

# Architectural models and the professional practice of the architect, 1834-1916

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## Abstract

*Architectural models and the professional practice of the architect, 1834–1916* explores how architects thought about, made, commissioned, and used models during the nineteenth century. Particular focus has been given to the relationship between the production and use of architectural models and the development of the professional identity of ‘The Architect’ in nineteenth- and early twentieth-century Britain.

The attitude of architects towards models in the nineteenth century has been neglected in the study of architectural and design history. Instead historians have focused on other forms of architectural production. Any analysis as there has been of model collections, including that of the V&A, has concentrated on the history of acquisitions and the individuals involved. The circumstances of model production, the work of the model-maker, and the use of models by architects in education, design, and construction have largely been ignored. In addition, by drawing on a variety of sociological theories and studies, the thesis explores architectural practice as a socially constructed concept and examines the role that architectural models played in the development of professional identity during the period.

Alongside comparative material from a variety of international, national, and local institutions, the collection of models held by the Victoria & Albert Museum (V&A) and Royal Institute of British Architects (RIBA) has been the core focus of research for the thesis. The temporal boundaries of the project are established by the history of models within these two institutions: 1834 marks the founding of the RIBA, whilst 1916 is the year in which the itinerant collections of the Architectural Museum were reabsorbed into the V&A before being dispersed and deaccessioned.

Across six chapters the thesis explores how architects used and thought about models at each stage of their professional lives from education to design, from public authority to private commissions, from temporary exhibitions to permanent displays. A wide variety of material from key public and private collections –

combined with evidence from print culture within and without historic architectural communities – offers a nuanced understanding of the role and use of the model in the nineteenth and early-twentieth century. Through this material and the application of the conceptual frameworks used by both architectural and design historians, the thesis provides a new understanding of the nineteenth century by establishing the conception, production, and use of models as a key aspect of architecture and society in the period.

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## Author's Declaration

'During the period of registered study in which this thesis was prepared the author has not been registered for any other academic award or qualification. e material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.'

Signature:

Date:



## Introduction

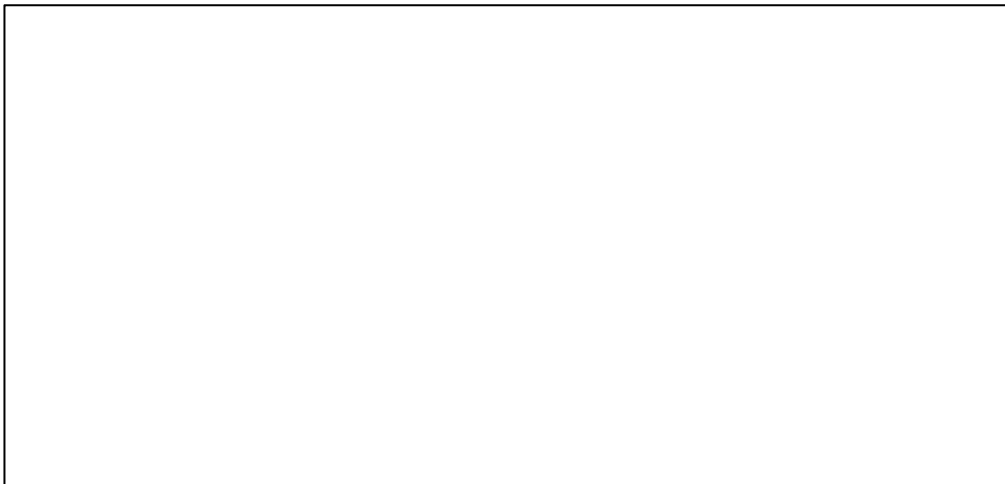
Architectural models and the professional practice of  
the architect, 1834-1916





## Introduction

I leave my house, turn right at the bottom of the steps, and walk up the South Lambeth Road. Beyond the Portuguese cafes, wine shops and restaurants, at the corner of Vauxhall Park, a new development looms up: a seven-storey concrete-frame covered in a skin of brick slips with loose references to the nearby parade of brick terraces and the Neo-Romanesque St Anne's Church. Set back from the road by a garden is the development's marketing suite. Originally a portent of the building to come, the pavilion is now notable for its façade made from different brick stock, which has been laid with mortar rather than the panelised brick system that is wrapped around the semi-completed building.



### **Figure 1**

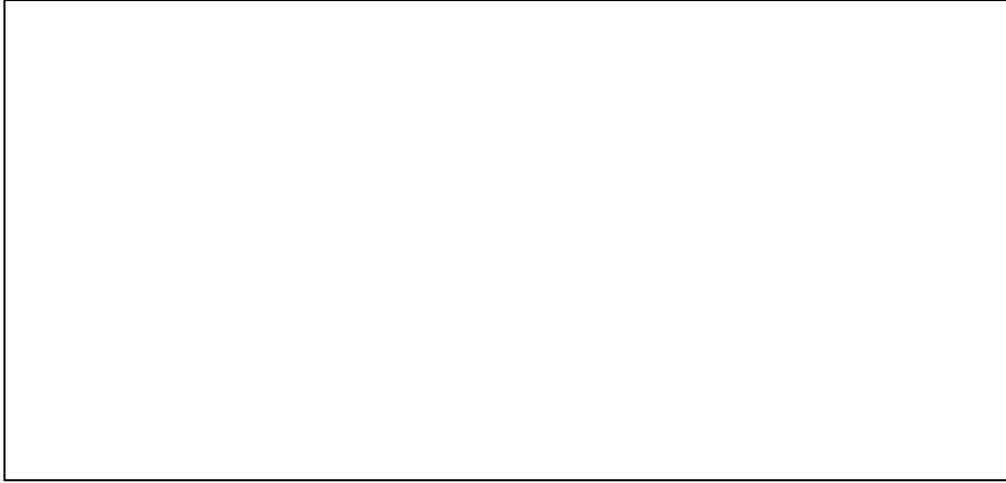
Process Models for Keybridge House

Design and Access Statement, August 2013, p.35.

Lambeth Council Planning Portal Reference: 13/03935/OUT

In the garden, before you enter the interior of the marketing suite, is a cast bronze alloy model of the development including a series of blocks and high-rise towers that run from the South Lambeth Road to the Wandsworth Road. Atmospherically lit from below at night, this metal model marks the boundary of the site, a totem for redevelopment. This model is nothing like the site model shown by the architects and client to the planners, which featured existing and proposed

buildings made from subtly different types of wood veneer. Nor is it similar to the design-process models made by the architects at the scale of 1:1000 showing various formal arrangements for the scheme (Fig. 1).



**Figure 2**

Site Model of London

Keybridge House: Design and Access Statement, August 2013, p.35.

Lambeth Council Planning Portal Reference: 13/03935/OUT

Inside the marketing suite, past the over-welcoming agents and video projections, is a large site model of London at perhaps a scale of 1:5000 (Fig.2). This model is made in two pieces in order to fit into standardised flight cases, capable of being flown around the world to residential trade fairs. The majority of the buildings are made in American oak with the Thames rendered in syrupy black resin. Here the whole of London lies before us in miniature. Certain monuments have been made in white plastic, picking them out as important even for those unfamiliar to London's built environment. From west to east we see Battersea Power Station with its projected embellishments, Victoria station, Tate Britain, the Palace of Westminster, the London Eye, Waterloo station, the Oval, and the prospective development where I currently stand. Through this depiction of particular monuments as a material series, the model attempts to construct an image of London by inventing a series of relationships between existing buildings and new ones.

Modelling is a primary mechanism through which we make sense of and act upon our material lives and society at large. Whether as a demonstration, experiment, or proposition, architectural models have the ability to record, alter, and remake the material world. Models can be contingent or idealised, abstract or representational, absolute or ephemeral. Recently a variety of disciplinary communities, including sociology and the history of science and technology, have been increasingly interested in the epistemic function and poetic potential of models: a model holds both the ability to embody existing knowledge and the potential to generate new experience. Despite advances in computer-generated images, throughout the world physical models are used to record lost monuments and to project future buildings in exhibitions, classrooms, and developers' marketing suites. Prior to construction, through the powers of abstraction and miniaturisation, the production of models allows buildings and monuments to be comprehended, understood, and discussed by a wide range of individuals and social groups. After a building's construction or its lifespan a model, as a part of a private collection or a national museum, contributes to the afterlife of monuments through the canonisation of buildings and the transmission of their visual and cultural identity. By recording buildings of the past or depicting remotely located structures, the model allows viewers to transcend the boundaries of time and space. Furthermore by controlling the relative quantities of scale or material, architectural models hold the potential to place particular buildings and the societies that produce them in a privileged position.

With these ideas in mind, the central concern of this thesis is to establish how architects thought about, made, commissioned, and used models during the nineteenth and early-twentieth centuries. The second aim of my research is to shed light on the relationship between the production and use of architectural models and the development of the professional identity of 'The Architect' in this period. Any study of architectural models by scholars have tended to focus on presentation models connected with major projects during the Quattrocento and Cinquecento, or the conceptual significance placed on models by architects in the twentieth and twenty-first centuries. The attitude of architects towards models in the nineteenth

century has been neglected in the study of architectural and building history. Instead historians have focused on other forms of architectural production including drawing, writing (lectures, treatises, histories, specifications), and building. Any analysis as there has been of architectural models in the nineteenth century has concentrated on the history of acquisitions and the individuals involved. The circumstances of model production and the use of models by architects in education, design, and construction have largely been ignored. Counter to this my doctoral research uses architectural models as a lens through which to explore the values embodied by various cultural, social, and political institutions.

As the collection of models held by the Victoria & Albert Museum (V&A) and Royal Institute of British Architects (RIBA) have been the focus of research, the temporal boundaries of this project are established by the history of models within these two institutions. 1834 marks the founding of the RIBA, the first professionalised body for architects, whilst 1916 is the year in which the itinerant collections of the Royal Architectural Museum (RAM) were reabsorbed into the V&A before being deaccessioned and dispersed. Following its establishment in Westminster (1851-57), the museum formed a part of the South Kensington Museum between 1857 and 1869. The collections of casts, fragments, models, and other building-related ephemera relocated to newly built premises on Tufon Street from 1869 until 1902, before cohabiting those premises with the Architectural Association between 1903 and 1912.<sup>1</sup>

The structure of the thesis is determined by the role of architectural models during the professional life of an architect. It will achieve this through six thematically

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<sup>1</sup> J. Summerson, *The Architectural Association, 1847 – 1947* (London, 1947); F. Leslie, 'Inside Outside: Changing Attitudes Towards Architectural Models in the Museums at South Kensington', *Architectural History* 47 (2004); E. Bottoms, 'The Royal Architectural Museum in the Light of New Documentary Evidence', *Journal of the History of Collections*, 19:1 (March 2007), 115-139; I. Flour, 'On the Formation of a National Museum of Architecture The Architectural Museum versus the South Kensington Museum', *Architectural History* 51 (2008) 211-238.

structured chapters, across which there are many interwoven themes and dialogues. The first chapter will examine the role played by architectural models in informal training and professional education between 1834 and 1916. In Chapter 2, the focus on the enquiry shifts to architectural models and the professional authority of the architect in the nineteenth-century public sphere. In Chapter 3, I will build on the position I established in Chapter 2 and demonstrate the conceptual and creative application of architectural models in practice through the work of William Burges, George Devey, and E. S. Prior. Moving onto another aspect of the architect's practice, in Chapter 4 I will examine the variety of approaches, strategies, and discussions that shaped how architectural models were commissioned, made, and used by architects, clients, and model-makers. Chapter 5 returns to the public sphere and examines the display of architectural models in relation to the public presentation of the architectural profession. Finally, in Chapter 6 I will investigate three collections of architectural models, one private and two public collections, in order to explore the relationship between the collecting practices and the legacy of the architect.

Through the combination of object-based study with investigation of archival material, this thesis revises the assumptions, judgements, and attitudes of a previous generation of scholars to the use of models by architects in the nineteenth century. Additionally, the thesis highlights the significance of the model as part of the design process of various architects' practices. The project also reveals the previously unknown role played by architectural models in the design and construction of many significant buildings. Through the study of print culture and popular newspapers, contemporary public interest and engagement with the medium of architectural models has been exposed. Equally the research has significance for how architects use models today in their interactions with clients, politicians, and general public. In its breadth and scope, the thesis critically investigates the function and form of models, the materials and methods of depiction, questions of scale, issues surrounding perception, experimentation and presentation of architectural models.



## Contemporary scholarship on the architectural model

Over the past thirty years many historians have explored the conceptual role and significance of architectural models through broad studies that form a background to the thesis. Clarifying and understanding the conceptual role of architectural models is a key concern for many scholars in the field. Following various historic examples a model can become a mechanism for understanding and demonstrating architectural concepts.<sup>2</sup> One view is that working with physical models provides a tactile, kinaesthetic experience that connects an abstract idea with a concrete reality.<sup>3</sup> Many historians describe how Renaissance architects saw models as part of the design process that allowed them to intellectually refine three-dimensional ideas through examination, exercise of judgment, and modification.<sup>4</sup> Several scholars note the changes in attitude to the conceptual significance of the model in the twentieth century, when following other artistic disciplines scale model-making became an art form akin to sculpture where composition, volumetric relations, and the effects of light and shadow could be examined in three dimensions and mediated through photographs.<sup>5</sup> The conceptual role of architectural models

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<sup>2</sup> A. C. Smith, *Architectural Model as Machine* (Amsterdam, 2004) vii.

<sup>3</sup> J. Griesemer, '3-D Models in Philosophical Perspective', in S. Chadarevian and N. Hopwood, *Models: The Third Dimension of Science* (Redwood City, CA, 2004) pp.433-442.

<sup>4</sup> H. A. Millon, 'Models in Renaissance Architecture', in H. A. Millon and V. M. Lampugnani eds., *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture* (London, 1991) pp.19-74; E. Ferretti and F. P. Di Teodoro, 'Les maquettes en bois du dôme de Brunelleschi au Museo dell'Opera del Duomo à Florence: architecture, techniques, et projet au XV<sup>e</sup> et XVI<sup>e</sup> siècles', in S. Frommel and R. Tassin eds., *La Maquette: un outil au service du projet architectural*. (Paris, 2015) pp.43-58; A. Lillie and M. Mussolin, 'The Wooden Models of Palazzo Strozzi as Flexible Instruments in the Design Process', in A. Belluzzi, C. Elam, and F. Paolo Fiore eds. *Giuliano da Sangallo* (Milan, 2017) pp.210-229.

<sup>5</sup> D. Deriu, 'Transforming Ideas into Pictures: Model Photography and Modern Architecture', A. Higgott, and T. Wray, eds., *Camera Constructs: Photography, Architecture and the Modern City* (Burlington, 2012) pp.159-178; O. Elser, 'On the History of the Architectural Model in the 20<sup>th</sup> Century', in O. Elser, and P. C. Schmal eds., *Das Architektur Modell: Werkzeug, Fetisch, kleine Utopie – The Architectural Model: Tool, Fetish, Small Utopia*, Exhibition catalogue, Deutsches Architekturmuseum (Frankfurt am Main, 2012) pp.11-22; M. Lending and M. Hvattum eds., *Modelling Time: The Permanent Collection 1925–2014* (Oslo, 2014); P. Amaldi, 'Autonomie et puissance du médium dans le processus de conception d'Alberti et Mies van der Rohe', in S.

continues to be explored in the twenty-first century with scholarship that examines the cross-pollination brought about between fine artists and practicing architects, where artists including Thomas Demand, Rita McBride, and Thomas Schütte question the instrumental role of the medium. In turn this line of questioning feeds back into how models are used by architectural practices to design buildings, rooms, and cities.<sup>6</sup> In light of the emergence of digital modelling and fabrication, many scholars have returned to the idea that a physical scale model remains a lodestar for contemporary architects in education, practice, and public relations.<sup>7</sup> Through the studies of several contemporary architects, a special issue of the journal *OASE* examines the contribution that physical models have made to architectural discourse since the emergence of digital modelling technologies.<sup>8</sup> Focusing on the ability to view models as objects from a privileged position, a ‘divine voyeurism’, Christophe Van Gerrewey proposes that a model is a ‘realisation of what architecture promises, yet can never attain itself’.<sup>9</sup>

In addition to serving a creative process, models are considered an immediate and comprehensible means of communication between individuals with different levels of knowledge. Simona Valeriani describes how by the seventeenth century the extended use of architectural models represented a development in instrumentalisation as well as improving the communication between different stakeholders in the design process.<sup>10</sup> This is because, scholars argue, models are

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Frommel and R. Tassin eds., *La Maquette: un outil au service du projet architectural*. (Paris, 2015) pp.85–96.

<sup>6</sup> H. Teerds and J. Floris, ‘On Models and Images: An Interview with Adam Caruso’, *OASE* 84 (2011) 128-142; P. V. Aureli, ‘Form and Resistance: A Conversation with Caruso St John’, *El Croquis: N. 166 Caruso St John 1993-2013* (Madrid, 2013) pp.5-10.

<sup>7</sup> M. Morris, *Models: Architecture and the Miniature* (London, 2006); M. Stavrić, P. Sidjanin, and B. Tepavčević, *Architectural Scale Models in the Digital Age: Design, Representation and Manufacturing* (Wien, 2013).

<sup>8</sup> K. Moon, *Modelling Messages. The Architect and the Model* (New York, 2005).

<sup>9</sup> C. Van Gerrewey, “‘What Are Men to Rocks and Mountains?’ The Architectural Models of OMA/Rem Koolhaas”, *OASE* 84 (2011) 31–36.

<sup>10</sup> S. Valeriani, ‘Three-dimensional Models as “in-between-objects”: The Creation of in-between Knowledge in Early Modern Architectural Practice’, *History of Technology* 31 (2011) 26-46; S.



three-dimensional objects and are able to display relations that cannot easily be represented in two dimensions.<sup>11</sup> Standardised scales are a key measure of control in the display of architectural models in that they demand the existence of other entities to which the object can be compared.<sup>12</sup> These aspects mean that models are ideally suited for pedagogical purposes. Historians of science note the crucial role models played in transferring knowledge and ideas at scale that allows for comprehension by students of biology, chemistry, and other disciplines.<sup>13</sup> In addition to the ability to represent existing knowledge, scholars recognise that models are a place for heuristic exploration by many disciplines including architects. However, Ludmilla Jordanova argues that the ability of a model ‘to reveal a reality without being the real thing’ indicates that the medium requires further investigation of both the models themselves and our pleasure in them.<sup>14</sup>

The close study of architectural models allows historians to explore why models were conceived and how they were used to help architects think through design both as a medium and as a process.<sup>15</sup> But recent architectural histories suggest a more complex situation with the social fabric of architectural workers whose contribution to practice has previously been obscured.<sup>16</sup> Extending to the study of

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Valeriani, ‘Christopher Wren et son milieu: les maquettes architecturales dans leur contexte’, in S. Frommel and R. Tassin eds., *La Maquette*, pp.59-70.

<sup>11</sup> S. Chadarevian and N. Hopwood, ‘Dimensions of Modelling’ in S. Chadarevian and N. Hopwood eds., *Models: The Third Dimension of Science* (Redwood City, CA, 2004) pp.1-18; K. Moon, *Modelling Messages. The Architect and the Model* (New York, 2005); M. Morris, *Models: Architecture and the Miniature* (London, 2006).

<sup>12</sup> M. Morris, *Models* (London, 2006) p.9. Morris derives this idea from his reading of C. Lévi-Strauss, *The Savage Mind*, trans. Anon (Chicago, 1966) p.23.

<sup>13</sup> M. S. Morgan, ‘Learning from Models’, in M. S. Morgan and M. Morrison eds., *Models as Mediators: Perspectives on Natural and Social Science* (Cambridge, 1999) pp.347-388; N. Hopwood, *Embryos in Wax: Models from the Ziegler Studio, with a Reprint of ‘Embryological Wax Models’ by Friedrich Ziegler* (Cambridge/Bern, 2002); S. Chadarevian, ‘Models and the Making of Molecular Biology’, in S. Chadarevian and N. Hopwood eds., *Models*, pp.339-368.

<sup>14</sup> L. Jordanova, ‘Material Models as Visual Culture’, in S. Chadarevian and N. Hopwood eds., *Models*, p.449.

<sup>15</sup> A. C. Smith, *Architectural Model as Machine*, vii.

<sup>16</sup> G. B. Johnston, *Drafting Culture: A Social History of Architectural Graphic Standards* (Cambridge, Mass., 2008); P. Deamer, *The Architect as Worker: Immaterial Labor, the Creative Class, and the Politics of Design* (London, 2015).

architectural models, several broad-ranging books draw attention to the rise of appreciation in the 'craft' of both the historic and the contemporary model-maker.<sup>17</sup> Building upon these wide-ranging discussions, other scholars demonstrate that the model-maker was an active part in the translation, interpretation, and transmission of ideas in the creation of buildings.<sup>18</sup> Whilst others describe how particular model-makers had another role as an 'intellectual craftsmen' in the production of theoretical and symbolic models for display in particular architect's studios.<sup>19</sup>

In addition to their conceptual role, models hold a representative function with the public display and presentation of models testifying to prosperity, power, and new political visions for individuals, institutions, and states. Across Ancient Asia, Egypt, and the Americas artists created models and effigies ranging from highly abstracted representations of temples to elaborate industrial complexes populated with figures of humans and animals.<sup>20</sup> These models were distillations of ideas about the symbolic significance of architecture as the embodiment of political power or as the focus of ritual practices. Since the sixth century, in sculpture or paintings, the representation of the church in model form in the hands of the church's patron became a powerful iconic image, conveying the role of the patron in the construction and his devotion to Christianity.<sup>21</sup> In Europe, during the Early Modern period, images of models allegorically presented to patrons appear in tapestries, paintings, and prints.<sup>22</sup> In a nineteenth-century context, it is proposed

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<sup>17</sup> K. Moon, *Modelling Messages*; M. Morris, *Models*.

<sup>18</sup> T. Fankhänel, 'Introducing Theodore Conrad or Why Should We Look at the Architectural Model Maker?', S. Frommel and R. Tassin eds., *Les Maquettes d'architecture: Fonction et Évolution d'un Instrument de Conception et de Réalisation* (Paris /Rome, 2015) pp.259-268; B. Calder, 'Medium or message? Uses of design and presentation models by Denys Lasdun and Partners', H. Heynen and J. Gosseye eds., *2nd International Conference of the European Architectural History Network* (Brussels, 2012) pp.452-456.

<sup>19</sup> T. Weaver, 'Model-maker Grimm', *AA Files*, 73 (2016) 94-100; F. Ballabio and A. Conti, 'Sentimental Education', *AA Files* 73 (2016) 129-134.

<sup>20</sup> J. Pillsbury, P. J. Sarro, J. Doyle, and J. Wiersema, *Design for Eternity: Architectural Models from the Ancient Americas* (London/New Haven 2015).

<sup>21</sup> M. C. Carile 'Buildings in their patrons' hands?', *Kunsttexte* 3 (2014) 1-15.

<sup>22</sup> S. Frommel, 'Les maquettes de Giuliano da Sangallo', in S. Frommel and R. Tassin eds., *Les Maquettes*, pp.83-84.

that European architects regarded models in exhibitions as completed works in much the same way as presentation drawings were also viewed.<sup>23</sup> Whereas in the twentieth century models of Rome (1933–44) had a dual role in recording archaeological sites and authorising an emerging modernist visual language for Fascist Italy.<sup>24</sup>

Whilst my thesis draws on this scholarship and presents a new and original reading of the use and conception of architectural models in Britain between 1834 and 1916, there already exists a series of important publications and exhibitions on the subject.

### Historiography

The historiography of the nineteenth-century architectural model began in the 1920s with the work of Martin Briggs, which was supplemented in the 1960s by several essays by John Wilton-Ely. Barrington Kaye, and Frank Jenkins obliquely referred to architectural models in their studies of the particular individuals or the architectural profession. Whilst in 1973 John Physick and Michael Darby questioned Wilton-Ely's assumptions about models in the period and began to offer revisionist interpretations. During the early 1990s Tim Knox explored specific architectural models in multiple articles. Reframing the tendency towards exploring model collections and collecting practices, in the twenty-first century James Yorke, Fiona Leslie, Edward Bottoms, and Richard Gillespie have all written about specific nineteenth-century models or collections.

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<sup>23</sup> A. Thomine-Berrada, 'De la maquettes de présentation à la maquettes de conception (1850-1880) réflexions autour de l'emploi de la maquettes au XIXe siècle', in S. Frommel and R. Tassin eds., *La Maquette* pp.241-252.

<sup>24</sup> V. P. Tschudi, 'Plaster Empires: Italo Gismondi's Model of Rome', *JSAH* 71.3 (September 2012) 386-403.

Specific scholarship on the role of the model in the nineteenth century began with a pair of essays written by Martin Briggs.<sup>25</sup> Published in the *Burlington Magazine*, Briggs discussed John Soane's use of architectural models, noting how Soane's models tended to be very carefully constructed and were highly finished objects. Briggs explored how the larger models could be dismantled to show the arrangement of the rooms, staircases, passages, and chimney flues. The elaborate nature of these models was reflected in their expense to produce.<sup>26</sup> Despite this, Briggs' speculated that Soane may have paid for the production of other models from his own fee. Further to this argument Briggs proposed that Soane's continued use of models had a dual function: they were used to communicate designs with clients and building committees, in addition to help Soane himself comprehend the spaces and forms that he was designing.<sup>27</sup> Briggs raised an important issue regarding models in the period – who was paying to produce models and for what motivation? These questions will be explored further in relation to the creative aspects and financial structure of architectural practice (Chapter 3) and the relationship between architects, model-makers, and clients (Chapter 4).

Within much scholarship on British architecture and urbanism there are glimpses of the role played by models during the nineteenth century. For instance in his study of the architectural profession, Barrington Kaye briefly discussed the complicated and multi-layered nature of the competition for the Royal Exchange held in 1837, which became 'a fiasco which probably did more than anything else to discredit the system of public competitions for the rest of the nineteenth century'.<sup>28</sup> Kaye's interest in this episode was only to highlight the problematic

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<sup>25</sup> M. Briggs, 'Architectural Models-I', *The Burlington Magazine for Connoisseurs* 54.313 (1929) 174-175+178-181+183; M. Briggs, 'Architectural Models-II', *The Burlington Magazine for Connoisseurs* 54.314 (1929) 245-247+250-252.

<sup>26</sup> Briggs cites the example of a wooden model for Holy Trinity Church, Marylebone that cost £25, a cost that Soane passed on to the client. £25 in 1828 is worth £1695 in 2018, according to the National Archives Currency Converter: <http://www.nationalarchives.gov.uk/currency-converter>

<sup>27</sup> M. Briggs, 'Architectural Models-II', 252.

<sup>28</sup> B. Kaye, *The Development of the Architectural Profession in England. A Sociological Study* (London, 1960) p.111.

nature of the competition system in this period. This was a topic also taken up by other historians. Frank Jenkins noted that prior to the Royal Exchange competition a RIBA committee established to define the particulars of design competitions proposed, 'Model should be received with caution, as not being unexceptional tests of the merits of a design'.<sup>29</sup> Jenkins, without presentation of any further evidence, described this view as 'doubtless in keeping with the prevailing attitude'.<sup>30</sup> Jenkins also noted the pre-eminence of drawings over models during the period, which he believed was due to the fact that the nineteenth-century client often lacked knowledge of orthographic drawings and a rendered perspective drawing was fundamental in illustrating how the building would appear when completed.<sup>31</sup> Both Kaye and Jenkins raised crucial questions about the accuracy or fidelity of architectural models, which will be explored through a variety of case studies throughout the thesis including the rebuilding of the Royal Exchange in Chapter 2, William Burges' scheme to decorate the interior of St. Paul's Cathedral in Chapter 3, and the role of architectural models in the 'education' of the wider public at the Royal Academy Exhibition in Chapter 5.

John Wilton-Ely, a key figure in the study of British architectural models, proposed that by the turn of the nineteenth century, 'few English architects appear to have relied upon models either in the process of design or for demonstration to clients and builders'.<sup>32</sup> Wilton-Ely suggested that there were several explanations for this decline. One reason was due to the reduction in concern for 'the sculptural qualities of mass and space'.<sup>33</sup> Additionally Wilton-Ely suggested that the technical knowledge of an established profession and development of specialized drawings superseded models as design tools.<sup>34</sup> One effect of this trend, Wilton-Ely concluded, was that the building industry, now familiar with the precise direction

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<sup>29</sup> F. Jenkins, *Architect and Patron: A Survey of Professional Relations and Practice in England from the Sixteenth Century to the Present Day* (London, 1961) p.124.

<sup>30</sup> F. Jenkins, *Architect and Patron*, p.124.

<sup>31</sup> F. Jenkins, *Architect and Patron*, p.209.

<sup>32</sup> J. Wilton-Ely, 'The Architectural Model', *Architectural Review* 142 (July 1967) 32.

<sup>33</sup> J. Wilton-Ely, 'The Architectural Model', 32.

<sup>34</sup> J. Wilton-Ely, 'The Architectural Model', 32.

offered by architectural drawings, no longer required the explicit instruction provided by detailed models.<sup>35</sup> Wilton-Ely proposed that exacerbating the reduced importance of architectural models was their replacement by ‘the seductive charms of the architect’s coloured impression [perspective]’.<sup>36</sup> However, the argument Wilton-Ely made suggested that the choice for architects in this period was to use either models *or* drawings. The choral effect of models and drawings for architect, builder, and patron should not be underestimated. In fact, as I will argue, the pre-eminence of one medium over another, as well as the struggle between drawings and models for truthfulness and reliability, will be discussed in depth throughout the thesis.

Wilton-Ely made a second key contribution to the study of the nineteenth-century architectural model in a subsequent article that offers a survey of remaining models held in the Sir John Soane Museum. Employing precedent from the organisation of architectural drawing collections, Wilton-Ely framed the extant models with a typological approach that organises them into one of six thematic types.<sup>37</sup> The complexity and difficulty of Wilton-Ely’s task is clear. In the category of ‘Compositional studies’, Wilton-Ely made connections between models of the same project, resulting in a propositional chronological sequence. For instance, when discussing Soane’s work at the Bank of England, Wilton-Ely suggested that initial simplistic wooden models were superseded by a detailed plaster model that embodied various amendments required by the Bank’s Building Committee.<sup>38</sup> Whilst this is a likely lineage in the process of design, Wilton-Ely did not cross reference the model with any other form of primary material that might support this interpretation. In order to avoid doing what I am accusing Wilton-Ely of

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<sup>35</sup> J. Wilton-Ely, ‘The Architectural Model’, 32.

<sup>36</sup> J. Wilton-Ely, ‘The Architectural Model’, 32.

<sup>37</sup> These six taxonomies are: ‘General or comprehensive’, ‘Compositional studies’, ‘Ornamental studies’, ‘Structural studies’, ‘Spatial and lighting studies’, and ‘Complex studies’.

<sup>38</sup> J. Wilton-Ely, ‘The Architectural Models of Sir John Soane: A Catalogue’, *Architectural History* 12 (1969) 8.

failing to do, when focusing on particular models and their use in design, exhibition, or education, I have drawn on a wide variety of primary material.<sup>39</sup>

In consideration of the models as objects, Wilton-Ely proposed there was a relationship between the function of the model and the type of material used to make it. At the Soane Museum, the majority of the surviving models are painted softwood but mahogany was used when a design required a greater level of detail to be shown.<sup>40</sup> Furthermore approximately one third of the models were made of plaster and these tended to show compositional aspects of the proposed design. Later in his study Wilton-Ely reflected on the importance of Soane's models as a part of his teaching and cites Soane's Royal Academy lectures where several models from Soane's own collection were used as exemplars to his students. Wilton-Ely notes that these models represented diverse topics including construction methods, compositional arrangement, exemplar historic buildings, and archaeological sites.<sup>41</sup> It should be noted that the temporal boundaries of this thesis limits the study of Soane's models to his tenure as Professor at the Royal Academy (Chapter 1), the exhibition of models at the Royal Academy Exhibition in 1834, and the construction of the Model Room at Lincoln's Inn Fields between 1830 and 1837 (Chapter 6).

Arguably the most important document for the study of nineteenth-century architectural models is the catalogue written by John Physick and Michael Darby, which accompanied the exhibition 'Marble Halls: Drawings and Models for Victorian Secular Buildings' at the Victoria and Albert Museum in 1973. Although published only four years after Wilton-Ely's article, the exhibition offered a revisionist interpretation of the nineteenth-century architectural model. Within the catalogue text Physick and Darby proposed, 'there is every reason to believe that

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<sup>39</sup> In Chapter 5 in relation to the portions of this thesis about Soane's models I use Soane's diaries, the office daybooks, bills from tradesmen, exhibition catalogues, and newspaper articles to help contextualise and frame the discussion.

<sup>40</sup> J. Wilton-Ely, 'The Architectural Models of Sir John Soane', 10.

<sup>41</sup> J. Wilton-Ely, 'The Architectural Models of Sir John Soane', 11.

more models were made during the Victorian period than during any previous era.<sup>42</sup> In justification Physick and Darby cited a number of models that were discussed in the architectural press.<sup>43</sup> In addition to Wilton-Ely's distinctive categories of models, Physick and Darby propose the category of a 'display model', which would be used for exhibition and public criticism.<sup>44</sup> Rather than categorise models in taxonomies, my approach in the thesis will be to contextualise them with other forms of contemporary evidence in order to explore why the models were made and how they were used in the nineteenth century.

In response to Wilton-Ely's study, Physick and Darby propose there was interrelationship between model and drawings in this period, citing a remark in *The Building News* 'that [William] Burges' models of his proposed decoration of the apse of St Paul's were excellent, but should have been accompanied by drawings'.<sup>45</sup> Furthermore, Physick and Darby note that the same article highlighted the perceived importance and superiority of the model, 'in enabling the architect to study what he is doing 'in the round.'<sup>46</sup> This episode and the three architectural models involved will be explored in depth in Chapter 3.

Tim Knox made a significant contribution to the study of nineteenth-century architectural models with the publication of two articles. In one article Knox discussed two ecclesiastical models that he had recently acquired for the RIBA: a 1874 timber and cardboard model for St Paul's Wesleyan Church, Bowdon, Cheshire by William Hayward Brakspear and the model of a baldacchino designed by Charles Alban Buckler for the Church of Our Lady & Saint Philip, Arundel.

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<sup>42</sup> J. Physick and M. Darby, 'The Architectural Model during the Victorian Period', in *Marble Halls: Drawings and Models for Victorian Secular Buildings*, Exhibition catalogue, Victoria & Albert Museum (London, 1973) p.13.

<sup>43</sup> These included the public exhibition of proposed buildings by regional and municipal authorities, the various models displayed in international exhibitions and at the Royal Academy Exhibition throughout the nineteenth century. J. Physick and M. Darby, *Marble Halls*, pp.13-15.

<sup>44</sup> J. Physick and M. Darby, *Marble Halls*, p.14.

<sup>45</sup> J. Physick and M. Darby, *Marble Halls*, p.15.

<sup>46</sup> J. Physick and M. Darby, *Marble Halls*, p.15.



c.1890.<sup>47</sup> As well as broadening the number of models available for study, in the article Knox explored the various ways that an architect might use a model and highlights the emergence of non-established churches as a new client base in the nineteenth century.

More significantly to the field of scholarship, in a second article Knox examined a timber model of Langton House (1824-1830), a country house in Dorset designed by C. R. Cockerell. In a similar methodology to the integrated approach taken in the thesis, Knox situated the model with other evidence, including entries from Cockerell's diaries, to determine the importance of the model in the design of the house.<sup>48</sup> Contributing to our analysis of architectural models in the period, Knox studied how the architect convinced his client to build a new house rather than rebuild a former parsonage through the production of an architectural model: to allay his client's concerns Cockerell made a model of the project to provide an estimate of the construction costs. Knox described how Cockerell spent ten days making drawings for the model, following which the where the model-maker came to Cockerell's office to discuss the model. This interaction was not a simplistic one where the model-maker was instructed to produce a model of the architect's final design. Instead Cockerell described how the model-maker, 'put me in concert with my model in respect of the levels of the floors'.<sup>49</sup> Once complete, the model provided Cockerell with a working tool: Knox noted that there are pencil alterations to the first floor window surrounds, which conform to the design as executed on site.<sup>50</sup> Significantly Knox described how Cockerell's model exerted a profound influence upon his client: 'apprehensions over his architect's proposals appear to have evaporated when confronted with the three-dimensional

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<sup>47</sup> T. Knox, 'Ecclesiastical models', *RIBA Journal* 99.8 (August 1992) 31.

<sup>48</sup> T. Knox, 'Cockerell's Model for Langton: A house for the Dorsetshire Nimrod', *The Georgian Group Journal* 3 (1993) 62.

<sup>49</sup> T. Knox, 'Cockerell's Model for Langton', 66 ft. 25 quotes: RIBA, Cockerell Diaries, 14 April 1825.

<sup>50</sup> T. Knox, 'Cockerell's Model for Langton', 65 and ft.41.

representation of the house in miniature.<sup>51</sup> Crucially with this article Knox demonstrated how a nineteenth-century model could be used as a multifunctional tool for an architect. It might be used rhetorically to convince the client to construct a new building through demonstrates of both the quality of the design and certainty of its construction costs. The model was also a working tool for Cockerell. In discussions with the model-maker the model served as a test of his design. Once complete, the model could both record and test embellishments and adjustments to the design. In addition to adopting Knox's methodological approach, these aspects of model use and production will be explored through case studies involving George Devey (Chapter 3) and at Dorchester House (Chapter 4).

Similar to Knox's focus on a single example, Matthew Williams' contribution to the secondary literature increased the number of known nineteenth-century models and advanced our understanding of how one particular architect used them.<sup>52</sup> In an article on a model made for William Burges at Castell Coch for Lord Bute, Williams' describes how Burges often used models as a part of the design process, a contribution that increases the sum of our understanding on a key architect from the period. Williams demonstrates that an interior model of a bedroom at Castell Coch was made to help the clients to finalise the decorative scheme, a claim Williams supports with accounts and letters on the topic from architect to the contracting decorator who also produced the model.<sup>53</sup> In the thesis I have drawn on Williams' approach to the close reading of primary sources to examine the use and production of architectural models. This includes the role played by the model-maker Richard Day junior in the development of the external and internal design of Dorchester House (Chapter 4), and the preparation of models by John Soane's assistants for the 1834 Royal Academy Exhibition (Chapter 5). Additionally, Williams' study of Burges' use of models encouraged me to further examine the models built to assist Burges in the decoration of St Paul's Cathedral (Chapter 3).

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<sup>51</sup> T. Knox, 'Cockerell's Model for Langton, 65.

<sup>52</sup> M. Williams, 'Lady Bute's Bedroom, Castell Coch: A Rediscovered Architectural Model', *Architectural History* 46 (2003) 269-276.

<sup>53</sup> M. Williams, 'Lady Bute's Bedroom, Castell Coch', 272-273.

Much of the recent architectural historical scholarship on nineteenth-century models has tended to focus on major institutional collections and their attitudes towards collecting. Fiona Leslie, a former curator of sculpture at the V&A, charted the history of the models acquired by the South Kensington Museums in the attempt to show the curatorial culture of the institution towards models.<sup>54</sup> Leslie used a variety of sources including catalogues and guidebooks, reports and records from the Department of Science and Art, personal correspondence of prominent individuals, and contemporary published accounts from the architectural press to offer a glimpse at the importance of models to this particular institution. In addition to bringing a large number of new models to light, Leslie discussed the changes in approaches to collecting models at the Victoria & Albert Museum and proposes that there was a shift in the classification of objects and purpose of displays in the museum, away from education and towards connoisseurship.<sup>55</sup>

Using newly discovered primary source material held at the Architectural Association to supplement Leslie's study of the collections in the South Kensington Museum, Edward Bottoms' essay on the collections of the Royal Architectural Museum (RAM), offered new understanding of models in relation to centralised collecting and institutional education practices. Despite focusing mostly on the broader collections, Bottoms showed how the RAM acquired models from a variety of sources including prominent architects (C. R. Cockerell), cultural societies (the Society of Antiquaries), and members' subscriptions, thereby offering a more varied picture of the sorts and types of architectural models that existed in the period.<sup>56</sup>

Focusing on an individual collection, James Yorke discussed how John Nash acquired his collection from the Parisian model-makers Jean-Pierre Fouquet and

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<sup>54</sup> F. Leslie, 'Inside outside: Changing Attitudes Towards Architectural Models in the Museums at South Kensington', *Architectural History*, 47 (2004) 159-200.

<sup>55</sup> F. Leslie, 'Inside outside', 178.

<sup>56</sup> E. Bottoms, 'The Royal Architectural Museum in the Light of New Documentary Evidence', ft. 103.

François Fouquet in c.1820<sup>57</sup>. Adding to the sum of our understanding on the topic, Yorke touched on the role these models played in the inspiration of contemporary architecture. Yorke described how the plaster-of-Paris models of antique buildings and monuments were exhibited in the gallery of Nash's house at 14–16 Regent Street from c.1820 until 1834, which led Yorke to propose that 'Models were an indispensable prop for an architect'.<sup>58</sup> Whilst Yorke does not develop this idea any further in his article, this thesis will demonstrate the performative potential of owning and displaying models. In particular in Chapter 6 we will see how the collection of architectural models formed a part of the legacy (or codification of knowledge) of architectural practice.

Exploring several collections in a pair of articles, Richard Gillespie charted how both institutions and individuals enthusiastically collected cork models for both educational purposes and demonstrations of neoclassical education in the late-eighteenth and nineteenth century. Focusing first on the model-maker Richard Du Bourg whose models of Antique buildings and their exhibition in London attracted a diverse audience including the aristocracy, architects, national and international tourists, groups of students with their tutors, and families, Gillespie argued that Du Bourg brought the new technique of cork modelling to England and developed his own distinctive modelling style.<sup>59</sup> In his second article Gillespie explored the emergence of cork model collections in the eighteenth century and their subsequent decline in the nineteenth century. Unlike many other scholars Gillespie's work made a contribution to our understanding in model-making materials and techniques.<sup>60</sup> In this thesis the social, economic, and technical aspects of architectural model-making will be explored further through the study of

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<sup>57</sup> J. Yorke, 'Tiny Temples of Mr Nash', *Country Life* (8 February 2001) 66-67.

<sup>58</sup> J. Yorke, 'Tiny Temples of Mr Nash', 67.

<sup>59</sup> R. Gillespie, 'Richard Du Bourg's "Classical Exhibition", 1775–1819', *Journal of the History of Collections* 29, 2.1 (July 2017) 251-269.

<sup>60</sup> R. Gillespie, 'The Rise and Fall of Cork Model Collections in Britain', *Architectural History* 60 (2017) 117-146.

educational manuals aimed at students (Chapter 1) and in a series of case studies on specific model-makers (Chapter 4).

In addition to the scholarship on specific architectural models and collections, this thesis uses studies of nineteenth-century architectural display culture to inform and support the analysis of architectural models. Building on the work of Leslie and Bottoms, Isabelle Flour focused on the relationship between the South Kensington Museum and the Royal Architectural Museum in relation to the display of architectural plaster casts.<sup>61</sup> Flour charted the establishment of both museums and their collections whilst analysing the background context of a 'national museum of architecture'. The article contributed both new sources material and develops the sum of our understanding about nineteenth-century architectural display culture. In particular Flour noted that in 1857 there were on-going discussions between prominent individuals in the architectural press about the policy of acquisitions, the classification and selection of 'specimens', the contextualization of exhibits within the display, and the sort of 'public' these collections should address.<sup>62</sup> I will examine these ideas in several portions of this thesis, in particular in Chapter 1 on models in architectural education and Chapter 5 on the exhibition of architectural models, and supplemented with other case studies including exhibitions at the Royal Academy and the Architectural Exhibition.

Mari Lending extended the breath and depth of studies into exhibition culture and collecting practices in her recent work, *Plaster Monuments*, which described how casts of major architectural works were made, circulated, and exhibited in the nineteenth and twentieth centuries in Western art museums.<sup>63</sup> Lending viewed these objects as items that document, preserve, and represent works of the past, which simultaneously question received assumptions about authenticity and

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<sup>61</sup> I. Flour, 'On the Formation of a National Museum of Architecture: The Architectural Museum versus the South Kensington Museum', *Architectural History* 51 (2008) 211-238

<sup>62</sup> I. Flour, 'On the Formation of a National Museum of Architecture', 217.

<sup>63</sup> M. Lending, *Plaster Monuments: Architecture and the Power of Reproduction* (Princeton/Oxford, 2017).

permanence in art. Drawing on examples such as the Musée national des Monuments Français in Paris and Royal Architectural Museum in London, Lending described how plaster casts offered the potential to both represent the individual building and its place in historical narratives. Locating fragments at eye level offered visitors the experience of details impossible in the real building, whilst photographs and drawings tried to situate the original and contextualize its purpose. Drawing on discussions of architectural transmission in print culture, Lending showed us how buildings could be transported through media and across continents, 'producing complex entanglements of copies and originals'.<sup>64</sup> Despite the book's focus on plaster casts, Lending's study has been a hugely important for my research in both the breadth of its primary evidence and the conceptual analysis of that evidence. For instance, Lending's discussion of the transitory nature of the plaster cast has influenced my consideration on the context, use, and production of nineteenth-century architectural models as mobile objects, constantly redeployed in varying situations as a part of professional practice. Methodologically Lending's approach allows for a consideration of the architectural models based on their variable use and purpose rather than a typological categorisation.

To conclude, this historiographic survey has indicated two crucial aspects. First, scholarship has, beyond the monographic study of models or collections, either overlooked or underestimated the role of the nineteenth-century architectural model. Scholars have often made unfounded assumptions about models or generalised their use by architects. Furthermore, there has been little discussion on the theoretical or practical approaches to the use or production of models in the nineteenth century. Second, I have described how I will make my contribution to the field of scholarship. I will increase our knowledge of the number and types of model that existed in the nineteenth century. In my analysis of I will contextualise the models through their comparison and investigation alongside other forms of evidence. Within this contextual framework, I will aim to understand how models

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<sup>64</sup> M. Lending, *Plaster Monuments*, p.8.

were used as a part of the social relationships of power articulated and distributed amongst architects and clients, builders and tradesmen, politicians and public.

### Primary Research Sources and Methodology

The methodological approach to the research combines object-based study with investigation of archival material held at the V&A, RIBA, National Archives (TNA), National Trust (NT), and many local history centres. Many of the architectural models held at the V&A, RIBA, and NT had not been subjected to in-depth academic analysis. Other collections of primary material held by St Paul's Cathedral, Sir John Soane's Museum, the National Gallery, the British Library, and the Royal Collection Trust have been used in order to broaden the number and types of model under examination. A wide variety of material from key public and private collections, combined with evidence from print culture within and without historic architectural communities, were studied in order to help develop a nuanced understanding of the role and use of the model in nineteenth-century society and its relationship to architectural culture.

To articulate and support the object-based study, the research has also relied on individual, museum and governmental archives; diaries and letters, newspapers and periodicals; books, pamphlets, and exhibition catalogues. In order to develop a broader scope for the thesis and gather supporting material for the object-based study, my research started with surveys of the architectural press in the period including the *Architectural Magazine* (active between 1834-38), the *Civil Engineer and Architects Journal* (established in 1838), the *Builder* (1842-), *Building News* (1854-), the *Architectural Review* (1896-), as well as the journals published by various architectural institutions including the *Transactions of the Royal Institute of British Architects* (1837-), *AA Journal* (1887-), and the *Architects' Magazine* (1900-). All of these publications were studied from the first date of publication until 1916. Where these magazines had been digitised I conducted keyword searches for the word 'model', a repetitive but highly rewarding research strategy. I will prove in this

thesis that these publications were both one of the main places for architectural discussions in the period as well as documenting the key exhibitions, projects, individuals and companies that shaped the profession. Complimenting the study of these journals, I have also examined exhibition catalogues and encyclopaediae, and books written by architects and other prominent individuals.

### Professionalism

Within architectural history professionalisation has been the subject of critical study by other scholars. These scholars identify the decline of aristocratic patronage, the expansion of building in post-Napoleonic War Britain, and the emergence of other disciplines as challenges to the intellectual credentials and socio-economic position of the architect prior to professionalism.<sup>65</sup> The formation of architectural societies, culminating in 1834 with the foundation of a professional body in the form of the RIBA, is considered to be both the expression of growing confidence in the services and activities of the discipline and manifestation of insecurity on the architect's role in society. Much of the secondary literature focuses on the instruments by which the profession attempted to gain pre-dominance over the building process including legal (registration), institutional (formation of RIBA), moral, educational, or technical (use of contracts and specifications).<sup>66</sup> However none of these accounts consider the role of the architectural models in relation to how the authority, authenticity, and reliability of the architectural profession was constructed in the nineteenth century.

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<sup>65</sup> H. Colvin, 'The Architectural Profession', *Biographical Dictionary of English Architects* (New Haven/London, 1995<sup>3</sup>) pp.10-25; F. Jenkins, *Architect and Patron*; J. Mordaunt Crook, 'The pre-Victorian architect: Professionalism and Patronage', *Architectural History* 12 (1969) 66; J. Wilton-Ely, 'The Rise of the Professional Architect in England', in S. Kostof ed. *The Architect: Chapters in the History of the Profession* (New York, 1977) pp.180-208; C. Webster, 'The Architectural Profession in Leeds 1800–50: A Case Study in Provincial Practice', *Architectural History* 38 (1995) 176-191; A. Saint, *Architect and Engineer: A Study in Sibling Rivalry* (New Haven/London, 2008).

<sup>66</sup> See in particular: J. Wilton-Ely, 'The Rise of the Professional Architect in England'; A. Saint *Image of the Architect* (New Haven/London, 1983) pp.51-71; M. Crinson and J. Lubbock, *Architecture: Art or Profession? Three Hundred Years of Architectural Education in Britain* (Manchester, 1994); B. Hanson, *Architects and the "Building World" from Chambers to Ruskin: Constructing Authority* (Cambridge, 2003).



While this secondary literature on the topic has offered comparative material and background for the examples studied in this thesis, theoretical and conceptual frameworks drawn from sociology have supported my understanding and analysis of the architectural profession in the nineteenth century. The purpose of professionalism is for a group of individuals to ‘constitute *and control* a market for their expertise’.<sup>67</sup> I understand professions to be neither fixed nor immutable entities but ones that continue to undergo renegotiation between different parties.<sup>68</sup> Thus, professionalisation is a dynamic process rather than an evolutionary goal or a static representation. This process typically consists of three distinct stages. First, how particular groups of people negotiate the boundary of an archetypal discipline in relation to the social division of labour.<sup>69</sup> Second, once the boundary has been established, in a protected position that profession can develop increasing independence through the control of specialised knowledge.<sup>70</sup> Finally the production of ideology, a stage that allows a group ‘to define and construct a social reality, ‘under the guise of universal validity conferred on them by their expertise’.<sup>71</sup> Across the course of the thesis I will establish how this is related to the development of professional education and the didactic use of models (Chapter 1), the role played by architectural models in relationship to claims for professional authority (Chapter 2), how models were used in the creative process of design (Chapter 3), the temporary display of architectural models in new forms of national and international exhibitions (Chapter 5), and the changes in collecting practices by key institutions during the period (Chapter 6).

Professional organisations are the key mechanism from which particular groups can establish these three stages. Through this the organisation is able to determine who

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<sup>67</sup> M. S. Larson, *The Rise of Professionalism: A Sociological Analysis* (Berkeley, 1979) xvi.

<sup>68</sup> V. Fournier, ‘The Appeal to “Professionalism” as a Disciplinary Mechanism’, *Social Review* 47.2 (1999) 280-307.

<sup>69</sup> M. S. Larson, *The Rise of Professionalism*, xii.

<sup>70</sup> M. S. Larson, *The Rise of Professionalism*, xii.

<sup>71</sup> M. S. Larson, *The Rise of Professionalism*, xiii.

is qualified to perform a defined set of tasks, to prevent all others from performing that work, and to control the criteria by which to evaluate performance.<sup>72</sup> Offering a formal structure, professional associations such as the RIBA, the Architectural Association, or the Architectural Society, are a primary way in which the interests of their members are expressed collectively or focused politically.<sup>73</sup> In its attempts to protect and advance the fortunes of its members, professional associations look both inward to individual members and outward to the society in which they are embedded. This thesis will examine these associations (and their printed output in magazines and journals) as sites for the presentation of new technical knowledge and artistic production through the form of architectural models, as well as places where architects gathered to discuss the practical and theoretical implications of architectural models in various stages of professional practice.

One aspect of the determining power within the architectural profession lies in the education of architects. Much of the secondary literature has analysed the relationship (and struggle) between professionalism and education during the nineteenth and early-twentieth century.<sup>74</sup> Following the standardisation of a profession through the setting up of professional organisations and networks, it follows that there are standardised skills and knowledge required to fulfil certain tasks and requirements. Certain architectural historians argued that architectural education has acted as a means to exclude particular groups or viewpoints.<sup>75</sup> Whilst sociologists suggest that professional education in general has democratic potential in its construction of a community and a shared body of knowledge.<sup>76</sup> However,

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<sup>72</sup> E. Freidson, *Professionalism: The Third Logic* (Chicago, 2001) p.12.

<sup>73</sup> E. Freidson, *Professionalism*, p.12.

<sup>74</sup> For in depth discussions of architectural education during the period see: M. Briggs, 'Architectural Education', *RIBA Journal* 7 (1950-51) 201-206; F. Jenkins, *Architect and Patron*, pp.160-161; J. Mordaunt Crook, 'The pre-Victorian architect: Professionalism and Patronage', 63-64; N. Bingham, 'Architecture at the Royal Academy Schools, 1768-1836', in *The Education of the Architect: Proceedings of the 22<sup>nd</sup> Annual Symposium of the Society of Architectural Historians of Great Britain* (No publisher, 1993); M. Crinson and J. Lubbock, *Architecture: Art or Profession?* pp.39-42.

<sup>75</sup> M. Crinson and J. Lubbock, *Architecture: Art or Profession?*, p.86.

<sup>76</sup> M. S. Larson, *The Rise of Professionalism: A Sociological Analysis* (Berkeley, 1992<sup>2</sup>) p. 42; E. Wenger, *Communities of Practice: Learning, Meaning, and Identity* (Cambridge, 1998).

Magali Sarfatti Larson proposes that the central hinge of the professional project is the link between the training institutionalized by the modern model of university, thereby allowing ‘university-based professions the means to control their cognitive bases’.<sup>77</sup> Through the exploration of the role of architectural models in this education, the relationship between professional practice and the emergence of formalised higher education will be examined in depth in Chapter 1.

Another significant factor in the study of the professions and connected to the emergence of formal education is the construction of professional authority. Scholars propose there are various types of authority. Keith Macdonald suggests there are two types of authority related to professionalism: technical authority stemming from knowledge and expertise in its application, while moral authority is exercised when professionals intervene in areas outside of the immediate boundaries of their work.<sup>78</sup> Whereas Eliot Freidson proposes there are three forms of knowledge related to authority that are implemented by professions in both everyday practice and in the strategic formation of policy: descriptive knowledge used by science and academia to claim technical authority over a subject; prescriptive knowledge, which includes law, religion, and ethics, to deal with social norms and claim moral authority; artistic knowledge where aesthetic rules and claims normative aesthetic authority.<sup>79</sup> For both scholars, however, these forms of authority are linked to their institutional context – a profession has a context in which it primarily operates e.g. medicine in the hospital, the law in the courtroom.<sup>80</sup> However, as professionalisation is a dynamic process rather a set activity, in this thesis I will demonstrate how architectural models allowed the architectural profession to vest authority in a mobile and variable *dispositif*, capable of deployment in a lecture hall, at an exhibition, or in a meeting with a client.

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<sup>77</sup> M. S. Larson, *The Rise of Professionalism*, p.17.

<sup>78</sup> K. M. Macdonald, *The Sociology of the Professions* (London, 1995) p.169.

<sup>79</sup> E. Freidson, *Professionalism: The Third Logic*, pp.157-158.

<sup>80</sup> T. C. Halliday, *Beyond Monopoly: Lawyers, State Crises, and Professional Empowerment* (London, 1987) p.37; K. M. Macdonald, *The Sociology of the Professions*, pp.169-170; E. Freidson, *Professionalism: The Third Logic*, pp.157-158.

## Chapter Structure

The structure of this thesis is determined by the role of architectural models during the professional life of an architect. It will describe this through six thematically structured chapters, across which there are many interwoven themes and dialogues. The first chapter will examine the role played by architectural models in professional education and informal training between 1834 and 1916. It will analyse how models were used in pupillage, at the Royal Academy Schools, and in the architectural courses offered at the Architectural Association and two colleges of the University of London. In Chapter 2, the focus of the enquiry shifts to architectural models and the professional authority of the architect in the nineteenth-century public sphere. Across five case studies, the chapter will examine architectural models in relation to the democratic expectations of an urban public. Through newspapers, private correspondence, and parliamentary records, the truthfulness and authority of architectural models, new thematic ideas and categories of analysis, will offer new understanding to the history of familiar civic buildings of national and international significance. In Chapter 3 I will demonstrate the importance of the conceptual and creative application of architectural models in practice through the work of William Burges, George Devey, and E. S. Prior. This chapter will also explore other issues including the ability of architectural models to simulate the experience of a building, the comprehension of three-dimensional massing and how making a model allows an architect to express 'feelings' about a design through a material process.

Moving onto another aspect of the architect's work, in Chapter 4 I will examine the variety of approaches, strategies, and discussions that shaped how architectural models were commissioned, made, and used by architects in the course of their professional practice. This chapter will situate the professional model-makers as a group of individuals in their own right, offer a discussion on their disciplinary backgrounds, and consider contemporary viewpoints on the relationship between

architect, client, and model-maker. Chapter 5 will return to the public sphere to examine the display of architectural models in relation to the public presentation of the architectural profession. Drawing on examples such as the Royal Academy Exhibition, Architectural Exhibition, and conversazione at the RIBA, the chapter will describe how the public display of models created a space where emerging and established architects might independently exhibit their work. Public displays could also serve as a platform on which the architectural profession, defined in its broadest terms, could present their work to an urban public as evidence of architectural and cultural achievement. Finally, in Chapter 6 I will conclude by exploring the legacy of the architect through the investigation of three collections of architectural models. This chapter will examine the formation, the acquisition and curation of objects in each collection, as well as exploring the spatial settings and the intentions of those individuals behind their formation.



## Chapter 1

### Architectural models and education





## Chapter 1: Architectural models and education

‘In short, the discouraging and rambling way in which architects are now-a-days compelled to obtain the qualifications essential to their future success, partly in an office, partly in the Academy, partly in the British Museum, and partly in some society or institute, constitutes a case that calls most loudly for redress.’<sup>81</sup>

This chapter will examine the role played by architectural models in professional education and informal training between 1834 and 1916 through the following research questions. What was an architectural model in the nineteenth century? How were models used in both casual and formal modes of architectural education? How did these roles change during the development of professionalism in the nineteenth century and into the twentieth century? And within this education system, what was the value placed on models as specimens for study or as representational tools required by architects? These questions will be examined through several lines of enquiry. First, through the close analysis of dictionaries, handbooks, and articles in the architectural press I will examine the definition and scope of architectural models in the nineteenth century. Second, the chapter will reflect on the state of architectural education at the onset of professionalisation. This will be followed by a discussion on the role of architectural models within the informal aspects of architectural education such as the Royal Academy lectures, instructional handbooks, and evening classes taken to supplement pupillage. Following this the most substantial portion of the chapter will examine how models were used in the architectural courses offered at the Architectural Association and two colleges of the University of London – King’s College and University College. In each of the following case study discussions of an architecture course at a university or institution I have drawn on surviving records including prospectuses, letters, curricula, and articles in the architectural press.

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<sup>81</sup> J. Blythe, ‘The Necessity of a National School of Architecture’, *The Civil Engineer and Architect’s Journal* 1 (October 1837 - December 1838) 158-159.

## 1.1 What was an architectural model in the nineteenth century?

For a nineteenth-century architect the term ‘model’ had multiple definitions. A model was an original object or concept that could be adapted, copied, or imitated. These originals included specifications, estimates, and contracts, as well as ornamental details and organisational layouts, which could be used as precedents in the design and construction of new buildings.<sup>82</sup> A model could also refer to a building element prototyped at full scale.<sup>83</sup> In the case of important civic monuments, a full-sized model of a sculpture might be fabricated and located in position in order for the architect and client to examine its appearance and effect.<sup>84</sup> For instance, prior to the erection of Cleopatra’s Needle, between 1877 and 1880 the Metropolitan Board of Works put up a full-sized wooden model of the obelisk, first in Parliament Square, then on the Embankment, ‘so as to get an idea how it will look’.<sup>85</sup> However, the primary definition of a model was a physical representation of an object.

Amongst these multiple uses, the three-dimensional projection of models meant that they had a key conceptual role in architectural practice. Following the practices of sculptors or craftsmen, a model and ‘modelling’, was defined as ‘working a plastic material into a desired shape, as a step in the study of an artist’s thought’.<sup>86</sup> Following these artistic disciplines, writers proposed that through the process of constructing models, nineteenth-century architects would be able to examine the composition and depths of window reveals, the outline of a roof, or the effects of light and shade on a proposed building’s façade.<sup>87</sup> Robert Stuart’s 1830 dictionary described models as the conceptual tool used by architects where ‘the sensations

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<sup>82</sup> ‘Professional Precedents’, *Architectural Magazine* (January 1837) 45.

<sup>83</sup> ‘MODEL’, *Dictionary of Architecture and Building* (London, 1902) II, p.214.

<sup>84</sup> J. Gwilt, *An Encyclopaedia of Architecture: Historical, Theoretical, and Practical* (London, 1842) p.1005.

<sup>85</sup> ‘Chips’, *Building News* (10 August 1877) 124; ‘The Obelisk’, *Builder* (17 July 1880) 97.

<sup>86</sup> ‘Modelling’, *Dictionary of Architecture and Building* (London, 1902) II, p.215.

<sup>87</sup> ‘Breadth of Light and Shadow in Architecture’, *CEAJ* (1 June 1866) 168.

which the whole and the part are brought together in the mind and the eye'.<sup>88</sup> In the architectural press other writers used the term more loosely, describing process of designing a hypothetical house in the mind through the assembly of walls, floors, and rooms as akin to the process of model-making.<sup>89</sup> Unlike orthographic projection that required prior knowledge of drawing conventions, many authors described how architectural models allowed viewers to conceive three-dimensional space and form. A volume of the *Penny Cyclopædia*, a multi-volume encyclopaedia aimed at an audience who were unable to obtain a formal education, described how a model was made:

[...] in order to give a more distinct idea of it than can be obtained from a number of separate drawings by those who are unable to comprehend them perfectly, and combine them together mentally so as to figure to themselves a complete and distinct image of the whole.<sup>90</sup>

As I will show in Chapter 2 when discussing the emerge of models in relation to the professional authority of the architect, many individuals and groups believed that models allowed lay audiences to comprehend proposals to the built environment that drawings could be communicate. The 1875 *Dictionary of Architecture* described how a model was 'particularly useful in conveying the effect of a proposed work to an unprofessional eye'.<sup>91</sup> I will analyse further in Chapter 4 how architectural models were considered vital components in communication with clients. In the 1902 *Dictionary of Architecture and Building*, published by Macmillan in London, Henry Rutgers Marshall proposed that a model could be 'used in place of, and much better than, elaborately "rendered" drawings, to explain to clients the appearance of buildings they propose to erect'.<sup>92</sup> Often models were used when a drawing could not be understood as an article in the *Builder* described:

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<sup>88</sup> R. Stuart, *A Dictionary of Architecture; Historical, Descriptive, Topographical, Decorative, Theoretical and Mechanical* (London, 1830) II, 'Model'.

<sup>89</sup> 'Old House Planning', *Builder* (8 March 1873) 183.

<sup>90</sup> 'Models, Architectural', in G. Long ed., *The Penny Cyclopædia*, p.294.

<sup>91</sup> 'MODEL', *The Dictionary of Architecture* (London, 1875) V, p.101.

<sup>92</sup> 'PRELIMINARY STUDIES', *Dictionary of Architecture and Building* (London, 1902) III, p.208.

‘Few but professional persons understand or can give due attention to plans and elevations, and even perspectives fail to make the connection of parts and the effect of the whole, as a mass, clear to their comprehension.’<sup>93</sup>

It was not only those who did not understand drawings that could benefit from the production of models. Edmund Beckett posited that details sections did not give a clear idea of three-dimensional appearances. Instead architects should construct models, Beckett argued, as ‘I never had a first model made of anything from which it was not easy to see that it might be improved’.<sup>94</sup> The ability of models to provide ‘a complete and distinct image of the whole’ meant that they were used didactically in education to support conceptual understanding. In addition to strongly recommending their use, a journal article on art theory from 1871 noted that models could assist students in comprehending the relative dimensions and proportions of geometric forms.<sup>95</sup> Later in this chapter I will discuss the impact of models in drawing classes that formed a part of architectural education. Within public, architectural, and artistic education, models also had a didactic role in the transfer of particular historical architectural styles or prominent buildings. At the official opening meeting of the RIBA, T. L. Donaldson explained how the institute were forming a museum of ‘models, casts, specimens of materials’, which would allow visitors a three-dimensional understanding of Antique buildings.<sup>96</sup> Models were also used to communicate technical knowledge about construction. In 1857 James Fergusson’s proposed that a new architecture museum should be instigated and include models of building elements including roofs, floors, and new developments in sanitation.<sup>97</sup> Later in this chapter I will explore the emergence of similar collections within university departments of architecture and their role in aiding professional education. More broadly, alongside slides and photographs, models were used to illustrate public lectures on the history of architecture given by

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<sup>93</sup> ‘The New Foreign Office’, *Builder* (26 February 1859) 158.

<sup>94</sup> E. Beckett Denison, *A Book on Building, Civil and Ecclesiastical* (London, 1880) p.69.

<sup>95</sup> ‘Theory of the Arts’, *Building News* (19 May 1871) 380.

<sup>96</sup> ‘Address’, *RIBA Transactions* (1835-1836) 7.

<sup>97</sup> ‘On a National Collection of Architectural Art’, *Builder* (2 January 1858) 8.

Banister Flight Fletcher at the Victoria & Albert Museum.<sup>98</sup> As the *Building News* noted, these lectures were intended to ‘appeal not only to architects, but to the general public, to whom a knowledge of architecture is now recognised as a necessity’, with models operating as a key vehicle of communication between profession and public.<sup>99</sup>

## 1.2 Structure of architectural education in 1834

Formalised architectural education began with a Parliamentary Report published in 1835, which condemned the standard of artistic education in Britain in comparison to Europe. In response the Government Schools of Design were established in 1837, which elicited extreme criticism from the architectural community.<sup>100</sup> In parallel departments of Civil Engineering and Architecture were established at King’s and University College London in 1840 and 1841 respectively, whilst the Architectural Association, an independent institution, was founded in 1847. Initially however, these architectural courses were only ever considered as a supplement to the pre-existing form of training through the pupillage system.<sup>101</sup> Often pupillage was supplemented by additional instruction that included institutional lectures, such as those at the Royal Academy Schools or the RIBA; specialised evening classes that required subscription; and self-directed study and travel both domestically and to Europe. Although pupillage was the predominate system there were doubts to its efficiency and enhanced methods of training were proposed by groups such as the London Architectural Society, Architectural Student’s Society, and newly-founded RIBA. John Blythe’s paper at the Architectural Society criticised the educational content of the Royal Academy Schools, which he accused of lacking instruction on construction science, surveying,

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<sup>98</sup> ‘Our Own Cable’, *Building News* (11 January 1911) p.50; ‘University Extension Lectures’, *Building News* (20 September 1913) p.650.

<sup>99</sup> ‘Our Own Cable’, *Building News* (11 January 1911) 50.

<sup>100</sup> B. Kaye, *The Development of the Architectural Profession in England* (London, 1960) p.94.

<sup>101</sup> The pupillage system, where a student was articulated to an architect for a period of three to five years during which time he was referred to as a pupil or an architectural assistant, provided the standard education for young architects and draftsmen.

and the legal aspects of architectural practice.<sup>102</sup> The lack of resources available for young architects in pupillage continued until the mid-century emergence of the displays at the Architectural Exhibition (Chapter 5) and the collections of the South Kensington Museum (Chapter 6). In addition to John Blythe's comments, when the issue of qualifications first arose, an anonymous author complained that there was 'no collection of working models or drawings to refer to, – no models of buildings' available in the evening for 'practical instruction'.<sup>103</sup>

However as John Blythe outlined in 1838, alongside the emerging formalised structures of education there were other environments where students learnt about architecture through models. These situations include the presence of models within architects' offices, drawing classes taken as a supplement to pupillage, handbooks and instructional articles on how and why students should make architectural models, and the discourse models at the Royal Academy Schools. It is these more informal or ephemeral situations that resist historical analysis due to an absence of documentation or material culture. Despite the limitations of the type and amount of evidence available, I have been able to assemble a number of viewpoints and accounts about models in relation to pupillage from the architectural press that offer a new viewpoint to our current understanding of professional practice in the nineteenth century.

Within evening classes provided as a supplement to pupillage simple geometric models were used in classes for students to practice their drawing skills in perspective.<sup>104</sup> Some classes gained more fame than others. Like many young

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<sup>102</sup> Compounding the Royal Academy's education deficiency, Blythe believed, was 'the want of a suitable museum and gallery, supplied with the best description of models, specimens, casts, and drawings [...] in the Academy the student has no guide; no practical details'. J. Blythe, 'The Necessity of a National School of Architecture', 158.

<sup>103</sup> 'The Diploma Question', *Builder* (24 November 1849) 560.

<sup>104</sup> Such courses included 'Drawing from Models', at Exeter Hall on the Strand, supervised by Butler Williams (a Civil Engineer) held every Wednesday and Friday evening. Further along the Strand another class, 'Drawing Classes for Tradesmen', was held at 36 Bedford Street where Mr. Gandee taught 'the new and successful method of Drawing from Models'. Another school for the study of anatomy and perspective from models, ran by J. M. Leigh at 181 Maddox Street, formed 'a class for

architects at the time, in the final year of his pupillage George Gilbert Scott took lessons with George Maddox who taught students in his apartments, which contained a museum of architectural models and casts for the students to study and draw.<sup>105</sup> Similar to the contemporary study of medicine and anatomy, from these examples it can be deduced that architectural models had a key role in supporting young architect's understanding of three-dimensional objects and how to represent them in two-dimensional drawings.<sup>106</sup>

As expressed in articles in the architectural press, there was a portion of the profession who were eager to impress the importance of models on a younger generation of architects. In an article on 'Professional Education' in the *Building News* from 1873, an anonymous author proposed that draughtsmanship and the ability to design should not be confused. The author argued, that in drawings, 'lines and shadows can only express form conventionally, and that real architectural form can be intelligibly rendered only by models'.<sup>107</sup> Another anonymous essay from 1898 proposed that a young architect should learn how to make models alongside construction and drawing in classes. The essay argued that the making of models had an educative effect on an architect's ability to compose buildings and their three-dimensional form:

'Only the man of imaginative power can arrange his building or masses in such a way as to produce an effective grouping. The value of retiring planes

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modelling and a collection of architectural models is contemplated'. Advert: 'Drawing from Models', *Athenaeum* 823 (5 August 1843) 705; Advert: 'Drawing Classes for Tradesmen', *Athenaeum* 825 (19 August 1843) 746; 'Miscellanea: Practical School for Artists, Designers, and Amateurs', *Builder* (29 November 1845) 579.

<sup>105</sup> 'Recollections of George Maddox by One of His Pupils'. *Architect* (19 Sep 1874) 143-144

<sup>106</sup> For studies on the contemporary use of wax anatomical models see: A. W. Bates, "'Indecent and Demoralising Representations": Public Anatomy Museums in mid-Victorian England', *Medical History* 52.1 (January 2008) 1-22; A. Riva, 'The evolution of anatomical illustration and wax modelling in Italy from the 16th to early 19th centuries', *Journal of Anatomy Publication* 216.2 (February 2010) 209-222; A. Maerker, 'Between Profession and Performance: Displays of Anatomical Models in London, 1831-32', *Histoire, médecine et santé* 5 (Spring 2014) 47-59.

<sup>107</sup> 'Custom and Invention in Art – Professional Education', *Building News* (3 January 1873) 8.

of building, quadrangular masses, and open courts can only be learned by modelling.<sup>108</sup>

In addition to classes on drawing from models, manuals were published on how to make architectural models, which were directed at students and pupils. Echoing the import of anatomical models to Britain from Italy, France and Germany in the 1830s,<sup>109</sup> in 1827 Bernhard Heinrich Blasche's *The Art of Working in Pasteboard* was translated from German by Daniel Boileau for a British audience.<sup>110</sup> The book offered readers 'the theoretical principles of the art, with ample directions for the choices of tools and materials, and for attaining the requisite manual dexterity'.<sup>111</sup> Werner Oechslin describes Blasche's book as a formative educational device and situates the work in a broader trajectory of German model-making handbooks.<sup>112</sup> Following my analysis of the book, I suggest that principles, skills, and techniques were the focus of its content with a student taught to develop their ability by modelling 'the pyramid, the cone, and the ball'.<sup>113</sup> Once these forms had been mastered, the appendix provided a general outline of how to make a model of a Greek Ionic Temple.<sup>114</sup> However, the remit of the book was limited to model-making techniques. Blasche did not examine how architectural models might be used in practice as heuristic or conceptual tools, to explain proposed buildings to a client, or to help a student begin to comprehend three-dimensional forms.

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<sup>108</sup> 'Solidity', *Building News* (11 February 1898) 187.

<sup>109</sup> A. W. Bates, "Indecent and Demoralising Representations", 8.

<sup>110</sup> B. H. Blasche, *The Art of Working in Pasteboard*, trans. D. Boileau (London, 1831<sup>3</sup>)

<sup>111</sup> B. H. Blasche, *The Art of Working in Pasteboard*, pp.iii-iv.

<sup>112</sup> W. Oechslin, 'Le modèle architectural. « Idea materialis »', in *Les Maquettes*, p.108.

<sup>113</sup> B. H. Blasche, *The Art of Working in Pasteboard*, p.40.

<sup>114</sup> This outline advised using an accurate drawing or engraving of the temple alongside several thicknesses of Bristol board – an unfinished paperboard – to achieve a successful result.





**Figure 3**

B. H. Blasche, *The Art of Working in Pasteboard*, p.1, Plate 8.

The body of knowledge available on model making was supplemented by a handbook published in 1859 T. A. Richardson. In *The Art of Architectural Modelling in Paper* Richardson proposed that the principle audience for the book was architectural assistants – ‘a large and increasing body’ – who in preparation for professional practice required practical knowledge of model making.<sup>115</sup> In particular Richardson believed that the instruction offered in his book held the potential to provide the architect with clarity when communicating with clients:

‘The modeller will be able to furnish the architect with sure and certain means that he may find weighty difficulties surmounted, especially in the case of uncomprehending clients, by giving to them the designs of their edifices with a distinctness almost equal to the real work when completed.’<sup>116</sup>

Significantly Richardson’s remark presumes that the ‘modeller’ and the ‘architect’ are separate individuals – throughout the thesis I will demonstrate how in the the nineteenth century professional model-makers, pupils and assistants, sculptors and joiners occupied the role of ‘modeller’ at various stages. Returning to the issue of

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<sup>115</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, p.16.

<sup>116</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, iii–iv.

architect-client relations, Richardson claimed that clients poorly understood perspective drawings, a factor that, ‘seldom fails to cause some slight dissatisfaction on their part when they see too late certain things that the eye would have detected in the model and corrected in the outset’.<sup>117</sup> Reflecting on the role of the model as a tool for judgment, Richardson noted that models were becoming more widespread in competitions for buildings, which had consequences for model-makers: the short timeframes instilled by the competition system increased the importance of producing models quickly and effectively.<sup>118</sup>

In the book Richardson described the approach required by students in making architectural models.<sup>119</sup> In order to gain proficiency, Richardson proposed that students required both patience and perseverance. Beautiful models consisted of sharp joints, accurate delineation of the details, and straight horizontal and perpendicular surfaces. Citing the example of using mitred joints to connect pieces of paper or cardboard, Richardson acknowledged that some skills and techniques required to make models might initially be too difficult for students. Repeated practice was important but if the student still failed to succeed, Richardson suggested that the student should ‘examine some model by an adept in the art, comparing his work with it’.<sup>120</sup>

Following these discussions on the importance of and challenges surrounding model making the treatise was divided into five parts. ‘Part I’ examined the materials required to make models with a focus on types of paper and the adhesives required to bond them together. From personal experience Richardson recommended J. Whatman’s drawing paper, which as a wove paper had a uniform surface that was not ribbed or watermarked.<sup>121</sup> Alongside a discussion of the paper’s

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<sup>117</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, iv.

<sup>118</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, iv.

<sup>119</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, p.13.

<sup>120</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, pp.14-15.

<sup>121</sup> The paper’s pale cream colour, Richardson noted, bore a resemblance to the colour of Bath stone but could ‘be easily tinted to represent bricks, or rubble, &c.’ if required.

qualities was a specimen of the paper itself bound into the book on the subsequent page. To bind thin pieces of paper or card together to produce a thicker piece, Richardson offered a recipe for an adhesive based on flour and sugar. A gum Arabic formula should be used connect the larger elements of the model itself together. Richardson suggested using materials other than paper or card to represent particular aspects of a building. In order to represent the glass in windows and skylights, students should procure mica or talc from an ironmonger, whilst sections of timber should be used to form small details such as pinnacles.<sup>122</sup>

In 'Part II' Richardson discussed the instruments necessary for a student to make models including a cutting board, modelling press (to help form cardboard from individual sheets of paper), T-square, adjustable straight-edge jig, modelling knives, and knife compass.<sup>123</sup> Following the stated assumption that the student had now procured the various instruments and materials required, in 'Part III' through his text and illustrations Richardson instructed the student in the method of making a model of a villa in the 'domestic Italian style'.<sup>124</sup> Significantly Richardson assumes that the student has a ground plan, roof plan, and elevations of the hypothetical villa in hand prior to making the model. Richardson's assumption suggests that orthogonal drawing is the first major design act by the student and the precursor to model making.



<sup>122</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, pp.22-23.

<sup>123</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, pp.25-38

<sup>124</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, p.39.

**Figure 4**

T. A. Richardson, *The Art of Architectural Modelling in Paper*, pp.44-45.

Richardson advised that the model should be produced as follows. First, a piece of plain cartridge paper should be applied to a drawing board the same size as the proposed model. Following this the student should draw an outline ground plan of the intended building. An illustration was provided to show how a detailed ground plan should be reduced to an outline plan without any internal walls (Fig.4).<sup>125</sup> Taking the actual thickness of the walls as their guide the student should paste together individual sheets of paper in a modelling press. Onto these composite sheets, the student should draw each elevation of the building, including the outline of any openings such as doors or windows reveals, and mark the horizontal recesses and projections such as cornices, mouldings, and string courses.<sup>126</sup> Once complete the student should carefully cut out the doors and windows in each elevation. Window frames could be made with laid paper, backed with blue-painted paper (glass), and then applied to the rest of the elevation.<sup>127</sup> Through a combination of instruction, plan diagrams and three-dimensional projections of parts of the hypothetical model, Richardson explained how the visible outside angles of the model should be made (mitred joints) in comparison to the hidden internal angles (lap joints).



*Architectural Modelling in Paper*, p.52.

## Figure 5

T. A. Richardson, *The Art of Architectural Modelling in Paper*, p.57.

In order to finish the model Richardson explained how a model should be prepared for presentation purposes. First, a wooden base should be covered with cloth or velvet and a small groove made inside the perimeter, designed to receive a glass shade. The model and base should be attached to a timber stand through a hole made within the internal structure described by Richardson in the 'X-Ray' isometric drawing (Fig.5). Richardson noted, 'models are frequently considerably improved in appearance by the imitation of nature objects, when taste and skill go hand in hand'.<sup>128</sup> Before describing appropriate techniques, however, Richardson warned against turning 'a work of art, [into] a mere toy', through overly colourful materials, candles placed within models, and unrealistic landscaping.<sup>129</sup> Instead Richardson advised using velvet, flock paper, or sand to depict lawns and paths. Water could be represented with glass or mica sheets backed with paper. Rocks and grottos could be moulded and modelled from paper that had been soaked and then dried. Flowerbeds could be made from burned cork to imitate earth, whilst twigs copped in shape could suggest trees. Significantly these suggestions for finishing models indicate that Richardson's focus was on presentation models, presumably for the clients and competition juries that he had described in the Introduction to his book.

Several contemporary architectural journals reviewed Richardson's book positively. The *Builder* judged that the book's illustrations and description would greatly aid the student in learning how to make models – a medium that it described as 'more useful than a perspective view, in presenting an architectural idea'.<sup>130</sup> On the publication of the book's second edition in 1887, the *Builder* described the volume as 'containing wise cautions against the temptations that beset the inexperienced

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<sup>128</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, p.91.

<sup>129</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, p.92.

<sup>130</sup> 'Books Received', *Builder* (26 March 1859) 227.

modeller'.<sup>131</sup> Whilst in their review, the *Building News* proposed that young architects should learn the art of model-making during their pupillage.<sup>132</sup> In order to make model making a quicker and easier task, the article proposed that the RIBA should aim to standardise production through the introduction of uniform scales. Instead of bespoke and time-intensive nature of making windows, details, and other architectural features with numerous tools, 'many of these could be bought at shops', with their production by paper manufacturers a potentially profitable business. These viewpoints from the architectural press indicate a demand for models and an emerging marketplace for model-making supplies.

Whilst there were often comments and letters on model making in the architectural press, what was effectively a handbook also appeared in the pages of the *Building News* in a long-form article published across two issues in December 1867. The article recommended that 'the architectural student, who wishes to obtain a thorough understanding of his profession, to try his hand at modelling'.<sup>133</sup> In order to do this the article first discussed the theoretical and practical aspects of using models in architectural practice. After analysing the 'crooked' nature of perspective drawings, which were 'often anything but correct representations of the intended buildings', the article proclaimed the virtues of architectural models for students:

'With models the case is altogether different; they give a representation of the building from every point of view. The spectator can walk round, see it on every side, come close, and look into the little porches and recesses; go back and see the general appearance, move his eye along and judge of the effect of the altering perspective; and, if it will help him, raise himself and take a bird's-eye view of the roof.'<sup>134</sup>

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<sup>131</sup> 'Books Received', *Builder* (22 January 1887) 167.

<sup>132</sup> 'Architectural Modelling', *Building News* (15 April 1859) 346.

<sup>133</sup> 'Architectural Modelling', *Building News* (6 December 1867) 851.

<sup>134</sup> 'Architectural Modelling', *Building News* (6 December 1867) 851.

The article noted, however, that perspective drawing was the more relied upon method of representation by architects, ‘and will probably remain so on account of their comparative cheapness’.

Second, the article described the merits and flaws of various model-making materials and where examples might be found in London, including at the South Kensington Museum and at the British Museum. Cardboard, the article declared, was the best material for students to use as ‘it requires less special training than the others’. After describing the tools required, the article began to describe the directions for how to make a model in cardboard, complete with illustrations to explain key moments. Initially the student should choose a subject: according to the article Gothic buildings presented fewer difficulties than Classical ones: an ideal subject would be a small country church and the student’s first task was to make a survey of the building. Once an appropriate scale was chosen the student should draw out each elevation and separate wall, whilst leaving a blank space for all the building’s buttresses and projections. The article warned against the conversion of these drawn elevations into a quick model with the window openings cut out. As the author explained:

‘This is not modelling. In real modelling, the mouldings, the canopies, and detail must be modelled in relief, drawing being only introduced when the effect cannot be obtained in any other way.’<sup>135</sup>

Instead windows and mouldings must be represented, ‘by different pieces of cardboard, gummed one behind the other, and each cut in a different manner’. As an illustration in the article described, however, there were issues surrounding this approach: the orthogonal profile of cardboard and pasteboard could not replicate the curved profiles of mouldings in either Classical or Gothic architecture. Instead as the illustrated section depicted, the student must abstract and reduce the curved profile ‘to an angular form [...] like a pattern for worsted work’. Drawing on other

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<sup>135</sup> ‘Architectural Modelling’, *Building News* (6 December 1867) 851.

artisanal crafts such as shoemaking, the article continued to describe the tools and techniques a student would use to model balustrades, hood mouldings, and quatrefoils.

After describing how to construct the roof and form any pinnacles, the author explained about the final flourishes that could be added to the model as well as their potential flaws. For instance, holes could be bored in the baseboard below the model and a light placed underneath in a concealed box. Light would stream up and through the glazed windows of the model to show the 'night effect'. The author described how he knew a model-maker who enhanced this effect by a peal of chimes in the box. Superfluous additions, the author proposed, add nothing instructive to the student and 'lower the model from a work of art to a child's plaything'. But the article concluded by arguing making of the model itself held the potential to educate young architects:

'At first sight, modelling may seem a great waste of time, but when it is considered that almost every requisite mental quality which an architect requires is called out and exercised by it, it is not perhaps too much to say that a more improving study could not be recommended to a young architect.'<sup>136</sup>

In addition to their value to the education of young architects, the publication of each of these handbooks demonstrates the form and character of the practical training of model-making in the nineteenth century. Whilst in the first handbook discussed Blasche focused on general skills and geometric forms before moving onto architectural models, the British guides offered practical advice about how to make and use models for a audience who were otherwise learning through first-hand experience in an architect's office. Multiple editions of both Blasche and Richardson's manuals indicate that there was a demand for the subject. In addition to examining the transmission of knowledge provided by the handbooks, the study of each manual offers a new understanding of the role of models in architectural

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<sup>136</sup> 'Architectural Modelling', *Building News* (13 December 1867) 870.



practice, the types of material used to make models, and concept that models held the potential to offer ‘a representation of [a] building from every point of view’.<sup>137</sup>

Alongside evening drawing classes and handbooks, for a select group pupillage was supplemented by additional instruction at the Royal Academy Schools. Unlike the painting and sculpture students the architecture students had no daytime classes, with the main portion of their education provided by an annual course of six evening lectures delivered by the Academy’s Professor of Architecture.<sup>138</sup> Whilst the majority of those attending the lectures were registered students at the Royal Academy, other pupils often attended.<sup>139</sup> Through these lectures many of the professors lectured to the students about architecture including how models should be used in the course of their professional practice. Occasionally a professor would use a model to illustrate a particular historical example or technical issue. We will examine the lectures of each professor in chronological order, starting first with John Soane.

John Soane was Professor of Architecture at the Royal Academy from 1806 until 1837, where he gave lectures from 1809 until his eyesight failed him in 1824.<sup>140</sup> Once appointed to the Professorship in 1809, Soane arranged his collection of architectural books, casts, and models at his house in Lincoln’s Inn Fields in order

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<sup>137</sup> Architectural Modelling’, *Building News* (6 December 1867) 851.

<sup>138</sup> N. Bingham, ‘Architecture at the Royal Academy Schools, 1768-1836’, in *The Education of the Architect: Proceedings of the 22<sup>nd</sup> Annual Symposium of the Society of Architectural Historians of Great Britain* (No publisher, 1993)

<sup>139</sup> For instance, despite not being enrolled as a student, George Gilbert Scott attended a course of John Soane’s lectures at the Royal Academy. G. G. Scott, *Personal and Professional Recollections* (Donnington, 2015<sup>2</sup>) p.74.

<sup>140</sup> From 1832 Henry Howard, Professor of Painting at the Royal Academy, read the lectures on Soane’s behalf. Records at the Soane Museum and in the press indicate that the twelve lectures were presented across two years in two six-lecture cycles before the sequence started again. For a full chronology of the lectures given see: S. Palmer, ‘Chronology of the Delivery of Sir John Soane’s Royal Academy Lectures’, in D. Watkin ed., *Sir John Soane: Enlightenment Thought and the Royal Academy Lectures* (Cambridge/New York, 1996) pp.731-732.

for the students to have access to these resources.<sup>141</sup> Soane also promised to allow students access to the collection of drawings and models for inspection before and after each lecture.<sup>142</sup> The importance of models as educational aids was underlined by Soane's comments in his Third Lecture on Architecture where he complained that an architecture student, 'has no models of ancient buildings to consult, nor plaster casts of their ornaments and component parts to refer to'.<sup>143</sup> This thesis will explore Soane's collection in Chapter 6.

In addition to providing access to his own collection, Soane occasionally used models in lectures in order to illustrate his arguments.<sup>144</sup> This was because for Soane the architectural model allowed the students to transcend physical and economic barriers imposed by long-term study on the Grand Tour – a crucial part of Soane's and other Regency architects' education. There were other media through which knowledge transferred from antique buildings to students during the period including prints and drawings. Soane admitted that whilst there was an 'abundance of prints and drawings', he believed such representations were fallible as they differed in their depictions of buildings. In the notes for the Twelfth Lecture, lamenting the lack of architectural models available for study by students, Soane referred to the example of a now-lost model of the Colosseum made by his companion on the Grand Tour, Thomas Hardwick. Whilst in Rome Hardwick undertook a survey of the Colosseum 'and now possesses an incalculable treasure'.<sup>145</sup>

However, for Soane, it was not only accuracy that dictated the supremacy of models:

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<sup>141</sup> J. Soane, 'Lecture VI', in D. Watkin ed., *Sir John Soane: Enlightenment Thought and the Royal Academy Lectures* (Cambridge/New York, 1996) p.579

<sup>142</sup> J. Soane, 'Lecture VI', p.579

<sup>143</sup> J. Soane, 'Lecture III', p.531

<sup>144</sup> In February 1810 three cork models were returned to Soane following a lecture at the Royal Academy see: D. Watkin ed., *Sir John Soane*, p.407.

<sup>145</sup> D. Watkin ed., *Sir John Soane*, p.393, ft.419 quotes: SJSMA Archives 1/103, fol.59.

‘Drawings and prints, however correct they may be, can give but very imperfect ideas of real and relative quantity; nor will they show the great varieties in the effects produced by the same objects when seen with different lights and shadows upon them.’<sup>146</sup>

These comments show how in Soane’s view a model could express both the relative scale and proportion of a proposed building. Simultaneously Soane believed that a model could show how the effects of form and relief diffract and structure light on a building’s façade. However, a large portion of Soane’s Twelfth Lecture on architecture was dedicated to the application of models to architectural practice. First, Soane discussed the use of models in the design and construction of buildings. Soane advised:

‘Many of the most serious disappointments that attend those who build would be avoided if models were previously made of the edifices proposed to be raised. No building, at least none of considerable size or consequence, should be begun until a correct and detailed model of all its parts has been made.’<sup>147</sup>

Soane continued, noting the capacity of a model to be used a tool of communication between architects and workmen.<sup>148</sup> To support his argument, Soane referred to several models ‘of those large rooms at the Bank [of England] constructed entirely of incombustible materials, such as these and those already exhibited in the course of these lectures.’<sup>149</sup> Drawing on examples of his own work and experience in practice for the students, Soane is proposing that the architectural model allows for the collaborative discussion between the various disciplines involved in construction.<sup>150</sup>

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<sup>146</sup> J. Soane, ‘Lecture III’, p.531.

<sup>147</sup> J. Soane, ‘Lecture XII’, p.660.

<sup>148</sup> J. Soane, ‘Lecture XII’, p.660

<sup>149</sup> J. Soane, ‘Lecture XII’, pp.660-661

<sup>150</sup> J. Soane, ‘Lecture XII’, p.661

Finally, Soane also discussed the variety of types and history of models in architectural practice through reference to models made of St. Peter's, Rome, Christopher Wren's model for St. Paul's, and 'a general model of the Mansion House, but likewise many of all the cornices and enrichments of their full size'.<sup>151</sup> In addition to these precedents of models, Soane posited a theoretical approach to how and why a model should be produced, citing a minor publication by a friend on villa design.<sup>152</sup> Soane proposed that after the architect had prepared a detailed estimate of a building's cost, a model should be made. There were caveats, however, as Soane recommended to the students that this hypothetical model should be, 'not a gaudy eye trap to dazzle and confound the ignorant and to take in the unwary, but a complete plain model shewing all the parts of the design he has approved'.<sup>153</sup>

Following Soane's death in 1837 William Wilkins was appointed Professor of Architecture but gave no lectures at the Royal Academy before his own death in 1839. Wilkins' replacement, C. R. Cockerell gave a series of lectures that survive in rough manuscript form at the British Architectural Library and through reports in the architectural press. Unlike Soane, however, Cockerell does not appear to have used physical models directly in the lectures themselves to communicate arguments with the students. However, Cockerell relied upon verbal description of models alongside drawings in order to discuss their theoretical and practical implications in contemporary architectural practice. In his Fifth Lecture of 1843 to the students of the Royal Academy Cockerell declared:

'But the exact conception of the ultimate effect of the building, the realization of the prophetic vision of the architect, are of extreme difficulty, and subject to lamentable disappointment. They can be attained only by

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<sup>151</sup> J. Soane, 'Lecture XII', p.661

<sup>152</sup> James Peacock, *Oikidia, or, Nutshells : being ichnographic distributions for small villas* (London, 1785) pp.55-56

<sup>153</sup> J. Soane, 'Lecture XII', p.661

great knowledge of perspective, and by careful models; and the greatest masters have been most remarkable for their reliance on such means.<sup>154</sup>

For the rest of the lecture Cockerell discussed approaches to architectural composition from a variety of canonical authors on the merits of various forms of representation. First, Cockerell paraphrased Christopher Wren who suggested that whilst models may demonstrate the deficiencies absent in orthogonal drawings, the architect should be well versed in perspective because, ‘everything that is good in model may not be so when built, because a model is seen from other stations and distances than the eye sees the building’.<sup>155</sup> In addition to Wren’s instruction, Cockerell summarised Leon Battista Alberti’s theories on architectural models from Book II of *De re aedificatoria*:

‘The ancients, therefore, not only by perspectives, but by models of the whole, and of parts, submitted their works to practised men before they laid a stone. Such models should not, however, be pretty toys, in which delicacy of workmanship draw the attention from the merit of the design’.<sup>156</sup>

Due to ill health Cockerell resigned the professorship in 1859 and was replaced by Sydney Smirke who does not appear to have discussed or used models in his Royal Academy lectures. In 1865 Smirke resigned and was replaced by George Gilbert Scott. In his Second Lecture, on the subject of arched construction, delivered in 1870, Scott explained:

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<sup>154</sup> ‘Royal Academy: Professor Cockerell’s Lectures on Architecture – Lecture V’, *CEAJ* (April 1843) 130.

<sup>155</sup> ‘Royal Academy: Professor Cockerell’s Lectures on Architecture – Lecture V’, 130.

<sup>156</sup> ‘The ancients, therefore, not only by perspectives, but by models of the whole, and of parts, submitted their works to practised men before they laid a stone. Such models should not, however, be pretty toys, in which delicacy of workmanship draw, the attention from the merit of the design’, ‘Royal Academy: Professor Cockerell’s Lectures on Architecture – Lecture V’, 130.

‘I exhibit a model of a portion of the vaulting of the Chapter-house at Westminster, prepared by the clerk of the works, Mr. Kaberry; also a view of the interior, to show the beauty of this form of vaulting.’<sup>157</sup>

This example demonstrates how models were used to explain the three-dimensional form of vaulted construction. A later account of the model described it as a ‘Model of a part of bay of vaulting’.<sup>158</sup> Therefore this example demonstrates the potential of the model to communicate ideas as well as its limitations. Through the representation of part of bay of vaulting rather than the whole building, the model was able to exhibit the complicated geometric interface of the octagonal vaulting. However, the presence of the accompanying perspective drawing suggests that the model was unable to illustrate the aesthetic experience of the Chapter House’s interior. Although officially Scott continued as Professor of Architecture until 1873, his successor E. M. Barry gave lectures from 1871 until his own death in 1880. His second lecture examined the effects of modern science and technology on contemporary architecture. In a discussion on the effects of the engineer and iron construction on the architectural profession, Barry assessed Joseph Paxton’s ‘Crystal Palace’ structure, which after housing the 1851 Great Exhibition in Hyde Park was moved and reconfigured in Sydenham, south London. For Barry the ephemeral character of Paxton’s structure meant, ‘it cannot be rightly termed a work of architecture [...] It does not exclude cold, heat, or rain’.<sup>159</sup> Barry believed, however, that the building’s importance for young architects was to demonstrate the potential of iron technology. Rather than examine Paxton’s original work, on a table at the front of the lecture hall Barry presented a model made for his father, Charles Barry, in 1853 to show proposals to adapt the structure following its disassembly in Hyde Park. With the model as an illustration Barry described to the students how his father’s embellishments to the structure, which included glass

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<sup>157</sup> ‘Professor Scott on Architecture, at the Royal Academy. Lecture II’, *Builder* (19 March 1870) 224.

<sup>158</sup> AA Archives, B401, RAM Minute Books, minute of a meeting held on 6 April 1870. Later the Chapter House model, made by a ‘Mr Carberry’, was donated by Scott to the Royal Architectural Museum. My thanks to Ed Bottoms for his notes on the Royal Architectural Museum.

<sup>159</sup> ‘Lectures on Architecture at the Royal Academy’, *Builder* (25 March 1871) 223.

domes at the intersection of the building's multiple roofs, would 'confer on the work a better architectural character than it now possesses'. This opinion was consistent with the *Builder's* view in 1853 – that Barry had produced 'a much more striking effect than the arrangement which is being carried out' – when the model was exhibited at the Royal Academy Exhibition alongside a second model of the building under construction.<sup>160</sup>

E. M. Barry explained how the directors of the Crystal Palace approved his father's plans but declined adopting them due to the additional expense. Barry's main argument was to demonstrate how the requirements for covering large-span internal spaces placed on architects had everything to gain from the study of innovative structural technologies. Barry concluded by advising the students that the architectural profession should not reject the influence and potential of iron structures but instead 'endeavour to master the principles which limit its artistic application'.<sup>161</sup> As an example his father's model offered students the chance to see the use of iron structural bays used in an unrealised artistic composition that was more impressive than the realised building. This example demonstrates one of the ways in which architects varied the deployment of models in the nineteenth century. In the 1853 RA Exhibition, the model was positioned alongside a model of the chosen design under construction in order for Charles Barry to prove the merits of his design by presenting both on equal terms.<sup>162</sup> By 1871, however, E. M. Barry employed the model of his father's design on its own with the intention to discuss issues in contemporary architectural practice related to new technologies. E. M. Barry did not need to present the model of the built version of the Crystal Palace as all of the students in the room would have been familiar with the building and its perceived artistic failures.

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<sup>160</sup> Leading Article, *Builder* (14 May 1853) 305.

<sup>161</sup> 'Lectures on Architecture at the Royal Academy', *Builder* (25 March 1871) 223.

<sup>162</sup> 'Royal Academy: Architectural Drawings', *Athenaeum* (11 June 1853) 710. Some portions of the press were more critical of Barry and suggested that the 'block models' did not correctly represent the iron and class of the proposed structure.

Following Barry's death in 1880, the professorship was filled by G. E. Street for a year before his own death in December 1881. In a lecture titled 'The Study And Practice of the Art of Architecture', Street emphasised the importance of drawing, particularly sketching in perspective, for the architect. This type of drawing, Street believed, was vital for the architect in their practice as:

'It will render it more easy to you to realise the effects of your building in perspective, without having the trouble of making a careful drawing or a model, to convince yourself of its real appearance.'<sup>163</sup>

Street's remarks to the students suggest that perspective sketching was crucial in the architect's professional life, where there was neither time nor money to make carefully constructed drawings or models to see how buildings would look in three dimensions. However, in Chapter 2 I will return to Street's opinion in light of the models produced by his office for the new Law Courts.

Formally appointed professor in 1887, George Aitchison appears to have been lecturing at the Royal Academy from at least as early as 1886. In February 1886 he gave a lecture to the students of the Royal Academy School on architectural education and practice. Aitchison explained to the students how architectural models were a part of professional practice. First, he described how perspective drawings were often used to enable the architect 'to present the form of his building to the employer, before a model is necessary'.<sup>164</sup> Second, in a discussion on the use of a model to judge the effects of light and shade, Aitchison noted that 'a project can only be exhibited by models or delineation' due to the effects of projection, recess, and modulation on the light cast on a building's façade.<sup>165</sup>

A number of themes have emerged from the study of the lectures at the Royal Academy. Through my discussion of both Soane and Aitchison I have shown how

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<sup>163</sup> 'The Study And Practice of the Art of Architecture', *Building News* (18 February 1881) 174.

<sup>164</sup> 'Architectural Education', *Builder* (27 February 1886) 331.

<sup>165</sup> 'Architectural Education', *Builder* (27 February 1886) 334.



architectural models could be used to show the potential effects of relief, projection, and differences in light on a building. Whereas Scott used a model, which depicted the vaulting of the Chapter House, in order to explain complex three-dimensional geometries and construction methods to students. Referring back to historical precedents in the form of notable models and treatises, in both Soane and Cockerell's lectures there are clearly two universal issues surrounding the proposed purposes of models for architects: a model should allow the architect to see the merits of a design rather than demonstrate the skill of the model-maker. Second, a model can be used to form judgements about a proposed building. For Soane 'serious disappointments' could be avoided in construction providing the model was 'correct and detailed of all its parts'. However, in reference to Wren, Cockerell posited the idea the 'good' appearance of a model may not be translated to a completed building, as a model can be studied from different positions and distances than the building. These ideas will continue to return throughout this thesis. I will explore how crucial these discussions were to the development of professional authority in Chapter 2.

### 1.3 Education at the Architectural Association

The Architectural Association (AA) was formed in 1842 by the younger members of the profession in order to improve the system of architectural education in Britain. Initially called the Association of Architectural Draftsmen, the AA first met in October 1846.<sup>166</sup> Alongside attempting to secure work for unemployed architectural assistants, the main aim of the association was to improve the knowledge and professional standing of articled students through self-education, which included access to expert lecturers at meetings, conversazione, and group visits to buildings.<sup>167</sup> Prior to the association's first meeting its aims were printed in the *Builder* including how the members were looking for a permanent premises suitable for the collecting of casts, models, books, and drawings to assist in the programme of self-improvement.<sup>168</sup> Following the establishment of a Voluntary Exam in Architecture by the RIBA in 1862, the AA formed its own Voluntary Exam class, which its prospectus warned should be complemented by 'practice and experience in the more artistic branches of the Profession'.<sup>169</sup> It is possible that architectural models were talked about or used in these early classes, but there is no surviving evidence. Architectural models were, however, part of life at the AA in two ways. First, models were used in meetings to illustrate particular lectures or the benefits of models as a tool for architects in all stages of their careers. Second, architectural models were used as teaching aids within the professional training offered by the school.

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<sup>166</sup> 'Education of the Architect: Opening of the Architectural Association', *Builder* (16 October 1846) 491-492.

<sup>167</sup> Meetings were held at Lyons Hall until 1859, when the AA moved to larger rooms as a part of the Architectural Union Company's premises at 9 Conduit Street. These premises will be discussed in much more depth in Chapter 4.

<sup>168</sup> 'Correspondence: Association of Architectural Draftsmen', *Builder* (22 February 1845) 94.

<sup>169</sup> The syllabus of this class had a very practical bent with a course of eight evening lectures on specifications, legislation, and the structural requirements of buildings. A second class, the Class of Design, was held fortnightly, as a complement to pupils' experience in practice. By 1874 a third class, the Class for the Study of Architectural Science, was established to teach aspects of building science, new technologies in construction, and legislation related to professional practice. AA Archive, Brown Book Session 1862-63, p.3; AA, C101, Minute Book, Class for Study of Architectural Science, 1874-80.

Published in the architectural press and in the association's own publication, many of the papers given at AA meetings related to the potential of architectural models to communicate between different individuals. According to a report in the *Builder*, a Mr Bunker 'delivered a practical lecture on 'Joinery', which he illustrated with models and specimens of doors, window-sashes, skirting boards, etc.'.<sup>170</sup> At the same meeting John Brown, a visitor to the association, presented a series of models of an invention to assist in the 'imperfect fitting of windows and doors'.<sup>171</sup> At a meeting of the AA in March 1877, W. Mayland 'read his paper on 'Half Timbered Houses and their Construction' which was illustrated by a Model + many sketches'.<sup>172</sup> Following the lecture and its subsequent discussion, Mr Neale, a member of the AA, requested that the sketches and model be lent to the association for use in classes. On each of these occasions an architectural model was used to transfer explicit knowledge about the technical aspects of construction to students. Other examples at AA meetings demonstrated how professional architects could use models to provide clear instructions about construction to builders and suppliers. For instance in a lecture given in November 1896 on 'Tiles' V. Wilkins proposed, 'In the case of a complicated roof, a miniature model has been made of the complete roof, and sent to the tile-maker for his guidance.'<sup>173</sup> Common to each of four examples, by the end of the nineteenth century architectural practice had extended to include interactions with manufacturers of new building technologies and products. One consequence of this was that architectural training had to educate students in the contemporary demands made on the profession. Later in this chapter I will demonstrate how architectural models formed a crucial part of this contemporary education.

On other occasions the papers focused on the theoretical and practical aspects of using models in architectural practice. In 1887 when a paper on modelling

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<sup>170</sup> 'The Architectural Association', *Builder* (22 March 1862) 202.

<sup>171</sup> 'The Architectural Association', 203.

<sup>172</sup> AA, C201, General Meetings minute book, minute of a meeting held on 23 March 1877.

<sup>173</sup> 'Architectural Association', *Building News* (13 November 1896) 693-694.

sculptural relief panels was read at a meeting by John Charles Lewis Sparkes of the National Art Training School at South Kensington, the subsequent heated discussion amongst the members focused instead on the topic of architectural models. Leonard Stokes agreed that modelling was a necessary tool for architects in the three-dimensional conception of buildings:

‘Unless [the architect] was able to model in his mind he could never realise what his building would be like. So long as architects could only grasp one elevation at a time their buildings would not be as satisfactory as if they were able to grasp the block or modelled mass in their minds.’<sup>174</sup>

Stokes proposed that whilst the modelling of detail was useful, ‘more attention should be paid to form in masses’.<sup>175</sup> John Slater, chairman of the meeting, believed that at other educational institutions in Europe and in North America, including the *École des Beaux-Arts* in Paris, modelling and model making were one of the compulsory subjects for students. Slater proposed:

‘Not only was modelling useful from an artistic point of view, in the arrangement of details, but it was also of extreme use constructionally. It was a matter of difficulty to tell if the roofs were all right from the drawings, and nothing could be more educational than for the student or office assistant to model his roofs in a piece of soap, or some similar substance.’<sup>176</sup>

Another member, Edward Swinfen Harris, noted that if architects wanted ‘to make sure that their buildings would be effective in appearance of outline, there was nothing so excellent’ as the production of models.<sup>177</sup> In support of his position, he proposed a contemporary example in the work of George Devey whose buildings, ‘were the results of models made to scale in wood’. With reference to Devey’s use of models, which I will examine in more depth in Chapter 3, Swinfen Harris noted:

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<sup>174</sup> ‘The Architectural Association’, *Builder* (19 November 1887) 698.

<sup>175</sup> ‘The Architectural Association’, 698.

<sup>176</sup> ‘The Architectural Association’, 698.

<sup>177</sup> ‘The Architectural Association’, 698.

‘Nothing, therefore, was so important to the members of the architectural profession as to understand the modelling of their buildings to a relative scale, so that they might form an idea of the effect produced before all attempts to improve it were too late’.<sup>178</sup>

Very occasionally lecturers presented models of contemporary buildings to illustrate their subject. At a meeting in April 1907, J. A. Marshall, chief assistant to the recently deceased John Francis Bentley, read a paper on the topic of Westminster Cathedral, illustrated ‘by a model in wood to scale of the completed building’.<sup>179</sup> This was not the first occasion that AA students had seen the model of Westminster Cathedral. Alongside lectures and classes the AA curriculum involved daytrips to prominent building sites in London. In February 1899 a group of students and members from the AA visited Westminster Cathedral whilst under construction.<sup>180</sup> An account of the visit in the *AA Journal* included a discussion of the model:

‘Even an unpleasant fog did not prevent [our visit], indeed it seemed to add to the impressive effect of the mass of the structure. Then we were welcome to inspect all the drawings in the offices, and these of themselves deserved more time than we could give to the whole visit, to say nothing of the fine model of the building, complete in and out as to form, but without decoration. Parts of this model can be moved to allow the interior to be more thoroughly examined.’<sup>181</sup>

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<sup>178</sup> ‘The Architectural Association’, *Builder* (19 November 1887) 698.

<sup>179</sup> ‘Architectural Association’, *Building News* (19 April 1907) 542-543. For a brief history of the model see P. Rogers, *Westminster Cathedral: An Illustrated History* (London, 2012) pp.32-34. The model survives at the cathedral and I will research it further as a part of my post-doctoral work.

<sup>180</sup> At this stage the brick and stonework of the aisles, chapels, transepts, apse and outer walls of the cathedral had been completed but the concrete domes had not yet been cast. W. de l’Hôpital, *Westminster Cathedral and Its Architect: The Building of the Cathedral* (London, 1919) I, p.85.

<sup>181</sup> P. J. Marvin, ‘Roman Catholic Cathedral, Westminster: Second Spring Visit, February 11<sup>th</sup> 1899’, *AA Journal* 14.145 (March 1899) 29.



**Figure 6**

Model of Westminster Cathedral, 1897-99

J. F. Bentley (architect), Francis Child of Farmer & Brindley (model-maker)

After going on to describe the building in detail, the article concluded by offering his opinion of the cathedral that was formed from the study of the model and drawings rather than the works under construction:

‘Outside I do not feel so sure of a satisfactory building; one can only judge at present by drawings and models assisted by the unfinished structure. It does not seem to me that the three equal domes of the nave, and the slightly smaller one of the sanctuary, hardly rising above the walls, can make a happy combination, and surely it is a poor building which is not beautiful in proportion and grouping outside.’<sup>182</sup>

In this example, the model stands in for the incomplete structure and allows students and members to form a judgement about the building. However, at an AA meeting three years earlier John Slater anticipated this line of thinking. In response to a paper read on the topic of studying books as an essential part of the student’s education, Slater concluded the meeting on a cautionary note:

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<sup>182</sup> P. J. Marvin, ‘Roman Catholic Cathedral’, p.31.

‘No amount of book knowledge would do away with the necessity for striving to make acquaintance on the spot, or by the inspection of models, with the buildings described’.<sup>183</sup>

The second way that architectural models were part of life at the AA was their direct use within the professional training offered by the school. Within reports in the architectural press there are glimpses of how models were used in the early classes. For instance, an article for students on thirteenth-century Gothic architecture described the principals of quadripartite vaulting before declaring, ‘This subject is more clearly explained in the lectures at the Architectural Association by means of a model.’<sup>184</sup> In a series of lectures on construction provided by Henry Lovegrove in December 1887 various methods of underpinning structures, ‘were then described and illustrated by large coloured diagrams and the excellent models given to the A.A. by Mr Thomas Blashill’.<sup>185</sup>

Once the Day School and the AA were more firmly established at the end of the 1890s, however, the recording of the application of models becomes clearer. At that stage, however, models were not only used as descriptive aids in the school’s teaching. Lawrence Harvey, an architect whose pedagogical principles were based on the study of stereotomy and its material application, taught a practical class in masonry where the students were ‘made to construct models of various structures a one–eighth real size’.<sup>186</sup> Harvey, who had been educated by Gottfried Semper at the ETH in Zürich and at the École des Beaux–Arts in Paris, was one of a number of European influences on British architectural education in the late nineteenth century.<sup>187</sup> Another influence was the purchase of five models that showed the

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<sup>183</sup> ‘Architectural Association: Books’, *Builder* (29 May 1886) 777.

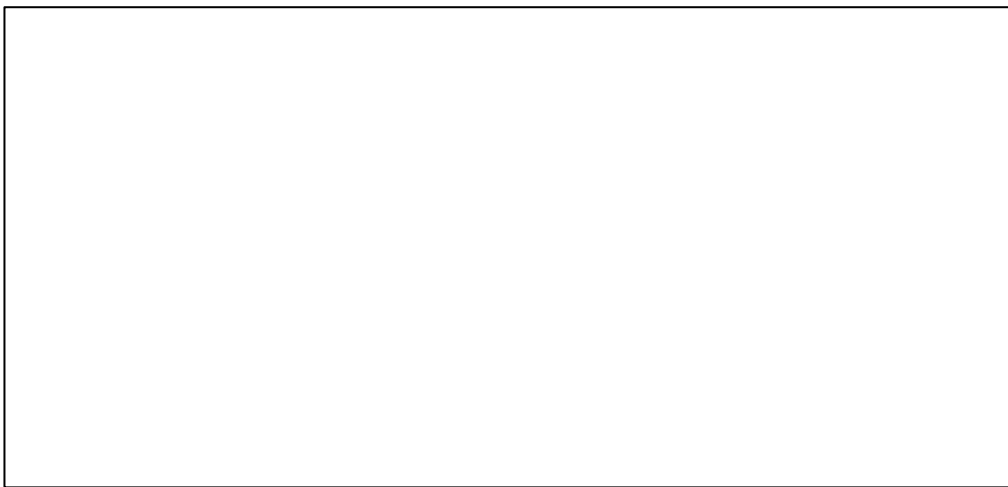
<sup>184</sup> ‘The Students Column’, *Builder* (30 August 1884) 310.

<sup>185</sup> As the AA’s journal reported, ‘The gentlemen who attended must have been able to learn much of a branch of building which is very important but little studied.’ Thomas Blashill (1831-1905) was Superintending Architect to the Metropolitan Board of Works from 1876 to 1887. ‘Lectures on Construction’, *AA Notes* 3 (December 1887) p.174.

<sup>186</sup> ‘Architectural Association’, *Builder* (2 October 1886) 507.

<sup>187</sup> A. Powers, ‘Architectural Education in Britain 1880 – 1914’ (PhD thesis, University of Cambridge, 1982) p.16.

construction of roofs in Germany from the 1851 Great Exhibition by the Department of Science and Art, which were produced by Jacob Schröder of the Polytechnisches Arbeits-Institut at Darmstadt. Established in 1837, Schröder produced models of geometric forms, ornamental profiles (to show the relative effects of light and shade), and structural systems (Fig.7).<sup>188</sup> Exhibited at the South Kensington Museum in the Museum of Construction from at least 1861, these models were made to educate and inform students through observation and copying of structural archetypes.



**Figure 7**

‘Dachstuhl mit Hängewerk anderer Art’, Jacob Schröder, c.1880.

In October 1898 the President of the AA, George H. Fellowes-Prynne gave an address about his approach to architectural education. Fellowes-Prynne proposed that the first training for an architecture student should be in a technical school or a demonstration workshop, which would provide, ‘precisely the kind of practical training that an architect requires’.<sup>189</sup> This approach, Fellowes-Prynne noted, would

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<sup>188</sup> Schröder also sold 1:1 models of machine parts and timber joints, alongside models that demonstrated mechanics and forces. See, J. Schröder, *Polytechnisches Arbeits-Institut Darmstadt, Preisliste für Unterrichts-Modelle und Apparate* (Hanau, 1895).

<sup>189</sup> ‘Architectural Association’, *Building News* (14 October 1898) 530.



require changes to the AA's premises and pedagogical strategy: the demonstration workshops should contain rooms for carpentry, masonry and bricklaying, and metalwork.<sup>190</sup> Fellowes-Prynne recommended that alongside benches and tools these workshops should be furnished with model of various structural systems and building elements, which could be studied, dismantled, and copied by the students.<sup>191</sup> Fellowes-Prynne noted that whilst the cost of commissioning these models would be considerable, once the tools and materials had been procured by the AA, led by expert tradesmen and AA members, the integration of a class on construction into the curriculum would assign students to produce a particular type of model and within a few years, 'the Architectural Association would have a most valuable set of models always ready for reference, made by the students themselves'.<sup>192</sup> It was at this juncture where the most noteworthy portion of Fellowes-Prynne's lecture arrives. He proposed that whilst the student-architect requires knowledge of building trades and technologies, he doesn't actually need to know *how* to build a brick wall, lay a stone floor, or construct a timber frame. Therefore as a scaled object an architectural model offered the knowledge of the building site or trade without requiring mastery of the technique. As Fellowes-Prynne argued:

'The manual labour involved in working out these models and details to small scale is a very different matter to working on large planks and heavy stones in a builder's yard, yet, for all practical purposes, the teaching would be the same, and that without injury to the hands for drawing purposes.'<sup>193</sup>

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<sup>190</sup> 'Architectural Association', 530.

<sup>191</sup> 'Models of wood, stone, and metal construction, and plumbers' work. In some instances, such as roofs, floors, staircases, and groining, the models would necessarily be on a small scale, but in all cases they should show accurately the construction, with joints, tenons, mortises, scarfings. &c., complete. But for such details as doors, window sashes, and casements, and other things of every-day use that will readily suggest themselves, full-size models would be more useful, and so made that they could be taken to pieces and put together again, so as to be copied, hit by bit, to small scale by students. 'Architectural Association', 530.

<sup>192</sup> 'Architectural Association', 530.

<sup>193</sup> 'Architectural Association', 530.

Whilst it is unclear whether the suggestion made by Fellowes-Prynne was ever adopted, in addition to practical classes on construction science, the AA curriculum offered an optional evening class titled 'Instruction in Modelling', which from 1892 was taught under the direction of the sculptor Frederick William Pomeroy.<sup>194</sup> In addition to his practice as a sculptor, Pomeroy made models for a range of architects including John Belcher, Edward William Mountford, and Alfred Brumwell Thomas (Fig.8). Many of these models were exhibited at the Royal Academy. Pomeroy's background and expertise suggests that he was employed for his ability to render the effect of a building rather than its design.<sup>195</sup> As Edward Bottoms notes, the modelling class at the AA consisted of making copies of the relief from existing casts and focused on examples of Antique and Renaissance sculpture rather than the gothic style.<sup>196</sup> However, a paper given by Pomeroy at the AA in 1899 suggests that the sculptor was aware of the possibilities that architectural models in particular could offer. Titled 'Curving and Modelling applied to Architecture', the paper focused on sculptural modelling for ornamental decoration. However, Pomeroy concluded his paper with the follow remark:

'Modelling might be used in architecture for a great variety of purposes – for preparing details of ornament, models for portions or the whole of a building – by which means a general idea of the general effect of light and shade could be definitely arrived at.'<sup>197</sup>

Following these comments, the *Building News* reported that with the aid of an assistant, Pomeroy gave 'a practical and most interesting demonstration of both

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<sup>194</sup> Pomeroy, previously a Royal Academy Gold Medallist for Sculpture, was active between 1881 and 1924, and worked on a wide range of free-standing and architectural sculpture. 'Obituaries: A Noted English Sculptor Mr. F. W. Pomeroy, R.A.', *The Times* (27 May 1924) 21.

<sup>195</sup> E. W. Mountford, "Sketch Model: South-West Angle of New Museum and Technical School, Liverpool", *Catalogue of the Exhibition of the Royal Academy* (London, 1898) no.1804; John Belcher, 'Model of a dome: Electra House', *Catalogue of the Exhibition of the Royal Academy* (London, 1902) no.1598; A. B. Thomas, 'Model of a monument to the late Marquess of Dufferin and Ava, Belfast', *Catalogue of the Exhibition of the Royal Academy* (London, 1906) no.1615.

<sup>196</sup>E. Bottoms, 'The Royal Architectural Museum in the Light of New Documentary Evidence', *Journal of the History of Collections*, 19.1 (March 2007) 17.

<sup>197</sup> 'Architectural Association', *Building News* (21 March 1899) 536.

carving and modelling on prepared clay surfaces raised upon a blackboard'.<sup>198</sup> In their expression of thanks to Pomeroy for his lecture, several members of the AA commented on the subject. The architectural sculptor Thomas Stirling Lee, 'endorsed [Pomeroy's] remarks as to the value an architect could derive from having a small scale model made of his proposed buildings and decorations'.<sup>199</sup> William Howard Seth-Smith III thanked Pomeroy and 'remarked that the employment of models was a great aid to the architect'.<sup>200</sup> From the article it is unclear whether Seth-Smith is supporting the use of models to assist in the design process, to display a building in an exhibition, or for another purpose.



**Figure 8**

E. M. Mountford (architect), F. W. Pomeroy (model-maker)  
'South-West Angle of New Museum and Technical School, Liverpool'  
'Supplement: Architecture at the Royal Academy, 1898', *Architectural Review* 6  
(June 1898) 10.

Alongside an understanding of the attributes of models and their contribution to architectural practice, at the AA there was also an awareness of the limitations of other forms of pedagogic instruction in comparison to models. Francis Taylor, an

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<sup>198</sup> 'Architectural Association', 536.

<sup>199</sup> 'Architectural Association', 536.

<sup>200</sup> 'Architectural Association', 536.

AA member and a keen photographer, gave a paper titled 'Photography for Architects (Illustrated by Lantern Views)' in December 1903 on behalf of the AA Camera Club. Taylor proposed, 'Photography possesses a value both in the study and practice of architecture which cannot be overlooked'.<sup>201</sup> Over the course of his lecture, Taylor outlined how lantern slides could be used to communicate buildings and their construction to architectural students as part of rigorous professional training. In response one member disagreed with Taylor's proposal and argued, 'For examining beams and girders slides were useless, whereas models were all important.'<sup>202</sup> This response indicates that there was an on-going debate about the relative didactic merits of different forms of representation used in architectural education.



**Figure 9**

AA Evening Class Studio, Tufton Street premises, 1904.

AA, Brown Book 1903, p.3.

Despite this on-going debate in a photograph of the Evening Class Studio on the second floor of Tufton Street from 1904 shows the range of types of model used in teaching at the AA. On the bench on the left-hand side at the front of the classroom are a series of ornamental models of sculpture including a full-size decorative flower

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<sup>201</sup> 'Architectural Association', *Building News* (11 December 1903) 783.

<sup>202</sup> 'Architectural Association', 785.

model, a model of an Ionic capital, and a model of a highly elaborate entablature. On the bench on the right-hand side are a two-sided model of antique columns and an architrave.<sup>203</sup> Next to these are two models that appear very similar to those made by Jacob Schröder: a model of a fan truss with a bottom chord formed from a square truss, and the model of a queenpost truss with additional webs. At a range of different scales, made of different materials, and at different levels of abstraction, the microcosm of models represented in the photograph embodies many of the ways that architectural models were used within professional education at the AA during the period.

#### 1.4 Education at King's College

As a constituent college of the University of London, from 1840 King's College offered daytime lecture courses in architecture within the Department of Engineering. In addition to a general course of applied sciences the college offered, 'a complete system of Elementary instruction in Engineering and Architecture'.<sup>204</sup> Divided into either civil or mechanical sub-disciplines, engineering dominated the curriculum until Robert Kerr was appointed professor in 1861.<sup>205</sup> Whilst numbers of enrolled students grew steadily from 47 in 1854 to 119 in 1885, the curriculum was still focused on engineering rather than architecture.<sup>206</sup> At this stage Kerr's influence was minor: he only gave two lectures a week and it is unclear how architectural models were used in the students' education. The first development came in July 1886 when Kerr suggested to the academic committee that his chair should be changed from 'Professor of the Principles and Practice of Architecture

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<sup>203</sup> Two-sided possibly to show two different proportional relationships between elements depending on the relative circumference of a column.

<sup>204</sup> 'King's College, London', *Builder* (7 September 1844) 464.

<sup>205</sup> KCL, KFE/M1-2, Minute Books of the Committee of the Applied Sciences, November 1844, October 1861.

<sup>206</sup> Courses in the applied sciences led the first and second year of studies, which were supplemented by courses in the art of construction, fine art, and photography in the third (and final) year. By 1874 these courses were complemented with classes on architectural drawing and rendering. KCL, KFE/M3, Minute Books of the Applied Science Board, 1 July 1881, 16 December 1885; 'King's College', *Builder* (1874) 914.

and of Engineering Construction' to 'Professor of Architecture'.<sup>207</sup> This alteration of title and purpose enabled Banister Fletcher, Kerr's successor in 1890, to adjust and then refocus the course to provide the professional training required for architects.

Under Banister Fletcher models were an important part of the applied education provided at King's. The establishment of a museum of models as a teaching resource was a significant juncture in the development of professional architectural training at the college.<sup>208</sup> Whilst archival sources indicate that the museum was discussed within the administrative structure of King's from 1894, earlier reports in the architectural press indicate that its establishment began in 1890. In May 1890 an anonymous writer of a regular column in the *Building News* dismissed the museum's effectiveness as a teaching resource:

'A museum of architecture is be established at King's College [...] I fear much good is improbable [...] If a King's College student wants to study architecture, he can find plenty of examples of different classes of work within a short walk of Somerset House. Pictures and casts are of little educational value when compared with actual buildings; and in constructional matters, any earnest student, with his eyes open and wits about him, can learn more in an hour's walk through London streets than a day in a museum of examples. Models are mere toys.'<sup>209</sup>

Instead the author proposed that the museum should contain photographs of buildings arranged on stylistic and chronological lines. Unlike architectural models, the author believed that photography was 'the best medium for the illustration of works of architecture.'<sup>210</sup> The following week the journal published a defence of architectural models by the prominent nineteenth-century model-maker Charles Newson Thwaite, whose work will be discussed in detail in Chapters 4 and 5. After

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<sup>207</sup> KCL, KFE/M3, 7 July 1886.

<sup>208</sup> 'The Engineering and Applied Science Department at King's College', *Builder* (24 December 1887) 665.

<sup>209</sup> 'Wayside Notes', *Building News* (16 May 1890) 687.

<sup>210</sup> The author recommended that a collection of photographs should be procured, 'to greatly facilitate the student's acquiring a clear knowledge of architectural history'. 'Wayside Notes', 687.

describing models as ‘the only comprehensible representation’ to the general public, Thwaite proposed:

‘[The] authorities at King’s would in time secure possession of a valuable collection of architectural models of executed works, the educational value of which would be very great’.<sup>211</sup>

Despite the debate in the press under the direction of Banister Fletcher the authorities at King’s began to assemble a collection of models alongside diagrams, specimens, and material samples.<sup>212</sup> The earliest record of the collection is from an 1894 publication titled *Catalogue of the Reference Museum*.<sup>213</sup> This catalogue lists 196 models of construction details showing roofs, floors, walls, windows, or the intersection between these elements. Lent by the Carpenters Company who had a long-standing connection to both King’s and Banister Fletcher himself, several models represented paradigmatic joinery details at 1:1 scale. Other models represented particular building products or technical innovations. A report in the *Building News* described how ‘the possession of such a unique collection of models, drawings, diagrams, and photographs [...] at King’s College [...] must always be an incentive to good work’.<sup>214</sup>

It is important to consider the collection at King’s College as responsive to the changing demands faced by the profession in the nineteenth century. An article in the *Building News* described the changes to professional practice caused by the transition away from ‘simple building operations confined to the traditional trades, and controlled by ordinary plans and workmen’.<sup>215</sup> Instead extra demands were placed on the architect due to the subdivision of existing trades and the emergence of new ones, ‘the extent of which may be gathered from the construction and use of

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<sup>211</sup> ‘Architectural Models’, *Building News* (13 June 1890) 852.

<sup>212</sup> It is likely that the collection was began in connection with the formation of an evening class for articulated pupils in 1892. ‘Kings College Architectural Classes’, *Building News* (11 October 1898) 495.

<sup>213</sup> KCL, KAS AC2 F11 *Catalogue of the Reference Museum* (London, 1894).

<sup>214</sup> ‘Kings College Architectural Classes’, *Building News* (11 October 1898) 495.

<sup>215</sup> ‘Special Developments’, *Building News* (19 February 1897) 261.

many modern buildings'. In order to prepare the architect for these extra demands, the article proposed that the architect required access to 'a practical building museum where may be found a collection of the special branches and trades [...] described and illustrated by models or specimens'.<sup>216</sup> This is exactly the sort of collection that was assembled at King's College to prepare a new generation of architects for the requirements of professional practice at the turn of the twentieth century.

Banister Fletcher also viewed the collection as a crucial pedagogic tool for students and discussed the formation of the museum in a series of letters. In a letter from January 1896, Fletcher described how within months of his election to the professorship, 'I had formed so large a collection of architectural & Building Construction casts, models, drawings, &c. that I applied for more space'.<sup>217</sup> Fletcher described how the physical limits of displaying the collection was 'indeed such a real disappointment to me and [a] loss to architectural students at the College'.<sup>218</sup> In order to build a case for additional support of the teaching resource Fletcher summarised the position of King's College within architectural practice at the end of the nineteenth century. In order to help establish the course within the profession, Fletcher gave the College casts and models for teaching and worked to have the course approved by the Society of Architects.<sup>219</sup> Fletcher concluded by noting that he 'was told that the professors who could attract professional students from the professions proved absolutely that his instruction it was the best'. In order to attract these professional students Fletcher asked for additional space for the teaching resource of models:

'I have to ask for additional space, that I may work to continual adding to this mighty reference museum the only one in London dealing with all the

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<sup>216</sup> 'Special Developments', 262.

<sup>217</sup> KCL KAS AD3 F7, Letter from Banister Fletcher to Henry Wace, 7 January 1896. 1r.

<sup>218</sup> KCL KAS AD3 F7, Letter, 7 January 1896. 2v.

<sup>219</sup> A society established in 1884 to promote architectural education, qualification by examination, and the compulsory registration of architects.



various styles of architecture and building and I believe that nothing will so add to the prestige of King's College and the addition of students.'<sup>220</sup>

Fletcher was so keen to have an expanded collection that in May 1896 he offered to support the museum financially:

'I am so anxious to complete this Museum and so benefit Kings that I will myself pay the expenses of the additional fittings required.'<sup>221</sup>

Changes to the organisation, location, and display of the models were intrinsically linked to how architecture was taught in the faculty. Whilst he was in the midst of purchasing new models and requesting additional space for their display, in March 1896 Fletcher proposed alterations to the curriculum that would make 'Architecture/ Building Science' compulsory to all first and second year students.<sup>222</sup> Whilst his fellow professors rejected this proposal, a syllabus from May 1896 indicates that there were classes added in 'Architectural Studio' and 'Building Construction'.<sup>223</sup> Fletcher underlined the importance of the collection of models as a pedagogic aid in a short essay on architectural education published in the *AA Journal* in 1897. After discussing the wider context of architectural education, Fletcher declared:

'The Museum at King's College is, I believe, without anything like its equal in England. It contains models of various pieces of construction used in the trades connected with architecture, as roofs, floors, plumbing, etc. These are used in the lectures, and the student can learn in less time than he can from diagrams only, as the models take to pieces, and are exact in constructive detail.'<sup>224</sup>

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<sup>220</sup> KCL KAS AD3 F7, Letter, 7 January 1896. 3r.

<sup>221</sup> KCL KAS AD3 F7, Letter from Banister Fletcher to Henry Wace, 1 May 1896. 1r.

<sup>222</sup> KCL, KFE/M3, 6 March 1896.

<sup>223</sup> KCL, KFE/M3, 27 May 1896.

<sup>224</sup> B. Fletcher, 'Architectural Teaching at King's College, London', *AA Journal* 12 (April 1897) 78.

Shortly after Banister Fletcher died in July 1899, on recommendations of the Museum Committee at King's, the Architectural Department relocated to the room formerly occupied by the Pathological Collection.<sup>225</sup> Following Banister Fletcher's death, his son, Banister Flight Fletcher, applied for the vacant professorship. Alongside the formal application to the university, Banister Flight Fletcher wrote to the college itself and discussed his role in the formation of the architectural museum:

'I collected the building construction models & arranged them similarly. I was also the means of purchasing a large number of these by the Carpenters Company whilst I was examiner in Carpentry & Joinery at the City Guild of London Institute.'<sup>226</sup>

In addition to his expertise in the collection, Banister Flight Fletcher reminded the college that his father's 'valuable personal collection of photographs, drawings, models & materials which now belong to me. I shall of course during my connection with the college continue to place them at the disposal of the students'.<sup>227</sup> Despite this offer, in November 1899 Ravenscroft Elsey Smith was appointed to the vacant professorship. In the subsequent months Banister Flight Fletcher removed a series of models, samples, and casts from the museum, claiming them to be his father's property on loan to the college. The removed items included a large model depicting the roof of a church with trussed purlins by Alfred Waterhouse purchased by Banister Fletcher before 1894.<sup>228</sup> Other models included those of a circular church and a church spire. Two models not itemised on the handlist were also removed: the model of the front of the Parthenon, contained with a glass case, and a 'very old' model of a roof to Hampton Court Palace.<sup>229</sup>

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<sup>225</sup> KCL, KFE/M4, Minute Books of the Board of Engineering, Faculty of Science, 22 November 1899.

<sup>226</sup> KCL KAS AC2 F10, Secretary's files, Letter from Banister Flight Fletcher to Walter Smith, 20 July 1899, 1v.

<sup>227</sup> KCL KAS AC2 F10, Letter from Banister Flight Fletcher, 20 July 1899, 2v.

<sup>228</sup> KAS AC2 F11, Letter to Walter Smith by Elsey Smith, 22 Jan 1900; Letter to Elsey Smith by Banister Flight Fletcher, 24 Jan 1900.

<sup>229</sup> KAS AC2 F11, Letter to Elsey Smith by Banister Flight Fletcher, 24 Jan 1900.

Elsey Smith's appointment to the professorship initiated a host of changes to the way that architecture was taught at King's. In March 1902 the department recommended, pending approval by the university's council, that students should be awarded a Certificate in Architecture upon completion of the course.<sup>230</sup> Any provision for classes in Building Construction, the bedrock of Banister Fletcher's pedagogical approach and the focus of the collection of models, was reduced to a secondary role within a first year course on drawing. During Elsey Smith's tenure there were further changes to the curriculum that indicate a change in how architectural students were taught. A memorandum from March 1905 describes how a joint decision was made between King's College and the Carpenters' Company that it was 'no longer desirable that woodcarving classes should be continued to be taught at the college'.<sup>231</sup> Whilst one reason given is the poor attendance of these classes, the memorandum described:

'But the real reason which has influenced them has been the feeling that the work at King's College should now be confined to more and more definitive University subjects. The gradual organization of education in London has provided elsewhere for students of a technical and less definitely Academic character.'<sup>232</sup>

In the provision of professional education for architects at King's there was a move away from the sorts of artisanal and practical knowledge provided by the models and classes that the Carpenters' Company supported. In her 1999 sociological study of various professions, Valérie Fournier argues that a profession is never completely established but continues to undergo renegotiation between different parties.<sup>233</sup> As Fournier describes, professional groups 'need to establish and continuously work at

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<sup>230</sup> The revised curriculum included architectural drawing (surveys, measured drawings, perspective, design); lectures in the history of architecture; specification writing, sanitary science, professional practice; a modern foreign language; applied maths, physics and chemistry. KCL, KFE/M4, Draft copy of Certificate course pasted in with minutes for meeting held on 13 March 1902.

<sup>231</sup> KAS AC2 F10, Memorandum from Secretary to Carpenters' Company, 27 March 1905.

<sup>232</sup> KAS AC2 F10, Memorandum, 27 March 1905.

<sup>233</sup> V. Fournier, 'The Appeal to 'Professionalism' as a Disciplinary Mechanism', 286.

maintaining their legitimacy in terms that map over with the norms and values of other actors in the network'.<sup>234</sup> Therefore professionalisation is a process rather than result. As the architectural profession developed so too did its educational system and as the newly formed Certificate in Architecture demonstrated, the profession valued skills developed through drawing (including design), the history of architecture, and administrative tasks related to practice. The memorandum of 1905 concluded, 'I should further like to point out that the School of Architecture is on a very different footing. Architecture ought certainly to be a University study'.<sup>235</sup> This belief led to a reorganisation of architectural education within all the colleges of the University of London, which will be discussed in the next section.

### 1.5 Education at University College

'Professional education has of late made a great advance [...] It is the aim of University College to offer the opportunity to young men of perfecting the instruction to be gained in the office of the architect, or in the counting-house of the builder.'<sup>236</sup>

Within the University of London another college, University College, offered a three-year degree in architecture from 1841. Under the direction of T. L. Donaldson and within the Department of Civil Engineering and Architecture, the degree was formed from a series of courses in formal and natural sciences, as well as architecture and drawing.<sup>237</sup> In his book on architectural education, Donaldson noted that that the education provided was not intended to supersede the conventional mechanism of pupillage but instead the courses would 'enable [the student] to enter with superior qualifications on his career of professional practice'.<sup>238</sup> It is unclear whether architectural models were used in the early period

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<sup>234</sup> V. Fournier, 'The Appeal to "Professionalism"', p. 286.

<sup>235</sup> KAS AC2 F10, Memorandum, 27 March 1905.

<sup>236</sup> 'Architectural Classes at University College, London', *Builder* (7 October 1848) 485.

<sup>237</sup> 'UCL Curriculum 1847', in T. L. Donaldson, *Architectural Maxims and Theorems*, Appendix, p.1

<sup>238</sup> 'UCL Curriculum 1847', p.1.

of teaching at UCL under Donaldson.<sup>239</sup> However, it is very hard to imagine that Donaldson did not use models as teaching aids in his courses as he used architectural models throughout his professional career.<sup>240</sup>

Donaldson and his successor in the chair of architecture at UCL from 1865, Thomas Hayter Lewis, appear to have used large drawings and diagrams as well as practical site visits as teaching aids. Despite the lack of surviving material evidence, under Hayter Lewis models again must have been a part of the Department's pedagogical approach as he wrote to the RIBA Council in January 1868 having heard that their collection of casts and models was being sorted out and some given away. Lewis requested some of the casts and models for use in drawing classes at University College.<sup>241</sup> Although the models have not survived, in Chapter 6 I will examine the extent and types of model collected by RIBA in the nineteenth century. There are also accounts of prominent contemporary architects donating models to the college.<sup>242</sup> Thomas Roger Smith replaced Hayter Lewis as professor in 1882 with few changes made to the course's structure or curriculum.<sup>243</sup> As Crinson and Lubbock note in their study of architectural education, lectures on professional practice and construction were appended to the course in 1892 but no design was

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<sup>239</sup> The architectural course itself was split into two components: one on 'Fine art' and the other on 'Construction'. A pair of notebooks containing a student's notes on each component of the course from 1863/64 survives in the UCL archive but does not mention any models: UCL MS ADD 121, 'Notes on Lectures given by T. L. Donaldson 1863/64'.

<sup>240</sup> In particular at the RIBA in 1835 he described how models of Antique or contemporary buildings were both 'instructive and interesting' as they could be viewed from different viewpoints. Donaldson was also one of three authors of an 1859 report for Committee of Council on Education into the to the format, layout, and organisation of the 'National Museum for Architecture' at South Kensington, which described the usefulness of architectural models as didactic objects for education. RIBA, BAL, MS.SP/4/1, 'Address delivered by Donaldson at the official opening meeting of the [Royal] Institute of British Architects on 15 June 1835', p.7.

<sup>241</sup> RIBA, BAL, LC/5/7/10, Letter to Council from Thomas Hayter Lewis, January 1868.

<sup>242</sup> For instance William Tite presented a model of the Royal Exchange to University College London, as a reference specimen for the use of the class of architecture in August 1865. 'University College', *ILS*, 19 August 1865, 158.

<sup>243</sup> S. Reed and R. Spaven, '1841–1919 Wandering in a Labyrinth of Experiments', in *Architectural Review: 175 Years of Architectural Education at UCL* (London, 2017) 70.

taught at UCL until the early twentieth century.<sup>244</sup> Whilst Frederick Moore Simpson was appointed professor at UCL in 1903, the main change to the education of architects at the University of London came from outside the profession with the merger of the two colleges in 1913. I will now examine this merger and its implications for how architectural models were used in education.

After hearing a report from Professor F. M. Simpson requesting a new building for the school at UCL and another from Professor R. Elsey Smith on the lack of space at King's and the emerging importance of formalised training for architects, the Senate of the University of London formed a committee in July 1910 to examine the amalgamation of the two architectural schools.<sup>245</sup> Unification with a third school, the AA, was discussed and negotiations begun before the AA withdrew on 1 May 1911.<sup>246</sup> A series of recommendations was made by the committee who proposed combining schools at a site adjoining the North Wing at UCL in a new building designed by F. M. Simpson.<sup>247</sup>

By the summer of 1913 the negotiations were complete and staff, students, and equipment transferred from King's to UCL. In a memo dated 29 May 1913 (for a meeting on 2 June 1913) Elsey Smith and Simpson outlined the equipment in the department at King's and noted that an application needed to be made to the Carpenters' Company for the cases of models and building specimens to be transferred to UCL.<sup>248</sup> The memo recorded that the two professors themselves should select the models to be transferred. Following this, in August 1913, the Secretary at King's sent a series of lists of books, models, and casts to the Academic

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<sup>244</sup> M. Crinson and J. Lubbock, *Architecture: Art or Profession?*, p.50.

<sup>245</sup> UoL, ST/2/2/26, minute of a meeting held on 13 July 1910, n.3433.

<sup>246</sup> KCL KAS AC2 F10, p.2, letter from Arthur Keen to University of London Amalgamation Committee, 1 May 1911.

<sup>247</sup> KCL KAS AC2 F10, 'Report of the Committee appointed by the Senate on the Amalgamation of the Architectural Schools of the University', p.3.

<sup>248</sup> KCL KAS AC2 F10, 'Equipment in the Architectural Department at King's College'.

Registrar at the University of London.<sup>249</sup> These lists outline the 400 models that were transferred to the newly combined school. The majority of these models depicted construction detailing, others showed technical innovations in building products. Some of the models were scaled objects, such as those that showed the structure of a timber bridge. Others were full-size models that showed the construction of specific building elements such as doors, windows, and floors. One of these full-sized elements was not, in fact, a model but an original eighteenth-century doorway and architrave, promised to the new school by Elsey Smith and transferred in October 1913.<sup>250</sup> Fronting onto Gower Street, the new building featured a dual-aspect museum (50ft<sup>2</sup>) on the first floor and a separate cast gallery (48ft by 28ft) on the third floor.<sup>251</sup> As the plan describes, the museum was the only space in the building where Simpson employed columns, rather than a load-bearing wall, in order to make a large open-plan space that occupied the most prominent floor of the new building with views onto Gower Street and into the college quadrangle. The importance of the museum to the school was underlined by a review of the new building that described how the collections of models, samples of materials, and casts '[were] being considerably increased, and the equipment will be complete and thoroughly up to date'.<sup>252</sup>

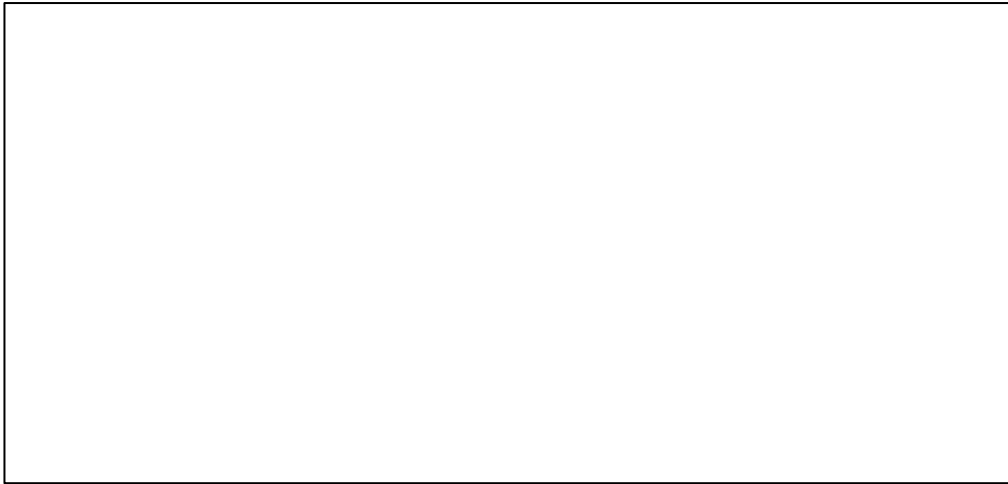
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<sup>249</sup> KCL KAS AC2 F10, 'List of Cases, etc. Transferred to University College August 20 to 25 1913: Architecture Museum', pp.1-5.

<sup>250</sup> In his essay on the nineteenth-century architectural profession J. M. Crook suggests that Simpson built this doorway into the fabric of the new architecture school building. KCL KAS AC2 F10 Letter to KCL Secretary from UCL Secretary, 13 October 1913; J. M. Crook, 'Architecture and History', *Architectural History* 27 (1984) 577, n.159.

<sup>251</sup> 'University College. London: New Building for the School of Architecture', *Building News* (5 December 1913) 797.

<sup>252</sup> 'University College. London', *Building News* (5 December 1913) 797.



**Figure 10**

UCL First Floor Plan of Building

‘University of London: New School of Architecture’, *Building News* (5 December 1913) 800.

The move to UCL was also related to how architecture was presented as university subject. This fact is demonstrated by an undated memorandum by the Professorial Board of the University, probably written in the summer of 1910, suggesting that the presence of the School of Archaeology and the Slade School of Art, also located adjacent to the college quadrangle, ‘made it desirable that the Architectural School should also be situated there’.<sup>253</sup> Furthermore the merged-school’s first prospectus described how the presence of Engineering Laboratories, School of Hygiene, and other courses offered by the university provided ‘facilities for a full and comprehensive Course of Architectural Education on a sound basis not possessed by any other institution in London’.<sup>254</sup> The prospectus noted that there was not just a scholarly benefit for architectural students but that there would be long-term social and professional advantages by learning alongside ‘engineers, painters, sculptors, and doctors [...] and other professions’.<sup>255</sup> Whilst supplemented with practical expertise at the Trades Technical School in Great Titchfield Street, the

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<sup>253</sup> KCL KAS AC2 F10, ‘Memo by the Professorial Board on the Proposed Scheme for the Amalgamation of the Architectural Schools of the University’, p.1.

<sup>254</sup> KCL KAS AC2 F10, ‘University of London School of Architecture 1913–14’, p.6.

<sup>255</sup> KCL KAS AC2 F10, ‘University of London School of Architecture 1913–14’, p.6.



architectural education offered by the combined school was focused on the classical orders as the basis for design. Whether studying for an undergraduate degree, certificate day course, or at an evening class, students were taught design through drawing classes on their delineation in perspective and orthogonal. Portions of these courses, not outlined in the prospectus, were based on students drawing from architectural models and casts in the school's museum and at the nearby Slade School.<sup>256</sup> In a 1914 paper on architectural form, Leslie Wilkinson, Assistant Professor of Architecture at the school discussed the role of models in professional practice: 'A model provides the equivalent of an infinite number of perspective views, and will often settle points with a layman'.<sup>257</sup>

Wilkinson's comments on architectural models offer a clear picture of their role at the University of London: models were objects for study and explanation for lay or uninitiated audiences rather than 'means of expressing form' for architects themselves. The ease of understanding that a model can provide, Wilkinson argued, makes them suitable for the young architect still in educational formation. Once he has graduated, he is part of the initiated and therefore can use them to convey information to others. This idea shows that models have a mutability of function. A model can be deployed with the ability to do different things in different situations and they perform different functions for people at different times.

## 1.6 Conclusions

In this chapter we have seen the role played by models in the professional education of architects. After exploring the multiple definitions of a model in the period, the second section outlined the state of architectural education at the start of the nineteenth century, whilst the third section examined the informal aspects of an architect's education, which included drawing classes, handbooks on model making, and evening lectures at the Royal Academy. Models were an inherent part

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<sup>256</sup> KCL KAS AC2 F10, 'University of London School of Architecture 1913–14', p.13.

<sup>257</sup> 'The Expression of Form', *Building News* (15 May 1914) 665.

of these educational supplements to the pupillage system. Whilst in evening classes simple geometric models were used in classes for students to practice their drawing skills in perspective, the examples of T. A. Richardson's *The Art of Architectural Modelling in Paper* and other instructional guides in the architectural press highlighted the need for education on how to make models, 'that must have been long felt by many students and others in the architectural profession'.<sup>258</sup>

The third, fourth, and fifth sections described the emergence of formalised modes of architectural training in London. Initially at the AA, models were descriptive aids as a part of a cycle self-education included expert lecturers at meetings, conversazione, and group visits to buildings. With the emergence of a Day School in 1874 the use of models at the AA began to take on a different register, one that used models to instruct students with the technical and practical knowledge required for late-nineteenth-century professional practice. The fourth section focused on how a collection of models was formed by Banister Fletcher in order to prepare students for the technical and constructional demands of professional practice in the early–twentieth century. Fletcher's intention for the collection was to attract 'professional students' to the university, provide a high level of technical education for students, and connect the course to the Society of Architects who supported qualification by examination. The fifth section discussed the effects of a merger between King's College and University College, which was driven by a desire by the University of London to reduce its offering of 'technical courses', to link a combined school of architecture to other institutions in the belief that there would be social and professional advantages for architectural students.

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<sup>258</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper* (London, 1859) iii.



**Figure 11**

‘School of Architecture – Studio’

‘Programme of Conversazione in the New Buildings of the School at University College June 23<sup>rd</sup> 1914’, in A. Powers, ‘Architectural Education in Britain’ III, Fig.192.

The effects of this merger the perceived status of architectural models in architectural education is unclear due to a lack of evidence. Although Wilkinson’s comments on models suggest that they were seen as objects for study and explanation to be used rhetorically rather than as exploratory aids for architects. I think this can clearly be seen in two photographs of the school’s interiors from a programme published in June 1914 to celebrate the new building.<sup>259</sup> In the photograph of the Design Studio there is a single model of an Antique temple, hiding in the shadows and ignored as students in their white smocks draw at their desks (Fig.11). Treated ornamentally, this model has a symbolic function in its representation of Beaux-Arts architecture that was being produced at every drawing board.

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<sup>259</sup> These photographs are missing from the UCL archives. The programme they were published in should be found at UCL Hist V B/14, ‘Programme of Conversazione in the New Buildings of the School at University College June 23<sup>rd</sup> 1914’. However my source for the photographs is from Alan Power’s 1982 PhD as referenced. My thanks to Sophie Read for her help on this.



**Figure 12**

'School of Architecture – Museum

'Programme of Conversazione', in A. Powers, 'Architectural Education in Britain' III, Fig.194.

Whereas in a photograph of the school's Museum there are models strewn across benches (Fig.12). There are models of arch construction, fragments of structural bays, and building elements. Interspersed between these are samples of materials, the glass from a window, and sculptural details carved in wood. These are not design models. Instead they were there to explain to the students the complicated junctions, details, and forms required in various forms of construction. I propose that these models are about the students constructing a level of knowledge that allowed them professional authority when interacting with builders, craftsmen, and suppliers. In the next chapter I will further this idea and examine how models were used in the public construction of professional authority.



## Chapter 2

### Architectural models in the public sphere



## Chapter 2: Architectural models in the public sphere

‘An architect cannot put up a monumental building in the hope that the public will approve of it and pay the expense. The most he can do is show a drawing or a model in public, and persuade men in power or of immense wealth that he is both capable and original, and will be able to charm the public by his work.’<sup>260</sup>

Following chronological progression in the career of an architect, this chapter explores the mainstream of professional life: once qualified and practising how did architects use models? This chapter asks, how did individuals, institutions – within and without the profession – and the wider public view models in relation to architectural practice? What was the relationship between the professional identity of the architect and the presentation of models in relation to public building projects or in legal disputes? Through newspapers, private correspondence, and parliamentary records the chapter demonstrates how architectural models played a key role in relation to the expectations and interaction of an urban ‘public’ who, in the context of the 1832 Reform Act (and successive legislative instruments), had a desire for democratic participation that included critiquing the construction of civic buildings of national and international significance.<sup>261</sup> Barry Bergdoll recently suggested that the relationship between architecture, printed press, and ‘self-

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<sup>260</sup> ‘Presidential Address’, *RIBA Journal* (3<sup>rd</sup> Series) 6 (1899) 4.

<sup>261</sup> The impact of 1832 on the shape and size of the British electorate remained ambiguous, and that a narrative of social change in the wake of the Act is highly complicated. In researching this chapter I have drawn on the work of many important scholars on the subject including: E. Hobsbawm, *Nations and Nationalism since 1780: Programme, Myth, Reality* (Cambridge, 1990); J. Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, trans. T. Burger with F. Lawrence (Oxford, 1992); D. Read, *The Age of Urban Democracy: England 1868–1914* (London / New York, 1994<sup>2</sup>); A. Briggs, *England in the Age of Improvement* (London, 1999) pp.228–260; R. Price, *British Society, 1680–1880: Dynamism, Containment, and Change* (Cambridge / New York, 1999); P. Morris, *Imagining Inclusive Society in Nineteenth-Century Novels: The Code of Sincerity in the Public Sphere* (Baltimore / London, 2004); C. Calhoun, *The Roots of Radicalism: Tradition, the Public Sphere, and Early Nineteenth-Century Social Movements* (London, 2012).



conscious social reform' was at its most potent during the 1830s and 1840s.<sup>262</sup> Against this background the chapter examines the theory, practical instruction, and discussions within an emerging profession that aimed to establish itself as the best-placed specialist to understand the design, procurement, and construction of buildings.

The chapter focuses on a number of case studies, which are structured chronologically from the 1830s to the 1900s. Alongside these case studies, I explore a number of previously unconsidered methodological and practical commentaries on the correct or appropriate use of models by writers in the architectural and popular press. The first section of the chapter will examine the use of architectural models in the design of the National Gallery (1833-38). I analyse the use of the model as an instrument of judgement and explore the relationship between political power and professional status. The second section asks what the role was of the architectural model within the competition system, one of the defining features of the nineteenth-century architectural scene. Using previously under-examined archival material relating to the Royal Exchange competition (1838-40), I will study the attitudes of architects, clients, and the wider public towards the use of models as effective devices for decision-making.

The third section will begin by exploring the models made by two architects for the New Law Courts competition in 1867. It will then broaden the discussion of professional authority by examining how the appointed architect, G. E. Street, and the client, the Office of Works, used and commissioned models during the design of the New Law Courts. Additionally I will demonstrate how debates in the House of Commons and the House of Lords were sites for public discussion about the benefits and shortcomings of architectural models. This topic will connect to the fourth section that analyses the unrealised scheme for the Admiralty and War

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<sup>262</sup> B. Bergdoll, '“The Public Square of the Modern Age”: Architecture and the Rise of the Printed Press in the Early Nineteenth Century', in M. Hvattum and A. Hultsch eds., *The Printed and the Built: Architecture, Print Culture and Public Debate in the Nineteenth Century* (London, 2018) p.27.

Offices by John and Joseph Leeming where a series of models were made for their proposals that were discussed in Parliament, criticised by various members of the profession, and became a key element in a Select Committee hearing about the project.

The idea of the architectural model as evidence or a manifestation of specialist knowledge relates to the final section of the chapter on the role of the architect as a legal expert and consultant. The chapter will conclude by examining the role that models played in courtrooms as agents and evidence in common law disputes where lawyers used architects to provide expert testimony to lay juries through the demonstration of models.

## 2.1 National Gallery

Founded in 1824 when the British government acquired John Julius Angerstein's collection of paintings, the National Gallery rapidly outgrew its original site at Angerstein's house in Pall Mall. The Gallery's trustees and governmental committees proposed various solutions for expansion of the original premises or construction of a new building.<sup>263</sup> No definite solution had been decided when in August 1831 William Wilkins proposed that the King's Mews at Charing Cross should be adapted to accommodate both the National Gallery and the Royal Academy.<sup>264</sup> Despite alternative schemes offered by John Nash and C. R. Cockerell, in May 1832 the committee approved Wilkins' proposal for the building.

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<sup>263</sup> For a synopsis of these solutions see: G. Martin, 'Wilkins and the National Gallery', *The Burlington Magazine* 113.819 (June 1971) 318-321; J. M. Crook and M. H. Port, *The History of the King's Works: Volume VI 1782 – 1851* (London, 1973) pp.461-463; R. W. Liscombe, *William Wilkins 1778 – 1839* (Cambridge, 1980) pp.180-183.

<sup>264</sup> W. Wilkins, *Letter to Lord Viscount Goderich on the patronage of the arts by the English government* (London, 1832). As Crook and Port note, one advantage of this proposal was that the removal of the Academy from Somerset House would release rooms required for government offices. Robert Peel, a trustee of the gallery, persuaded both the House of Commons and the Chancellor of the Exchequer to commission a new building following debates in Parliament during July 1833. A building committee, consisting of the Gallery's trustees, governmental ministers, and the Commissioner of Woods and Works, was formed to guide the procurement of a new building that provided

Wilkins exhibited a model, first mentioned on 3 February 1833, of the projected building to a select group including members of the press, at the Office of Woods and Forests.<sup>265</sup> On 23 February 1833, the *Literary Gazette* published an elevation for ‘public inspection’ of the building facing onto Trafalgar Square (Fig.13). This elevation, the newspaper claimed, was based on the exhibited model.<sup>266</sup> Despite declaring, ‘it is not our wish to play the critic and make embarrassing objections’, the *Literary Gazette* critiqued the model.<sup>267</sup> Among the writer’s complaints was that the building’s cramped and low appearance was better suited to a bright-skied Grecian plain rather than the smoky atmosphere of Charing Cross. The *Literary Gazette*’s main concern, however, was that the architect and Government would, ‘waste immense sums of money, and have nothing suitable to show for it!’<sup>268</sup> In the case of the National Gallery there were clear expectations from the *Literary Gazette* that a wider public should be kept up-to-date with the designs of a prominent civic building.

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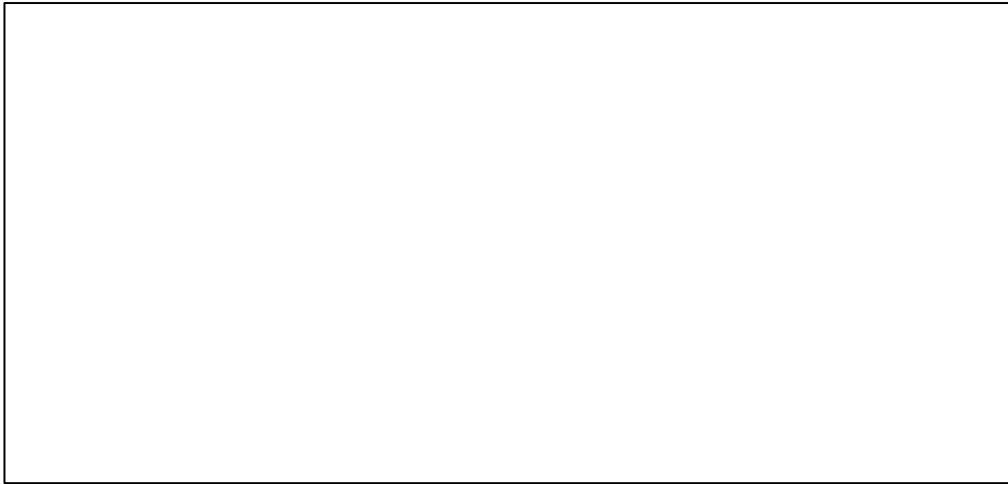
accommodation for the collection of paintings, various societies, and a public records repository. J. H. Barrow ed., *Mirror of Parliament, Second Session of the Tenth Parliament of Great Britain and Ireland (Commencing 6<sup>th</sup> December 1831)* (London, 1832) IV pp.3306-3308; J. M. Crook and M. H. Port, *The History of the King’s Works: Volume VI*, p.462.

<sup>265</sup> It appears fairly clear from the newspaper accounts that the model was held and displayed in the Office of Woods and Works. However, there is no record of this in either the letter books of the Office (TNA WORK 1/20, Letter book, March 1832 to January 1834), nor within any of the incoming letters to the department (TNA WORK 17/10/1, Letters relating to the National Gallery). Further, there was no mention of the model in relation to tendering builders who were invited to view plans and specifications only for the building at Wilkins’ office from 23 January 1833 until 19 February 1833 TNA WORK 17/10/1, Letters relating to the National Gallery, f.42, Letter from Office of Woods to tendering builders, 21 January 1833.

<sup>266</sup> ‘The National Gallery’, *Literary Gazette*, 23 February 1833, 122.

<sup>267</sup> ‘The National Gallery’, *Literary Gazette*, 23 February 1833 122.

<sup>268</sup> ‘The National Gallery’, *Literary Gazette*, 23 February 1833 122.



**Figure 13**

‘Elevation of the National Gallery’

‘The National Gallery’, *Literary Gazette*, 23 February 1833, 122.

Wilkins wrote a letter to the *Athenaeum* on 2 March 1833 in response to the publication of the elevation and its subsequent criticism.<sup>269</sup> According to Wilkins, William Jerdan, editor of the *Literary Gazette*, had requested a drawing of the proposed National Gallery for publication in his journal. Wilkins had refused on the grounds that an engraving would be too expensive to produce.<sup>270</sup> Instead he had offered Jerdan the opportunity to visit the model of the building. Wilkins reported how Jerdan himself did visit the model but instead wrote to the Secretary of the Woods and Forests for permission for friend to visit the model. When permission was granted Jerdan sent an artist, ‘who on being seen in the act of making a drawing of the model, was informed, that he could not be permitted to take or make use of any sketch of it’.<sup>271</sup> Despite this, the engraving was published. To make it worse, Wilkins claimed that it also misrepresented the model.<sup>272</sup> One of Wilkins’ key criticisms of the engraving was the incorrect scale of both particular elements and the building as a whole. In particular Wilkins claimed that the artist had

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<sup>269</sup> ‘The National Gallery’, Letter from W. Wilkins to Editor, *Athenaeum*, 2 March 1833, 135.

<sup>270</sup> ‘The National Gallery’, *Athenaeum*, 2 March 1833, 135.

<sup>271</sup> ‘The National Gallery’, *Athenaeum*, 2 March 1833, 135.

<sup>272</sup> The engraving omitted sculpture niches and failed to represent windows in the upper storey, whilst the two ends of the building were entirely absent, presumably due to the interruption of the artist in his clandestine operation.

undersized the smaller windows in the lower level of the model.<sup>273</sup> This misinterpretation of the model's scale also affected other aspects of the engraving. Later in the letter, when discussing the urban scenography created by his building, Wilkins questioned how Jerdan would be able to understand the height of the proposed building as 'No scale is added to the model, and his artist could only make a *rough estimate* of its height'.<sup>274</sup>

Wilkins' criticism of the published engraving resonates with a contemporary concern that the lack of a scale in an architectural model held the potential to deceive viewers.<sup>275</sup> Within a series of articles published between 1835 and 1850, the architectural critic William Henry Leeds examined the practical and methodological issues surrounding the correct use of models within contemporary architectural practice.<sup>276</sup> In an essay published in October 1835, Leeds considered how the architect should use various methods of representation in the design of buildings. Whilst not directly addressed to architectural students, Leeds' article had a didactic character and was clear in its message: architectural models were a tool to assist architects in understanding what their proposed buildings looked like prior to construction. According to Leeds, one benefit to the use of models was its legibility 'to those who are not conversant with geometrical designs'.<sup>277</sup> This advice, however, came with a warning: despite models appearing to be 'the most certain guide of all, [models] may, if incautiously trusted, greatly mislead'.<sup>278</sup> This legibility, Leeds proposed, was a key way in which models could deceive viewers:

[The model is] an exact representation of the building, but nothing more: there is no positive scale for the eye, so that either fancy or inclination may

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<sup>273</sup> 'The National Gallery', *Athenaeum*, 2 March 1833, p.135.

<sup>274</sup> 'The National Gallery', *Athenaeum*, 2 March 1833, p.135.

<sup>275</sup> W. H. Leeds, 'Modes of Architectural Representation', p.453.

<sup>276</sup> For a short biography of W. H. Leeds see: H. Colvin, *Biographical Dictionary of English Architects*, pp.510-511.

<sup>277</sup> W. H. Leeds, 'Modes of Architectural Representation', p.453.

<sup>278</sup> W. H. Leeds, 'Modes of Architectural Representation', p.453.

exaggerate its dimensions, and bestow upon it an importance the building itself will not possess.<sup>279</sup>

Wilkins was therefore typical in his concerns about the limitations of models and the possibility of their potential ‘deception’. In response to Wilkins’ letter to the *Athenaeum*, Jerdan described the engraving as ‘sufficiently indicating its [i.e. Wilkins’ design] general character and outline to every professional eye’.<sup>280</sup> According to Jerdan, it was ‘a clever young architect, and one of the most accomplished draughtsmen in London, [who had] studiously examined the model’. Whilst the draughtsman ‘could not use his pencil in elaborating details’, Jerdan declared, ‘we are assured, by most competent judges, that more than justice has been done to the architect in this “libellous” sketch.’<sup>281</sup> If, as Wilkins suggested, however, his model lacked the relative elements of scale and site or location then what was its assigned purpose? In the *Literary Gazette* from 16 March 1833, Jerdan noted that ‘a very intelligent artist’ had visited the model at the Office for Woods and Forests and informed the journal that portions of the model were covered with sheets of paper.<sup>282</sup> It is unclear whether the sheets of paper covered up the ends of the model to help Wilkins focus on the design of the central portion of the building or to hide an abandoned element of the design from public view. However, it would appear from other descriptions that the model was made with moveable components that would allow viewers to test different formal arrangements. In an editorial in the *Literary Gazette* from 15 February 1834, Jerdan claimed that one of the discrepancies between the illicitly published engraving of 23 February 1833 and the model was due to the variable nature of the object itself:

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<sup>279</sup> W. H. Leeds, ‘Modes of Architectural Representation’, p.453.

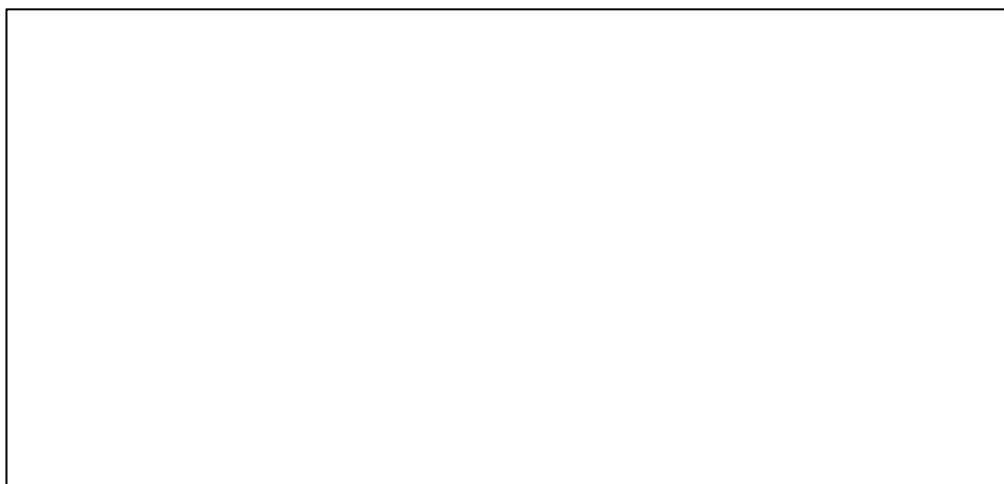
<sup>280</sup> ‘Fine Arts: The National Gallery’, *Literary Gazette*, 2 March 1833, p.138.

<sup>281</sup> ‘Fine Arts: The National Gallery’, p.138.

<sup>282</sup> ‘Happening to look in when the whole of the model was disclosed, I objected to the ends [of the proposed National Gallery] as unnecessarily weak and flimsy. After some discussion, I was informed that those ends were not decided on; that in consequence of various remarks, Mr. Wilkins had consented to alter them; and further, that sheets of blotting paper, (*which somehow were then removed,*) had been placed over those ends *by Mr. Wilkins himself*. To prevent further criticism on that point, and to tally with Mr. Wilkins’ intention, the papers were immediately (*in my presence*) replaced.’ ‘Fine Arts: The National Gallery’, *Literary Gazette*, 16 March 1833, p.171, ft. \*.

‘Our smaller domes [in the 23 February 1833 engraving] were also misplaced, at least [they] differ from their present disposition; but as they were movable, they had probably been shifted on the model by some ingenious amateur.’<sup>283</sup>

The language of these editorials and letters often refers to ‘the scientific and professional world’ or the ‘professional eye’, which can use or interpret the model correctly, unlike the ‘ingenious amateur’ whose poor judgement in the adaption of the model leads to mistakes and faults. This language is connected to the development of professional practice in the period. Larson and Friedson note that as a part of the social construction of a hypothetical profession, only the profession itself has the recognised ability and agency to declare external evaluation and opinion illegitimate – we see this in Wilkins’ letters in reply to particular issues to the various journals. Additionally Valérie Fournier describes how the authority of a profession relies upon the construction of a boundary between the professional and the layperson – in this case through the ability to make appropriate use of the architectural model on display.<sup>284</sup>



**Figure 14**

Two elevations – ‘As now erecting’ and ‘As it appeared in the L.G. No.480’ ‘The National Gallery’, *Literary Gazette*, 8 March 1834, p.176.

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<sup>283</sup> ‘Fine Arts: The National Gallery’, *Literary Gazette*, 15 February 1834, p.176.

<sup>284</sup> V. Fournier, ‘Boundary work and the (un)making of the professions’, pp.73-74.

Alongside the question of the agency of a model, the argument between Wilkins and Jerden enlarged to address issues regarding the authority of the architect. On 4 March 1833, in a letter to the *Morning Herald*, Wilkins confronted the claims made by the *Literary Gazette*. Prefiguring Leeds' later suggestions about architectural models, Wilkins proposed that the lack of scale or surrounding context in his model meant that it was impossible to judge the proposed building in relation to Trafalgar Square. In order to test this situation a second model of the project was to be commissioned by Wilkins, a fact he made clear to the public in a letter to the *Morning Herald* from 4 March 1833:

‘An accurate and highly-finished model of the buildings in the neighbourhood is in preparation, for the purpose of being submitted to the authorities, who will finally decide upon the line [of the Gallery’s façade]. In this the positions of all the surrounding buildings will be accurately shown, and that part of the model representing the intended buildings so managed as to show the latter, under all the varieties of position. Gentlemen connected with the Press will be afforded an opportunity of seeing it when completed, which will be in about three weeks.’<sup>285</sup>

Until this second model was completed, Wilkins requested that the press, and particularly Jerdan, ‘suspend your judgement on this point, which is a simple question of taste’.<sup>286</sup> Here Wilkins was referring to the discussions in the press on his ‘low and beautiful Greek structure’ that was considered inappropriate for the constraints and prominence of the site, the atmospheric conditions of London, and ‘anomalous’ when considered alongside the neighbouring church of St Martin-in-the-Fields. Here I propose that we see the architectural profession attempting to make a distinction between moral authority and technical authority.<sup>287</sup> Unlike aesthetic judgments made by non-professionals, Wilkins proposes that his authority in the matter is technical. This authority is derived from professional expertise in

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<sup>285</sup> ‘New National Gallery and St. Martin’s Church’, *Morning Herald*, 4 March 1833, 3.

<sup>286</sup> ‘New National Gallery and St. Martin’s Church’, 3.

<sup>287</sup> K. M. Macdonald, *The Sociology of the Professions*, p.169.



the application of knowledge; in this case how to use an architectural model to design a building.

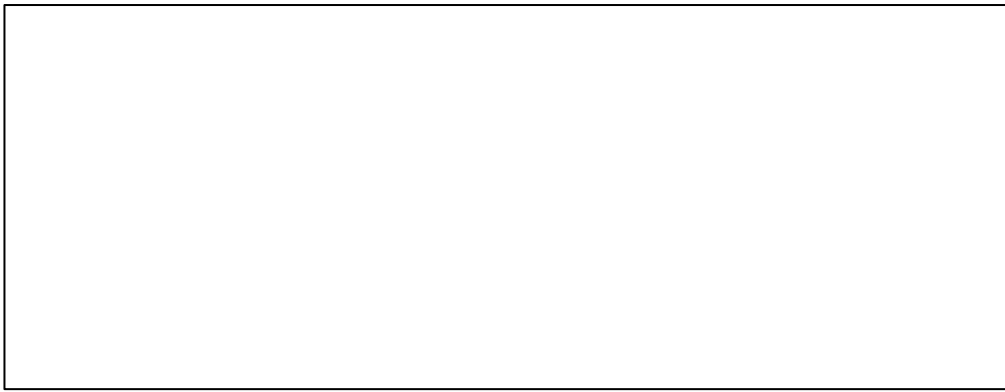
The second model was produced for Wilkins by the prominent model-maker Richard Day between March and August 1833.<sup>288</sup> On 24 August 1833 Wilkins wrote to one of his supporters, the politician Thomas Spring Rice, to invite him to inspect the second model, 'by which you may judge the proportionate magnitude'.<sup>289</sup> Unlike the first model, which depicted the principle elevation, the second model represented the massing of the gallery in the context of the site. In his letter to the *Morning Herald*, Wilkins' description indicates that this second model allowed for the objective assessment of the proposed building in relation to the existing buildings. Despite the fact that the model no longer survives we can understand the two positions of the building that were displayed: a plan published alongside Wilkins' letter to the *Athenaeum* shows the two options for the alignment of the façade (Fig. 15). Additionally, a year later the model made an appearance in public when exhibited alongside a selection of Richard Day's other models at the National Gallery of Practical Science in February and March 1834.<sup>290</sup>

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<sup>288</sup> This dating is based on the fact that whilst Wilkins' letter suggests that the second model was in preparation in February 1833, it does not appear to have been exhibited even privately until August 1833.

<sup>289</sup> NG, 5/18/4, Letter from William Wilkins to Board of Trustees, 10 September 1833.

<sup>290</sup> The National Gallery of Practical Science was housed on the north side of the Lowther Arcade, a shopping passage built by John Nash on the north side of the western end of the Strand in 1831. Popularly known as the Adelaide Gallery (or Royal Adelaide Gallery), the Long Room (the main hall) was primarily used for the display of various scientific and mechanical models. A drawing of the gallery by George Scharf from 1832 survives in the British Museum (BM, 1862,0614.689) and an engraving by Thomas Kearnan from c.1840 in the Science Museum (Science Museum, 1987-708). R. D. Altick, *The Shows of London* (Cambridge, Mass./London, 1979) pp.375-389.



**Figure 15**

William Wilkins, *Site of the Proposed National Gallery*  
'The National Gallery', *Athenaeum*, 2 March 1833, 136.

This second model, made with adjustable or alternative parts to demonstrate the two possible alignments of the building, was the instrument through which accurate assessment could be made about 'the proportionate magnitude' of Wilkins' proposal. In contrast with the inaccurate elevation produced by the *Literary Gazette*, Wilkins' model could be viewed as an 'accurate and highly-finished' implement suitable for the objective assessment of the proposed Gallery's effect on Trafalgar Square. Before continuing with a discussion of the role played by models in the design of the National Gallery, it is worth reflecting on the theoretical implications of the model produced by Richard Day. As W. H. Leeds noted in October 1835, models rarely took into account the proposed building's context. In order to avoid misconceptions of the proposed visual effect caused by the absence of adjacent buildings, Leeds proposed adding 'cardboard elevations of a part of each adjoining building'.<sup>291</sup> This issue was also raised by an entry on 'Models, Architectural' in the *Penny Cyclopædia*. Despite their expense models should be produced, the entry suggested, in order to offer a clearer idea of the proposed building than could be obtained from drawings alone by individuals unfamiliar with orthographic representations.<sup>292</sup> In addition to their role as a tool of communication, the entry proposed that for architects the model held the ability to test ideas that drawings left under-examined.<sup>293</sup> However, the entry outlined that there were still doubts as

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<sup>291</sup> W. H. Leeds, 'Modes of Architectural Representation', p.453.

<sup>292</sup> 'Models, Architectural', p.294.

<sup>293</sup> 'Models, Architectural', p.294. 'Besides, even when an architect has thoroughly considered all his preparatory drawings, he may still find out something that, if not absolutely faulty, might be

to the truthfulness and reliability of architectural models in practice. The author suggested that models often ‘convey no idea of the situation, but merely show the building itself’.<sup>294</sup> The author argued that drawings of the building should be used to mitigate these issues including ‘an exact plan of the situation, and one or more views, as may be, showing it as it will actually appear when erected’.<sup>295</sup>

On 10 September 1833, Wilkins wrote to the Gallery’s Board of Trustees and informed them that the models of the National Gallery were to be inspected by King William IV.<sup>296</sup> The following day Wilkins presented his models and plans to the King, and the event was reported in the *Athenaeum*:

‘[Wilkins] had the honour of submitting his plans and models to the King, at St. James’s Palace. His Majesty expressed his unqualified approbation of the designs. Some alterations in the elevation having been suggested by persons whose taste and judgement entitle their opinions to consideration, the models were exhibited under both aspects for his Majesty’s decision. The King gave a most decided preference to the design as it was originally intended, which will consequently be adopted.’<sup>297</sup>

Whilst the King signed the drawn ground plan presented by Wilkins, architectural models operated at a number of levels in the process of judgement.<sup>298</sup> Initially the two architectural models, with integral adjustable elements, allowed Wilkins to examine the composition of the façade and the position of the building line in relation to the context. Second, in chorus with a series of orthogonal drawings, the models were displayed to the King in two permutations in order for him to pass judgement on Wilkins’ designs. Finally, underpinning the various incidents surrounding the models there is the political power and professional control that

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considerably improved – something that he had thought would have had a different effect, and which therefore, if detected in the model, can still be remedied.’

<sup>294</sup> ‘Models, Architectural’, p.294.

<sup>295</sup> ‘Models, Architectural’, p.294.

<sup>296</sup> NG, 5/18/6, Letter from William Wilkins to Thomas Spring Rice, 24 August 1833.

<sup>297</sup> ‘Our Weekly Gossip on Literature and Art’, *Athenaeum*, 14 September 1833, p.619.

<sup>298</sup> TNA WORK 33/910, National Gallery, Principal floor plans, September 1833.

the model provided to Wilkins. Whilst architectural history has something of an obsession with the role played by perspectival drawing in power relations few have discussed the political implications of architectural models.<sup>299</sup> In the case of the National Gallery, Wilkins not only held the instrument of judgement but also dictated when and how the press could interact with the models. When engaging with figures that were politically more important than him, Wilkins offered the model as a legible demonstration in order to gain their support for his design.

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<sup>299</sup> The exceptions are: S. Frommel, 'Les maquettes de Giuliano da Sangallo', *Les Maquettes*, pp.83-84; H. Giesler, 'Architectural Models in the Nazi Era' in O. Elser, and P. C. Schmal eds., *Das Architektur Modell: Werkzeug, Fetisch, kleine Utopie*, pp.98-105. For studies of perspective and power I refer to R. Evans, 'When the Vanishing Point Disappears', *AA Files* 23 (1992) 1-12; E. Panofsky, *Perspective as Symbolic Form*, trans. C. Wood (New York, 1997); M. Trachtenberg, *Dominion of the Eye* (Cambridge/New York, 1997); R. Evans, 'In perspective: conceptual vs. actual structure', *Perspecta* 31 (2000) 46-49; N. Temple, *Disclosing Horizons: Architecture, Perspective and Redemptive Space* (London, 2006).

## 2.2 Royal Exchange

Architectural competitions in nineteenth-century England were one particular thematic area where the truthfulness and validity of architectural models was tested in relation to professional authority. The procurement of buildings through open or limited competition was a key feature of architectural practice in the nineteenth century. Twentieth-century historians have explored how the mechanism of the competition system directly influenced the development of the architectural profession and the architectural styles of the nineteenth century.<sup>300</sup> Geoffrey Tyack and M. H. Port, at the end of the twentieth century, proposed that holding a competition was the general public's preference for public buildings because it appeared the fairest way of obtaining the best possible design.<sup>301</sup> In particular, Joan Bassin suggested that the competition system was the favoured solution to procurement for a collective client responsible for the civic, administrative, and public structures in rapidly industrialised British cities.<sup>302</sup> Bassin, writing in 1984, proposed, 'Models were virtually never used' in the competition process.<sup>303</sup> Rarely used would be the more correct description, but when they were used they were revealing about the nature of professional practice in the nineteenth century.

But was the absence of models a deliberate strategy by those organising architectural competitions? If so, this strategy appears at odds with contemporary debates. As has been demonstrated earlier in this chapter, the practical use of models as tools of judgement was a topic of discussion within the architectural community during the nineteenth century. The architectural critics in the press that we have encountered

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<sup>300</sup> J. Summerson, 'A Victorian Competition: The Royal Courts of Justice', in *Victorian Architecture: Four Studies in Evaluation*, (New York / London, 1970) pp.77–118; R. H. Harper, *Victorian Architectural Competitions: An Index to British and Irish Architectural Competitions in The Builder 1843-1900* (London, 1983); J. Bassin, *Architectural Competitions in Nineteenth-Century England* (Ann Arbor, 1984).

<sup>301</sup> G. Tyack, *Sir James Pennethorne and the Making of Victorian London* (Cambridge, 1992); M. H. Port, *Imperial London: Civil Government Buildings in London 1851 – 1915* (New Haven and London, 1995) pp.161-165.

<sup>302</sup> J. Bassin, *Architectural Competitions in Nineteenth-Century England*, pp.6-7.

<sup>303</sup> J. Bassin, *Architectural Competitions in Nineteenth-Century England*, p.16.

– W. H. Leeds, Henry Fulton, and ‘Candidus’ – all emphasised the ability of models to communicate with lay clients, as well as the accuracy of that message. This section will begin with a closer reading of what the architectural community thought about the use of models in competitions at the time of the Royal Exchange competition (1838-40). Through the episode of the Royal Exchange, the role of models within the competition process will then be explored. Finally, the section will examine the consequences of the competition process and how the debate surrounding the efficacy of models as an accurate representation of a design was played out in the popular press.

Prior to the Royal Exchange competition there were concerns surrounding the decision-making process of competitions more generally. One attempt at reform was the establishment of an investigative committee on competitions established by the RIBA in 1838. The committee’s report proposed that in the process of selecting an architect by competition:

‘Perspective drawings, if correctly made, are certainly desirable to show the proper effect of designs; but they should be restricted to specified points of view. Models should be received with caution as not being unexceptional tests of the merits of a design.’<sup>304</sup>

In the eyes of the profession’s own committee on the subject, a ‘correctly made’ perspective drawing could depict the effects of proposed designs and therefore held primacy in the judgement of an architectural competition. By restricting the perspective drawing to specific points of view, the committee were trying to establish a framework from which objective judgements could be made. Architectural models, on the other hand, came with a caution, as the committee held the opinion that they were not ‘unexceptional tests’ of the quality of a

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<sup>304</sup> ‘Extract from a Report of the Committee appointed to consider the subject of Public Competitions for Architectural Designs. Laid before the Special General Meeting, held 24<sup>th</sup> January 1939’, *CEAJ* (May 1839), 183.

proposed design.<sup>305</sup> It should be noted that unlike perspective drawings the RIBA committee offered no practical method for the ‘correct’ use of architectural models. This assessment of models was at odds with other opinions voiced by the RIBA. Two years earlier at the Annual General Meeting on 22 May 1836, in a report on the institute and the architectural profession, the desire to prepare and exhibit buildings in the form of models was justified as ‘a model conveys so perfect an idea of the object contemplated’.<sup>306</sup>

Many commentators in the architectural press discussed the issue further. In an 1841 pamphlet the engineer Henry Austin proposed a series of measures including standardised competition particulars, the public exhibition of entries at the RIBA, and the employment of RIBA members as impartial judges.<sup>307</sup> Summarising his opinion, Austin noted, ‘coloured views would of course be prohibited, [...] models would be unnecessary, and all useful information would be afforded without trouble or loss of time’.<sup>308</sup> Austin’s aim was to provide a standardised framework for the management of competitions rather than to regulate the correct use of architectural models in those competitions. An article published in the December 1843 edition of the *CEAJ* raised issues surrounding the ability of either drawings or models to communicate the merits of a design. As with many of the other viewpoints I have examined so far in this thesis, the author raised the concern that the prettiness of the drawings and models distracted from the ‘truth’ of the design itself.<sup>309</sup>

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<sup>305</sup> I have taken my definition of ‘unexceptional’ from the Oxford English Dictionary which defines the adjective as ‘To whom, or to which, no exception can be taken; perfectly satisfactory or adequate’, citing several nineteenth-century examples including Robert Browning, J. S. Mill, and John Ruskin. <http://www.oed.com/view/Entry/213037#eid16840112> [accessed on 17 January 2018].

<sup>306</sup> ‘Report of the Council’, *Transactions of the Institute of British Architects: Sessions 1835–36. Vol. 1. Part 1.* (London, 1837<sup>2</sup>) p.24.

<sup>307</sup> H. Austin, *Thoughts on the Abuses of the Present System*, pp.14-17.

<sup>308</sup> H. Austin, *Thoughts on the Abuses of the Present System*, p.22.

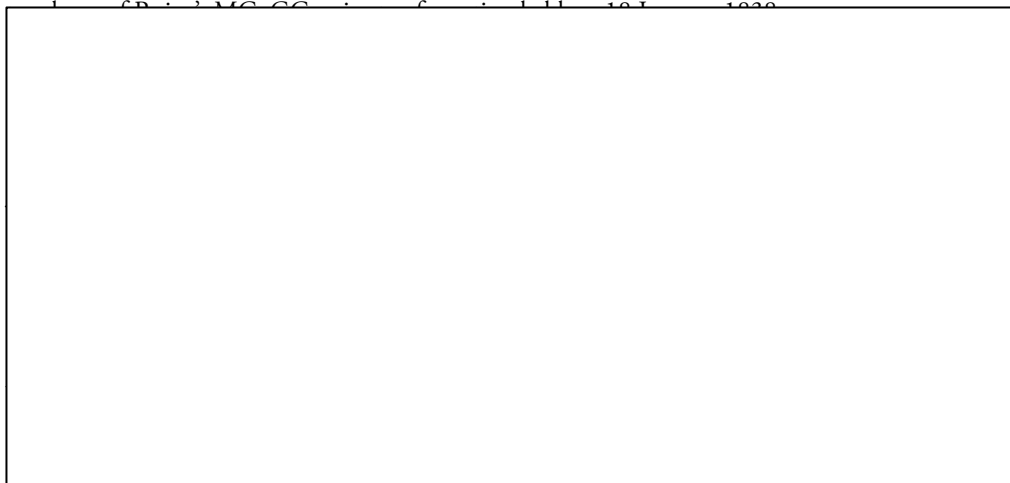
<sup>309</sup> ‘On the Modern Practice of Competitions’, *CEAJ* (December 1843) 433

On 10 January 1838 the Royal Exchange in the City of London was destroyed by fire.<sup>310</sup> The loss of the building was seen to be potentially catastrophic for trade in the City. A building committee was formed jointly from the Corporation of the City of London and the Mercers' Company. Despite the complexity caused by the involvement of two organisations within the decision-making process, Richard Lambert Jones, the chairman of the committee, resolved that the design of the new Royal Exchange would be procured by an open competition.<sup>311</sup> This episode has been explored before, beginning in 1896 with J. G. White's *History of the Three Royal Exchanges*.<sup>312</sup> More recent scholarship by M. H. Port questions White's account and offers a revised building history of the Royal Exchange.<sup>313</sup> Despite his brilliant account of the rebuilding process, however, what has not been explored before is the role of models in the episode, in particular the way in which professional authority and the validity of architectural models as a tool for communication was played out in the public sphere.

The new Royal Exchange was to be located on the site of the previous building, to the east of the Bank of England in the City of London. Whereas the previous building had entrance porticos on both north and south elevations to face the two main thoroughfares of Threadneedle Street and Cornhill, the new Royal Exchange was to have its primary façade to the west. Through compulsory purchases of various properties to the east and the demolition of old bank buildings to the west,

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<sup>310</sup> According to George Smith, Surveyor to the Mercers' Company, the whole building was 'reduced





the site was extended to form an irregular oblong of 302 by 168 feet with the streets either side widened (Fig.16).<sup>314</sup>

### **Figure 16**

Royal Exchange Competition Site Plan  
'Instructions to Architects', MC, GC, p.4.

By 26 March 1839 the Joint Gresham Committee had decided on the rules of the competition for a new Royal Exchange with three premiums to be offered for designs adjudged by the committee to be the best.<sup>315</sup> Each entry was required to submit a complete set of orthographic drawings alongside two perspective drawings – a view from the west and a courtyard interior. The competition particulars stated that 'no model, sketch, perspective, or coloured drawing (save two such perspective drawings as are described in the previous resolution) shall be received'.<sup>316</sup> A deadline for the competition was set of 1 August 1839. Various individuals and institutions raised concerns about the timeframe of the competition process and the proposed building's programmatic requirements.<sup>317</sup> Thomas Hopper, an architect who had been narrowly defeated in earlier competitions used the occasion to publish a pamphlet on the judge competitions process, which called for shortlisted entries to a competition to be modelled.<sup>318</sup> In their review of his pamphlet, the *CEAJ* agreed with Hopper's proposal and suggested that in a design competition all models should be made to the same scale and accompanied with a perspective view in order

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<sup>314</sup> The ground plan of the site issued for the competition offers the clearest depiction of this: MC, GC, minute of meeting held on 26 March 1839, Instructions to Architects, p.4.

<sup>315</sup> MC, GC, minute of meeting held on 26 March 1839.

<sup>316</sup> MC, GC, minute of meeting held on 26 March 1839.

<sup>317</sup> MC, GC, minute of meeting held on 24 April 1839, Letter from T. L. Donaldson to the Joint Gresham Committee; 'Paper Read by W. Tite, Esq., President of the Architectural Society, at the Last Soiree of the Season, 1839', *CEAJ* (July 1839) 242-243.

<sup>318</sup> Hopper proposed that two different sets of judges would choose two sets of three to five architectural designs, which would then be modelled and exhibited publically before a winner was chosen.

to show the appearance of the building in relation to the site.<sup>319</sup> The review explained, the reason for this was that when used in isolation, ‘models are most fallacious, and moreover captivate and delude the eye by a certain prettiness that would not belong to the buildings erected from them’.<sup>320</sup> As described there were a host of diverging theoretical views on the accuracy of architectural models during the nineteenth century. Likewise in practice, within the Royal Exchange competition, architects, clients, critics, and the general public proposed different views on the subject.

On 7 September 1839 Robert Smirke, Philip Hardwick, and Joseph Gwilt were appointed judges with thirty-eight entries submitted for the competition.<sup>321</sup> The judges submitted a shortlist of five entries that fell within the cost limits of the project to the building committee.<sup>322</sup> Based on the demonstration of artistic skill rather than economical planning and a concern for building costs, a second class of winners was also submitted by the judges, which included designs by T. L. Donaldson, Henry Richardson, and David Mocatta. No overall recommendation was provided. As the judges had established no clear winner, the Committee approached Smirke, Hardwick, and Gwilt collectively to prepare a plan and specification for a new Exchange from the competition.<sup>323</sup> All three judges declined the opportunity. A further twist occurred in November 1839 when it was revealed that the entry of Henry Richardson was in fact the design of his employer, C. R. Cockerell.<sup>324</sup>

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<sup>319</sup> ‘Reviews: A Letter to Lord Viscount Melbourne on the Rebuilding of the Royal Exchange. By Thomas Hopper, Architect.’, *CEAJ* (April 1839) 143.

<sup>320</sup> ‘Reviews: A Letter to Lord Viscount Melbourne on the Rebuilding of the Royal Exchange’, 143.

<sup>321</sup> MC, GC, minutes of meetings held on 27 August 1839 and 6 September 1839.

<sup>322</sup> LMA, CLC/521/MS04952, Bound volume of papers by Joseph Gwilt relating to the Royal Exchange’ [hereafter ‘Gwilt Papers’], ‘The Royal Exchange – Report of the Architects’, 2 October 1839, f.2v. The five consisted of William Grellier, Alexis de Chateaufeuf and Arthur Mee, Sydney Smirke, Thomas Wyatt and David Brandon, James Pennethrone.

<sup>323</sup> LMA, ‘Proceedings’, minute of a meeting held on 5 November 1839.

<sup>324</sup> LMA, ‘Proceedings’, minute of a meeting held on 14 November 1839. It appears that Cockerell was distrustful of competitions; in the rough notes for his third Royal Academy lecture of 1848, Cockerell declared, ‘tho’ all of us have been invited to plans and Estimates, and until taste has its exclusive attendance [...] convenience, cheapness and interested views will of course prevail’.

Initially reluctant to abandon the competition, in February 1840 the committee asked six architects to submit a new design.<sup>325</sup> The architects nominated by committee consisted of the original judges: Smirke, Hardwick, and Gwilt; one of the original entrants: Cockerell; and two new names in William Tite and Charles Barry. All declined the invitation except Tite, who suggested to Cockerell that they should collaborate as they had done previously at the London and Westminster Bank building in Lothbury (1837).<sup>326</sup> Cockerell declined the offer but this did not dissuade Tite. On 11 February 1840, the committee set a limited competition between Cockerell and Tite.<sup>327</sup> According to his assistant John Eastly Goodchild, Cockerell accepted the challenge on the understanding that new design would not be required. Instead Cockerell would prepare a ‘model to a good scale, with the addition of other drawings’ in order to demonstrate his design to the committee.<sup>328</sup> Examining the minutes of the committee meetings however, it is less clear that Cockerell’s intention to demonstrate the merits of his competition design through a model was as clear as Goodchild indicated. Included within Cockerell’s competition entry was a rendered perspective view of the courtyard, which was drawn with two columns removed from a ground level colonnade in order to offer a greater impression of the space than would occur in reality.<sup>329</sup> Cockerell’s intention in producing the model may have been to counter Joseph Gwilt’s observation that Cockerell’s design would mean that ‘no more than 2/3 of the Court[yard] could be treated with Sun’s Ray’ due to its elliptical roof light with coving and a

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BAL, CoC/1/31: C. R. Cockerell Royal Academy lecture notes, 20 January 1848, ff.iv–v

<sup>325</sup> MC, GC, minute of meeting held on 3 February 1840.

<sup>326</sup> RIBA, BAL, VOL/77, ‘Reminiscences’, f.42.

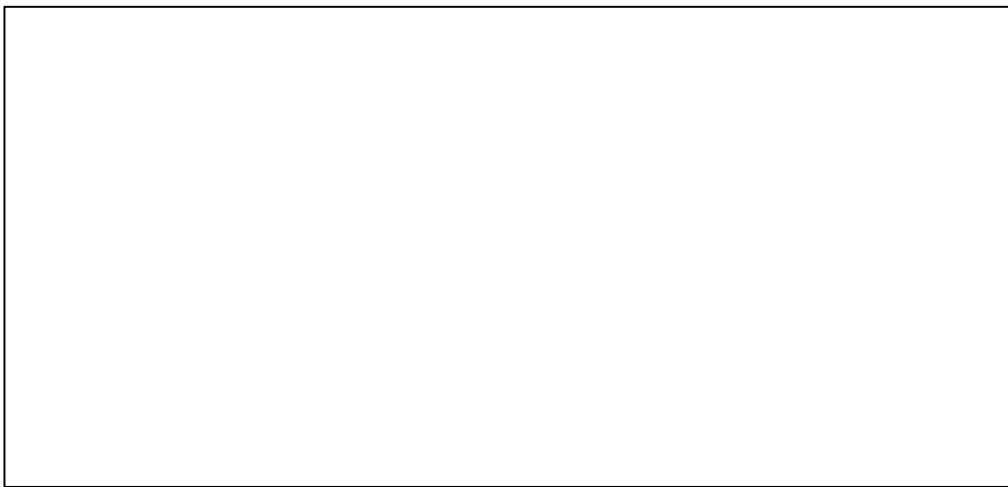
<sup>327</sup> LMA, CLA/062/04/019, *Royal Exchange: Extracts and Reports*, ‘Proceedings’, minute of a meeting held on 11 February 1840.

<sup>328</sup> RIBA, BAL, VOL/77, ‘Reminiscences’, ff.42-43.

<sup>329</sup> For the presentation drawing see: RIBA, BAL, VOL/77, ‘Reminiscences’, f.48. For what is likely to have been Cockerell’s original sketch see: RIBA, Drawings Collection, SC88/15(13): C. R. Cockerell, Preliminary studies for competition design for the Royal Exchange, perspective sketch of interior courtyard looking east. For my further study of the former drawing see:

<https://www.drawingmatter.org/drawings/fantasy-reality/cockerell-gwilt-and-royal-exchange-competition/>

balustrade.<sup>330</sup> In order to calculate this Gwilt produced a small sketch section of the courtyard with the position of the sun during winter and summer solstices.<sup>331</sup> Gwilt's drawing highlights how one of the issues at the centre of the Royal Exchange episode was the opposing claims of authority made by architects that 'truthful' representations of proposed designs could be provided through drawings or models alone.



**Figure 17**

C. R. Cockerell, Royal Exchange, View of Merchants Area, 8 September 1838. RIBA, BAL, VOL/77, 'Reminiscences', f.48.

On 28 April 1840 the Joint Gresham Committee received plans and accompanying reports from both Tite and Cockerell. Cockerell wrote to the Committee, offering them eleven drawings of his design and inviting them to inspect the model, 'explanatory of my design for the new Royal Exchange', at his office located close to

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<sup>330</sup> LMA, CLC/521/MS04952, 'Gwilt Papers', 28 September 1839, f.17v.

<sup>331</sup> LMA, CLC/521/MS04952, 'Gwilt Papers', undated, f.27r.

the Mercers' Hall at 20 Old Jewry.<sup>332</sup> At the same meeting a letter from William Tite was read, which questioned the validity of models as an accurate form of representation:

‘The mode, sometimes adopted, of exhibiting an architect’s intentions by a model was prohibited in this instance by the instructions of the committee. I do not complain of this, for models are said to raise expectations that are rarely realised.’<sup>333</sup>

In response the committee allowed Tite and Cockerell to attend the next meeting to present their designs in person on 4 May 1840.<sup>334</sup> Cockerell’s report, which he read at the meeting on 4 May 1840, provides a clear indication of his belief in the model as a valid instrument of representation.

‘I am sorry that it is not convenient to offer these explanations with the model before us [...] during the interval allowed, I thought myself best employed upon that model, because it is certain that no drawings however complete or numerous could convey all those relations and reflections which a model at once presents to the eye and understanding’.<sup>335</sup>

Previously unconsidered, these comments demonstrate the importance of the model to Cockerell as a design tool for himself and a method of communication to others. Significantly Cockerell states that the model conveys more information than a complete body of drawings could as different parts of a proposed design are shown relative to one another as a whole. Unfortunately the model produced for Cockerell does not survive but there are two accounts that offer a description. First, Goodchild recorded that it cost £400 and described it in detail:

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<sup>332</sup> MC, GC, minute of meeting held on 28 April 1840. Letter from C. R. Cockerell to the Joint Gresham Committee.

<sup>333</sup> MC, GC, minute of meeting held on 28 April 1840. Letter from William Tite to the Joint Gresham Committee.

<sup>334</sup> MC, GC, minute of meeting held on 28 April 1840.

<sup>335</sup> BAL. CoC/3/16: ‘Copy of C R Cockerell’s report to the Committee of the Gresham Trustees for carrying into execution the rebuilding of the Royal Exchange in London, 4 May 1840’, f.1v.

‘The model was made chiefly in wood, to a scale of half an inch to a foot, the total length being nearly twelve feet, it was raised upon a stage, to a proper height for the eye of the spectator, the floor of the inner quadrangle being absent so that the spectator could fit in his head and walk about it from end to end, the scale was sufficient for all the sculpture and chief ornamental parts were fairly represented, some of the ornamental parts were in plaster and the sculptures modelled in wax by W. H. G. Nicholl. All the Kings and Queens in their niches as in the previous building, the allegorical figures over the columns and in the spandrils [sic] of the arches of the exterior.’<sup>336</sup>

A second description of the model by W. H. Leeds published three years later in 1841 offers a different portrayal:

‘[The model] was nine feet six inches long. The streets on either side, from the Mansion House to St Peter’s, Cornhill, inclusive, on the south, and from Princes street, comprising the Bank to Bartholomew church on the north, were also modelled to scale, making altogether 28 feet long. It expressed the internal architecture of the Exchange, as well as its external west, south, and east fronts, and elevated to the level of the eye, enabled the spectator to judge of its relation to all the surrounding buildings.’<sup>337</sup>

When considered closely the two descriptions give a similar size for the model of the building. Therefore I propose that there was a single model rather than two different models. Leeds’ report of the surrounding building is supported by an article in the *Morning Chronicle* from May 1840 that mentioned ‘a large model, calculated fully to explain the design itself, and its relations to all the surrounding buildings and streets’.<sup>338</sup> Additionally a model set within its surrounding context would also have responded to earlier criticism in the architectural press which complained about the lack of representative information that showed ‘the comparative heights of the neighbouring buildings’.<sup>339</sup> It would also appear that Cockerell’s model was in line with the theoretical position advanced by Leeds in

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<sup>336</sup> BAL, VOL/77, ‘Reminiscences’, f.43.

<sup>337</sup> W. H. Leeds, ‘Article III: The New Royal Exchange’, *Westminster Review* 35 (January 1841) 66.

<sup>338</sup> ‘New Royal Exchange’, *Morning Chronicle*, 22 May 1840, 4.

<sup>339</sup> ‘Royal Exchange’, *The Civil Engineer and Architect’s Journal*, 2 (May 1839), 173

1835, which advocated modelling a proposal's surrounding buildings as well as positioning the model at eye height in order to offer viewers the opportunity for accurate visual judgement.<sup>340</sup> Further discussions about how to view models appear later in this Chapter during debates in the House of Lords. These discussions emerge again in Chapter 5 in the arguments surrounding the display of models in artistic exhibitions.

In 7 May 1840 Cockerell again wrote to request that the committee visit the model he had prepared in illustration of his drawings. The minutes of the meeting noted that 'most of the gentlemen of the committee stated they had already inspected the said model'.<sup>341</sup> After a protracted discussion and by a vote of thirteen to seven, Tite was declared the winner. It is clear from later meeting minutes that Cockerell wrote letters in objection to this result.<sup>342</sup> Although not supported by discussions in the minutes, Goodchild reported that 'the Committee had asked for designs and not for a model', implying that was why Cockerell did not win.<sup>343</sup> On 22 May 1840 Cockerell appeared at the Court of Common Council to petition in person. In order to test the relative merits of the two designs, Cockerell proposed that the committee should, 'instruct the City side of the joint committee to require my respected competitor, Mr. Tite, to prepare a model of his proposed edifice on the same scale'.<sup>344</sup> In support of Cockerell two members of the committee advised that 'a model was the best test, as it displayed defects as well as perfections'.<sup>345</sup> One member cited the example of James Walker's model of the proposed alterations to Blackfriars Bridge, which, 'convinced him of the advantages to be derived from making those alterations'.<sup>346</sup> In response another member denied the necessity of a

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<sup>340</sup> W. H. Leeds, 'Modes of Architectural Representation', 453.

<sup>341</sup> LMA, CLA/062/04/019, *Royal Exchange: Extracts and Reports*, 'Proceedings', minute of meeting held on 22 July 1840. According to a report in the *Morning Chronicle* Cockerell's model was seen by twenty or twenty-one members out of twenty-three on the committee. 'New Royal Exchange', *Morning Chronicle*, 6 June 1840, 4.

<sup>342</sup> MC, GC, minute of meeting held on 14 May 1840; 10 June 1840.

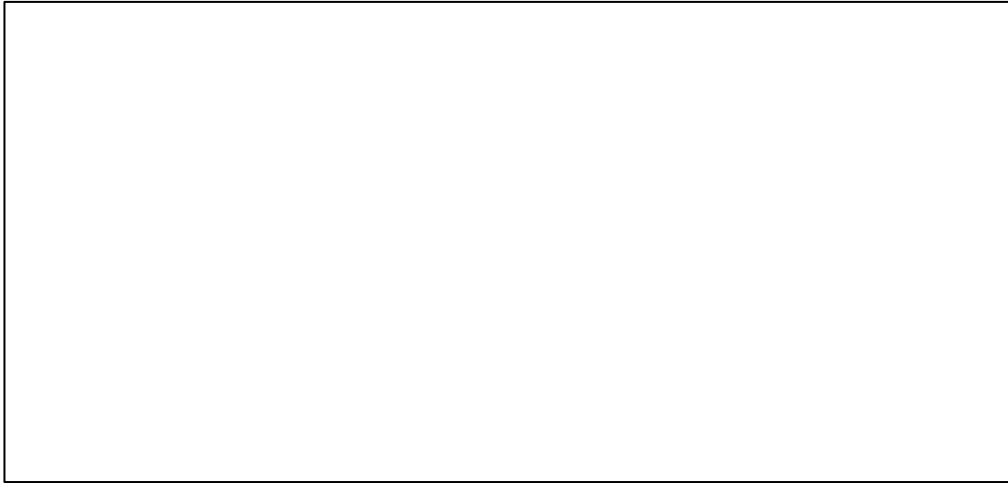
<sup>343</sup> BAL, VOL/77, 'Reminiscences', f.43.

<sup>344</sup> 'New Royal Exchange', *Morning Chronicle*, 22 May 1840, 4.

<sup>345</sup> 'New Royal Exchange', 4.

<sup>346</sup> 'New Royal Exchange', 4.

model in either situation and declared, 'Tite's drawings were quite sufficient and most fully described the merits of the designs.'<sup>347</sup>



**Figure 18**

William Tite, *The New Royal Exchange - View of the Western Front*, April 1840, MC Collection 0217.

During the summer of 1840 the debate about the validity of architectural models in professional practice moved from the committee room to being played out in the popular press. There was praise for Cockerell's design by W. H. Leeds, as well as condemnation for the committee and Tite's design in two mainstream newspapers, *The Times* and the *Globe*. Much of this criticism is recorded in Goodchild's folio, with later annotations added. One critique is enshrined in an editorial from the *Globe* from 3 June 1840, which stated that '[Tite's design] could not be modelled without betraying its defects'.<sup>348</sup> In fact, if a viewer was able to understand drawings, these defects were apparent in the perspective submitted by Tite in May 1840 (Fig.18). Underneath a lithograph copy of the drawing within the Goodchild album an annotation reads: 'The portico is made to appear of much greater projection by the depth of shadow than it would be in reality.'<sup>349</sup> In the same edition of the *Globe*, an anonymous letter quoted at length the benefits of the uses

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<sup>347</sup> 'New Royal Exchange', 4.

<sup>348</sup> RIBA, BAL, VOL/77, 'Reminiscences', f.53, newspaper cutting on far left of sheet: Leader, *Globe*, 3 June 1840.

<sup>349</sup> BAL, VOL/77, 'Reminiscences', f.50.



of models in design as proposed by Leon Battista Alberti in the first book of *De re aedificatoria*.<sup>350</sup> In addition to this fifteenth-century architectural authority, the letter cited the more recent discussion by Quatremère de Quincy on the uses of scale models by Michelangelo at the Palazzo Farnese and Claude Perrault for a full-scale model of a triumphal arch on Rue St-Antoine in the seventeenth century. Domestic architectural models by Christopher Wren were also mentioned including the model for a design of St. Paul's and the chapel at Pembroke College, Cambridge. Finally the anonymous letter concluded:

‘In truth the model is a troublesome and expensive preliminary that exposes those architects to impertinent criticisms, and puts an end to that suspense and curiosity in which it is in their interest to keep the public mind – till it is too late to alter and amend, and the percentage is duly received.’<sup>351</sup>

Most striking about this episode is how there is little stylistic or aesthetic judgement. Rather there is the invocation of methodological precedent from the great architects of Renaissance and Enlightenment Europe, as well as a domestic tradition with Wren. In addition, the contemporary relevance of the debate is emphasised through its presence in the letters and editorials of the popular press. For one summer at least it is clear that the discussion of models as the fit test of a design were in the public mind.

Following an appeal by Cockerell to the Treasury in July 1840, the First Commissioner of Works interviewed Lambert Jones who reassured him that the committee had not visited Cockerell's model in their official capacity.<sup>352</sup> Later in 1841 the *Westminster Review* reported how Lambert Jones told the Common Council of the Corporation of London that ‘he found all the best authorities opposed to models’, and that a City builder, who was a friend on whose experience

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<sup>350</sup> BAL, VOL/77, ‘Reminiscences’, f.53, newspaper cutting on centre left of sheet: ‘New Royal Exchange’, *Globe*, 3 June 1840.

<sup>351</sup> RIBA, BAL, VOL/77, ‘Reminiscences’, f.53, newspaper cutting on centre left of sheet: ‘New Royal Exchange’, *Globe*, 3 June 1840.

<sup>352</sup> MC, GC, minute of meeting held on 27 July 1840.

he trusted, had seen the model and assured him ‘it was a complete deception’.<sup>353</sup> Despite Cockerell’s appeals to various committees and groups, on 27 September 1840 Tite was formally awarded the commission for the Royal Exchange.

Later in January 1841, W. H. Leeds attempted to demonstrate how every aspect of Tite’s design from the functionality of the plan to the proposed rental yields of the shops was inferior to Donaldson and Cockerell’s proposals. Leeds’s main ire was reserved for the portico of Tite’s design and proposed that the perspective drawing produced by Tite concealed the lack of depth and ‘character’ in the portico. Referring to an analytical diagram of Tite’s drawing (Fig.19), Leeds explained how Tite’s perspective view, with a vanishing point that provided a flat-on view of the portico, was a deliberately deceptive choice.<sup>354</sup> Leeds suggested that in future, public competitions should be judged solely by members of the profession from much simpler instructions.<sup>355</sup> Alongside a written description, each architect would be required to submit simple plan and perspective drawings only. When the judges had difficulty in choosing between two sets of designs of equal merit, ‘each candidate should be requested to furnish a model, for which, whether successful or otherwise, he should be paid’.<sup>356</sup> Leeds proposed that despite the expensive and time-consuming nature of model making, there was an objective truth to models that was often absent in drawings, which could conceal unsuccessful elements by the deliberate selection of vanishing points.

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<sup>353</sup> ‘W. H. Leeds, ‘Article III: The New Royal Exchange’, *Westminster Review*, 35 (January 1841) 67.

<sup>354</sup> ‘W. H. Leeds, ‘Article III: The New Royal Exchange’, 80.

<sup>355</sup> ‘W. H. Leeds, ‘Article III: The New Royal Exchange’, 87.

<sup>356</sup> ‘W. H. Leeds, ‘Article III: The New Royal Exchange’, 88.



Figure 19  
 Analytic diagram of William Tite's perspective for the Royal Exchange  
 W. H. Leeds, 'Article III: The New Royal Exchange', *Westminster Review*, 35.1  
 (January 1841) 80.

### 2.3 New Law Courts

Despite the construction of new law courts at Westminster under the direction of John Soane in 1824, the tendency for barristers to practice both chancery law and common law meant that physical separation of courts and counsel between Westminster and the Inns of Court became highly inconvenient for the legal community.<sup>357</sup> The establishment of a professional organisation, the Law Society, in 1831 gave solicitors the collective vehicle to campaign for a central concentration of court and counsel in London. Despite a series of petitions and the establishment of various commissions a limited competition for new courts was not held until

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<sup>357</sup> S. Sawyer, 'Sir John Soane's Symbolic Westminster: The Apotheosis of George IV', *Architectural History* 39 (1996) 54-76.

February 1866. M. H. Port, John Summerson, and David Brownlee have all outlined the external factors, competition process, and construction of the New Law Courts.<sup>358</sup> I have the benefit of being able to draw on the background provided by this scholarship to explore how models were used in the design of the New Law Courts. Initially I will examine the use of models in the competition for the courts, before broadening the discussion of professional authority by examining how G. E. Street, and the First Commissioner of Works, used and commissioned models during the design process. Additionally I will demonstrate how debates in the House of Commons and the House of Lords became sites for the public discussion of architectural models alongside the pages of the architectural and popular press. Finally, this section will explore a hitherto unexamined model that was commissioned by Street to demonstrate (and offer a proof of) the effectiveness of his functional arrangement of the courts and its circulatory system.

Alongside ‘plans (with dimensioned rooms), long and transverse sections, and one or more perspective or “birdseye” views’, architects had the option to submit models for the New Law Courts to ‘illustrate’ their designs.<sup>359</sup> At the competition stage only two architects used models to describe their proposals. Alongside the requested drawings and a pair of additional diagrams, Henry Bayley Garling provided a model of unknown size, scope, and material.<sup>360</sup> Unfortunately the model does not survive and there is no mention of its presence in the exhibition of competition entries that was held at 33 Lincoln’s Inn Fields during March and

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<sup>358</sup> M. H. Port, ‘The New Law Courts Competition, 1886–67’, *Architectural History* 11 (1968) 75-93; J. Summerson, ‘The Law Courts Competition of 1886–67’, *RIBA Journal* 77 (1970) 11-18; J. Summerson, ‘IV. A Victorian Competition: The Royal Courts of Justice’ in *Victorian Architecture: Four Studies in Evaluation* (New York and London, 1973) pp. 77-117; M. H. Port, ‘From Carey Street to the Embankment – and back again!’, *London Topographical Record* 24 (1980) 167-190; D. B. Brownlee, *The Law Courts: The Architecture of George Edmund Street* (Cambridge, MA, 1984).

<sup>359</sup> TNA, WORK 12/33/1, ‘Courts of Justice Commission: Instructions for the Competing Architects’, p.12 (f.119).

<sup>360</sup> In his report, however, Garling made reference to the model and its purpose: ‘The Detail arrangements of the Courts will be best understood from the Plans and Model.’ H. B. Garling, ‘Palace of Justice: Description of Design by H. B. Garling’, p.6 in *New Courts of Justice* (London, 1867)

April 1867.<sup>361</sup> A second architect, John Pollard Seddon, also submitted an architectural model alongside his drawings for the competition. A series of photographs of this model survive in the RIBA Collection, presumably because of their display at the galleries at Conduit Street as a part of the Architectural Exhibition in the summer of 1867 – the Architectural Exhibition and its role in the display of models as a part of professional practice will be discussed further in Chapter 5 (Fig.19).<sup>362</sup>



**Figure 19**

J. P. Seddon, Competition Entry for new Law Courts, 1867.  
RIBA, SD89/1(2)

When displayed among the competition entries at Lincoln’s Inn Fields in March 1867 it appears that it was Seddon’s model itself, rather than photographs of the model, which was exhibited to the visiting public and legal profession.<sup>363</sup> The

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<sup>361</sup> ‘Questions’, *Building News* (22 March 1867) 216. Before demolition in 1911, 33 Lincoln’s Inn Fields was owned by H. M. Commissioner of Works. See: *Survey of London: Volume 3, St Giles-in-The-Fields, Pt I: Lincoln’s Inn Fields* (London, 1912) pp.35-38.

<sup>362</sup> ‘Four General Views of Model of Building (photographs of designs sent in competition for the New Law Courts)’, *Architectural Exhibition Society – Seventeenth Exhibition 1867* (London, 1867) p.25, no.320.

<sup>363</sup> The RIBA were also invited to a private view of the exhibition on 11 February 1867. RIBA, 1.2.3, LC/4/8/6, Letter to Council from Secretary of Law Courts Commission, 17 January 1867.

plaster representation allowed the architectural press to discuss, critique, or support Seddon's proposals. For instance, after declaring the Law Courts project to be the most important 'architectural work' in London since the Palace of Westminster competition in 1834, the *Building News* described how, 'Seddon has been at pains to produce a model in plaster in addition to drawings of the building which he would set up.'<sup>364</sup> A week later the same journal considered the notion that all the competitors should submit models and proposed:

'To the uninitiated public a model is always attractive, because it affords them an opportunity of forming some sort of judgment, without having to undergo the horrible task of trying to make out the relation of the several plans, elevations, and sections.'<sup>365</sup>

The benefit of architectural models was not just for the 'uninitiated public', however, but in order to allow all the competitors, 'equal chance with the public and non-professional judges'. The article advised that every architect should submit a model of his design, made from the same material and to the same scale. The importance of this idea to the anonymous author was clear. Whilst acknowledging the disappointment and anger that would be expressed by the competitors, the article called on the government 'to pause in such an important work [...] until they have had models made of the other designs'.<sup>366</sup> In particular, the article proposed that a row of models would allow judgement of the general composition to be made, whilst, 'a detail model of one bay' would offer a test to each architect's ability to the 'grouping and massing of parts.'<sup>367</sup>

Later the article raised the issue of urban scenography and townscape in relation to the new Law Courts.<sup>368</sup> In order to counter this neglect and help both judges and public understand the 'conditional elements' of each scheme, each competitor, he

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<sup>364</sup> 'The Designs for the New Courts of Law', *Building News* (18 January 1867) 52.

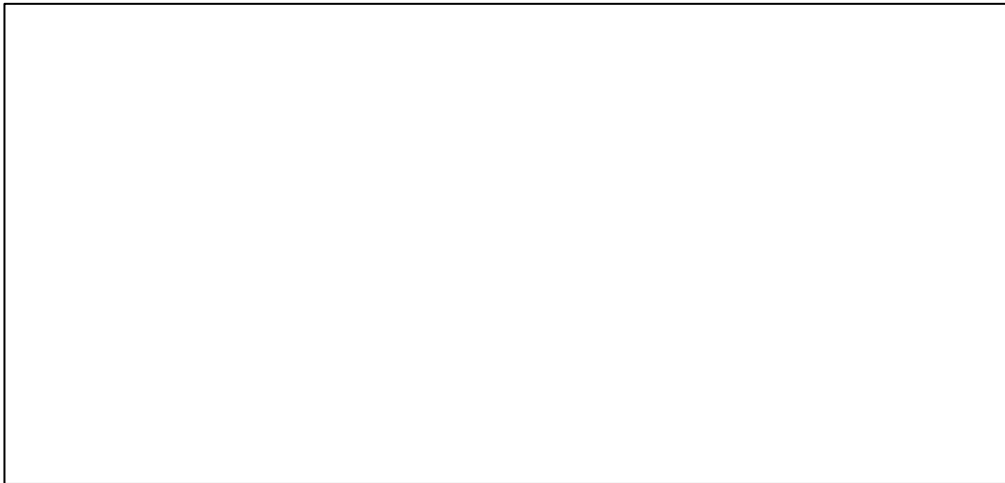
<sup>365</sup> 'Courts of Justice Competition', *Building News* (25 January 1867) 57.

<sup>366</sup> 'Courts of Justice Competition', 57.

<sup>367</sup> 'Courts of Justice Competition', 57.

<sup>368</sup> The author was critical of many of the competitors who 'have treated their designs with apparently the utmost contempt for the site'. 'Courts of Justice Competition', 58.

proposed, should submit a model with surrounding context. Without this, the author noted, it would be impossible to analyse ‘the merits and demerits of some of the schemes submitted.’<sup>369</sup> Whilst the base of Seddon’s model was planned to show the slope of the site along Bell Yard from Carey Street to the Strand, is worth noting that the report of the surveyors appointed by the competition commission judged that Seddon’s scheme *definitely* would not fit on the site – a fact evident in the block plan that accompanied the competition entry (Fig.20). At the same time as these debates in the architectural press, the need for a site or urban model of this rapidly changing portion of London emerged both in Parliament and amongst those employed by Office of Works.



**Figure 20**

J. P. Seddon, Competition Entry for new Law Courts, 1867.  
*New Courts of Justice* (London, 1867)

As Port, Brownlee, and Summerson explain, in a highly complicated series of events, George Edmund Street was appointed architect for the New Law Courts. The complication and confusion related to the project was compounded by the election of William Gladstone and the Liberal Party in December 1868, which led to the appointment of Austin Henry Layard as First Commissioner of Works. Following his appointment Layard stopped the bill for additional land purchases on the Carey Street site earmarked for the New Law Courts and began to consider a

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<sup>369</sup> ‘Courts of Justice Competition’, 58.

site on the Embankment.<sup>370</sup> As Port outlines there were concerns raised by both the legal profession and wider public about the alternative site and the position of the New Law Courts in both practical and aesthetic terms. More pertinent for this study, however, were the discussions regarding architectural models as a means to ‘view’ the proposals for various public buildings at both private departmental level and in public debates at the Palace of Westminster.

In March 1869 a confidential report recommended that an expert architectural advisor be appointed to assist the Office of Works. I propose that the appointment of an architectural advisor – filled initially by the architectural historian and critic James Fergusson – was only one part of Layard’s strategy.<sup>371</sup> The second was the conception, production and deployment of an architectural model of London at a moment when, in Layard’s view, ‘The Government had to decide upon the erection of a large number of important public buildings than had ever been raised in any capital at one time.’<sup>372</sup> This model is now lost. However its importance is cited in a series of documents and parliamentary discussions from 1869 as an object that allowed the Office of Works, figures in government, and later the wider public to examine the proposed buildings at this key stage in London’s development.

As the debate over the site for the Law Courts continued at the end of the 1860s, architectural models became a key component of how the project was discussed in Parliament. At the first reading of the bill for the purchase of the properties on and surrounding the Embankment site, Layard explained he was ‘strongly of opinion that no great public building ought to be erected without a model upon a large scale, having first been submitted to the public’.<sup>373</sup> Layard explained how a model would be the apparatus to publically display Street’s design to the government,

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<sup>370</sup> For a full discussion of this see: M. H. Port, ‘From Carey Street to the Embankment – and back again!’, *London Topographical Record* 24 (1980) 167-190.

<sup>371</sup> For a discussion on Fergusson’s role see: M. H. Port, ‘A Regime for Public Buildings: Experiments in the Office of Works, 1869-75’, *Architectural History* 27 (1984) 74-75.

<sup>372</sup> TNA, WORK 22/2/18, ‘Confidential Memorandum’, A. H. Layard, 4 November 1869, p.1.

<sup>373</sup> HC Deb, 10 May 1869, Vol. 196, cc.538-561.



opposition M.P.s, and broader tax-paying public, ‘in order that it might be seen and criticized.’<sup>374</sup> This idea was underlined a month later following the display of a ‘sketch’ of the New Law Courts in the Library of the House of Commons. When Layard was asked in Parliament whether he approved of the sketch, he reminded the House, however, ‘that the elevation was a mere sketch, and is so called by Mr. Street’.<sup>375</sup> Echoing his earlier comments, Layard noted:

‘If the House should approve of the erection of the Law Courts on the Embankment he should think it his duty to have a model placed in the Library, or some other part of the House to which Members might have access, and so be able to form an opinion.’<sup>376</sup>

Exactly when such a model was produced and when it appeared in the Library of the House of Commons is unclear. However, it appears to have been produced and displayed between May and November 1869 as the model is a key discussion point in the memorandum written by Layard following his dismissal as First Commissioner. In the memo Layard again outlined his intention that before ‘authorising an architect to proceed with the erection of any important public building’, drawings and ‘a complete model of such a building’ should be submitted to ‘public criticism’.<sup>377</sup> Layard suggested that this approach would avoid repeating many of the ‘architectural failures that are now seen in the Metropolis.’<sup>378</sup> In order to avoid this failure, one tactic Layard developed, ‘to give the public a just notion of the effect and position of a new public building, and of any intended Metropolitan improvement’, was the production of a model of the Embankment from Blackfriars Bridge to the Palace of Westminster. This model was ‘on a considerable scale’ and required the Chancellor of the Exchequer’s consent due to its expenditure.<sup>379</sup> A later Parliamentary discussion on expenditure from May 1871 indicated that £2,421 16s.

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<sup>374</sup> HC Deb, 10 May 1869, Vol. 196, cc.538-561.

<sup>375</sup> HC Deb, 3 June 1869, Vol. 196, c.1209.

<sup>376</sup> HC Deb, 3 June 1869, Vol. 196, c.1210.

<sup>377</sup> TNA, WORK 22/2/18, ‘Confidential Memorandum’, A. H. Layard, 4 November 1869, p.9.

<sup>378</sup> TNA, WORK 22/2/18, ‘Confidential Memorandum’, p.9.

<sup>379</sup> TNA, WORK 22/2/18, ‘Confidential Memorandum’, p.9.

3d. was spent on ‘a preparation of a plan and model in connection with the proposed Thames Embankment site of the New Courts of Justice’.<sup>380</sup> In 1869 Layard described the model:

‘This model has been completed under the very able superintendence of Lieutenant Cole, R.E. Upon it, nearly every building now standing is represented, and each building can be removed, and can be replaced on the model of any intended new building. I consider this model of permanent use and interest.’<sup>381</sup>

Interest in the model was not only reserved for the Office of Works. A report in the *Illustrated London News* explained that the model would be exhibited in the South Kensington Museum.<sup>382</sup> The purpose of this model, the newspaper explained, was ‘to aid in properly disposing of sites for public works’. As a result the model displayed both the possible sites for the New Law Courts, Carey Street and the Embankment, with the Embankment site ‘occupied by a model of the experimental design of Mr. Street’.<sup>383</sup> A catalogue entry from 1876 noted that the model was made from wood at a scale of 1 inch to 20 feet (modern scale 1:240).<sup>384</sup> Unmentioned in the catalogue entry, however, was the fact that the model was on display at the Bethnal Green Museum, ‘where it may be seen by those who desire to make use of it as a ready means of forming a judgment on the proposals made’.<sup>385</sup> Despite the display of the model in a public museum, by the following year sections of the architectural press became frustrated about the lack of detail, which Street offered only in an elevation drawing. In particular the *Builder* noted how unsatisfactory the front façade was, which the journal claimed should have been

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<sup>380</sup> HC Deb, 20 March 1871, Vol. 205, c308.

<sup>381</sup> TNA, WORK 22/2/18, ‘Confidential Memorandum’, p.9.

<sup>382</sup> ‘Chips’ *Building News* (4 February 1870) 100.

<sup>383</sup> ‘Chips’ 100.

<sup>384</sup> *Catalogue of the Collection Illustrating Construction and Building Materials* (London, 1876) 134 Y. Transferred to the Art Division of the Museum in 1873, the model appears to have disappeared when the Structural Collections were disbanded in 1882.

<sup>385</sup> ‘The Model of the Thames Embankment’, *Building News* (14 March 1873) 321.

presented to the public in a larger model.<sup>386</sup> The *Builder* repeated these claims again in March 1872 and May 1873, suggesting that there was further expectation from within the profession to both see models and that Street present his design to ‘public scrutiny’ through the medium.<sup>387</sup>

However, neither Port, Brownlee, nor Summerson make reference to architectural models produced by G. E. Street in the development of the design and construction of the New Law Courts. I described in Chapter 1, in my analysis on the role of architectural models in the pedagogical programme of the Royal Academy, Street emphasised the importance of drawing, particularly sketching in perspective, for the architect.<sup>388</sup> As I discussed earlier, Street’s remarks acknowledged that the speed and ease of perspective sketches were crucial in the architect’s professional life, where there was not time or money to make carefully constructed drawings or models in order to see how a building would appear in three dimensions. Models were, however, a part of Street’s own practice. When designing decorative sculpture and communicating with masons, Street believed that the architect should model all the sculpture or carving in a building.<sup>389</sup> And in addition to the model of the New Law Courts, in Chapter 5 I will explore a model of St. James-the-Less in Pimlico made for Street and displayed at the Architectural Exhibition in 1861. Additionally I have found discussions of a second model related to Street’s design for the New Law Courts. A review of the building from the *Building News* praised the complicated programmatic arrangement of the courts with various intertwined routes of circulation for judges, administrators, lawyers, plaintiffs, and public alongside the integration of modern building services. In particular the article described how in order for the arrangement of the building to be truly appreciated:

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<sup>386</sup> ‘The Proposed Courts of Justice’, *Builder* (2 December 1871) 949.

<sup>387</sup> ‘The Designs for the Law Courts’, *Builder* (30 March 1872) 237; ‘The New Courts of Justice’, *Builder* (31 May 1873) 431.

<sup>388</sup> ‘The Study And Practice of the Art of Architecture’, *Building News* (18 February 1881) 174.

<sup>389</sup> Street believed it was ‘impossible to direct another man [...] by giving drawings [...] and you must learn to give your instructions in the round’. G. E. Street, ‘Study and Practice of Architecture’, in A. E. Street, *Memoir of George Edmund Street, R.A., 1824–1881* (London, 1881) p.329.

‘The aggroupment and arrangement of several floors must be examined and considered vertically as well as horizontally, and their relative connection with and bearing upon one another must be taken into account’.<sup>390</sup>

How was this vertical and horizontal ‘aggroupment and arrangement’ resolved by Street and subsequently explained to the Commissioner of Works? Later in a more detailed description of a courtroom the article described how at the order of the Government, ‘a specimen court was selected for trial by means of a model’.<sup>391</sup> This courtroom was constructed at ‘a small scale’ alongside ‘the adjoining rooms, stairs, corridors, etc.’.<sup>392</sup> Subsequently the model was:

‘Explained by the architect, and which also was fully competent to explain itself, was minutely examined by some members of the Government, and particularly by the Chancellor of the Exchequer, by some of the judges, and by other official personages; and in the working of each of its component parts, as also in the combined action of all its parts, the model was unanimously declared to fulfil every requirement in the happiest and most satisfactory manner’.<sup>393</sup>

There are three significant aspects about the use of this model. First, Street used the model to explain his scheme in a manner that orthographic drawings, bound by convention, could not. There are of course other forms of drawing such as axonometric or isometric projection that have the ability to demonstrate the horizontal *and* vertical distribution of various rooms, corridors, and staircases. However, these forms of drawing appear to have been used in a very limited capacity in nineteenth-century architectural practice. Laurent Stalder and Moritz Gleich argue that until the turn of the twentieth century the primary purpose of architectural drawings was been to depict the appearance of a building rather than how it worked.<sup>394</sup> Similarly Yve-Alain Blois suggests that it is the axonometric

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<sup>390</sup> ‘The New Law Courts – II’, *Building News* (20 October 1871) 284.

<sup>391</sup> ‘The New Law Courts – II’, 285.

<sup>392</sup> ‘The New Law Courts – II’, 285.

<sup>393</sup> ‘The New Law Courts – II’, 285.

<sup>394</sup> L. Stalder and M. Gleich, ‘Stirling’s Arrows’, *AA Files* 72 (2016) 60.

drawing above any other form of representation that aims to unite all of the key elements of a building in a single frame.<sup>395</sup> Presumably the specimen court model fulfilled a similar, mechanistic role, as ‘the working of each of its component parts’ – ‘the adjoining rooms, stairs, corridors, etc.’ – was shown to operate in ‘combined action’. Second, whilst the architect explained the model, it was ‘fully competent to explain itself’. In other words it needed no explanation: the model rendered Street’s complicated ‘aggroupment and arrangement’ clearly to an audience from a variety of disciplinary backgrounds, some with specialist knowledge of aspects of the physical arrangement of a legal system and others without. Finally, the article described how Street repeated the ‘typical court’ around the central hall of the courts, ‘with certain slight modifications in some instances, such as might be demanded in certain positions on the general plan, and by special conditions of circumstances.’<sup>396</sup> I posit that the physical model operated conceptually as both an authoritative proof of Street’s circulatory planning of the New Law Courts *and* a prototypical ‘model’ to be adapted in the other courtrooms distributed within the complex.

#### 2.4 Admiralty and War Offices

As Michael Port outlines there were a host of options for new premises for both the Admiralty and the War Office between 1852 and the 1880s.<sup>397</sup> First proposed in 1852, new accommodation for the War Office was included as a part of the 1857 Government Offices Competition, which resulted in the construction of George Gilbert Scott and Matthew Wyatt’s Foreign Office completed in 1866. In the same year the Office of Works began to acquire property adjacent to Parliament and King Street by compulsory purchase for the future construction of governmental departments.<sup>398</sup> Various proposals were put before Treasury Select Committees in

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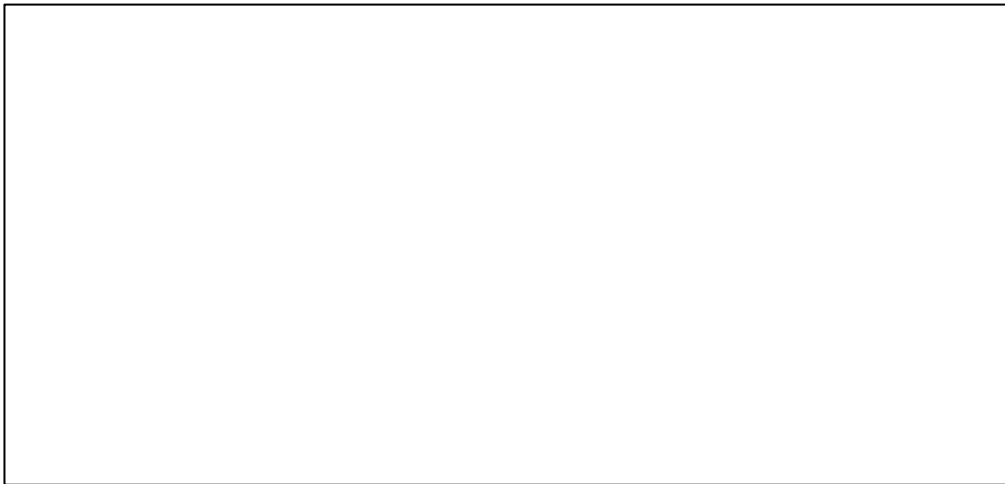
<sup>395</sup> Y-A Blois, ‘Montage and Architecture’, *Assemblage* 10 (December 1989) 114.

<sup>396</sup> ‘The New Law Courts – II’, 285.

<sup>397</sup> M. H. Port, *Imperial London: Civil Government Buildings in London 1851 – 1915* (New Haven/London, 1995) p.117

<sup>398</sup> M. H. Port, *Imperial London*, pp.118-119.

1867 and 1868 by Colonel Andrew Clarke, Admiralty director of works, who proposed a scheme for the rebuilding of the entire west side of Whitehall and Parliament Street for a linked range of offices<sup>399</sup> He presented them in two architectural models, one a site-wide depiction (Fig.21) and the other a portion of a single building, which showed the three-dimensional arrangement of floors, lightwells, and corridors.



**Figure 21**

Lieutenant-General Andrew Clarke

Model for the proposed rebuilding of Whitehall, 1869

E. I. Woodhead and G. L. Brighton (model-makers)

V&A, LOAN NATARCHIVESPRO.1-2003

By 1882 George Shaw-Lefevre, incumbent First Commissioner of Works, had lobbied the government and Parliament for support for a new complex for the Admiralty and War Office.<sup>400</sup> Shaw Lefevre announced that a two-tier competition was to be held in autumn 1883 for submission in March 1884.<sup>401</sup> When asked

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<sup>399</sup> The proposal amalgamated minor Government departments, the Metropolitan Police, the Treasury, and two courtyards containing the Admiralty and War Office. Clarke argued that his proposals provided ample accommodation for civil servants, police, and military at a lower cost for the public than any of the alternatives. 'On the Arrangement of Public Offices', *Builder* (13 March 1869) 200-202.

<sup>400</sup> HC Deb, 05 April 1883, Vol. 277, c.1481

<sup>401</sup> HC Deb, 5 April 1883, Vol. 277, cc1481-2.

about the topic in the House of Lords, Lord Thurlow, Paymaster General at the time, explained that there would be time for a discussion of any selected scheme to take place, ‘with the aid of plans and models’, due to the required demolition of the houses acquired by the government in Parliament Street.<sup>402</sup> A week later the Earl of Wemyss petitioned the government and Lefevre to locate the ‘model of the buildings proposed to be erected in Parliament Street’ when the Office of Works was directed by Layard.<sup>403</sup> At the same time as the discussions around the site for new Law Courts in 1869, the Office of Works commissioned a second model, of Whitehall, for a similar purpose. In response to the Earl of Wemyss, Lord Thurlow explained how the model of Parliament was missing.<sup>404</sup> Reminding the Commons that ‘the model cost £500, and was worth £1,500’, the Earl of Wemyss suggested that the Office of Works should make a further search.<sup>405</sup>

Despite questions about the use of models to aid explanation of the proposals, architectural models were not a part of the competition process for the Admiralty and War Office. Initially competitors were required to submit ‘sketch designs’ that comprised of outline plans, sections, and elevations in March 1884. Four members of the Office of Works and two professional judges – Philip Hardwick and Ewan Christian – worked through 128 entries to form a shortlist of nine competitors.<sup>406</sup> The nine shortlisted architects developed their schemes through more formalised orthographic drawings and perspective drawings of their proposed schemes, submitted by 21 June 1884.<sup>407</sup> From this shortlist the judges selected the little-known, Halifax-based architects John and Joseph Leeming.<sup>408</sup> Following their appointment John and Joseph Leeming were criticised in the architectural press for

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<sup>402</sup> HL Deb, 14 August 1883, Vol. 283, c454.

<sup>403</sup> HL Deb, 20 August 1883, Vol. 283, cc1317-20.

<sup>404</sup> HL Deb, 20 August 1883, Vol. 283, cc1317-20.

<sup>405</sup> HL Deb, 20 August 1883, Vol. 283, cc1317-20.

<sup>406</sup> TNA, WORK 12/115/4, Proceedings of the Committee of Judges of the designs [New War office].

<sup>407</sup> HC Deb, 01 May 1884, Vol. 287, cc1033-4.

<sup>408</sup> Port suggests first place was awarded to the Leemings’ scheme, ‘perhaps because they transgressed the [competition] instructions the least’. M. H. Port, *Imperial London*, p.235, caption for fig.246.

their proposal's handling of various classical motifs and overall massing.<sup>409</sup> Despite this, Lefebvre championed the proposal and guided the architects through a series of design changes.<sup>410</sup> Even at this early stage the architectural press called for a model to be made in order to help the public judge the winning submission:

‘As it is now proposed to carry out this design, we venture to offer a few suggestions, and first to express the hope that a model will be prepared to a sufficiently large scale to enable one to judge of grouping and of detail. To think that the quarter-inch detail is actually going to be built as a portion of one of our public buildings is really uncomfortable to contemplate.’<sup>411</sup>

Following guidance from the Office of Works and departmental representatives, John and Joseph Leeming were requested to reduce the ornamentation of the building's façade, relocate a tower to the St. James' Park façade from the Whitehall elevation, and therefore alter the attic portion of the Whitehall elevation.<sup>412</sup>

Questions were raised in the House of Lords following these changes. At a debate on 24 November 1884, Lord Sudeley informed the house that John and Joseph Leeming had made alterations to their plans for the Admiralty and War Offices and as a result:

‘Models are now being proceeded with, and will be ready for inspection early next year. It is proposed to have two models, one on the same scale as the drawings, showing the whole plan; and the other on a much larger scale of a small section of the building, to show all the details of the architectural workings.’<sup>413</sup>

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<sup>409</sup> ‘New Admiralty and War Offices’, *Architect* (6 October 1883) 201; ‘New Admiralty and War Offices’, *Saturday Review* (9 August 1884) 173; ‘Utility’ *Building News* (15 August 1884) 280-281; *Builder* (6 September 1884) 320; *Builder* (4 October 1884) 454.

<sup>410</sup> TNA, WORK 12/88/1, Report of select committee on the Admiralty and War Office (sites), various departmental memos.

<sup>411</sup> ‘The War Office and Admiralty Competition Designs’, *Builder* (16 August 1844) 218.

<sup>412</sup> TNA, WORK 12/115/4, Proceedings of the Committee of Judges of the designs, minutes of a meeting held on 21 April 1885.

<sup>413</sup> HL Deb, 24 November 1884, Vol. 294, c222. Also on 24 November 1884 in a debate in the House of Commons Lefevre described how the Government had adopted the judges' conclusions in the competition for the building and would submit the proposals for a vote at the next parliamentary



In response to Lord Sudeley's report, the Earl of Wemyss suggested, 'the models should be on such a scale as would show how far the new buildings would harmonize with the general character of the surroundings and neighbouring buildings'.<sup>414</sup> Lord Sudeley reminded the Earl of Wemyss about the missing model that depicted the area either side Whitehall and Parliament Street, and reported that the Office of Works were considering how to alter the model to show the new proposals.<sup>415</sup> Despite the replacement of Lefevre by the Earl of Roseberry as First Commissioner of Works in February 1885,<sup>416</sup> in April 1885 John and Joseph Leeming were directed to begin with detailed design of the basement portion of the project, simultaneously the leveling of the site began.<sup>417</sup>

At a debate in the Lords on 4 May 1885 the Earl of Roseberry explained that a model of the proposed Admiralty and War Office was in the process of being made but had not yet been completed.<sup>418</sup> Several months later on 4 August 1885 the Earl of Iddeleigh, reported that he was in communication with the First Commissioner of Works about whether the models could be moved from the Victoria Gallery in the Palace of Westminster, to 'some place where they could be inspected by architects and others interested in the matter'.<sup>419</sup> By the third week of August 1885 the three models were put on public display in an Admiralty office at 18 Spring Gardens where they could, 'be inspected by the general public for three weeks'.<sup>420</sup> The first model was of the building at a scale of one inch to sixteen feet, the same scale as the plans at the second competition stage; the second model showed 'the

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session. In the interval, 'Messrs. Leeming have been engaged in making various improvements in their design, which I had suggested to them after considering all the criticism which had been made.' HC Deb, 24 November 1884, Vol. 294, c270.

<sup>414</sup> HL Deb, 24 November 1884, Vol. 294, c222.

<sup>415</sup> HL Deb, 24 November 1884, Vol. 294, c222.

<sup>416</sup> M. H. Port, *Imperial London*, p.275, Appendix 1 cites: C. Cook and B. Keith, *British Historical Facts 1830–1900* (London, 1975) p.55.

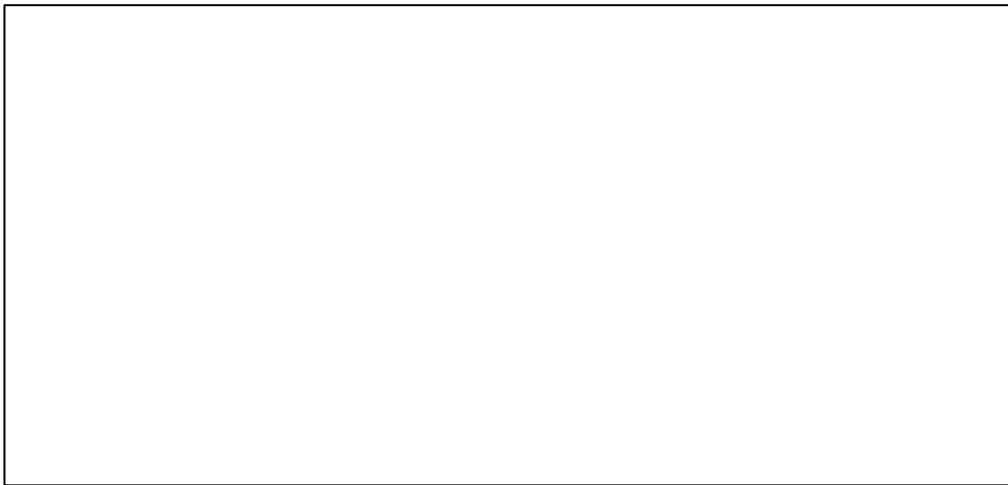
<sup>417</sup> *Report from the Select Committee on Admiralty and War Office (Sites)* 184 (London, 1887) iii.

<sup>418</sup> HL Deb, 4 May 1885, Vol. 297, c1478.

<sup>419</sup> HL Deb, 4 August 1885, Vol. 300, c1032.

<sup>420</sup> 'Notes on Current Events', *British Architect* (21 August 1885) 82.

buildings and all the surrounding district' at a scale of one inch to twenty feet; the third model represented the south-west tower for the building at a scale of one inch to four feet. The first and third model survive in the Parliamentary Collections, and were exhibited at the V&A's 'Marble Halls' exhibition in 1973.<sup>421</sup> The tower model (Fig. 22) was 'executed in plaster in a very careful manner, and is a very creditable production by Mr. C. H. Mabey'.<sup>422</sup> C. H. Mabey will be further discussed in Chapter 4.



**Figure 22**

Model of the South-West Tower of the Admiralty and War Office, 1885  
John and Joseph Leeming (architects) C. H. Mabey (model-maker)  
V&A Guard Book MA 32/516/GC 1679

Unlike the plaster model of the tower, the two other models on display to the public were 'formed by lithographed elevations on paper, pasted onto solid blocks with certain portions, such as circular columns and vases modelled in wood' (Fig.23).<sup>423</sup> This description of the model's construction connects to letters written by Alfred Waterhouse in 1871 whilst he was designing the Natural History Museum. In correspondence with the Office of Works, Waterhouse informed the

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<sup>421</sup> My thanks to Mark Collins for facilitating a visit to the two models. J. Physick and M. Darby, *Marble Halls*, pp.46-47.

<sup>422</sup> 'Notes on Current Events', *British Architect* (21 August 1885) 82.

<sup>423</sup> 'Admiralty and War Office', *Building News* (3 April 1885) 547.

department that if a model of the proposed design was required by the House of Commons, plans and elevations would first need to be prepared and given to the model-maker to commence work, a process that would take two to three months.<sup>424</sup> Therefore I argue that these sorts of models for public building projects were not sites of creativity or conceptual understanding. Instead they were three-dimensional drawings, solid blocks wrapped with elevation drawings to show compositional arrangement of windows and openings in relation to a building's relative massing. These models were hugely important for the architectural profession and the wider public. As the article in the *British Architect* explained:

‘The use of such models as these, especially in the case of large public works, can hardly be over-estimated. In this instance their usefulness is very marked, for they illustrate our national niggardliness in the matter of public improvements.’<sup>425</sup>

The article was correct about the importance of the models as their exhibition became a point of debate and criticism by the architectural profession on the proposed buildings. An anonymous correspondent in the *Architect* wrote a long article that was highly critical of the proposal's rationale and appearance:

‘The models [...] exhibited at 18 Spring Gardens represent a kind of “Anglo-Italian” [...] a sort of Pimlico palatialised in real stone, with statuary for which you know, better than any one, that no House of Commons will consent to advance a penny, and without which a perpendicular excrescence of solid block, column, and attic, will appear a motiveless obstruction.’<sup>426</sup>

Contrary to the article in the *British Architect* the article in the *Architect* complained about the scope and detail of the models exhibited at Spring Gardens. The anonymous writer complained that the lack of surrounding context of the model

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<sup>424</sup> TNA, WORK 12/115/4, f.209, Letter from Office of Works to Alfred Waterhouse, 15 June 1871; f.210 Letter from Waterhouse To First Commissioner of Works, 15 June 1871.

<sup>425</sup> ‘Notes on Current Events’, *British Architect* (21 August 1885) 82.

<sup>426</sup> ‘A Letter to the Right Hon. J. G. Shaw-Lefevre, M.P. On the Models for the New Public Offices’, *Architect* (4 September 1885) 141.

meant that comparison between the internal courtyards of the proposed Admiralty and War Office with those of Gilbert Scott's Foreign Office, 'or indeed with the quadrangle of Somerset House, is rendered impossible'.<sup>427</sup> Without these comparative portions, the author declared:

'For all practical purposes that model is useless, and to any one wishful to form a correct judgment of the facts it is worse than useless. It is deceptive, and it will deceive those with whom the rude privilege rests of foisting on the British nation a fatuous and shameful piece of work.'<sup>428</sup>

Other individuals proposed more radical solutions that involved the engagement of the RIBA as a decision maker. Lawrence Harvey, who we last encountered in Chapter 1 teaching students at the AA stereotomy through the construction of models, wrote to the RIBA council and proposed that the present government, a Conservative minority government replaced the Second Gladstone-led Liberal government in June 1885, had exhibited Admiralty and War Office models to the public in order to receive support in rejecting the proposed design.<sup>429</sup> Instead Harvey suggested that the RIBA call a meeting for all its members to view the models and petition the government to hold a new competition for the building, opening to 'British architects only to deal architecturally with the whole space from Downing Street to Spring Gardens'.<sup>430</sup>



<sup>429</sup> RIBA, 1.2.3, LC/23/8/8, Letter to Council from Lawrence Harvey, 11 September 1885.

<sup>430</sup> RIBA, 1.2.3, LC/23/8/8, Letter to Council from Lawrence Harvey, 11 September 1885.

### Figure 23

Model of the Admiralty and War Office, 1885

John and Joseph Leeming (architects)

V&A Guard Book MA 32/516/GC 1680

Despite Harvey's plea for the architectural profession to intervene as a group, alongside this popular and professional criticism of the design for the new Admiralty and War Office there was governmental concern at the costs of construction in the light of rising national expenditure and in March 1887 a Select Committee of the House of Commons was formed to consider the merit of the new building's location and design.<sup>431</sup> Chaired throughout by David Plunkett, Shaw-Lefevre's successor as First Commissioner for Works, the seventeen-strong committee that included Shaw-Lefevre was also instructed to investigate whether the existing Admiralty buildings might be renovated and reused.<sup>432</sup> Across ten sessions held during the summer of 1887 the committee called on a host of witnesses including the professional judges (Phillip Hardwick and Ewan Christian), professional experts from the RIBA (John Macvicar Anderson), employees of the Office of Works, and John and Joseph Leeming. Alongside these individuals, the architectural models were at the forefront of the committee's questioning and cross-examination. Often the models were rhetorical figures, used to help illustrate and illuminate speeches by members of the committee in their enquiry.<sup>433</sup> Additionally the models were used as descriptive aids as a part of questioning, One committee member in particular, Sir William Crossman, asked Shaw-Lefevre on several occasions: 'Can you show it on the model?'<sup>434</sup>

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<sup>431</sup> *Report from the Select Committee on Admiralty and War Office (Sites)* 184 (London, 1887) ii.

<sup>432</sup> *Report from the Select Committee on Admiralty and War Office*, iii.

<sup>433</sup> For instance: 'Surely that would be an impossibility; just look at the model behind you.' *Report from the Select Committee on Admiralty and War Office*, p.101, minute of a Select Committee meeting held on 10 May 1887, para.1751.

<sup>434</sup> *Report from the Select Committee on Admiralty and War Office*, p.50, minute of a Select Committee meeting held on 29 April 1887, para.829; p.71 minute of a Select Committee meeting held on 6 May 1887, para.1231.

However, there were also occasions where the models were also used to help describe, explain, and support the testimony of witnesses called before the committee. On 26 April 1887 John Taylor, the long-standing Surveyor in London for the Office of Works, was recalled by the committee and further examined.<sup>435</sup> In response to a series of questions by Shaw-Lefevre on the proposed building's ornament in relation to the surrounding context of Whitehall, Taylor described how the larger model made by C. H. Mabey offered a better impression of the ornament than either of the other models (Fig.22).<sup>436</sup> Shaw-Lefevre's final question to Taylor – on the quality of light in the building's internal courtyards – also raised conceptual and experiential issues related to the use of architectural models. Shaw-Lefevre asked Taylor whether the 'smallness of the model' gave a false impression about the amount of daylight in the courtyards of the building. Taylor explained how when viewed 'with a side light' a viewer had a 'very false impression' of the building.<sup>437</sup> In order to view a model of this type 'as it should be seen', Taylor described how, 'we should see it with the light from the top (*describing it on the model*)'.<sup>438</sup>

There were other occasions when witnesses used the models to help to clarify aspects of the design. On 26 April 1887 a committee member questioned Taylor in a discussion on the appearance of the building's windows. Howell used the windows of the nearby Foreign Office as an initial comparison in his questioning of Taylor and made comparisons between the *real* windows outside of the committee room and the *miniature* windows of the model.<sup>439</sup> Later in the exchange, Taylor was again questioned on the ability of the model to simulate the visual experience of

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<sup>435</sup> John Taylor was called four times in total on 22 April, 26 April, 3 May, 6 May 1887.

<sup>436</sup> *Report from the Select Committee on Admiralty and War Office*, p.34, minute of a Select Committee meeting held on 26 April 1887, para.459.

<sup>437</sup> *Report from the Select Committee on Admiralty and War Office*, p.34, minute of a Select Committee meeting held on 26 April 1887, para.462.

<sup>438</sup> *Report from the Select Committee on Admiralty and War Office*, p.34, minute of a Select Committee meeting held on 26 April 1887, para.462.

<sup>439</sup> *Report from the Select Committee on Admiralty and War Office*, p.39, minute of a Select Committee meeting held on 26 April 1887, para.603.

the proposed building. This experience, it was argued, was connected to how the model was viewed at scale rather than the ‘real’ experience of the constructed building. With reference to the model, its scale, and his own body, Taylor replied that that a viewer would have the same view of the building from St James’ Park as he had in the hearing from the model.<sup>440</sup> Taylor concluded by telling the Select Committee that he believed the proportions and detail of the building were rendered at scale ‘without damage’ on the model.<sup>441</sup>

When the architects were called before the committee on 6 and 13 May 1887 the models were used in two ways. First, to communicate new proposals for which there were no drawings or model. Second, when questioned by one of the committee members about the estimated cost of construction in relation to the currently low price of building materials, the architectural model of the proposed Admiralty and War Offices stood in as proxy (or promise) for the building to come. However, the committee proposed reducing costs by constructing a ‘building on the lines suggested in that model, but with less architectural pretensions’.<sup>442</sup> Whilst acknowledging that John and Joseph Leeming’s ‘plans have received high commendation from distinguished architects’, the Select Committee proposed that the scheme should be abandoned. Instead the committee recommended that ‘by making additions to the present Admiralty all the requirements of that Department may be suitable provided for [...] at a moderate cost’.<sup>443</sup> In February 1888 John and

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<sup>440</sup> *Report from the Select Committee on Admiralty and War Office*, p.40, minute of a Select Committee meeting held on 26 April 1887, para.612.

<sup>441</sup> *Report from the Select Committee on Admiralty and War Office*, p.40, minute of a Select Committee meeting held on 26 April 1887, para.614.

<sup>442</sup> *Report from the Select Committee on Admiralty and War Office*, p.81, minute of a Select Committee meeting held on 6 May 1887, para.1444.

This is analogous to stripping the lithographed elevations from the model and revealing its modest wooden superstructure underneath, with the effect of reducing its sculptural ornamentation and associated costs.

<sup>443</sup> *Report from the Select Committee on Admiralty and War Office*, iv.

This moderate cost was estimated by the committee to be more than £500,000, as well as the value of the Spring Gardens site that could be used for further additions to the Admiralty and the opening of the Mall in Charing Cross.

Joseph Leeming prepared new plans for a western extension to the existing Admiralty building which were exhibited in the House of Commons.<sup>444</sup> However, the models of Admiralty and War Office were a part of a much a much broader debate on the construction of new buildings and infrastructure in London, led primarily by the Earl of Wemyss. The Earl of Wemyss had been a long-term advocate for the use of models in presenting proposed designs. During the debates over the appropriate style for the New Foreign Office (1858–60), he tried to mediate between the ‘Goths’ and the ‘Classicists’ by displaying a model of George Gilbert Scott and Matthew Digby Wyatt’s Gothic design for the building in the Library of the Palace of Westminster for the public to view.<sup>445</sup> An article the *Builder* from February 1859 described how this act would enable ‘non-professional judges [...] a better means of arriving at [their] decision than by plans, elevations, and working drawings.’<sup>446</sup>

A belief in the production of models to allow for public debate continued throughout Wemyss’ political career, throughout the 1890s and into the 1900s he continued his campaign to have architectural models displayed of proposed public works. First, Wemyss spoke to the architectural profession about the importance of making, using, and displaying models in public building projects. After a RIBA meeting on 5 May 1899 where a paper was read by Henry Statham on ‘The Architectural Element of Engineering Works’, Wemyss first apologised for his deafness and then proposed:

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*Report from the Select Committee on Admiralty and War Office*, viii, minute of a Select Committee meeting held on 15 June 1887.

<sup>444</sup> M. H. Port, *Imperial London*, pp242–243.

<sup>445</sup> ‘Lord Palmerston on Architecture: The New Foreign Office’, *Builder* (6 August 1859) 515. Although another report in the *Builder* described the models value as a tool of communication: ‘The model, although valuable as conveying an idea of the general arrangement and proportions of the masses to those who cannot read plans, and these are many, is not calculated, we think, to advance the interests of the design as a work of art. The drawings show it much more advantageously.’ ‘The Designs for the Foreign Office and India Office’, *Builder* (6 August 1859) 514.

<sup>446</sup> ‘The New Foreign Office’, *Builder* (26 February 1859) 158.



‘The engineer should be under some sort of control – whether the control of the Institute of British Architects, or of some Parliamentary Committee [...] One matter he felt very strongly upon: there ought to be models exhibited. Models were a necessity, and he thought it was a matter the Institute should take action upon.’<sup>447</sup>

‘Architects’ drawings’, Wemyss had found from experience, ‘were the most deceptive things in the world’. Instead Wemyss advised:

‘The only safe course was to see everything in model [...] when [the architect] had got a satisfactory design his plan was to have it first modelled in plaster, and then a part of the building was modelled in the actual material one-third the size. This was the practice in France very much more than in this country. The new buildings in Parliament Street were to be put up without any model, and someday they would regret it.’<sup>448</sup>

Offering examples from free-standing sculptures tested first in models at the Houses of Parliament and the Tate Gallery, Wemyss encouraged that ‘the Institute should urge that all public works paid for with public money should be put up in model first’.<sup>449</sup> In reply, George Aitchison, RIBA President at the time, noted that he had ‘impressed upon Mr. Akers-Douglas [First Commissioner of Works] the importance of having models made, and he understood they were going to be made’.<sup>450</sup> Robert Kerr spoke to indicate his agreement with Wemyss:

‘It was well known that on the Continent it was a rule to present a model of a public monument of a reasonable size before the public were committed to it. It was a great mistake that nothing of the sort was done in this country. They would not, of course, put up a full-size model of a new building, but there would be no harm, if the Government did not understand drawings – and he understood from Lord Wemyss that they did not – in making a

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<sup>447</sup> ‘The Architectural Element of Engineering Works’, *RIBA Journal* (3<sup>rd</sup> Series) Vol. 6 (1899) 396.

<sup>448</sup> ‘The Architectural Element of Engineering Works’, 396.

<sup>449</sup> ‘The Architectural Element of Engineering Works’, 396.

<sup>450</sup> ‘The Architectural Element of Engineering Works’, 396.

model of the buildings. He was quite sure the Meeting would agree with that.<sup>451</sup>

Second, following criticism from various peers and ministers in both chambers of the Houses of Parliament on the lack of architectural models made for the new War Office, improvements to Parliament Street, and the refurbishment of Westminster Hall,<sup>452</sup> a memorandum was published by Wemyss that called on the Government to take action.<sup>453</sup> Signed by 140 individuals the majority signatories were peers in the House of Lords. In the Lords on 4 August 1899 Wemyss began a debate on the topic:

‘My Lords, I rise to move: “It is desirable that models of all public buildings of importance that are about to be erected at the public cost should be made and publicly exhibited, and that this is more especially to be desired at the present time”’.<sup>454</sup>

Wemyss informed the house that the method he was proposing ‘is an almost universal custom abroad’. Following descriptions of this process in France and Italy, Wemyss explained how the system was not just a ‘private or foreign practice’ but also one ‘successfully adopted in our own country’ when Layard was First Commissioner and the large-scale model of ‘Greater Westminster’ was commissioned. As discussed earlier, Wemyss described how when used as a part of the public judgment of John and Joseph Leeming’s Admiralty, the model ‘so shocked the public who saw it that the plan was knocked on the head’.<sup>455</sup> After a further discussion on the Office of Works, Wemyss continued to read the memo:

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<sup>451</sup> ‘The Architectural Element of Engineering Works’, 398.

<sup>452</sup> HC Deb, 2 March 1899, Vol. 67, cc1036-7; HL Deb, 12 May 1899, Vol 71, cc446-9; HL Deb, 18 July 1889, Vol. 338, cc674-87.

<sup>453</sup> ‘The New War Office Building’, *British Architect* (28 July 1899) 55; M. H. Port, *Imperial London*, p.311, n.66 cites: Edinburgh, National Archives of Scotland, Wemyss MSS, RH4/40/13: *The New War Office: What It Is To Be; What Still Might Be* (London, 1899).

<sup>454</sup> HL Deb, 4 August 1899, Vol. 75 cc1430-46.

<sup>455</sup> HL Deb, 4 August 1899, Vol. 75 cc1430-46.

‘By the public exhibition of models, as proposed, successful precedents established in the case of designs for public buildings by Her Majesty’s Office of Works, should now be followed’.

Following this the House of Lords debated the topic. In response the Marquess of Lansdowne questioned the role that an architectural model could play in judgement and questioned Wemyss’ belief in this form of representation:

‘A model on a table never by any chance presents the appearance of the actual building – you see the model as you might see the building from the top of the Duke of York’s Column, a point of view from which the noble Earl on the cross benches is very fond of regarding men and things in general. We humbler individuals contemplate these structures from the pavement as we walk on our way to Westminster.’<sup>456</sup>

Additionally, Lansdowne proposed, a model would allow the government to regulate the size and proportion of buildings on their property, ‘but what power does it give you of regulating buildings erected immediately alongside on ground which is not the property of the Government?’. Lansdowne noted the new War Office could be designed in proportion to the height of the surrounding government buildings, but other surrounding private buildings ‘might put out the whole scale of proportion’. In response, Lord Stanmore rejected Lansdowne’s observation that a viewer’s position in relation to a model affected both the worth and the value of the model in presenting the actual appearance of the proposed building. Instead Stanmore suggested:

‘The noble Marquess says [models] are of no use at all, looked at from above. I would venture to suggest, with all submission, that this depends on the height of their pedestals.’<sup>457</sup>

Wemyss suggested that when viewing a model, to avoid Lansdowne’s ‘chimney pot argument’, that there was ‘a possibility of raising the model to the level of your eye’

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<sup>456</sup> HL Deb, 4 August 1899, Vol. 75 cc1430-46.

<sup>457</sup> HL Deb, 4 August 1899, Vol. 75 cc1430-46.

in order to examine the object from preferential viewpoints. Other peers supported Wemyss and Stanmore. The Duke of Norfolk described how ‘Personal experience has taught me that models of intended buildings are of great use’ and encouraged the government to provide models in future projects. After having also raised this issue and having been refused discussion at a debate in May 1899, the Marquess of Lothian demanded:

‘In future models will be exhibited of all proposed public buildings. I do not think it is at all fair that the taxpayers should be called upon to pay for buildings, which might be very bad, and which they have no opportunity of saying beforehand whether they like or not. I think on the whole the action of the Government was fairly satisfactory, but I hope that in future models will be exhibited.’<sup>458</sup>

Subsequently the motion was withdrawn. However, this was not the end of the debate. In a discussion in the Lords on suitable sites for governmental buildings near to Parliament in October 1899, Wemyss again raised the subject of architectural models in relation to public expenditure. Wemyss reported that the government had consulted the RIBA and George Aitchison on the topic ahead of a debate in the Lords, and that Lansdowne ‘implied [...] that Professor Aitchison did not care the least for models, that he thought they were neither necessary nor desirable’.<sup>459</sup> Following the debate Wemyss and Aitchison wrote to one another about the topic. Wemyss reported that ‘Aitchison, who is, I find, more favourable to models than any man I have yet met’. Wemyss noted how, in conclusion, Aitchison told him ‘I certainly think that, even now, there ought to be models made of the new War Office [...] The expense would be a mere fleabite.’<sup>460</sup>

Once designs were prepared for these sites in July 1901 there were another series of debates in the Lords on the production and public display of models.<sup>461</sup> Aitchison

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<sup>458</sup> HL Deb, 4 August 1899, Vol. 75 cc1430-46.

<sup>459</sup> HL Deb, 27 October 1899, Vol. 77, cc749-760.

<sup>460</sup> HL Deb, 27 October 1899, Vol. 77, cc749-760.

<sup>461</sup> HL Deb, 16 July 1901, Vol 97, cc551-569; HL Deb, 22 July 1901, Vol 97, cc1082-1105.

wrote to *The Times* to criticise the government for absence of models of the project: 'I believe that all the principal buildings of the world, since Justinian's time, were built from models'.<sup>462</sup> In spite of the support provided to Wemyss by Aitchison, the RIBA, and a majority in House of Lords, the Office of Works denied his request to have models made for public display. In a letter in the *Architects' Magazine*, Wemyss described how the denial was 'an official slap in the face to professional architectural authority and public opinion'.<sup>463</sup>

Despite Wemyss' campaign and its reference to professional authority, the *Builder* questioned his desire to have models displayed of proposed public works. An editorial suggested that the public expenditure on the models would 'result in anything beyond a little show for the public'.<sup>464</sup> 'We have the highest opinion of the value of models,' the article noted, so long as they were not used 'as toys for public amusement'.<sup>465</sup> Instead the editorial proposed that architects would be better served by using models conceptually rather than as means to present buildings to the public and private clients:

[Models are] a means for an architect testing the lines and composition of his own design, for which purpose a rough model during the earlier stages of a design is of far more value than a finished model at a later stage'.<sup>466</sup>

Later in Chapter 3 I will examine the conceptual role of models in depth. I will propose that changing attitudes towards the conceptual role of models at the end of the nineteenth century suggested a new source of authority to the architectural profession.

## 2.5 The Architect as Legal Consultant

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<sup>462</sup> 'The New Government Offices', *The Times* (8 June 1901) 9.

<sup>463</sup> 'A Question of Models', *Architects' Magazine* (September 1901) 203.

<sup>464</sup> 'Lord Wemyss and the Government Offices', *Builder* (20 July 1901) 46.

<sup>465</sup> 'Lord Wemyss and the Government Offices', 46.

<sup>466</sup> 'Lord Wemyss and the Government Offices', 46.

Another particular professional function of the architect that appears to have emerged in the nineteenth century is as a legal expert, called upon by lawyers in cases related to property or building disputes. The 'legal model', or architectural models deployed in a legal setting, has been almost completely ignored from the secondary literature by historians. Building litigation was facilitated thanks to the emergence of new statutory instruments such as the Prescription Act of 1832 and from the 1840s the building acts for cities such as London, Bristol, and Liverpool. Throughout the second half of the nineteenth century on many occasions at the RIBA and other architectural societies speakers gave papers on these legal acts and how the scope and services of professional practice should respond to them. Similarly the pages of the architectural press covered all the major legal cases related to construction and property law.<sup>467</sup> The first occurred in 1851 and the bulk of these cases were heard after 1879 but the reported instances undoubtedly represent only a glimpse of the actual number. In three articles on the model-maker John Thorp from 1900, 1910, and 1913 there are another twenty-five models illustrated that were used in legal cases, none of which I have come across in my trawl through the architectural press. I propose that the main reason why the press may have reported fewer instances than actually appeared in court was that models were not a form of evidence. Instead they were illustrative and explanatory aids, used as a form of rhetorical support, when lawyers called on architects to provide expert testimony.

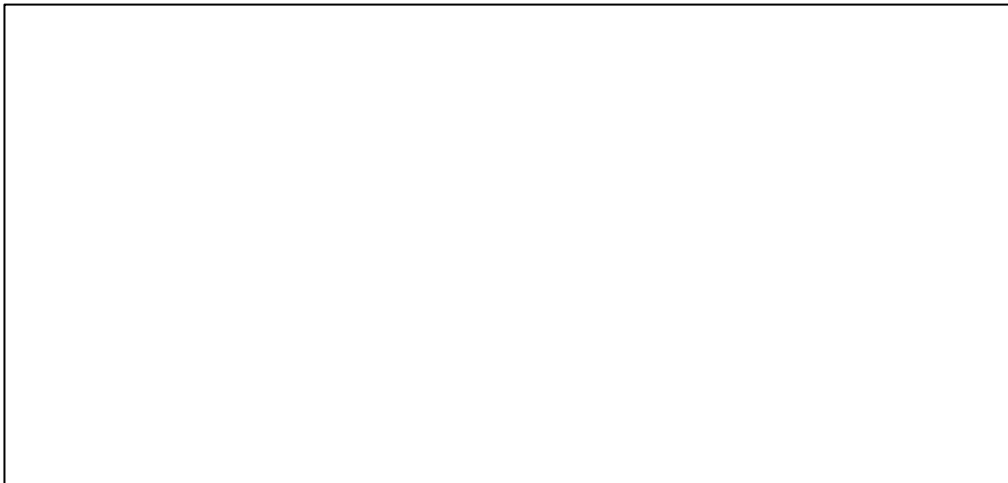
The use of models in legal cases even affected the architecture of the courtroom itself. For instance the 1866 *Instructions for Competing Architects* on the new Law Courts competition noted that lifts were required 'for large models to be produced in Court'.<sup>468</sup> Once transported into the courtroom models required a place and position from which all could see them. Thomas Webster QC discussed this requirement in a paper published in the *Builder* in 1865 on the new Law Courts competition. In a discussion on the internal arrangement of a courtroom, Webster

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<sup>467</sup> From my study of the architectural press from 1838 until 1916 I have found twenty-four occasions where architectural models were used in civil legal cases.

<sup>468</sup> TNA, WORK 12/33/1, ff.113-121, 'Courts of Justice Commission: Instructions for the Competing Architects', p.10.

proposed that the central part of the floor should be 'kept clear for the exhibition of models and plans', which, 'in their introduction and exhibition, great inconvenience is frequently experienced'.<sup>469</sup> This approach was not purely confined to hypothetical reflections on the layout of a courtroom. In a description on the newly opened Durham Assize Courts in 1870 it was reported that at the front of the court was a large table, 'having in it a moveable circular disc, so constructed as to be raised at pleasure, to enable models to be shown and described' (Fig.24).<sup>470</sup>



**Figure 24**

'Crown Court' at Durham Assize Courts in which the movable disc for displaying models is visible. 'The Assize Courts, Durham', *Builder* (22 January 1870) 67.

This section will briefly explore the emergence of the architect-consultant through the writing of Robert Kerr, who was introduced in Chapter 1 as a professor at King's College. Then, drawing on the publication of examples by the model-maker John Thorp, I will turn to the discussion of three case studies related to civil law disputes over the right to light, party walls, and easements.

From the beginnings of professional practice institutions and individuals offered guidance for the emerging architectural profession. The RIBA prepared standardised contracts and specifications. Other guides were published on a

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<sup>469</sup> 'The Proposed Palace of Justice', *Builder* (9 December 1865) 867.

<sup>470</sup> 'The Assize Courts, Durham', *Builder* (22 January 1870) 64.

multitude of topics; one of the most prominent authors was Robert Kerr. In addition to his teaching, Kerr published a series of books on contemporary architectural practice.<sup>471</sup> In one of these, *The Consulting Architect: Practical Notes on Administrative Difficulties and Disputes*, first published in 1886, Kerr covered the principles of consultation and evidence, and specific examples where the architect's professional viewpoint might be brought to bear including cases of arbitration, structural damage, easements, leaseholds, valuations, and 'Questions of Ancient Lights'.<sup>472</sup> In particular Kerr discussed how architects should present themselves and their evidence in courtrooms. Kerr advised:

'Models – Lawyers always prefer models to drawings; they seem to afford a better illustration of the facts, because their language is more intelligible. In some classes of cases models are almost invariably produced in court, and a great deal turns upon the impression of the facts thus created. But it ought not to be overlooked that, beyond a certain point in the inquiry, a model is necessarily fallacious, because of its small scale... That is to say, an architectural model ought never to be allowed to be used further than to aid a verbal description of the buildings in question; it cannot serve in any degree the same purpose as a personal view of the buildings themselves, and especially their interior. It may be added that it is always well to work up a model as much as possible in respect of finish, because the representation of detail assists identification in a most important degree, and especially with those who are not well acquainted with the subject.'<sup>473</sup>

Kerr's advice was a microcosm about the debates surrounding the use of models by architects in the nineteenth century. He suggested that lawyers preferred models to

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<sup>471</sup> R. Kerr, *On Ancient Lights* (London, 1865)

Kerr had previously spoken on the issues and importance of Rights of Light at a meeting of the RIBA in April 1866: R. Kerr, 'Remarks on the Evidence of Architects Concerning the Obstruction of Ancient Lights', *RIBA Transactions*, 1<sup>st</sup> Series, 16 (1865/66) 149-163. Kerr had also discussed how architects could use models to calculate the Right to Light in a property at a meeting of the RIBA on 7 January 1878 where another member's paper on the topic was discussed.

'Discussion on Mr. Locock Webb's Paper [The Law of Easements]', *RIBA Transactions*, 1<sup>st</sup> Series, 28 (1877/78) 108-109.

<sup>472</sup> R. Kerr, *The Consulting Architect: Practical Notes on Administrative Difficulties and Disputes* (London, 1886)

<sup>473</sup> R. Kerr, *The Consulting Architect*, p.15.



drawings because they are ‘more intelligible’. Despite this, Kerr warned his readership that at a certain point a model could be deceptive because of its small scale and therefore should only be used to assist in the verbal description of a building to a jury. However, a model should be ‘worked up’, ‘finished’, and ‘detailed’, because the ‘representation of detail’ in a model is essential in communicating with a lay audience. This advice is unlike the discussions surrounding the use of models that I have described from John Soane, W. H. Leeds, and C. R. Cockerell, which supported the Albertian attitude that privileged the formal design idea represented by the model rather than its detailed or realistic depiction of a building.

Later in the book Kerr specifically discussed the role and actions of the architect within right to light cases. Kerr noted that the unprepared architect might prepare orthographic drawings of the properties in the case. These visual aids were useless, in Kerr’s opinion, as, they could ‘only [be] understood by architects’.<sup>474</sup> Instead he proposed that task for the architect as witness was to represent in a way ‘which may in the circumstances be most intelligible’, through either a sectional diagram or a model.<sup>475</sup> On the latter, Kerr noted that models favoured the plaintiff in a case, ‘because of the impression which is produced by looking down on [the model]’.<sup>476</sup> Here Kerr hits on a recurring issue in the discourse surrounding nineteenth-century architectural practice: how one uses (or views) an architectural model relates to the content, tone, and authority of its message. Much of the contemporary discourse surrounding the benefits of architectural models in all forms of practice related to the ability of a model to be understood by a lay audience, who were not conversant in orthographic drawings or might be persuaded by the beauty of a coloured perspective. An article from the *Architects’ Magazine* in December 1900 on the uses of architectural models by the profession noted, ‘the value of models in Ancient

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<sup>474</sup> R. Kerr, *The Consulting Architect*, p.94.

<sup>475</sup> R. Kerr, *The Consulting Architect*, p.94.

<sup>476</sup> R. Kerr, *The Consulting Architect*, pp.95-96.

Lights, Party Wall, and other similar cases [...] is too obvious to need further comment'.<sup>477</sup>

These views were, however, not totally consistent with the views of the judiciary. In April 1879 the *Building News* published a paper by Jas Ball, which described and explained the statutes and common law components that form the Right to Light in English civil law. In reference to the case of the 'City of London Brewery Company vs. Tennant', Ball quoted the ruling made by the judge, on the lack of obstruction in the case, 'which requires to be rebutted by direct evidence of injury and not the mere exhibition of models'.<sup>478</sup> This ruling led Ball to advise architects and surveyors to make a distinction between legal cases that dealt with the obstruction already caused by newly constructed buildings and legal cases that contested the *potential* obstruction that might be caused by proposed buildings. Ball proposed that the former should not use architectural models as, 'the evidence of persons occupying the premises whose light is obstructed should be obtained, as this will have far greater weight than any scientific theoretical evidence'.<sup>479</sup> Ball argued in the case of proposed buildings or those yet to be completed, 'models should be exhibited to the court, and scientific theoretical evidence given as to the result which would follow from the erection of the proposed buildings'.<sup>480</sup> In reality, however, as I will now examine, there was a less clear-cut distinction made by architects when using architectural models to illustrate and demonstrate their professional authority in the courtroom.

Unfortunately no legal models appear to have survived from the period for my consideration. The only visual evidence of this sort of model is in photographs that were reproduced within articles in the architectural and popular press on the model-maker John Thorp. Whilst Thorp will be examined more closely in Chapter 4, it should be noted that he operated from premises at 98 Gray's Inn Road, adjacent to

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<sup>477</sup> 'Some Uses of Architectural Models', *Architects' Magazine* 1.2 (December 1900) 33.

<sup>478</sup> 'Light and Air', *Building News* (18 April 1879) 425.

<sup>479</sup> 'Light and Air', 426.

<sup>480</sup> 'Light and Air', 426.

Gray's Inn and the surrounding community of legal chambers. Therefore we can presume his specialisation in this type of model was prompted by his location. Initially offering services as 'The London Drawing and Tracing Office' from 1885, Thorp began to advertise his services as a model-maker from 1900, although he later stated that he began making models from 1880. An article from 1910 suggested that Thorp had been engaged as a witness in court before he realised the importance of models in support of legal cases. The article noted, 'no evidence, [Thorp] realized, had such weight and influence with a jury'.<sup>481</sup> Thorp made models for a variety of purposes and ensured that his work was published in both the architectural journals and popular press. On several occasions he made a distinction between models 'to show what a building will be like when completed; and diagram models, for law cases or to demonstrate some technical point in construction'.<sup>482</sup> The diagrammatic nature of these models is an aspect I will explore later. Legal models appear to have become Thorp's main activity: an article from 1910 quoted Thorp as stating, 'the majority of the models I make are for legal purposes'.<sup>483</sup>

The first case study in this section involves an easement claim between two parties in London's West End regarding obstruction to a right of way (Fig.25).<sup>484</sup> An article in *Strand Magazine* described the case and the composition of the model made by Thorp, which 'was made with the object of showing how drastically the way had been barred'.<sup>485</sup>



party holds the right to use, enter, or enjoy access to another party's land without possession.

<sup>485</sup> A. Soutar, 'Produced in Court', 618.

## Figure 25

‘Model of an outbuilding that was said to obstruct a Right of Way’  
A. Soutar, ‘Produced in Court’, 615.

Unfortunately I have not been able to identify any further details on this case but the reproduction of the model allows us to study its construction and the intention behind its production. Presumably the model did two things. First, it was performative, aspects or parts of it could be removed and added in order to show the changes to a situation. Second, from the photograph we can gain an idea of what the model was intended to show. The elevation of the houses behind is like a stage set and the building in the foreground is made to show its internal arrangement and therefore allow an audience an understanding of how the ‘obstruction’ would affect the plaintiffs’ use of the property. Despite the lack of further information on this particular case it corroborates with comments made in magazine article by Thorp from 1911, which described the models as ‘akin to diagrams’, which enabled lawyers to ‘readily grasp the fundamental facts of a case’, and then when in court the models held the potential to describe the legal and technical issues in a direct and clear manner – ‘The production of a well-made model has on many occasions quashed opposition in a few minutes.’<sup>486</sup>

The second case study relates to a Light and Air case heard on 23 January 1904 about two properties on the corner of Dover Street and Stafford Street in Mayfair (Fig.26).<sup>487</sup> The plaintiffs filed an injunction to restrain the defendants from erecting any building on the site of 5 Stafford Street that would obstruct the Right to Light of their property – 16 Dover Street. A report in the *Builder* described how

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<sup>486</sup> P. Collins, ‘Practical Modelling’, *The World’s Work* Vol.17 (1911) p.85: ‘[Models in legal cases], are in their nature, akin to diagrams, and elaborate adornment would tend to detract from their value by confusing the points at issue.’

<sup>487</sup> ‘Legal: West End Ancient Lights Dispute’, *Builder* (30 January 1904) 118. For a further discussion on this case see: ‘Easement — Ancient lights — Light and air — Obstruction by building — Claim for injunction — Damages’, *The Estates Gazette Digest of Land and Property Cases* (London, 1905) pp.39-40.

technical evidence was given for the plaintiffs by Professor Elsey Smith and for the defendants by Henry John Treadwell, one half of the Treadwell Martin partnership.<sup>488</sup> This legal case raises a series of issues surrounding the uses of architectural models by architects in courtrooms. First, the defendants lost the case and there was no mention in the press of the model, only the discussion surrounding technical evidence and expertise offered by the two architects. Contemporary advice in the architectural press discussed the role models could play in illustrating the two types of evidence given in Rights to Light cases. On the one hand there was witness testimony that described ‘the actual effect that has been, or will be, produced by the defendant's wrongful action’. On the other hand there was evidence provided to demonstrate, ‘the amount of sky area of which the plaintiff will be deprived’. According to an advisory article in the *Building News* it was ‘usual to produce a model proving all these points’, constructed in order for lawyers or architects ‘to show the changes that have been, or are to be made’ to a disputed property.<sup>489</sup>



**Figure 26**  
Dover Street Model

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<sup>488</sup> The partnership was active in the late-nineteenth century designing commercial buildings and public houses in Westminster. For an outline of their lives see: A. Felstead, J. Franklin, and L. Pinfield, *Directory of British architects 1834–1900* (London, 1993) p.604 (Martin) and p.924 (Treadwell).

<sup>489</sup> ‘Ancient Lights – II’, *Building News* (1 October 1880) 377.

‘Some Uses of Architectural Models’, *Architects’ Magazine* 1.2 (December 1900) 33.

From the photograph published in an article on Thorp, the model appeared to have alternative portions: one a plain model showing only the massing; the other a more realistic model that is made in the same manner as the surrounding context. A photograph of this model was first published in December 1900, just over three years before the case was first heard in court. I therefore propose that the model was first made by Thorp in order for Treadwell and Martin to show the client the scheme to enlarge the property on Dover Street. Subsequently the model was then appropriated for use in the legal case with the plainer massing model made to show the existing condition on the site. As Thorp himself explained the difference in finish was appropriate to the models’ different functions: exhibition models and legal models. An article in the popular magazine *The World’s Work* from 1911 discussed Thorp’s model-making techniques. In particular the article noted that when models were made for legal purposes:

‘An artistic finish is not desirable the walls, roof, &c. are simply coloured by distemper. But exhibition models demand much more elaborate treatment. The whole of the wood is faced with paper, upon which the details of stone, brick or slate are reproduced in watercolours.’<sup>490</sup>

The third and final examples involves a legal case in relating to Crosby Hall, the surviving portion of a fifteenth-century mansion built on Bishopsgate in the City of London in 1466.<sup>491</sup> In January 1899 at the City of London Court Horatio Davies MP, owner of Crosby Hall, brought action against Lewis & Marks, merchants who

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<sup>490</sup> P. Collins, ‘Practical Modelling’, *The World’s Work* 17 (1911) p.87.

<sup>491</sup> The building was adapted for various uses until the early twentieth century when, faced with demolition, it was moved stone-by-stone to a site on Cheyne Walk in Chelsea where it was re-erected in 1909. For a history of Crosby Hall and its rebirth in Chelsea see: C. Knight ed., ‘Crosby Place’, *London 1* (London, 1841) pp. 317-332; *Survey of London Monograph 9: Crosby Place*, P. Norman and W. D. Caröe eds. (London, 1908); P. Norman, ‘Crosby Place’, *London Topographical Record* 6 (1909) 1-22; *Survey of London Volume 4, Chelsea, Pt II*, W. H. Godfrey ed. (London, 1913) pp.15-17; A. Saint, ‘Ashbee, Geddes, Lethaby and the Rebuilding of Crosby Hall’, *Architectural History* 34 (1991) 206-223.

intended to demolish an adjoining property and construct a much taller building.<sup>492</sup> A sketch by the artist Robert Randoll from August 1899 shows the situation in question with Crosby Hall to the left, a disputed party wall covered in scaffolding, and to the right, the empty site where the adjoining building previous stood (Fig.27).



**Figure 27**

Robert Randoll,

Crosby Hall (August 1899)

LMA, SC/GL/PR/181/CRO/q3698573

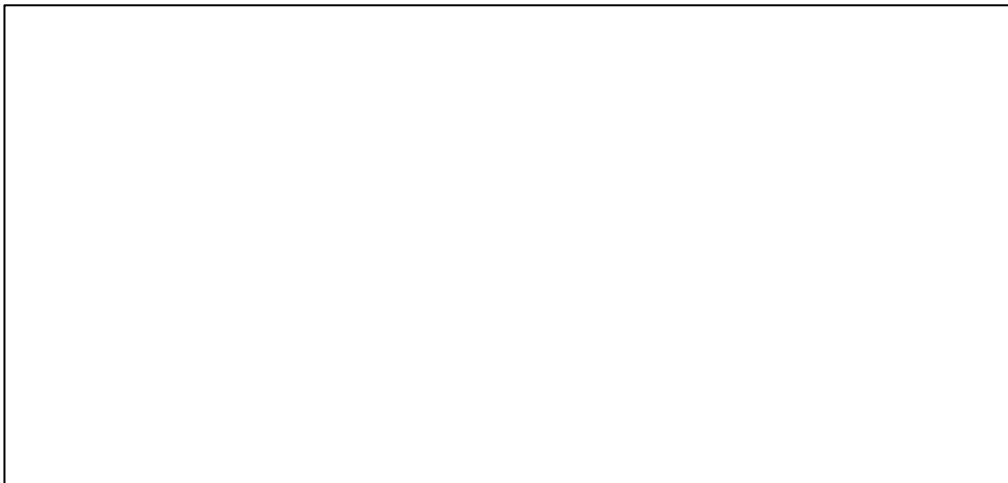
Before the case came before the City of London Court for arbitration both plaintiff and defendant had appointed surveyors, T. H. Smith and Donald Campbell (who were also architects) and a party wall award had been made by a third, independent surveyor and architect, Edward I'Anson. Included within the initial award there was a drawing of the party wall structure that indicated the portions that could be demolished in blue.<sup>493</sup> In the legal proceedings the whole of the party wall award

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<sup>492</sup> My information on the case is based on three reports published in journals by the Royal Institution of Chartered Surveyors: 'The London Building Act, 1894: A Note on Two Recent Party Wall Cases', *RICS Professional Notes*, Vol. 9 (1899) 349-351; 'City of London Court: Davies v. Lewis and Marks', *RICS Professional Notes*, Vol. 9 (1899) 428-431; 'Ordinary General Meeting, Held on Monday December 11<sup>th</sup>, 1899', *RICS Transactions*, 32, (1899) 93.

<sup>493</sup> 'City of London Court: Davies v. Lewis and Marks', 429.

was not in dispute. What was disagreed on was which parts of the structure were the party wall and which portions were *solely* the property of Crosby Hall. Notes on the case from the *City Press* revealed that Davies and his surveyor, T. H. Smith, appealed to Commissioner Kerr, who was hearing the case, that the assigned ‘party structure’ was in fact the property of Crosby Hall rather than a shared wall at a legal boundary.<sup>494</sup> Therefore, Davies and Smith claimed, a new party wall structure was required adjacent to shore up the existing wall of Crosby Hall. It is this party wall structure that we can see in the photograph of the model John Thorp produced for the courtroom. The model showed the front prominent façade of Crosby Hall and the wall structure exposed with each timber stud (Fig.28). I suggest that to the right of the model are additional pieces, perhaps the structure that Smith and Davies proposed should be constructed (and paid for) by the defendant in order to support the existing wall.



**Figure 28**

‘Quarter scale Model for Mr. T. H. Smith, Basinghall St., used in party wall dispute between Crosby Hall and Threadneedle House, Bishopsgate Street.’

As Robert Kerr noted in *The Consulting Architect*, models seem to present a clearer illustration of the facts of a case than drawings because, ‘their language is more intelligible’. In a complicated legal situation in the context of a bench trial involving

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<sup>494</sup> ‘Alterations at Crosby Hall’, *City Press* (18 January 1899) 6.



disputed boundaries to existing buildings, contractual obligations, and the three-dimensional party wall structure, the architectural model offered the judge in the case – who was not necessarily an expert in property law – a clear depiction of the existing building alongside an accurate representation of the intricacies of the dispute. This model and the previous two examples were rhetorical devices, deployed by architects to help describe, explain, and persuade the legal facts of a case to non-experts.

## 2.6 Conclusions

‘I maintain that until the public can see it in model the public are unable to express an opinion. Whether it will be possible to form a judgment when the model is made I do not know, but I maintain that no man who has any common sense in private life ever builds without a model of almost everything.’<sup>495</sup>

In this chapter I have outlined multiple ways in which models were presented, used, and discussed in varying situations with an urban public that desired participation in the construction of civic buildings of national and international significance. Across five strands from the 1830s to the 1900s, I have explored how models were used to assert the professional authority of the architect in public life.

Through drawings, newspaper reports, and private correspondence, I described how the two models were used by Williams Wilkins as a site for testing and presentation of possible designs to others. Additionally I explained how drawings of the model were transmitted as prints in the press as part of a new public discourse on architecture that questioned the professional authority of the architect. To offer a broader context to the publication of architectural designs in the popular press, Asa Briggs proposes that ‘public opinion, particularly as expressed in the increasingly influential Press’ was a key feature of a ‘strong society’, which followed the 1832

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<sup>495</sup> HL Deb 16 July 1901 vol 97 c.569

Reform Act.<sup>496</sup> More recently in their study of architecture and print culture in the nineteenth century, Mari Hvattum and Anne Hultzsch describe how the integration of words, images, and buildings in the architectural and popular press, ‘contributed to shape a new public discourse on architecture’.<sup>497</sup>

The nineteenth-century architectural competition was a particular moment where the truthfulness and validity of models was tested in relation to professional authority. After describing the background to the Royal Exchange competition, I explored the production, effects, and extents of C. R. Cockerell’s model for the building, where the architect’s authority was questioned by a rejection of a model by a client. The subsequent criticism for William Tite’s design in the press and support for the use of models highlighted their importance for the objective judgment of designs. On several occasions the British press looked to the Continent for a precedent of how scale models and full-sized mock-ups could be used in the public examination of a design.<sup>498</sup> In reference to historic continental examples, during the Royal Exchange competition one correspondent noted how a model, despite its expense, could expose architects’ designs to criticism, and therefore ‘puts an end to that suspense and curiosity in which it is in their interest to keep the public mind’.<sup>499</sup>

These ideas are consistent with many of the views surrounding the construction of public works in the 1860s until the 1900s. In the third section I explored how the Office of Works, in the belief that ‘no great public building ought to be erected without a model [...] having first been submitted to the public’, prepared a large-

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<sup>496</sup> A. Briggs, *England in the Age of Improvement* (London, 1999) p.388.

<sup>497</sup> M. Hvattum and A. Hultzsch, ‘Introduction: A Storehouse of Ideas’, in M. Hvattum and A. Hultzsch eds., *The Printed and the Built: Architecture, Print Culture and Public Debate in the Nineteenth Century* (London, 2018) p.7.

<sup>498</sup> These included the 1810 model of the Elephant of the Bastille, (‘Column de Juillet’, *CEAJ* (1838) 23) and a wooden model for the facade of the new Opera House at Paris by Charles Garnier in 1862, (‘Chips’, *Building News* (4 July 1862) 17).

<sup>499</sup> RIBA, BAL, VOL/77, ‘Reminiscences’, f.53, newspaper cutting on centre left of sheet: ‘New Royal Exchange’, *Globe*, 3 June 1840.

scale model for the consideration of politicians.<sup>500</sup> In addition to the rise of the popular press, this example underlined the importance of models for the House of Commons and the House of Lords in relation to the public discussion of architecture, as well as various contradictory opinions on the use of architectural models from outside the profession.

Other scholars of the period have explored the construction of professional authority in public life in the nineteenth century. In her study of the public sphere in Victorian literature, Pam Morris notes that whilst visible power and authority continued to be situated within traditional sites, it came to be administered by a new professional class that was brought about ‘by a general public perception [...] of unseen dangers within the nation that urgently needed to be known and quantified’.<sup>501</sup> Through the various case studies discussed, I demonstrated that architectural models and their role in professional practice fed into these larger discussion about the public and their part in the decision-making process. And whilst drawing on Continental methodological precedent, much of the discussion around models had a nationalistic tone regarding the quality, cost, and content of new public buildings in London. As an anonymous letter to *The Times* explained, ‘No guarantee against a failure which is to endure for centuries and disgrace the country can be obtained except by a model’.<sup>502</sup>

In the fourth section, on the Admiralty and War Offices, I examined how three architectural models were made specifically for public display were debated in parliament, criticised by various members of the architectural profession, and played a key part in a Select Committee inquiry that measured the feasibility of the project. These models presented a mutually agreed representation of the proposed building. The belief in the model as an agreement and therefore a vital part of the democratic procurement of public buildings was highlighted by the Earl of

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<sup>500</sup> HC Deb, 10 May 1869, Vol. 196, cc.538–561.

<sup>501</sup> P. Morris, *Imagining Inclusive Society in Nineteenth-Century Novels*, p.116.

<sup>502</sup> ‘Our Public Buildings’, *The Times* (27 May 1872) 7

Wemyss' attempt to make it a legal requirement that 'all public buildings of importance that are about to be erected at the public cost' should be publically exhibited in the form of architectural models.<sup>503</sup> Thinking more broadly, I propose the idea that a model does not require interpretation because it *is* something rather than merely *representing* something. And therefore because it does not require interpretation it can be mutually agreed or disagreed upon.

This idea of the model as a form of agreement can also be seen the emergence of the practising architect as a legal expert or consultant, introduced a new role for the model as a description of professional knowledge in the British courtroom. After exploring how models affected the architecture of the nineteenth-century courtroom itself, I examined how *The Consulting Architect* offered a microcosm of the debates surrounding the use of models in the nineteenth century and their authority in practice by raising questions about their level of finish, detail, and scale. In particular Kerr examined how the model's intelligibility to lay audiences, in this case juries, was affected by how a model was made, presented, and explained. Subsequently I cross-examined Kerr's manual against three legal cases that used models produced by John Thorp, which raised further questions about the required level of depiction on a legal model, how the content of the legal case help establish the purpose of the model itself, and the need for professional authority or knowledge was made manifest through physical objects.

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<sup>503</sup> HL Deb, 4 August 1899, Vol. 75 cc1430-46.

## Chapter 3

Experience, form, and feeling



## Chapter 3: Experience, form, and feeling

In this chapter I will examine how three different architects – William Burges, George Devey, and E. S. Prior – used models in the creative and conceptual processes of nineteenth-century architectural practice. Drawing on a wide variety of source material, the first section examines how William Burges produced, used, and displayed two models of the interior of St. Paul’s Cathedral in 1873 and 1874. Through discussions of the model in the architectural press, an explanatory pamphlet on how the models should be viewed, and Burges’ own reflections on why the models were made, this section explores the ability of architectural models to simulate the experience of a building – a concept discussed by Burges and countered by others in the architectural and popular press at the time. In the second section through an examination of surviving models and surviving drawings for models, I investigate how George Devey used models in the course of his practice during the 1870s and 1880s. In the light of comments made about Devey’s use of models after his death, I advance the idea that architectural models were a key part of his conceptualisation of three-dimensional form. In the final section, I investigate photographs of physical models and an explanatory text on the topic written by E. S. Prior at the end of the nineteenth century. Unlike Burges and Devey who commissioned others to make models, Prior advocated for architects to make their own models as a method of expressing internal ‘feelings’ about a design into tangible, material objects, thereby presenting a challenge to the prevailing orthodoxy and offering a new conceptual role for architectural models.

### 3.1 Model as Experience: William Burges and St. Paul’s

As Joe Mordaunt Crook outlined in his authoritative study of William Burges, by the mid-Victorian period the state of St. Paul’s cathedral was a national scandal.<sup>504</sup>

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<sup>504</sup> J. M. Crook, *William Burges and the High Victorian Dream* (London, 2013<sup>2</sup>) p.122. See also Crook’s earlier essay on the topic: J. M. Crook, ‘William Burges and the Completion of St. Paul’s’, *The Antiquaries Journal* (September 1980) 285-307.

Compounding this neglect was the seemingly incomplete nature of its decoration as left by Christopher Wren in the seventeenth century. Led by prominent figures at the Royal Academy, two attempts in the eighteenth century to complete the interior were unsuccessful.<sup>505</sup> There has always been a strong tradition of using models in the building of St. Paul's. In addition to Wren's extensive use of architectural models in the seventeenth century,<sup>506</sup> prior to Burges' appointment there were models made by Alfred Stevens of the decoration of the dome, worked on between 1862 and 1875, and a model of the apse made by F. C. Penrose was exhibited at the Royal Academy in 1866.<sup>507</sup> Penrose had been Surveyor of the Fabric of St. Paul's since 1852, and in 1864, working in collaboration with George Frederick Watts and Stevens, placed four designs for mosaics as 'mock-ups' in the spandrels of the arches beneath the great dome.<sup>508</sup>

In 1870 William Gladstone, then Prime Minister, launched a public appeal to rescue the cathedral from its condition produced by 150 years of neglect.<sup>509</sup> An Executive Committee was formed.<sup>510</sup> Within this committee, prior to Burges' involvement in the decorative project, theological and political groups had already been established. As Crook discusses, in together with Beresford Hope the four members of the clergy formed a High Anglican quintet, determined that the

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<sup>505</sup> H. H. Milman, *Annals of St. Paul's Cathedral* (London, 1868) pp.471-472.

<sup>506</sup> K. Downes, 'Wren and the New Cathedral', in D. Keene, A. Burns, and A. Saint, *St Paul's: The Cathedral Church of London 604-2004* (London/New Haven, 2004) pp.190-206; S. Valeriani, 'Three-dimensional Models as 'in-between-objects'', 26-46.

<sup>507</sup> Teresa Sladen's account of the various decorative schemes prior to 1900 has been a useful resource. T. Sladen, 'Embellishment and Decoration, 1696-1900', in D. Keene, A. Burns, and A. Saint, *St Paul's*, pp.233-257. The Stevens model is reproduced on p.247, fig.179; the Penrose model is reproduced on p.249, fig.183.

<sup>508</sup> Three other models for Stevens' designs survive in the collections of the Victoria & Albert Museum: 1955-1897 *Issiah*; 1956-1897 *Jerimiah*; 1957-1897 *Daniel* (unrealized).

<sup>509</sup> J. M. Crook, *William Burges*, p.122 cites: 'A reproach to this great nation', *The Times* (9 June 1870) p.9.

<sup>510</sup> The committee was formed from four members of the Clergy: Richard Church, Dean of St. Paul's, Benjamin Webb, Robert Gregory, and Henry Liddon; three Liberal MPs: John Walter, George Cavendish Bentinck, and William Tite; three publishers: John Murray, Henry Butterworth, and William Longman; and four from the Arts: James Fergusson, George Gilbert Scott, Thomas Gambier Parry, and Alexander Beresford Hope.



decorative scheme would be polychromatic and heavy with Christian symbolism.<sup>511</sup> Crook explains how in opposition to this high church position were three members of the committee – Tite, Bentinck, and Fergusson whose religious outlook was ‘Classical, Protestant, and Rationalist’ – who sought to stop Burges’ proposals from the beginning.<sup>512</sup> However, thanks to Beresford Hope’s influence, Burges was asked to prepare a preliminary iconographic scheme for the decoration; this report was completed in February 1871 without any drawings or illustrations and sent to the Executive Committee the following month.<sup>513</sup> Crook suggests that whilst Fergusson, who surely would have opposed the scheme and the appointment, was convalescing in Europe, Burges was appointed ‘Architect’ to St. Paul’s in April 1872.<sup>514</sup> Penrose retained his post of Surveyor of the Fabric and was given the right to comment on Burges’ work at each stage.<sup>515</sup> As Crook discusses in great detail, the Cinquecento decorative style proposed by Burges attracted a large deal of criticism in both the popular and professional press.<sup>516</sup> In this instance, as in the competition and construction of the Foreign Office buildings and the Law Court competition, contemporary theological and political disputes were played out in the debates over architectural style.<sup>517</sup> It was these religious and political disputes that caused Burges’ appointment to be terminated in October 1874. Between January 1873 and October 1874, whilst operating as architect to the Dean and Chapter of St Paul’s,

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<sup>511</sup> J. M. Crook, *William Burges*, p.124

<sup>512</sup> J. M. Crook, *William Burges*, p.124

<sup>513</sup> SPC, AA/A/1, ‘Report on Decoration St. Paul’s Cathedral’.

<sup>514</sup> J. M. Crook, *William Burges*, p.122 cites: St. Paul’s Cathedral Archives, Chapter Minutes, Sub-Committee for Decoration, 22 April 1872.

<sup>515</sup> T. Sladen, ‘Embellishment and Decoration, 1696–1900’, p.251, ft.138 cites: St. Paul’s Cathedral Archives, Decorations Box 1, ‘Agreement as to the Completion of St. Paul’s Cathedral made between the dean and chapter and F. C. Penrose and W. Burges’, 8 August 1872.

<sup>516</sup> Crook suggests that the decoration of St. Paul’s attracted more popular coverage than any other architectural issue in the mid-Victorian period For Crook’s intensive and extensive study of this aspect see J. M. Crook, *William Burges* p.128.

<sup>517</sup> For an in-depth discussion of these theological and ideological battles played out through architectural projects see: D. B. Brownlee, *The Law Courts: The Architecture of George Edmund Street* (Cambridge, MA, 1984); D. B. Brownlee, ‘That “regular mongrel affair”: G. G. Scott’s designs for the government offices’, *Architectural History* 28 (1985) 159-197; M. H. Port, *Imperial London: Civil Government Buildings in London 1851 – 1915* (New Haven and London, 1995).

Burges made three models made that showed his proposals to overlay the existing stone interior of the cathedral with a new decorative scheme in marble.

In January 1873, three months after he was appointed architect, Burges received a letter from the Dean that authorised him, 'to execute the model at a cost not exceeding £50'.<sup>518</sup> This model, the first model, represented one bay of the nave (Fig.29). H. W. Lonsdale, a former assistant of Burges who gave up architecture and became his chief architectural artist, began to make the model at Burges office in May 1873.<sup>519</sup> Six days later, at the end of the May, an individual called 'Pembury', presumably an assistant or decorative artist, came to Burges' office and began painting the model.<sup>520</sup> A meeting was arranged at the Chapterhouse for the end of June to present the model to the Executive Committee. Burges reported the events of the meeting in his journal and described how he was not allowed to show his model:

'Fergusson & Oldfield wanted drawings. I refused and stuck to models. A resolution had been carried before I was called in viz. Prepare plans & designs to show how the decorations could be applied to dome, also to prepare a plan for Ritual arrangements. I remonstrated against this and another resolution was added that as I could not do the drawings: The next portion of my work was to be a coloured model of apse – to be ready by November, and also to obtain estimates of cost.'<sup>521</sup>

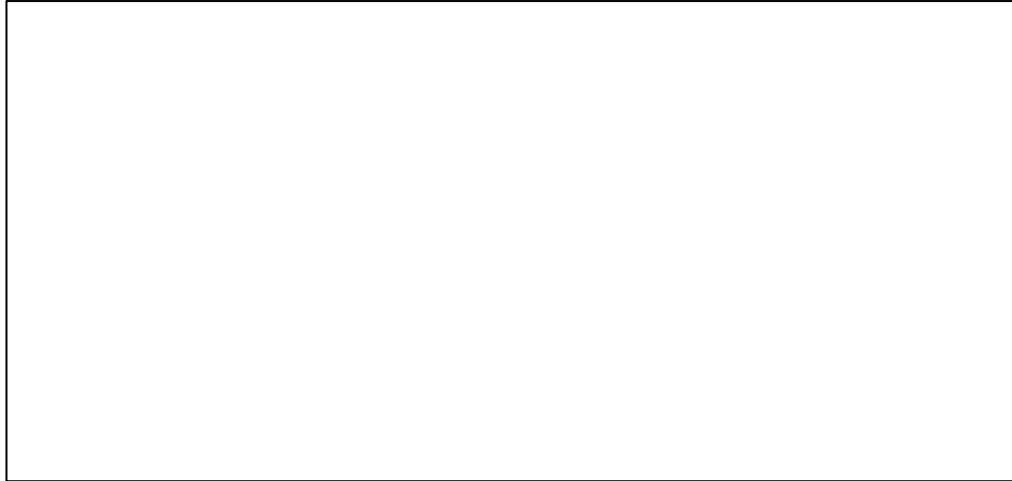
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<sup>518</sup> RIBA BAL, BuW/1, Journal, or register, compiled by Burges between 1870 & 1877, St. Paul's Cathedral, entry for 15 January 1873, f. 144.

<sup>519</sup> RIBA BAL, BuW/1, entry for 21 May 1873, f. 150.

<sup>520</sup> RIBA BAL, BuW/1, entry for 27 May 1873, f. 152.

<sup>521</sup> RIBA BAL, BuW/1, entry for 27 June 1873, ff. 152-3.



**Figure 29**

St Paul's, First Model, One bay of the nave (1873)

R. P. Pullan, *The Designs of William Burges, A.R.A.* (London, 1885) p.2.

Missing

In an attempt to mediate in the disagreement between Burges and the members of the committee who wanted to examine drawings, three days later the Dean wrote to Burges and suggested that he might supplement the model with drawings.<sup>522</sup> Burges replied to the Dean by letter and declared, 'drawings would be useless for those parts not studied in model'.<sup>523</sup> Subsequently the committee authorised Burges to spend a £100 on the model of the apse (Fig.30).<sup>524</sup> Following the receipts in Burges' journal, it is likely that John Walden, a Covent Garden-based craftsman who worked with Burges at Cardiff Castle, the Tower House in Kensington, and made many pieces of furniture to Burges' designs, made the timber base of both models.<sup>525</sup> Lonsdale continued to work on the model, presumably decorating and painting the plain timber base, during July 1873.<sup>526</sup> The model was only partially

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<sup>522</sup> RIBA BAL, BuW/1, entry for 30 June 1873, f. 156.

<sup>523</sup> RIBA BAL, BuW/1, entry for 30 June 1873, f. 156.

<sup>524</sup> RIBA BAL, BuW/1, entry for 12 July 1873, f. 160. Longman informed Burges that any excess from the £100 could be used to pay off the cost of the first model.

<sup>525</sup> RIBA BAL, BuW/1, entry for 14 July 1873, f. 160. For a discussion on Walden see: A. Tilbrook, *Truth, Beauty and Design: Victorian, Edwardian and Later Decorative Art.* (London, 1986) p.26.

<sup>526</sup> RIBA BAL, BuW/1, entry for 23 July 1873, f. 160.

complete at this stage as on 24 July 1873, Longman, Beresford Hope, and Eastlake called at Burges' office to see the model. The same day Burges asked to delay any presentation, as the model was not yet finished.<sup>527</sup> On 8 November 1873, the Dean wrote to Burges to ask whether it would be possible to have the nave model ready 'for inspection' at the end of November.<sup>528</sup> Ahead of its completion, Burges wrote to the committee to request additional fees for model-making and suggested that a third model, a model of the dome, should be commenced at once.<sup>529</sup> The importance of these models was underlined at this stage by Burges who informed one member that the committee could commission drawings of the decorative proposals from these models at their own expense.



**Figure 30**

St Paul's, Second Model – Apse (1873)

R. P. Pullan, *The Designs of William Burges, A.R.A.* (London, 1885) p.3.

Later appropriated and adapted by William Blake Richmond for his decorative scheme at St Paul's between 1891 and 1904: SCP, AA/P/18/5/1-3.

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<sup>527</sup> This delay appears to have been accepted as the next mention there is of the model comes three months later. RIBA BAL, BuW/1, entry for 24 July 1873, f. 162.

<sup>528</sup> RIBA BAL, BuW/1, entry for 8 November 1873, f. 162.

<sup>529</sup> RIBA BAL, BuW/1, entry for 15 November 1873, ff. 165–66. By 15 November 1873 Burges reported that £194 6s had been spent on the two models, although the committee had only granted £150 for them. John Walden had been paid £57 11s and Lonsdale had been paid £50 by Burges himself. See: RIBA BAL, BuW/1, entries for 14 July 1873, f. 160; 15 November 1873, ff. 165–66.

Unofficially the model of the nave was shown to a meeting of the Executive Committee held at the Deanery on 25 November 1873. Burges' comments in his journal – 'I go to the Deanery and remain while meeting is held' – suggest that he was not allowed to present the model or explain its depiction of his proposals.<sup>530</sup> Instead, 'a memorandum explaining materials' was read out at the meeting. The meeting concluded with a resolution that the presentation of the model of apse would be deferred until March 1874.<sup>531</sup> Following the meeting Longman wrote to congratulate Burges and indicated that the Executive Committee liked the presented model.<sup>532</sup> After the meeting Longman wrote to Burges to request itemised bills for the models and to inform him that no money would be paid on account until the design was accepted by the Dean and Chapter.<sup>533</sup> Eight days later, Penrose wrote to Burges to say that his clerk had made a mistake in the survey of the choir vault. Some of the dimensions were incorrect, and therefore, as Burges noted, 'the model is wrong'.<sup>534</sup> Members of the Committee, Hope and Longman, visited Burges' office at the start of the year to see the model in a semi-official capacity.<sup>535</sup> Despite these visits, however, the two models were not formally presented until 27 March 1874 where on a vote of four against three, the Committee, 'having carefully considered the subject in all its leanings', could not 'recommend either of these models as a basis for the decoration of S. Pauls'.<sup>536</sup>

Despite this lack of recommendation however, in May 1874 the decoration of St. Paul's came into the public eye when both models were exhibited at the Royal Academy exhibition. Subsequently there were several editorials, opinion pieces, and correspondence published in both the architectural and popular press. The majority of these articles focused on three things: the choice of a polychromatic Cinquecento

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<sup>530</sup> RIBA BAL, BuW/1, entry for 25 November 1873, f. 166.

<sup>531</sup> RIBA BAL, BuW/1, entry for 25 November 1873, f. 166.

<sup>532</sup> RIBA BAL, BuW/1, entry for 25 November 1873, f. 168.

<sup>533</sup> RIBA BAL, BuW/1, entry for 10 December 1873, f. 170.

<sup>534</sup> RIBA BAL, BuW/1, entry for 18 December 1873, f. 176.

<sup>535</sup> RIBA BAL, BuW/1, entry for 9 February 1874, f. 180; entry for 20 March 1874, f. 182.

<sup>536</sup> RIBA BAL, BuW/1, entry for 27 March 1874, ff. 185-186 transcription of Committee report.

style; the lack of architectural drawings to accompany or support the design; and the extent to which the model could simulate the experience of the proposed decorative scheme. When the press discussed the topic of simulation and experience, the main issues and questions surrounded the purpose of the model and the realism provided by the scaled depiction of figures and decoration. A review of the exhibition noted that whilst the other exhibited model at the Royal Academy was an improvement on the ink-tinted perspective drawing of the same subject exhibited nearby, it was unclear whether Burges' St. Paul's model were 'an improvement upon what might be done by drawings alone'.<sup>537</sup> The writer continued by discussing the draughtsmanship of the paper decorations pasted onto the inside of the model, which caused negative effects: the heavy outlines of the drawings reduced the scale of the decorations and the flat colouring employed 'gives to the whole effect a certain appearance of crudeness'.<sup>538</sup> The question, the writer considered, was 'whether these combined influences [...] do or do not seriously affect the success of the models'. This success, the writer noted, was not related to their artistic or symbolic success.<sup>539</sup> Instead the writer argued that the problem with the models was their depiction of the 'real experience' of the proposed decoration. As the writer queried, 'if the figure drawing throughout, and even the other surface work, had been *manipulated to scale*, would not the effect have been much more true?' This belief also held true for elements such as windows. As shown in the model, the writer noted, 'opaque pictures' represented the painted-glass clerestory windows and this effect 'is not in any way even suggestive of that of translucent glass'. All of these factors led the writer to conclude:

'The models are not meant to be more than a sort of conventional representation, although in the solid, of the designer's purpose, while we

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<sup>537</sup> The other model was a plaster model of E. M. Barry's Bristol Corn Exchange. 'Draughtsmanship in the Architectural Room of the Royal Academy', *The Architect* (16 May 1874) 273.

<sup>538</sup> 'Draughtsmanship in the Architectural Room of the Royal Academy', 273.

<sup>539</sup> 'We have agreed to leave this out of view for the present'. 'Draughtsmanship in the Architectural Room of the Royal Academy', 273.

have been rather looking at them as constituting a realistic presentment of the actual edifice.<sup>540</sup>

This idea of the model being unable to replicate the experience of the decorated interior was underlined by an eighteen-page pamphlet published by Burges at the time of the Royal Academy Exhibition. Although it does not appear to have been included at the Royal Academy as part of the model's display, the pamphlet offered a description of the models for the wider public 'with the view of facilitating their examination, and of explaining the principles on which they are constructed'.<sup>541</sup> Whilst focusing mostly on describing the content and symbolism of the decorative scheme, Burges concluded his description by emphasising the importance to the reader that the models were merely a representation of an interior and not a simulation of reality:

'In examining the model, it must not be forgotten that it is seen under very different conditions from those of the Cathedral itself. It is exposed to a blaze of light, instead of being darkened by the surrounding parts of the building.'<sup>542</sup>

Edward William Godwin, an architect-designer and friend of Burges, published a review of the designs in *Fraser's Magazine*. After condemning the views of those opposed to Burges, Godwin proposed to examine the models in order 'to see them in the way they should be seen'.<sup>543</sup> Godwin believed there were several difficulties that disrupted how the models were viewed. First, the models were sectional and therefore 'the colours are therefore illuminated as they could never been in fact unless the entire west end, dome and transepts of the church, were removed and the windows barricaded on the outside'.<sup>544</sup> Echoing the view of the *Architect*, in

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<sup>540</sup> 'Draughtsmanship in the Architectural Room of the Royal Academy', 273.

<sup>541</sup> *A Description of Mr. Burges' Models for the Adornment of St. Paul's now exhibited at the Royal Academy* (London, 1874) p.3.

<sup>542</sup> *A Description of Mr. Burges' Models*, p.18.

<sup>543</sup> E. W. Godwin, 'The Decoration of St. Paul's Cathedral', *Fraser's Magazine* 10. 56 (August 1874) 214.

<sup>544</sup> E. W. Godwin, 'The Decoration of St. Paul's Cathedral', 214.

Godwin's opinion the windows were also themselves deeply problematic to a viewer's experience of the model and its depiction of space: the stained glass of the proposal, which would admit light and become illuminated in colour, was made from an opaque model-making material. As a result the brightly lit spaces of the proposed building were depicted in shadow within the model. In contrast the portions of the interior that would be darkest in reality were in fact bathed in light due to their presence closest to the 'front' or 'section cut' of the models. Finally, due to the scale of the models, Godwin believed that Burges had neglected many of the details of the decorative scheme. Instead Godwin proposed that the cartoons for the decoration should have been prepared at full scale, photographed, and reproduced at the correct scale for the model. Without this approach, Godwin proposed, 'a certain crudeness in drawing and design must be expected and must be allowed for'.<sup>545</sup> However, Godwin's review drew criticism from sections of the architectural profession. In an article published the following week, the *Building News* declared that a model at ½ inch to the foot (modern scale = 1:24) should not be deficient in 'representative power', as many architects 'seldom adopt so large a scale for their drawings'.<sup>546</sup> Instead the journal claimed that the model represented the decorative scheme accurately as a poor design as 'If the model looks confused under a glare of light, the darkened interior of the cathedral will look more so'.<sup>547</sup> Other members of the profession added to the discourse on the models' ability to depict the experience of the proposed decoration to St. Paul's. In a letter to the *Architect*, T. L. Donaldson, driven by his Protestant outlook, discussed the effect of the models on the image of the design in his mind and suggested there was too much glare, gilded surfaces, and colours, that there was 'no sufficient quantity of surface left plain for repose to the eye and mind'.<sup>548</sup>

Donaldson's view was not one held by all of the profession. In a letter to the *Architect*, T. Roger Smith suggested that the scheme required careful study of both

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<sup>545</sup> E. W. Godwin, 'The Decoration of St. Paul's Cathedral', 214-215.

<sup>546</sup> 'The Decoration of St. Paul's Cathedral', *Building News* (7 August 1874) 179.

<sup>547</sup> 'The Decoration of St. Paul's Cathedral', 179.

<sup>548</sup> 'St. Paul's Cathedral', *Architect* (20 June 1874) 350.



the models and the pamphlet before it became clear what Burges had designed. However, Smith highlighted several issues with the arrangement, the model-making techniques, and fragmentary nature of the models that caused issues with their depiction of the decorative scheme. As Smith noted, viewing the model alone would cause few members of the public to understand how ‘a luminous and brilliant surface like that of marble will be substituted for stone’. Additionally, Smith noted, if the pamphlet had been consulted and Burges’ plans to redecorate the existing fabric were understood, the models offered little assistance in comprehending the effect this alteration would have on the interior. Like many other commentators, Smith noted that the lack of transparency in the materials used to make the clerestory windows gave the model a different effect than would occur in reality. As a result, Smith argued, both the architecture and the light in the model differed from the realities of the design. Exhibited in the Architecture Room at the Royal Academy, Smith suggested that the curation of two models failed to simulate the effect of being within the proposed interior:

‘The two models [...] cannot be seen at once glance, so that even such a slight approximation to the effect of the whole building might be obtained by looking through the nave-model at the choir model is lost.’<sup>549</sup>

Smith also proposed that the two models represented ‘fragments of a design’ that neither represented the decorative scheme or ‘the architecture of the entire building’.<sup>550</sup> Despite describing the models as ‘excellent in their way’, Smith conceded that what was required instead was ‘a decorated model of the whole building’ rather than the two isolated fragments.<sup>551</sup> If a model of the whole building was ‘too costly or too troublesome’, Smith proposed that Burges should prepare ‘a series of sections and interior perspectives embracing the entire design’.<sup>552</sup> These drawings were not just necessary for the wider public, who Smith believed ‘cannot

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<sup>549</sup> ‘St. Paul’s Cathedral’, 350.

<sup>550</sup> ‘Correspondence: The Adornment of St. Paul’s Cathedral’, *Architect* (18 July 1874) 36.

<sup>551</sup> ‘Correspondence: The Adornment of St. Paul’s Cathedral’, 36.

<sup>552</sup> ‘Correspondence: The Adornment of St. Paul’s Cathedral’, 36.

fail to misunderstand Mr. Burges's proposals', but to offer guidance for the architectural profession as to the content of Burges' proposal.

Another letter, this time from an anonymous fellow of the RIBA, highlights how debates over the depiction of materials and experience in the models were used as vehicles for contemporary theological and political disputes. Published in June 1874, the letter proposed that the model did not offer an adequate representation of the effect of marble in the decoration, which overlaid the existing stone interior with new slabs of marble. The letter suggested that until the decoration was seen in reality people would not 'believe in its beauty'.<sup>553</sup> Despite this lack of realistic depiction, the writer suggested that the colour of the proposed materials could be judged, 'if not adequately, at least to a great extent'.<sup>554</sup> However, the author proposed that the criticism of the models in the press focused on the 'very vague denunciations of its gaudiness and its un-Protestant quality', rather than criticism where 'critical faculty is really called into play'.<sup>555</sup> These issues and their debate through the medium of models also came into play with the publication of a rival pamphlet by James Fergusson that criticised Burges' designs and offered an alternative design based on Wren's Great Model, at that stage then on display at the South Kensington Museum.<sup>556</sup> I will discuss the importance of the Great Model to the profession further in Chapter 6.

Shortly after the models were put on display at the Royal Academy, on 19 May 1874 the Executive Committee overruled the Fine Arts Committee and accepted Burges' scheme 'as a basis' for the completion of the decoration of St. Paul's.<sup>557</sup> In June 1874 the four members who had voted against Burges design in March 1874 – Bentinck, Fergusson, Oldfield, and Parry – wrote a letter of protest at Burges' designs, published whilst the architectural models were in the public eye at the

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<sup>553</sup> 'The Decoration at St. Paul's', *Architect* (11 July 1874) 21.

<sup>554</sup> 'The Decoration at St. Paul's', 21.

<sup>555</sup> 'The Decoration at St. Paul's', 21.

<sup>556</sup> J. Fergusson, *Proposal for the Completion of St. Paul's Cathedral* (London, 1874).

<sup>557</sup> J. M. Crook, *William Burges and the High Victorian Dream*, p.122.

Academy.<sup>558</sup> Citing the example of the choir model that contained neither an altar nor stalls, the four dissenting members claimed that the scope of the models did not constitute ‘sufficient groundwork for a final decision’.<sup>559</sup> Additionally the four complained that due to Burges’ persistent refusal to present the models with accompanying drawings or sketches there was ‘no means of judging how the choir is to be harmonised with adjacent parts of the building’.<sup>560</sup> In the four members’ objections to Burges’ design, there is no discussion of the inability of the models to replicate or simulate the experience of the interior. Instead the main objections were critical of Burges’ aesthetic decisions for the proposed colour scheme, which would ‘absorb light in an interior already too dark’, and the variety of marbles, which ‘would produce an effect at once confused and gaudy’.<sup>561</sup> The following week, a letter was published from the Executive Committee that asserted, ‘every portion of [Burges’] models will be subjected to the most careful consideration before any commissions are actually given for the execution of the work’.<sup>562</sup> At a meeting on 3 July 1874 the Executive Committee laid down exactly how the decorative proposals would be examined by ordering Burges to provide coloured perspective drawings and designs, both for the parts represented in the model and the rest of the cathedral.

I have demonstrated the popular and architectural press were divided over both Burges’ design and the models that represented it. Whilst it appeared to be a continuation of the battle between the Gothic and Classical styles, beneath the surface it was a religious and political conflict, one in which Burges’ design became a casualty. Following an Executive Committee meeting on 27 October 1874, where his appointment as architect was terminated, Burges wrote a letter to the Dean of St. Paul’s to acknowledge this resolution, which underlined importance of architectural models in the conception of his design:

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<sup>558</sup> ‘St. Paul’s Cathedral’, *Architect* (20 June 1874) 349.

<sup>559</sup> ‘St. Paul’s Cathedral’, *Architect* (20 June 1874) 349.

<sup>560</sup> ‘St. Paul’s Cathedral’, 349.

<sup>561</sup> ‘St. Paul’s Cathedral’, 349.

<sup>562</sup> ‘The Decoration of St. Paul’s’, *Architect* (27 June 1874) 365.

‘I worked by means of models rather than by drawing, because my experience told me that the work is done more thoroughly and the difficulties better foreseen by their use than by coloured drawings, where colours can be blended, softened down, and hidden by convenient shadow. My experience also told me that the colours in a working model require to be slightly more crude than in a picture, as their intensity is very considerably altered by the accidents of position: thus a blue will require to be of a different intensity, according as it may be placed on a wall, or a ceiling. The models which I have had the honour to bring before you have been designed for working purposes, and therefore the colours are slightly more crude than they would appear on the building itself.’<sup>563</sup>

The letter emphasises that the understanding of how to use models was based on Burges’ professional experience and knowledge ahead of ‘coloured drawings’. Burges’ comments on the model being a place where ‘work is done more thoroughly and the difficulties better foreseen’ is almost certainly a reference to the three-dimensional nature of the applied decoration to the walls, vaults, and other surfaces of St. Paul’s. However in Burges’ view, the colours in the models do not simulate their effects in reality, ‘as their intensity is very considerably altered by the accidents of position’, an aspect that was roundly criticised by professional colleagues in the architectural press. At some point following the termination of Burges’ appointment in October 1874, the paper decorations were stripped from the models, stuck into a scrapbook, and the models reused and adapted by William Blake Richmond in the course of designing his decorative scheme at St Paul’s between 1891 and 1904 (Fig.31). Following Matthew Williams’ study of Burges’ working method at Castle Coch, I propose that some of the paper decorations in the scrapbook were alternative options – drawings produced in order to be tested in the model – a technique Burges used in the design of other buildings including Castell Coch and Cardiff Castle.<sup>564</sup>

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<sup>563</sup> RIBA BAL, BuW/1, entry for 23 November 1874, f. 240 letter from Burges to Dean.

<sup>564</sup> M. Williams, ‘Lady Bute’s Bedroom’, 273.



**Figure 31**

Burges' paper decorations in a scrapbook  
SPC, Burges Album, AA/A/1, p.11.

The termination of Burges, however, was not the end of the story. A year after the exhibition of the models, three perspectives of Burges' scheme drawn by Axel Haig were exhibited at the 1875 Royal Academy Exhibition. A highly skilled draughtsman, Haig was a regular delineator for Burges' designs and on this occasion he was paid £250.<sup>565</sup> On the occasion of the drawings' exhibition in 1875 an article in the *Architect* noted:

'These drawings ought, of course, to have accompanied the models exhibited last year; they not only supplement them, but, in many particulars, they correct erroneous impressions which the crude tinting of the model, entirely devoid of atmospheric effect, could not fail to give.'<sup>566</sup>

This reading of the drawings aligns with many of the issues described earlier in Chapter 2, albeit with the addition of a discussion on the atmospheric experience of the newly decorated interior, a depiction that the models were unable to replicate. Whilst on display at the Royal Academy, Burges wrote to Longman and proposed

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<sup>565</sup> RIBA BAL, BuW/1, entry for 4 August 1874, f. 222: 'Haigh wants £50 each for 5 drawings.'

<sup>566</sup> 'Architecture at the Royal Academy – I.', *Architect* (8 My 1875) 272.

that Haig's drawings 'have convinced the public that the effect of colour in the model was an erroneous one'.<sup>567</sup> Despite this, however, Burges did not work again on proposals for the cathedral. As raised earlier, this comment appears to contradict Burges' earlier statement that working with models rather than rendered perspectives was better because 'the work is done more thoroughly' whereas in drawings 'colours can be blended, softened down, and hidden by convenient shadow'.<sup>568</sup> I propose that Burges had these drawings made in order to 'win back' the commission at St Paul's by providing clarity about the atmospheric effect of Burges' design. This episode also establishes the importance of the Royal Academy Exhibition of a site of public discussion about architecture and how the profession presented itself to the public. I will return to investigate the Royal Academy Exhibition in Chapter 5.

### 3.2 Model as Form: George Devey

As many of his biographers have noted, as an architect who designed in the Wealden, Flemish, or Jacobean styles, George Devey had a direct influence on many later Arts and Crafts architects that worked in his office or admired his work.<sup>569</sup> Their admiration came from Devey's adoption of local building materials and methods such as vernacular timber framing or shingles, which led to a distinctive visual appearance to his work. In addition to this distinctive tectonic approach, Walter Godfrey, the first of his biographers, argued in 1907 that Devey's abilities as an architect included 'a natural and artistic balance of the masses of building'.<sup>570</sup> I will demonstrate in this section how Devey's ability to mass form and group buildings was supported by the use of architectural models. As his

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<sup>567</sup> RIBA BAL, BuW/1, entry for 16 June 1875, f. 296 letter from Burges to Longman.

<sup>568</sup> RIBA BAL, BuW/1, entry for 23 November 1874, f. 240 letter from Burges to Dean.

<sup>569</sup> W. H. Godfrey, 'The Work of George Devey – I', *Architectural Review* 21.122 (January 1907) 22-30; W. H. Godfrey, 'The Work of George Devey – II', *Architectural Review* 21.123 (February 1907) 83-88; W. H. Godfrey, 'The Work of George Devey – III', *Architectural Review* 21.127 (June 1907) 292-306; J. Williams, 'George Devey and his work', *AA Journal* 24.266 (April 1909) 95-103; J. Allibone, *George Devey: Architect 1820–1886* (Cambridge, 1991).

<sup>570</sup> Godfrey also described how the 'power of grouping George Devey possessed in a wonderful degree'. W. H. Godfrey, 'The Work of George Devey – I', p.30.

professional partner James Williams noted in 1909, Devey's office featured 'one modeller in constant work'.<sup>571</sup> Whilst Devey's interest in vernacular materials and detailing are expressed clearly in the office's elevation and perspective drawings, the surviving architectural models are characterised by their plainness, with little depiction of materials, relief, or decoration. Jill Allibone suggests that Devey did not produce many 'seductive' presentation drawings and instead relied upon sketches and models to show his clients what the buildings would look like in reality.<sup>572</sup> However, Devey's consistent use of architectural models in his work remains under examined by the secondary literature. Examining the primary sources from a different perspective, this chapter will explore the plain and volumetric nature of the models, which allowed Devey to comprehend his formal compositions in three dimensions. In order to test my hypothesis, this section of the chapter will examine the surviving primary sources related to the models of George Devey and consider this material in relation to Godfrey's comments about formal grouping and massing. Whilst there is an absence of documentary sources that survive, firstly, the section will examine posthumous discussions regarding Devey's use of models in the architectural press. Second, the section will explore surviving drawings for models of a gatehouse at St Alban's Court, Nonnington, Kent, and additions to an existing house at Melbury House in Dorset. Finally, the section will consider two surviving models of Devey's work for the Royal Family at Barton Manor near East Cowes on the Isle of Wight.

Beyond Walter Godfrey's comments on the well-judged architectural massing in Devey's work, other commentators in the architectural press discussed how scale models could allow architects, clients, and the wider public to comprehend the relative dimensions and form of buildings. In May 1871 an anonymous author ('G. H. G.') recommended the use of models in order to 'assist the mind through the eye to the comprehension of relative dimensions and form'.<sup>573</sup> A much longer and

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<sup>571</sup> J. Williams, 'George Devey and his work', 98.

<sup>572</sup> J. Allibone, *George Devey: Architect 1820–1886*, p.86.

<sup>573</sup> 'Theory of the Arts', *Building News* (19 May 1871) 380.

wide-ranging essay on architectural models in November 1877 proposed that the three-dimensional nature of models offered advantages to their depiction of physical form in comparison to drawings:

‘You can walk round a model, examine the contour, the details, the relative proportion that the various parts of a building bear to each and the whole, the projections and the recesses’.<sup>574</sup>

A later article in the *Building News* titled ‘Designing in the Solid’ addressed this issue and noted that ‘A building is a solid thing [...] Elevations do not show it as it is, and perspectives [...] only show it from a single point, whereas it will be seen from an infinity of points’.<sup>575</sup> Another, much later article from the February 1898 issue of the *Building News* proposed that model-making should be used by architects as:

‘The modelling of a building or group of buildings has an educative use, which cannot be supplanted by mere plan and elevation drawing. Only the man of imaginative power can arrange his building or masses in such a way as to produce an effective grouping’.<sup>576</sup>

However, there was neither a contemporary consensus on the ability of models to represent three-dimensional form nor the need for architects to use them. In an pseudonymous letter, signed ‘Pilk’, sent to the *Builder* in March 1897, the writer responded to comments in a previous issue about exhibiting architectural models at the International Building Trades’ Exhibition in Islington.<sup>577</sup> After dismissing Seward’s proposal, ‘Pilk’ suggested that whilst the general public required ‘further translation’ of architectural designs through the medium of models, the architectural profession and building industry did not:

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<sup>574</sup> ‘Architectural Modelling in its relation to the Architect, his Client, and the Public’, *Builder* (17 November 1877) 1145.

<sup>575</sup> ‘Designing in the Solid’, *Building News* (4 March 1881) 221.

<sup>576</sup> ‘Solidity’, *Building News* (11 February 1898) 187

<sup>577</sup> ‘Models of Designs and Buildings: Letter from Edwin Seward’, *Builder* (27 February 1897) 205.



‘It seems right to me that fellow-architects, builders, and workmen, we rightly convey our artistic (if any) meaning by means of drawings to scale or perspectives on the flat. We can all imagine the rest for ourselves.’<sup>578</sup>

However, the opinion expressed by ‘Pilk’ was not a view shared by a majority of architects. The importance of architectural models for Devey’s work was well understood by the wider profession. A few days after Devey died, at a meeting of the RIBA held in November 1886, Richard Phené Spiers suggested:

‘When some memoir was written of Mr. Devey, it might be illustrated by a few of the models he had made, and with photographs of several of his buildings, without which it was impossible to understand the power of design and fertility of imagination which characterised all his works.’<sup>579</sup>

Additionally George Devey’s use of models was mentioned on other occasions when architects discussed their role in professional practice. As discussed in Chapter 1, at a meeting of the AA in 1887, where a paper was read on modelling sculptural relief panels by J. C. L. Sparkes, Edward Swinfen Harris suggested that if architects wanted to make sure that their buildings would appear striking in outline, ‘there was nothing so excellent as modelling them as a whole’.<sup>580</sup> Citing the example of Devey’s buildings, ‘which were the results of models made in scale in wood’, Swinfen Harris proposed:

‘Nothing was so important to the members of the architectural profession as to understand the modelling of their buildings to a relative scale, so that they might form an idea of the effect produced before all attempts to improve it were too late.’<sup>581</sup>

John Slater, chairman of the meeting, admitted that whilst ‘Something had been said as to Devey’s success being due to the fact that his buildings were modelled in

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<sup>578</sup> ‘The Architect’s Model’, *Builder* (6 March 1897) 227.

<sup>579</sup> ‘Royal Institute of British Architects’, *Builder* (20 November 1886) 728.

<sup>580</sup> ‘The Architectural Association’, *Builder* (19 November 1887) 697.

<sup>581</sup> ‘The Architectural Association’, *Builder* (19 November 1887) 697.

wood', this approach to design came with a caveat related to how the profession managed its resourcing with the invoicing of fees to clients. As Slater proposed, Devey was fortunate with the type of clients he worked for and was 'never at a loss for any money to be expended'. Counter to this, Slater suggested how 'many of [the members'] clients, on the contrary, would look askance if asked to pay for models of buildings they were having designed'.<sup>582</sup> In the example of George Devey, with the model-maker employed within the practice itself rather than subcontracted to a professional model-maker, it appears that the cost of the model was included in the fee invoiced, but not itemised, to the client for the services undertaken. In the example the design of 'Maplewood', an un-built mansion for the 2<sup>nd</sup> Earl Granville, only one site plan and the photographs of a model survive (Fig.31). Devey invoiced £52 10s in June 1879, presumably for the site plan, model, and design work undertaken.<sup>583</sup> This is not an insignificant amount of money and seems to correlate with John Slater's proposal that it was Devey's wealthy clientele who supported his mode and method of architectural practice. When published in the *AA Journal* the caption to the photographs of the model noted:

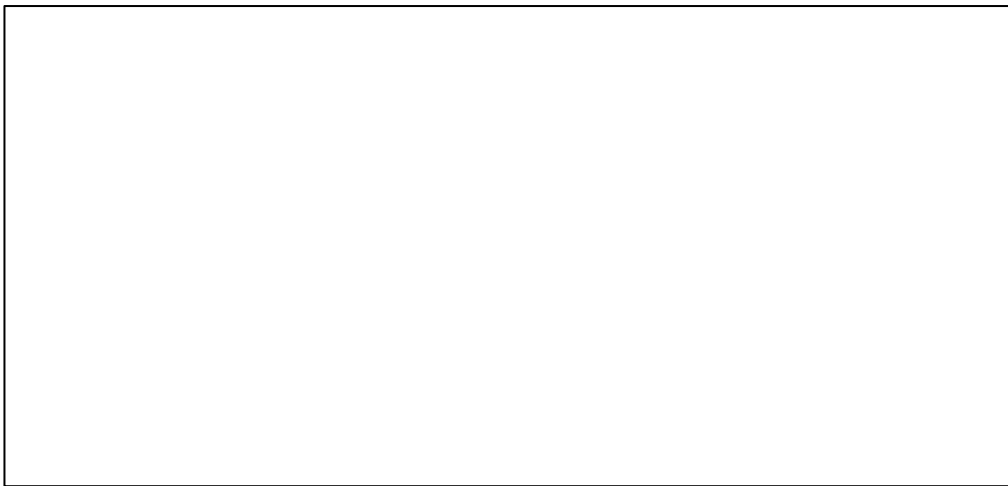
'The illustrations clearly show the great care and consideration which [Devey] always devoted to the grouping in mass and surroundings of his buildings; for which purpose sketch models of this nature were habitually prepared.'<sup>584</sup>

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<sup>582</sup> 'The Architectural Association', *Builder* (19 November 1887) 698.

<sup>583</sup> RIBA BAL, DeG/1/1, George Devey's account book, entry for 14 June 1879; RIBA BAL PB817/DEV[117] 1, Plan of the estate made for 2nd Earl Granville, 1879.

<sup>584</sup> J. Williams, 'George Devey and his work', 103.



**Figure 32**

Model of Maplewood

J. Williams, 'George Devey and his work', *AA Journal* (April 1909) 103.

Despite the constant work for a model-maker, implied by his full-time employment in Devey's office, there appears to be only four models that survive, with photographs of another published alongside an essay by Williams, and drawings for two further models in the RIBA Drawing Collection.<sup>585</sup> However, as Jill Allibone notes, there were almost certainly other models made that do not survive. Notably three of the four surviving models are contained within original, purpose-built travelling cases. Whilst these cases are probably one of the key factors to the survival of the models, the cases themselves raise questions about how models were deployed by the architectural profession during a period when industrial and infrastructural improvements were changing the mobility of the architectural profession.<sup>586</sup>

Connected to this idea, Allibone notes how unaccompanied by Devey, James Williams travelled with a model of a clock tower to Dover Harbour to a

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<sup>585</sup> A third model of an unbuilt house in Surrey, 'The Ledgers', remains in the possession of the original client's ancestor, Roger Daniell of Fickleshole Farm, Warlingham. My thanks to Mr Daniell for allowing me to visit the model.

<sup>586</sup> Citing the example of George Gilbert Scott, Howard Colvin notes that the improvement in communication and railway infrastructure in the nineteenth century allowed the new professional architect to be based in London whilst personally supervising 'the erection of half a dozen buildings at once, in a way which had been quite impossible for his eighteenth-century predecessor'. H. M. Colvin, *Biographical Dictionary of English Architects* (London, 1954) p.24.

presentation to the Harbour Board in May 1876.<sup>587</sup> In this case and in the other instances with Devey, I argue that the models stood in as proxy for the professional architect and their ideas, whilst the ability to travel gave the model its own autonomy.

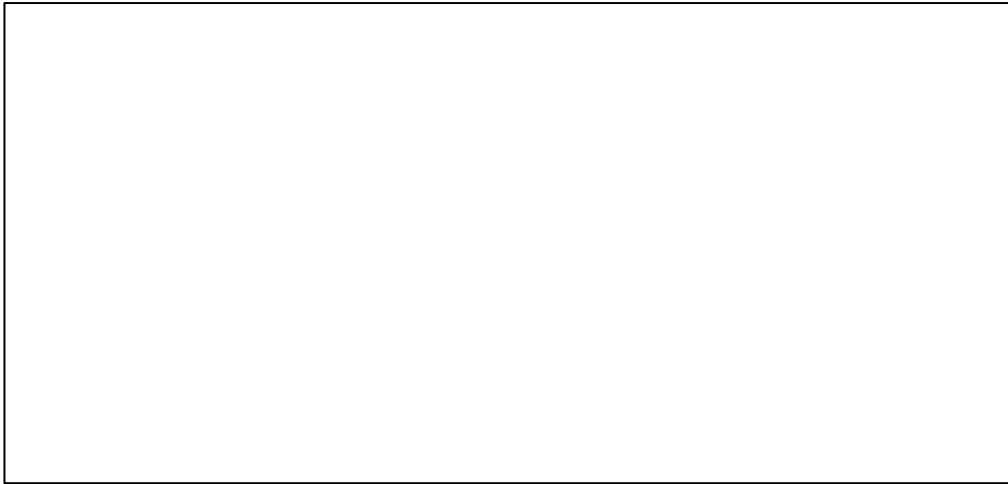
In addition to the four surviving models there are two sets of drawings from Devey's office for other models, which offer further understanding about the types of models that Devey was having made. For instance a model was produced for work at St Alban's Court, Nonnington, Kent, an eighteenth-century mansion house and estate inherited by a William Hammond, a Kentish banker, in 1868. Devey worked for Hammond on refashioning the house and adding a new lodge and estate cottages from 1867 until his death in 1886.<sup>588</sup> Seven orthogonal drawings survive for a model of a gatehouse at 1/8 inch scale.<sup>589</sup> Three of the elevation drawings are the original drawings on cartridge paper whilst the others are copies made on ochre tracing paper. In the drawings, and therefore presumably the model, there are no windows or openings and nothing that might suggest the materiality or the Wealden style of the final building. Instead the drawings (Fig.33) are simply drawn in pen with a yellow wash applied to walls of the elevation in order to clearly communicate to the model-maker the relationship between solid and void in the massing. Clarity of communication is evident in other aspects of the drawing: the three-dimensional form of the chimneys is not described in plan elsewhere, and so in elevation a partial plan is drawn and filled with pink-red wash in order to differentiate this part for the model-maker.

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<sup>587</sup> J. Allibone, *George Devey: Architect 1820–1886*, p.117 cites Dover Harbour Board Minute Book, II, p.352, minute of a meeting held on 8 May 1876.

<sup>588</sup> J. Allibone, *George Devey: Architect 1820–1886*, pp.100–103.

<sup>589</sup> These drawings are four elevations, ground plan, first floor plan, and a cross section. RIBA BAL, PB827/DEV[146] 81–86, 89.



**Figure 33**

Elevation for a model of St Albans Court, c.1875.

RIBA PB827/DEV146/82

Separate to the drawings, a model for refashioning the existing house at St Albans Court survives in a private collection (Fig.34). Missing its original timber base, the 1/16-inch (modern scale = 1:192) model can be observed from below, showing its composition from a series of timber pieces. In various places the wooden components of the model have been added and adjusted, with extra pieces used to depict a bay window or a buttress. Whilst there is no documentary evidence for this project, I propose that in the manner of the model's production from components demonstrates how Devey's ability to compose the masses of a building was supported by the use of his architectural models.



**Figure 34**

Model of St Albans Court, c.1875.

Private collection 273mm x 159mm x 75mm

A second set of drawings for a model survives for proposals to extend the existing building at Melbury House by Henry Fox-Strangways, the 5<sup>th</sup> Earl of Illchester.<sup>590</sup> Devey was employed to extend Melbury House in Dorset – a Tudor house that had already been enlarged once in the seventeenth century and again with a new library by Anthony Salvin in 1872.<sup>591</sup> Following Mark Girouard’s description and ground plans held in the RIBA Collection, it is evident that before Devey’s intervention the house was formed from the main house and two interconnecting wings, one of which contained Salvin’s library, around a small rectangular courtyard. Early ground plans show Devey proposing to add extensions north and west, whilst leaving the library alone and offering small alterations to the main house.<sup>592</sup> These designs were rejected and Devey was asked to prepare proposals for a wing that would extend north and south from the west end of Salvin’s library. There are three sets of ground and first-floor plans related to these proposals.<sup>593</sup>

Two surviving models relate to Devey’s work at Barton Manor, a largely seventeenth-century manor house located half a mile to the southeast of Osborne on the Isle of Wight, which was purchased by Queen Victoria and Prince Albert in 1845. Thomas Cubbitt remodelled the manor house in 1847-48 as an annexe to Osborne House for members of the Royal Household.<sup>594</sup> In 1873, Devey was instructed to refashion an existing stable block to include a new gabled entranceway from forecourt to stable yard, and add a dairy with a bay window, office, and

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<sup>590</sup> To be more precise the surviving drawings are a pair of office tracings of the drawings for the model.

<sup>591</sup> J. Allibone, *George Devey: Architect 1820–1886*, p.130. For a further discussion of the house see: RCHME, *An Inventory of the Historical Monuments in Dorset* (London, 1952) I pp.163–167; M. Girouard, *Life in the English Country House: A Social and Architectural History* (London/New Haven, 1978) p.78.

<sup>592</sup> RIBA BAL, PB817/DEV[119] 8-9. Graphically these drawings show the existing fabric in a grey-blue wash with Devey’s proposals in pink.

<sup>593</sup> RIBA BAL, PB817/DEV[119] 3-4, 10-11, 12-13. One set (10-11) includes flaps with alternative options for the north-west portion of the extension

<sup>594</sup> Cubbitt’s initial work reduced the size of the house itself and, later in 1852, added a model farmstead to the west and southwest. D. W. Lloyd and N. Pevsner, *The Buildings of England: Hampshire and the Isle of Wight* (London/New Haven, 2006) p.295.

connecting colonnade. Devey was introduced to Queen Victoria through her daughter, Princess Louise, and Louise's husband, the Duke of Argyll.<sup>595</sup> Devey and Williams travelled to Osborne on the Isle of Wight and had lunch with the Queen and various members of the Royal Family on 29 July 1873.<sup>596</sup> Devey and Williams brought two stout wooden boxes with them from the office. These boxes survived in the Royal Collection and are stored at Osborne. Each box is made of pine with a folding brass handle and two brass catches. Housed within each is an architectural model on a removable base, held in place with a catch and a dowel that fits into a socket on the opposite side of the case. Both models and cases are stamped with Devey's name and business address. The first model (Fig.35) is at the scale of 1/16 inch (modern scale = 1:192), incorporating the existing manor house and adjoining buildings. The second model (RCIN 34370) is at the scale of 1/4 inch to 1 foot (modern scale = 1:48), at this larger scale, the model depicts only the intersection between the existing stables and the new entranceway, colonnade, and dairy.



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<sup>595</sup> Between 1873 and 1877 Devey was engaged on additions to an existing house and a new lodge for Princess Louise and the Duke of Argyll at Machariorch House, Argyllshire see, J. Williams, 'George Devey and his work', 99; J. Allibone, *George Devey: Architect 1820–1886*, p.167.

<sup>596</sup> RA VIC/MAIN/QVJ (W) 29 July 1873 (Princess Beatrice's copies): '[Princess] Louise came & showed drawings for a new Dairy, which a Mr Deeney, whom they know, & who came here on purpose, has made'. Williams reported how Devey was asked to attend the following day and whilst driving up to Osborne the pair noticed the Queen was 'sitting out under a portico with her attendants'. Absent from this second meeting, Devey discussed 'the proposed alterations and additions to the Barton Manor House on the estate' with Princess Louise and the Duke of Argyll

**Figure 35**

Model of Barton Manor

RCIN 34371

Box - 430 x 255 x 95mm

Model – 415 x 235 x 80mm

The first model shows the various roof forms of the manor house and stables, and the distinctive figure of the chimneystacks, grouped into fours on the house and paired on the stables. Both proposed and existing buildings are made from the same timber, back-fixed with screws onto a timber base. Red wash has been applied to the wooden chimneys to show their brick construction. Elsewhere, on the house and stables, the elevations have been drawn onto the blocks of the model in pencil, giving the model a graphic quality. Windows have been outlined with their recessed panes of glass indicated with a heavy graphite shadow. The stone quoins and bases of the house have been indicated with pencil work. At the point of Devey's intervention the pencil work is more detailed with indications of the profile and shadow of various stone elements such as the arched entrance to the stable yard depicted in linework, whilst the infill rubble portions of the wall are portrayed with heavy hatching. On the roofs of the model roughly drawn lines portray the direction and jointing of roof tiles. The paths and lawns adjacent to the buildings have been drawn on in plan with pencil. Although the timber grain shows through, portions of the lawns themselves have been rendered with a bottle-green wash of wood stain. Notably the model-maker has also drawn the outline of two trees in plan. These outlines have been left without wash to depict the foreshortening of the tree canopy above the lawn when viewed from above, whilst against the walls either side of the new entranceway the model-maker has roughly drawn bushes or climbing plants in elevation. These accentuate the graphic elements of the model and give the impression that the model is able to combine multiple forms of architectural representation in a single image, defying the usual conventions of architectural practice.





**Figure 36**

Ground Plan of Barton Manor, RCIN, Osborne House, no number.

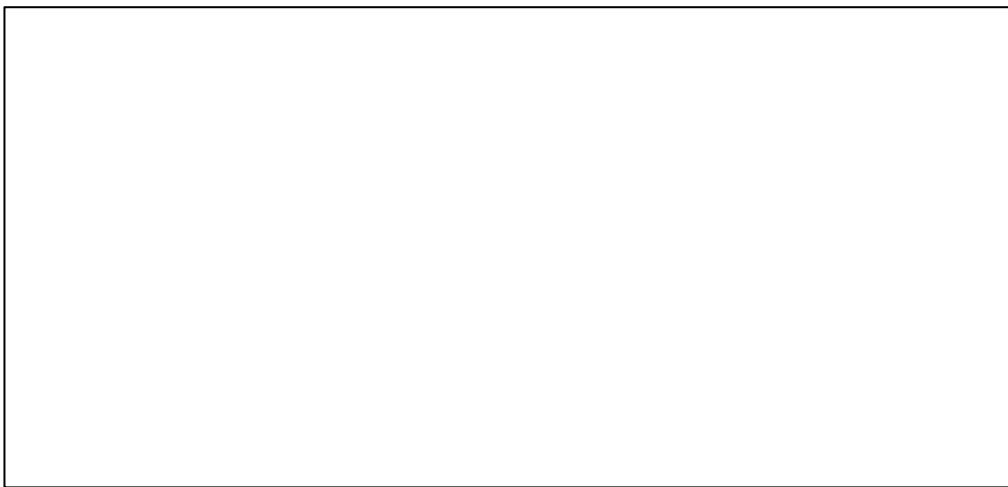
Whilst the first model depicts both the form and elevation treatment of Devey's proposals, it offers little explanation for the organisation of the buildings or which parts of the model represent existing and proposed fabric. These aspects are captured in the ground plan, drawn to the same scale as the first model, which uses three tones of wash to provide a clear image of Devey's new proposal and reorganisation of the existing building (Fig.36).



**Figure 37**

Model of Barton Manor  
RCIN 34371

Whilst the first model and ground plan would allow the viewer to understand the formal and organisational arrangement of Devey's proposals, the second model offered a more detailed portrayal of the interventions and a glimpse at its interior. At the much larger scale of 1/4 inch to 1 foot (modern scale = 1:48), in plain timber, the second model represents the key moment in Devey's scheme as an isolated fragment with the colonnade, bay window into the dairy, and entranceway to the stable yard (Fig.38). At this much larger scale the audience is able to see both the interior of the Dairy and the treatment of the colonnade, entranceway, and parapet.



**Figure 38**

Model of Barton Manor

RCIN 34370

Box - 375 x 275 x 260mm

Model – 355 x 255 x 220mm

Devey's second model, however, is not a complete model. Instead it depicts two bays of the colonnade, the dairy (with bay window), and the entranceway to the stable yard. There is no portrayal of the entire site. The 'rear' of the model is much plainer than the 'front', with no elevation drawn on in pencil, possibly to indicate the reality that most of the 'rear' would in fact be a part of a new coal store and hence architecturally unimportant. (A projecting sliver of wall indicates where this

section meets with an existing wall). One side of the model is sealed with a pine panel onto which Devey's name and business address has been stencilled. One face of the model has been left open to show the dairy with a lowered floor, steps down, shelving (presumably for butter churns), and a horizon of tiles, drawn in pencil, below the level of the windows. There is no material distinction between existing and proposed. Instead all of the model is roughly made from pine lengths and sheets screwed together with flat-head screws or nailed with tacks. Little attempt has been made by the model-maker to hide the connections between the different pieces that form the model; in fact the box for the model has been made more carefully with dovetail joints. Whilst the parapet and hood moulding to the entranceway have been added with an extra profile of pine, the rest of the model is largely without formal embellishment. Instead, like the first model, pencil lines have been added to indicate the coursing of stone and bricks on the external walls. In its unsophisticated level of production, depiction of elevations, and level of detail, the model is the epitome of Soane's comments from his Twelfth Royal Academy lecture, discussed in Chapter 1, where the idea (or design) is prioritised ahead of the skill of the model-maker.<sup>597</sup>

### 3.3 Model as 'Feeling': E. S. Prior

'The Architecture Room this year contains two models of buildings, in addition to the usual drawings. What may be hoped from such an innovation?'<sup>598</sup>

In the corner of the Architecture Room at the 1895 Royal Academy Exhibition was a model of a house by Edward Schroeder Prior.<sup>599</sup> As the *Builder* reported the model showed the building's external form only although there were small plan drawings

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<sup>597</sup> '[The Architect should prepare] a complete plain model shewing all the parts of the design he has approved'. J. Soane, 'Lecture XII', p.661

<sup>598</sup> 'Architecture at the Royal Academy', *Builder* (4 May 1895) 323.

<sup>599</sup> The second model was exhibited by Arthur Blomfield's design for the chapel at Tyntesfield in Somerset. This model was made by Charles Newson Thwaite and survives at Tyntesfield. I will examine Thwaite's work further in chapters four and five.

nailed down to the four corners of the base.<sup>600</sup> The plan was ‘a very peculiar one’, what historians describe as a butterfly plan, with a central hall acting as a hinge between two oblique wings covered by a roof, which contained a first-floor level of bedrooms.<sup>601</sup> Despite the innovative plan, it was the presence and nature of the model that attracted comment in the *Builder*:

‘It is comparatively rough in appearance, and revolutionary in its tendencies. We do not like to suggest anything so much below the dignity of ‘professional’ architecture, but we strongly suspect Mr. Prior of having made the model with his own hands. He is quite capable of it.’<sup>602</sup>

Whilst the model has not survived, a black and white photograph of it exists in the British Architectural Library (Fig.39). Fixed to a board, the house occupies a roughly diamond-like outline with rubble walls, pan-tile roof, leaded casements, and battered stacks with clusters of tall chimney pots all clearly depicted. Lawns and paths surround the house. In the foreground of the photograph this landscaping has been overlaid with one of the house’s plan drawings. The depiction of materiality in the model is both descriptive and naturalistic: the rubble stone walls are coarse and irregular, the weather-boarded gable ends are rough and uneven. One effect of this form of depiction is to offer a more realistic and naturalistic image of a building than any previous model-maker had been able to do in card, plaster, or timber. Through Prior’s discussion of model making I will explore an emerging change to architectural practice at the end of the nineteenth century: architects were beginning to see the potential of model-making through their own hands as a tactile way of developing formal thoughts and concepts.

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<sup>600</sup> ‘Architecture at the Royal Academy’, *Builder* (4 May 1895) 323.

<sup>601</sup> ‘Architecture at the Royal Academy’, *Builder* (4 May 1895) 323.

<sup>602</sup> ‘Architecture at the Royal Academy’, *Builder* (4 May 1895) 323.



**Figure 39**

E.S. Prior, 'Model of a House', 1895.

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Recent studies by David Valinsky and Martin Godfrey Cook have suggested that Prior's use of architectural models, 'caused quite a stir and revived the medium'.<sup>603</sup> Like this study, Valinsky and Cook are indebted to Lynne Walker's brilliant but unpublished PhD thesis on Prior.<sup>604</sup> Both Valinsky and Cook discuss Prior's work in isolation and therefore fail to recognise that there are two issues at play: first, how did Prior think about and use models in the course of his architectural practice, which will be explored here in Chapter 3; second, how did and why architects exhibit models, most notably at the Royal Academy, in the period, which will be discussed here briefly before being examined further in Chapter 5.

Following the display of Prior's model, in July 1895 fifty individuals wrote to the editor of the *Builder* with opinions about how the architectural profession should exhibit work at the Royal Academy. The correspondence was published across several weeks alongside editorials that provided further views on the topic.<sup>605</sup> Almost

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<sup>603</sup> M. G. Cook. *Edward Prior: Arts and Crafts Architect* (Marlborough, 2015) p.15; D. Valinsky, *An Architect Speaks: The Writings and Buildings of Edward Schröder Prior* (Exeter, 2014) p.86.

<sup>604</sup> L. B. Walker, 'E. S. Prior 1852–1932', (PhD Thesis, Birkbeck College, University of London, 1978)

<sup>605</sup> 'The Representation of Architecture at the Royal Academy', *Builder* (6 July 1895) 1-3; 'The Representation of Architecture at the Royal Academy: Concluded', *Builder* (13 July 1895) 21-23; 'The Representation of Architecture at the Royal Academy', *Builder* (13 July 1895) 25–28

all of the writers were ‘dissatisfied with the architectural exhibition at the Academy’, and therefore the topics discussed included the purpose of architectural exhibitions; what types of drawings should be exhibited; how the exhibition should be curated; the employment of external draughtsmen and the question of authorship.<sup>606</sup> Many of the correspondents discussed the role that architectural models could play for the profession. Individually, Henry Allen Prothero, Robert Alexander Briggs, Thomas Phillips Figgis, and Charles Edwards Mallows called for more architectural models to be displayed.<sup>607</sup> Edward Prioleau Warren welcomed the exhibition of ‘models of all sorts – of whole buildings or portions of them’.<sup>608</sup> Prior himself wrote to the editor and proposed that the Royal Academy should ‘admit only architectural representations [...] which are modelled and can stand on the same basis as the sculptor’s models, as the work of the artist himself’.<sup>609</sup> However, in support of the model exhibited at the RA, Prior clarified his views on model-making as a creative act in an essay on the topic, ‘Architectural Modelling’, published in the *Builder* in June 1895. The essay addressed topics that included the purposes of model-making for architects, the three-dimensional properties of models, the practical and representational qualities of materials, and the conceptual role of architectural models in relation to other artistic disciplines.

With the first line of his essay, ‘The architectural model is not recommended to the profession as a new device for client-getting’, Prior aimed at establishing the purpose and function of models in contemporary architectural practice. Models were for the architect, not the client.<sup>610</sup> Initial designs could be shown to clients in a sketch.<sup>611</sup> Clients poorly understood drawings, Prior believed, and therefore

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<sup>606</sup> ‘The Representation of Architecture at the Royal Academy’, *Builder* (6 July 1895) 1.

<sup>607</sup> ‘The Representation of Architecture at the Royal Academy’, *Builder* (6 July 1895) 2; ‘The Representation of Architecture at the Royal Academy’, *Builder* (13 July 1895) 25-26.

<sup>608</sup> ‘The Representation of Architecture at the Royal Academy’, *Builder* (6 July 1895) 3.

<sup>609</sup> ‘The Representation of Architecture at the Royal Academy’, *Builder* (13 July 1895) 27.

<sup>610</sup> E. S. Prior, ‘Architectural Modelling’, *Builder* (29 June 1895) 482.

<sup>611</sup> Prior also advocated that architects should work out their preliminary ideas through ‘sketch models’ with cheaper and quicker-to-use materials such as rough cardboard, a technique that he used in 1897 for the proposed vestry at All Saints Church, Margate. Despite my enquiries this model is missing and appears to have last been seen in the late 1970s.

architects were able to operate autonomously on the design for a project. Prior suggested that it was dangerous to show clients a model for two reasons. One, a model was too revealing of the architect's intentions: 'It is dangerous to show what is so near the truth'. Second, a model was an experimental tool for the architect, but because of its legibility, 'it may provoke criticism, and the game be up'.<sup>612</sup> Despite this, Prior proposed that models were vital for architects as it gave them 'a review of their work, before the imprimatur of the builder is set upon it'.<sup>613</sup>

Prior advised that there were a wide variety of materials that could be used for model-making. For sketch models cardboard or French putty, a form of impure soap, could readily take the form of architectural surfaces. With more elaborate models, 'real interpretive work', Prior explained how wax was indispensable as it had the ability to represent both the colour and texture of real materials. Powdered pigments could offer colour, and any required texture could be achieved by the addition of sands, dusts, or powders to the combination of paraffin wax and turpentine. Wax could be applied to pasteboard and worked with modelling tools to replicate the material texture of a wall. In turn these models could be used to discuss the design with craftsmen which resisted representation in drawings such as 'The desired texture and arrangement' of a wall.<sup>614</sup> And whilst the specification and contract should dictate how the building should be assembled a 'serious practitioner' should always produce a model in order for the contractor and craftsman to 'see' what the contract states: the architect 'will be loath to trust the success of the operation to drawings, plans, and specifications'.<sup>615</sup>

One aspect of their importance for architects was the three-dimensional nature of models. Similar to the view expressed in his later letter to the *Builder*, Prior complained: 'It is continually forgotten that an architectural design is a sculpture in

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<sup>612</sup> E. S. Prior, 'Architectural Modelling', 482.

<sup>613</sup> E. S. Prior, 'Architectural Modelling', 482.

<sup>614</sup> E. S. Prior, 'Architectural Modelling', 483.

<sup>615</sup> E. S. Prior, 'Architectural Modelling', 483.

the round'.<sup>616</sup> Prior proposed that the way that architects made drawings was largely to blame. The standardised use of technical drawing instruments such as T-squares encouraged parallel composition in plan and elevation. Whilst drawing plans and elevations on separate pieces of paper, however 'perfect' in isolation, had the effect of separating the design into abstract categories. Instead, Prior proposed, 'if modelled first, the design would have had unity of plan and elevation impressed on it from the first'.<sup>617</sup> This was not the only occasion that Prior discussed the form-making characteristic of model making. In 1911 when Prior elected to the Slade Professorship in Fine Art at Cambridge University, in his inaugural lecture Prior discussed the fundamental importance of model-making in the university education of an architect: 'He must model so as to understand how form is situated.'<sup>618</sup>

Prior suggested that another problem with architectural drawings was the lack of materiality, colour, or texture in their representation. Architects often resorted to written specifications in order to communicate these aspects of a building of clients and builders. Prior compared this to a hypothetical painter who would not make paintings but instead a written register of pigments. Prior bemoaned, 'How can the delicate inspirations, that come of personal feeling in such matters as texture and colour, be expected from such methods?' The 'present habits' of architectural practice caused a separation between the architect and his work.<sup>619</sup> In order to bridge this gulf, 'The model', Prior declared, 'brings the architect a step nearer his work than the drawing did'.<sup>620</sup>

Prior's unique contribution to the topic was that an architect could explore their subjectivity towards the colour, texture, and materiality of a building through the production of models. The expressive nature of model-making meant the medium was a representation suited for an emotive purpose rather than an imitative one. In

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<sup>616</sup> E. S. Prior, 'Architectural Modelling', 483.

<sup>617</sup> E. S. Prior, 'Architectural Modelling', 483.

<sup>618</sup> 'In the Value of Architecture', *Building News* (7 June 1911) 804.

<sup>619</sup> E. S. Prior, 'Architectural Modelling', 482.

<sup>620</sup> E. S. Prior, 'Architectural Modelling', 483.



part, this was related to the choices and types of materials used. Prior suggested that wax models could convey ‘feeling to oneself rather than facts to another [...] the use of wax is but a door to experiment’.<sup>621</sup> Experimentation through making is clearly an important aspect of Prior’s ideas around the use of models. This underlined by the fact that both the first model exhibited at the 1895 Royal Academy Exhibition and a second model exhibited at the 1899 exhibition were theoretical projects that were later used as prototypes in Prior’s domestic work (Fig.40).<sup>622</sup> The 1895 model appears to have been the forerunner to ‘The Barn’, a cottage in Exmouth built in 1897. Lynne Walker suggests that the 1899 model represents a period of development in Prior’s domestic architecture that culminated in his celebrated work at Voewood (sometimes known as Home Place) in Norfolk built completed in 1905.<sup>623</sup>



**Figure 40**

E.S. Prior, Model of a House, 1899.

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<sup>621</sup> E. S. Prior, ‘Architectural Modelling’, 483.

<sup>622</sup> As with the 1895 model, this model has not survived but there are two black and white photographs of the model in the British Architectural Library. Additionally two other photographs of the model were published in the *Architectural Review*: ‘Supplement: Architecture and Crafts at the Royal Academy, 1899’, *Architectural Review* 6 (June 1899) p.81.

<sup>623</sup> L. B. Walker, ‘E. S. Prior 1852–1932’, p.446.

Both Prior's models and theoretical discussion surrounding their use exerted an influence beyond the British architectural profession. Reproduced in Herman Muthesius' *Das englische Haus* (1910), Wolfgang Pehnt describes how the plan of 'The Barn' exerted a particularly strong influence on German Expressionist architecture in the early twentieth century.<sup>624</sup> Later in his 1973 study, Pehnt traces how German architecture transitioned from Jugendstil through Expressionism and into Neue Sachlichkeit of the 1920s by 'the gradual fashioning of the building into a spatially and plastically conceived structure capable of being experienced in every dimension'.<sup>625</sup> As Pehnt notes the clay model played an important role in the design process for architects that included Hans Poelzig, Hans and Wassili Luckhardt, Hermann Finsterlin, and Bernhard Hoetger.<sup>626</sup> I propose that the clay model as a conceptual tool for these architects emerged thanks to their study of E. S. Prior's two Royal Academy models and his 1895 theoretical text. My evidence for this is based on the interest in Prior's work as mediated through Muthesius as well as Wassili Luckhardt's polemic text 'Vom Entwerfen' ('On Designing') from 1921, that paraphrased Prior's comments on conception through parallel projection and encouraged architects to put pens and paper aside in favour of expression of a design in plasticine and clay.<sup>627</sup>

### 3.4 Conclusion

This chapter has identified three key ways that models held a conceptual role in their use as design tools by architects in the course of their professional practice. The first section of the chapter examined three models made for William Burges at St. Paul's, where the potential of the model to project the experience of the completed building was disputed and discussed by various individuals. However,

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<sup>624</sup> W. Pehnt, *Expressionist Architecture* (London, 1973) p.157.

<sup>625</sup> W. Pehnt, *Expressionist Architecture*. p.198.

<sup>626</sup> W. Pehnt, *Expressionist Architecture*. p.198.

<sup>627</sup> W. Luckhardt, 'Vom Entwerfen' (1921) pp.169-170 quoted and translated in O. Elser, 'On the History of the Architectural Model in the 20<sup>th</sup> Century', in O. Elser, and P. C. Schmal, *Das Architektur Modell*, p.12.

Burges was convinced of the conceptual role of a models ahead of a drawing, ‘where colours can be blended, softened down, and hidden by convenient shadow’.<sup>628</sup> I propose that much of the debate around the models for the decoration of St Paul’s was due to their display at the Royal Academy where their purpose was misconstrued by the profession and public alike. When displayed in public the models could not replicate the internal lighting, depict the decorative scheme, or offer a view of the effect of the whole project in one image – something the public demanded and which was provided by Axel Haig’s atmospheric perspectives.

In the second section of the chapter, I explored how models allowed George Devey to conceptualise the massing and grouping of his buildings. The surviving models raise questions regarding level of depiction in relationship to scale, the interrelationship between drawings and model on the model’s surface, and how the method of production, through an assemblage of timber parts, was a part of how Devey conceived the form of his buildings.

Finally, I demonstrated how the model as both an object and a technique allowed Prior to express his ‘feelings’ about an architectural design through the tactile medium of model-making. Unlike traditional modes of drawing, this form of model making, as a component of professional practice, held the potential to unite the architect with his designs. I suggest that this was due to the three-dimensional quality of the models, the *Builder* proposed in 1899 in a discussion on Prior’s models, that ‘a model comes closer, in a sense, to the actual architecture than a drawing’.<sup>629</sup> Chapter 2 also dwelt on the idea that a model was closer to the building than a drawing: C. R. Cockerell, in his description of the model for the Royal Exchange, explained how ‘no drawings however complete or numerous could convey all those relations and reflections which a model at once presents to the eye

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<sup>628</sup> RIBA BAL, BuW/1, entry for 23 November 1874, f. 240 letter from Burges to Dean.

<sup>629</sup> ‘Architecture at the Royal Academy’, *Builder* (29 April 1899) 403.

and understanding'.<sup>630</sup> Both Prior and Cockerell described how models were objects to be experienced, whether this experience was related to their making or viewing.

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<sup>630</sup> BAL. CoC/3/16: 'Copy of C R Cockerell's report to the Committee of the Gresham Trustees for carrying into execution the rebuilding of the Royal Exchange in London, 4 May 1840', f.1.

## Chapter 4

### Clients, Commissions, and Model-Makers



## Chapter 4: Clients, Commissions, and Model-Makers

This chapter will examine how architectural models were commissioned, made, and used by architects in the course of their professional practice. In particular, the chapter will explore the relationships between client and model, architect and model-maker. A series of key research questions that examine these relationships include: how were models used to communicate design information from architects to their clients? How did both clients and the architectural profession see the role of the model as a tool of communication? How were models commissioned, made, and paid for during the period? Finally, to what extent was the model-maker a creative or independent actor in the design of buildings?

The chapter will begin by exploring contemporary discussions on how an architect should use a model with clients. Next I will locate the model-makers as a group of individuals in their own right and discuss their disciplinary backgrounds, operations, and positioning in both the professional and public spheres. I will then move on to explore first case study, which investigates use of models in the conception and iterative design process at Dorchester House. This case study will also re-introduce the model-maker Richard Day, whom I last discussed in Chapter 2 when he produced models of the Royal Exchange for William Tite. From the study of letters held at the British Architectural Library, alongside close readings of trade directories and census information, I will explore how the architect (Lewis Vulliamy), client (Robert Holford), and model-maker (Richard Day junior) interacted with and through models.

My second case study investigates how a client (Edward Hussey III) visited the workshop of the prominent model-maker Thomas Dibdin Dighton to view a model of a new house designed by Anthony Salvin at Scotney Castle in Kent. Through examination of the model, Hussey's diaries, and surviving drawings, the episode reveals one way in which the relationship between client and model, architect and model-maker developed. In particular the case study offers a glimpse

of the process of production and the iterative nature of working with models, despite their supposedly ‘finished’ or ‘presentation’ status.

Finally, the chapter concludes with a section on the model-maker John Thorp. After introducing Thorp and his workshop, I will explore a model he made in 1907 for an industrial complex. Working from the architects’ own orthographic drawings, Thorp’s model uncovered a host of ‘errors’ in the plans for a highly complicated building, which saved the client several thousand pounds in potential construction costs. By examining the publication of photographs of this model, I will propose a correlation between the construction of the model and the desire for improved industrial efficiency of both equipment and labour.

#### 4.1 How should an architect use models with clients?

On two separate lectures on professional practice, T. Roger Smith, an important figure in architectural education and a key voice in the profession, discussed the use of models as a method of communication between architects and clients. In a lecture given at the Royal Society of Arts in April 1869 on ‘The Duties of an Architect’, in front of a broad audience, Roger Smith described how for a client, ‘A plan is an almost unintelligible document’.<sup>631</sup> Instead to help a client understand both the organisation of a building and its external expression, Roger Smith advised how a ‘model ought to be constructed, to make arrangement, and even, in some cases, appearances, clear’.<sup>632</sup> According to Roger Smith, the clarity of a client understanding a design and its probable cost was a key part of the role of the professional architect.<sup>633</sup> The understanding of a client, Roger Smith believed, should continue to be reinforced during the progress of the building on site

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<sup>631</sup> T. Roger Smith, ‘On the Duties of an Architect with Reference to the Arrangement and Construction of a Building – Part I’, *Building News* (7 May 1869) 383.

<sup>632</sup> T. Roger Smith, ‘On the Duties of an Architect – Part I’, 383.

<sup>633</sup> T. Roger Smith, ‘On the Duties of an Architect – Part I’, 383.



through ‘specimens. [...] or full-sized models of features fixed to their intended place’ for the satisfaction of both architect and client.<sup>634</sup>

Roger Smith further developed and discussed these ideas in a second series of lectures on professional practice to the members of the Architectural Association in 1872. In the second of his lectures Roger Smith noted that often the initial instruction from a client might include ‘drawings to scale and models’.<sup>635</sup> However, it was more likely, Roger Smith noted that an architect would produce a model as an explanatory aid for a client’s understanding. In his third lecture, T. Roger Smith advised that some clients would be able to comprehend plan drawings. Whilst an ‘isometrical drawing’ could be used to explain the internal arrangement of a building, Roger Smith suggested a model-making technique similar to the model of the Admiralty and War Office (Chapter 2):

‘Where the exterior only was needed to be shown, a good model could be made to the size and shape of the building, and the elevations drawn and pasted on to this block.’<sup>636</sup>

Throughout the period the profession continually debated the question of how and why architectural models should be used with clients. In a broad-ranging editorial on the discipline, the *Builder* described several of the problems associated with the use of models in practice. The substitution of models for drawings, as proposed by a small group of unnamed architects, would cause a series of future problems for the profession.<sup>637</sup> This proposal, the editorial remarked, will ensure that ‘a large proportion of those who employ the services of architects’, would not ‘take the trouble to understand drawings’. ‘Drawings’, the editorial proposed, ‘are a much

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<sup>634</sup> T. Roger Smith, ‘On the Duties of an Architect with Reference to the Arrangement and Construction of a Building – Part II’, *Building News* (30 April 1869) 410.

<sup>635</sup> For clarity, Roger Smith is stating that he has received initial instruction from models to scale made by clients. T. Roger Smith, ‘On Professional Practice – Lecture II’, *Building News* (29 November 1872) 418.

<sup>636</sup> T. Roger Smith, ‘On Professional Practice – Lecture III’, *Building News* (20 December 1872) 485.

<sup>637</sup> ‘Modern Architect and its Assailants’, *Builder* (24 April 1875) 362.

more certain and adequate method of exhibiting a building than a small model'. Although it did not provide a clear answer as to why it had come to this conclusion, the article concluded by suggesting that the use of a model to simulate 'the general effect of the finished structure, is in fact one of the most deceptive things possible'.<sup>638</sup>

Two years later the *Builder* took a different position with a two-page article on the benefits of 'Architectural Modelling in its Relation to the Architect, his Client, and the Public'.<sup>639</sup> After lamenting that Britain lacked a national gallery of models, the article proposed that such a gallery would provide a didactic service to the profession by allowing clients the opportunity to choose from 'an abundance of examples [...] illustrative of the style in which he would like a building erected', which would correct clients' 'crude and indifferent taste'. Additionally the article proposed that the benefits of a model in comprehending a proposed building were clear:

'However artistically plans, elevations, sections, and perspective drawings may be made, these even at best, give but an incomplete idea of what a building would be like upon erection. You can walk around a model, examine the contour, the details, the relative proportion that the various parts of a building bear to each other and the whole, the projections and recesses, the system of ventilation, method of carrying off the rain water, roof-plan, etc. which you cannot do with a drawing.'<sup>640</sup>

Despite the benefits, the article discussed three reasons why architectural models were less prevalent than they should be in contemporary practice. Models were often offered 'caricatures of a design'. Second, the model-makers themselves were 'inadequately rewarded' for their services. (This was undoubtedly true – there are reports in the architectural press of two of the most prominent model-makers in the

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<sup>638</sup> 'Modern Architect and its Assailants', 362.

<sup>639</sup> 'Architectural Modelling in its Relation to the Architect, his Client, and the Public', *Builder* (17 November 1877) 1145-1146.

<sup>640</sup> 'Architectural Modelling in its Relation to the Architect, his Client, and the Public', 1145.

period, Thomas Dibdin Dighton and Richard Day, struggling financially in the late 1840s. Similarly the *Builder* reported in July 1850 that ‘there are several good architectural modellers, who have not more work than they can do’.<sup>641</sup> Finally, the 1877 article blamed the emergence of photography, ‘by which any number of perspectives can be obtained’. The 1848 article on Dighton also blamed the rise of cheap ‘electrotyping, and other reproducing’ technologies for the lack of model-making work.<sup>642</sup>

Despite the emergence of these technologies, however, the 1877 article stated that a photograph ‘fails to give an observer that readiness and fullness with which he can grasp the design of a building in all its parts when shown by a model’.<sup>643</sup> In particular with clients, the article noted, a model is of ‘essential value’. And unlike perspective drawings, ‘often made so deceptive as to mislead the client so that the client becomes dissatisfied’, the model has the potential to offer a clear, reassuring, and legible view of the proposed building. I would suggest that often the ‘practical value’ of an architectural model in the nineteenth century was to form a commitment or pact about the final building between architect and client. Later in this chapter, in the discussions of Dorchester House and Scotney Castle, I will show how involved clients were in the production of architectural models – commenting, shaping, and discussing the proposed buildings in miniature, before the costly and time-consuming business of construction began.

The argument over the differences in legibility for a client between drawings and models continued to be discussed in the architectural press at the turn of the twentieth century. In response to a letter regarding an exhibition of architectural models at the International Building Trades’ Exhibition to support the profession,<sup>644</sup> ‘Pilk’, a pseudonymous correspondent, wrote to the editor of the *Builder* and noted, ‘the people who visit building trades’ exhibitions are not

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<sup>641</sup> ‘To Correspondents’, *Builder* (6 July 1850) 323.

<sup>642</sup> ‘Architectural Models’, *Builder* (6 May 1848) 225.

<sup>643</sup> ‘Architectural Modelling in its Relation to the Architect, his Client, and the Public’, 1145.

<sup>644</sup> ‘Models of Designs and Buildings’, *Builder* (27 February 1897) 205.

altogether those whom we would wish to influence'.<sup>645</sup> 'Pilk' claimed that 'architects, builders, and workmen' communicated with one another through orthographic or perspective drawings alone, and asserted, 'we can imagine the rest for ourselves'. The wider public, however, 'require some further translation [...] furnished by means of models'. 'Pilk' explained how:

'I have lately taken some pains to make for my clients simple models of proposed work, and have found from actual experience that greater interest is aroused and their sympathy augmented thereby. I am confident that both young and old prefer to look at an architectural model in place of a drawing wherever practicable'.<sup>646</sup>

A reoccurring theme within these discussions is the role of the architectural model as a tool to assist the client rather than the architect. The comments made by 'Pilk' reinforce this idea. Similarly in a discussion on the role of sketch designs with clients in the *Building News*, one writer described how:

'The preparation of sketches for an employer contemplating building is a usual and fairly reliable means of representing the effect of a design. [...] Many architects must have come across people of this kind, who can understand a model or a building erected, but who cannot realise the effect of a perspective view'.<sup>647</sup>

Sketching was a highly cost-efficient method of working and there were architects who began to suggest new (and cost-efficient) ways of demonstrating the three-dimensional forms of buildings to clients. In 1906 Allan O. Collard published a diagram for the construction of a 1/16-inch paper model of a church, alongside an engraved illustration of a completed example.<sup>648</sup> Formed from elevations of each side of the proposed building's volume, Collard explained how models of this sort could be made from a single sheet of 'ordinary drawing paper', with folding flaps

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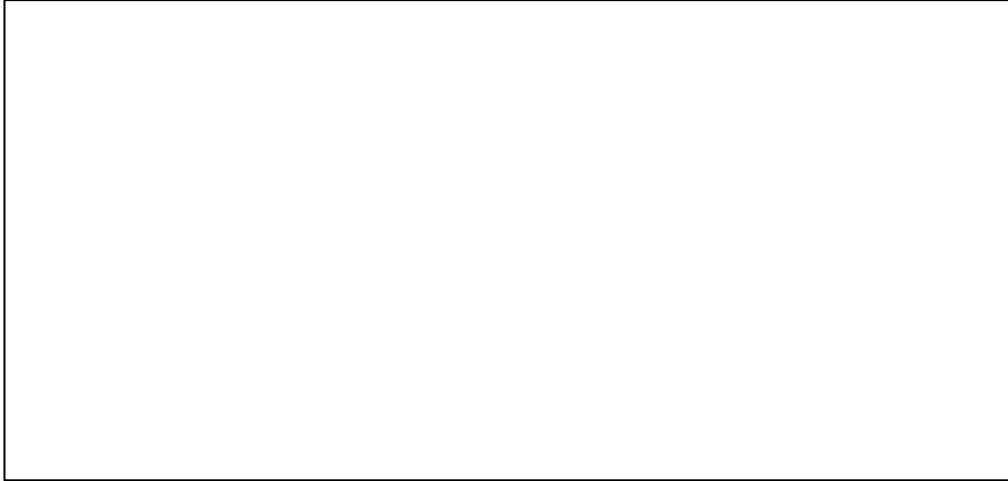
<sup>645</sup> 'Correspondence: The Architect's Model', *Builder* (6 March 1897) 227.

<sup>646</sup> 'Correspondence: The Architect's Model', 227.

<sup>647</sup> 'Preparation of Sketches', *Building News* (26 July 1901) 95.

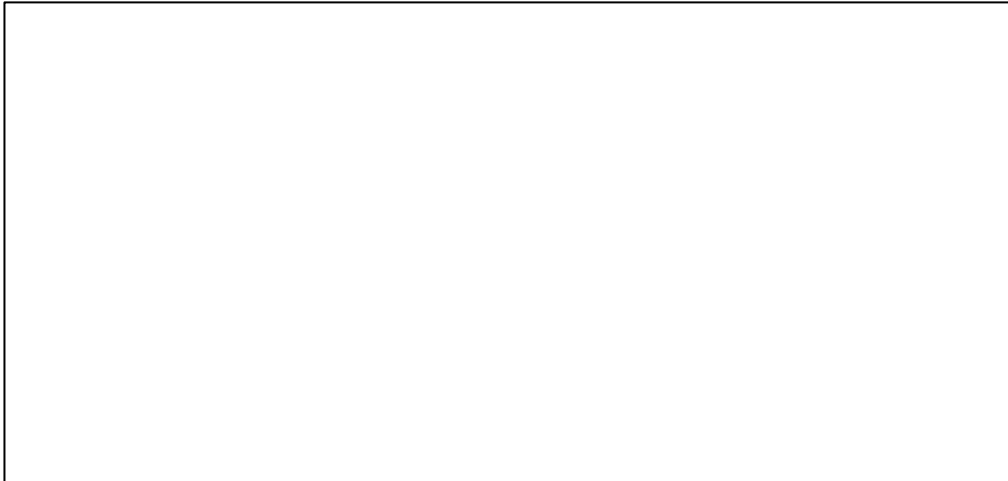
<sup>648</sup> 'Paper Models of Buildings', *Builder* (6 January 1906) 22.

and tabs that allowed the model to be assembled without the use of adhesives. As Collard explained the idea 'was partly the result of a desire to show a client, quickly and cheaply in model form, the general appearance of a completed building.'<sup>649</sup>



**Figure 41**

'Paper Models of Buildings', *Builder* (6 January 1906) 22.



**Figure 42**

Model of the church made from the instructions

'Paper Models of Buildings', *Builder* (6 January 1906) 22.

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<sup>649</sup> 'Paper Models of Buildings', 22.

## 4.2 Locating the Model-makers

As outlined in the literature review within the Introduction, other than the articles written by Tim Knox on C. R. Cockerell and by Matthew Williams on William Burges, there has been an understandable lack of scholarship on the relationship between architect, client, and model-maker.<sup>650</sup> The model-makers themselves have received even less attention. In his 1969 essay on John Soane, John Wilton-Ely noted that it wasn't until the end of the nineteenth century that model-making was a specialised activity.<sup>651</sup> Before that time, Wilton-Ely suggested, models were produced by architectural assistants or by the various craftsmen employed on the building. Although published only four years after Wilton-Ely's article, the catalogue essay written by John Physick and Michael Darby that accompanied 'Marble Halls' at the Victoria and Albert Museum in 1973, proposed that architects tended to employ the services of an external model-maker rather than produce models 'in-house'. As I showed in the previous chapter with George Devey, however, there were exceptions to this practice. Physick and Darby noted how model-making was carried out by large firms of sculptural modellers, such as George Jackson & Sons, and individual architectural model-makers. In the latter category Physick and Darby cited Stephen Salter and Charles Newson Thwaite as particularly prominent model-makers. In 2005 Karen Moon offered a brief discussion of the career of John Thorp whilst also repeating Wilton-Ely's claim that before the end of the nineteenth century there were few model-makers operating in England.<sup>652</sup> Recent work by Teresa Fankhänel has brought attention to the importance of the model-maker Theodore Conrad and his role as an active player

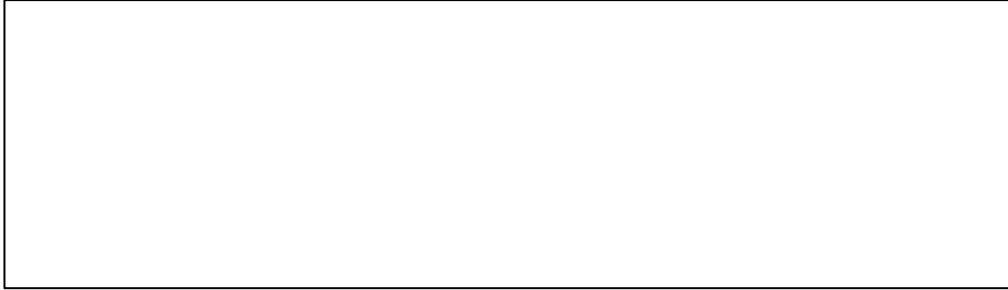
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<sup>650</sup> T. Knox, 'Cockerell's Model for Langton'; M. Williams, 'Lady Bute's Bedroom, Castell Coch',

<sup>651</sup> J. Wilton-Ely, 'The Architectural Models of Sir John Soane: A Catalogue', *Architectural History* 12 (1969) 10.

<sup>652</sup> K. Moon, *Modelling Messages. The Architect and the Model* (New York, 2005) p.145.

in the development American twentieth-century architecture.<sup>653</sup> However as I will demonstrate in this chapter, I contend with her proposal that model-making only emerged as a specialist endeavour in the 1930s.



**Figure 43**

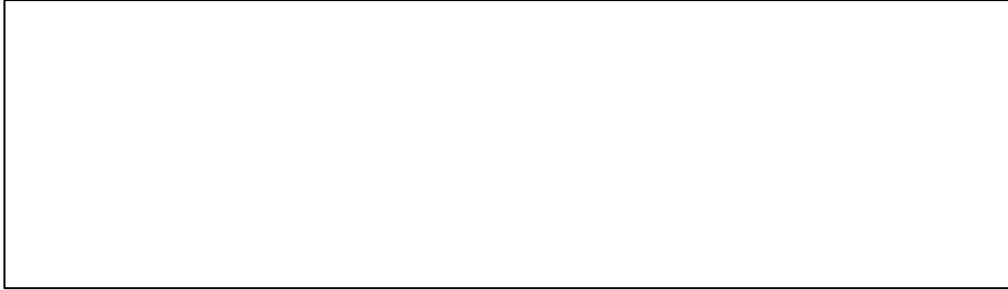
‘Advert: C. N. Thwaite, Architectural Modeller in Cardboard’, *Builder* (5 July 1862) xiv.

In this chapter I will present case studies involving three of the key professional model-makers who operated in the nineteenth and early-twentieth century: Richard Day and his son Richard Day junior, Thomas Dibdin Dighton, and John Thorp. In Chapter 2 I examined earlier work by Richard Day in addition to models produced by James Mabey, his son Charles Henry Mabey, and his son Charles Henry Mabey Junior. When exploring architectural display culture in Chapter 5, I will focus on models produced by Stephen Salter and Charles Newson Thwaite. These eight model-makers, three dynastic operations, constitute the key architectural model-makers in the period. The majority of them were based in London, although Thwaite began work from Manchester before moving to London in 1865 and Richard Day junior left south London for Maidstone in Kent in the mid-1860s. The location of their workshops varied across London. Dighton remained within Westminster until moving to north Devon at the end of his career. Richard Day junior had a series of workshops in south London, and whilst operating separately from his father, inherited both his father’s tools and work-in-progress following his death in 1849. Following the relocation of his business to the

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<sup>653</sup> T. Fankhänel, ‘Introducing Theodore Conrad or Why Should We Look at the Architectural Model Maker?’, *Les Maquettes*, pp.259-268. See also her forthcoming book, T. Fankhänel, *The Miniature Boom: A History of American Architectural Models in the Twentieth Century* (Zurich, 2019).

capital, Thwaite also operated from a workshop in south London before setting up in Craven Street off the Strand from the mid-1860s. C.H. and J. Mabey were based at in a mews at Storey's Gate, Westminster, from c.1864-66 until 1889.



**Figure 44**

Model of Country Hall, as approved by the London County Council in April 1911  
R. Knott (architect), C. H. Mabey (model-maker).

*Survey of London Monograph 17: County Hall*, H. Hobhouse ed. (New York/London, 1991) plate 5c.

Disciplinary background and training were a key part of how these individuals went about the processes of model-making. Those with a sculptural background, such as the Mabey or Day dynasties, worked exclusively in plaster. Those that came from a graphic or architectural background worked in cardboard or paper applied to a timber substructure. Certainly for the Mabeys, architectural model-making was only a secondary source of income at best. As Susan Beattie outlines, their primary work was the production of relief sculptural work for buildings.<sup>654</sup> This included commissions for civic buildings, such as Todmorden Town Hall (completed 1875), as well producing an extensive stock and catalogue of plaster and cement readymade elements including 'ceiling flowers, cornice enrichment, capitals, trusses, enriched panels, chimneypieces, etc.' which architects and clients could view at their premises.<sup>655</sup> There were also occasions when the sculptor-model-maker produced both the architectural model of the building and carried out the work for the sculpture on the exterior of the building. One example of this was Charles Henry Mabey Junior who made a model for the County Hall, London, in 1911, and later

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<sup>654</sup> S. Beattie, *The New Sculpture* (London / New Haven, 1983) pp.51–52.

<sup>655</sup> 'Advert for James Mabey', *Kelly Building Trades' Directory* (London, 1870) p.47.



completed the architectural carvings for the exterior to the designs of Ralph Knott between 1910 and 1922 (Fig.43).<sup>656</sup>

### 4.3 Dorchester House and Richard Day

Between 1848 and 1857, Lewis Vulliamy designed an Italianate palazzo that replaced an earlier house, on behalf of the art and plant collector Robert Stayner Holford. There have been several studies of Dorchester House written from the nineteenth century to the present day.<sup>657</sup> Described by the Survey of London as the ‘most opulent of all the Park Lane palaces’, all of these accounts focus on Holford’s impressive collection of European paintings, the various artistic (primarily Italian Renaissance and neoclassical) influences on both the client and his architect, and the contribution of the sculptor Alfred Stevens to the interiors, especially the Carrera-marble chimneypieces for the Saloon and the Dining Room.<sup>658</sup> Due to the absence of surviving models, it is not surprising that all of these studies overlook the role of Richard Day junior in the design of the building. I will first discuss Richard Day junior’s background by drawing on a variety of material including postal directories, census records, and exhibition catalogues. Through surviving letters sent to Vulliamy from Holford and from Day, I will examine the function of the architectural models in the design of the project. Finally, I will discuss the model’s legacy.

Few of the surviving letters written by Day junior to Vulliamy are dated, which makes their chronological organisation difficult. Additionally as only one side of the

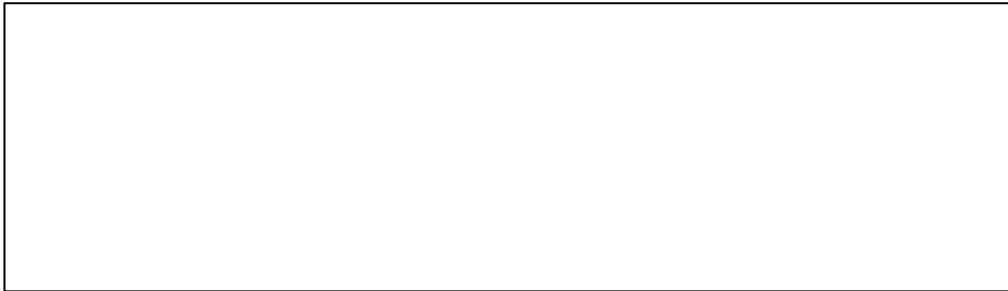
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<sup>656</sup> *County Hall: Survey of London Monograph 17* (New York/London, 1991) p.47.

<sup>657</sup> E. Balfour, ‘Dorchester House’, *Magazine of Art* 6 (October 1883) 397-404; E. B. Chancellor, *The Private Palaces of London: Past and Present* (London, 1908) pp.249–259; C. Hussey, ‘London Houses: Dorchester House – I. London’, *Country Life* (5 May 1928) 646-653; C. Hussey, ‘London Houses: Dorchester House – II. London’, *Country Life* (12 May 1928) 684-689; *Survey of London: Volume 40, the Grosvenor Estate in Mayfair, Part 2 (The Buildings)*, ed. F. H. W. Sheppard (London, 1980); D. Watkin, ‘Holford, Vulliamy, and the Sources for Dorchester House’, in S. Macready and F. H. Thompson eds., *Influences in Victorian Art and Architecture* (London, 1985) pp.81-92.

<sup>658</sup> *Survey of London: Volume 40, the Grosvenor Estate in Mayfair, Part 2*, p.273.

correspondence survives, the ‘in letters’ from Holford and Day junior to Vulliamy, the narrative of how architectural models were used in the design of Dorchester House remains incomplete. However, the surviving material offers a rare documentation of how models were commissioned, transported and used. As I will demonstrate through analysis of the letters, Holford was a highly educated individual who could not only understand orthographic drawings but also made his own copies of Vulliamy’s drawings in order to offer suggestions on the design. On many occasions the letters include Holford’s drawings in plan, elevation, and perspective for many aspects of the work at Dorchester House.<sup>659</sup> Holford’s letters, therefore, offer us a more nuanced view of the relationship between architect, client and model during the period.



**Figure 44**

‘Dorchester House, Park Lane’, *Builder* (28 August 1858) 551.

The eldest son of Richard Day (1786-1849), Richard Day junior (1816-91), was active as a model-maker in south London between 1843 and c.1860, before relocating to Maidstone. His first work appears to have been a ‘Model of an inkstand, surmounted by the new church at Lee, Kent, executed in silver’, which was exhibited at the Royal Academy Exhibition in 1843.<sup>660</sup> Whether for new ‘exhibition’ models or existing models presented to a wide public audience, the Royal Academy Exhibition was a regular site for Day junior’s work. In 1844 a model of a design by J. B. Bunning for the Royal Exchange in 1839 was exhibited

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<sup>659</sup> The letters are complicated by their reference to Holford’s country house Westonbirt, which was rebuilt between 1861 and 1870 under Vulliamy’s direction.

<sup>660</sup> *The Exhibition of the Royal Academy – 1843* (London, 1843) No.1383.

with Day junior's name included as 'maker',<sup>661</sup> followed in 1846 by a model of the Temple Church in London,<sup>662</sup> and in 1847 by a model of the north-west corner of Soane's Bank of England.<sup>663</sup> This latter example is likely to have been a copy of a model that survives in Sir John Soane's Museum (MR16). Day junior had a working relationship with the Soane Museum. George Bailey, one of Soane's assistants and then the first curator of the museum following Soane's death, noted in his diary how in July and August 1847 Day junior was working on repairs of the architectural models in the collection.<sup>664</sup> Day also exhibited models at the 1851 International Exhibition. Under 'Class 30 – G: Models in Architecture, Topography, and Anatomy', Day junior exhibited five architectural models under his own name: the portico of the Parthenon, The Temple Church, the portico of the Pantheon at Rome, the Martyrs' Memorial at Oxford, and a window from St Paul's Church on Herne Hill.<sup>665</sup> At the Royal Academy and at the 1851 International Exhibition, Day junior exhibited models for commercial reasons, and by producing models at different scales and in styles of differing periods he was demonstrating his ability to produce work based on a customer's requirements.

Tracing Richard Day junior's location has been a key part of understanding the letters he sent to Vulliamy regarding Dorchester House. The census in 1841 recorded Day junior as living with his model-maker father, mother and six siblings at Newington Causeway in Lambeth.<sup>666</sup> In 1840 Day senior was operating from premises at 12 Darlington Place in Lambeth.<sup>667</sup> Despite living south of the River, in 1846 and 1849 Day's business address was listed as 10 New Church Street, off

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<sup>661</sup> *The Exhibition of the Royal Academy – 1844* (London, 1844) No.1258.

<sup>662</sup> *The Exhibition of the Royal Academy – 1846* (London, 1846) No.1363.

<sup>663</sup> *The Exhibition of the Royal Academy – 1847* (London, 1847) No. 1300.

<sup>664</sup> SJSM, George Bailey Diaries, entries for 29 July 1847, 5 August 1847, 7 August 1847, 16 August 1847.

<sup>665</sup> *Great Exhibition of the Works of Industry of all Nations, 1851: Official Descriptive and Illustrated Catalogue* (London, 1851) II p. 830, no.161A.

<sup>666</sup> 1841 census of England, Surrey, Lambeth, Newington, folio 26, lines 1-8, Richard Day household; digital image Ancestry.com, (<http://www.ancestry.com>): accessed 13 April 2018); citing PRO HO 107/1065/5.

<sup>667</sup> *Post Office London Directory for 1840* (London, 1840) p.73.

Lisson Grove in Marylebone.<sup>668</sup> At the same time, Day junior appeared to have been working independently from his father – the Post Office Directory for London listed Day junior’s profession as ‘artist’ and his address as ‘42 Commercial Road, Lambeth’ in 1845 and 1846.<sup>669</sup> At this stage Day senior was struggling for commissions. An article in the *Builder* from October 1848 lamented that architects did not further employ him at that time:

‘There are few architects who are noted acquainted with the admirable models made by Mr. Day. We are sorry to hear, that after struggling for some years to make a living by the practice of his art, he finds his efforts fruitless, and that he must either seek some other occupation or starve. It seems sad as well as surprising, that with the ability he has acquired in this particular path he should not be enabled to maintain himself by the exercise of it. Some of our readers may, perhaps be disposed to aid him.’<sup>670</sup>

Despite the lack of commissions, Day senior was working on a model of Dorchester House in 1849. The work was probably at its early stages as there are only three letters addressed to Day senior. In June 1849 Day senior met Vulliamy at his office at 27 Argyll Street to discuss the project.<sup>671</sup> On 3 September 1849 Day senior wrote to Vulliamy, informing him that the cost of the model had increased due to the time taken to make the moulds for it.<sup>672</sup> Three days later on 6 September 1849 Day senior wrote again to inform him that the model was not yet in a fit state to be moved or ‘finished sufficient to judge from’.<sup>673</sup> Unfortunately this was last work undertaken by Day senior. On 17 September 1849 he died of Asiatic Cholera, almost certainly linked to a large-scale outbreak occurring in London at the time.<sup>674</sup>

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<sup>668</sup> *Post Office London Directory for 1846* (London, 1845) p.1288; *Post Office London Directory for 1849* (London, 1848) p.1341.

<sup>669</sup> *Post Office London Directory for 1845* (London, 1844) p.680; *Post Office London Directory for 1846* (London, 1845) p.690.

<sup>670</sup> ‘Day, the Architectural Modeller’, *Builder* (7 October 1848) 490.

<sup>671</sup> RIBA RIBA VuL 13/1/1, Letter from Richard Day senior to Lewis Vulliamy, 29 June 1849.

<sup>672</sup> RIBA RIBA VuL 13/1/1, Letter from Richard Day senior to Vulliamy Office, 3 September 1849.

<sup>673</sup> RIBA VuL 13/1/2, Letter from Richard Day senior to Vulliamy Office, 6 September 1849.

<sup>674</sup> ‘Richard Day’. (1849). *Certified copy of birth certificate for Richard Day, on 17 September 1849*. 1849, September, Saint Saviour Surrey, Vol. 04 p.1019 (GRO COL/ 677340).

Following Day senior's death, Day junior wrote to Vulliamy to offer his services to complete the model of Dorchester House and offered Vulliamy reassurance in his skills as a model-maker: 'Of my abilities I can give you the most satisfactory reference if you should require.'<sup>675</sup> Following this, in October 1849, a memorandum of understanding was agreed between Day junior and Holford for the former to complete the model started by his late father for £60.<sup>676</sup> The document also acknowledged that if the model was 'in any respect deficient in the style of workmanship' when finished by Day junior, then it was agreed that another model-maker would be employed to finish the model. On the same date as the document, Day junior wrote to Vulliamy to assert that if after completing the model, any alterations were required, they would require further payment by Holford.<sup>677</sup> This letter also offers a glimpse of the context of Day's working life. Day reported how his father's death had affected his ability to begin work on finishing the model – his mother had been moved into new apartments, his father's personal effects had to be thrown away, and, crucially, his father's modelling apparatus needed to be removed from his studio, some of which was repaired and repurposed by Day junior.

As few of the surviving letters written by Day junior to Vulliamy are dated, tracing the location of Day junior's studio from the addresses on the letters has been a key component of understanding the letters he sent to Vulliamy regarding Dorchester House. The first few letters sent to Vulliamy in late 1849 are addressed from 128 London Road, Southwark, listed in the 1850 Post Office Directory as a Post Office Receiving House.<sup>678</sup> Presumably Day junior was still operating from his previous premises at 42 Commercial Road, Lambeth. Within a year, however, Day junior moved to 1 Rockingham Place on the New Kent Road, as the Vulliamy Office

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<sup>675</sup> RIBA VuL 13/1/32, Letter from Richard Day junior to Lewis Vulliamy, undated.

<sup>676</sup> RIBA VuL 13/1/3, Memorandum of understanding between Richard Day junior and Robert Holford, 1 October 1849.

<sup>677</sup> RIBA VuL 13/1/5, Letter from Richard Day junior to Lewis Vulliamy Office, 1 October 1849.

<sup>678</sup> *Post Office London Directory for 1850* (London, 1848) p.360.

account books noted this address from June 1850. This move initially caused disruption to Day's work. In an undated letter, addressed from the New Kent Road, Day explained to Vulliamy how he was in the midst of moving house and therefore 'I shall not be able to do any modelling this week.'<sup>679</sup>

The 1851 Census listed Richard Day ('Modeller') and his wife Allen Day as 'visitors' living at 1 Rockingham Place.<sup>680</sup> At this stage Day junior disappears from the Post Office Directories, only to reappear in 1853 at an address on Webb Street in Southwark.<sup>681</sup> The location of Day junior's studio also allows us to see the complicated logistics of model-making in the capital. In an undated letter addressed from Webb Street, Day apologised for not leaving a model at Dorchester House as if he was working on it in his studio. Day explained how the time taken travelling to Park Lane, 'causes such a loss of time, & I cannot work the hours there that I can at home'.<sup>682</sup>

Analysis of Day's correspondence offers a greater understanding of how models were made and the marketplace for them. For instance, Day worked alone, without assistants, which reduced the speed at which he could complete projects. In an undated letter without an address, Day junior explained to Vulliamy that he could not work any quicker on the model in question as, 'it is progressing as fast as is possibly can considering there is only myself to work at it'.<sup>683</sup> There were other effects of working alone: on another occasion Day described how he was frequently working on the model, 'until 3, 4, & 5 in the morning'.<sup>684</sup> It is unclear whether

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<sup>679</sup> RIBA VuL 13/1/19, Letter from Richard Day to Lewis Vulliamy, undated.

<sup>680</sup> 'Richard Day' (1851) *Census return for 1 New Kent Road, Newington, Lambeth, London*. PRO HO 107, piece 1566, f.319, p.8 (1851). Available at: <http://www.ancestry.co.uk> (Accessed: 13 April 2018).

<sup>681</sup> The directories are based on records taken in the previous November, but Day junior may have moved before then, as there is a letter dated 23 October 1852 to Lewis Vulliamy from Webb Street *Post Office London Directory for 1853* (London, 1852) p.1428; RIBA VuL 13/1/12, Letter from Richard Day junior to Lewis Vulliamy, 23 October 1852.

<sup>682</sup> RIBA VuL 13/1/47, Letter from Richard Day junior to Lewis Vulliamy, undated.

<sup>683</sup> RIBA VuL 13/1/31, Letter from Richard Day junior to Lewis Vulliamy, undated.

<sup>684</sup> RIBA VuL 13/1/6, Letter, 12 December 1849.

Day was typical or atypical in his practice as there is not any comparative evidence of other contemporary model-makers such as Dighton, Salter, or Thwaite.

However, as I will discuss later in this chapter, John Thorp worked with several assistants in a centrally located workshop that seems to have greatly increased the number of commissions that could be undertaken.

Although none of the models appear to have survived, my research indicates that there were at least three major models made for the project, alongside a series of smaller and supplementary models. The three major models were a ¼-inch scale model of the house begun by Day senior in 1849, a larger model of the principal façade at 1-inch scale, and a multi-tiered model of the central hall, staircase, and adjoining vestibules.



**Figure 45**

Photograph of the South Elevation of Dorchester House

‘London Houses: Dorchester House – I. London’, *Country Life* (5 May 1928) 646

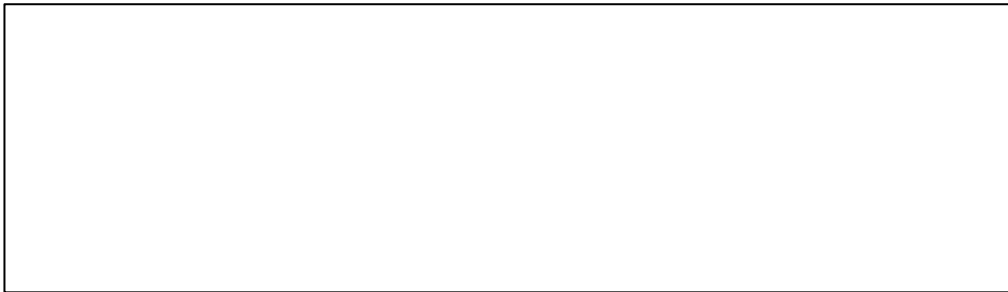
The ¼-inch model of the house – the ‘experimental parts of [the] West Front of Dorchester House’ – was started by Day senior before his death, and noted on the account with Vulliamy in September 1849.<sup>685</sup> Initially at least, the scale of this model was undecided, as in June 1849 Holford wrote to Vulliamy asking why Day thought ¼ inch was a better scale to use than 3/8 inch.<sup>686</sup> In addition to his understanding of architectural drawings, Holford’s appreciation for and awareness of how models could be used was demonstrated by his response to disagreement

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<sup>685</sup> RIBA VuL 13/2/15, Account with Richard Day, entry for September 1849.

<sup>686</sup> RIBA VuL 1/1/3, Letter from Robert Holford to Lewis Vulliamy, 14 June 1849.

about the leasehold of Dorchester House with the Duke of Westminster. In order to convince various parties about the effects of the design to a unidentified covenant in the leasehold, Holford proposed to Vulliamy that Day junior should produce a 1/8 inch 'rough block' model with two options to show the differing relationships between existing house and the proposed design with the existing boundary wall, which Holford illustrated in the letter with a small sketch (Fig.46).<sup>687</sup> Although it is unclear whether this model was ever executed by Day, led by the client rather the architect, Holford's diagram and description offers an insight into how clients also conceived of models as explanatory aids or rhetorical devices to other individuals.



**Figure 46**

Holford's diagram to show the options for a model regarding a property dispute RIBA VuL 1/2/5, Letter from Robert Holford to Lewis Vulliamy, 19 August 1850

The letters from Day to Vulliamy also develop our understanding of the nature of the model-making business. As per the agreement signed by Holford and Day junior in October 1849, a model of Dorchester House was completed by February 1850 for £60.<sup>688</sup> Progress made by Day on the first model was initially quite slow. As Day noted in a letter to Vulliamy from 12 December 1849, '[the model] is not so forward as I expected & wished it to be. The South front has so much work in it

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<sup>687</sup> RIBA VuL 1/2/5, Letter from Robert Holford to Lewis Vulliamy, 19 August 1850.

<sup>688</sup> RIBA VuL 13/2/1, Record of payments made to Richard Day.

Day was paid by Holford in four £15 instalments on 9 October 1849, 3 February 1850, 30 March 1850, and 3 May 1850.



that it has quite deceived me'.<sup>689</sup> In the letter from 12 December 1849 Day described how he had requested a further advance from Holford for the model and admitted that he should have waited for approval from Vulliamy before proceeding. Day offered an explanation that the principal loggia was not complete and this would have been a good time to ask for the advance. The incompleteness of this part of the model, Day claimed, was not his fault as, 'The Caryatid figures are not yet done. My friend a sculptor who is doing them is at Liverpool at St. Georges Hall but I expect them in a few days.'<sup>690</sup>

The comment is important for two reasons. There was a connection between model-making and other skilled trade: there were clearly occasions when the sculptors working on the decorative schemes for buildings also made similar elements, albeit in miniature, for architectural models.<sup>691</sup> Second, the comments offer us a glimpse of the model-making trade with Day providing a service but subcontracting out portions of the work that he, presumably, was unable to produce.

As Day had requested following the initial agreement, additional adjustments to the model required additional payment. Between February 1850 and 19 April 1850, Day made alterations and additions to the model including the replacement of a loggia on the South façade with a new (unknown) central feature, modelling two new doorways, adjusting the chimneystacks from four to three, and making good all of this work.<sup>692</sup> Between 19 April and 31 May 1850 Day junior continued to adjust the model. For a fee of £15 Day made further alterations to the South façade including the addition of the carriage and screen porches to the model, which were modified twice, and made two iterations to the loggia on the South façade.<sup>693</sup>

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<sup>689</sup> RIBA VuL 13/1/6, Letter from Richard Day to Lewis Vulliamy, 12 December 1849.

<sup>690</sup> RIBA VuL 13/1/6, Letter, 12 December 1849.

<sup>691</sup> It is possible that Day's friend was the sculptor W. G. Nicholl who not only produced pedimental and freestanding sculpture at St. George's Hall but also produced the sculptural figures for C. R. Cockerell's now-lost model for the Royal Exchange (as discussed in Chapter 2).

<sup>692</sup> RIBA VuL 13/2/15, Account with Richard Day, entry for February 1850.

These alterations and additions to the model cost £12.

<sup>693</sup> RIBA VuL 13/2/15, Account with Richard Day, entries for 19 April 1850 to 31 May 1850.

From June 1850 the Vulliamy office's accounts of the work undertaken by Day become much more detailed, despite the smaller amounts of money involved (often typically £4 or less). Unlike the earlier arrangement, every single action related to the production or alteration of the model is itemised. In the account books the method of record keeping changed from a linear description of the work to a tabular system of labour with each component and action itemised. By way of contrast, Day's own records for each payment are much briefer. For example, the work undertaken by Day in the summer of 1850 was itemised over two pages for Vulliamy, where Day's account described the same work in only thirty words.<sup>694</sup> In a letter that enclosed an invoice for the model of the staircase dated 17 December 1853, Day explained how he would have asked for an advance on the work done on the model but 'I believe you [Vulliamy] prefer having the exact account of the works done'.<sup>695</sup> These accounting practices may relate to Vulliamy's family background: Lewis Vulliamy was the third son of the clockmaker Benjamin Vulliamy. As described by Liliane Hilaire-Perez at a research seminar in 2016, Benjamin Vulliamy also operated a tabular record keeping system.<sup>696</sup> Unlike a linear system where each entry features a simple written description of the job or work to be performed (similar to Day), Benjamin Vulliamy's tabular system itemised the watches he was repairing into individual components, e.g. cylinder, wheel, etc. Each listed component was detailed with a series of actions that described the specific activity happening of that portion of the watch, e.g. polishing, fitting, mending, etc. Hilaire-Perez proposes that this 'language of action' is the result of an emerging technical or operative culture within the economy of production.

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The £15 fee also included Day's attendance at Dorchester House with Holford and Vulliamy on 20 April 1850, and an all-day meeting at Vulliamy's office at 27 Argyll Street on 3 May 1850, where Day received further instructions related to the modelling of the carriage porch

<sup>694</sup> For Day's record of the account see: RIBA VuL 13/2/14.

<sup>695</sup> RIBA VuL 13/1/17, Letter from Richard Day to Lewis Vulliamy, 17 December 1853.

<sup>696</sup> L. Hilaire-Perez, 'Trade Records and Technology in Eighteenth Century England', paper given at a V&A/RCA History of Design Research Seminar on 26 November 2016.

This separation of work into labour can also be seen in Lewis Vulliamy's record keeping of the architectural models made by Day. One result of this was a series of disputes between architect, client, and model-maker over the sums invoiced by Day. In a letter dated 27 December 1853, Day indicated that despite Vulliamy's 'wish', he couldn't revise his most recent bill and explained how 'I have only charged the time which the work has occupied me, at the same rate at which all the other parts of the model have been charged'.<sup>697</sup> Day continued to explain how the enumeration of the account was formed in relation to the activities he had performed on the staircase model. One item in particular was controversial: 'the 2 vaulted ceilings over the private staircase'. Day remonstrated with Vulliamy (who proposed that this portion of the model might have been made by anyone) and suggested that no other model-maker could have made them for less. In order to appease Vulliamy and Holford, Day offered to deduct recent additions and adjustments to the staircase model that had been made since the invoice was sent. Despite these incidents, however, Day remained vague about the cost of work to the model. In a later letter Day estimated how the cost of a particular part of the staircase model would 'not be less than £50 [...] but from the quantity of work there is I cannot say the precise sum it might amount to'.<sup>698</sup>

Despite the discrepancies over the model's costs, through the account books it is clear that model was not formed directly from a complete set of drawings. Instead the model was a site of exploration where the model-maker helped to adjust the object in relation to the conversations between architect and client. For instance during June and July 1850 the model was reworked, remade, and made good as the design progressed through discussions between Vulliamy and Holford.<sup>699</sup>

Alterations were made to the cornice, south façade, balustrade, roofline, and profile of windows. Much of this work appears to have been made to the 'original' model but other models or portions of the building may have been modelled to show

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<sup>697</sup> RIBA VuL 13/1/19, Letter from Richard Day to Lewis Vulliamy, 27 December 1853.

<sup>698</sup> RIBA VuL 13/1/43, Letter from Richard Day to Lewis Vulliamy, Undated letter (after October 1852).

<sup>699</sup> RIBA VuL 13/2/16, Account with Richard Day, entries for June 1850 and July 1850.

options. On 15 July 1850 Day modelled two designs for keystones to the lower windows of the basement level on the West façade of the building.<sup>700</sup> On 13 July 1850 Day commenced work on a 1-inch to 1-foot (1:12) scale model of part of the basement, presumably a partial façade or elevation model rather than a complete model of the whole building.<sup>701</sup> For the alterations and the two new models Day was paid £28 5s on 2 August 1850.<sup>702</sup> Records are missing for the exact work that occurred between August 1850 and April 1851 but we know from other payment records that Day was paid £30 13s for further work on architectural models on 23 December 1850.<sup>703</sup> Models were also used to examine proposed design changes to the siting of the house and its external effects: in August 1851, Day lowered the roadway of the carriage porch and added moveable pathways to the porch from the corners of the building's East and West fronts, adding colour to differentiate them from the rest of the model.<sup>704</sup>

Both scales of model were used to test different designs and present these iterations to Holford. At the end of December 1851 Day added two different styles of window to the ¼ inch scale model, before a pedimental design was tested on the 1-inch scale façade model, which then led to Day adjusting the windows on the ¼ inch scale model to this design.<sup>705</sup> Day continued to work on adjustments to the models during January and February 1852 in addition to meeting Holford and Vulliamy twice at Dorchester House, occasions where he was paid a 5s fee in addition to the work completed on the models.<sup>706</sup> In March 1852 Day began work on modelling 'a new design for the carriage porch with 3 moveable wings' at a cost of £6.<sup>707</sup> Day made alterations to the porch in April 1852, which included adjustments to the springing of the arches, opening an archway on one side, and

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<sup>700</sup> RIBA VuL 13/2/16, Account with Richard Day, entry for 15 July 1850.

<sup>701</sup> RIBA VuL 13/2/16, Account with Richard Day, entry for 13 July 1850.

<sup>702</sup> RIBA VuL 13/2/1, Record of payments made to Richard Day, 2 August 1850.

<sup>703</sup> RIBA VuL 13/2/1, Record of payments made to Richard Day, 23 December 1850.

<sup>704</sup> RIBA VuL 13/2/18, Account with Richard Day, entries for 18 and 19 August 1851.

<sup>705</sup> RIBA VuL 13/2/18, Account with Richard Day, entries for 30 December 1851.

<sup>706</sup> RIBA VuL 13/2/19, Account with Richard Day, entries for 5 and 28 February 1852.

<sup>707</sup> RIBA VuL 13/2/19, Account with Richard Day, entry for 1 to 18 March 1852.

changes to the balustrade design.<sup>708</sup> At the end of April, Day spent eleven days on a new model, one that depicted the screen wall surrounding the house, as well as carving slabs in the ground at the front of the ¼ inch scale model.<sup>709</sup> Throughout May and June 1852 he continued to make alterations to the screen wall in addition to the porch, chimneys, and stables of the house. Whilst Day continued to work on the alterations to the model of the screen wall at the end of June 1852, he also modelled (either on an existing model or as a separate specimen) the chimneystacks to the house and showed them to Holford and Vulliamy on three occasions on 29 June, 3 July, and 6 July, for which he was paid 10s on each occasion.<sup>710</sup> At this stage work on the four models appears to have been suspended.



**Figure 47**

William Hatherell (1855-1928), View of the Staircase at Dorchester House in: E. Balfour, 'Dorchester House', *Magazine of Art* 6 (October 1883) 398

In the early autumn of 1852 Day began work on a new model that included the staircase and surrounding rooms of Dorchester House, a model that would take five years to complete (Fig.47). After initially estimating that he would be finished by Christmas 1852, after several requests, on 2 February 1853 Day informed Vulliamy that 'the model of the staircase as far as completed will be taken to Dorchester

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<sup>708</sup> RIBA VuL 13/2/19, Account with Richard Day, entry for 9 to 16 April 1852.

<sup>709</sup> This possibly also included placing one of the models in a frame: the account notes an 'inch deal frame'. RIBA VuL 13/2/19, Account with Richard Day, entry for 30 April 1852.

<sup>710</sup> RIBA VuL 13/2/19, Account with Richard Day, entries for 29 June, 3 July, and 6 July 1852.

On 6 July Day also replaced the capitals of five Ionic pilasters and replaced them with Roman Doric versions on an unspecified model, presumably the ¼ inch scale model of the house.

House on either [5 or 7 February 1852]'.<sup>711</sup> There is then a gap in the letters between Day and Vulliamy until the surviving detailed accounts kept by Vulliamy begin again in April 1853. These describe how Day adjusted and altered aspects on the new staircase model in a similar manner to the earlier, external models of Dorchester House. In April and May 1853 Day was paid for alterations to the steps of the staircase, surrounding vestibule, and balustrade.<sup>712</sup> Alongside these alterations Day also produced 'option' studies of various elements: in July 1853 he made two models of the vaulted ceilings over the private staircase.<sup>713</sup> Despite these additional components, Day's main focus was on the model of the staircase and surrounding vestibule, work that continued from July until December 1853.<sup>714</sup> Holford was due to see the model in November 1853, in a letter discussing their client's visit Day attempted to reassure Vulliamy about the state of the model: 'Since I saw you last my entire attention has been dedicated to it.'<sup>715</sup> Work continued into the new year. In March 1854 Day laboured on modelling the upper vestibule and its elliptical ceiling.<sup>716</sup> A copy of a payment receipt from Vulliamy to Day in May 1857 suggests that Day continued to make adjustments to the staircase model for several years.<sup>717</sup> Frustratingly, there is not a complete series of accounts and letters that have survived. Although, as I have shown, the letters from Day to Vulliamy's Office demonstrate that the staircase model was used iteratively in two ways: the use of

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<sup>711</sup> RIBA VuL 13/1/14, Letter from Richard Day junior to Lewis Vulliamy, 2 February 1853.

<sup>712</sup> RIBA VuL 13/2/20, Account with Richard Day, entries for 29 April and 10 May 1853.

On 29 April 1853 Day was paid £2 5s for removing Ionic pilasters and a balustrade on the model, 'making good all deficiencies', and adding additional steps that projected forward into the hall. In May 1853 Day made alterations to the surroundings vestibules of the model and adjusted the internal widths of the corridors that pivoted around the staircase.

<sup>713</sup> RIBA VuL 13/2/20, Account with Richard Day, entry for 4 July 1853.

<sup>714</sup> RIBA VuL 13/2/20, Account with Richard Day, entry for 17 December 1853. Between mid July and mid December 1853 Day was paid £30 for work done on this model, which included forming the balustrade around the stairwell, making twenty-five Corinthian columns with an entablature and arches above, and completing the groined ceilings above the North and East corridors.

<sup>715</sup> RIBA VuL 13/1/16, Letter from Richard Day to Lewis Vulliamy, 31 October 1853.

<sup>716</sup> RIBA VuL 13/1/20, Letter from Richard Day to Lewis Vulliamy, 8 March 1853. A later letter from Day to Vulliamy in March 1854 noted that the model was work in progress and not yet complete, in particular the upper vestibule and its elliptical ceiling, 'both of which have been taking some time'.

<sup>717</sup> RIBA VuL 13/2/22, Vulliamy copy of payment receipt issued to Richard Day, 23 May 1857.

plaster meant that could be altered as new elements were examined and new components, such as options for the ceilings, could be applied to test new possibilities.

In addition to the narrative of the model-making production, the surviving letters from Day provide further understanding about the relationship between architects, clients, and model-makers, as well as the overall practice of model-making in the period. Throughout the production of the four models Day was often delayed by various factors. Day was often unwell and wrote to Vulliamy, Jacob Wray Mould (Vulliamy's chief assistant on the project) or Clement Thomas (Clerk of Works) to offer his excuses.<sup>718</sup> Equally the task of model-making appears to have been delayed by Day's model-making methods. A letter from early in the process of making the staircase model describes a part of Day's working method. In a letter Day explained to Vulliamy that he had not yet put any of the parts of the staircase model together, as, 'My intention is to complete all the modelling required first & then build right off at once.'<sup>719</sup> This method of building separate components and then assembling them appears to have been one way that the model-making process was delayed. In the same letter Day noted that it was not clear exactly when he would be finished, as he required additional information from Vulliamy in person.<sup>720</sup> Often progress was also delayed as Day required drawings of particular portions to help render the design in three dimensions, which Vulliamy and his assistants failed to deliver in a timely fashion. This included aspects of all sizes and parts of the design from tracings of the basement level plan, to more decorative elements including the cornice, or the vase-shaped finials for the west façade.

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<sup>718</sup> RIBA VuL 13/1/7, Letter from Richard Day to Jacob Wray Mould, 10 March 1850, notes for instance: 'I am very unwell & have been so this 3 weeks past in fact I ought to have quite given up work.'

<sup>719</sup> RIBA VuL 13/1/12, Letter from Richard Day to Lewis Vulliamy, 23 October 1852.

<sup>720</sup> RIBA VuL 13/1/13, Letter from Richard Day to Lewis Vulliamy, 11 December 1852: 'I shall have to call on you very shortly for some information about the doors in the upper vestibule'.

Another cause of delay was Holford's irregular presence in London. Unlike Vulliamy's drawings, which Holford would have sent to his country residence by post, make copies of, and return, discussion surrounding the architectural models often required the attendance of all three men. From his letters, Day is often surprised by Holford's sudden appearance in London ('I did not expect Mr. Holford would have been in London so soon or [I] would have had the lower part ready for his inspection') and often had to either delay presentation of the models or work faster to finish them.<sup>721</sup> It appears that as the project developed Vulliamy's office became better at working with Day, often writing several weeks in advance to warn him of Holford's presence in London.<sup>722</sup> The dislocation of Holford, Vulliamy, and Day often led to confusion in the production of the models. For instance on 31 December 1850, Day responded to a note from Vulliamy who wanted to understand why the model had only four windows with pediments, rather than the six requested in the last set of written instructions. Day explained that these written instructions were 'quite contrary to what I believe was the intention of your self & Mr. Holford, when last I was with you at Dorchester House'.<sup>723</sup>

Rather than clarifying Day's direction, instructions given by letters or drawings from Vulliamy's Office often caused more confusion to the model-making process. For instance in an undated letter (c.1850-1852) Day wrote to Vulliamy, informing him that the 'plain blocks' (modillions) added to the cornice of the one-inch model had been done 'according to the instructions I had from your Office'. Day noted that these 'can be taken down at pleasure', and replaced later in the week.<sup>724</sup> Often written or verbal instructions did not suffice for detailed information. The letters

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<sup>721</sup> RIBA VuL 13/1/12, Letter from Richard Day to Lewis Vulliamy, 23 October 1852.

<sup>722</sup> For instance the warning of Holford's presence in the copy letter written by one of Vulliamy's assistants in October 1853: 'I am directed by Mr Vulliamy to say that as Mr Holford will shortly be in town, he will thank you to make all possible effort in forwarding the model of the Grand Staircase.'

RIBA VuL 13/1/15, Copy letter from Mr Young to Richard Day, 12 October 1853.

<sup>723</sup> RIBA VuL 13/1/10, Letter from Richard Day junior to Lewis Vulliamy, 31 December 1850.

<sup>724</sup> RIBA VuL 13/1/25, Letter from Richard Day junior to Lewis Vulliamy, Undated (c.1850-1852)



record occasions when Day required extra drawings to ‘convey all of the information I want’. On one occasion Day wrote to Mould and asked for a ‘Plan through the stones over the window showing their relative projection, the depth of joints from A to B, the projection of landing under Balcony’.<sup>725</sup> To illustrate exactly what he meant, Day added a small sketch elevation of the stones above the window, which was annotated with a horizontal line (A-B) to show the exact location where he required a plan to be drawn for him (Fig. 48).



**Figure 48**

Diagram of measurements required for model

RIBA VuL 13 1 38a, Letter from Richard Day junior to Lewis Vulliamy, undated (c.1850-1852).

There were also issues with the translation of scale and dimensions through drawings sent by Vulliamy to Day. In one letter Day apologised to Vulliamy for the size of the sculptural panels he had attached to the ¼-inch scale model and noted, ‘I am not aware that they are any larger than those sketches you gave me. I perceived that they were to inch scale so I made mine ¼ size of them.’<sup>726</sup> On another occasion Day wrote to Vulliamy to thank him for a note containing a tracing of a pattern for a window and the cornice above, but also to complain about the usefulness of the drawing for the purposes of model-making:

‘There is not any dimensions put on it & not being drawn to scale I write to know whether it is to be exactly like the one at present on the model [...] I

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<sup>725</sup> RIBA VuL 13/1/38, Letter from Richard Day junior to Lewis Vulliamy, Undated (c.1850-1852).

<sup>726</sup> RIBA VuL 13/1/39, Letter from Richard Day to Lewis Vulliamy, Undated (c.1850-1852)

should much prefer having a correct drawing of it, which please send by next post.<sup>727</sup>

During the project there were instances when without these drawings from Vulliamy, Day was unable to continue to work on the models. As he explained to Vulliamy: ‘Will you let me have drawings of the following parts of [the] Design for Dorchester House as I am nearly at a standstill & would be glad to get on with it.’<sup>728</sup> Day continued that he needed to be sent drawings for all the enrichments to the main cornice and soffit for the balcony in order to work on these parts of the model whilst ‘the other parts of the work are drying’. And in order to reduce the issues of ‘translation’ between the drawings and the model, Day requested that all of the issued information ‘be drawn to the scale I am at work upon & that there will be nothing of the ornament left to my taste’.<sup>729</sup> Whilst I suspect that this is a comment to flatter Vulliamy, who had published a three-volume treatise on architectural ornament, Day’s confusion surrounding the three-dimensional interpretation of orthographic drawings shows the complications that could occur in the production of models. Despite the complications caused by drawings, following the definitions of nineteenth-century models that I provided in Chapter 1, the models made by Day both provided a three-dimensional version of the design for Holford and examined Vulliamy’s design.

The physical attributes of plaster emerge as another theme in the correspondence between architect, client, and model-maker. The storage of the model at Dorchester House required particular atmospheric conditions that were related to the medium of plaster.<sup>730</sup> On 24 December 1850 Day wrote to Vulliamy and asked him to

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<sup>727</sup> RIBA VuL 13/1/22, Letter from Richard Day to Lewis Vulliamy, Undated (c.1850-1852).

<sup>728</sup> RIBA VuL 13/1/33, Letter from Richard Day to Lewis Vulliamy, Undated (c.1850-1852).

<sup>729</sup> RIBA VuL 13/1/33, Letter from Richard Day to Lewis Vulliamy, Undated (c.1850-1852).

‘I hope all these will be drawn to the scale I am at work upon & that there will be nothing of the ornament left to my taste as I feel myself very deficient in that matter never having made ornament a study.’ For Vulliamy’s work see, *Examples of Ornamental Sculpture in Architecture*, 3 vols (London, 1823, 1824, 1827).

<sup>730</sup> There were other occasions when the models were stored at Dorchester House, In a letter dated 27 December 1853, Day wrote that he would be in ‘the model room’ at Dorchester House the next

ensure that Thomas, the clerk of works, did not remove the first model of Dorchester House from the room it was stored in. Day specified the temperature and lighting in the room both in order to protect the model and ensure its correct appearance:

‘I hope you will not give orders to Thomas to remove the 1<sup>st</sup> model down to the room below during this weather as it will greatly affect the model, there should be a good Fire every day for at least a week previous; to drive off the damp. & perhaps you would arrange the sky light, so as to put the model in proper effect. Please excuse these suggestions but I know that the consequences would be ruinous to the model if placed in a damp room; it being nearly as absorbent as a sponge.’<sup>731</sup>

There were often accidents that occurred to the models, which offer further understanding about how models were used and the point at which a design project superseded them. In an undated letter Day informed Vulliamy that a portion of the balustrade parapet on a model had been broken by one of the subcontractors working on the new house.<sup>732</sup> Day noted how the same portion had already been twice smashed and repaired when the model was moved from the previous house on the site.<sup>733</sup> Despite repairing the damage, however, Day explained to Vulliamy how he had not replaced the balustrade parapet as ‘the Balustrade has been carried out somewhat different’. This comment provides further evidence that the models were part of an iterative and discursive process of design. There were clearly moments when the models stopped being used and the designs for the house were developed through drawings alone rather than in tandem with models.

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day to meet Holford. Clearly this was room where the model was kept whilst at Dorchester or where the ornamental modellers for the buildings interiors worked rather than a collection of architectural models similar to the ones we will examine later in Chapter 6.

RIBA VuL 13/1/18, Letter from Richard Day to Lewis Vulliamy, 27 December 1853.

<sup>731</sup> RIBA VuL 13/1/8, Letter from Richard Day to Lewis Vulliamy, 24 December 1850.

<sup>732</sup> RIBA VuL 13/1/53, Letter from Richard Day to Lewis Vulliamy, Undated letter (after October 1852).

Day immediately repaired the model and was paid 12s by the subcontractor’s clerk for the repair

<sup>733</sup> This is possibly the house with the skylight referred to in the letter from 24 December 1850.

Several of the letters refer to the complications that could occur during the processes required to make plaster models. Day described to Vulliamy how a ‘serious accident’ happened to a model of the cornice:

‘I was going to take [it] to Dorchester House today which will take at least two days to repair, the model in its present state is quite useless or I would come up with it. I was afraid I should be rather behind time with it & to have been at work the whole night & was putting it down in front of the fire to dry when the accident occurred.’<sup>734</sup>

Both the accident and Day’s request for a fire to be lit in the room where the model was kept at Dorchester House show us the importance of accelerated drying processes in the production of plaster models. Wet, recently cast plaster can be carved and worked into the required form and details can be added with tools but it also means that the model is soft and weak. Recently cast plaster also retains the water mixed with the raw plaster and is therefore incredibly heavy until this water evaporates. Dried plaster can also reabsorb moisture in the atmosphere, which can cause the model to soften again or, depending on the type of raw plaster used, crack at particular junctions. Due to the impact of these conditions of his work, Day was concerned at the internal climate of the room that the models would be stored in.

Day’s correspondence with Vulliamy offers a further insight into the networks of model-maker, clients, and professional architects in the period. Holford was not Day’s only client. Throughout the process Day was working on a number of other models for various clients, which are occasionally referred to in the letters. In December 1850, whilst still based on the New Kent Road, Day was involved with making models for James Pennethorne and therefore excused himself from work on the models for Dorchester House.<sup>735</sup> Later in March 1854 Day excused himself

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<sup>734</sup> RIBA VuL 13/1/35, Letter from Richard Day to Lewis Vulliamy, undated.

<sup>735</sup> RIBA VuL 13/1/9, Letter from Richard Day to Lewis Vulliamy, 30 December 1850; VuL 13/1/23, Letter from Richard Day to Lewis Vulliamy, undated (c.1850-1852). The model Day was working on *may* have been related to Pennethorne’s work as architect to the Offices of Works. The subject of the model *may* have been Pennethorne’s design for the Museum of Practical Geology or

again as he was engaged on a model related to Decimus Burton's work for John Walters, proprietor of *The Times*, at Bearwood in Berkshire.<sup>736</sup> There was also a model for an unidentified competition that caused Day to excuse himself from a meeting with Vulliamy and Holford.<sup>737</sup> And in April 1851 Day explained to Vulliamy that he had stopped work on the models for Dorchester House, in order to prepare exhibits for the 1851 Great Exhibition:

'I am now finishing off the last portion of my models to be exhibited in the Hyde Park Palace so shall be ready to resume your work immediately. It was my intention to have called on you as soon as I had got rid of the exhibition models.'<sup>738</sup>

The letters also mentioned long-term relationships with institutional clients that required Day's attention ahead of work on the models of Dorchester. For instance a model for the Corporation of London (c.1853–54) became 'a longer job than I first thought for'.<sup>739</sup> Vulliamy's office became frustrated with Day and suggested he was making the model of the staircase 'a matter of convenience' to himself.<sup>740</sup> Day apologised for not being able to give his undivided attention to the model as he had 'very important work to do for the City Corporation relating to public improvements'.<sup>741</sup> In a later letter Day explained that the model for the Corporation was of Gerard's Hall Crypt, on Basing Lane in the City of London – a structure that was destroyed by the widening of Bread Street in 1852. On the occasion that he transported the staircase model to Dorchester House, Day also brought another model for Holford and Vulliamy to view:

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the Ordnance Office, both of which he was working on at the time. For information on these projects see: G. Tyack, *Sir James Pennethorne and the Making of Victorian London* (Cambridge, 1992) p.314.

<sup>736</sup> RIBA VuL 13/1/20, Letter from Richard Day to Lewis Vulliamy, 8 March 1854.

<sup>737</sup> RIBA VuL 13/1/30, Letter from Richard Day to Lewis Vulliamy, undated (c.1850–1852).

<sup>738</sup> RIBA VuL 13/1/45, Letter from Richard Day to Lewis Vulliamy, 25 April 1851.

<sup>739</sup> RIBA VuL 13/1/49, Letter from Richard Day to Lewis Vulliamy, undated (c.1853–57).

<sup>740</sup> RIBA VuL 13/1/49, Letter from Richard Day to Lewis Vulliamy, undated (c.1853–57).

<sup>741</sup> RIBA VuL 13/1/49, Letter from Richard Day to Lewis Vulliamy, undated (c.1853–57).

‘I have taken a model of Gerard’s Hall brought for you & Mr. Holford to see: The Crypt was destroyed in making the new Street from St. Paul’s. The model is made from measurements taken (previous to its destruction) by the Corporation of London for who I made a much larger model. I have left the drawings at each end which have the appearance of the stones removed in order to obtain a larger view. This model is for sale Price £10.10.0.’<sup>742</sup>

It is possible that Day was offering to sell the model of Gerard’s Hall to Holford. Alternatively Day’s intention may have been to prove that he had been engaged on other commissions and therefore his work on the staircase model was delayed.

Following the completion of the models for Dorchester House in 1857, Day continued to work for Vulliamy and Holford between 1861 and 1868, making architectural models related to the rebuilding of Westonbirt, Holford’s country house in Gloucestershire.<sup>743</sup> Whilst the other two major models of Dorchester House disappear from documents following their discussion and payment, a model of the staircase formed a part of the collection of Construction and Building Materials at the South Kensington Museum in 1860, a collection that I will examine further in Chapter 6.<sup>744</sup> In August 1859 the Science and Art Department wrote to George Vulliamy, Lewis Vulliamy’s nephew, requesting that models of Dorchester House, ‘which illustrate the appliances adopted in the construction and fitting of the edifice’, be sent to the South Kensington Museum for exhibition.<sup>745</sup> The surviving documents offer conflicting portrayals of exactly what was exhibited. In September 1859 the Science and Art Department wrote to Lewis Vulliamy to acknowledge the receipt of a model of the a capital made from Parian, a composite material that imitated marble, and a sample of the hollow bricks used to construct

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<sup>742</sup> RIBA VuL 13/1/56, Letter from Richard Day to Lewis Vulliamy, undated (c.1853–57).

<sup>743</sup> RIBA VuL/33/7/1-30, Letters from Robert Holford to Lewis Vulliamy regarding Westonbirt House; RIBA VuL/42/6-8, Letters and bills from Richard Day to Lewis Vulliamy regarding Westonbirt House.

<sup>744</sup> ‘Construction and Building Materials’, *South Kensington Museum: Catalogues of its Divisions* (London, 1860) 22M.

<sup>745</sup> RIBA VuL/3/5/6, Letter from Science and Art Department to George Vulliamy, 19 August 1859.

the partition walls at Dorchester House.<sup>746</sup> However, an 1861 catalogue published by the museum lists a model of the staircase and corridor at Dorchester House, ‘executed in marble and alabaster’, which was on display in the collection of Construction and Building Materials.<sup>747</sup> By 1866 this model was housed in the East Corridor of the Brompton Boilers at South Kensington. Displayed alongside an ornamental chimney-piece, the staircase model featured alongside models and prototypes of ventilators, lavatories, and zinc roofs in the Museum of Construction and Building Materials, where it remained until at least 1876.<sup>748</sup> As each of these catalogues note the material of the model as ‘marble and alabaster’, I suggest that a second, more decorative and final model of the staircase was produced by Day after March 1854 once iterations, adjustments, and alterations to the design had been tested on the plaster version. Last listed in the 1876 catalogue, the staircase model disappeared again from documents until 1916 when it was itemised in lists of architectural models in the Store Room of Southern Galleries in the Science Museum.<sup>749</sup> Unfortunately this was the last documented sighting of the staircase model.

#### 4.4 Anthony Salvin’s use of architectural models at Scotney and Thoresby

In response to the 1832 Reform Bill, which introduced changes to the electoral system of England and Wales, J. C. Loudon noted in 1835 that the ‘best hopes of future employment [for architects] is on the taste of the middling classes. The time for building palaces, castles and cathedrals is gone by, or nearly so’.<sup>750</sup> There were, however, continued commissions for architects to build country houses. One architect in particular whose practice designed a significant number country houses

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<sup>746</sup> RIBA VuL/3/5/7, Letter from Science and Art Department to Lewis Vulliamy, 12 September 1859.

<sup>747</sup> *Catalogue of Building and Constructing Materials* (London, 1862) 49M.

<sup>748</sup> *Guide to the South Kensington Museum* (London, 1866<sup>2</sup>) p.12; H. Sandham, *Catalogue of the Collection Illustrating Construction and Building Materials* (London, 1876) 109-Y

<sup>749</sup> V&A, Nominal File, MA/1/5851, ‘Science Museum’, Lists of Architectural Objects in the Store Room of Southern Galleries Science Museum, 11 June 1916.

<sup>750</sup> J. C. Loudon, ‘Editorial’, *Architectural Magazine*, 2 (1835) p.471.

was Anthony Salvin. Jill Allibone suggests that one reason for this was that Salvin came from the landed gentry himself, and most of his clients came from this class or the aristocracy. Allibone notes, however, that Salvin did also design country houses for families from an entrepreneurial or mercantile background. Despite the meagre surviving documentary material from the start of Salvin's career, it is clear that architectural models were used as a part of his professional practice.<sup>751</sup> In the 1830 Royal Academy Exhibition Salvin exhibited three models in the Library.<sup>752</sup> I will explore the role and status of the Royal Academy Exhibition in Chapter 5. There are three other architectural models that survive, one for each Salvin's work at Scotney Castle in Kent (1837-43), Peckforton Castle in Cheshire (1844-52), and Thoresby Hall in Nottinghamshire (1864-72). The cardboard model of Scotney Castle was fabricated by the model-maker Thomas Dighton and I will examine it in depth later in this section through diary entries made by the client during the duration of the model's production. Made of cork, the model of Peckforton Castle was produced for John Tollemache and survives at Helmingham Hall in Suffolk. This model was exhibited at the 1855 *Exposition Universelle* in Paris. Salvin's family visited the exhibition, an event that Eliza Anne Salvin, Salvin's daughter, recorded in her journal:

‘As yet, we had not met papa and thinking the architectural gallery the most likely spot to find him in, we went in there. [...] The Peckforton model is exhibited in this gallery, it has a stand to itself and looks very grand. One can hardly believe, that it is a new castle, built from the very ground. Papa has certainly caught the spirit of the old feudal times’.<sup>753</sup>

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<sup>751</sup> J. Allibone, *Anthony Salvin: Pioneer of Gothic Revival Architecture* (Cambridge, 1988) p.13. Jill Allibone has claimed that that Salvin's youngest son, Osbert (1835–98), burnt most of his father's archive when he inherited the family home at Hawksfold, Fernhurst, Sussex in 1881.

<sup>752</sup> These were a model of a chapel in Wroxham Churchyard, Norwich, a model of an anonymous church, and a model of Mamhead Park. *The Exhibition of the Royal Academy – The Sixty-fifth* (London, 1830) Nos.1163–65.

<sup>753</sup> BAC, MS 6787/5, Journals of Foreign Tours by Eliza Anne Salvin, entry for 8 September 1855, pp.144-145.



Described by Allibone as ‘Salvin’s last great house’, a timber model of Thoresby Hall is now in the RIBA Collections.<sup>754</sup> The client for Thoresby Hall was the 2<sup>nd</sup> Earl Manvers who wanted to replace an existing brick eighteenth-century house with a new stone mansion that was constructed between 1864-72.<sup>755</sup> Excellent records and account for the construction of Thoresby survive in at the University of Nottingham Manuscripts and Special Collections.<sup>756</sup> Despite the amount of documentation, with every tradesman and subcontractor listed in the estate accounts, there are no entries that relate to the expenditure on the architectural model of the house. This is perhaps not unsurprising: the model is likely to be a ‘joiner’s model’, an object produced in a contingent way by a contractor or craftsman who was employed elsewhere on the construction site.<sup>757</sup> Allibone claims that the painted wood of the Thoresby model is more elaborate than the model of Scotney.<sup>758</sup> Unfortunately this is completely incorrect. As I shall demonstrate the Scotney model, made by a professional model-maker, included the outbuildings and grounds, and uses layers of cardboard to depict the relief and material of the proposed building’s façade. Whereas the Thoresby model is made from brown-stained pine with the elevations of the building drawn onto the surface in black ink. Its most notable features are the two detachable towers that demonstrate alternative designs for the house’s principal elevation. These alternative designs are also evident in an elevation drawing of the house with a second option for the tower gummed onto the edge of the sheet in a different type of paper (Fig.49).

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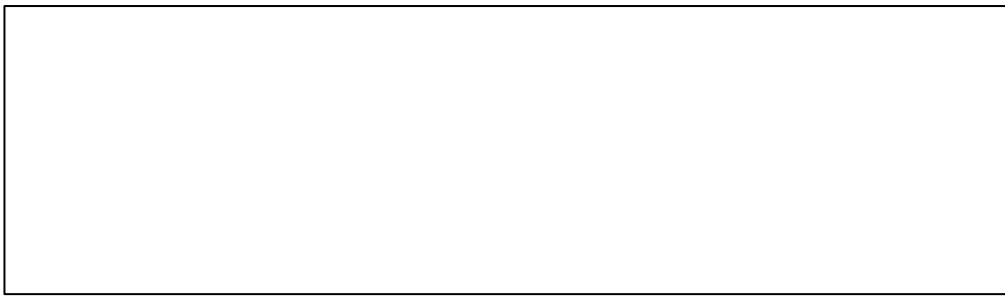
<sup>754</sup> RIBA BAL, MOD/SALV/1.

<sup>755</sup> J. Allibone, *Anthony Salvin*, p.87.

<sup>756</sup> UoN, Ma 6 A/1/77, Record of expenses in the upkeep of Thoresby Hall and Park.

<sup>757</sup> My thanks to Charles Hind for this suggestion.

<sup>758</sup> J. Allibone, *Anthony Salvin*, p.88.



**Figure 49**

Anthony Salvin, Elevation of Principal Front Thoresby, c.1864.

UoN Ma 4 P/25

With two options for the tower available to be added and removed, there is no doubt that the model was to aid discussions between Salvin and Manvers. My research leads me to suggest that the model may have been made by William Oldreive, Clerk of Works for the new house.<sup>759</sup> This suggestion is partly based on the rough timber in which the model is made and partly on the fact that when construction began on site, in June and July 1864, Oldreive was paid £20 12s 3d and £17 6s 1d for wages and expenses.<sup>760</sup> Following the accounts very little work had happened on site at this stage – only fencing off areas and laying pipes – but Oldreive was being paid beyond his usual £13 14s 5d wage for unknown labours, perhaps the production of the model based on Salvin’s drawings.

The most significant architectural model used by Salvin relates to his work at Scotney Castle near Tunbridge Wells in Kent. Edward Hussey III, once he came of age, decided to build a new house on the family estate to replace a fourteenth-century castle that had fallen into disrepair. Following advice from William Sawrey Filpin, a watercolour painter turned gardener, Hussey approached Anthony Salvin to design a new house. The first stone was laid on 25 February 1837 and Edward Hussey first slept in the new house on 29 March 1843.<sup>761</sup> In her study of Salvin’s

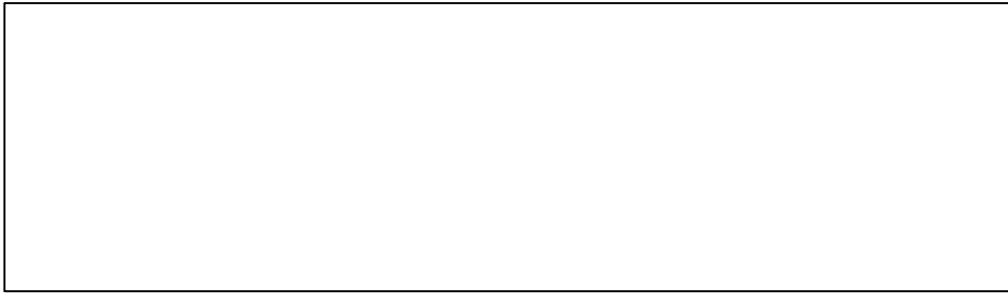
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<sup>759</sup> Or possibly his son William Thomas Oldreive, who served as an assistant to his father during construction and later went on to be an architect with an impressive municipal career in the Office of Works.

<sup>760</sup> UoN, Ma 2 A/208, Record of household expenditure, entry for 3 May 1864, p.1.

<sup>761</sup> KHC, U1776/F12A, ‘Memorandum of important events in life of Edward Hussey. 1807-1893’, unfoliated manuscript.

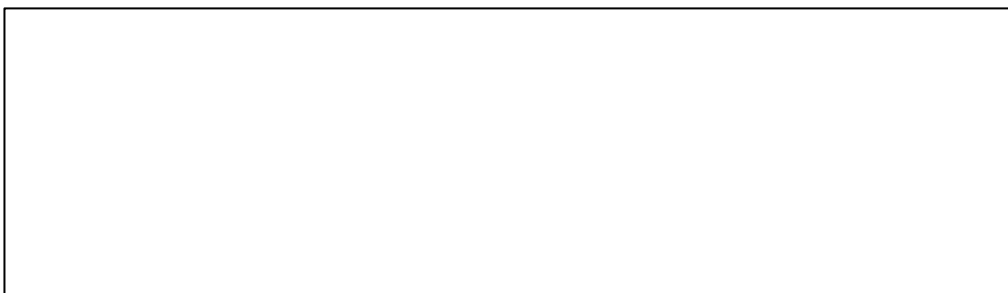
career, Jill Allibone notes how client and architect met thirty-two times before construction began with many small-scale plans drawn by both individuals forming a record of their discussions.<sup>762</sup> As the archive of Scotney Castle is between two locations and in the process of being consolidated, I am yet to consult these plans, although there is one example held in the collections of Drawing Matter (Fig.50).



**Figure 50**

Anthony Salvin, Sketch plan of Scotney Castle  
Drawing Matter 2728

Allibone's account, however, fails to examine how an architectural model was also a key object that allowed the client to interact with the proposed building, as in addition to the conferences between Hussey and Salvin, the model-maker Thomas Dibdin Dighton produced a cardboard model of the house (Figs. 51 and 52).



**Figure 51**

Anthony Salvin (architect), Thomas Dighton (model-maker)  
Model of Scotney Castle, c.1836.

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<sup>762</sup> J. Allibone, *Anthony Salvin*, p.34.

First based in Mayfair, before moving to Pimlico, and then operating from 2 Lower Grosvenor Place from 1845, Thomas Dibdin Dighton (1799-1882) was the most prolific model-maker of the nineteenth century.<sup>763</sup> Later describing by himself as ‘Architectural Modeller to her Majesty and Prince Albert’, Dighton was active from c.1830 until the mid 1870s, working for a variety of architects and clients, often on models of country houses.<sup>764</sup> Although Dighton’s last recorded work appears to have been a model of Holborn Viaduct in 1872, the majority of his models were designs for new houses.<sup>765</sup> One of the earliest models I have found that Dighton made was a model for the façade of Lacock Abbey for William Henry Fox Talbot in 1830. In a letter to Talbot, Dighton noted how parts of the model could be removed and other designs for the façade added by Dighton at ‘four or five guineess [sic] each’.<sup>766</sup>

As a regular visitor to the Royal Academy Exhibition, Edward Hussey may have seen other models produced by Dighton, such as a model of a house for the Duke of Athol, at Dunkeld, designed by Thomas Hopper and exhibited in 1832.<sup>767</sup> Or a model Dighton made of a Somerleyton Hall, Suffolk, designed by John Thomas and exhibited at the Royal Academy in 1847.<sup>768</sup> A well-known and well-respected figure amongst architects, the rejection of a model made by Dighton in the 1849 Royal Academy Exhibition led the profession to rethink the role that exhibiting work to the general public should take – a topic that will be discussed further in Chapter 5. Three models made by Dighton for three different architects were also exhibited at the 1851 Great Exhibition: a model of Preston Hall, Aylesford, for

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<sup>763</sup> *Post Office London Directory for 1845* (London, 1844) p.1269.

<sup>764</sup> This relationship is probably related to Dighton’s close (or at least regular) relationship with John Thomas on various projects including Somerleyton Hall, Bristol High Cross, Preston Hall, and possibly the Palace of Westminster.

<sup>765</sup> ‘Model of the Holborn Viaduct’, *Builder* (3 August 1872) 602.

<sup>766</sup> BL, Add MS 88942/2/26, Fox Talbot Collection, NTA: 32375, letter from Thomas Dibdin Dighton to William Henry Fox Talbot, 23 January 1830.

<sup>767</sup> *The Exhibition of the Royal Academy – The Sixty-seventh* (London, 1832) No.958.

<sup>768</sup> *The Exhibition of the Royal Academy – The Eighty-second* (London, 1847) No.1306.

John Thomas, a model of St. John's Church, Paddington for Charles Fowler, and a model of the Public Record Office on Chancery Lane for James Pennethorne.<sup>769</sup> The architectural press was full of praise for Dighton's work. When discussing a model of Cossey Hall, Norfolk made by Dighton for J. C. Buckler in 1831, J. C. Loudon in the *Architectural Magazine* suggest that the model-maker should be 'employed in modelling some of the other fine buildings in the country.'<sup>770</sup> Whilst I will return to this model in Chapter 6 when examining the RIBA collection, the model was also a key part of how Buckler and his clients – Lord and Lady Stafford – engaged with the three-dimensional nature of the design of Cossey Hall.<sup>771</sup> The model of Cossey Hall was held up as the exemplar for what an architectural model could be. An 1839 encyclopaedia entry on architectural models described the Cossey Hall model as 'the very great perfection to which that species of modelling has been brought'.<sup>772</sup> This 'perfection' was also recognised by a broader community: Dighton's model of Scotney was one of the models chosen by the Institute of Civil Engineers for their presidential conversazione in June 1844.<sup>773</sup>

From study of Hussey's diaries there was a close relationship between client and model-maker. Between March 1836 and June 1837 Hussey went to see the model fifteen times (Table 1) at Dighton's workshop located in Upper Eaton Street, Pimlico.

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<sup>769</sup> *Great Exhibition of the Works of Industry of all Nations, 1851: Official Descriptive and Illustrated Catalogue* (London, 1851) II, p.835, 235A; p.829, 142; p.830, 160.

<sup>770</sup> 'The Model of Cossey Hall, Norfolk', *Architectural Magazine* (June 1834) p.185.

<sup>771</sup> A surviving letter from Buckler to Lord Stafford noted: 'I am going to Mr Dighton on Monday evening, & on Saturday I propose doing myself the pleasure of calling upon Lord Stafford when I will trouble his Lordship for a frank which will give me an opportunity to report to your Ladyship the state of the model.' Staffordshire Record Office, D641/3/P/14/2, letter from J. C. Buckler to Lord Stafford, 4 December 1831. My thanks to Joshua Mardell for this reference and his help on Cossey Hall.

<sup>772</sup> 'Models, Architectural', in G. Long ed., *The Penny Cyclopaedia*, Vol.15, p.294.

<sup>773</sup> 'Proceedings of Scientific Societies: Institute of Civil Engineers', *CEAJ* (June 1844) 245.

**Table 1: Edward Hussey diary entries mentioning models<sup>774</sup>**

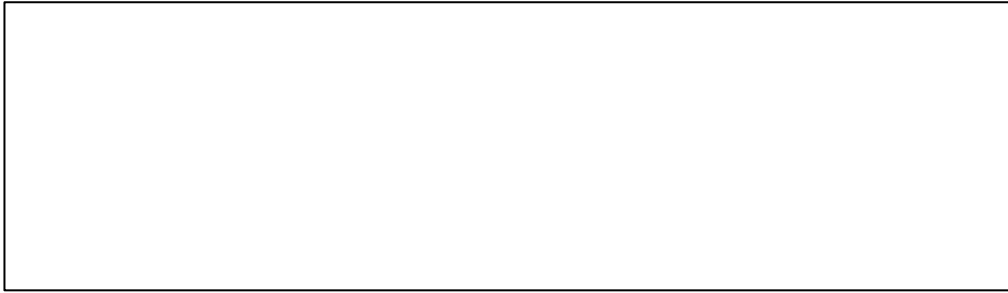
Date	Diary entry
<b>1836</b>	
March 1	“Went to Dighton to order model of house.”
March 19	“Called on Dighton about model.”
March 28	“Geary called, he drove me to Dightons to see plans.”
March 30	“Called on Salvin, got estimates for new house which were twice as much as expected. Rode horse in park. Called at Dightons.”
July 12	“Call in Salvin to see features remodeled.”
November 1	“Called on Salvin & Dighton.”
December 23	“Called on Salvin. Met a man about warming house with hot water, called on Dighton”.
<b>1837</b>	
February 8	“Called at Dighton.”
February 13	“Showery day. Called at Salvins and on Dighton.”
February 28	“called on Salvin and Dighton”.
March 4	“Call on Dighton about model”.
March 10	“Called on Dighton about model & at Salvin’s.”
March 23	“Called on Dighton”.
April 6	“Went to [see] Dighton.”
May 2	“Called on Salvin and Dighton”.
June 1	“Saw model at Dighton”.

The model, now exhibited on a table in the middle of the kitchen at Scotney, depicts the new house, the L-shaped range of stables, and the immediate surrounding landscaping including the raised topography that the house rests on, steps, garden walls, and lawns. There is an explicit and direct descriptiveness to the model: not only is the proposed form, figure, and roofscape of the house modelled, but so too are details including chimneys, rainwater downpipes, and string courses. Each window has been modelled to show the stone mullion, timber frame, and lead

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<sup>774</sup> KHC, U1776/F1/16-17, Diaries of Edward Hussey, 1836-37.

glazing bars. Through the use of different coloured papers, Dighton has articulated the different material qualities of these elements. Varying shades of brown wash are used to show the pale stone ashlar of the house with its naturally subtle differences in tone. Other shades of wash are used to represent timber doors and red clay tiles. Incised lines, possibly pencil marks, are used by Dighton to indicate the coursing of stonewalls, individual roof tiles, and the sheets of timber that form doors. Different model-making materials are also used to define different aspects of the landscaping. Brown sand combined with glue marks the pathways around the house, whilst green-coloured flock is used to indicate areas of lawn. Small human figures made from layers of paper are placed on the model to demonstrate scale, allowing viewers to project themselves into the space.



**Figure 52**

Anthony Salvin (architect), Thomas Dighton (model-maker)

Model of Scotney Castle, c.1836.

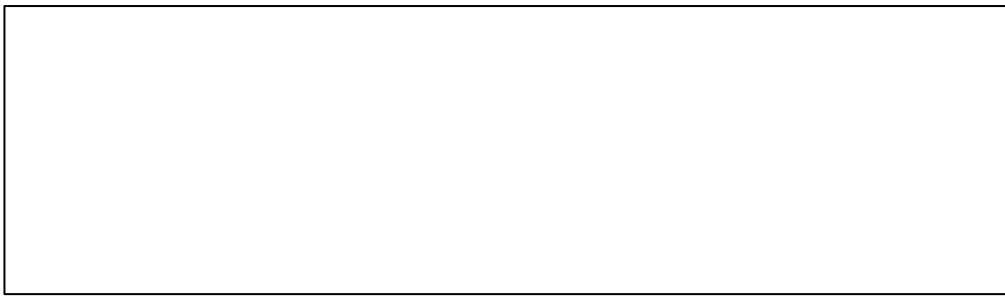
NT 791941

Hussey was not only heavily involved in the design process with Salvin but also with setting out and planting the gardens at Scotney. Within memoranda books from 1836 to 1838 there are lists of plants, and small sketches of planting plans for the area immediately surrounding the house.<sup>775</sup> From Hussey's diary, it is clear that he was on site during both the setting out and construction of the earthworks and lawns surrounding the new house in October 1839.<sup>776</sup>

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<sup>775</sup> KHC, U1776/F12/2, Memoranda book, 1836-1838, no foliation.

<sup>776</sup> KHC, U1776/F1/19, Diary of Edward Hussey, entry for 14 October 1839.



**Figure 53**

Anthony Salvin (architect), Thomas Dighton (model-maker)

Model of Scotney Castle, c.1836.

NT 791941

Hussey's regular visits to see Dighton also suggests that there were several iterations of the model made over the fifteen-month period, and that it was used as a working tool to develop the design. Rather than the more conventional interpretation, where architects used models as rhetorical device to convince their clients, the model of Scotney was a tool for the client to comprehend the design and dictate what he wanted in an unambiguous manner. Although now presented as a 'final model', in its early stages, Hussey's diary shows that the model was a site of collaboration between to display and test ideas. The direct relationship between client and model is supported by a contractual link. It was Hussey, rather than Salvin, who ordered the model, and on 10 August 1837 it was Hussey who paid Dighton's invoice for the cost of the model's production.<sup>777</sup> Similar to Holford, Hussey's general interest in models is demonstrated by a visit to the gallery of model ships at Somerset House in January 1837, and visits to exhibitions of models at the Adelaide Gallery and Polytechnic Institute in January 1839.<sup>778</sup> It is important emphasise that not only was Hussey an engaged and active client but he was also a competent draftsman. Hussey was not a client who struggled to 'read' drawings. Within his memorandum books there are accomplished drawings of 41 Wimpole Street, London and elevation studies of eave and pitch details of almshouses at East

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<sup>777</sup> KHC, U1776/E4, Account book, 1837, p.113, "August 10 – 'T. Dighton on acc[ount] of model. 30l'".

<sup>778</sup> KHC U1776/F1/19, Diary of Edward Hussey, entries for 9 January 1837 and 14 January 1839.



Grinstead, Sussex.<sup>779</sup> It would seem that for Hussey, the model of Scotney offered something that drawings failed to communicate.

#### 4.5 John Thorp, model-maker

At the end of the nineteenth century a new figure emerged on the model-making scene in the form of John Thorp (1862-1934). Thorp appears to have begun by offering architectural services as ‘The London Drawing and Tracing Office’ from 1883, whilst based at Moorgate Street in the City of London.<sup>780</sup> From 1897 Thorp’s operation moved to premises at 98 Gray’s Inn Road, adjacent to Gray’s Inn and the surrounding community of legal chambers, with additional drawing and printing facilities at another premises in Hatton Garden (Fig.53). An advert in the *Builder* from November 1897 described the services offered by Thorp as:

‘The prompt and efficient execution of all work usually required by the Profession such as Working Drawings, Tracings, Perspectives, Surveys, Competition Drawings, Black Line Photo-Copies and Blueprints, Quantities, Specifications Lithographed, Models, Diagrams, &c.’<sup>781</sup>

In the early years of his business Thorp advertised regularly in the architectural and trade press. In 1900, to ‘almost all London architects and the most prominent provincial ones’, Thorp sent a calendar illustrated for each month with colour plates of his work.<sup>782</sup> Once the profession was accustomed to his work, Thorp appears to have ensured that his models were published in both the architectural and trade journals as well as in popular magazines such as the *Strand Magazine* (1910), *The World’s Work* (1911), the *Pall Mall Magazine* (1912), and *American Homes and Gardens* (1915).

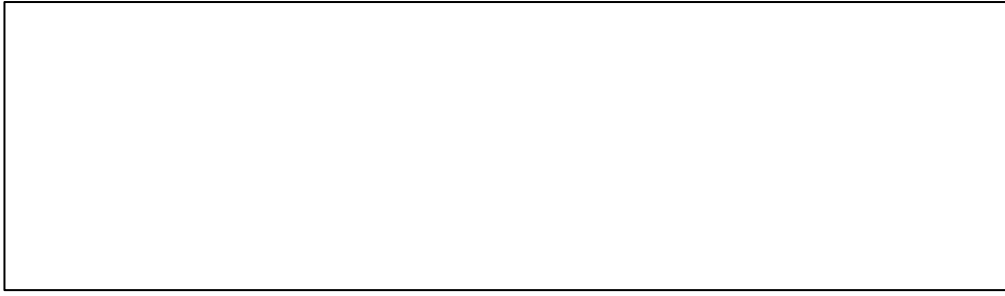
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<sup>779</sup> KHC, U1776/F12/1, Memoranda book, 1833-1835, no foliation.

<sup>780</sup> ‘Advert: The Drawing and Tracing Office’, *Building News* (3 June 1885) xxi.

<sup>781</sup> ‘Advert: London Drawing and Tracing Office’, *Builder* (27 November 1897) xxi.

<sup>782</sup> ‘A Calendar’, *The Surveyor* (9 February 1900) 124.



**Figure 54**

‘Old London: Mr Thorp and his models’, *Pall Mall Magazine* (June 1912) 803

The models themselves appear to have become a more distinct part of his business from 1900 when an advert for his services in ‘the prompt and efficient execution of all work usually required by the [architectural] profession’ described how Thorp made models ‘in cardboard, wood or plaster’. Additionally the advert offered illustrations of models executed for those interested in this particular services.<sup>783</sup> Also in 1900 the architectural and trade press became much more interested in Thorp’s model-making practices. Both *The Surveyor* and *The Builders’ Journal* published short news stories on two models made by Thorp at 1:200 scale, one of the Brook Hospital on Shooter’s Hill, London (Fig.55), and a second model for the North Eastern Hospital in Tottenham.<sup>784</sup> Later exhibited in the 1900 Exposition Universelle in Paris,<sup>785</sup> the ‘utility’ of these models was noted by the *Builders’ Journal* who suggested that whilst architects could understand drawings, ‘this is not the case with the general public and those who generally form building committees’.<sup>786</sup> Therefore, the article proposed, ‘The excellent manner in which [Thorp’s models] show how the buildings will look when completed well repays their cost’.<sup>787</sup> An article from 1910 in the *Strand Magazine* described how both of the hospital models were made especially for the *Exposition Universelle* as when

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<sup>783</sup> ‘Advert: London Drawing and Tracing Office’, *Builder* (6 January 1900) xxviii.

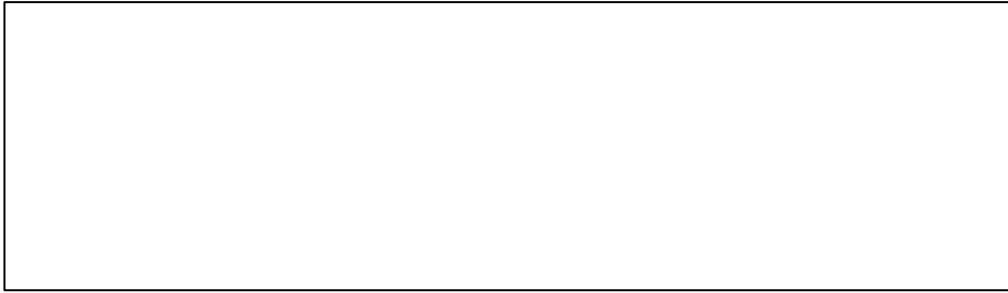
<sup>784</sup> ‘Some Uses of Architectural Models’, *The Architects’ Magazine* 1.2 (December 1900) 32. The cost of each model for the client or architect was transparent: the Brook Hospital model cost £300 and the North Eastern Hospital cost £100. Although I suspect that the Brook Hospital cost was probably due to two factors – there were additional models made of the project and these models were probably adjusted and developed, thus costing extra money.

<sup>785</sup> ‘Class 112 Public Charitable Relief’, *Paris Exhibition, 1900: British Official Catalogue* (London, 1900) p.151. Thorp was not listed in the catalogue. I propose that adding his name to the model was a key part of his strategy of self-promotion.

<sup>786</sup> ‘Two Interesting Models’, *The Builders’ Journal* (21 February 1900) 6.

<sup>787</sup> ‘Two Interesting Models’, *The Builders’ Journal* (21 February 1900) 6.

completed, both '[were] regarded as a triumph in architectural design'. Commissioned by the Metropolitan Asylum Board, Thorp was engaged on the models for nine months. They travelled to 'several other exhibitions on the Continent' after Paris before then being exhibited at the 1909 Imperial International Exhibition at White City in Hammersmith.



**Figure 55**

Model of Brook Hospital, Shooter's Hill, London  
*Concerning Models of Buildings*, p.22.

From the photographs of his workshop and published articles it is clear that Thorp required drawings from a client, whether they were an architect, a patron, or an institutional authority, in order to begin making a model (Fig.56). In addition to assisting the model-making process there were practical purposes for this. Thorp described in 1913 how in the instance of 'Exhibition or Law Courts Models, all the drawings must be carefully studied before a price can be quoted'.<sup>788</sup> In practice, however, the drawn information available to Thorp varied, depending on the situation. Retrospective to its construction, Thorp made a model of the Princess Mary Village Homes at Addlestone – an industrial school for the children of convicts – for the Victorian Era Exhibition held at Earls Court in 1897. Costing £50, the model was 'worked up entirely from photographs and the ground plan'.<sup>789</sup>

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<sup>788</sup> J. Thorp, *Concerning Models of Buildings, Estates, Works, etc. for Exhibitions or Law Cases* (London, 1913) p.30.

<sup>789</sup> A. Soutar, 'Produced in Court', *The Strand Magazine* 39 (January - June 1910) 616.



**Figure 56**

‘Mr. John B. Thorp, Maker of Models for Law Cases in His Workroom, Gray’s Inn Road’, A. Soutar, ‘Produced in Court’, 613.

Often the models made by Thorp required much further research and attention to the objects (or incidents) that he was tasked with rendering in miniature. When Thorp was commissioned to make a model of the scene of a coaching accident for a legal case he visited the scene of the accident in order to produce an exact model in support of the defendant.<sup>790</sup> Other models, not made for clients, required much further research. Thorp’s series of models of reconstructed monuments of London exhibited at the 1908 Franco-British Exhibition were the result of ‘research into the history of Old London’ and based on ‘old books, prints, and contemporary documents of the period [...] and advice solicited from living authorities’.<sup>791</sup>

Following this research Thorp ‘conceived the idea of reconstructing the most historic portions of the capital’ and built a model of London Bridge (c.1630) at a ¼ inch to the foot (1:50 scale).<sup>792</sup> Over twenty-one feet long and encompassing both banks of the Thames, this model was available for hire to the public (Fig.57). A painted backcloth and ‘proscenium opening representing a large stone arch’ would allow sixty or seventy people to view ‘a large working representation’ of the

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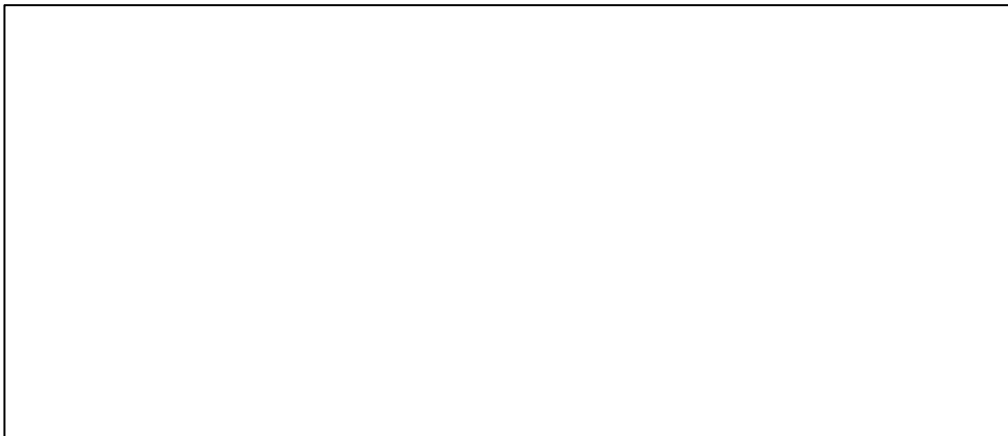
<sup>790</sup> A. Soutar, ‘Produced in Court’, 615.

<sup>791</sup> ‘Notes of the Month’, *Architectural Review* (November 1907) 212.

<sup>792</sup> A. Soutar, ‘Produced in Court’, 613.

bridge.<sup>793</sup> The article in *The Strand Magazine* described how a friend advised Thorp of the potential public interest in the model and similar ones of other reconstructed monuments:

‘Why not construct the whole of the more interesting portions of London? The average Londoner’s love of the capital is such that a model, when replete with panoramic equipment, would bring him from far and near to see it.’<sup>794</sup>



**Figure 57**

‘North Bank of the Thames. At the extreme left is the entrance to Fleet River, with Bridewell Palace and Baynard Castle in the foreground’

‘Old London: Mr Thorp and his models’, *Pall Mall Magazine*, 789.

A contemporary article in the *Architectural Review* noted that several notable antiquaries, including Philip Norman, had praised Thorp’s model of London Bridge. The *Architectural Review* comment that ‘The purpose of Mr. Thorpe [sic] has not been to provide a sensational toy, but to build up a realistic and accurate presentation of the structures and districts of old London.’<sup>795</sup> Most importantly, the *Architectural Review* stated, was the potential educational role that these models could offer for a general public:

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<sup>793</sup> Thorp archive, ‘A Great Attraction’, undated advert (c.1910). My thanks to Alec Saunders and David Lund for sharing this item with me.

<sup>794</sup> A. Soutar, ‘Produced in Court’, 613.

<sup>795</sup> ‘Notes of the Month’, *Architectural Review* (November 1907) 212.

‘These models will have not merely an interest for the architect, artists, antiquarians, and historians, but that they should appeal to all classes of people for their educational and instructional value’.<sup>796</sup>

In conclusion, the *Architectural Review* commented on Thorp’s more ambitious project to make a ‘model of the whole of old London, on a scale about twelve feet to the inch’. In addition to the probable cost of making this model, the article noted how the model would require ‘a large turntable base on which it could be revolved and explained to a seated audience’. Despite the complexity and cost of such a model, the work undertaken by Thorp held the potential ‘to combat the growing Philistinism of the present day, and rouse the lay public to the urgent necessity of preserving those relics that still remain to us’.<sup>797</sup>

Thorp proceeded to spend ‘many years devoted to the careful study of old pictures and records’ to produce a suite of models of historic sites in London in 1907-08.<sup>798</sup> Covering an area of 27m<sup>2</sup>, there were five models in total, four of the City of London prior to the 1666 fire, whilst a fifth depicted the village of Charing Cross.<sup>799</sup> Similar to the model of London Bridge, each had a panoramic background – for instance the Charing Cross model looked towards Westminster – to ‘present to the observer a realistic vision of what the city looked like prior to the Great Fire of 1666’.<sup>800</sup>

In a specially constructed building on the Central Avenue the models were exhibited as ‘Old London’, one of the amusements at the Franco-British Exhibition held in White City between 14 May and 31 October 1908. Thorp later claimed that the models had been seen by over 500,000 people, including Queen Alexandra

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<sup>796</sup> ‘Notes of the Month’, 212.

<sup>797</sup> ‘Notes of the Month’, 212.

<sup>798</sup> P. Collins, ‘Practical Modelling’, p.87.

<sup>799</sup> J. Thorp, *Concerning Models of Buildings*, pp.31-32.

<sup>800</sup> P. Collins, ‘Practical Modelling’, p.87.

and other members of the Royal Family.<sup>801</sup> A report from 1907 in the *Builder* described how these ‘restorations in model form [were] placed in a series of compartments under special lighting’.<sup>802</sup> Each model, the article noted, was built in solid parts and capable of being disassembled and exhibited at different places. In his study of twentieth-century expositions, Alexander Geppert describes how ‘Old London’ represented a distinct national past, one securely overtaken by technological progress, with the old values conserved as ‘ancient’ alongside ‘modern’.<sup>803</sup> This idea – the visual presentation of the British Empire to a mass audience – was noted by contemporary sources. I will explore this idea further in Chapters 5 and 6, which address the display of architectural models. At the time the *Builder* was clear about the message that the models were able to communicate about the relationship between historic London and the contemporary British Empire:

‘It is hoped that [the models] may be interesting especially to our Colonial visitors, as illustrations of the mother-city from which all our Colonial development sprung.’<sup>804</sup>

Following the exhibition in 1908 and their reappearance at the 1909 Imperial International Exhibition and 1912 Festival of Empire, the five models were acquired by the Committee of the London Museum in March 1912 for £300 and permanently exhibited in a specially constructed annexe to Kensington Palace, the London Museum’s first home from 1912 to 1914.<sup>805</sup> Once the it had relocated to

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<sup>801</sup> I have been unable to check these figures directly but there are accounts held in the surviving Thorp papers, which indicate that the display brought in £7,338 during the 126 days that the exhibition was open. As the entrance fee was 6d, the actual number of visitors was probably around 293,500. J. Thorp, *Concerning Models of Buildings*, pp.30-31; Thorp archive, ‘Statement of accounts’, accounts for the exhibition of Thorp models at the Franco-British Exhibition (1908).

<sup>802</sup> ‘Models of Old London’, *Builder* (19 October 1907) 405.

<sup>803</sup> A. C. T. Geppert, *Fleeting Cities: Imperial Expositions in Fin-de-siècle Europe* (London/New York, 2010) p.128.

<sup>804</sup> ‘Models of Old London’, *Builder* (19 October 1907) 405.

<sup>805</sup> ‘Our Own Cable’, *Building News* (22 March 1912) 433; F. Sheppard, *The Treasury of London’s Past: An Historical Account of the Museum of London and its Predecessors, the Guildhall Museum and*

Lancaster House in the Spring of 1914, the initial five models were joined by a new model of the Tower of London as it appeared in 1600 at 1:100 scale.<sup>806</sup> Once the museum had moved to Lancaster House, these models were displayed in a series of rooms in the basement, next to various miscellaneous exhibits.<sup>807</sup> A part of one of the models – a model of St Paul’s before the loss of its spire in 1561 – survives today in the Museum of London’s collection where it can be seen on display as a representation of the medieval cathedral.<sup>808</sup>

In a short article in the *Builder* that discussed the publication of a prospectus of Thorp’s work that he self-published in 1913, the writer noted:

‘Every architect knows that sometimes a model can be of far greater use in conveying to a client an idea of the general massing of a design than any number of perspective drawings, while modifications of his own working drawings may suggest themselves to him when he sees a well-made model of his own design.’<sup>809</sup>

In addition to being a masterful piece of self-promotion, Thorp’s publication is a vital source for photographs of his work alongside a descriptive text that paraphrased three articles previously published in the popular press. Midway through the publication, Thorp discussed a particular model that he made for the little-known London-based architectural partnership of John. P. Bishop and Henry Etherington-Smith. I will examine how this discussion offers a view of the

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*the London Museum* (London, 1991) p.59 cites Museum of London, DC3/2, letter from Sir Guy Laking to William Edward Harcourt, 9 November 1911.

<sup>806</sup> Commissioned from Thorp and donated to the museum by John George Joicey, son of a Baronet and part of a coal-mining dynasty in Durham, the model was 7.5m in length. As a report in the *Builder* noted ‘in this model of Mr. Thorp’s a most excellent idea can be gained of what the grim fortress appeared like hundreds of years ago’.<sup>806</sup> The *Building News* suggested that this model was ‘one of the finest pieces of work [Thorp] has executed’. ‘The Tower of London A.D. 1600’, *Builder* (27 February 1914) 259. ‘Notices’, *Building News* (6 February 1914) 209.

<sup>807</sup> These included the last cabriolet driven in London and a life-size wooden horse attributed to Grinling Gibbons. F. Muirhead, *London and Its Environs* (London, 1927) p.356; F. Sheppard, *The Treasury of London’s Past*, pp.81, 84-85.

<sup>808</sup> MoL, 2005.175a, Model of St Paul’s.

<sup>809</sup> ‘Models of Buildings’, *Builder* (13 February 1913) 212.



relationship between Thorp and the architectural profession. Additionally the prospectus shows how an architect's working drawing or sketch design might be questioned and examined by Thorp's production of a model.

In 1906 Meux's Brewery Company commissioned Bishop and Etherington-Smith to design new premises for the firm in Wandsworth.<sup>810</sup> These new premises were never realised despite the firm's later move to south London.<sup>811</sup> The appointment of Bishop and Etherington-Smith was closely linked to the brewery's struggling performance. Production at the brewery fell from 218,672 barrels of in 1891 to 198,906 barrels in 1896, and 114,785 barrels in 1904 due to falling levels of industrial efficiency.<sup>812</sup> In 1905 it was noted by William Harris, the Chairman of Meux, that the brewery's facilities were old, in a poor state of maintenance, and inefficiently arranged for modern methods of production.<sup>813</sup>

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<sup>810</sup> I can find very little information on either architect. A few minor details on Etherington-Smith can be found in: A. Felstead, J. Franklin, and L. Pinfield, *Directory of British architects 1834–1900* (London, 1993) p.294. However, both partners appear to have been members of the Society of Architects and the partnership appears to have worked on the Hype Park Hotel, Knightsbridge in 1924 (see Westminster City Archives, Acc 40/6, Plan of alterations by Bishop and Etherington-Smith).

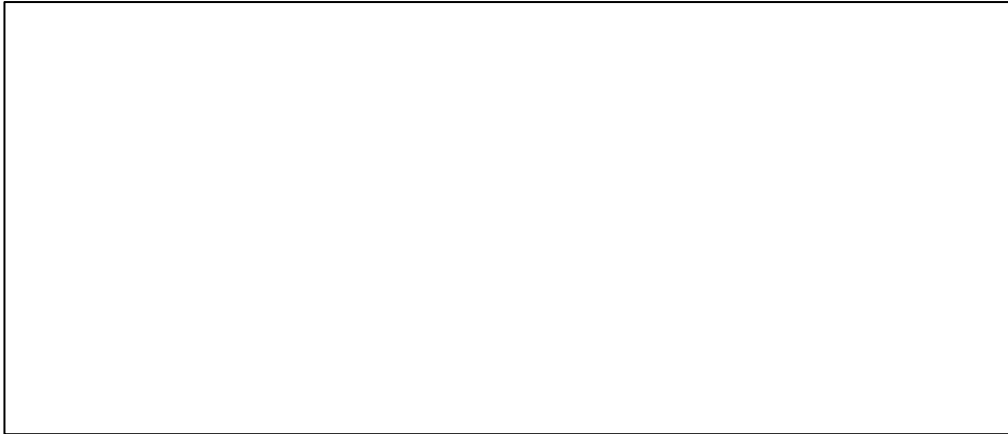
<sup>811</sup> Initially established in 1807 at the Horseshoe Brewery at 269 Tottenham Court Road, the brewery and surrounding block of freehold properties covering 2.5 acres between Great Russell Street and New Oxford Street were sold by the company in February 1918 for £400,000. The reason for the sale was Meux's acquisition of another brewing company, Thorne Brothers of Wandsworth, in 1914. Subsequently Meux moved their operation and brewery name to Thorne's site at 28 Nine Elms Road in 1919.

LMA/ 4435/A/01/006, Sales particulars for Meux Company Premises, 28 February 1918.

For a discussion of Meux's see L. Richmond and A. Turton, eds., *The Brewing Industry: A Guide to Historical Records* (Manchester / New York, 1990) p.233. For a broader history of brewing and development in the Nine Elms area see: *Survey of London Volume 50, Battersea: Homes and Housing*, C. Thom ed. (London, 2013) p.322.

<sup>812</sup> LMA/ 4435/A/01/003, Report of an Extraordinary General Meeting of Shareholders of the Meux Brewery Company, 28 January 1914, p.4.

<sup>813</sup> LMA/ 4435/A/01/003, Proceedings of an Extraordinary General Meeting of Shareholders of the Meux Brewery Company, 16 March 1905.



**Figure 58**

Plan of Wandsworth site from sales particulars, 1905.

LMA 4435 A 01 006

Just over a year later, in January 1906, Meux's directors and shareholders met to debate the purchase of nine-acres of land in Wandsworth for the erection, completion, and equipment of a new brewery (Fig.58). This proposed site would not only contain new plant and brewing equipment but also provide improved access to logistical networks via the river or the nearby railway line. Harris described how the brewery's current buildings were 'constructed as to cause an enormous amount of wasted labour', with a wage bill per annum almost £2,500 higher than their competitors.<sup>814</sup> Meux, Harries explained, had commissioned an unnamed firm of architects who had provided 'a rough sketch as to how they would put up a brewery which would contain every modern labour-saving appliance'.<sup>815</sup> Unfortunately the sketch drawing appears not to have survived. According to a Directors' Report, an increase in trade for Meux caused the architects' plans to be revised twice during 1906.<sup>816</sup> Ultimately it was this increase in trade that meant

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<sup>814</sup> LMA/ 4435/A/01/003, Précis of an Extraordinary General Meeting of Shareholders of the Meux Brewery Company, 23 January 1906, p.12.

<sup>815</sup> LMA/ 4435/A/01/003, Précis of an Extraordinary General Meeting, 23 January 1906, p.12.

<sup>816</sup> LMA/ 4435/A/01/004, Directors Report and Balance Sheet to 31 December 1906, 16 February 1907.

plans for the new buildings were stopped and instead ‘considerable sums’ were spent on new plant and equipment for the existing brewery.<sup>817</sup>



**Figure 59**

West Elevation of Brewery Model

J. Thorp, *Concerning Models of Buildings*, p.19.

However, in 1907 John Thorp produced a model of the proposed new brewery buildings in Wandsworth from a series of the architects’ ‘rough plans’ at the scale of ¼ inch to a foot (Fig.59).<sup>818</sup> Made in timber, the model could be taken apart to reveal the individual spaces and rooms that made up the brewery. Whilst the model does not survive, from my analysis of photographs I propose that the model was a spatial diagram that did not follow the typical conventions of the ‘cut’ in either plan or sectional representation. Not being forced to follow these conventions allows the partially dismantled model to show the overall functional and structural layout of the proposed building, in addition to the plant and machinery required by a modern brewery. As Percy Collins in *The World’s Work* described in 1911:

‘This model, when complete, comprised fifty-two separate blocks – each made up of many smaller sections – and measured 6 ft. square. Its cost was £300. But it brought to light several ambiguities in the architectural plans, the discovery of which served to effect a saving of over £10,000 in the

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<sup>817</sup> LMA/ 4435/A/01/004, Directors Report and Balance Sheet to 31 December 1907, 13 March 1908.

<sup>818</sup> A. Soutar, ‘Produced in Court’, 616.

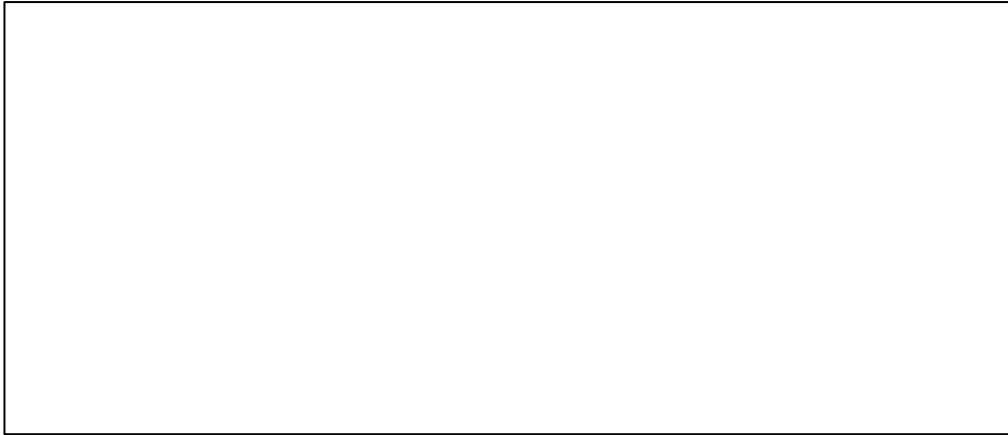
building contract. This model was worked up with more than ordinary attention to detail. A complete set of drays, horse, men and barrels all made accurately to scale, was prepared in order that the exact amount of space which these things would occupy in the yards and buildings might be ascertained.<sup>819</sup>

In two articles in the popular press the model was photographed obliquely, from a 'birdseye' position, like many of the models Thorp made during the period. In the 1913 prospectus, however, the model was presented in two ways. First, a pair of photographs of the model from the typical oblique position, which demonstrate the overall mass and grouping of the various buildings that make up the brewery complex. Second, a sequence of six photographs that depict each level of the brewery complex, photographed from a slightly offset plan viewpoint (Fig.60). Within a decorative border that contains, identifies, and frames the abstracted images as also the model for Meux's Brewing Company, the photographs form a taxonomy of the model's various components and offer a serial image of construction from basement to roof.<sup>820</sup>

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<sup>819</sup> P. Collins, 'Practical Modelling', *The World's Work* Vol.17 (1911) p.86.

<sup>820</sup> In many ways this correlates most closely with contemporary BIM models and promotional videos of buildings being constructed from exploded elements, such as the now-famous video of 56 Leonard Street by Herzog and de Meuron. This topic will be covered in Hugh Campbell's forthcoming book *Space Framed: Architecture, Photography and Built Space* due to be published by Lund Humphries in 2019.



**Figure 60**

Brewery Model from above

J. Thorp, *Concerning Models of Buildings*, p.18.

In a thank-you letter written from the architects to Thorp, which miraculously survives in the company's records, Bishop and Etherington-Smith remarked:

‘We are aware that the buildings were irregular on plan and of varying levels throughout and contained numerous vessels of different shapes and sizes. This undoubtedly made our stipulation a difficult one to comply with, namely that all parts of the Model should take to pieces and be accessible. We can only say that we consider you have accomplished a decidedly difficult job in an excellent manner.’<sup>821</sup>

Clearly for Bishop and Etherington-Smith the model allowed them to comprehend both the building and the brewing machinery at once, in a way that orthographic drawings were unable to achieve due the limitation of their conventions. Additionally, as Percy Collins noted, the model revealed discrepancies in the drawings, which would have cost Meux £10,000 once the project was under construction. Alongside these issues, I believe that there is a connection between the model's fabrication and the efficiency of industrial production. In the light of

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<sup>821</sup> Thorp archive, Letter written by Bishop and Etherington-Smith to The Manager of the London Drawing & Tracing Office, 2 January 1907.

William Harris' comments about the wasted labour at the existing Meux brewery, and Percy Collins' observation that the model was made in order to ascertain the exact amount of space required for the brewery, I propose that Thorp's model of the proposed complex offered a framework on which stakeholders could measure and judge distances, volumes, and costs.<sup>822</sup> For the directors of Meux, the model allowed for a three-dimensional understanding of human labour in relation to the raw materials, equipment, and spaces required for producing beer. Viewing the model from above, with miniature 'drays, horse, men and barrels all made accurately to scale', the directors and shareholders, owners of the means of production, were able to control, regulate, and direct labour in order to increase the efficiency of the brewery.

#### 4.6 Conclusion

This chapter has sought to show the variety of approaches, strategies, and discussions that shaped how architectural models were commissioned, made, and used by architects in the course of their professional practice. Drawing on reports in the architectural press the first section of the chapter offered contemporary viewpoints on the relationship between architect, client, and model-maker. We saw how prominent individuals such as T. Roger Smith proposed that models were a key vehicle in clients understanding the extents and costs of a building prior to its construction. Whilst Chapter 1 explored the various guides available for model-making, the second section of this chapter situated the professional model-makers as a group of individuals in their own right who were responsible for the vast bulk of architectural models in the period studied by the thesis. In particular the section also discussed the model-makers' disciplinary backgrounds in order to position them and their work in relation to professional architectural practice.

The third section explored the use of architectural models in the conception and iterative design process at Dorchester House. Through census information,

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<sup>822</sup> A. C. Smith, *Architectural Model as Machine* (Amsterdam, 2004) p.63.

correspondence, and accounts this case study explored how the Lewis Vulliamy, Robert Holford, and Richard Day junior interacted with and through architectural models. It allowed us to explore one example of how were models commissioned, made, and paid for during the period. This example brings to light a host of new issues that the existing scholarship was previously unaware, including sub-contracting, the emergence and effects of new record keeping systems on the production of models, and the practicalities of making, carving, and transporting large-scale plaster models in London.

Focused on a single architect but exploring three of his surviving models, the fourth section examined how Anthony Salvin commissioned and used models in his work at Scotney, Peckforton, and Thoresby. In particular at Scotney this example questions the perceived relationship between architect and model-maker, instead proposing that the client and the model-maker had a much closer working relationship than might be expected. The records of this relationship from the client's diary offered a glimpse at the process of production and the iterative nature of working with models, despite the highly finished nature of the models. Alongside the working relationship between Dighton and Hussey, the chapter examined to what extent was the model-maker a creative or independent actor in the design of buildings. In particular this idea was explored through the final section on John Thorp. As I demonstrated, despite working from a complete set of the architects' own orthographic drawings Thorp's model uncovered a host of spatial and programmatic discrepancies in the plans for a highly complicated building. In addition to saving the client several thousand pounds in potential construction costs, in the publication of photographs of this model we saw a relationship between the construction of the model and the desire for improved industrial efficiency of both equipment and labour.





## Chapter 5

### Exhibiting architectural models



## Chapter 5: Exhibiting architectural models

This chapter will examine how and why architectural models were displayed in public. Through a series of case studies the chapter will explore the status of the architectural model in various institutions and exhibitions during the period. The chapter will not focus solely on exhibitions but also explore other contexts for the public display of models on the boundary of the profession such as RIBA meetings, groundbreaking and opening ceremonies, and other social events such as *conversazione*. Through these case studies I will explore the practical and epistemological significance of the public display of architectural models in relation to the development of professional practice. Throughout the chapter I will follow the themes of the various methodological and practical positions taken by architects, critics, and commentators in the popular, trade, and architectural press on the exhibition and display of models during the period.

The chapter will begin by introducing the broader background of the annual Royal Academy Exhibition before exploring the 1834 edition of the exhibition, chosen as it has the greatest number of surviving architectural models than any other year's exhibition, I will analyse how and why both emerging and established architects displayed work to the public through the presentation of models. In the second section I will explore the decline of architectural models displayed at the Royal Academy during the 1840s and the emergence of the Architectural Exhibition. Despite being neglected by architectural historians, I will demonstrate that the emergence of the Architectural Exhibition was a key moment for the nascent profession which was able to gain control of the curatorial process. Through a pair of case studies, in the third section I will examine the role that the architectural models played at the 1851 Great Exhibition and the relationship between the professional identity of the architect and the public presentation of these models on an international stage. After offering a wide-ranging discussion on the background to the exhibition and the sorts of models displayed, I will discuss two models in particular. First, an absent model of the docks of Liverpool commissioned by the

Liverpool Architectural Society. Second, a surviving model by the professional model-maker Stephen Salter of Cambridge Assize Courts by Thomas Henry Wyatt and David Brandon. Through the analysis of these models, I will reflect on the limitations, techniques, and conventions of architectural models in the depiction, representation, and communication of proposed buildings in miniature. The fifth section examines the role of models on the boundary of the profession. Following a discussion of models at the RIBA in the nineteenth century, I will explore the *conversazione*, an open occasions where models and drawings were informally exhibited by a society's members and discussed in public. After examining how William Tite's model of the portico of the Royal Exchange was displayed at a *conversazione*, in the sixth section I explore the model's symbolic role in the groundbreaking and opening ceremonies of the new building.

### 5.1 The Royal Academy Summer Exhibition

In addition to its role in architectural education as discussed in Chapter 1, the Royal Academy held the most prominent artistic exhibition every summer during the period.<sup>823</sup> Whilst Nicholas Savage has discussed the early phase of architectural drawings exhibited at the Royal Academy in depth, there is sparse scholarship about the architectural models on display in the annual summer exhibition.<sup>824</sup> Between 1825 and 1831 architectural models were exclusively exhibited in the Royal Academy's Library, I propose this location for the models was related to their status as art objects in the libraries of aristocratic patrons, an idea that I will explore further in Chapter 6.<sup>825</sup> In 1832 only one was exhibited in the Library with seven

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<sup>823</sup> For an in-depth discussion on the early history of the Royal Academy Exhibition see: D. H. Solkin, *Art on the Line: The Royal Academy Exhibitions at Somerset House 1780–1836* (New Haven/London, 2002).

<sup>824</sup> N. Savage, 'Exhibiting Architecture: Strategies of Representation in English Architectural Exhibition Drawings, 1760–1836', in D. H. Solkin, *Art on the Line* (New Haven/London, 2002) pp.201-216.

<sup>825</sup> V. Coltman, 'Classicism in the English Library', *Journal of the History of Collections* 11.1 (1999) 35-50; R. Gillespie, 'The Rise and Fall of Cork Model Collections in Britain', *Architectural History* 60 (2017) 117-146.

other models displayed in the Council Room.<sup>826</sup> From 1837 until 1916 models were exhibited in the Architecture gallery. During the period of study an average of 180 architectural exhibits were displayed every year, out of around 1200 items exhibited across all the artistic disciplines; ‘architects’ comprising around eight to twelve percent of the exhibiting artists.<sup>827</sup> Between 1830 and 1916 at least 109 models were exhibited. That means models represented about 0.7% of the architectural content of the exhibition during the period in question. But their presence in the exhibition was not consistent across the period as the graph below demonstrates. As I shall argue, the absence of models from the exhibition was due to the negative perception of their status by the Royal Academy in the middle of the nineteenth century.

Before discussing specific models and architects there are two key questions: first, what was the Royal Academy Exhibition for, and why would an architect want to exhibit work at it? David Solkin describes the Royal Academy as the centre of the London art world with the annual summer exhibition the single official showcase for the achievements of contemporary British painters, sculptors, and architects.<sup>828</sup> The audience for this spectacle, as C. S. Matheson describes through prints, catalogues, and novels, was drawn from a variety of viewers: wealthy urban dandies, provincial clergymen, groups of young women escorted by a chaperone, the Royal Family, journalists and critics.<sup>829</sup> Discussions in the popular press indicate there was an expectation that architects should participate in the exhibition and engage with this varied audience. An article in *Arnold’s Magazine of the Fine Arts* noted that there was an absence of prominent architects in the 1834 Royal Academy exhibition and opined that ‘they might as well have let us seen on paper some of the things

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<sup>826</sup> Models continued to be displayed in the Council Room until the transfer of the Royal Academy to new apartments in the National Gallery in 1837.

<sup>827</sup> This data is drawn from the Paul Mellon Centre’s digital research project, ‘The Royal Academy Summer Exhibition: A Chronicle, 1769–2018’, <https://chronicle250.com/>

<sup>828</sup> D. H. Solkin, ‘Preface: The Exhibition’, in D. H. Solkin ed., *Art on the Line*, xi.

<sup>829</sup> C. S. Matheson, ‘A Shilling Well Laid Out: The Royal Academy’s Early Public’, *Art on the Line*, pp.39-54.

they are executing'.<sup>830</sup> This opinion was corroborated by the *Athenaeum* in 1847 which proposed that whilst it might be unreasonable to expect exhibits 'from architects who are fully employed', the public would expect that those architects 'occupied on important works [...] would let us see what they are doing, or about to do'.<sup>831</sup>

Despite this there was a lack of models exhibited by the Professors of Architecture at the Royal Academy during the period.<sup>832</sup> There were, however, younger architects keen to present and promote themselves on the public stage and regarded models as an effective medium.<sup>833</sup> Other architects used the exhibition as an opportunity to exhibit failed competition entries as portfolio pieces.<sup>834</sup> There were also architects who exhibited more regularly to promote their work. Between 1835 and 1848 James Bunstone Bunning exhibited fifteen times at the Royal Academy Exhibition. On five occasions Bunning exhibited architectural models. Two of these models

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<sup>830</sup> 'Exhibition of the Royal Academy: Architectural Drawings', *Arnold's Magazine of the Fine Arts* 4 (1834) 147.

<sup>831</sup> 'Architectural Drawings', *Athenaeum* (22 May 1847) 553.

<sup>832</sup> John Soane, professor between 1806 and 1837, exhibited only two models during his tenure. Despite his use of models in architectural practice as described in Chapter 2, William Wilkins never exhibited models at the RA. Nor did C. R. Cockerell. There were instances when the architectural press commented on the absence of Cockerell's models from the exhibition. In 1841 Cockerell exhibited his perspective drawing of the proposed Royal Exchange for the 1839 competition discussed in Chapter 2. The *Civil Engineer and Architects' Journal* noted the absence of the model of the same subject and suggested: '[The model] would have been a striking object in the room, and would have explained the whole design, we have heard it spoken of as abounding with many effective parts.' Cockerell's successor as professor, Sydney Smirke also failed to exhibit a model despite his use of a model for the arcades of the Royal Horticultural Society at South Kensington in 1859, which was exhibited at the Architectural Exhibition in 1864: Likewise George Edmund Street, professor of architecture between 1880 and 1881, never exhibited a model at the RA despite his use of them in the design of the Royal Courts of Justice and St. James-the-Less. 'Architecture Room: Royal Academy', *CEAJ* (June 1841) p.171; *Catalogue of the 14th Exhibition of the Architectural Exhibition* (London, 1863) p.30, no.395.

<sup>833</sup> As I described in Chapter 4, aged thirty years old, Anthony Salvin exhibited three models in 1830 including a model of Mamhead Hall (1827–33), which at that stage of his career was his most prominent building. *Catalogue of the Exhibition of the Royal Academy* (London, 1830) nos.1163–1165.

<sup>834</sup> In 1836 William Bardwell and W. J. Inman exhibited models of their unsuccessful designs for the Fitzwilliam Museum competition. *Catalogue of the Exhibition of the Royal Academy* (London, 1830) nos.918 and 924.

were designs for open competitions, the Houses of Parliament and the Royal Exchange, which prohibited the use of models by competitors and required entrants to rely on drawings to communicate ideas.<sup>835</sup> Presumably therefore these models were made for Bunning after the competition process from relatively resolved designs for the purposes of exhibiting at the Royal Academy. As noted in my literature review, John Physick and Michael Darby propose that the ‘exhibition model’ for display or public criticism emerged in the mid-nineteenth century. I think, however, that it is important to distinguish between models made specifically for display and those adapted or repurposed for deployment in exhibitions and public events during the period. In the case of Bunning, his regular clients, in particular institutional building committees, would have been aware of his practical abilities in preparing specifications, calculating costs, and running a building site. Through the exhibition of architectural models, Bunning was able to demonstrate a different set of skills to a new audience. Similarly in 1861 Alfred Waterhouse exhibited a now-lost model of Manchester Assize Courts.<sup>836</sup> Aged 31 and with a practice based in Manchester, Waterhouse was no doubt keen to prove to London society his ability to design a prominent building. Through demonstrating their architectural abilities with projects presented in the form of models, the most legible form of architectural representation to the untrained, younger architects were able to promote their work within the confines of the Summer Exhibition to a wider public.

The section will now explore the relationship between the professional identity of the architect and the public presentation of models through the example of the 1834 Royal Academy Exhibition, from which three models survive. I will conclude the section by reflecting on how the status of models at the Royal Academy Exhibition changed by the mid nineteenth-century and the response of the architectural profession in relation to these changes. In his 2002 essay Nicholas

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<sup>835</sup> *Catalogue of the Exhibition of the Royal Academy* (London, 1837) no.1148; *Catalogue of the Exhibition of the Royal Academy* (London, 1844) no.1258.

<sup>836</sup> *Catalogue of the Exhibition of the Royal Academy* (London, 1830) no. 696.

Savage describes the impossibility of proposing a history of architectural exhibition drawings as a genre as too few have survived for a meaningful narrative to be proposed.<sup>837</sup> Whilst too few architectural models survive to propose a grand narrative, only seven out of one hundred and two, the models themselves and documentation relating to their production, use, and reception do show some of the ways that architects exhibited models as a part of their professional practice.<sup>838</sup>

Held in the Royal Academy's rooms at Somerset House, the 1834 Exhibition opened on Friday 2 May and closed on Saturday 19 July. In the Council Room five architectural models were exhibited.<sup>839</sup> Three of these survive. John Soane's two models remain at the Sir John Soane Museum and Charles Frederick Inwood's model of All Saints Marlow survives in the boilerhouse of the church. One model exhibited by John Soane was a model (SJSM L91) for a proposal to complete the frontage to Whitehall of government offices on either side of a triumphal arch that would lead to Downing Street (Fig.61). The other was a model for the New State Paper Office at St James Park (SJSM MR18), a project designed and built between April 1829 and November 1833.<sup>840</sup> Unlike the plaster models made by professional model-makers such as Richard Day and Richard Day junior, or the Mabey dynasty, both models were made for John Soane by W Robson and J Estelle, plasterers based in Abchurch Lane in the City of London.<sup>841</sup> Robson and Estelle did much of the plasterwork and its repair at Soane's house on Lincoln's Inn Fields. As a bill for the

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<sup>837</sup> N. Savage, 'Exhibiting Architecture', p.203.

<sup>838</sup> These seven models are John Soane, Model for the Privy Council and Board of Trade Offices, SJSM L91 (1834); John Soane, Model for the New State Paper Office, SJSM, MR18 (1834); Charles Frederick Inwood, Model of All Saints Marlow (1834); J. B. Bunning, Model of the new Coal Exchange, RIBA MOD/BUNN/1 (1847); William Burges, Models for St. Paul's (now in a heavily altered state) SPCAA/P/18/5/1-3 (1874); A. W. Blomfield, Model of the Chapel at Tytesfield, NT (1895); Charles. J. Ferguson, Bamburgh Castle (1896). There are several others that survive in the form of photographs, especially from once the *Architectural Review* began to be published in 1895.

<sup>839</sup> *Catalogue of the Exhibition of the Royal Academy* (London, 1830) nos.870–874.

<sup>840</sup> S. Palmer, 'Sir John Soane and the Design of the New State Paper Office, 1829–34', *Archivaria* 60 (2005) 39-70.

<sup>841</sup> Although strangely a model of the same subject was also displayed at an exhibition of Richard Day's models in April 1834: 'Reviews. Art. I: *Brief Memoir of Sir John Soane*', *Architectural Magazine* (October 1834) 311.



model describes, the model for Whitehall was made between 27 March to 22 June 1830 and involved the work of ‘196  $\frac{3}{4}$  Days Ornament plasterers’ and ‘72  $\frac{1}{4}$  Days Plasterers’ (charged by Robson and Estelle at a lower rate), as well as over a tonne of plaster.<sup>842</sup> Soane paid £90.4.6 for the model on 11 December 1830 which appeared on an invoice alongside work for plaster washes of the Monk’s Parlour, attic bedrooms and basement.<sup>843</sup> Various historians written about this project in detail. Yet why the model was produced and how it was used remains absent from secondary literature on Soane’s life and work.<sup>844</sup>



**Figure 61**

John Soane (architect), W Robson and J Estelle (model-makers)  
Model for the completion of Whitehall  
SJSM L91

Housed in a long and thin, dark timber case with curved glass front that it was exhibited in at the Royal Academy, the model can be found on the mantelpiece in

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<sup>842</sup> SJSM, Soane Private Correspondence XV. K. 1, f.26, bill from Robson and Estelle to John Soane, 2 October 1830. The bill contains a fully itemised account of who worked on the model and when. It used one tonne, two stone, and fourteen pounds of plaster to be precise.

<sup>843</sup> SJSM, Soane Journal, No. 6, Entry for 11 December 1830, p.405.

<sup>844</sup> J. Wilton-Ely, ‘The Architectural Models of Sir John Soane’, 33–35, nos.84–87; M. H. Port, ‘The Privy Council Office and Board of Trade’, in J. M. Crook and M. H. Port, *The History of the King’s Works: Volume VI 1782 – 1851* (London, 1973) pp.551–562; S. Sawyer, ‘ProceSSIONal Route’, in M. Richardson and M. A. Stevens eds., *John Soane Architect: Master of Space and Light*, Exhibition catalogue, Royal Academy of Arts (London, 1999) pp.252–264.

the Library-Dining Room at Sir John Soane's Museum. The model is a detailed depiction of Soane's grand proposal for the completion of Whitehall, with five individual carved pieces brought together to form the range of buildings in the model. Small labels at the base of each portion indicate the programme within the building.<sup>845</sup> A mirror has been placed behind the triumphal arch to offer a continuous reflective space.<sup>846</sup> Within the case and behind the model is a short descriptive text that offers an answer to the questions that the model can't due to its size, scale, and focus: the description explains where the buildings are, how they relate to other public buildings and proposed infrastructural work, and what the sculpture of the triumphal arch represents. Although the model is at a small scale (1/16' = 1'-0' or 1:192), the model-maker has intricately carved the profile and form of the buildings' windows, doors, and their casings.

Several articles in the press offered contemporary reflections on the model. An article in *Arnold's Magazine of the Fine Arts* used Soane's model to discuss the design and critique the proposals rather than examine the quality of the displayed model itself. After questioning the tastefulness of Soane's proposal, the author suggested that the colonnade would be an awkward addition to Whitehall.<sup>847</sup> Whilst

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<sup>845</sup> For the building to the left hand side these are labelled: 'Home Office', 'Building to contain the Records now in Westminster Hall / Chambers for the Judges', 'Secretary of State for the Home Department'. The central triumphal arch is titled 'Downing Street'. The buildings on the right hand side are labelled: 'Privy Council Office', 'Board of Trade', 'Proposed Addition to Treasury Chambers'.

<sup>846</sup> The description reads: 'At the south-east corner of Downing Street is the proposed 'New Home Office', and southward of that Edifice the New Record Office, Chambers for the Judges, the Board of Control & the exterior of these Public Buildings corresponding in every respect with the front of the Privy Council Offices and Board of Trade & might be connected together by a Triumphal Art commemorative of the Glorious Victories by Sea and Land achieved by British Valour during the late War, King Street is considerably widened and continued in a straight line towards Westminster Abbey Church, the centre of the street coinciding with the centre of the North Entrance thereto. The Building at the Northern extremity, containing at present the Office of the Secretary of State for the Home Department is proposed to be New Fronted, and added to the Treasury Chambers.'

<sup>847</sup> 'Exhibition of the Royal Academy: Architectural Drawings', *Arnold's Magazine of the Fine Arts* 4 (1834) 149.

commenting on the proposal's expense, J. C. Loudon in the *Architectural Magazine* suggested that the colonnade was 'wholly without either grandeur or utility.'<sup>848</sup>

As Nicholas Savage outlines with regard to architectural drawings, Soane's model for the completion of Whitehall raises the possibility there is a category of architectural models produced specifically for contemporary exhibitions. Following the records held in Sir John Soane's Museum the two models exhibited in 1834 were prepared for display before their exhibition at the Royal Academy. At the end of 1834 Robson and Estelle sent Soane a bill covering work undertaken between 22 February to 26 November 1834 that included, 'Altering & repairing of the Modell of the New State Paper Office, St. James's Park'.<sup>849</sup> Prior to their display at the Royal Academy Soane's assistants George Bailey and C. J. Richardson spent time preparing the models. On 7 April 1834 the office day book noted that Bailey and Richardson were 'Preparing models for the Exhibition + about drawings of State Paper Office.'<sup>850</sup> The next day the office day book noted how Bailey and Richardson were again, 'Preparing models for the Exhibition.'<sup>851</sup> Most likely these preparations included the preparation, annotation, and mounting of the drawings to the rear of both models – drawings that appear to acknowledge that the models were exhibited in round in the Council Room of the Royal Academy. On the rear of the Model for the completion of Whitehall is a plan drawing that suggests an axial relationship between Soane's proposal at Whitehall, Westminster Abbey, and the Palace of Westminster (Fig.62). Nicholas Savage notes that Soane's use of composite drawings in his work at the Royal Academy was a response to the impossibility of showing architecture by a singular mode of representation.<sup>852</sup> Similarly the relationship between models and drawings shows us the limits of both representational media: due to scale and size and cost, the model cannot show the

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<sup>848</sup> 'Royal Academy', *Architectural Magazine* (June 1834) 183.

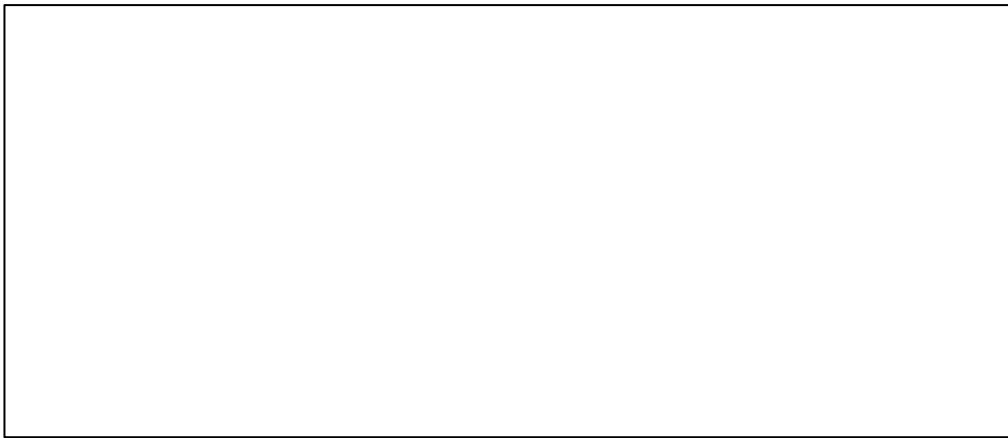
<sup>849</sup> SJSJ, Soane Private Correspondence XV. K. 3, f.5, bill from Robson and Estelle to John Soane, 22 February to 26 November 1834.

<sup>850</sup> SJSJ, Day Book, Vol. 7, entry for 7 April 1834.

<sup>851</sup> SJSJ, Day Book, Vol. 7, entry for 8 April 1834.

<sup>852</sup> N. Savage, 'Exhibiting Architecture', p.208.

relationship between nearby landmarks and Soane's proposal, which were intended to form part of a royal procession route for George IV.<sup>853</sup>



**Figure 62**

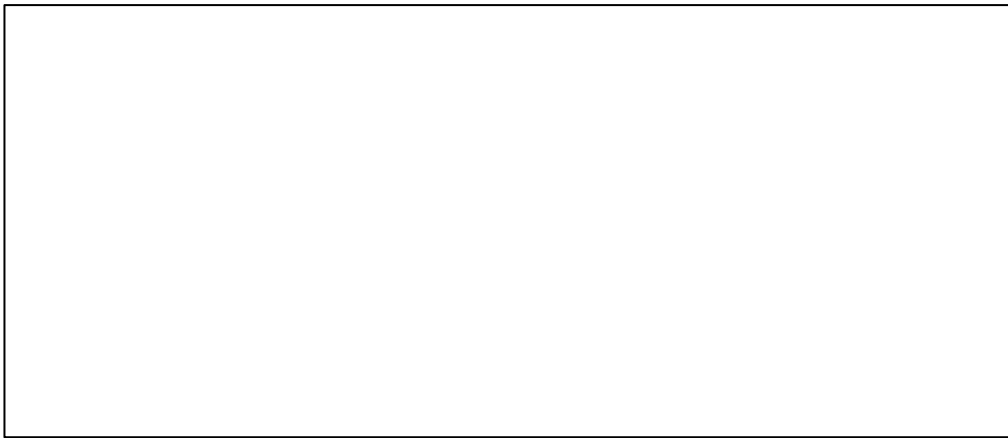
John Soane

Rear of Model for the completion of Whitehall (SJSM L91) showing location plan  
SJSM XP51

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<sup>853</sup> S. Sawyer, 'Sir John Soane's Symbolic Westminster: The Apotheosis of George IV', *Architectural History* 39 (1996) 54-76.

The location of this drawing suggests that the model was to be viewed in the round. Similarly the model of the New State Paper Office (SJSM MR18) did not show all



of the building: only the West elevation appeared in its entirety, and only two bays of the North and South façades were represented. The ‘rear’ of the model was blank despite the East façade featuring the main elevation to the building from Duke Street. Rather than display a blank façade on the model at the summer exhibition or engage Robson and Estelle in the time-consuming and costly business of preparing this portion of the model an ad-hoc solution was found. On watercolour paper Richardson prepared a perspective of the East façade showing the entrance to the building, other parts of the L-shaped building not represented in the model, and the surrounding streetscape that helps frame the view of the State Paper Office. Beneath this drawing are three plans of the principal floors that offer an understanding of the internal organisation of the building. With its multiple types of drawing, this sheet provided a visitor to the exhibition a view of the ‘absent’ elevation, a view of the building’s context, and an understanding of its internal layout – properties that the original model could not represent.

**Figure 63**

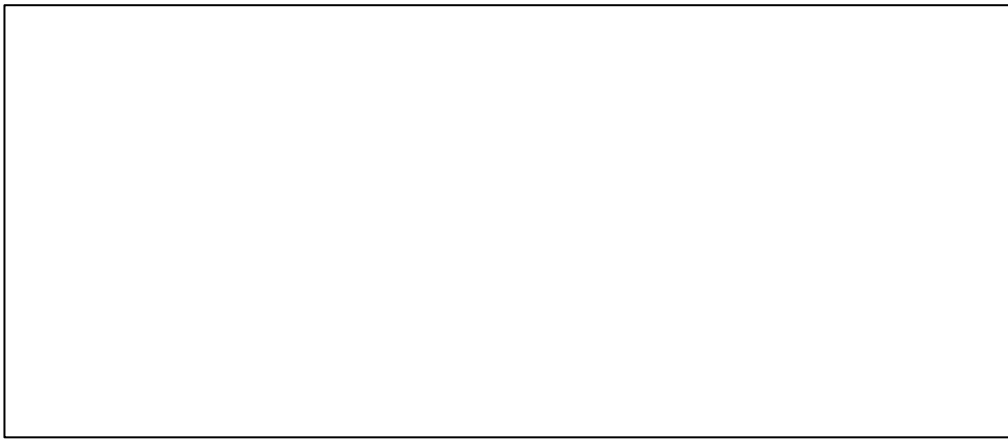
John Soane

Model of the New State Paper Office

SJSM MR18

Also exhibited in the Council Room was a model of the church of All Saints on the bank of the Thames at Marlow by Charles Frederick Inwood and built between

1832 and 1836.<sup>854</sup> Inwood, who had trained at the Royal Academy Schools, exhibited a perspective drawing for the church in the 1832 edition of the exhibition.<sup>855</sup> The model does not appear to have played any role in the design, fundraising, or construction of the church.<sup>856</sup> I have looked for references to the model in parish meeting minutes, building contracts, and newspaper records. Despite the extensive nature of the church records, the model is totally absent from any documentation. Inwood never presented the model at a meeting, relying instead on plans, working detail drawings, and specifications.



**Figure 64**  
Charles Frederick Inwood  
Model of All Saints, Marlow, c.1834

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<sup>854</sup> Owing to the old church of All Saints' poor condition, the decision was made by a group of trustees to build a new church in 1830. In the summer of 1831 the trustees placed adverts in *The Times*, *Morning Herald*, and *Reading Mercury* requesting architects for rebuilding the church to send plans, specifications, and estimates. Inwood was appointed in September 1831 and began to prepare working drawings. In order to reduce the construction costs, Inwood altered his design. In October 1832 a local builder, William Bond, was awarded the contract to build the church, which was completed in July 1836. CBS, PR 140/6A/2/10, rough minutes of parish meeting held on 22 April 1830; PR 140/6A/2/90, cuttings from named newspapers from 26 July 1831; PR 140/6A/3/103, Letter (copy) from J. S. Wright to C. F. Inwood, 17 September 1831; PR 140/6A/4/87/2, Memorandum of Agreement with William Bond 24 October 1832; PR 140/6A/8/26, Letter from J. S. Wright to C. F. Inwood, 9 July 1836.

<sup>855</sup> *Catalogue of the Exhibition of the Royal Academy* (London, 1832) p.43, no.1031.

<sup>856</sup> The money to build the church came first through an Exchequer Office loan. The trustees made several attempts to acquire new, larger loans at a lower rate of interest. CBS, PR 140/6A/4/17, Report of committee for fundraising, April 1832.

Despite a variety of attempts to raise money to build the church through loans and subscriptions, there is no discussion of the model as a part of this campaign. Nor did Inwood or a model-maker invoice the parish for the model. It appears that the model and its appearance at the Royal Academy were separate from the business of designing and building the church. Notwithstanding our lack of understanding regarding the model's production, I propose that this example is connected to the theme of a younger architect, presenting his provincial work to London society through the medium of a model, which offered a detailed and pseudo-realistic representation of the proposed building's materiality.

As discussed in the introduction to this section, there was a decline in the presence of models at the Royal Academy Exhibition in the middle of the nineteenth century. It was noted at the time by the architectural press. In 1843 the *CEAJ* proposed that the lack of models and their display – treated ‘as little better than lumber’ – suggested the RA cared little for the medium.<sup>857</sup> Three years later the same journal noted that ‘The show of models this season is even poorer than usual [...] that we almost wonder any should be sent at all.’<sup>858</sup> In response to a letter that suggested architects establish their own separate exhibition due to the Academy's ‘scanty accommodation’, an editorial in the *Builder* proposed that through the exhibition of drawings and models, ‘A grand suite of exhibition rooms would enable us to assert a sovereign claim to public attention.’<sup>859</sup> In an article from January 1844, Henry Fulton proposed the separation of architecture from the Royal Academy. This suggestion was not ‘out of disrespect to the sister arts of painting and sculpture’, but due to the inability of the general public to understand the three-dimensional reality of the architectural drawings hung at the Royal Academy

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<sup>857</sup> ‘Architectural Drawings, Royal Academy’, *CEAJ* (July 1843) 231.

<sup>858</sup> ‘Royal Academy Exhibition: Architecture, Second Notice’, *CEAJ* (July 1846) 196.

<sup>859</sup> ‘Editorial’, *Builder* (25 February 1843) 30.

Exhibition.<sup>860</sup> ‘Profoundly ignorant of architectural drawings’, Fulton proposed models had a crucial role to play in public understanding of architectural practice:

‘There is a method to teach them in spite of themselves, aye, and to instil into them a love of the art without their being aware of the why or the wherefore; it is by models’.<sup>861</sup>

In 1848, the first year of a five-year dearth of models at the exhibition, the *CEAJ* suggested that either no architectural models were submitted for exhibition, or else the medium was rejected altogether. The journal proposed that the latter was possible as they had seen some of the rejected models by experienced and capable architects.<sup>862</sup> This rejection en masse, the journal believed, was a strategic move on the part of the exhibition hanging committee whose intention:

‘[...] seems to be nothing less than gradually to work the expulsion of architecture from the Academy, at least from the exhibitions, by disgusting architects, and so deterring them from sending at all’.<sup>863</sup>

Portions of the popular press also commented on the presentation of architecture and the lack of models at the RA Exhibition. In May 1848 the *Athenaeum* noted, ‘there is not a single architectural model this season. On the whole, architecture is now reduced to a position so humiliating at the Academy’.<sup>864</sup> Like many other publications the *Athenaeum* suggested that architecture should be excluded from the exhibition. Before discussing that year’s exhibition, the writer expressed the expectation that the establishment of the RIBA ‘would have had a beneficial influence on the architectural department of the Academy’s Exhibitions’.<sup>865</sup> In reality, the writer noted that since the formation of the RIBA, ‘the display of

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<sup>860</sup> H. Fulton, ‘Observations on Architects and Architecture: No.5’, *CEAJ* (January 1844) p.18.

<sup>861</sup> H. Fulton, ‘Observations on Architects and Architecture: No.5’, p.18.

<sup>862</sup> A later article referred to a rejected model of the church of St. Stephen’s in Rochester Row, Westminster by Benjamin Ferrey. See: ‘Architecture at the Royal Academy’, *CEAJ* (July 1848) 195.

<sup>863</sup> ‘Architecture at the Royal Academy’, *CEAJ* (June 1848) 164.

<sup>864</sup> ‘Royal Academy’, *Athenaeum* (6 May 1848) 465.

<sup>865</sup> ‘Royal Academy’, *Athenaeum* (6 May 1848) 465.



architectural talent at the Academy has gradually dwindled away', with the RIBA members making little 'attempt to figure at the Academy or in any way assist at its Exhibitions'.<sup>866</sup>

The following year the strategy to exclude models from the exhibition became even clearer. According to the *CEAJ*, architectural models as a class were turned away altogether, a development which they described as 'an innovation quite the reverse of improvement'.<sup>867</sup> The rejection of a model of a large governmental building made by Thomas Dighton particularly irked the article's author due to the interest of the architectural subject and Dighton's capacity for producing models.<sup>868</sup> (I think it is likely that this model was an elevation model of the Public Record Office, now the Library of King's College London, by James Pennethorne, later exhibited at the 1851 Great Exhibition.<sup>869</sup>) As the *Builder* noted, 'It is sufficient to say that the model was made by Dighton, to prove that its rejection is not to be attributed to want of excellence as a work of art.'<sup>870</sup> This exclusion, the *CEAJ* proposed, suggested that the Royal Academy were 'no friends to architecture'.<sup>871</sup> In the eyes of the journal the issue did not improve as two years later in May 1851 their review declared, 'To hold an architectural exhibition without models is monstrous; and we hope this department will not be forgotten by the architects'.<sup>872</sup> In fact the profession had been developing their own exhibition dedicated solely to architectural works. Known as the Architectural Exhibition and emerging from the newly formed Architectural Union Company, I will now explore this particular context of display in more detail.

### 5.3 Architectural Exhibition

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<sup>866</sup> 'Royal Academy', *Athenaeum* (6 May 1848) 465.

<sup>867</sup> 'Architecture – Royal Academy', *CEAJ* (June 1849) 163.

<sup>868</sup> 'Architecture – Royal Academy', *CEAJ* (June 1849) 163.

<sup>869</sup> *Great Exhibition, 1851: Official Descriptive and Illustrated Catalogue*, II, p.830. no.160.

<sup>870</sup> 'Editorial', *Builder* (12 May 1849) 217.

<sup>871</sup> 'Architecture – Royal Academy', *CEAJ* (June 1849) 163.

<sup>872</sup> 'Royal Academy', *CEAJ* (31 May 1851) 301.

From the beginning of architectural professionalisation certain individuals wanted to establish an exhibition for the display of architecture separate from the Royal Academy.<sup>873</sup> In 1843 a letter to *The Builder* drew attention to the lack of space afforded to the architectural portion of the Royal Academy Exhibition and suggested that the profession establish a separate annual exhibition of their own.<sup>874</sup> As the author ('W.H.') pointed out, since the establishment of the Royal Academy, 'The profession has greatly increased in numbers, and the public are beginning to take more and more interest every day in architecture and the study of it'.<sup>875</sup> *The Builder* described the letter 'as one of great importance' and proposed:

'A grand suite of architectural exhibition rooms would enable us to assert a sovereign claim to public attention; if drawings, models, specimens, and the relics of our art were collected and arranged in an appropriate manner, where would be the museum or exhibition to be named in the same day with this?'<sup>876</sup>

A similar sentiment appeared to be active in the *CEAJ* in November 1848. The writer proposed that the architectural works in the Royal Academy Exhibition were scarcely looked at by audiences.<sup>877</sup> Portions of the popular press held this view too: the *Athenaeum* suggested that architecture should be excluded from future events at the Royal Academy and hoped that this would lead to annual exhibitions exclusively formed from architectural drawings and models.<sup>878</sup>

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<sup>873</sup> In the *Architectural Magazine* in August 1837, the author ('W.S') argued: 'If a separate exhibition of architectural drawings and designs were established on a broad and liberal basis, it would tend to increase the taste for architectural improvement, and, consequently, would benefit the architects themselves' 'Art. II. Reasons for having an annual Exhibition of Architectural Drawings and Designs, distinct from the Exhibitions of the Royal Academy of Arts. By W. S.', *Architectural Magazine* (August 1837) 372.

<sup>874</sup> 'Letter from W.H. to the editor', *The Builder* (25 February 1843) 30.

<sup>875</sup> 'Letter from W.H. to the editor', 30.

<sup>876</sup> 'Letter from W.H. to the editor', 30.

<sup>877</sup> 'Architectural Exhibitions', *CEAJ* (November 1848) p.327

<sup>878</sup> 'Royal Academy', *Athenaeum* (6 May 1848) 463.

By 1848, therefore, a separate annual exhibition dedicated to architectural designs, drawings, and models, removed from the restrictions of the Royal Academy, had been established in the form of the Architectural Exhibition Society. Founded by the Architectural Association, the educational and professional association that I discussed in Chapter 1, the Architectural Exhibition Society organised their first exhibition in March 1849, which advertised for submissions of competition designs, studies of existing buildings, and architectural models in the *Builder* a year beforehand.<sup>879</sup> Held in the gallery of the Society of Painters in Water Colours at 5 Pall Mall, the AA saw the direct advantage to the profession in ‘the elevation of their art, by the diffusion of taste amongst the public’.<sup>880</sup> In order to support as wide as possible a diffusion of taste and knowledge, the AA ‘determined to constitute the exhibition *free*, with the exception of Saturdays.’<sup>881</sup>

The evidence for what was displayed in the exhibition’s early years is fragmentary and relies heavily on reports in the architectural and popular press.<sup>882</sup> Despite the incompleteness of the evidence, an idea of how architectural models were exhibited can be evaluated, as well as how the structure, content, and form of the exhibition developed. In their review of the 1849 Architectural Exhibition, the *CEAJ* welcomed the establishment of a separate annual exhibition dedicated to architecture.<sup>883</sup> The journal noted that the AA was currently hindered by a lack of patronage from within or outside the profession and questioned the exhibition’s longevity and impact.<sup>884</sup> In their discussion of the exhibition itself, the *CEAJ* reported positively on the gallery space and hanging of the work but were critical about much of the show’s content and the lack of contributions from experienced and able practitioners.<sup>885</sup> The display of models, the author noted, ‘which class of

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<sup>879</sup> ‘Architectural Exhibition’, *Builder* (10 February 1848) 70.

<sup>880</sup> ‘Architectural Exhibition’, 70.

<sup>881</sup> ‘Architectural Exhibition’, 70.

<sup>882</sup> Catalogues for the exhibition for the years 1855-57 and 1859-70 appear to survive.

<sup>883</sup> ‘The Architectural Exhibition’, *CEAJ* (April 1849) 98.

<sup>884</sup> ‘The Architectural Exhibition’, 98–99.

<sup>885</sup> ‘The Architectural Exhibition’, 99.

subjects the room affords convenient space – is very poor’.<sup>886</sup> With one exception, the author proposed that the problem was in the form of the models themselves as, ‘they are all upon so diminutive a scale as to have a very toy-like look’. In particular the author singled out a model of the north-west corner of the Bank of England, ‘whose size fits it better for an ornament upon a chimney piece, than for an architectural exhibition’.<sup>887</sup> There was one exception, however, in the form of a model described in the catalogue as ‘Study for a Façade’, which was a design by Samuel Charles Fripp for the Army and Navy Club.<sup>888</sup> As the *CEAJ* noted, whilst the model demonstrated ‘considerable merit and artistic feeling [...] the subject itself hardly required a model [...] there is nothing that might not just as well be expressed in a mere elevation’.<sup>889</sup> Nearby the model was an elevation drawing of another building, the journal noted, which was ‘very much in need of the assistance of a model, and to be shown in actual relief’.<sup>890</sup> These comments suggest that there was a contemporary awareness regarding the aspects of a design that a model might show successfully, rather than the use of a model as a means of presenting a building in miniature.

In 1851 the committee responsible for the organising the Architectural Exhibition altered their stance to the exhibitions opening hours. In response to the forthcoming Great Exhibition, the exhibition would open for two months during the summer season and visitors would be charged for admission.<sup>891</sup> The committee appealed for support from the whole body of the profession for contributions to the exhibition and financial subscriptions. At a meeting of subscribers in July 1851,

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<sup>886</sup> ‘The Architectural Exhibition’, 100.

<sup>887</sup> ‘The Architectural Exhibition’, 100. I would suggest that it is highly likely that this model was the same model exhibited at the 1847 Royal Academy Exhibition under same title by Richard Day junior.

<sup>888</sup> ‘Leading Article’, *Builder* (10 March 1849) 109. Fripp, a Bristol-based architect, exhibited this model again at the 1851 Exhibition of the Bristol Academy under the title, ‘Proposed Club House in London’.

([http://sculpture.gla.ac.uk/view/object.php?id=msib1\\_1218016139](http://sculpture.gla.ac.uk/view/object.php?id=msib1_1218016139), accessed 19 May 2017, cites: *Catalogue for the Sixth Exhibition of the Bristol Academy* (Bristol, 1851) p. 19 no.73.

<sup>889</sup> ‘The Architectural Exhibition’, *CEAJ* (April 1849) 100.

<sup>890</sup> ‘The Architectural Exhibition’, 100.

<sup>891</sup> ‘The Architectural Exhibition for 1851’, *Builder* (1 March 1851) 143.

William Frederick Laxton proposed that in future the exhibition of new materials, patents, and products relating to architectural construction ‘might advantageously be connected with this Exhibition’.<sup>892</sup> A few months later in November 1851, a short article in the *Builder* discussed how a collection of new materials, patents, and designs connected with architectural construction ‘would be alike of interest to the profession and of great advantage to inventors, by bringing such objects more fully and immediately before the notice of architects and the public, than could be done in any other way’.<sup>893</sup>

It is unclear exactly what exhibits were displayed in the 1852 incarnation of the exhibition due to the absence of a catalogue or other evidence. The 1855 catalogue, however, documents how the exhibition held in the galleries of the Royal Society of British Artists on Suffolk Street, Pall Mall, separated, drawings, photographs, and models from a ‘Department of Materials’.<sup>894</sup> Alongside models of industrial patents and constructional products, the later portion of the exhibition included specimens of materials. The cabinet-makers Holland & Son exhibited models of bookcases whilst John Greenwood displayed a model of patented rubber mouldings to prevent draughts from doors and windows. In addition to specimens of their products, Vieille Montagne exhibited a model of a roof covered in zinc tiles.<sup>895</sup> In their review of the exhibition, the *Builder* argued that the exhibition of building materials and products formed a highly advantageous collection:

‘We have repeatedly urged the desirability, and great need, of the establishment of a means by which a knowledge of what is good – as of the constant advances that are being made in matters connected with art-manufacture generally – might actually be disseminated, of course not

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<sup>892</sup> ‘Architectural Exhibition’, *CEAJ* (19 July 1851) 395.

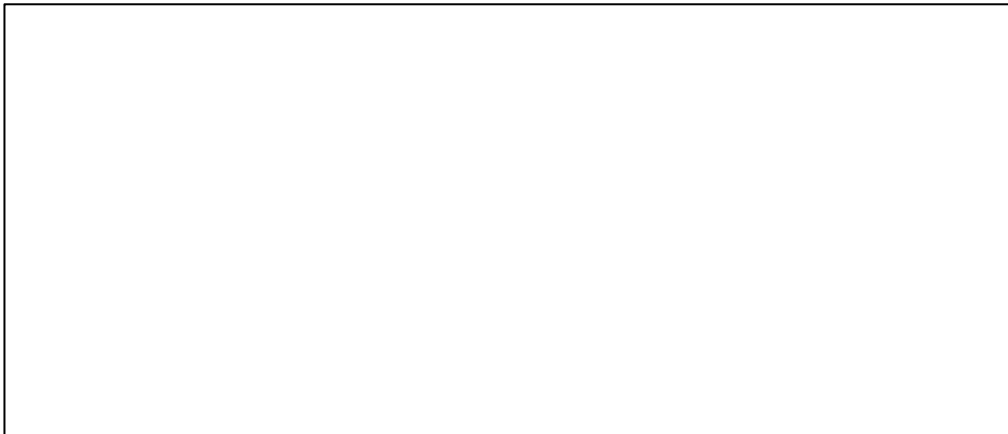
<sup>893</sup> ‘Architectural Exhibition 1852’, *Builder* (15 November 1851) 717.

<sup>894</sup> The review of the 1852 exhibition in the *Builder*, which also discussed displayed objects sequentially in this order, suggested that this formation was established from the introduction of the building materials.

<sup>895</sup> In 1862 Vieille Montagne ran adverts in the *Builder* that discussed how models of their patented products could be seen at the Architectural Exhibition. Vieille Montagne adverts, *Builder* (24 June 1862) v; (12 July 1862) viii.

forgetting the value of such a medium as between supply and demand [...] we are glad that the initiative should have been taken in those branches which concern our specialty, viz., architecture and building appliances.’<sup>896</sup>

The Architectural Exhibition was held in rooms borrowed from other societies in the West End of London until it established a regular space at 9 Conduit Street in 1858. These premises were purchased from Lord Macclesfield and managed by the Architectural Union Company (AUC), a limited liability company established on 5 September 1857 to provide accommodation for various architectural societies including the RIBA, the AA, and the Architectural Exhibition.<sup>897</sup> Through the issue of shares the AUC was able to purchase of the existing property and construct ‘large and well-lighted galleries’ to accommodate the Architectural Exhibition, with apartments on the upper floor to house the Architectural Photographic Society and the RIBA.<sup>898</sup>



**Figure 65**

Plan of the Ground Floor galleries at 9 Conduit Street

‘The Architectural Galleries Conduit Street’, *Builder* (12 March 1859).

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<sup>896</sup> Leading article, *Builder* (17 January 1852) 34.

<sup>897</sup> RIBA, AUC/1/1, Articles of Association, 5 September 1857.

<sup>898</sup> The Architectural Exhibition Committee rented three large gallery spaces for £200 per annum. RIBA, 1.2.1, IV, ‘Report of Council’, 3 May 1858, p.151. RIBA, AUC/2/1/1, Minute Book, minute of a meeting held 12 November 1858.

The following year the exclusively architectural exhibition was praised by the RIBA Council who declared that the organising committee had provided, 'Spacious, well lighted and well arranged Galleries' for 'the Architectural world in London, which the Royal Academy denied within its walls'.<sup>899</sup> In March 1859 the *Builder* published a plan of the ground floor at 9 Conduit Street, which showed how beyond the entrance and stairhall there was an enfilade sequence of three main galleries: the West Gallery, the Great Gallery, and the East Gallery (Fig.65). From the engraved perspective printed alongside the ground floor plan, these three galleries appear to have been hung in a similar style to the Royal Academy Exhibition, with architectural drawings tightly displayed on the gallery's walls (Fig.66). In 1859 there were no architectural models displayed in the Great Gallery. Instead models of projects by William Tite, T. Roger Smith, and two others were exhibited on a table in the West Gallery. This was not typical, however, as in all of the exhibitions between 1861 and 1868, models were displayed on tables and screens in the Great Gallery, indicating their presence at the heart of the Architectural Exhibition (see Appendix 3 for a complete list of all of the models exhibited at the exhibition).

In addition to the three main galleries there was also a smaller gallery to the north that was accessed from the Great Gallery and provided a link to Maddox Street, the road parallel to Conduit Street. Within this space the Architectural Exhibition displayed what the 1859 RIBA Report of Council described as, 'Objects of utility [...] connected with building operations, never attempted before the establishment of the Architectural Exhibition'.<sup>900</sup> Similar to the 'Department of Materials' from previous exhibitions, within this area and organised by manufacturer there were models of 'inventions, materials, and building manufactures', alongside specimens of materials and sanitary ware.<sup>901</sup> The importance of this sort of exhibition to the profession is underlined by an entry in the 1859 exhibition catalogue, which

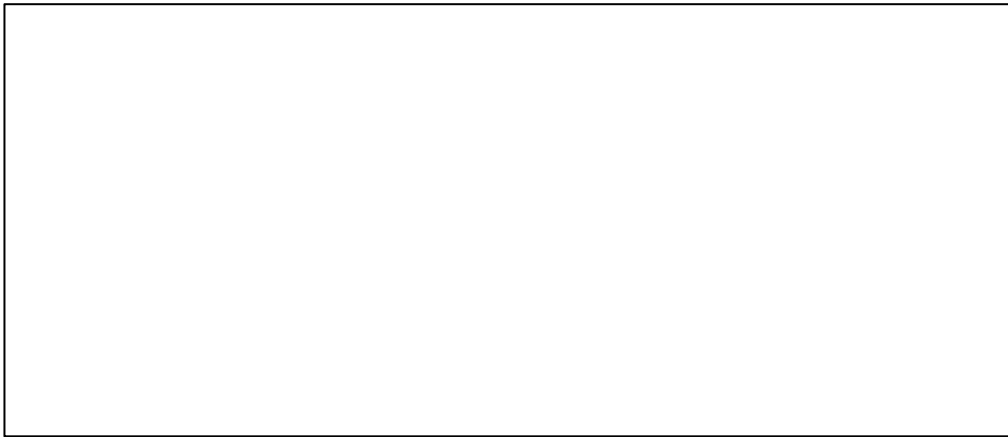
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<sup>899</sup> RIBA, RIBA, 1.2.1, IV, 'Report of Council', 2 May 1859, p.209.

<sup>900</sup> RIBA, RIBA, 1.2.1, IV, 'Report of Council', 2 May 1859, p.209.

<sup>901</sup> 'Fine Arts: Architectural Exhibition: The New Galleries, Conduit-Street', *Daily News* (16 March 1859) 5.

explained how the AUC intended to establish a regular exhibition solely devoted to 'Building Manufactures and Inventions'. Held between July and December, this exhibition would allow architects to 'become acquainted with all that is new and best in various Trades and Manufactures'.<sup>902</sup> A guidebook to London from 1878 described how the 'Museum of Building Appliances' was established in order to allow patentees and inventors 'the opportunity for the introduction of their improvements to those most interested in their adoption'.<sup>903</sup>



**Figure 66**

View of the Great Gallery at 9 Conduit Street

'The Architectural Galleries Conduit Street', *Builder* (12 March 1859) 189.

Reports from the architectural press indicate that the Architectural Exhibition suffered from similar problems as the Royal Academy Exhibition. An article in the *Building News* on the 1860 edition of the exhibition was dismayed that the profession did not recognise, 'the mutual advantage of laying their productions before the public in an exhibition founded especially for their benefit'.<sup>904</sup>

Additionally the article criticised 'older members of the profession' who had

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<sup>902</sup> *Catalogue of the Architectural Exhibition*, (London, 1859) p.25.

<sup>903</sup> E. Walford, *Old and New London* (London, 1878) IV, p.320.

<sup>904</sup> 'The Approaching Architectural Exhibition', *Building News* (6 April 1860) 264.



withheld their support and patronised the Committee. The article concluded by questioning why well-established architects who were a part of the RIBA and the Royal Academy, who ‘have surely erected some buildings which would instruct the public’, were absent from the exhibition: ‘Why then are their names, elsewhere so conspicuous, wanting in the catalogue of this professional exhibition?’<sup>905</sup>

The popular press viewed the presentation of work at the Architectural Exhibition more favourably. The *Illustrated London News* considered the 1861 exhibition ‘one of great interest and importance’.<sup>906</sup> In their analysis the article noted that the exhibition was divided into two distinct portions: one for the designs of buildings proposed or in construction and another for models, specimens, and inventions connected with building. The newspaper described this second section as, ‘an offshoot from the Great Exhibition, whilst the former section, the newspaper proposed, gave ‘more ample scope to a class of designs already partially, but indifferently, represented at the Royal Academy Exhibition’.<sup>907</sup> I think this implies that the models at the Architectural Exhibition were more for showing speculative ideas rather than concrete examples of specific buildings. In their review of the same exhibition, the *Athenaeum* described how the exhibition was a positive opportunity for both established and younger architects. The latter had a place to present work to their peers, elders, and public. Whilst for established practitioners had the chance to display the designs of new buildings previously unseen by the public and profession until completion. As the review noted, ‘now there is a chance of open comment being made upon its merits or demerits’.<sup>908</sup> These comments show how through the display of drawings and models, the Architectural Exhibition was perceived to be a place of dialogue with the profession, not just a space for the dissemination of professional rhetoric.

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<sup>905</sup> ‘The Approaching Architectural Exhibition’, 264.

<sup>906</sup> ‘The Architectural Exhibition’, *ILS* (20 April 1861) 365.

<sup>907</sup> ‘The Architectural Exhibition’, 365.

<sup>908</sup> ‘The Architectural Exhibition’, *Athenaeum* (6 April 1861) 470

In 1861 two models were exhibited in the Architectural Exhibition from 4 April until 30 June that also formed a part of the Royal Academy's summer exhibition from 6 May until 27 July. Whilst there is a possibility that there were two copies of each model, one in each exhibition, I think it is more likely that the two models spent time on display in both places, increasing our understanding of the fluidity related to the display of models in the nineteenth century. The first of these was a model of Manchester Assize Courts by Alfred Waterhouse at the scale of 1/8 inch to a foot (1:96).<sup>909</sup> The second was a model of the Chapel of the Holy Trinity Church at Knightsbridge by Raphael Brandon and Henry Eyton. With interior and exterior perspective drawings of the chapel exhibited nearby, 'a large-scale model of two or three bays' of the chapel's roof structure was displayed on a table in the Great Gallery at 9 Conduit Street.<sup>910</sup> The roof was technically complex due to a clerestory window that lit the interior despite the building's location on a constricted site.<sup>911</sup> The specification of works made no reference to the model.<sup>912</sup> Despite the absence of further material or documentary evidence, I propose that this suggests there were specific models made for exhibition. Additionally, despite the perception of the art-architecture culture of the Royal Academy, technical or structural models were displayed to the public. The real difference between the models on display at the Architectural Exhibition and Royal Academy in 1861 was the absence of models of commercial products or new inventions from the latter. The display of models at the Architectural Exhibition was part of a network or marketplace between enterprise and institutions, or clients and vendors, with the professional architect as a mediator.

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<sup>909</sup> As I explained earlier, Waterhouse was no doubt keen to prove to London society his ability to design a prominent building to London society by displaying a model of the proposed building.

<sup>910</sup> 'The Architectural Exhibition', *CEAJ* (1 June 1861) 159.

<sup>911</sup> 'The Architectural Exhibition', 159. The *CEAJ* commended Brandon on how the interior of the chapel innovatively lit through a clerestory window, which was constructed in the rake of the roof and extended along the full length of the building. This approach to lighting the interior was necessary due to the church being located in a constricted site. As the article described, the structural system necessary for supporting the clerestory windows created a chapel with a distinct character.

<sup>912</sup> RIBA DB/7/2/3 'Specification of works by Brandon & Eyton for taking down and rebuilding the Chapel of the Holy Trinity, Knightsbridge, London', c.1859.

Architectural models made by Charles Newson Thwaite, introduced briefly in chapters 1 and 4, received much praise during the period following their display at the exhibition. A short article in the *Builder* from 1862 commended his models in the Architectural Exhibition:

‘[The models] are carved with the knife out of cardboard, and are remarkable for delicate and careful manipulation. If models of designs were oftener made before the erection of the structure than is usually the case, advantage would result; and a better man for the purpose than Mr. Thwaite does not occur to us.’<sup>913</sup>

In 1862 Thwaite was based in Manchester and advertised his services as a ‘Modeller in Cardboard’ in the *Builder* with reference to his two architectural models on display in the International Exhibition.<sup>914</sup> Later operating from premises at 100 Commercial Road in Peckham, at the 1865 Architectural Exhibition Thwaite exhibited five models in cardboard and another in plaster. Active between 1862 and 1895, Thwaite often exhibited models under his own name or, if a model represented a prominent architect’s design, Thwaite’s name would also be attached to the model.<sup>915</sup> Only one model displayed by Thwaite at the Architectural Exhibition during this period survives.<sup>916</sup> On display in the centre of the Great Gallery at 9 Conduit Street in 1865, the model of St James-the-Less in Pimlico was produced between July and December 1859 (Fig.67).<sup>917</sup> Designed by George Edmund Street in a style influenced from his contemporaneous travels to Italy and Spain, the design of St James-the-Less began in July 1859, the foundation stone was

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<sup>913</sup> ‘Thwaite’s Architectural Models’, *Builder* (18 October 1862) 744.

<sup>914</sup> ‘Advert: C. N. Thwaite, Architectural Modeller in Cardboard’, *Builder* (5 July 1862) xiv.

<sup>915</sup> Thwaite also exhibited models at the 1865 Manchester Art-Workmen’s Industrial Exhibition, at multiple years of the Architectural Exhibition, and at the 1871 International Exhibition. ‘The Manchester Art-Workmen’s Industrial Exhibition’, *Builder* (25 February 1865) 132; ‘Report on Architectural Designs in the International Exhibition of 1871’, *Building News* (21 July 1871) 46.

<sup>916</sup> Three other Thwaite models survive: a model of Northumberland House prior to its demolition, c.1875; a model of St Philip’s Stepney that survives in the Royal London Hospital Museum and Archives, c.1886; a model of the Chapel at Tyntesfield, exhibited at the Royal Academy in 1895.

<sup>917</sup> My thanks to Neil Jackson for his unpublished notes and Geoff Brandwood for his thoughts on the church. In particular see: N. Jackson, ‘The Un-Englishness of G. E. Street’s Church of St James-the-Less’, *Architectural History*, Vol. 23 (1980) 86-94+191-195.

laid in the spring of 1860, and construction finished in June 1861, although the interior may not have been completed until March 1862.<sup>918</sup> Financed by Mary, Jane and Penelope Monk, the three daughters of James Henry Monk, Canon of Westminster and Bishop of Gloucester and Bristol, the red brick edifice of St James-the-Less offered a startling contrast to the white stucco and London stock-brick terraces of Pimlico.



**Figure 67**

G. E. Street (architect), C. N. Thwaite (model-maker)  
Model of St James-the-Less

As I explained through my discussion of the model-making handbooks in Chapter 1, cardboard was not necessarily an easy material to use in the nineteenth century. I will demonstrate through a discussion of Thwaite's work, model-making in cardboard was a sophisticated technique rather than one that was taught to students or beginners. His abilities were publically recognised: an article on the 1862 International Exhibition described Thwaite as a valuable ally for the architectural

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<sup>918</sup> A schoolhouse (1867) and parish hall (1890), the latter built by G. E. Street's son, were later added to the complex as funds were raised and freeholds became available for further construction. CWA, SJL/2474/2/3/1, Copy of Minute of the Chapter of Westminster, 14 July 1859; 'New Churches', *Civil Engineer and Architect's Journal* (1 April 1861) 96; 'Church of St. James-the-Less, Garden-Street, Westminster', *The Builder* (15 June 1861) 410-411; 'Church of St. James-the-Less', *The Builder* (15 March 1862) 186-87.

profession and noted that his models had ‘a minutely exact fidelity and thorough feeling for architectural character and expression that command our warmest admiration’.<sup>919</sup> The character and expression of Thwaite’s work is clear in the model of St James-the-Less. At the base of the model there are two layers of grey cardboard, representing the boundary of the site and the separation between street and church. On the street the Yorkstone paving have been marked with thick pencil lines for each slab. At the front of the model is a campanile formed by an unbroken surface of card pigmented in horizontal bands to show red and black bricks interspersed with pale stone. At the level beneath the pointed roof, zinc-coloured card louvres are set in pointed arches that spring from string courses, carefully constructed with paper floral forms sandwiched between layers of thin and thick card deployed horizontally. Finally, the main body of the church is produced from the independent forms of chancel, nave, aisles, and vestry, and unified by a dado of layered brick all round the exterior. The bands of dark brick and the lack of any vertical joint in the model’s surface are intended to bind together with horizontal lines the broken outline of the whole group of buildings. At the west end, a series of windows in soft black paper puncture the surface of the wall and cut across the layered horizontal brick banding; to the north and south, clerestory windows above the nave are held between the ridgeline of one roof and the eaves of another; to the north side of the chancel aisle two conjoined pitched roofs, one with a lancet window, and the other with a chimney stack that emerges from the apex of its roof.

There is no direct information for the reasons behind the model’s production. The City of Westminster archives have no documentation that directly relates to its production or use, nor do the family papers held in the Wren Library at Trinity College, Cambridge. I propose that the model represents an early version of Street’s design, which was later amended to relocated the vestry to the south rather than the north of the church whilst the land surrounding the site was being acquired.

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<sup>919</sup> ‘Notabilia of the International Exhibition’, *Art Journal* (1 October 1862) 206.

What then was the purpose of the model? There appears to be little mention of it in the architectural or popular press, and the institutional and individual archives are incomplete. There are two comments, however, from articles in the *Building News* that give us an idea why Street might have commissioned such a model. The first, is that in their review of the completed building, the author suggested that the massing and arrangement of the building was lost due to the constricted nature of an urban site: ‘The exterior, unfortunately, is so hemmed in by houses that from on one point can it be seen in its entirety’.<sup>920</sup> Unlike published engravings in the *Ecclesiologist* and the *Builder*, Thwaite’s model offered a portrayal of the building removed from the constricted reality of the site.<sup>921</sup> Similar to the bird’s-eye view that Street used in his 1867 entry for the New Law Courts, the models allows a viewer to consider the full three-dimensional ensemble of the building. The sharpness of Thwaite’s model-making technique and detailed representation of building materials also prompted another form of understanding. Five years later in the *Building News*, within a general discussion of the contemporary condition of architectural practice and construction, an anonymous author concluded:

‘We would notice some elegant and correct models of churches, &co., which were exhibited by Mr. Thwaite, of Craven-street [...] We noticed especially models of the church of St. James the Less, in Garden-street, Westminster, and of Bowden parish church, near Manchester. These models are well worthy of examination, as they are most carefully and delicately executed, every detail being brought out with sharpness and precision. The materials of the buildings are represented in their various colours, which enables the beholder to fully realise the building itself.’<sup>922</sup>

Whilst I am able to suggest a date for when the model was made from a study of published drawings and reports in the press, I am not able to propose a single reason for its production. I suggest that there is a range of possibilities. The retention of the model in the church indicates that it was made for some part in the

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<sup>920</sup> ‘St. James-the-Less, Westminster’, *Building News* (2 May 1862) 310.

<sup>921</sup> ‘Church of St. James-the-Less’, *The Ecclesiologist* (December 1859) 426; ‘Church of St. James-the-Less’, *The Builder* (15 June 1861) 411.

<sup>922</sup> ‘Progress in the Mechanics of Building’, *Building News* (7 June 1867) 389.

planning or decision-making process. The lack of financial transaction in the documentation for the building's construction indicates that someone else paid for it, perhaps one of Mary, Jane and Penelope Monk, for use by Street or the Chapter of Westminster. However, if it was an early design model, did the fact that the design it represented was superseded mean that Thwaite was permitted to present the model together with five other models at the 1865 Architecture Exhibition?

#### 5.4 International Exhibitions

A series of international expositions of art, science, and industry were held during the nineteenth century. This section will examine the role that models played across these exhibitions and the relationship between the professional identity of the architect and the public presentation of these models on an international stage. As has been discussed in great detail by Paul Greenhalgh, Jeffrey Auerbach and Michael Leapman, amongst others, the first of these international exhibitions, the 1851 'Great Exhibition', was held between 1 May and 15 October 1851 in Hyde Park.<sup>923</sup> The British architectural community were eager to be involved. Whilst the RIBA lacked a formal role in the Exhibition's organisation, the institute were early financial supporters of the Royal Commission in charge of the event.<sup>924</sup> It is clear that architectural models were identified as a vehicle through which British design and taste could be disseminated. During 1850 adverts were placed in the *Builder* requesting that 'decorators, architectural modellers and building-improvers' apply for space in the exhibition.<sup>925</sup> A later article warned that whilst there were already more entries than space allowed, 'Architects should exhibit models of their

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<sup>923</sup> P. Greenhalgh, *Ephemeral Vistas: The Expositions Universelles, Great Exhibitions and World's Fairs, 1851–1939* (Manchester, 1988); J. Auerbach, *The Great Exhibition of 1851: A Nation on Display* (New Haven / London, 1999); M. Leapman, *The World for a Shilling: How the Great Exhibition of 1851 Shaped a Nation* (London, 2001).

<sup>924</sup> 'Report of Council', *RIBA Transactions* 3 (6 May 1850) p.87.

<sup>925</sup> 'Advert: Decorators, Architectural Modellers and Building-Improvers', *Builder* (31 August 1850) 418.

works.<sup>926</sup> Complementary to these calls, an essay in the *Builder* by Charles Bruce Allen, an early curator of the Architectural Museum, outlined how models should be curated in order to ensure that visitors viewed them ‘correctly’:

‘All architectural and engineering models should be so placed that the eye of the spectator be on a level with the horizon line, and so that he may stand and view it as he would do the actual building.’<sup>927</sup>

Whilst the RIBA does not appear to have been formally engaged, the Liverpool Architectural Society took a more active role in the production of a model for the exhibition. At a meeting in May 1850, a local architect, H. P. Homer, read a paper requesting that the architects of Liverpool assist in the production of a model of the docks in Liverpool for display at the exhibition. As Homer described, ‘the model would be on the scale of 8 feet to the mile, and architects would facilitate the work by sketching, colouring, and afterwards transferring to the model, blocks of particular buildings.’ Following this process, Homer explained, these drawings ‘would be pasted on the wood and cut out afterwards by paid assistants.’<sup>928</sup> An article in the *Builder* two months later noted that the model was ‘to be on so large a scale as to show everything distinctly, and will cost about £750’.<sup>929</sup> Unlike the other architectural models, which were grouped together as a subclass (G: Models in Architecture, Topography, and Anatomy) within a wider category (‘Sculpture, models and plastic art, mosaics, enamels, etc.’), the model of Liverpool was amongst a group of ‘Miscellaneous Objects’ in the main avenue of the exhibition hall. The catalogue for the Great Exhibition illustrated and described in the model:

‘This model, which represents a sea wall of five miles, at a scale of eight feet to the mile [...] embraces the whole of the docks, about 300 acres; and about one-third of the town – the commercial portion. The buildings are all

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<sup>926</sup> ‘Decorators and Designs in the ’51 Exhibition’, *Builder* (12 September 1850) 485.

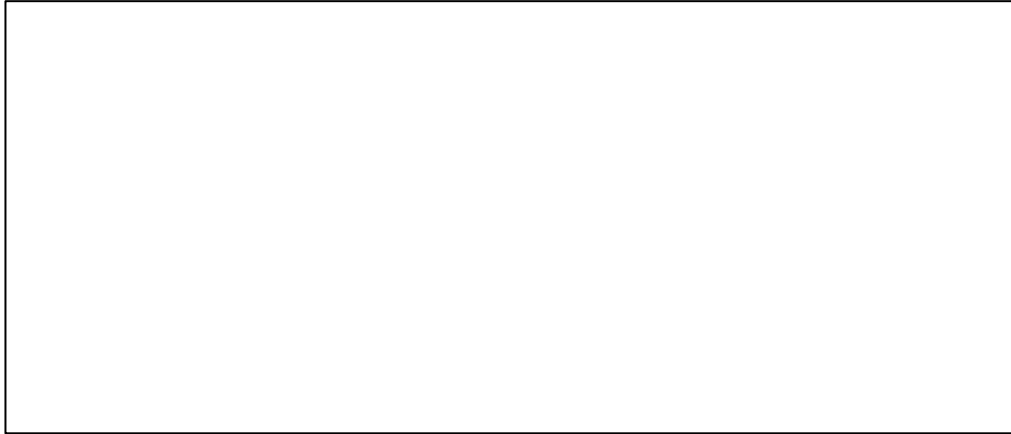
<sup>927</sup> C. B. Allen, ‘Some Suggestions for Arranging and Colouring the Interior of the Building in Hyde Park’, *Builder* (7 December 1850) 580.

<sup>928</sup> ‘Liverpool Architectural Society’, *Builder* (11 May 1850) 226.

<sup>929</sup> ‘Models’, *Builder* (20 July 1850) 345.



modelled with great accuracy and care. It includes the three great stations of the London and North Western Railway, and one of the Lancashire and Yorkshire Railway, the Town Hall, Custom-house, Sailor's Home, several churches, and St. George's Hall, said to be the finest Grecian building in England. The water and docks are formed of pale green glass, silvered [...] The model is contained in a beautiful glass case [...] supported by fourteen elephants and twenty columns standing on a plinth'.<sup>930</sup>



**Figure 68**

'Model of the Docks and Commercial Portion of the Town of Liverpool'  
*Great Exhibition, 1851: Official Descriptive and Illustrated Catalogue*, II, p.850.

After its display in the exhibition, the model was purchased by Liverpool Council for £700 and put onto display in the newly constructed Picton library.<sup>931</sup> Whilst little is known about the model, its production and presence in the Great Exhibition indicates another type of model, one that represents that represented industrial development at an urban scale, which was produced by local architects recording and constructing portions of their city in miniature.

In the main avenue of the exhibition hall were a series of models produced by Stephen Salter, a professional model-maker based in Hammersmith who I discussed in Chapter 4. Under his own name he exhibited two models of bridges in

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<sup>930</sup> *Great Exhibition of the Works of Industry of all Nations, 1851: Official Descriptive and Illustrated Catalogue* (London, 1851) II, p. 851.

<sup>931</sup> 'Models', *Builder* (30 August 1851) 36.

Derbyshire and Yorkshire as well as a model of St. Nicholas' church, Hamburg, designed by George Gilbert Scott, which won a prize medal.<sup>932</sup> Two further models made by Salter were exhibited under the names of their architects, the partnership of Thomas Henry Wyatt and David Brandon. Both models were made in cardboard, the first the church of St. Mary and St. Nicholas, in Wilton, Wiltshire, and the second of the new assize courts in Cambridge.<sup>933</sup> The former model does not appear to survive whilst the later survives in a seminar room at the Faculty of Architecture and Art History, University of Cambridge.<sup>934</sup>



**Figure 69**

Model of Cambridge Assize Courts, c.1840

Stephen Salter (Model-maker); Thomas Henry Wyatt and David Brandon (architects),

Designs for the new assize courts appear to have commenced in 1838 when a now-lost perspective drawing of the building was exhibited by Wyatt and Brandon at the Royal Academy Exhibition.<sup>935</sup> Despite the absence of building records, construction work probably began in 1841, and in 1842 one of the existing gatehouses of the

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<sup>932</sup> *Great Exhibition of the Works of Industry of all Nations, 1851*, II, p. 851.

<sup>933</sup> *Great Exhibition of the Works of Industry of all Nations, 1851*, II, p. 854.

<sup>934</sup> It returned to Cambridge after featuring in the 'Marble Halls' exhibition at the V&A in 1973. My thanks to Frank Salmon for facilitating my visit to see this model.

<sup>935</sup> 'Perspective view of the County Assize Courts erecting at Cambridge, from the designs and under the superintendence of Wyatt and Brandon', *Catalogue of the Exhibition of the Royal Academy* (London, 1838) p.44, no.1038.

castle was demolished to make space for the new courts.<sup>936</sup> Accompanied by Salter and Brandon, the model of the assize courts made its first appearance when presented to judges at a local sessions in November 1841 were it ‘was the subject of much admiration’.<sup>937</sup> Later, alongside Salter’s model of St. Mary and St. Nicholas, in Wilton, the model of the assize courts was a part of a *conversazione* held at the Institution of Civil Engineers in June 1842 – I will discuss *conversazioni* in more detail in the next section.<sup>938</sup> On 21 October 1842 the assize courts was opened when the General Quarter Sessions for the County were held there.<sup>939</sup>

Reports in the architectural press indicate that Salter’s work was widely respected by both the architectural and engineering professions due to his sophisticated model-making techniques, which saw him win prize medals for models exhibited at both the 1851 and 1862 international exhibitions.<sup>940</sup> The sophistication of his model-making skills can be seen from the model of Cambridge Assize Courts. The model is oriented to the east and Castle Street, the road to Ely that runs through the centre of Cambridge. The outer layers of the base are made from tinted cardboard. From the road is a pathway leading to six steps that rise up the plinth of the building to the portico. At the rear of the model is a high wall that abruptly cuts across the symmetry of the model. This is the external wall that surrounded the octagonal County gaol.<sup>941</sup> Access from Castle Street to the south of the courts led to a set of stairs and a doorway to basement level, clearly shown in the model.<sup>942</sup> Existing elements such as the road and the wall are treated in the same manner as the proposed courts. Through this depiction of existing structures alongside Brandon

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<sup>936</sup> C. H. Cooper, *Annals of Cambridge* (Cambridge, 1842) IV, p.657.

<sup>937</sup> ‘Cambridgeshire Adjourned Sessions’, *Cambridge Independent Press* (20 November 1841) p.3.

<sup>938</sup> ‘Institution of Civil Engineers’, *CEAJ* (July 1842) 238.

<sup>939</sup> C. H. Cooper, *Annals of Cambridge* (Cambridge, 1842) IV, p.657.

<sup>940</sup> For further discussion of Salter’s models see: ‘Passage of the Tudela and Bilbao Railway across the Pyrenees’, *Builder* (26 July 1862) 534; ‘Bombay Exhibition’, *Builder* (17 February 1866) 117; ‘The Late Mr Stephen Salter’, *Builder* (25 October 1873) 842.

<sup>941</sup> Royal Commission on Historical Monuments of England, *An Inventory of the Historical Monuments in the City of Cambridge* (London, 1959) II, p.304.

<sup>942</sup> A contemporary source confirms there was a subterranean layer of holding cells underneath the building with an underground route to the gaol. ‘Cambridge – Cambridgeshire’, S. Lewis ed., *A Topographical Dictionary of England* (London, 1848<sup>7</sup>) p.479.

and Wyatt's proposed building, the model is able to mediate between the existing site and proposed courts. On the outside of the model pale brown cardboard is used to model the façade, windows, balustrade, and steps. Whilst the sculptural and profiled aspects of the façade are intricately modelled with care and expertise, there is no depiction of the way the building would be constructed with large pieces of Whitby stone and visible joint lines. The roof, however, has been depicted with horizontal bands of tiles in grey cardboard and thin strips to show ridgelines. In places the roofs have added details such as skylights and chimneys.

Salter's model of the Assize Courts counters the proposition in the *Penny Cyclopaedia* that models as objects could reveal little of the internal layout or experience of a building unlike floor plans and sections. The entry in the encyclopaedia caveated its proposition with the comment:

'Unless a model be made to open, or be so constructed that either one of more of its side may be removed at pleasure, so as to lay open the interior, the inside of a building can hardly be shown at all in a model'.<sup>943</sup>



**Figure 70**

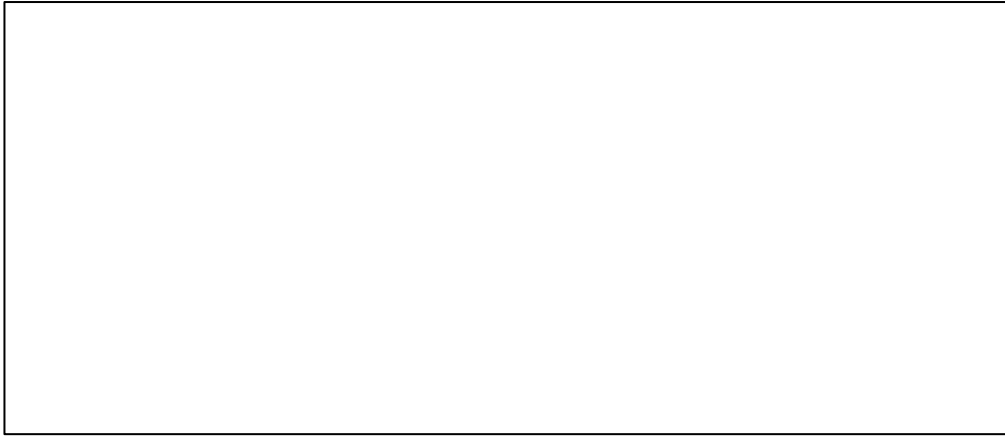
Model of Cambridge Assize Courts, c.1840

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<sup>943</sup> 'Models, Architectural', in G. Long ed., *The Penny Cyclopaedia of the Society for the Diffusion of Useful Knowledge* (London, 1839) XV, p.294.

Photographed from above – gaol wall in upper left hand corner.

Probably at the command of the Wyatt and Brandon, Salter made the model in order for it to be opened by viewers. The removal of the model's nine roofs reveals the interior layout of the courts (Fig.71). The portico leads to a central, square hall that connects with two courtrooms (one a criminal court with a witness box, the other a *Nisi Prius* court) with the judges' room between them, and with the Grand Jury room and other apartments split on either side. Analogous to the proposed construction of the building from load-bearing masonry lined with timber panelling, in the model each internal wall is formed from a piece of timber lined on either side with beige cardboard. Like the contemporary drawing convention that indicates brickwork with pink wash, the upper plane of each piece of timber has been primed with pink paint. Modelled with a similar technique to the outside of the model, Salter has layered cardboard in both vertical planes and thin strips to depict timber panelling. Internally the model is highly detailed. Within each courtroom there are benches and balustrades to show how the witness box, public gallery, and judge's bench are inhabited. As well as the allusions to a basement level discussed earlier, the internal depiction of the model allows a glimpse at the sectional relationships that are key to the building's hierarchical arrangement. Secondary public entrances on either side of the building allow access via a square-plan staircase lit from above by a skylight to the public galleries of each court. At the upper corners of the central hall, a small staircase leads down to the holding cells underground.



**Figure 71**

Model of Cambridge Assize Courts, c.1840  
Photographed from above – with roofs removed.

J. W. Papworth read a paper across a pair of meetings at the RIBA in November and December 1851, which reflected on the exhibition and the role of models by the profession. Without referring to any specific model, Papworth proposed, ‘In the department of models of architectural works, England’s supremacy in the Exhibition must have been so unquestioned for the number and high finish of the specimens.’<sup>944</sup> In conclusion, Papworth suggested that any belief in the foreign superiority of architecture and the fine arts had been shown to be a mistake.<sup>945</sup> What the RIBA did next was to encourage the profession to take a much more active role in subsequent international exhibitions.

Whilst I will not explore these later exhibitions in detail here, at future international exhibitions prominent individuals within the RIBA were appointed to important positions in administrative roles, selecting architectural objects for display, and curating displays.<sup>946</sup> The RIBA was invited to contribute by Henry Cole to the

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<sup>944</sup> J. W. Papworth, ‘Considerations Upon Some of the Productions Connected with Architecture in the Exhibition of 1851’, *RIBA Proceedings* (1851/52) p.12 [108].

<sup>945</sup> J. W. Papworth, ‘Considerations Upon Some of the Productions’, p.14 [110].

<sup>946</sup> Additionally a letter to the RIBA Council from 1871 underlined the emerging emphasis towards professionalism of the architectural displays after the 1851 Great Exhibition. Charles Charnock Nelson, Honorary Secretary of the RIBA, described how Earl de Grey, President of the RIBA between 1834 and 1859, was not invited be a part of the executive committee of the exhibition

Exposition Universelle in Paris in 1853.<sup>947</sup> In the architectural portion of the exhibition there was a move away from models made by ‘amateurs’ to models of contemporary buildings displayed by professional architects: forty of the forty-eight exhibitors were RIBA members. Charles Barry and C. R. Cockerell, two RIBA members, judged this part of the exhibition.<sup>948</sup> For the International Exhibition of 1862, a group from the RIBA, including T.L. Donaldson, George Gilbert Scott and William Tite, selected twenty architectural models for display in the Fine Art Department.<sup>949</sup> At the 1867 Exposition Universelle in Paris only two models were exhibited by the English section – George Gilbert Scott’s Albert Memorial, and the Royal Albert Hall designed by Francis Fowke and Henry Young Darracott Scott. Even though two members of the RIBA, Alexander Beresford Hope and William Tite, were appointed as commissioners for the exhibition, the RIBA proposed that an RIBA sub-committee should be in charge of the entire architectural portion of the exhibition. A fifty guineas grant was provided by the RIBA towards the preliminary expenses of this committee in relation to the display of ‘Architectural Designs and Models’ at the exhibition. With Alfred Waterhouse winning the Grand Prix in Paris, the 1868 RIBA Report of Council described the exhibition as, ‘a substantial acknowledgement of the high position taken by British Architecture at this Exhibition.’<sup>950</sup>

As I have examined in this section and will discuss further in the Conclusion, within the context of international exhibitions, models were used as a part of the construction of professional, local, and national identities. I believe that further

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because he was not ‘a professional president’. RIBA, 1.2.3, LC/9/2/4, Letter to Council from Charles Chanock Nelson, 16 April 1871.

<sup>947</sup> RIBA, 1.2.3 LC/3/6/7, Letter to Council from Science and Art Department (Henry Cole), 6 September 1853.

<sup>948</sup> ‘Class 30: Architecture’, *Catalogue of the Works Exhibited in the British Section of the Exhibition* (London, 1855) 91-94. The other eight were all architects from industrial cities in northern England or Scotland.

<sup>949</sup> *International Exhibition of 1862: Official Catalogue of the Fine Art Department* (London, 1862) 101–102

<sup>950</sup> RIBA, 1.2.1, V, ‘Report of Council’, 7 May 1866 p.283; ‘Report of Council’, 4 May 1868 p.407.

research could explore these ideas in greater depth through the study of surviving models, catalogues, and institutional records.

### 5.5 The display of models within the profession

Chapter 1 introduced the display of the architectural model within the profession through a brief discussion of the models that appeared at the Architectural Association in the period. This section will further that discussion, first by exploring the appearance of models at meetings of the RIBA, second by examining the boundary between profession and public in the role of the *conversazione*.

Many historians have discussed the birth of the RIBA.<sup>951</sup> These accounts however, lack any discussion of the role played by architectural models at the institute in the nineteenth century. This section will examine the role of architectural models at RIBA meetings; a subsequent section in Chapter 6 will explore the RIBA's collection of models.

Typically the RIBA held around twenty-five 'Ordinary General Meetings' from November to June, with short breaks for the Christmas and Easter. Following an opening presidential address, at each meeting a member or guest read a paper on an aspect of architectural practice or knowledge. The sharing and dissemination of knowledge through lectures was a part of the original purpose of the RIBA:

'The Institute of British Architects has been founded for facilitating the acquirement of architectural knowledge, for the promotion of the different

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<sup>951</sup> A.M. Carr-Saunders and P.A. Wilson, *The Professions* (Oxford, 1933) pp.184-185; J. A. Gotch ed., *The Growth and Work of the Royal Institute of British Architects, 1834-1934* (London, 1934); H. M. Colvin, *Biographical Dictionary of English Architects* (London, 1954); B. Kaye, *The Development of the Architectural Profession in England* (London, 1960); F. Jenkins, *Architect and Patron* (London, 1961); J. Mordaunt Crook, 'The pre-Victorian architect: Professionalism and patronage', *Architectural History* 12 (1969) 62-78; M. Crinson and J. Lubbock, *Architecture: Art or Profession?* (Manchester, 1994); B. Hanson, *Architects and the "Building World"* (Cambridge, 2003).



branches of science connected with it, and for establishing an uniformity and respectability of practice in the profession.<sup>952</sup>

Through reading of the institute's minutes and journals it has been possible to identify the use of architectural models at RIBA meetings in relation to each of those three original aims. It is worth noting how, whilst the majority of those present at the meetings were RIBA members, there appears to have been a second set of attendees that included students and other professions related to the construction industry and associated trades. The wide variety of topics discussed at the institute reflects both the multidisciplinary nature of the architect during the period and those present at the meetings. During these meetings models were displayed by RIBA members and visiting speakers alike in order to 'facilitate the acquirement of architectural knowledge'. What constituted 'architectural knowledge' during the period examined by this thesis was highly varied. Models were used to illustrate and explain papers given on topics including archaeology, structural engineering, and architectural history as well as new technical products and developments in construction. However, I have only found one occasion when the subject of a paper was a contemporary building and an architectural model was used as illustration. In February 1858 Edward M. Barry displayed a plaster model of the Victoria Tower of the Palace of Westminster made by James Mabey. As Barry described, 'The carefully executed model on the table by Mr Mabey, will give a better idea of its appearance than any description that I can write.'<sup>953</sup> On other occasions architectural models were used to illustrate accounts of historic monuments, descriptions that were contested through the discussion of the model. At a meeting of the RIBA in February 1846 the sculptor Richard Cockle Lucas gave a paper on the Parthenon, illustrated by a pair of models of the building that had been commissioned by the British Museum (Fig.72).<sup>954</sup> On this occasion the

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<sup>952</sup> 'Regulations of the Institute of British Architects', *RIBA Transactions* (1835–1836) p.10.

<sup>953</sup> 'An Account of the New Palace of Westminster, and the Progress of Building the Same. By E. M. Barry', *RIBA Proceedings* (1857–1858) p.86.

<sup>954</sup> 'An Essay on the Parthenon, with a dissertation on the Restoration of the same now in the British Museum by R. C. Lucas', *RIBA Proceedings* (1849–1850) 143.

‘authenticity’ of Lucas’ reconstruction was criticised by various members of the institute, including T. L. Donaldson.<sup>955</sup> The *RIBA Proceedings* described how Donaldson protested that Lucas’ models were not ‘a faithful representation of the Temple in its dilapidated condition, and [was] inaccurate in its Architectural details’.<sup>956</sup>

Similar to the models that I discussed in Chapter 2 and the contested claims of professional authority through models, Donaldson’s comments on Lucas’ reconstruction of the Parthenon demonstrates how the perceived appearance of historical buildings was debated through their reconstruction as models. As Victor Plahte Tschudi describes in relation to models of ancient Rome,<sup>957</sup> Donaldson’s remarks about the model-reconstruction were connected to the establishment of a ‘uniformity and respectability of practice in the profession’, one of the three founding purposes of the institute. Additionally this is further evidence to how boundary of professional authority of the architect in Britain included both the recording of historic buildings and the translation of this knowledge into contemporary architecture.<sup>958</sup>

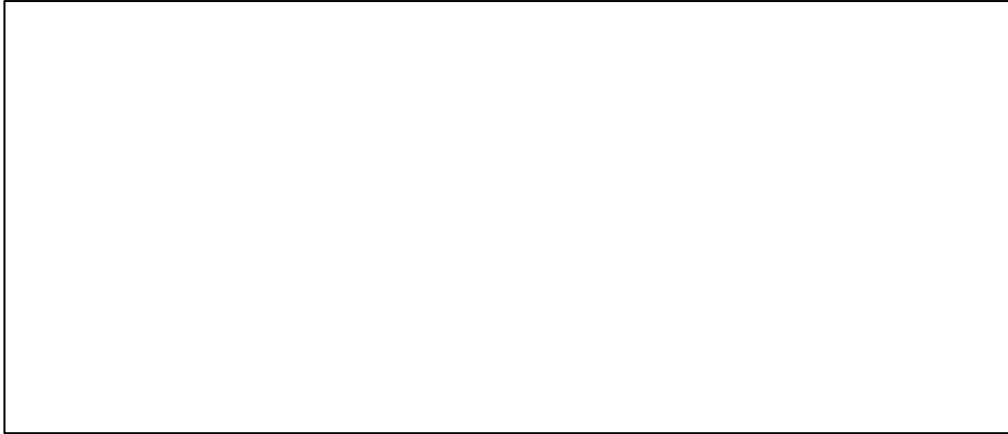
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<sup>955</sup> ‘An Essay on the Parthenon’, *RIBA Proceedings* (1849–1850) 146.

<sup>956</sup> ‘An Essay on the Parthenon’, 146.

<sup>957</sup> V. P. Tschudi, ‘Plaster Empires: Italo Gismondi’s Model of Rome’, *JSAH* 71.3 (September 2012) 386–403.

<sup>958</sup> In particular this relates to the scholarship in F. Salmon, *Building on Ruins: The Rediscovery of Rome and English Architecture* (Aldershot, 2000); A. Buchanan, *Robert Willis (1800–1875) and the Foundation of Architectural History* (Woodbridge, 2013); K. Wheeler, *Victorian Perceptions of Renaissance Architecture* (Farnham, 2014). Additionally the role of models to as markers for ‘communities’ was not limited to classical architecture. In 1851 the Oxford Architectural Society were given a large-scale model of University Church of St Mary the Virgin by the Vice-Chancellor and Hebdomadal Council. In this setting a model of domestic architecture took on similar ideas surrounding knowledge, values, and identity. ‘Oxford Architectural Society’, *CEAJ* (28 June 1851) 358.



**Figure 72**

Photograph of Elgin Room, British Museum, c. 1890.  
BM, Department of Greece and Rome files.

The wide variety of topics discussed at the meetings connects to the second purpose of the RIBA – ‘for the promotion of the different branches of science connected with [architecture]’. For instance, in March 1836 Charles Fox gave a paper to the institute on ‘Skew Arches, with explanatory drawings and models’.<sup>959</sup> In February 1876 in a paper on the mathematical theory of domes Edmund Beckett also displayed a series of self-made architectural models to illustrate ‘the limits between a barely stable and unstable dome and arch’.<sup>960</sup> Additionally, as Chapter 1 briefly examined in relation to architectural education, as the requirements for building services emerged in the nineteenth century, the meetings of the institute were often a place for the presentation of new technical ideas. In February 1863 F. Marrable read a paper on ‘The Practical Ventilation of Buildings’, which was ‘demonstrated via a model a ventilator invented by Mr. Haworth and exhibited at the 1862 International Exhibition’.<sup>961</sup> Such models accounted for eight out of the twenty instances when models featured at RIBA meetings, and therefore it seems clear that

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<sup>959</sup> C. Fox, ‘On the construction of Skew Arches, with explanatory drawings and models’, *The Architectural Magazine* 3.28 (June 1836) 251-260.

<sup>960</sup> For Beckett’s description of the models see: E. Beckett Denison, *A Book on Building, Civil and Ecclesiastical* (London, 1880) pp.328-329. For the paper read at the RIBA see: ‘On the Mathematical Theory of Domes’, *RIBA Transactions* (1870–1871) 81-115.

<sup>961</sup> ‘The Practical Ventilation of Buildings’, *RIBA Transactions* (1862–1863) 127.

one of the primary uses of architectural models at the RIBA was to demonstrate new technical products to the profession.

There were several instances where models were a part of how the institute established a ‘uniformity and respectability of practice in the profession’. In addition to the technical models that provided descriptive knowledge, on behalf of the institute members interacted with models in order to make claims for prescriptive and artistic knowledge over a subject, which in turn provided normative authority to the profession. In Chapter 2 I showed how the Earl of Wemyss, George Aitchison, and others were involved in the discussion about the role of models in public building projects, an issue that was discussed at the institute, in Parliament, and at select committee hearings. There were also moments outside the walls of 9 Conduit Street, however, when architectural models were displayed to members of the institute. For instance, in relation to proposed improvements to Hyde Park Corner,<sup>962</sup> in June 1882 the Office of Works wrote to the Secretary of the RIBA, ‘to acquaint you that a Model has been prepared showing the exact effect of the proposed alterations.’<sup>963</sup> A similar instance occurred in June 1887 when John Fenwick Kitto wrote to the RIBA with the request that members of the institute view a model prepared (‘drawn up’) by the Metropolitan Board of Works for alterations of the steps to the portico of St-Martin-in-the-Fields and offer their opinion on the model.<sup>964</sup> These occasions are much more closely connected to the themes raised in Chapter 2 surrounding professional authority and architectural models. The display of models within the RIBA and other architectural societies occurred primarily at *conversazione* – a nineteenth-century social event that I will now discuss.

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<sup>962</sup>In order to relieve traffic congestion a scheme was prepared between the Office of Works and Metropolitan Board of Works to add a new road that cut across the corner between Piccadilly and Grosvenor Place. This new road required the relocation of the Wellington Arch a short distance to the south-east, facing down Constitution Hill. M. H. Port, ‘Hyde Park Corner: Resolving a Nineteenth Century Traffic Block’, *London Topographical Record* 28 (2001) 167-186.

<sup>963</sup> RIBA, 1.2.3, LC/21/5/11, Letter to Council from Office of Works, 23 June 1882.

<sup>964</sup> RIBA, 1.2.3, LC/26/3/15, Letter to Council from John Fenwick Kitto, 15 June 1887.

Appropriated from the Italian word for an evening assembly for conversation, social recreation and amusement, which was often described by British Grand Tourists in the mid-eighteenth century, one of the nineteenth century's distinctive events was the *conversazione*: an open occasion where work was exhibited by a society's members and discussed in public. During the nineteenth century *conversazione* were held by the RIBA, Architectural Association, Architectural Museum, and Architectural Society, as well as by individuals, for example the Duke of Sussex, and similar societies, for example the Institute of Civil Engineers. These particular events have received little attention from architectural historians, unlike similar gatherings staged by scientific bodies.<sup>965</sup> In part this is because these events were more informal than a standard meeting and the records are much sketchier. Therefore the architectural press is often the best record of the format and content of the *conversazioni*.

Judging from these contemporary accounts they were well-attended affairs: the Architectural Society's first *conversazione* in 1834 attracted '200 professors and amateurs of architecture'.<sup>966</sup> From the *Builder* we know that there were 'probably 500 or 600 present' at the Architectural Museum's annual *conversazione* in June 1855, where a model of the Crystal Palace, 'as proposed by Sir C. Barry', was lent for the occasion.<sup>967</sup> The work displayed varied in medium: an advert placed by the RIBA in the *Builder* requested 'any good pictures, tapestry, models, and other works of art' for the 1861 *conversazione*.<sup>968</sup> As the *Architect* noted in 1876, these occasions offered a 'wide circle of artistic and professional persons pleasant opportunities of meeting'.<sup>969</sup> In addition to opportunities for display and networking it appears that *conversazioni* could also provide a setting for collective

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<sup>965</sup> J. Wood, 'A Culture of Improvement: Knowledge, Aesthetic Consciousness, and the *Conversazione*', *Nineteenth Century Studies* 20 (2006) 79-98; S. J.M.M. Alberti, 'Conversazione and the Experience of Science in Victorian England', *Journal of Victorian Culture* 8.2 (Autumn, 2003) 208-230.

<sup>966</sup> 'Architectural Society', *The Gentleman's Magazine*, 1 (February 1834), p.209.

<sup>967</sup> 'Art Workmen – *Conversazione*, Architectural Museum', *Builder* (30 June 1855) 309.

<sup>968</sup> 'Proposed *Conversazione*, Royal Institute of British Architects', *Builder* (22 June 1862) 436.

<sup>969</sup> 'The Institute *Conversazione*', *Architect* (22 July 1876) 48.

judgement: the Manchester Architectural Society dedicated their April 1838 conversazione to the recent competition for Manchester's proposed catholic church as 'public examination is the most effective mode of insuring just decisions in competition'.<sup>970</sup> Every October from 1857 until 1891, the Architectural Association held their annual conversazione at 9 Conduit Street where student work was presented to the members, wider profession, and public. The RIBA's annual conversazione was held every June or July, often at Conduit Street but occasionally 'off-site' at the South Kensington Museum.

At a conversazione the physical, textual and visual products of the architectural profession were displayed to an urban public as evidence of architectural and therefore cultural achievement. Historians of science and technology have suggested that the conversazione served a didactic role for particular groups through the transfer of 'approved knowledge' from profession to public.<sup>971</sup> Other scholars have emphasised the symbolic significance of participating in a conversazione where individual identity and opinions were given authority through the development of collective identities.<sup>972</sup> One example of this was a conversazione held by the Architectural Society in June 1841, as a part of the society's founding aim 'to advance architectural knowledge'.<sup>973</sup> In June 1841 William Tite, then president of the society, exhibited a model of the portico of the Royal Exchange (Fig.73).

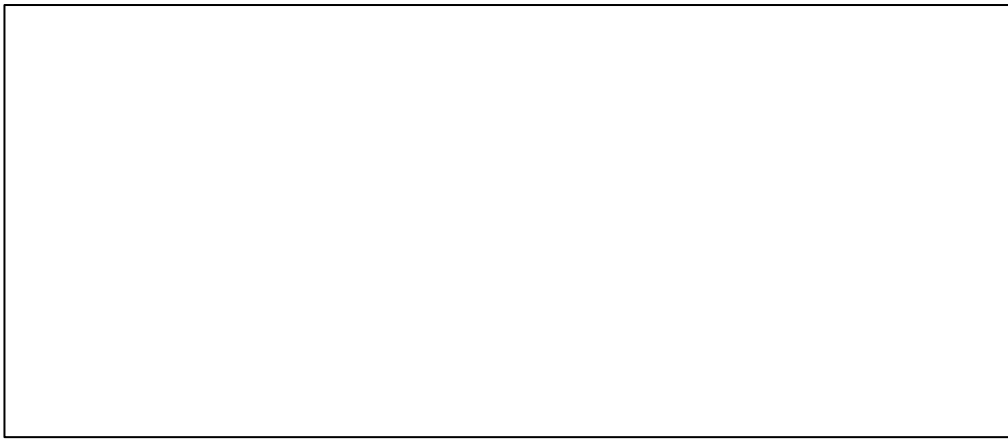
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<sup>970</sup> 'Architectural Society', *The Civil Engineer and Architect's Journal*, 4 (May 1841) 201.

<sup>971</sup> J. Wood, 'A Culture of Improvement: Knowledge, Aesthetic Consciousness, and the Conversazione', *Nineteenth Century Studies* 20 (2006) 80–81.

<sup>972</sup> S.J.M.M. Alberti, 'Conversaciones and the Experience of Science in Victorian England', *Journal of Victorian Culture*, 8.2 (Autumn 2003) 223.

<sup>973</sup> 'Art. X. Laws and Regulations of the Architectural Society', *Architectural Magazine*, 2.19 (November 1835) 513–14.



**Figure 73**

Model of the portico of the Royal Exchange, currently in storage  
William Tite (architect), Richard Day (model-maker), 1840  
H: 90.8 cm, L: 105.41 cm, W: 72.07 cm  
Victoria & Albert Museum, 1069-1873.

Produced in plaster by Richard Day and first presented to the building committee of the Royal Exchange in January 1841, the model showed Tite's revised design for the portico with an extra column, the corner arrangement, and one bay of the building's southern flank.<sup>974</sup> Made at the same scale as Cockerell's model that Tite had criticised, ½ inch to the foot, the portico model includes carved details showing the proposed capitals of the columns and pilasters, and establishes the depth and form of niches and the shaping of mouldings at the juncture with the façade.<sup>975</sup>

An obvious question is why a model was made at this particular stage. Despite his comments to the committee six months earlier, when asserting that models created unrealistic expectations of an architect's design, Tite now saw a role for the model in the communication of a design and its effects to others. Due to the procurement of the building through two lump-sum contracts, the design of the portico could be

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<sup>974</sup> Following the committee's minutes the model was made between 16 October 1840 and 15 January 1841: LMA, CLA/062/04/019, *Royal Exchange: Extracts and Reports, 'Proceedings'*, 16 October 1840 and 15 January 1841.

<sup>975</sup> Despite providing detail of the proposed building's ornamentation, profile and form, however, there is still a disjunction between the materiality of the model and the material reality of the proposed building: in the model, wall and window are both shown abstractly in plaster with no attempt to represent stone or glass. One reason for this, of course, is that the committee had already decided at the competition stage that the building was to be construction of 'stone of a hard and durable quality'. LMA, CLA/062/04/019, *'Proceedings'*, 26 March 1839.

revised without a causing a delay to the construction programme.<sup>976</sup> The model offered an opportunity for the effects of a building to be examined as a three-dimensional object, unlike the perspective drawings submitted in competition that were criticised by Leeds for the deliberate selection of vanishing points as I discussed in Chapter 2. Additionally when Tite first showed the committee the model in January 1841, he described how proposed to deepen the portico with an additional row of columns in order to improve ‘the effect of the building ... with reference to the surrounding objects’.<sup>977</sup> This suggests that Tite was aware of the ability of the model to demonstrate its effects in the urban scenography of London.

Furthermore the portico model received ‘considerable praise and attraction’ during its presentation to the profession at the conversazione in June 1841.<sup>978</sup> There was broader interest and praise for the model as *The Times* reported, ‘A model of the portico of the new Royal Exchange was exhibited and looked exceedingly handsome.’<sup>979</sup> In the following June the *CEAJ* complained about the absence of the portico model from that year’s Royal Academy Exhibition.<sup>980</sup> As I described earlier in this chapter, much of the architectural press recognised the importance of presenting contemporary designs to the general public at the Royal Academy Exhibition through the medium of models. Additionally the *CEAJ* complaints

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<sup>976</sup> The model is connected to how the building was procured: the joint committee had decided early on to divide the new work into two lump sum contracts, one for the foundations and the other for the rest of the building. At a meeting on 16 October 1840, the committee received tenders for the foundations. As the minutes noted, however, one of the committee members suggested, prior to the tenders being considered, that the excavation of the area beneath the proposed portico should be excluded. Tite had estimated that the cost of this work, including excavation and concrete and the vaulting of this area, was approximately three thousand pounds, and, as a result, the committee decided to omit it from the contract. This allowed time, while the ground workers were on site, for the portico design to be considered more fully. In fact, following the committee’s decision, the minutes recorded that ‘Mr. Tite be requested to consider what alterations he would propose as to the portico, or any other suggests which may occur to him’. LMA, CLA/062/04/019, ‘*Proceedings*’, 16 October 1840 and 15 January 1841.

<sup>977</sup> LMA, CLA/062/04/019, ‘*Proceedings*’, 15 January 1839.

<sup>978</sup> ‘Architectural Society’, *The Civil Engineer and Architect’s Journal*, 4 (4 June 1841) 237.

<sup>979</sup> ‘Architectural Society’, *The Times*, 2 June 1841, 5.

<sup>980</sup> ‘Architectural Drawings, Royal Academy’, *The Civil Engineer and Architect’s Journal*, 4 (July 1841) 232.



suggests that there were links or connections between the different spaces of architectural display – the model’s reputation from the *conversazione* resonated or created expectation that models would also be presented in other situations. However, Tite’s model was now about to be displayed in a new setting, which was outside of the confines of the exhibition or meeting room.

### 5.6 Construction and testimony

As I described in the Introduction with examples from the Ancient Americas or Middle Kingdom of Egypt, models have always been used to represent architecture’s connection to political power or its relationship with ritual practices. In medieval sculpture or paintings the representation of a church in the form of a model held in the hands of the church’s patron was used a powerful iconic image, one that conveyed the role of the patron in the construction and his devotion to Christianity.<sup>981</sup> During the Early Modern period, images of models presented allegorically to patrons appeared in tapestries, paintings, and prints. This idea continued through artistic culture in Renaissance Italy, adopted in particular to symbolise Medici patronage.<sup>982</sup> In twentieth-century Germany, during the period of the Nazi government, large-scale models of proposed buildings were paraded at groundbreaking ceremonies and political congresses to present the *Nationalsozialist* vision for German cities in a physical form.<sup>983</sup>

Related to this broader contextual use of models, Tite’s model of the portico was twice publically displayed in a ritualised setting. On 17 January 1842, under a large fabric canopy designed by William Tite and illuminated by candlelight, Prince Albert laid the foundation stone for the new Royal Exchange.<sup>984</sup> Prior to the ceremony beginning Tite presented two models of the new building to Prince

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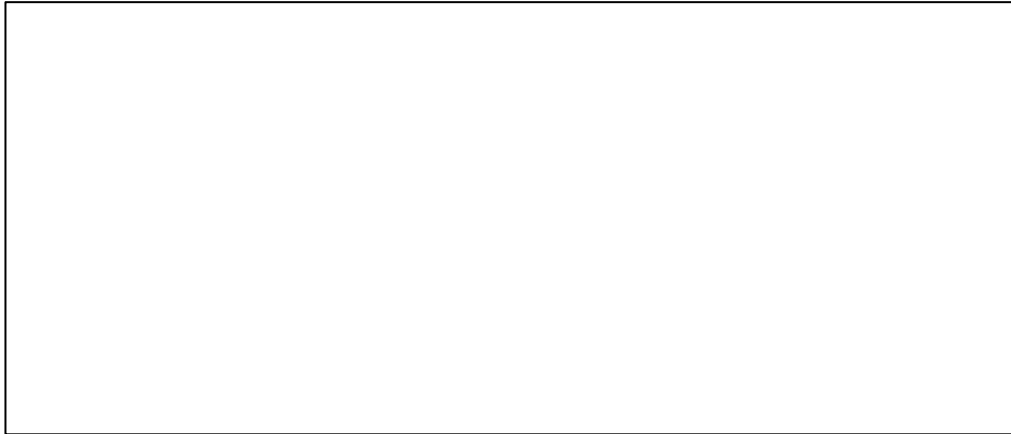
<sup>981</sup> M. C. Carile ‘Buildings in their patrons’ hands?’, 1-15.

<sup>982</sup> S. Frommel, ‘Les maquettes de Giuliano da Sangallo’, *Les Maquettes*, pp.83-84.

<sup>983</sup> H. Giesler, ‘Architectural Models in the Nazi Era’, *Das Architektur Modell*, pp.98-105.

<sup>984</sup> For a full description of the ceremony see: E. Wilson, *Description of the New Royal Exchange* (London, 1844) pp.80-92.

Albert.<sup>985</sup> One of these, as is clear from a lithograph documenting the event, was the portico model, while the other appears to be a model of the east-facing elevation with its two towers (Fig.74). According to newspaper reports, the exhibition of these two models ‘excited general admiration’.<sup>986</sup> Offered by the architect to the prince, the models on display had a votive role as a promise for the building being constructed, with a gathered crowd as public witnesses.



**Figure 74**

Thomas Allom,

*Prince Albert Laying the Foundation Stone of the Third Royal Exchange.* 1842

LMA, Collage, 6547.

Queen Victoria officially opened the new Royal Exchange at a large-scale public ceremony and banquet held on 28 October 1844.<sup>987</sup> Following a procession from Buckingham Palace to the City of London, the queen and Prince Albert were received by the Lord Mayor of London and various Aldermen in a reception

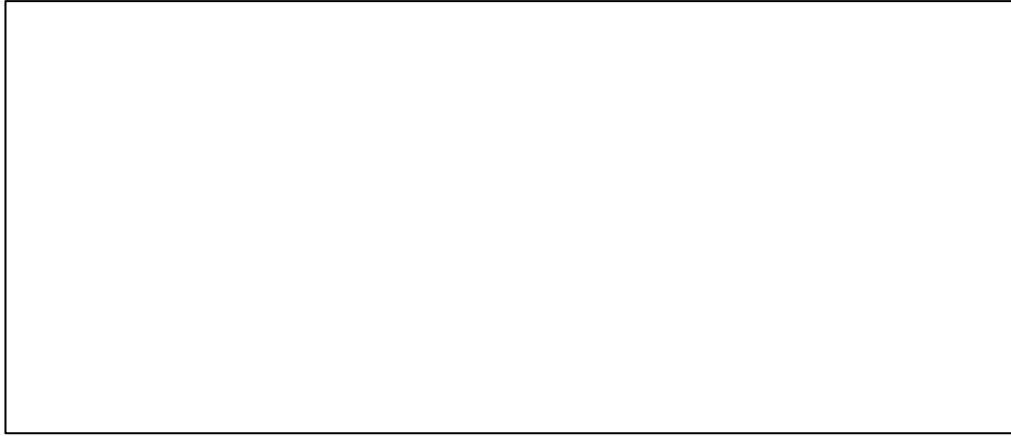
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<sup>985</sup> ‘New Royal Exchange’, *Observer*, 17 January 1842, p.3.

<sup>986</sup> ‘The Ceremony of Laying the First Stone of the New Royal Exchange by Prince Albert’, *The Ipswich Journal*, 22 January 1842, p.1.

<sup>987</sup> There are various accounts of the occasion. See: ‘Opening of the New Royal Exchange’, *ILS* (2 November 1844) 276-285. ‘The New Royal Exchange’, *ILS* (9 November 1844) 291-293.

room.<sup>988</sup> Here William Tite presented two models to the queen, which were positioned either side of the room's mantelpiece: one of the east end of the Exchange and the other of the quadrangle (Fig. 75).<sup>989</sup>



**Figure 75**

‘The Queen’s Drawing Room - Her Majesty Inspecting Mr. Tite’s Models of the New Royal Exchange’,  
*ILS*, 9 November 1844, 292.

Unfortunately neither of the models appears to have survived, but they are visible in a lithograph of the event published in the *ILS* (Fig.75).<sup>990</sup> Judging from this image, the two models were similar in scale to the portico model. There are no mentions of any additional models made for or presented in front of the Joint Gresham Committee. Nor do accounts of the opening ceremony note any specific payment for models.<sup>991</sup> With no evidence that these models were connected to the design or construction process, it seems reasonable to presume that they were produced after the building, externally at least, was finished. Unlike the surviving portico model,

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<sup>988</sup> One large room, the Subscribers’ Room, was prepared for a lavish déjeuner while, a smaller room, the Reading Room, on the building’s southwest corner was to serve as a reception room for the queen

<sup>989</sup> ‘Opening of the New Royal Exchange by Her Majesty’, *Chelmsford Chronicle* (1 November 1844) 2.

<sup>990</sup> ‘The New Royal Exchange’, *ILS* (9 November 1844) 292.

<sup>991</sup> Although Tite was paid £101 ‘for commission, drawings, &c’. It is most likely that these models were the work again of Richard Day

these two models do not allow the viewer to comprehend something previously unknown. Instead, they are performative objects for display, which allow the building to be consumed all at once by the viewer.

## 5.7 Conclusions

The chapter began by introducing the broader background of the annual Royal Academy Exhibition before exploring the 1834 edition of the exhibition in depth through surviving models made exhibited by John Soane and C. F. Inwood. In particular with Soane's models, I showed how existing architectural models were prepared and adapted for their display in prominent exhibitions. Following this, the second section explored the decline of architectural models displayed at the Royal Academy during the 1840s and the emergence of the Architectural Exhibition as a new site of display for the profession. Following this the third section examined the architectural models displayed at the 1851 Great Exhibitions and the relationship between the professional identity of the architect and the public presentation of these models on an international stage. In the fifth section we how models were displayed at the RIBA to illustrate lectures, primarily on archaeological discoveries or the emergence of new building technologies. By exploring models of proposed construction in London or archaeological reconstructions, I described how in turn models were displayed to the RIBA in order for their judgment or professional opinion, themes that align closely with those described in Chapter 2. In the portion on the *conversazione* I showed another way that architects displayed models in public for both professional and personal recognition, as well as the awareness that the events were an opportunity to build connections between the discipline and the wider public. Similar to the deployment of Soane's models in the 1834 Royal Academy Exhibition, in the final section of the chapter we saw how William Tite presented a model of the Royal Exchange to his peers before the model took on a symbolic role several years later in in the groundbreaking and opening ceremonies of the new building.

This chapter has examined how and why models were displayed in public in relation to the public presentation of the architect. I propose that the display of architectural models was a reflection on the role and purpose of the architect in society. The examples discussed in the chapter showed how the public display of models was a space where both emerging and established architects might exhibit their work, or could serve as a platform through which broader architectural profession could present their work to an urban public as evidence of architectural and cultural achievement. The examples discussed in this chapter have also served to highlight the various ways and places where architects displayed models.

As I explored in Chapter 1 with the collections of models at King's College, there were new demands exerted on the profession by improvements in building technologies and the expectations of clients for atmospherically controlled internal environments.<sup>992</sup> The Architectural Exhibition shows how new marketplaces emerged for building products at the heart of the profession. In order to provide the profession with the information required for specialised trades and products, the manufacturers of these products represented their work through models, in order to offer a three-dimensional version of their products to visiting audiences. Whilst the axonometric drawing had emerged from central European military and mechanical engineers in the seventeenth and eighteenth century, by the nineteenth century British architects do not appear to have adopted the technique, despite publications on the topic by William Farish (1822) and Joseph Jopling (1842).<sup>993</sup> I would question why this was the case. Was it simply that the physical model was considered a superior vehicle to represent these ideas? Or did British architects have

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<sup>992</sup> For a further discussion of this see: M. van der Tempel, I. Wouters, F. Descamps & D. Aerts, 'Ventilation techniques in the 19th Century', *Structural Repairs and Maintenance of Heritage Architecture XIII* (2011) 271-284; H. Schoenefeldt and J. Campbell, 'Introduction' in J. Campbell ed., *History in the Study of Services and Construction* (Cambridge, 2018) pp.1-10.

<sup>993</sup> W. Farish, 'On Isometrical Perspective', *Transactions of the Cambridge Philosophical Society* 1 (1822) 1-20; J. Jopling, *The Practice of Isometrical Perspective* (London, 1842). I would also like to thank Laurent Stalder for discussing this topic with me and sharing an unpublished paper on the subject.

a particular viewpoint towards axonometric drawings? In my post-doctoral work I will look to explore British and European attitudes relationship between models and axonometric drawings further.

## Chapter 6

### The practice of collecting





## Chapter 6: The practice of collecting

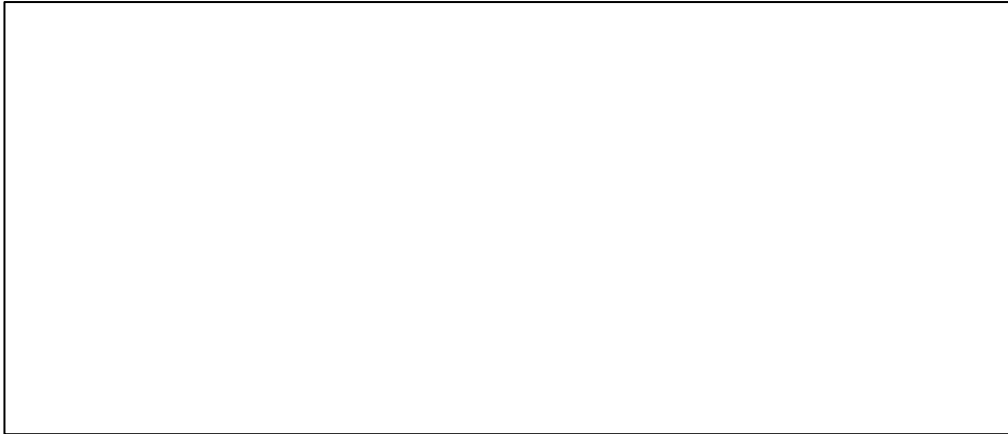
This chapter will investigate three collections of architectural models that explore the relationship between the collecting practices, the public presentation of models, and the nascent professional identity of the architect. Through these case studies I will investigate why did collecting practices by key institutions changed during the period in question, and what the relationship was between the collection and public presentation of models and the nascent professional identity of the architect.

Richard Altick describes how collections of models and miniatures became a part of exhibitions in London at the end of the eighteenth century through two main sources: one composed of faithful miniature reproductions of buildings, the other composed of spectacular curiosities, devoid of authenticity or the power to instruct.<sup>994</sup> The first established collection devoted principally to architectural models appears to be Richard Du Bourg's Classical Exhibition, which was first established in 1778 at 24 St Albans Street, Pall Mall. Du Bourg was both maker and exhibitor of a collection of cork models of sites associated with classical literature (Fig.76).<sup>995</sup> Throughout the nineteenth century Du Bourg's models appeared in collections including those at the Bodleian Libraries, Sir John Soane's Museum, and the South Kensington Museum.

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<sup>994</sup> R. D. Altick, *The Shows of London* (Cambridge, Mass. / London, 1979) pp.114-115.

<sup>995</sup> For a fuller discussion on Du Bourg see: R. Gillespie, 'Richard Du Bourg's 'Classical Exhibition', 1775-1819', *Journal of the History of Collections* 29, 2.1 (July 2017) 251-269; R. Gillespie, 'The Rise and Fall of Cork Model Collections in Britain', *Architectural History* 60 (2017) 117-146.



**Figure 76**

'Du Bourg's Museum'

LMA, SC/GL/PR/W2/GRO/STR/p5416254

Another prominent and reoccurring type of models in both private and public collections were plaster of Paris models of antique subjects made by the French model-makers Jean-Pierre Fouquet and François Fouquet, a father and son pair of model-makers active in Paris from the 1790s until the 1830s.<sup>996</sup> Jean-Pierre Fouquet produced 76 models of antique buildings in cork and plaster for the collector Louis François Cassas who opened a gallery at No.8 Rue de Seine to exhibit them.<sup>997</sup> The British architect John Nash acquired a set of Fouquet in c.1820.<sup>998</sup> These plaster-of-Paris models of antique buildings and monuments were exhibited in the gallery of Nash's house at 14-16 Regent Street in about 1820. The set of Fouquet models owned by Nash will be discussed again in the section on the South Kensington Museum. Another set of nine Fouquet models were purchased through public subscription in 1823 by John Shute Duncan and Philip Bury Duncan, successive keepers of the Ashmolean Museum. These models were exhibited in the Picture Gallery of the Bodleian Library alongside paintings and

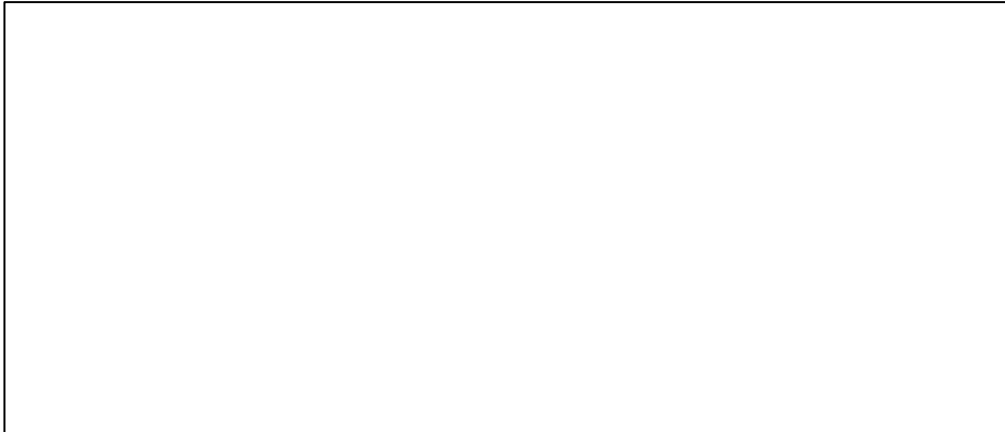
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<sup>996</sup> G. Cuisset. 'Jean Pierre et Francois *Fouquet*. Artistes modeleurs'. *Gazette des Beaux Arts* 115 (1990), 227-257; P. Thornton and H. Dorey, *Sir John Soane: The Architect as Collector* (New York, 1992) p.118; M. Richardson, 'Model Architecture', 224; H. Dorey, 'Sir John Soane's Model Room', *Perspecta* 41 (2008) 93.

<sup>997</sup> G. Cuisset. 'Jean Pierre et Francois *Fouquet*', 230.

<sup>998</sup> J. Yorke, 'Tiny Temples of Mr Nash', *Country Life* (8 February 2001) 66-67

figurative sculpture (Fig.77).<sup>999</sup> Later joined by further donations, the models in the Picture Gallery were occasionally referred to the architectural press.<sup>1000</sup> In the summer 1853 the *Builder* urged younger readers to use their summer holidays to travel to Oxford in order to study the buildings and visit the Bodleian's collection of models.<sup>1001</sup>



**Figure 77**

Picture Gallery, Bodleian Library

Unknown painting from the nineteenth century, Bodleian Libraries.

Throughout the nineteenth century architects and writers postulated a variety of reasons and theories about the benefits of collecting models for public display. Many also expressed opinions about curatorial practice – where and how models should be exhibited – in relation to hypothetical collections. As I discussed in Chapter 1, in his Third Royal Academy Lecture, John Soane described how the architectural model was not only a physical object but also held the epistemic potential to allow viewers to transcend the physical, temporal, and economic

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<sup>999</sup> . J. Norris, *A Catalogue of the Pictures, Models, Busts, &c. in the Bodleian Gallery, Oxford* (Oxford, 1839) p.60. A 1839 catalogue by John Norris, Janitor of the Bodleian, recorded the Fouquet models on display alongside one of Dubourg's models and a model made by one of the Wyatt dynasty

<sup>1000</sup> J. H. Parker, *A Hand-book for Visitors to Oxford* (Oxford, 1875) p.95. These later donations included a model, in teak wood, of a subterranean palace in Gujarat, presented by Sir J. W. Awdry; the Cathedral of Calcutta, in alabaster, by Van Lint of Pisa, presented by Bishop Wilson; and a model of the Martyrs' Memorial, the gift of the Rev. Vaughan Thomas.

<sup>1001</sup> 'Leading article', *Builder* (7 May 1853) 289.

boundaries associated with the study of antique buildings. There were also other reasons for the establishment of an architectural museum containing models. In a paper read before the RIBA in April 1845, Charles Heath Wilson, Director of the Government School of Design between 1843 and 1847, spoke about the effect and importance of models for young artists and designers to study from in order to ‘correct’ and ‘purify’ taste.<sup>1002</sup> Three years later in February 1848 Henry Walker Benson wrote to the *Builder* expressing surprise that there was not a collective series of models of public and private buildings, ‘so placed as to bring them into prominent view.’<sup>1003</sup> In his February 1848 letter from Benson proposed that a museum of architectural models should be established and contain ‘models of cathedral, collegiate, conventual, and parochial churches, whether perfect or in a ruinous condition.’<sup>1004</sup> Benson estimated that the museum might cost between £300-£400 per annum and the models might be subsidised through sponsorship from the each building’s institutional owners. Each building, Benson proposed, was to be made at three separate scales: one scale for the exterior form of each building; a second ‘large one’ for the interiors; and a third, even larger one, ‘for some integral portion [...] to shew the peculiar characteristics of each building’.<sup>1005</sup> These three scales should be fixed, Benson believed, in order for the comparative sizes of buildings, ‘to be better understood, and by this means more satisfactory ideas can be obtained.’<sup>1006</sup> For incomplete or ruined buildings, Benson proposed making a second model at the same scale, ‘to shew the effect to be produced by the completion of the edifice, according to the original design’.<sup>1007</sup> As I will show in the case studies discussed in this chapter, standard scales were a key method of control in the display of architectural models.

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<sup>1002</sup> C. H. Wilson, ‘Suggestions for Forming a Museum of Casts of the Architecture of Antiquity and of the Middle Ages’, *The Civil Engineer and Architect’s Journal* (May 1845) 138–139.

<sup>1003</sup> ‘Museum of Architectural Models’, *Builder* (5 February 1848) 62. Whilst his occupation is unknown, Benson later wrote to the *Builder* to discuss various colours of cardboard for models and explained that he had many years experience as a model-maker. ‘Card-board models’, *Builder* (24 March 1849) 141.

<sup>1004</sup> ‘Museum of Architectural Models’, 62.

<sup>1005</sup> ‘Museum of Architectural Models’, 62.

<sup>1006</sup> ‘Museum of Architectural Models’, 62.

<sup>1007</sup> ‘Museum of Architectural Models’, 62.

There were various views from within the profession about why models should be collected and displayed for various aspects of public education. Certain writers took on a nationalist agenda: noting that the British Museum's collection of British antiquities was 'bare and miserable', an 1853 editorial in the *Builder* advised the Museum to create a gallery of British antiquities that would represent Stonehenge and other prehistoric sites through plans, sections, models, and paintings.<sup>1008</sup> Others saw a clear role for collections of models in the definition of the architectural profession. In order to strengthen the RIBA and their mission, William Burges proposed all the architectural societies and their collections should be housed in one location in order to form an 'Architectural Museum'. This museum would include the 'exhibition of ordinary building materials, another of models, and a third of new inventions'.<sup>1009</sup> However, sections of the profession questioned the role that models could and should play in the public dissemination of architecture. In a letter to the *Building News*, an anonymous architect questioned the role that architectural models could play in museums:

[...] as an architect, I really do not think that there is much value in models in museums [...] and that space occupied by them may often be more usefully employed for the exhibition of good photographs.<sup>1010</sup>

Despite the emergence of photography other groups and individuals believed that collections of architectural models held a place in museums, even at the beginning of the nineteenth century. A paper read at the Manchester Society of Architects in October 1904 made a request to the local authority that when the new art gallery was built in Manchester an architectural gallery and museum would be provided for the city. The author proposed that in all towns with an art gallery the municipal authority should form an architectural gallery or museum, which through drawings, casts, and models, 'the various styles the history of architecture might be studied

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<sup>1008</sup> 'British Antiquities in the British Museum', (19 March 1853) 179.

<sup>1009</sup> 'The Architectural Association', *The Architect* (25 December 1875) 368.

<sup>1010</sup> 'Wayside Notes', *Building News* (20 June 1890) 888.

from its earliest days.<sup>1011</sup> The paper suggested that these collections might have a local focus through the acquisition of models of ‘ancient buildings which had been cleared away to make room for town improvements’.

By preserving past monuments in miniature, collections of models offer communities and individuals the opportunity idealise the past and edit the present condition of the built environment.<sup>1012</sup> In this chapter I will explore these ideas of nostalgia and modernity, scale and organisation, representation and purpose through three case studies. The first case study will explore the development of John Soane’s collection of and their display at 13 Lincoln’s Inn Fields (1830-35). Through a close reading of published catalogues, engravings, and Soane’s diary, I will trace how the evolution of the collection affected the house cum museum. The second section will examine the initial intention for, result of, and subsequent dispersal the collection of architectural models by the Royal Institute of British Architects between 1834 and 1868. Using previously under-examined material including manuscript copies of lectures, RIBA council minutes, and reports in the architectural press, I will explore the RIBA’s view that a collection of architectural models would demonstrate the profession’s worth to the public. Finally the third case study will focus on the South Kensington Museum’s early acquisition and curation of models, as well as the logic behind and the reaction to the separation of the models between the ‘Art’ and ‘Science’ collections that occurred in 1860.

Unlike the exhibitions such as the Royal Academy Summer Exhibition or the Architectural Exhibition discussed in the previous chapter, the collections examined here were permanent rather than seasonal, and had a different agenda attached to their formation. Through a study of the models and the reactions they incited, I will examine the reasons why architectural models were collected in the context of a newly formed professional society (the RIBA), public museum (the V&A), and an

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<sup>1011</sup> ‘Manchester Society of Architects’, *Building News* (21 October 1904) 596.

<sup>1012</sup> Susan Stewart critiques the nostalgia at play in this sort of collecting practice and proposes that the past is formed from the collection of ‘presently existing pieces’ S. Stewart, *On Longing*, p.145.

architect's private collection (Sir John Soane's Museum). The chapter is not intended as a complete history of these collections or institutions, but will focus on short periods of their histories and specific aspects of their relationships to the architectural profession at that time.

### 6.1 John Soane and the practice of collecting

John Soane formed a collection of architectural models at his house in Lincoln's Inn Fields from 1804 until his death in 1837. As described in Chapter 1, alongside antique sculpture and casts, Soane displayed models resided in his house for the benefit of his office and visiting students.<sup>1013</sup> Whilst there are office models related to his work at Wimpole Hall and at Tythingham from 1793, Soane began to acquire models in 1804, when he purchased cork models of the Temple of Vesta at Tivoli and the Arch of Constantine made by Giovanni Altieri.<sup>1014</sup> Initially these models were likely displayed as art objects in Soane's house. Margaret Richardson proposes that the creation of a room specifically devoted to the display of models was prompted by the acquisition of a model that represented the 1820 excavations at Pompeii and four cork models of temples at Paestum owned by Soane's former pupil John Sanders.<sup>1015</sup> In order to display these acquisitions Soane purchased a brass pedestal with two stands to show models at two levels.<sup>1016</sup> Between 1826 and 1829, however, the model stand was not displayed in its own room but located in the South Drawing Room on the first floor of No.13 Lincoln's Inn Fields. Throughout this case study I will explore how Soane collected, altered, and adapted the collection of models at Lincoln's Inn Fields. This is crucial, as others have argued, Soane's Museum is both a network of intrinsically meaningful objects *and* a

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<sup>1013</sup> In their study on Soane's collecting practices, Peter Thornton and Helen Dorey have described Soane's collection as 'an anthology of antique architecture and decoration as well as a teaching collection'. P. Thornton and H. Dorey, *Sir John Soane: The Architect as Collector* (New York, 1992) ix.

<sup>1014</sup> P. Thornton and H. Dorey, *Sir John Soane: The Architect as Collector*, p.80.

<sup>1015</sup> M. Richardson, 'Model Architecture: Sir John Soane's Collection of Architectural Models', *Country Life* 183.38 (21 September 1989) 224.

<sup>1016</sup> M. Richardson, 'Model Architecture', 225.

curated collection of objects, 'in which the architecture and collections work together to create complex visual and psychological effects'.<sup>1017</sup>

In 1827 Soane's friend, the British antiquarian John Britton published *The Union of Architecture, Sculpture, and Painting* – a sketch and catalogue raisonné of 13 Lincoln's Inn Fields, accompanied by drawings by Soane's assistants C.J. Richardson, Edward Davis and Henry Shaw. Through this presentation of Soane's 'House and Museum', Britton intended to assert the claims of architecture as a fine art in its own right.<sup>1018</sup> In his description of the house, Britton explained how the South Drawing Room had 'recently been fitted up to contain and display a series of *architectural models*, in cork'.<sup>1019</sup> The main exhibit was the model of Pompeii, a topic that Britton described as an attractive theme for architectural inquiry and speculation. Accompanying this model were the four models of temples at Paestum.<sup>1020</sup>

The collection of models and their location in the museum was not a fixed entity. Instead there was a series of alterations to both the content of the collection and its display in the museum. Between October and December 1829 Soane began a campaign of reorganisation and refurbishment to the upper floors of No.13 Lincoln's Inn Fields. The office day books record how Soane's assistant, C. J. Richardson, prepared the working drawings for these alterations at the end of October.<sup>1021</sup> These alterations were completed by 4 November 1829 when Soane noted that 'moved model into the attic', and by the 11 December 1829 the work

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<sup>1017</sup> S. Thomas, 'A "strange and mixed assemblage": Sir John Soane, Archivist of the Self', *Studies in Romanticism* 57.1 (Spring 2018) 126.

<sup>1018</sup> J. Britton, *The Union of Architecture, Sculpture, and Painting* (London, 1827) xiii.

<sup>1019</sup> J. Britton, *The Union of Architecture*, p.45.

<sup>1020</sup> J. Britton, *The Union of Architecture*, p.45.

<sup>1021</sup> SJS, Office Day Book, I, entries for 23–24, 30–31 October, 4 November 1829.

Following his Note Book, Soane 'settled windows and bookcase for Library & attic room for models' on 6 October 1829. Soane continued to work on the plans for his improvements until 19 October 1829. SJS, Soane Note Book, XIII, no.211, entries for 6 and 19 October 1829, pp.38–39.



was completed.<sup>1022</sup> At the end of November 1829 Soane began work on the first edition of his *Description of the House and Museum*, his own *catalogue raisonné* of his collection at Lincoln's Inn.<sup>1023</sup> Published April 1830, the *Description* featured an engraving that showed how Soane arranged his collection in the Model Room (Fig.78).<sup>1024</sup> Lit by two sash windows and a thin rectangular roof light, possibly influenced by Du Bourg's museum, the model stand sits in the middle on the attic's bare timber floorboards. On the upper level of the pedestal are three cork models of Antique subjects.<sup>1025</sup> At the lowest level, separated from the floor by only a thin sheet of brass, is a timber model of a design for the Board of Trade (M31). On the walls of the room and in recesses formed between the south-facing windows are rendered perspective drawings of Soane's designs for public and private buildings. Judging from Soane's description there is at least one model absent from the illustration which was in fact housed in the room.<sup>1026</sup> Additionally other models were located around the house alongside antique sculptures, casts, and all manner of paintings and decorative art, suggesting a fluidity to the organisation of the collection at this stage.<sup>1027</sup>

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<sup>1022</sup> SJSJ, Soane Note Book, XIII, no.211, entry for 4 November 1829, 7 November 1829, and 11 December 1829, pp.42-44.

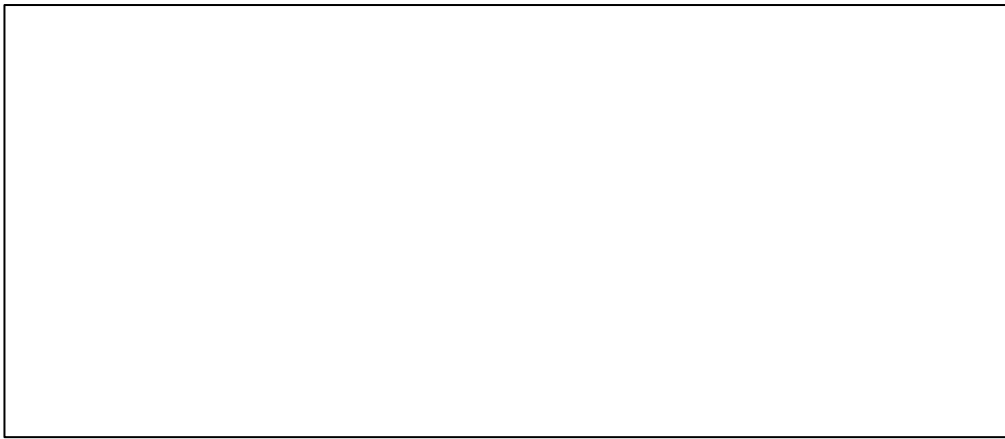
<sup>1023</sup> SJSJ, Soane Note Book, XIII, no.212, entries for 11 Jan 1830, p.51, and 24 April 1830, p.62.

<sup>1024</sup> This engraved view of the Model Room was based on a drawing made by Richardson on 31 December 1829. SJSJ, Office Day Book, I, entry for 31 December 1829.

<sup>1025</sup> Model of the Temple of Zeus or Apollo at Paestum in its own case (MR25), a Model of the Temple of Vesta at Tivoli (MR2), and a second, larger model Model of the Temple of Zeus or Apollo at Paestum (MR5). At the middle level of the pedestal is the model of the excavations at Pompeii (MR1).

<sup>1026</sup> This was a Model of the Arch of Constantine in cork (MR29).

<sup>1027</sup> Shrouded in shadow despite its presence beneath a skylight in Plate XVI, the model of the Temple of Vesta also appears at the centre of the illustration of the Picture Room. Also in the Picture Room, as today, was a timber model of the south façade of the Bank of England (HR4). A second model of the Board of Trade (HR2) in plaster appears on the ground floor in Plate 4, 'Recess behind Apollo'. Housed within the Student's Room was a model of the four orders of architecture in wood (M1421). In the basement there was an unnamed timber model 'terminated with a dome'.



**Figure 78**

1830 Model Room

*Description of the House and Museum*, 1830. Plate 16.

At this stage of the Model Room's development, its location and positioning in No.13 Lincoln's Inn Fields was crucial. As the *Description* noted, the south-facing windows offered panoramic views of London's monuments and environs. In his 1994 essay on the Model Room, Jas Elsner proposes that Soane attempted to miniaturise the 'real' buildings of London and through the relationship between model and miniaturised image, form 'a set of criteria, against which the actual architecture of London is set to be judged'.<sup>1028</sup> As Elsner notes, Soane did not make these suggestions in his text. Soane's description however, does provide a guide to how the models should be experienced: 'The effect of these models, to be duly appreciated, should be seen under the influence of sunshine.'<sup>1029</sup> The ability of an architectural model to replicate the effects of light and shade on a building was a reoccurring theme for Soane.<sup>1030</sup> Rather than attempting to collapse the boundary between model and external world as Elsner proposes, the south-facing windows were intended to provide as much direct sunlight into the room in order to achieve their full effect. Entries in Soane's Note Book described how the builder, Mr Stewart, altered the windows to the Library and Attic room of the house and

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<sup>1028</sup> J. Elsner, 'A Collector's Model of Desire: The House and Museum of Sir John Soane', in J. Elsner and R. Cardinal eds., *The Cultures of Collecting* (London, 1994) p.167.

<sup>1029</sup> J. Soane, *Description*, p.25.

<sup>1030</sup> In his Third Royal Academy Lecture Soane described how models held the potential to 'show the great varieties in the effects produced by the same objects when seen with different lights and shadows upon them'. J. Soane, 'Lecture III', p.531.

replaced the plate glass in them.<sup>1031</sup> Unlike the typical Georgian window with a series of small plate glass rectangles held between sash bars, the newly-installed windows in the Model Room were formed from two long rectangles of glass joined with a single horizontal bar in order to allow as much sunlight into the interior as possible, thereby replicating the effects of Mediterranean light on the models.

The 2015 reconstruction of the Model Room at the Sir John Soane's Museum is not based on the version depicted in the 1830 edition of the *Description*, but on the new composition and location created in 1835. Before discussing this second Model Room there were two key issues that affected Soane's collection of models and its presentation. An Act of Parliament passed in April 1833 ensured that after Soane's death the collection would be preserved in-situ in the house-museum.<sup>1032</sup> Between 1832 and 1834 Soane expanded his collection of models to include additional cork models and twenty plaster models by the model-maker François Fouquet.<sup>1033</sup> Soane began to alter the Model Room in July 1832.<sup>1034</sup> In order to prepare them for presentation, repairs were made to the plaster models of the Bank of England and Board of Trade by the plasterers Robson and Estelle at some stage between 22 February and 26 November 1834.<sup>1035</sup> Further alterations to the second floor ('Chamber Floor') of No. 13 occurred in September 1834 where the south portion of the house that featured a Lobby and Mrs Soane's Bedroom were refashioned into

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<sup>1031</sup> SJSJ, Soane Note Book, XIII, no.211, entries for 6–7 October, p.38, 4 November 1829, p.42.

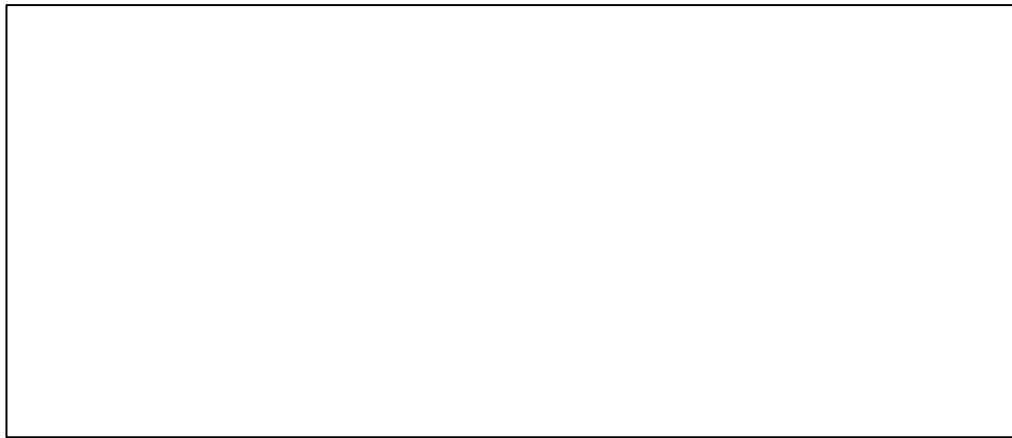
<sup>1032</sup> The public would have access two days per week throughout April, May, and June. 'An Act for Settling and Preserving Sir John Soane's Museum, Library, and Works of Art, in Lincoln's Inn Fields', 20 April 1833, *A Collection of the Private Acts printed by the King's Printer passed in the Third and Fourth Year of the Reign of His Majesty King William the Fourth, being the First Session of the Eleventh Parliament of the United Kingdom of Great Britain and Ireland*, 26 June 1832 to 25 June 1834 (London, 1834)

<sup>1033</sup> In 1832 Soane procured further cork models from a Mr. Foxhall for £8. 6s. that had previously been owned by the architect and collector Charles Heathcote Tatham (1772–1842). Helen Dorey suggests that a model of the Temple of Fortuna Virilis in Rome (M1274) and a model of Stonehenge (M300) were probably the models acquired from Foxhall. P. Thornton and H. Dorey, *Sir John Soane*, p.67.

<sup>1034</sup> SJSJ, Soane Note Book, XIV, no.217, entry for 9 July 1832, p.7.

<sup>1035</sup> SJSJ, Soane XV. K. 3, Private Correspondence, Bill from W Robson and J Estelle, undated, f.5.

a new Model Room. Following these alterations to the second floor the models were moved into the second incarnation of the Model Room on 4 March 1835.<sup>1036</sup>



**Figure 79**

Composite plans of Model Room

Left: Attic plan from *Description*, 1830. Plate 10.

Right: Chamber floor plan from *Description*, 1835. Plate 17.

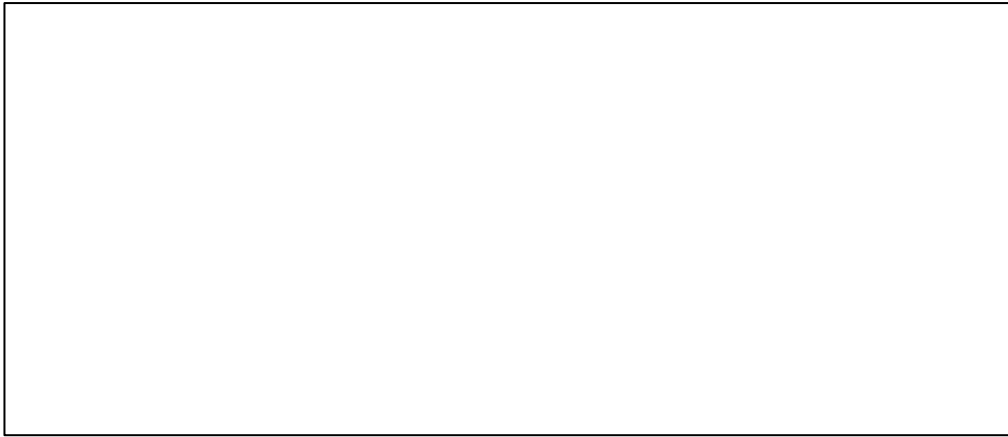
Following these revisions to his house, Soane began a second edition of the *Description* was begun in July 1835.<sup>1037</sup> As with the first edition, C. J. Richardson prepared illustrations for the *Description's* plates including a drawing of the second Model Room (Fig. 80).<sup>1038</sup>

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<sup>1036</sup> SJSJ, Soane Note Book, XIV, no.221, entry for 16 September 1834, p.42; no. 222, entry for 4 March 1835, p.47.

<sup>1037</sup> SJSJ, Soane Note Book, XIV, no.223, entry for 24 July 1835, p.56. By the end of August Soane had finished the text and handed it over to his publisher. SJSJ, Soane Note Book, XIV, no.223, entries for 24–29 August 1835, p.57.

<sup>1038</sup> Although it is not recorded exactly when he produced the drawing, the Day Book indicates that Richardson was recording the house-museum's new arrangement between the end of August and end of December 1835. SJSJ, Office Day Book, VIII, entries for 28 August to 26 December 1835.



**Figure 80**

1835 Model Room

*Description*, 1835. Plate 38.

Drawn from the south-west corner, Richardson's description shows the model stand is centred in the second floor room and lit by two south-facing windows. A narrow band of carpet frames the stand as it trails from the doorway and around to the stand to form a square territory in the middle of the room. Three supports have been added to the original upper level of the stand to display three large cork models including a model of the Temple of Zeus or Apollo at Paestum (MR5)<sup>1039</sup>. Just beneath these, at the upper level of the stand are a series of unidentifiable models in cases.<sup>1040</sup> Next to these are two further models by Fouquet including a model of the Temple of Zeus or Apollo at Paestum (MR27), which in its idealised form sits beneath a cork version of the same building.<sup>1041</sup> As the *Description*

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<sup>1039</sup> The two other models are a model of the four orders of architecture in wood (M1421), and cork model of the Temple of Zeus or Apollo at Paestum in its own case (MR25)

<sup>1040</sup> Following the *Description* and the proportions of the cases these are probably models of the ancient Greek Ionic temple on the Illisus, near Athens (MR28), the Roman Temple of Augustus at Pola in Istria (MR26), the Erechtheion on the Acropolis (MR24) produced in plaster by François Fouquet.

<sup>1041</sup> Sandwiched between the two Fouquet models is a cork model of the Tomb of the Horatii and Curiatii, outside Rome (MR4). To the right of the Fouquet model of Temple of Zeus or Apollo at Paestum is a cork model depicting the remains of two columns and entablature of the Temple Jupiter Tonans (or Temple of Divus Vespasianus) in Rome (MR7). Lurking behind in a case is a model of the Tower of the Winds, Athens (MR11), again by Fouquet

explains, there are further Fouquet models behind the stand, on the mantelpiece.<sup>1042</sup> Reflected in the mirror above the mantelpiece is a third cork model of a temple at Paestum, the Temple of Hera (MR22). Opposite the chimney, on the middle level of the stand, are further plaster models by Fouquet.<sup>1043</sup> At this level, on the other side of the stand is a model of the Arch of Constantine in cork (MR29). Most of this level is taken up by the large-scale model of Pompeii (MR1) with the cork model of the Temple of Vesta at Tivoli (MR2) perched on the corner. Directly beneath the cork and plaster models of temples at Paestum are three large-scale models of the columns from these temples (MR8-10).

Many scholars have focused on the differing materials of the two sets of models. In one set cork was used to reproduce the current ruinous state of the antique monuments, minus the alterations and changes to their structure since antiquity. In the other set plaster of Paris was used to represent the monuments in their idealised and reconstructed form. Valentin Kockel suggests that these materials allowed for two different perspectives on the same buildings from antiquity: cork emphasised the picturesque and temporal character of the monuments whilst the flawless, pure white plaster models presented a classical idea that could be reconstructed through scholarly study.<sup>1044</sup> None of the models displayed in either incarnation of the Model Room attempted to portray *directly* the materiality of the buildings they represented.<sup>1045</sup> Several contemporaries of Soane discussed the effects of particular model-making materials in order to convey ideas about a building's construction or condition. W. H. Leeds cited the example of plaster models whose material form did not correlate with a built reality and suggested that plaster models rather 'show

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<sup>1042</sup> According to *Description* (1835) p.87, these are models of the Choragic Monument of Lysicrates as executed at St Cloud, Paris, (MR76), the Arch of Hadrian, Athens (MR74), and 'a monument' at Palmyra, Syria (MR72).

<sup>1043</sup> Models of a monument at Mylasa (MR15) and the Temple of Vesta (MR13)

<sup>1044</sup> V. Kockel, 'Plaster Models and Plaster Casts of Classical Architecture and its Decoration', in R. Frederiksen and E. Marchand eds., *Plaster Casts: Making, Collecting and Displaying from Classical Antiquity to the Present* (Berlin/New York, 2010) p.424.

<sup>1045</sup> As Mari Lending describes, throughout the nineteenth century there were many discussions about the replication of colour, texture, and weathering on collections of architectural casts. M. Lending, *Plaster Monuments*, pp.94-95.

a degree of beauty which is desirable, than one which is attainable.<sup>1046</sup> Later in 1839 the *Penny Cyclopædia* noted that plaster models were very beautiful and neat but their pure whiteness was ‘a fault’, the author proposed, ‘because it prepossesses the eye too much, and shows the building of a pure uniform hue, many degrees whiter than the whitest stone.’<sup>1047</sup> In 1860, as a part of a short article that offered advice to young architects, the *Building News* described how the whiteness of newly finished stone was distinctly different from ‘the unnatural chalky complexion of a plaster model’.<sup>1048</sup> The article proposed that instead of ice-white examples shown to the public and other members of the profession, plaster models should be mixed with colour or exposed to dirt. Commentators also discussed the merits and problems of model-making with cork. The *Penny Cyclopædia* entry concluded by describing ‘*portrait* models of celebrated edifices’, which it noted were often housed in libraries or galleries. Whilst the entry did not discuss the purpose of these models, it categorised them as either portraying buildings as ‘reconstructions of the original structures or dilapidated by time’.<sup>1049</sup> For the latter, the entry noted, ‘cork is the material usually made use of, it being well calculated to express of itself the ruggedness and flaws of decayed stone buildings’.<sup>1050</sup> A later article on model making techniques in the *Building News* suggested that cork held the advantage of being easily worked but was ‘more suitable for models of old buildings and ruins than for new buildings’.<sup>1051</sup> Whilst quick to carve, the author proposed, the accuracy and detail of buildings, including pinnacles, spires, and mouldings, would be lost or altogether ignored due to the material quality of cork.

Jas Elsner proposes that the series of models of antique buildings form all of the buildings from which Soane’s prized architectural fragments and casts (exhibited throughout the rest of his house-museum) were taken. Seeing Soane’s collection of

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<sup>1046</sup> W. H. Leeds, ‘Modes of Architectural Representation’, 454.

<sup>1047</sup> ‘Models, Architectural’, p.294.

<sup>1048</sup> ‘Advice and Counter-Advice’, *Building News* (3 February 1860) 69, ft.\*.

<sup>1049</sup> ‘Models, Architectural’, p.294.

<sup>1050</sup> ‘Models, Architectural’, p.294.

<sup>1051</sup> ‘Architectural Modeling’, *Building News* (16 December 1867) 851.

architectural fragments as a synecdochic strategy where a part of a building is used to represent the whole, Elsner argues that Soane's approach in the Model Room was to use a 'microcosmic method in which the scientifically measured and scaled-down model *represents* the real building', thereby creating a newly fashioned architectural history of antiquity that distorts both geography and time.<sup>1052</sup> Despite this distortion, I propose that in both the materiality of the models and Soane's text in the *Description* there is a distinction made between the ruined model and the idealised one. Similarly the models related to Soane's practice are given their own portion of the model stand, their own paragraph in the *Description*, and their own material (timber). The lowest level of the stand only displays models relating to Soane's own architectural practice: a model of an engine for driving piles in wood (MR80), a timber model of a design for the Board of Trade (M31) and a painted timber model for the Bank Stock Office at the Bank of England (MR20). On the other side is a model for the south-east angle of the Bank of England (MR16) and, out of view, a series of other models related to his practice.<sup>1053</sup> Whilst overall as Elsner describes the models form a single collection, I propose that there are still distinct categories or taxonomies within that collection created by the curation of the models on the stand. It is hard however, not to see in the Model Room an attempt by Soane to connect the legacy of his work with the classical canon. Through the accumulation and deployment of objects, antiquarians and collectors constructed spaces that never existed in the classical past in order to evoke a world that similarly only existed in their imagination.<sup>1054</sup> Surrounded by these symbols of classicism – which were often contemporary depictions rather than 'original material' – the collector was able to realise in physical form his dreams and fantasies. United by a common medium in the form of architectural models, I

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<sup>1052</sup> J. Elsner, 'A Collector's Model of Desire', pp.162-163.

<sup>1053</sup> The *Description* listed these as a model of the Pitt Cenotaph at the National Debt Redemption Office (MR40), a model for the Law Courts at Westminster in the Gothic style (MR30), and a plaster model of the New State Paper Office (MR18, a model we examined in Chapter 5). J. Soane, *Description of the House* (1835) p.88.

<sup>1054</sup> V. Coltman, 'Classicism in the English Library', *Journal of the History of Collections*, 11.1 (1999) 36



propose that Soane is able to construct a world where the canonical monuments of antiquity are comparable to his own buildings – both the complete and unrealised.

## 6.2 The RIBA Collections

At the official opening meeting of the Royal Institute of British Architects on 15 June 1835, T. L. Donaldson, one of the founding members, gave an address that described how the RIBA was forming:

‘A Museum of antiquities, models, casts, specimens of materials used in building, and of all such other objects as may tend to the illustration of the Arts and Sciences in their application to design and construction.’<sup>1055</sup>

As outlined by Donaldson in the complete version of his address, there was a desire for the RIBA and its members to use models as a part of the facilitation of knowledge within the profession, an aspect of professional practice that I studied in the previous chapter. Donaldson noted the benefits that models brought to the study and intellectual discussion of architecture:

‘Models also of ancient or modern buildings will be at once instructive and interesting, as they tend to develop more definitely all the beauties, which result from seeing an edifice under different points of view.’<sup>1056</sup>

For Donaldson the potential for instruction brought about by a model was due to its three-dimensional nature. Owing to its three dimensionality a viewer could interact with the ‘edifice’, from multiple viewpoints. The importance of architectural models to the RIBA was reinforced a year later by P. F. Robinson. In the Report of Council read at the Annual General Meeting on 22 May 1836 Robinson provided a definitive rationale for displaying architectural models ahead of other forms of representation, as a ‘model conveys so perfect an idea of the object

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<sup>1055</sup> ‘Address’, *RIBA Transactions* (1835–1836) 7.

<sup>1056</sup> RIBA, MS.SP/4/1, ‘Address delivered by Donaldson at the official opening meeting of the [Royal] Institute of British Architects on 15 June 1835’, p.7.

contemplated'.<sup>1057</sup> Robinson explained that the RIBA had even greater ideas for the scope of their collection:

[The RIBA are] anxiously looking forward to the time when we may possess a museum enriched with representations of the most celebrated buildings of ancient Greece and Rome, with those of our own country, made to the same scale.<sup>1058</sup>

Later described as a 'model room', in this proposed RIBA collection, British buildings, when arranged alongside Antique examples, would acquire a position in the lineage of wider European architectural history. Through the medium of models, Robinson proposed, 'the public may, by degrees, acquire some knowledge of a profession classed by universal consent among the most liberal'.<sup>1059</sup>

In reality how did the RIBA's collecting policy play out? Donations and bequests from members, exhibitors at meetings, and other benefactors were the main sources for the RIBA's collections.<sup>1060</sup> Some members made donations of money for the RIBA to purchase items as they saw fit. Others directly donated objects to the collections such as models. An evaluation of the comments made by Donaldson, Robinson, and Earl de Grey, indicates that during the initial stages of the establishment of the RIBA there was a belief that the collecting of architectural model had a series of positive uses for the development of professional practice including aesthetic instructive, and public legibility of architecture through the ability to represent buildings in three-dimensional form. Through these multiple aspects, the use of models offered clear benefits to the institute's aim to disseminate architectural knowledge. Furthermore, the formation of an evolutionary canon of models, which relied on scale and miniaturisation to make a comparisons between

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<sup>1057</sup> 'Report of the Council', *RIBA Transactions* (1835–1836) 24.

<sup>1058</sup> 'Report of the Council', *RIBA Transactions* (1835–1836) 24–25.

<sup>1059</sup> 'Report of the Council', *RIBA Transactions* (1835–1836) 26–27.

<sup>1060</sup> Within the institute's regulations was a series of forms that defined the correct language to use when donating or bequeathing models and other items to the society: 'Section XIX of Donations and Bequests', *RIBA Transactions* (1835–1836) 18.

buildings in different physical locations and temporal epochs, the RIBA sought to situate British architecture within a broader historical narrative and establish a British School (or style) of architecture.

It is interesting to compare the RIBA's initial desires for a comparative museum of models of historical (both Antique and domestic) and contemporary buildings with the types of model that were actually donated to them (Appendix 1). Of the twenty models donated to the institute, nine of these there were of Antique buildings, with other subjects including contemporary buildings, historic domestic architecture, and technical products also represented in the collection. Whilst the records of the institute are occasionally imprecise, meeting and council minutes indicate there was no attempt to purchase a set of Fouquet models such as was found in the collections of Nash, Soane, and the Bodleian Library. Instead the most prominent model in the collection was a specimen of the contemporary Gothic style. Regrettably demolished in 1920, Cossey (or Costessey) Hall was the work of J. C. Buckler who refashioned and extended an existing the Tudor mansion for Lord Stafford Jerningham between 1826 and 1836<sup>1061</sup> Unfortunately the model also no longer exists. Made by Thomas Dighton, whose importance as a model-maker was discussed in Chapter 4, the model of Cossey Hall drew much praise from J. C. Loudon in the *Architectural Magazine*. Loudon, who visited the model at Dighton's residence at 12 Mount Street in Mayfair and subsequently described the model in great detail:

‘The fidelity and beauty which these details have been executed by Mr. Dighton are almost beyond praise [...] We could wish to see Mr. Dighton employed in modelling some of the other fine buildings in the country’.<sup>1062</sup>

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<sup>1061</sup> My thanks to Joshua Mardell for his kind assistance on J. C. Buckler and his work at Cossey Hall.

<sup>1062</sup> ‘The Model of Cossey Hall’, *Architectural Magazine* (June 1834) 182–183.

A year later W. H. Leeds also praised Dighton's model for Cossey Hall, which he saw as a lodestar for a future architectural museum that would elevate wider tastes in architectural style:

‘Cossey Hall is a exceedingly interesting specimen of [Dighton’s] ability. Were a series of such models, exhibiting some of our finest works of architecture, and all executed upon the same scale, made the nucleus of a National Architectural Museum, there can be no doubt of its leading to improvement in the public taste.’<sup>1063</sup>

Despite the failure of that museum to be realised at the RIBA or elsewhere, Dighton's model of Cossey was still cited twenty years later in an essay on domestic Gothic architecture in the *Builder*, which praised the model held at the RIBA, describing it as ‘one of the best specimens of Gothic architecture in the kingdom’.<sup>1064</sup>

Despite moving from their first premises at 43 King Street, Covent Garden to 16 Grosvenor Street, Mayfair in 1837, by May 1838 the increasing size of the RIBA's library and collection of models, casts, and drawings was already threatening to outgrow the new apartments, and the RIBA's application to the Government for larger accommodation in a public building was unsuccessful.<sup>1065</sup> After the formation of the Architectural Union Company in May 1857, however, the 1858 Report of Council noted that the RIBA's new apartments at 9 Conduit Street would include a large room for casts and models.<sup>1066</sup> Whilst the collection survived the RIBA's relocation to 9 Conduit Street in April 1859, there are no further recorded discussions about arranging the models. In fact, it appears that the collection of architectural models quickly became redundant, possibly in relation to the establishment of the Architectural Exhibition in 1849 and the South Kensington

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<sup>1063</sup> W. H. Leeds, ‘Modes of Architectural Representation’, p.454, \*.

<sup>1064</sup> ‘Domestic Gothic Architecture’, *Builder* (29 September 1855) p.460.

<sup>1065</sup> RIBA, 1.2.1, I, minute of a meeting held on 7 May 1838.

<sup>1066</sup> RIBA, 1.2.1, IV, minute of a meeting held on 3 May 1858.

Museum in 1857. First the RIBA models were moved into storage. As there were no storage facilities immediately available Charles Nelson (secretary of the RIBA) wrote to Council in June 1867, requesting that shelving for models and casts should be installed in the basement of 9 Conduit Street.<sup>1067</sup> In January 1868 Thomas Hayter Lewis, who had recently been appointed Professor of Architecture at University College London, wrote to the RIBA council having heard that the collection of casts and models in the RIBA basement was being sorted out and some given away. Lewis requested for some of the casts and models for use in drawing classes at University College, a request that was granted.<sup>1068</sup>

The overall trajectory of the RIBA's model collection indicates that there was an initial grand idea at the foundation of the institute but one that was never implemented. Instead the collection was formed from an assortment of donated models, presumably produced from different materials and at different scales. There is no evidence that the RIBA solicited or commissioned models in any form: individuals wrote to Council to offer items or speakers donated models to the collection after using them in a meeting. By 1868 it appears that the collection was viewed as redundant by the RIBA, due to the Architectural Exhibition (also present at 9 Conduit Street) and the emergence of the governmental collections at the South Kensington Museum.

### 6.3 The Early History of Architectural Models at the South Kensington Museum

'The object of a Metropolitan Establishment was to create, exhibit, and distribute the most improved illustrations, models, and diagrams, both in Science and Art, which should be readily accessible to the public at large,

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<sup>1067</sup> RIBA, 1.2.3, LC/5/7/10, Letter to Council from Charles Charnock Nelson, 3 June 1867.

<sup>1068</sup> RIBA, 1.2.3, LC/5/7/10, Letter to Council from Thomas Hayter Lewis, 14 January 1868.

According to a letter from Albert Richardson these models appear to have survived an air raid in 1941 (RIBA Information File, Albert Richardson) but were probably removed from the university in the 1960s by Richard Llewelyn-Davis. My thanks to Charles Hind for this information.

but especially to all persons throughout the country interested in education.<sup>1069</sup>

Established in 1857 following the transfer of the Department of Science and Art from the Board of Trade to the Committee of Council on Education, the South Kensington Museum held a series of architectural models within its collections under assorted groupings and classifications. Building on the scholarship of John Physick and Anthony Burton, and more recently Fiona Leslie, Isabella Flour, and Julius Bryant, this section will offer an analysis of the models held in the collections during the nineteenth century and their contribution to the understanding of architectural practice in the public sphere.<sup>1070</sup> In 1860 when the museum separated into 'Art' and 'Science' divisions, the heterogeneous nature of the museum increased with the 'Science' portion containing collections of naval models and a Food Museum. In his introductory address in November 1857 on the Department's purposes, Henry Cole described how, 'by means of electricity [electrotypes] and photography the great Art-treasures in Europe, will be collected for the benefit of this country'.<sup>1071</sup> Following the example of museums in Dresden, Berlin, and Vienna, the medium for the museum's didactic message would be the copy. The architectural collections of the museum were also constituted by copies in the unified displayed union of models and casts. I propose that like electrotypes and photographs, models are a form of reproduction – they are not the *thing* itself but represent it. Furthermore, a model represents something in a way that it becomes more legible than the original object as a viewer is not limited by

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<sup>1069</sup> *First Report of the Art and Science Department of the Committee of Council on Education* (London, 1854) x.

<sup>1070</sup> J. Physick, *Victoria and Albert Museum: The History of Its Building* (London, 1982); A. Burton, *Vision and Accident: The Story of the V & A* (London, 1999); F. Leslie, 'Inside Outside: Changing Attitudes Towards Architectural Models in the Museums at South Kensington', *Architectural History*, 47 (2004) 159-200; I. Flour, 'On the Formation of a National Museum of Architecture: The Architectural Museum versus the South Kensington Museum', *Architectural History* 51 (2008) 211-238; J. Bryant, *Art and Design for All: The Victoria & Albert Museum* (London, 2012).

<sup>1071</sup> H. Cole, 'Extracts from an Introductory Address on the Functions of the Science and Art Department', *Fifty Years of Public Work* (London 1884) II, p.288

geography, time, or space. In this sense, models fitted perfectly within both the museum's didactic agenda and its communicative techniques.

In the early history of the South Kensington Museum there are moments that demonstrate how models were used as a medium to transfer knowledge about architectural styles, technical products, and historic buildings to the visiting public. The architectural historian James Fergusson proposed that architecture had become 'the privilege and exclusive property of a small and limited class of persons' in a lecture given on 21 December 1857 at the South Kensington Museum.<sup>1072</sup> The consequence of this retraction, Fergusson believed, was the narrowing of architecture 'into the reproduction of some technical or archaeological form of art, rather than becoming the expression of the nation's wants and feelings'.<sup>1073</sup> Fergusson proposed that 'the establishment of an architectural museum' was the best means of addressing this shortfall.<sup>1074</sup> Fergusson acknowledged private collections, including Sir John Soane's Museum, and the Architectural Courts at the Great Exhibition, as useful but limited in their ability 'to improve the taste of the nation'.<sup>1075</sup> He also dismissed existing institutional collections, including the RIBA, as being, 'far too small to be considered as a representation of the art'.<sup>1076</sup> Instead, Fergusson proposed a new national museum that would consist of a collection of casts of architectural ornaments of every style. Architectural models of entire buildings 'must be supplied' to contextualise the displays.<sup>1077</sup> Alongside these models, Fergusson believed that a National Museum of Architecture would be incomplete without a portion dedicated to the technical aspects of construction. This portion of the museum should include samples of building materials, new inventions, and 'like the fine art branch, should be accompanied by models of roofs, floors, foundations, and other parts of construction, more especially those which are

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<sup>1072</sup> 'On a National Collection of Architectural Art', *Builder* (2 January 1858) 8.

<sup>1073</sup> 'On a National Collection of Architectural Art', 8.

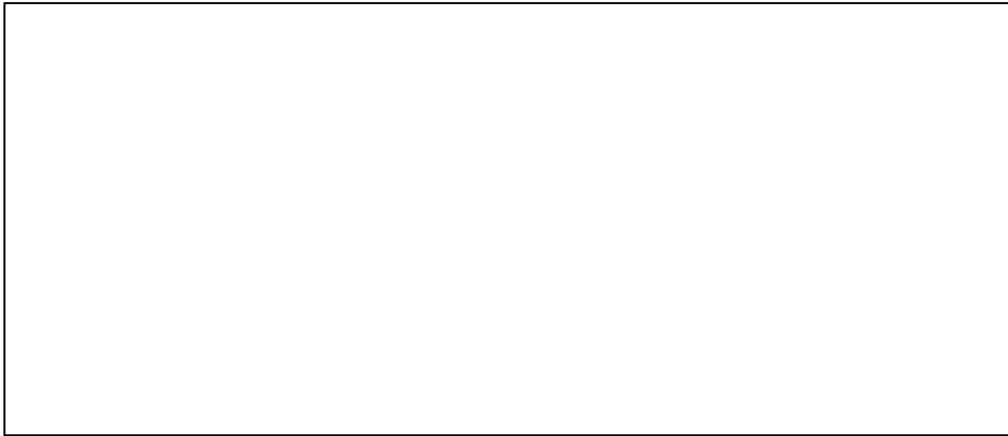
<sup>1074</sup> 'On a National Collection of Architectural Art', 8.

<sup>1075</sup> 'On a National Collection of Architectural Art', 9.

<sup>1076</sup> 'On a National Collection of Architectural Art', 9.

<sup>1077</sup> 'On a National Collection of Architectural Art', 9.

of importance in a sanitary or fire-proof point of view'.<sup>1078</sup> Fergusson proposed that the cumulative effect of these two aspects 'would convey a mass of information which has never yet been accessibly to the public, [...] in a form which all could comprehend'.<sup>1079</sup> Fergusson's proposals are important as this content and form was the basis for the architectural collections at the South Kensington Museum.



**Figure 81**

Plan of the South Kensington Museum, June 1857

*Guide to the South Kensington Museum* No.1 (London, 1857)

A plan of the South Kensington Museum from 1857 shows us the layout of the site at that time (Fig.81). Brompton Park House was appropriated by the museum for use as the Art School. To the north-east was James Pennethorne's 'Junction', a low single-storey building with projections to the north and south that contained offices, storerooms, and a circular lecture theatre, which led to the exposed iron galleries, commonly known as the Brompton Boilers that housed the collections from 1857 until the early 1860s. Not unlike the range of exhibits at the 1851 Great Exhibition, there were a variety of collections contained within the South Kensington Museum including the Museum of Ornamental Art, Education Collections (including equipment and teaching apparatus), the Architectural

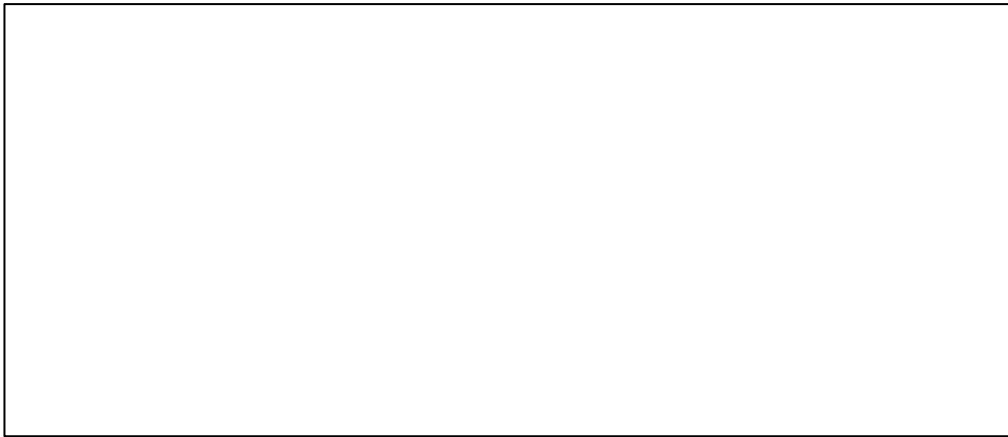
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<sup>1078</sup> 'On a National Collection of Architectural Art', 9.

<sup>1079</sup> 'On a National Collection of Architectural Art', 9.



Museum, and Sculpture of the United Kingdom (including the Sheepshanks bequest of paintings).



**Figure 82**

Museum of Ornamental Art, South Kensington Museum, 1857.  
V&A MA/32/804, Guard Book

In its early incarnation, the South Kensington Museum displayed its collection of architectural models in two distinct galleries. First, the Museum of Ornamental Art, a permanent national collection formed from the donations of Queen Victoria and other prominent private collectors alongside existing objects transferred from Marlborough House (Fig.82). The collection, as the 1857 *Guide to the South Kensington* explained, was ‘intended for the instruction of the public in decorative or ornamental art’.<sup>1080</sup> With this objective in mind objects were displayed in one of seventeen classifications based either the technical skill or material.<sup>1081</sup> Located in the west corridor of the Brompton Boilers, the classification ‘Division 1 – Sculpture’ contained carvings in various materials, bronzes, and ‘Models in Wax, Plaster, etc.’.<sup>1082</sup> As can be seen in a photograph of the west corridor from c.1857 and described in the *Guide*, the first objects a visitor saw on entering the Museum

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<sup>1080</sup> South Kensington Museum, *Guide to the South Kensington Museum* 1 (London, June 1857) p.2.

<sup>1081</sup> Sculpture, for instance, had its own classification that encompassed many different types of material, whereas other classifications were reserved for a specific skill relating to a material technique, e.g. leather-work, glass painting, etc.

<sup>1082</sup> *Guide to the South Kensington Museum* 1 (London, June 1857) p.2.

were an assemblage of ornamental plaster casts, moulded from details of ancient edifices or from fragments persevered in museums, hung in bays from projecting screens that ran perpendicular to the Brompton Boiler's column. These screens were labelled – the one in the photograph reads 'Antique – Greek & Roman'. Set between the screens were a series of pedestals mounted with glass cases that contained plaster of Paris models of antique monuments made by Fouquet. This set of Fouquet models were previously owned by John Nash (as described at the beginning of this chapter) and were purchased by the Office of Works in 1857.<sup>1083</sup> The 1857 catalogue described how the models of 'celebrated buildings' were accompanied by photographs on each pedestal, 'which represent these buildings in their actual state of ruin and dilapidation'.<sup>1084</sup> Beyond the bay dedicated to Antique architecture were bays containing 'casts of the revived classical or renaissance style of Italy, France, Flanders, etc.'.<sup>1085</sup> Although not legible in the photograph, opposite these in each bay were 'hung drawings, engravings, and photographs, illustrative of architecture and ornament'.<sup>1086</sup> Contemporaries commented upon the plurality of media used alongside the models. A few months after the museum had opened the *Builder* described how a visitor, by comparing the models with the casts and photographs, would, 'without travelling', be able 'to form a good idea of those works which by name are so familiar'.<sup>1087</sup> The instructional and informative aspects of the display had been alluded to a few months early by the *Builder* who explained the museum's location and its objectives, alongside a brief description of its architectural collections by quoting the first museum *Guide*. In summary the journal described the museum's intention to support artistic education:

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<sup>1083</sup> On the left hand side of the photograph, behind the column, is the Model of 'a monument' at Palmyra that formed part of a larger monument known as the *Tetrapylon*. From right to left across the photograph is a model of the Sepulchral Temple at Palmyra, a model of the Erechtheion on the Acropolis, and a model of the Temple of Antoninus and Faustina in the Forum Romanum in Rome. In the far-left hand corner of the photograph is another Fouquet model, its subject unidentifiable due to the sunlight on the model's case. *Fifth Report of the Art and Science Department* (London, 1858) p.71.

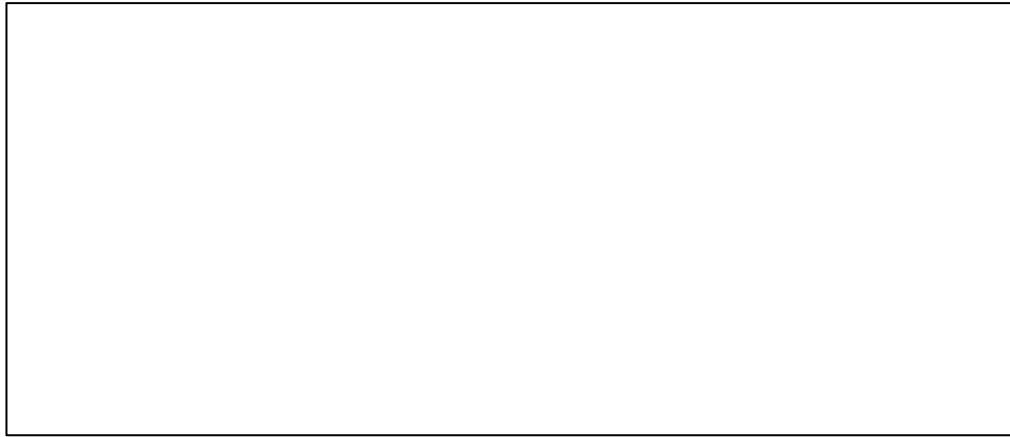
<sup>1084</sup> , *Guide to the South Kensington Museum* 1, p.2.

<sup>1085</sup> , *Guide to the South Kensington Museum* 1, p.2.

<sup>1086</sup> , *Guide to the South Kensington Museum* 1, p.2.

<sup>1087</sup> 'The Brompton Museum', *Builder* (29 August 1857) 496.

‘Even from this brief outline it will be evident to our readers that the museum at Brompton may be made to play an important part in the education of the rising generation.’<sup>1088</sup>



**Figure 83**

Architectural Museum, South Kensington Museum 1857  
V&A MA/32/798, Guard Book

In addition to the models exhibited in the Museum of Ornamental Art, another portion of the Brompton Boilers contained ‘The Architectural Museum’, a collection formed by George Gilbert Scott and a group of architects in 1851 with the intention to establish a ‘National Museum of Architecture’. Recent essays on the Architectural Museum by Edward Bottoms and Isabelle Flour have detailed the scope and purpose of this collection.<sup>1089</sup> In general the collection was focused on ornamental casts. Flour describes the museum as a three-dimensional catalogue of ornamental designs to be used in contemporary architectural practice.<sup>1090</sup> In addition to its intention as a physical reference library, the Architectural Museum’s self-stated purpose was ‘to improve and perfect the art workmanship so deficient at

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<sup>1088</sup> Leading article, *Builder* (27 April 1857) 358.

<sup>1089</sup> E. Bottoms, ‘The Royal Architectural Museum’ 115-139; I. Flour, ‘On the Formation of a National Museum of Architecture’ 211-238.

<sup>1090</sup> I. Flour, ‘On the Formation of a National Museum of Architecture’, 214.

the present time'.<sup>1091</sup> The 1857 *Guide* to the collection listed 61 'specimens' that were arranged in the central bay of the West Gallery of the Brompton Boilers (Fig.83). Alongside whole building elements, figural sculpture, and casts, there were a number of architectural models. On a table there were models of Windsor Castle and the Castle of Saxe Colburg Gotha, exhibited by Queen Victoria. Neither of these models appears to have survived, although the model of Windsor Castle is visible in the right-hand side of a photograph from 1857 (Fig.83). This model was probably made by John Bellamy, who the *ILS* recorded as having exhibited a model of Windsor Castle, 'on a scale of one-tenth of an inch to the foot and covers nearly ninety square feet', to the Royal family in November 1857.<sup>1092</sup> On another table, further down in the gallery, were a suite of unnamed models of cathedrals and churches, donated by the Ecclesiological Society.<sup>1093</sup>

At this time several key members of the architectural profession were consulted by the Committee of Council on Education as to the format, layout, and organisation of the 'National Museum for Architecture' at South Kensington. Two reports from 1857 written by George Godwin, T. E. Donaldson, and F. C. Penrose were published in the *Builder* – Godwin was the journal's editor – following readers' requests in September 1859. Focused on the collections of architectural casts, the first report described the collection as 'an educational series illustrative of the progress of architectural detail and decoration'.<sup>1094</sup> Within the collection the first report advised maintaining stylistic distinctions (Greek, Roman, Renaissance, etc.) within a chronological sequence. Godwin, Donaldson, and Penrose proposed that

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<sup>1091</sup> *Architectural Museum, Prospectus* (London, 1856) p.2.

<sup>1092</sup> 'Model of Windsor Castle', *ILS* (14 November 1857) 475.

<sup>1093</sup> It is likely that these models were a group donated by the Ecclesiological Society, and included models of Salisbury Cathedral and St. Mary's Redcliffe, Bristol, as well as models of memorial crosses and the font at Winchester Cathedral. These models were also displayed on a table when the museum was at Canon Row. Ed Bottoms suggests that these models are the models of St Mary's Bristol (V&A SCP L.7) and Salisbury Cathedral (V&A SCP L.9), which remain in the care of the Sculpture Department at the V&A. *Architectural Museum, Catalogue* (London, 1855) p.44.

<sup>1094</sup> 'The Architectural Collections in the Museum at Brompton', *Builder* (17 September 1859) 614. The second report consisted of a series of questions in response to the Committee of Council on Education about the collection and arrangement of casts.

both the Museum of Ornamental Art and the Architectural Museum would become more useful for public instruction if they were categorised within the same system with ‘specimens arranged in a like sequence’.<sup>1095</sup> The role of the architectural models within this curatorial structure was clear. As the first report described:

‘The system, already commenced, of placing near the casts models of the perfect building from which they are taken, and photographs, engravings, and drawings, showing its present and original condition, is excellent, and may be carried further with peculiar usefulness.’<sup>1096</sup>

For Godwin, Donaldson, and Penrose the collecting and display of the architectural models at the South Kensington Museum was both a synecdochic strategy and a microcosmic method. For the former, alongside photographs the models offered a reference point for the surrounding cast fragments that allowed connections to be made by viewers between distant and distant objects. With regards to the latter, the idealised condition of the models represented existing narratives in a new visual form that was able to distort both geography and time. The purpose of both of these strategies and the collection itself was clear. The concluding portion of the report describes the purpose of the collection, ‘as affecting the progress of art and its noblest works, or the improvement of taste in the application of art’.<sup>1097</sup> Key individuals involved in the foundation of the South Kensington Museum took a keen interest in the architectural collections. In his introductory address at the formation of the Science and Art Department, Henry Cole lamented that the public had been deprived of the collections during their time at Marlborough House and at Cannon Row. Cole proposed that uniting these collections and supplementing them with new additions, ‘betoken what an Architectural Museum may become, if the individuals and the State will act together’.<sup>1098</sup> Whilst a united Architectural Museum remain unrealised, over the years Cole and other museum administrators made changes to the collection and its categorisation and layout,

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<sup>1095</sup> ‘The Architectural Collections in the Museum at Brompton’, 614.

<sup>1096</sup> ‘The Architectural Collections in the Museum at Brompton’, 614.

<sup>1097</sup> ‘The Architectural Collections in the Museum at Brompton’, 614.

<sup>1098</sup> H. Cole, ‘Extracts from an Introductory Address’, *Fifty Years*, II, p.292

which affected how architectural models were displayed, used, and understood by public and profession alike.

#### 6.4 Museum of Construction: Models and the Separation of Science and Art at the South Kensington Museum, 1858–83.

Fiona Leslie proposes that the shift in the collecting strategy at the South Kensington Museum resulted in a change in the classification of objects and the purpose of Museum displays, away from education and towards connoisseurship.<sup>1099</sup> Just as the museum was an agglomeration of buildings, some new and purpose-built, others found and appropriated, the collections of the museum were an overlapping and contradictory series of objects, something Henry Cole identified when he described the museum as a temporary refuge for transient collections.<sup>1100</sup> In the example of the Museum of Construction I will demonstrate how architects, curators, and others tried to make sense of the architectural models held by the museum and offer some form of curatorial or pedagogical direction to the display of the objects.

Published in 1859, the *Sixth Report of the Art and Science Department* described how rearrangements were made in the Museum of Ornamental Art in line with the suggestions made by Godwin, Donaldson, and Penrose. The report explained how a systematic list of objects and labels for those objects was in the process of preparation. The most prominent development, however, was the growth and development of the collection of models related to construction and building materials. Captain Francis Fowke, the Royal Engineer in charge of this collection, noted how these exhibits had been impeded by a lack of space in the museum, but additional space had been made for the collection, which was subsequently rearranged and, ‘as far as possible classified with a view to its utility for immediate

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<sup>1099</sup> F. Leslie, ‘Inside outside’, *Architectural History* 47 (2004) 178

<sup>1100</sup> H. Cole, ‘Scandalous Stage’, *Fifty Years of Public Work* (London 1884) II, p.55.

reference.<sup>1101</sup> This development was consistent with rest of the museum's curatorial strategy. In 1860 Henry Cole instigated a shift in how the South Kensington Museum classified and organised its collections. By introducing two divisions there was now a clear distinction made between Art and Science. The Art Division still included 7,000 'specimens' separated stylistically into the (Classical) Museum of Ornamental Art and the (Gothic) Architectural Museum. The Science Division included the Museum of Construction featuring models of construction and examples of domestic and foreign building materials and was located in the Museum's East Corridor.<sup>1102</sup> In the 1861 catalogue there are no architectural models displayed within the auspices of the Museum of Ornamental Art. Instead, all the architectural models were exhibited as a part of the newly formed Museum of Construction. Under the control of Francis Fowke and assisted by Henry Sandham who edited the catalogue, the collection was obtained through donations and purchases following the 1855 Paris Exhibition. Other objects were donated by the Royal Commission for the Exhibition of 1851 or lent by individuals and companies (who were obliged by the museum regulations to provide their objects for a minimum of twelve months).<sup>1103</sup>

The curation of the Museum of Construction was based on the type of material represented or displayed, including distinct sections for different types of stone, timber, and metalwork. Section M of the Museum of Construction was devoted to 'Models of Construction, &c.'. This included Nash's set of Fouquet models and a newly acquired plaster model of the 'Marble Arch', which were exhibited alongside twelve models that depicted roof construction and two models of staircases. Interspersed between these were several models for new inventions in building technology, including innovative sash windows and steel shutters, the latest developments in ventilation systems and fireplaces. Loans to the collection included

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<sup>1101</sup> *Sixth Report of the Art and Science Department of the Committee of Council on Education* (London, 1859) p.430.

<sup>1102</sup> South Kensington Museum, *Guide to the South Kensington Museum* 8 (London, April 1860) p.2.

<sup>1103</sup> 'Construction and Building Materials', *Catalogue of the Collection Illustrating Construction and Building Materials in the South Kensington Museum* (London, 1861) p.7.

a pair of sectional models of the roof above King's Cross station lent by Lewis Cubitt and accompanied by diagrams, the model of a roof for a chapel at Highgate by T. Roger Smith, and a model for the arrangement of a double staircase by G. A. Burn.<sup>1104</sup> Alongside these domestic examples were also five models of the construction of roofs in Germany, produced by Jacob Schröder of the Polytechnisches Arbeits-Institut at Darmstadt, a type of model that I discussed in Chapter 1. The museum catalogue noted that these models were procured from the Great Exhibition at its close and three of them continued to be exhibited until 1876.

In the *Eighth Report of the Art and Science Department* (1861) Fowke noted that the rearrangement of the Museum of Construction allowed visitors to judge the improvements, intentions, and uses of the exhibits. Fowke was also aware of the museum's audience and proposed that the new classification had rendered the Museum of Construction, 'of much value to architects, builders, and others, from whom frequent inquiries are received for various building contrivances.'<sup>1105</sup> This connects back to a description of the pedagogical strategy of the Museum of Ornament Art that rejected the idea of a museum as 'a passive, dormant institution, an encyclopedia', and proposed instead that the collection should be 'an active, teaching institution, officiously useful and suggestive'.<sup>1106</sup> The conclusion to the report, however, noted that the active nature of the collection was under threat as Fowke warned that the current arrangement and recent contributions to the Museum of Construction had almost exhausted the space allotted to it within the wider museum complex. Fowke raised concerns that without additional space for new models and specimens:

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<sup>1104</sup> There was clearly fluidity to exhibitions and collections in the period – the former two models were previously exhibited at the Architectural Exhibition in 1859

<sup>1105</sup> *Eighth Report of the Art and Science Department* (London, 1861) p.140.

<sup>1106</sup> 'Appendix G: Report on the Museum of Ornamental Art, by Curator', *First Report of the Art and Science Department* (London, 1854) p.228.



‘Many valuable articles used in building and construction must remain unrepresented; and the Museum will comparatively be incapable of competing with the various and increasing demands now placed upon it’.<sup>1107</sup>

Therefore, throughout the 1860s the collection expanded and was often reframed by the museum. Unlike earlier versions the 1866 *Guide to the South Kensington Museum* provided both a catalogue of the displayed objects and an illustration of the layout and format of the collection. The *Guide* described the sequence of architectural objects, renamed as the ‘Museum of Building Materials’, and provided a plan of their layout in the East Corridor adjacent to the museum’s refreshment rooms and entrance to Cromwell Road (Fig.84).



**Figure 84**

‘General Ground Plan of South Kensington Museum’, 1866

*A Guide to the South Kensington Museum* (London, 1866) pp.3-4.

The *Guide* described how a series of tables displayed the models of a Poultry House built for the Queen, the Holy Sepulchre at Jerusalem, the Palace of Saxe-Coburg Gotha, Windsor Castle, and part of the nave at Westminster Abbey (Fig.85).<sup>1108</sup>

These were followed by a model for hoist, a model illustrating the construction of fire-proof concrete floors a model illustrating the French system of rolled iron

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<sup>1107</sup> *Eighth Report of the Art and Science Department* (London, 1861) p.141.

<sup>1108</sup> *Guide to the South Kensington Museum* (London, 1866) p.11.

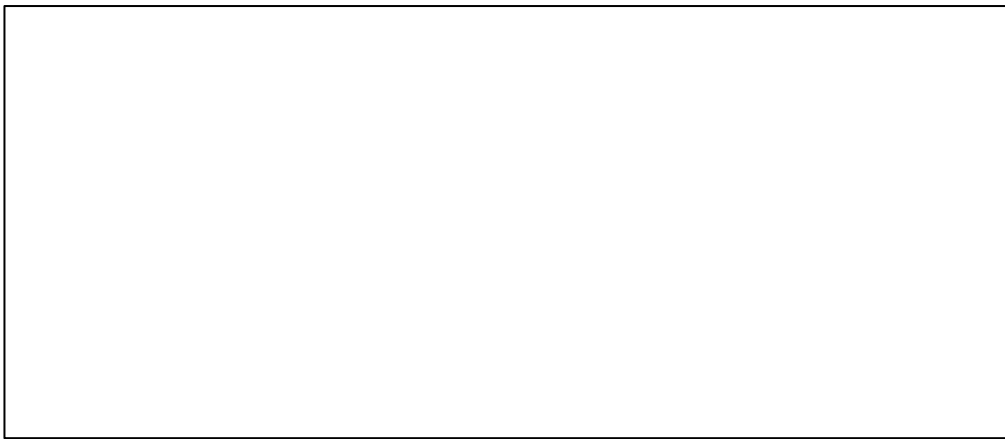
girders, and a model of a wooden bridge in Sri Lanka, exhibited besides samples of imitation stained glass.<sup>1109</sup> On the wall between the former table and the next were various examples of ornamental wall tiles produced by Thomas Minton. Juxtaposed beside these were two models of the roof at King's Cross, a model of a lighthouse off the Welsh coast, a model of a memorial at Kanpur, a model of a new system for ventilation, a model of a bakery near Paris, a model of the Town Hall at Leeds, and model of Strasbourg Cathedral, which were exhibited alongside specimens of native wood from Canada and New Zealand.<sup>1110</sup> This eclectic mix of models was a far cry from the systematic approaches carried out by John Soane or proposed by the RIBA. I think this lack of systematic approach underlines the nature of trying to curate a coherent and didactic display from a collection of donated and borrowed models. The majority of these models were donations rather than active acquisitions that fitted the collection's didactic purpose. I suggest that in order to rectify this the Science and Art Department were actively collected further specimens and models more suited to a contemporary museum of construction. This is why the in August 1859 the Department requested that models of Dorchester House, 'which illustrate the appliances adopted in the construction and fitting of the edifice', be sent to the South Kensington Museum for exhibition (as I discussed in Chapter 4).<sup>1111</sup>

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<sup>1109</sup> *Guide to the South Kensington Museum* (London, 1866) p.11.

<sup>1110</sup> *Guide to the South Kensington Museum* (London, 1866) pp.11-12.

<sup>1111</sup> RIBA VuL/3/5/6, Letter from Science and Art Department to George Vulliamy, 19 August 1859.



**Figure 85**

Ground Plan of Museum of Building Materials and Educational Museum, 1866  
*Guide to the South Kensington Museum* (London, 1866) pp.5-6.

There are two aspects of the Museum of Building Materials to reflect upon. First, there was a large market for innovative products and new building materials at the time. This is also demonstrated by the ‘Department of Materials’ at the Architectural Exhibition (discussed in Chapter 5) and the models displayed or collected by the RIBA. Second, the curators of the Museum of Building Materials saw their primary function as providing a collection of material and technical educational collection rather than a collection that illustrated the history of architecture.<sup>1112</sup> In the setting of the Museum of Building Materials, these models were used to transmit new forms of technical knowledge and educate visitors of differing levels of understanding. Finally, these models and their presence was a crucial part of informal learning and professional practice in the period. An article in the *Builder* from November 1864 declared:

‘We cannot now say more of the collections, [other] than that the Museum of Building Materials is one of those which should be studied. With the building-materials are many models of roof-timbers, roof-covering, and flooring, and others of contrivances of the greatest importance to architects.’<sup>1113</sup>

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<sup>1112</sup> R. G. W. Anderson discusses this idea in relation to the scientific instruments held at the South Kensington Museum. R. G. W. Anderson, ‘Connoisseurship, Pedagogy or Antiquarianism?’, *Journal of the History of Collections* 7.2 (January 1995) 224.

<sup>1113</sup> ‘The South Kensington Museum and Schools’, *Builder* (26 November 1864) 859

By 1876, the date of the next catalogue and therefore the next official source of evidence, the 'Collection Illustrating Construction and Building Materials' had grown.<sup>1114</sup> As in 1862 these varied from Nash's set of Fouquet models to models demonstrating the latest applications in building technology such as sash windows, glass lanterns, and fire-proof flooring. There were new acquisitions that give an insight to the wider social and infrastructural developments of the 1870s. There were, for instance, four cardboard models for 'dwellings for the working classes' in Bethnal Green and Pimlico. The catalogue describes how for each location there were two models: one depicting the elevation and the other showing one floor of the building showing the internal arrangement of a typical floor. These models allowed the visiting public to see what the building would look like from the street and how its internal layout functioned. Other models nearby represented designs for more prominent and contemporary buildings and unrealised projects.<sup>1115</sup> Within the collection were also two large models, one of the 'Thames (Victoria) Embankment, from Westminster to Blackfriars' and another of the Embankment, 'Made by the Department 1869, by order of the Treasury, to show the several sites proposed for the New Law Court Buildings', (which I investigated in Chapter 2 on public building works during the nineteenth century).<sup>1116</sup>

After 1876 there were no further catalogues produced although the collection continued to expand with donations.<sup>1117</sup> In 1881 a committee was appointed by the

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<sup>1114</sup> In 'Section Y. –Models of Construction', there were 77 models on display amongst 167 objects. These other objects included material samples, specimens, and full-sized fragments of particular building technologies. *Catalogue of the Collection Illustrating Construction and Building Materials* (London, 1876) pp.203-227

<sup>1115</sup> These included a model of the Reading Room of the British Museum designed by Sydney Smirke, an early design model and façade studies for the Royal Albert Hall, and a model for proposed Government Buildings at Whitehall by Sir Arthur Clarke, all of which survive in the V&A's collection.

<sup>1116</sup> *Catalogue of the Collection Illustrating Construction and Building Materials* (London, 1876) p.209, 41.b.Y; p.222, 134Y

<sup>1117</sup> These donations to the collection included a model of Cleopatra's Needle and of the scaffolding used to erect the obelisk on the Embankment donated by the civil engineer John Dixon in 1878, and four cardboard models – St Paul's Cathedral, St. Bartholomew's Hospital, and two pagodas –

Committee of Council on Education to examine the ‘Structural Collection’ and advise whether ‘this collection should be developed, and what specimens might with advantage be removed’.<sup>1118</sup> This was the first mention of the possible disposal or removal of models from the collections. The committee of four, which included James Abernethy and Charles Hutton Gregory (both civil engineers), G. E. Street (architect) and Major H. C. Seddon (Examiner for Building Construction in the Science and Art Department), began their report by confirming that, ‘the establishment of this collection has been of great value in many respects’, and citing developments in ‘terra-cotta for structural purposes’, mosaic work, and earthenware ‘architectural enrichments’.<sup>1119</sup> In reference to ‘the more general uses of the Structural Collection’, the committee argued that the collection was a ‘natural and necessary adjunct to the Science and Art Department’, as well as being ‘of great value for general reference’. In particular the committee felt that:

‘The exhibition of foreign building materials and foreign structural models ought to enlarge the views and improve the practice of our own manufacturers and workmen.’<sup>1120</sup>

In conclusion the committee established that the maintenance of the Structural Collection was ‘highly desirable on public grounds’ and made the recommendation ‘to sanction its maintenance, revision, and development’.<sup>1121</sup> This revision would, the committee described, include the removal of specimens it deemed out of date, and ‘models and objects which may not be of practical value’.<sup>1122</sup> Additionally the committee proposed rearranging the collection in new rooms and bringing ‘the collection up to the present date’ to promote contemporary ‘technical knowledge’

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donated by one Fred Wilby in 1879. *Lists of Bequests and Donations to the Department of Art and Science to 31 December 1888* (London, 1889)

<sup>1118</sup> ‘Structural Collection of the South Kensington Museum’, *Twenty-Ninth Report of the Department of Science and Art* (London 1882) p.13.

<sup>1119</sup> ‘Structural Collection of the South Kensington Museum’, (London 1882) pp.13-14.

<sup>1120</sup> ‘Structural Collection of the South Kensington Museum’, p.14.

<sup>1121</sup> ‘Structural Collection of the South Kensington Museum’, p.14.

<sup>1122</sup> ‘Structural Collection of the South Kensington Museum’, p.14.

on ‘public grounds’. In addition to the collection’s accommodation requiring ‘re-arrangement’, the committee concluded:

‘We submit that the collection when placed in a proper condition would be of so much value in promoting technical knowledge, that any outlay necessary for this purpose would be greatly outweighed by the public advantage’.<sup>1123</sup>

G. E. Street died in December 1881 before the report was published. The Science and Art Department wished to fill the vacancy left by Street with another architect. To achieve this the department wrote to the RIBA to request the recommendation of a member to replace Street in December 1882.<sup>1124</sup> This letter was not discussed in the subsequent meetings of the RIBA and no member appears to have been appointed to the committee.

There are several reasons why the study of the Museum of Construction is significant. Despite the strange assemblage of subjects on display, my analysis has shown the importance of the collection to architects, building trades, and general public. It is also significant that beyond Street’s advisory role, it was Fowke, a Royal Engineer rather than architect, who was responsible for the curation of the displays. Following Street’s death no other member of the RIBA was recommended for appointment to the committee. I propose that instead of attempting to influence a collection of models, the RIBA were asserting their professional authority through much larger advisory roles related to the construction of buildings and infrastructure in London.<sup>1125</sup> Running throughout the collection’s life was the idea that it should be an active educational resource, and there were attempts to acquire

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<sup>1123</sup> ‘Structural Collection of the South Kensington Museum’, p.14.

<sup>1124</sup> RIBA, 1.2.3 LC/21/9/2, Letter to Council from Science and Art Department, 1 December 1882.

<sup>1125</sup> In particular the Metropolitan Board of Works invited the RIBA to comment on models showing the developments at Hyde Park corner (1882), and issued elevations of proposed buildings for the institutes approval in 1884 and 1885. Additionally at the time the RIBA were heavily involved in preparing new building legislation. All of these factors were a part of the construction of professional authority in the period.

aspects of construction that were unrepresented. In turn this active nature meant that individuals claimed that the Museum of Construction had led to developments in several areas of building technology. On the other side of the arc of technological development, this led to obsolete specimens, which the advisory committee suggested be removed from the collections.

### 6.5 Museum of Ornamental Art at the South Kensington Museum

The 1864 article in the *Builder* noted that South Kensington Museum also contained several models of historic value to the architectural profession.<sup>1126</sup> I now will focus on these historical models and examine how contemporary architects studied them. Following its relocation to the newly completed North Court in April 1862 the Museum of Ornamental Art continued to display a series of models. In the north-east aisle of the court were the models in cork of six temples at Paestum and Sicily, and a model in cork of the Coliseum by Du Bourg.<sup>1127</sup> Adjacent to these was the original, 'Great Model' of St. Paul's Cathedral, which was lent by the Dean and Chapter of St. Paul's.<sup>1128</sup> First displayed to the public at South Kensington from the museum's opening in 1857, the model had previously been exhibited in the 'model room' at St. Paul's Cathedral – a loft over the north-west chapel of the nave. A print from the *ILS* from 1852 shows us the model in this space (Fig.86).<sup>1129</sup>

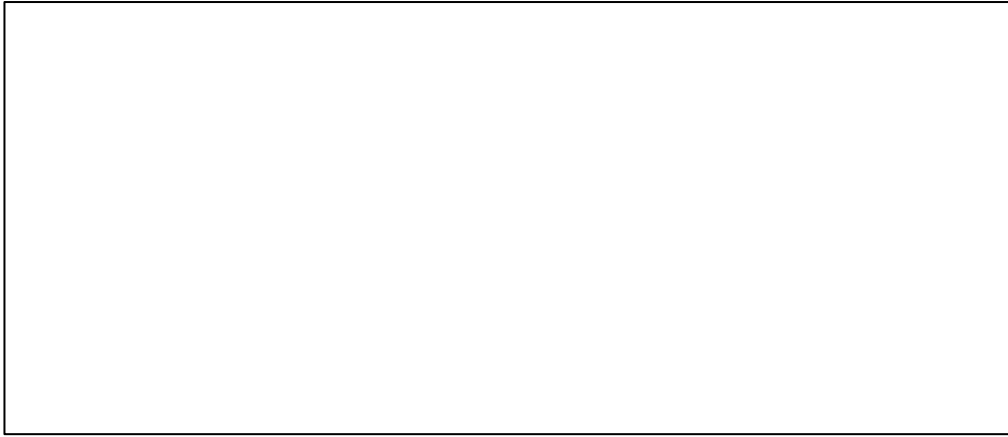
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<sup>1126</sup> 'The South Kensington Museum and Schools', *Builder* (26 November 1864) 859

<sup>1127</sup> The model was transferred in 1930 from the Science Museum to the Industrial and Technological Museum, Melbourne, now part of Melbourne Museum. For further details on this model see: R. Gillespie, 'The Rise and Fall of Cork Model Collections in Britain', 139.

<sup>1128</sup> G. Higgott, 'The Fabric to 1670', *St. Paul's*, pp.186-189; J. Campbell, *Building St Paul's* (London, 2008).

<sup>1129</sup> 'The Model-Room at St. Paul's Cathedral', *ILS*, 11 December 1852, 536.



**Figure 86**

‘Model Room – St. Paul’s Cathedral’, *ILS*, 11 December 1852, p.532.

Between 1859 and 1869, the Great Model was a part of the Museum of Ornamental Art in the north court of the Brompton Boilers (Fig.87). Several catalogues record that the model was accompanied by plans, sections, and other illustrations of the existing, as-built cathedral.<sup>1130</sup> The model’s presence in the museum prompted much public and professional interest. In April 1865 the *ILS* featured a description and illustration of the model as their first in a series of ‘noteworthy specimens of art’, held in the museum.<sup>1131</sup> Several architectural commentators were keen to discuss the model and its relevance for contemporary architects. Prior to its transfer to the South Kensington Museum questions had been raised about the condition of the model and the suitability of its environment at St Paul’s. At a meeting of the RIBA on 23 February 1857, C. F. Hayward drew attention to the dilapidated state of the model to encourage ‘the authorities to effect a restoration, and to place it in a more advantageous position’.<sup>1132</sup> In March 1857 the Architectural Association wrote to the Dean and Chapter of St. Paul’s in protest that the model was falling into neglect in a room that was unsuitable for its exhibition.<sup>1133</sup> In a letter to the *Builder*, an anonymous architect pointed out that the model had to be ‘visited’ in person in order to be experienced, and argued that a

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<sup>1130</sup> *Guide to the South Kensington Museum 7* (London, 1859) p.2: ‘The wooden models of churches, proposed to have been erected in London, are lent by the Dean and Chapter of St. Paul’s; and in the gallery above the corridor will also be found Sir Christopher Wren’s original model for St Paul’s Cathedral, accompanied by plans, sections, and other illustrations of the present structure’.

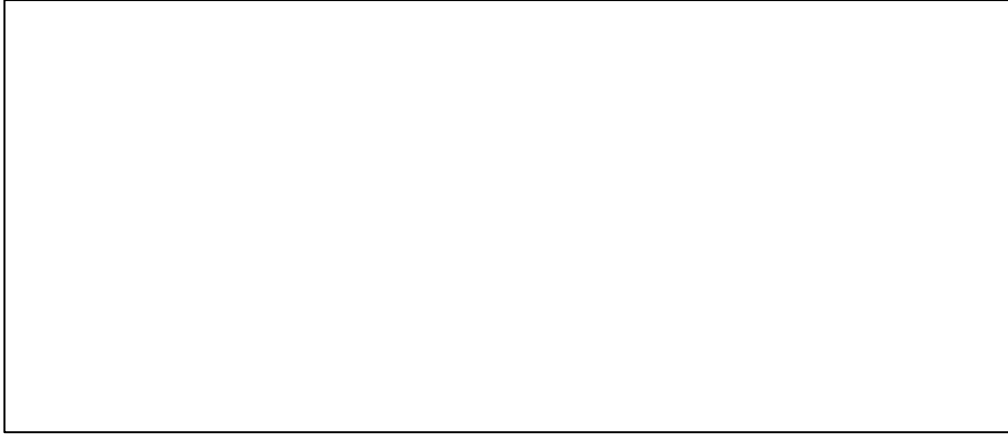
<sup>1131</sup> ‘The Art Loan Collection in the South Kensington Museum’, *ILS* (29 April 1865) pp.399-400.

<sup>1132</sup> ‘Royal Institute of British Architects’, *Builder* (21 March 1857) p.165.

<sup>1133</sup> ‘The Model of Wren’s First Design for St. Paul’s’, *Builder* (21 March 1857) p.161.



volume of drawings of the model be published – both orthographic drawings and perspective views – ‘to assist in promoting a result alike beneficial to the fame of Wren and the cause of the original design’.<sup>1134</sup>



**Figure 87**

'South Kensington Museum, North Court, showing casts and model of St. Paul's Cathedral', J. Davis Burton, No. 5 in the *London Series*, 1868, V&A, 60755

In the face of this pressure from the profession, the Dean and Chapter of St. Paul's agreed for the model to be moved to the South Kensington Museum on the understanding that it would be repaired by Francis Penrose, Surveyor of the Fabric at St. Paul's. On 18 May 1857 a group of sappers from the Royal Engineers removed the model and transported it to South Kensington.<sup>1135</sup> Despite the model's poor condition – many of its decorative elements were broken off or damaged – the model allowed the wider public and architectural profession to appreciate, ‘a superior conception to [the building] which was erected’.<sup>1136</sup> The same article praised the noble effect of the exterior [...] harmony of the leading lines of the structure; and especially how the bold convex of the dome is enhanced in dignity

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<sup>1134</sup> ‘Wren's Model for St. Paul's’, *Builder* (28 March 1857) p.178. In reply to the anonymous letter T. Roger Smith noted that a ‘very fine set of drawings’ of the model were kept at St. Paul's and if published these drawings would provide, ‘a lasting memorial of what I fear will soon fall to pieces from sheer decay.’ ‘Wren's Model for St. Paul's’, *Builder* (11 April 1857) p.212.

<sup>1135</sup> ‘Wren's Original Model of St. Paul's’, *Builder* (23 May 1857) p.285.

<sup>1136</sup> ‘Laying out Public Places: Sculptors' Competitions’, *Builder* (26 June 1858) p.435.

and power by rising out of the concave sweep of the body of the building', before describing the finished cathedral as an inferior work to the displayed model.

I posit that Great Model represented a lost future, a counterfactual building, which deviated from the realities of construction and cost. This possibility fascinated the architectural profession in the mid-nineteenth century. John Eastley Goodchild exhibited two drawings of St. Paul's based on the Great Model at the 1859 Architectural Exhibition and later donated these to the RIBA.<sup>1137</sup> In 1871 T. Roger Smith read a paper at the Architectural Association entitled 'London as a Field for Architectural Study', which advocated those familiar with St Paul's as built to visit the model at South Kensington in order to, 'try to realize from it what the intentions of its gifted author had been as to interior effect.'<sup>1138</sup> In a review of William Longman's book on the history of St. Paul's, the *Building News* suggested that the Great Model, 'gives the best idea, and should be carefully studied by all those who wish to understand how the idea grew in Wren's mind'.<sup>1139</sup> The Great Model was removed from display at the South Kensington Museum between February and July 1869 and presumably returned to St Paul's in better condition than when it had arrived.<sup>1140</sup> It is unclear exactly why the model was returned. Fiona Leslie suggests there was a change in the museum's policy away from models and focused instead on original objects demonstrating technical virtuosity. Although she separates the Great Model from the rest of the architectural models in the collection, it does look startling out of place in the North Court, surrounded by important examples of Italian sculpture. Equally the reason for the removal may have been straightforward: there may have been an agreement the model would be returned after twelve years or after repairs had been completed.

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<sup>1137</sup> These drawings survive in the RIBA Drawing Collection. 'The Architectural Galleries, Conduit-Street', *Builder* (12 March 1859) p.188.

<sup>1138</sup> 'London as a Field for Architectural Study', *Building News* (10 February 1871) p.114.

<sup>1139</sup> 'Mr. William Longman's Book on S. Paul's Cathedral', *Building News* (20 June 1873) p.695.

<sup>1140</sup> *Guide to the South Kensington Museum* (London, July 1869) p.11.

## 6.6 Conclusion

In conclusion each of the case studies examined reveals a particular way that architects thought about and used collections of architectural models. First, John Soane's museum and its *Descriptions* embody theories concerning the value of objects and the correct way to experience them. Soane's curatorial remit extended to the selection of objects, environmental experience, and spatial setting, in order to control the dialogue between objects, architectural settings, and visitors.<sup>1141</sup>

Through this operational strategy Soane presents the objects and values that should be valued by visitors, which in turn constructed a new narrative of architectural history that included his own work. Mari Lending suggests that whilst buildings are often portrayed as stable bearers of meaning that offer a view of the historical past, they are in fact in flux, constantly 'styled and reframed in accordance with the taste and interests of shifting present moments'.<sup>1142</sup>

These themes continued in the second section where I demonstrated how the RIBA's early intention to form a model room that included examples of Antique buildings alongside modern British buildings at the same scale was clearly an attempt to use the relative forces of miniaturisation in order to support understanding of the nascent professional discipline. Whilst the collection failed to grow beyond nineteenth models and was partially dispersed in 1868 following its transfer to University College, as we saw in Chapter 5 models continued to be used as instruments of rhetoric or illustration to support the arguments made in papers given at meetings of the institute.

At the South Kensington Museum I explored how stylistic distinctions were made between types of models and the effects of changes in overall curatorial strategy altered the understanding and purposes of the model. There was a belief from the

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<sup>1141</sup> C. Whitehead, *Museums and the Construction of Disciplines: Art and Archaeology in Nineteenth-Century Britain* (London, 2009) p.25, p.29

<sup>1142</sup> M. Lending, *Plaster Monuments*, p.7.

architectural profession that the models in these collections held a vital role in providing both specialised and public education through their value as didactic instruments of taste (e.g. the Fouquet models) and the representation of historically important buildings (e.g. Wren's Great Model). In the Museum of Construction I showed how the emergence of collection containing technological and constructional innovations, which unlike the precedent set at other exhibitions, did not make a distinction between the architectural model as a fine art piece or as a new form of building technology. At no stage of the period in question would the Royal Academy have exhibited a technical or product model, whilst the Architectural Exhibition and International Exhibitions made both physical separations – different sorts of model were displayed in different galleries – and intellectual distinctions through categorisation, taxonomies, and labelling. These distinctions were much less clear in the Museum of Construction where Scott's model of the Prince Consort Memorial sat alongside J. W. Tyler's models of improved zinc roofing. Here the self-enclosure of the collection was only possible thanks to the replacement of history, origin, and purpose with an imposed and overarching classification, one based on a particular didactic agenda.

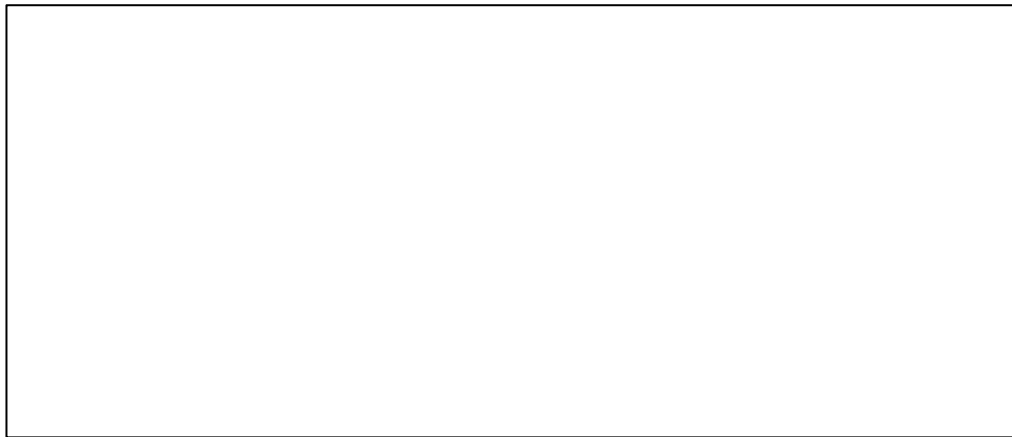
Before moving onto the conclusion to the thesis it should be noted that there were undoubtedly private collections of architectural models, which are now missing. Edward Cresy who provided Soane with his set of Fouquet models accumulated 'a fine collection of drawings and models'.<sup>1143</sup> Similarly Decimus Burton *may* have had an extensive collection of plaster models; the likelihood of a larger collection is supported by the survival of three models of Antique subjects at Hastings Art Gallery and Museum (Fig. 88).<sup>1144</sup> Additionally within the surviving papers of T. Roger Smith there is the mention of a 'model room' in the specification for works

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<sup>1143</sup> 'Taylor and Cresy', *Builder* (5 March 1859) 166. In 1920 Albert Richardson described how Cresy's study contained models in 'waxed plaster' of the Theatre of Herculaneum, the Arch of Sergii at Pula, and the Maison Carrée ('Roman Temple') at Nimes, all of which were previously owned by G. L. Taylor and Cresy. A. E. Richardson, 'Architectural Causerie: Architectural Models', *Architect's Journal* (5 May 1920) 582.

<sup>1144</sup> HASMG, 950/38/13 Model of the Temple of Theseus, Athens; HASMG, 950/38/14 Model of a Corinthian Column, HASMG, 950/38/15 Model of the Pantheon.

to erect a new studio at the rear of Smith's house at 7 Gordon Square in August 1899.<sup>1145</sup> Based on these examples and the case studies examined in this chapter, I propose there was clearly a broad culture of architectural models, housed in an architect's office or studio, that operated as symbols of the architect's knowledge and authority. In 1896 the *Building* described the difference between architects and craftsmen based on the location of their place of business and the equipment contained within, including a 'model of the Parthenon', a visual statement of the architect's cultured knowledge and understanding of the Western architectural canon.<sup>1146</sup>



**Figure 88**

Model of the Pantheon, previously owned by Decimus Burton  
HASMG, 950/38/15

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<sup>1145</sup> UCL MS ADD 367, 'Specification of Work to be done ...in erecting a studio in rear of No 7 Gordon Street, Gordon Square for T. Roger Smith', August 1899.

<sup>1146</sup> 'Architects and Craftsmen', *Building News* (3 April 1896) 479.

## Conclusion



## Conclusion

In May 1914 Leslie Wilkinson, Assistant Professor of Architecture at the University of London gave a paper to the Society of Architects that discussed the various methods of representation available to architects:

‘I was going to mention models as a means of expressing form, but I think we must rule them out as being rather realisations in miniature. But their value for purposes of study and explanation is unrivalled, and were it not for their expense I suppose they would be much more widely used than they are. A model provides the equivalent of an infinite number of perspective views, and will often settle points with a layman, when perspective might be distrusted and geometrical drawings not understood, or, what is worse, misunderstood.’<sup>1147</sup>

Wilkinson’s paper highlighted several of the key issues that have emerged in this thesis about the relative merits and problems surrounding the use of models by architects. Ideas about judgement, truth, and perception are inherently linked to how models are understood. Many suggested that the problems associated with models were inherently a part of the medium. In examples such as the Royal Exchange (Chapter 2), St Paul’s Cathedral (Chapter 3), or various legal cases (Chapter 2), I have shown how various parties disagreed over the production, presentation, and practicality of architectural models in the construction of the contemporary built environment. I have demonstrated through various case studies, that during the nineteenth century there was never a consensus agreed upon how models should be used. Wilkinson belittled models as ‘realisations in miniature’. In 1907 the architect and journalist Maurice Bingham Adams suggested that whilst the use of models held both advantages and limitations, models could be given ‘a deceptive attractiveness’, with ‘False impressions are given by models as readily as by studies that are "passed off" on clients as "sketch designs”’.<sup>1148</sup> John Soane advised

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<sup>1147</sup> ‘The Expression of Form’, *Building News* (15 May 1914) 665.

<sup>1148</sup> ‘Architectural Journalism’, *Building News* (22 February 1907) 265.



models be made to avoid ‘serious disappointments’.<sup>1149</sup> Edmund Beckett argued that viewing a model made it easy to see what he could improve in a design.<sup>1150</sup> In Chapters 2 and 4 I showed how clients such as the Earl of Wemyss, Robert Holford, and Edward Hussey III trusted models as a key tool for the conception and discussion of buildings prior to construction. I think much of the debate was led by the misrepresentation of models rather than problems inherent to the medium. For instance William Burges’ models of St Paul’s were clearly vital to his working method: ‘my experience told me that the work is done more thoroughly and the difficulties better foreseen by [the] use [of models] than by coloured drawings’.<sup>1151</sup> However, when displayed in public or to the building committee the models could not replicate the proposed lighting effects, accurately depict the decorative scheme, or offer a view of the effect of the whole project in one image – something the public demanded and which was provided by Axel Haig’s atmospheric perspectives. As one writer noted, the models were not anything beyond ‘a sort of conventional representation although in the solid’ of the Burges’ design, although the public viewed the models ‘as constituting a realistic presentment of the actual edifice’ rather than an architect’s tool.<sup>1152</sup>

Certain individuals proposed that the misconceptions caused by models were a practical issue about how viewers interacted with them and these issues could be addressed. W. H. Leeds suggested that in part the misconception was caused by the absence of adjacent buildings, which could be resolved by the addition of the adjoining buildings and context to a model.<sup>1153</sup> Leeds noted that models tended to be viewed from above, which caused ‘their proper effect’ to be lost on a viewer.<sup>1154</sup> To counteract this ‘misuse’, a model should be fitted with a cardboard aperture, ‘fixed at the natural level of the eye’, in order for viewers to examine the model at

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<sup>1149</sup> J. Soane, ‘Lecture XII’, p.660

<sup>1150</sup> E. Beckett Denison, *A Book on Building*, p.69.

<sup>1151</sup> RIBA BAL, BuW/1, entry for 23 November 1874, f. 240 letter from Burges to Dean.

<sup>1152</sup> ‘Draughtsmanship in the Architectural Room of the Royal Academy’, 273.

<sup>1153</sup> W. H. Leeds, ‘Modes of Architectural Representation’, p.453.

<sup>1154</sup> W. H. Leeds, ‘Modes of Architectural Representation’, p.454.

the same viewing position as the building would appear in reality.<sup>1155</sup> Fixing the viewpoint of a model was also explored in other contexts. At the time of the 1851 Great Exhibition, as I explained in Chapter 5, Charles Bruce Allen, an early curator of the Architectural Museum, proposed that a model should be positioned at a level for a ‘spectator [...] may stand and view it as he would do the actual building’.<sup>1156</sup> After E. S. Prior exhibited his work at the 1895 Royal Academy Exhibition the editor of the *Architectural Review*, Dugald Sutherland MacColl, proposed:

‘To get anything like the real aspect [a model] should be supplemented with a screen, pierced with eyeholes at a height corresponding to the height of the spectator’s eye on the scale of the model.’<sup>1157</sup>

Fixing the viewpoint of an observer, as Leeds and MacColl suggested, would render the model into a perspective, by separating the subject from the object, and flatten its three-dimensional character, ironically turning a model into a form of drawing. Unlike a drawing, with a model the viewer can move in and around, adjusting their eye and body to its form, scale, and boundaries. Recent studies of nineteenth-century visual culture are helpful in understanding the issues that lie beneath these discussions. In his 2008 exploration of the visual mechanics of Victorian society, Chris Otter discusses how optical theories and the resulting understanding of the relationship between vision and thought created a ‘pure communion with an entirely separate world’.<sup>1158</sup>

Whilst the thesis has explored the place of models within this ‘separate world’, the role of models was affected by the emergence of model photography in the mid nineteenth century.<sup>1159</sup> Although not examined directly in my thesis, significant

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<sup>1155</sup> W. H. Leeds, ‘Modes of Architectural Representation’, p.454.

<sup>1156</sup> C. B. Allen, ‘Some Suggestions for Arranging and Colouring the Interior of the Building in Hyde Park’, *Builder* (7 December 1850) 580.

<sup>1157</sup> ‘Architecture and the Royal Academy: A Discussion V’, *Architectural Review* (1903) 47.

<sup>1158</sup> C. Otter, *The Victorian Eye: A Political History of Light and Vision in Britain, 1800–1910* (Chicago/London, 2008) pp.47-48.

<sup>1159</sup> However, the relationship between nineteenth-century models and photography has not been further explored by scholars despite its obvious potential as a route of investigation into the design of

individuals such as Charles Garnier, Owen Jones, and J. P. Seddon used model photography to fix viewpoints, iteratively test designs, and present images of their work. Additionally the advent of photogravure in 1876, a process that allowed for the detailed reproduction of photographs in magazines, ensured that photographs of models were included in architectural and popular publications. This promises to be a fertile area of enquiry for my post-doctoral project in which I intend to broaden my current area of study to examine model photography in relation to the emergence of collage and other forms of representation. One particular case study that I will examine is William Lethaby's entry for Liverpool Cathedral competition in 1902 where two different models were made, photographed, and the prints adjusted through the addition of china white (Fig.89).<sup>1160</sup>



**Figure 89**

William Lethaby and others, 'Photograph of Smaller Model – General Birdseye View', Competition for Liverpool Cathedral, 1902

V&A, E.2284-1934

How realistic or abstract a model should be in its depiction of a building was intensely debated by architects. Many architects were concerned that the elaboration of a model, which they believed produced to a toy-like quality, would

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buildings and the subsequent presentation of those designs. The exception is an essay by Rolf Sachsee from 2012, which focused on early twentieth-century German architectural model photography. R. Sachsee, 'A Short History of Architectural Model Photography', in O. Elser, and P. C. Schmal eds., *Das Architektur Modell: Werkzeug, Fetisch, kleine Utopie – The Architectural Model: Tool, Fetish, Small Utopia* (Frankfurt am Main, 2012) 23-28.

<sup>1160</sup> Lethaby's entry was a group effort that included Harry R. Ricardo, Robert Weir Schultz, Francis William Troup, and Henry Wilson.

lead the medium to be misunderstood as a key part of architectural practice. Soane described to his students the importance of producing ‘a complete plain model’ of a design. However, as I described in Chapter 1, each of the model-making handbooks offered instruction on how to make highly elaborate examples of domestic or ecclesiastical architecture. The author of one of these handbooks, T. A. Richardson, warned against turning ‘a work of art, [into] a mere toy’, through the use of colourful materials, candles placed within models, and unrealistic landscaping.<sup>1161</sup> A review of Richardson’s book suggested that it was the inexperienced modeller who often made models with ‘the character of a mere toy’.<sup>1162</sup> As I discussed in Chapter 5, an 1882 article on the establishment of a ‘National Gallery of Architectural Models’ suggested that it was the use of cardboard that could give a model a ‘toy-like effect’. Instead models should be made from different varieties of wood to represent the different materials of a building. This approach, the article suggested, ‘gives to a model a more realistic appearance than can be effected by the use of cork, cardboard, or plaster’.<sup>1163</sup> Within his Royal Academy Lectures, C. R. Cockerell insisted that models should not be misunderstood as ‘pretty toys’ in which the ‘delicacy of workmanship draw[s], the attention from the merit of the design’.<sup>1164</sup>

Following the very public discussions surrounding models during the nineteenth century, by the end of the century there was increased awareness from within the profession about how models were used as ‘toys’ by politicians to criticise prominent building projects on behalf of the public. ‘We have the highest opinion of the value of models,’ an article in the *Builder* noted when the use of models for public building projects was debated in Parliament, as long as they were not used ‘as toys for public amusement’.<sup>1165</sup> For many commentators, the toy-like nature of a model was related to a model’s scale, size, and how it was viewed. In particular these issues were debated when models were exhibited in public. Writing in his monthly

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<sup>1161</sup> T. A. Richardson, *The Art of Architectural Modelling in Paper*, p.92.

<sup>1162</sup> ‘Review: The Art of Architectural Modelling in Paper’, *Builder* (22 January 1887) 167.

<sup>1163</sup> ‘National Gallery of Architectural Models’, *Builder* (8 April 1882) 433.

<sup>1164</sup> ‘Royal Academy: Professor Cockerell’s Lectures on Architecture – Lecture V’, 130.

<sup>1165</sup> ‘Lord Wemyss and the Government Offices’, 46.

column in the *CEAJ*, the Anglo-Irish architect Henry Fulton was highly critical of a number of models at the Adelaide Gallery in London as well as examples in Paris and in Naples, all made to ‘a very small scale’, as this caused them to ‘look more like toys than architectural works’.<sup>1166</sup> Often the criticism of a model’s size was connected to what the profession perceived as its correct use in practice. In its critique of the 1898 Royal Academy Exhibition, the *Builder* proposed that the ‘real value of a model’ was to show part of the detail of a building at a large scale, ‘so that its effect and projection can be estimated’.<sup>1167</sup> ‘A small model of the whole’, the writer suggested, ‘is chiefly valuable to amuse the public’.<sup>1168</sup> Similar to the debates around perspective drawings, these debates indicate that the profession believed there were ‘right’ and ‘wrong’ uses for models that depended on the discernment and knowledge of the viewer.

On other occasions the scale of a model apparently reduced the effectiveness of its presentation to the wider public. As I briefly described in Chapter 5, when J. B. Bunning displayed a model of the Coal Exchange at the 1847 Royal Academy Exhibition, the *CEAJ* criticised the size of the model, describing it as a ‘toy’. The journal proposed that the small size made it ‘impossible to judge of more than the general shape of the structure’.<sup>1169</sup> In my study of the model-maker John Thorp, in Chapter 4, I noted how Thorp’s model of old London was celebrated for not being a ‘sensational toy’ but instead how the ‘realistic and accurate presentation of the structures and districts’ in the model had educational value for architects, artists, and ‘all classes of people’.<sup>1170</sup> I would argue that the highly finished and elaborate, professionally made models produced by Thwaite, Salter, Thorp, and others were to allow broad audiences of non-architects to comprehend and engage with the design of proposed buildings or a legal case. I contend that these models were still a key part of professional practice: they clearly had a role in explaining designs to lay

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<sup>1166</sup> ‘Observations on Architects and Architecture No.5’, *CEAJ* (January 1844) 18.

<sup>1167</sup> ‘Architecture at the Royal Academy’, *Builder* (30 April 1898) 408.

<sup>1168</sup> ‘Architecture at the Royal Academy’, *Builder* (June 1847) 174.

<sup>1169</sup> ‘Royal Academy Exhibition: Architecture’, *CEAJ* (30 April 1898) 408.

<sup>1170</sup> ‘Notes of the Month’, *Architectural Review* (November 1907) 212.

audiences of decision makers, in shaping the public perception of an architect's work, and unlike the slow business of construction models, offering an immediately legible and detailed version of a design.

The legibility of models also emerged in the discussion on their exhibition and display in the nineteenth century. In Chapter 5 I explored how the public display of architectural models was a key part of professional practice. The clarity of a model in its representation of an architect's design made it a vehicle for both emerging and established architects alike to exhibit both their built and unrealised projects. However, the clarity or legibility of a design also had the potential to cause problems and disrupt the professional authority of the architect. As I described in the Introduction, Eliot Freidson proposes that the implementation of aesthetic rules to claim normative authority is one of the key ways professions gain control in both everyday practice and wider society.<sup>1171</sup> I have shown in several examples, including the construction of the Admiralty and War Offices (Chapter 2) and nineteenth-century works to St Paul's Cathedral (Chapter 3), how the three-dimensional legibility of a model allowed non-architects the opportunity to criticise a proposed design, thereby threatening the privileged position and legitimacy of the profession. In 1867 the *Building News* noted this issue during the Royal Courts of Justice competition and suggested:

‘To the uninitiated public a model is always attractive, because it affords them an opportunity of forming some sort of judgment, without having to undergo the horrible task of trying to make out the relation of the several plans, elevations, and sections.’<sup>1172</sup>

However, by the end of the nineteenth century there was a shift in how models were perceived by architects. Following Valérie Fournier's idea that a profession is never completely established but continues to undergo renegotiation, professions first need to establish and then continually to work at maintaining their legitimacy

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<sup>1171</sup> E. Freidson, *Professionalism*, pp.157-158.

<sup>1172</sup> ‘Courts of Justice Competition’, *Building News* (25 January 1867) 57.

in society.<sup>1173</sup> With these ideas in mind, I propose that the use of a model as a tactile design tool by E. S. Prior in 1895 and 1899 indicates a moment where architects attempted to gain conceptual control and authorship over the medium. This moment is also visible in architectural education: in a 1906 article in the *Architectural Review* about the Architectural Association two plasticine or clay models of mausolea made by fourth-year students were shown in photographs (Fig.90). The article described how as the students were at an advanced level and therefore already had a strong knowledge of drawings, it was ‘more profitable to devote their energies in the school to questions of architectural form and expression’.<sup>1174</sup> The implication was that it was modelling that permitted these aspects to be realised most effectively. Combined with Prior’s influence on European architecture, as I described in Chapter 3, I believe that there is more research to be done on the conceptual development of the architectural model in the first half of the twentieth century.



**Figure 90**

Arthur Welford, ‘Model of a Design for a Small Mausoleum’

‘Architectural Association School of Architecture’, *Architectural Review* (December 1906) 279.

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<sup>1173</sup> V. Fournier, ‘The Appeal to “Professionalism”’, p. 286.

<sup>1174</sup> ‘Architectural Association School of Architecture’, *Architectural Review* (December 1906) 275. Alan Powers rather unfairly, I think, seems to dismiss the relevance of these models: A. Powers, ‘Architectural Education in Britain 1880 – 1914’, p.122.

Models have held a symbolic role with their public display and presentation of models testifying to attainment, power, and new political visions. Throughout the six chapters I have shown how models operated as markers of identity for individuals, institutions, and governments. Models of antique buildings, such as those found in the collections of John Soane, Edward Cressy, and Decimus Burton, demonstrated the architect's knowledge of the architectural canon, and helped to differentiate the profession from the tradesman or contractor. I examined in Chapter 5 how the exhibition of a model was a way in which the profession presented its work to the public, framed by either an individual, collective, or national agenda. At the Royal Academy Exhibition architects including C. F. Inwood, J. B. Bunning, and William Burges displayed models as individuals to show their ability to design buildings, and present new ideas about the decoration, form, and technological expression of architecture. In their presentation in institutional settings, such as the South Kensington Museum or at Parliament, or on ceremonial occasions, models were used in a performative capacity, as a testimony and proxy for buildings and the political authorities responsible for procurement. Within the context of international exhibitions, models were used as a part of the construction of local and national identities. Whilst the Liverpool Architectural Society presented their city and its commercial district in miniature at the Great Exhibition in 1851, the RIBA began to use models at subsequent expositions both to present British architecture internationally and to cement their place as the voice of the profession in Britain. Throughout the thesis I have explored how various groups and individuals proposed the construction of a museum of architecture with a nationalist agenda, where models would be used to signify and promote a particular 'British' style and identity.

Paradoxically in some instances the thesis the absence of evidence about models in the available sources actually affords insights into the processes of design and construction in the nineteenth century. Whilst Chapter 1, Chapter 5, and Chapter 6 demonstrated how models were used to display and communicate construction details and market new technical products, I have not found a single model that was



used contractually to agree a particular construction technique or to specify work. For instance, as described in Chapter 5, a model of the Chapel of the Holy Trinity Church at Knightsbridge by Raphael Brandon and Henry Eyton was displayed at the Architectural Exhibition in 1861. This model depicted two bays of the chapel's roof structure, which was technically complex due to the presence of a clerestory window that lit the interior despite the constricted site. Following the rationale established by other studies of architectural models demonstrating complex structural systems, notably those by Christopher Wren and John Soane, one might expect the model to have been used or referred to in the contract documents related to construction.<sup>1175</sup> However, the specification of works by Brandon and Eyton for rebuilding the Chapel of the Holy Trinity issued to the builders made no reference to the model.<sup>1176</sup> Instead, as I argued in Chapters 1, 5, and 6, the content of models was responsive to the changing economic and organisational demands faced by the profession in the nineteenth century: the transition away from traditional tradesmen and 'simple building operations' to 'the subdivision of existing trades' and the emergence of new technologies, meant the profession required a 'building museum' formed from a 'collection of the special branches and trades [...] described and illustrated by models or specimens'.<sup>1177</sup> Many of these examples suggest that the overall value of models in the nineteenth century became focused on their rhetorical power than their practical application. At King's College, the Architectural Exhibition, and the South Kensington Museum, models were collected and displayed to prepare a new generation of architects for the requirements of practice at the turn of the twentieth century. The content of these models was also indicative of the standardisation of the architectural profession, building trades, and construction techniques. I would like to further explore the idea of standardisation in the nineteenth century through a deeper investigation of the other aspects of professional practice: the 'model' documentation produced to

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<sup>1175</sup> J. Wilton-Ely, 'The Architectural Models of Sir John Soane', 9, 16-18; S. Valeriani, 'Three-dimensional Models as "in-between-objects"', 26-46.

<sup>1176</sup> RIBA DB/7/2/3 'Specification of works by Brandon & Eyton for taking down and rebuilding the Chapel of the Holy Trinity, Knightsbridge, London', c.1859.

<sup>1177</sup> 'Special Developments', *Building News* (19 February 1897) 262.

assist the profession during the period such as appointments, specifications, and building contracts, alongside their input into the refinement of building regulations during the period. Viewing these documents as designed objects as much as any other form of architectural production, they could be examined in terms of their role in regulating services, encouraging trust in the profession, and reducing risk.<sup>1178</sup>

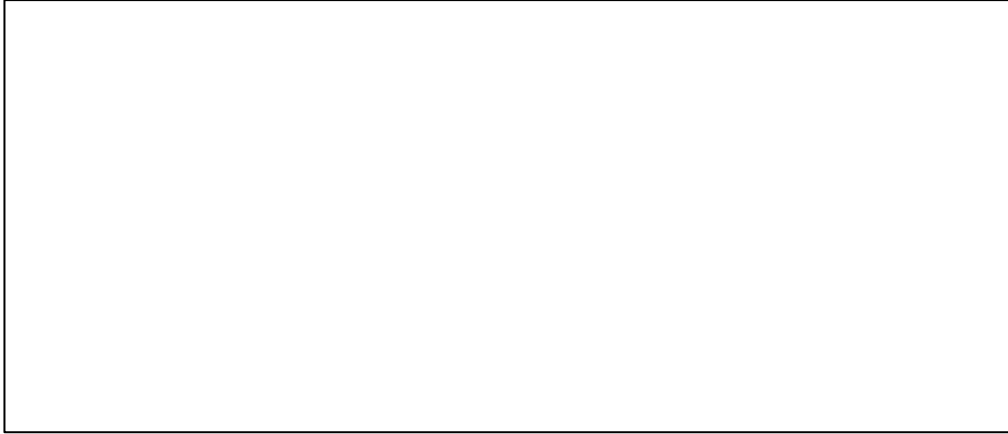
There are several other themes that have arisen in the course of the research. I have, for example, shown how there were other individuals involved in the production and use of architectural models. In Chapters 2 and 4 I examined how both governmental and private clients, who were able to understand orthographic drawings such as Robert Holford, Edward Hussey III, and Austin Henry Layard, were actively involved in the architectural models made for the buildings they were commissioning. Contrary to the opinions expressed by John Wilton-Ely in the 1960s who described how model-making did not emerge as a separate discipline until the end of the nineteenth century, my research has demonstrated how model-makers were active agents in the production of architecture during the period. In Chapter 4 through a study of models made by Richard Day junior, I exposed a series of topics that existing scholarship has overlooked, including sub-contracting, how the cost of models were tabulated, and the practicalities of making large-scale plaster models. In Chapters 2 and 4 I established the importance of John Thorp as a model-maker in both legal disputes and the design of new buildings. For the former, ‘no evidence, [Thorp] realized, had such weight and influence with a jury’ as an architectural model, whereas for the latter, in the case of Meux’s Brewery Company, Thorp’s fragmentary model uncovered a host of spatial and programmatic discrepancies in the plans for a highly complicated industrial complex.<sup>1179</sup> Produced in 1907, Thorp’s Meux Brewery model alludes to an emerging modernist conception of architecture that was later expressed at the Bauhaus, in particular

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<sup>1178</sup> This portion of the study will also examine the role of marginalia and annotation in drawings, contracts, and specifications. These disruptions to the standardisation of practice can be seen as actions that attempt to regain individual authorship and communication in a field of repetition and anonymous bureaucratic forces.

<sup>1179</sup> A. Soutar, ‘Produced in Court’, 614.

with Walter Gropius' interest in modular building techniques that manifested itself in a construction diagram model for the Törten Estate in Dessau, 1926 (Fig.91).<sup>1180</sup>



**Figure 91**

Walter Gropius, 'Model of the Construction Method, Törten Housing Estate' 'Bauhausbauten Dessau', *Bauhausbücher* 12 (Munich, 1930) p.165, Fig.148.

In conclusion, as I have demonstrated across the thesis, the production, use, and display of models was a central part of architectural practice in the nineteenth century, anchored in the emergence of professionalism. Models were a primary mechanism through which architects, clients, and the wider public made sense of and acted upon both their material lives and society at large. Whether as a demonstration, experiment, or proposition, the models I have presented in this thesis recorded, altered, and remade the built environment world of nineteenth-century Britain. As the first large-scale study on the use of models in Britain, my thesis reconsiders the current narrative of nineteenth- and early twentieth-century British architecture by linking architectural representation to contemporary discussions on the design of cities and buildings, by portraying a profession as one

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<sup>1180</sup> O. Elser, 'On the History of the Architectural Model in the 20<sup>th</sup> Century', p.14.

Here I am using modernist lightly, perhaps defined best by Christopher Wilk as both a historical period that consists of loose collection of ideas, a rejection of historical tradition, a belief in the power and potential of the machine and industrial technologies, and an embrace of abstraction. See: C. Wilk, 'What was Modernism?', *Modernism: Designing a New World*, Exhibition catalogue, Victoria & Albert Museum (London/New York, 2006) pp.11-22.

that was still in the midst of shaping its identity and role within society, and by exposing compromises to the vision of the 'omnipotent architect'. By framing the use of and discourse around models within the emergence of the architect as professional, it also contributes to scholarship on both architecture and models more broadly through its analysis of the relationship between social status and the deployment of models, how the architectural profession has constructed its authority, and how developments in building science and technology were disseminated to architects, builders, and others. Furthermore, the thesis makes a methodological contribution through its argument for how to work with primary sources. In particular, it calls for a close analysis of primary literature, archival documents, prints, drawings and models as key vehicles for revisiting familiar narratives, for allowing new voices from inside and outside of the profession, and thereby providing a multi-layered narrative of architectural production. Through these means it offers a framework for a wider analysis of the architectural profession, a topic that I will explore further in my post-doctoral work.

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## Appendices



## Appendix 1: Models donated to the RIBA

Date	Title	Providence	Maker
1834 <sup>1181</sup>	'Model of the Temple at Edfou, as restored by Napoleon'	Papworth, J. B.	Unknown
1834 <sup>1182</sup>	'Model of a Scaffold'	Donaldson, T. L.	Unknown
1834 <sup>1183</sup>	'Model of Apparatus used as a Scaffold Upon restoring the paintings by Sir James Thornhill in the dome of St. Paul's Cathedral, London'	Parris, E. T.	Unknown
1834 <sup>1184</sup>	'A very beautiful model of Cossey Hall, Norfolk'	Dighton, Thomas	Dighton, Thomas
1835 <sup>1185</sup>	'Model of an Egyptian Temple, executed by T. Deighton'	Papworth, J. B.	Dighton, Thomas
1835 <sup>1186</sup>	'Several models and pamphlets in illustration of the ventilation and heating of buildings'	Hiort, J. W.	Unknown
1837-1838 <sup>1187</sup>	'Model of Obelisk of Materialah, near Cairo'	Bonomi, Joseph	Unknown
25 June 1838 <sup>1188</sup>	'Model of a Scaffold for erecting the Devonport Memorial'	Foulston, J.	Unknown
11 May 1840 <sup>1189</sup>	'Model of a Roof with description'	Cubitt	Unknown
17 April 1848 <sup>1190</sup>	'Model of Salisbury Cathedral'	Britton, John.	White of Bristol

<sup>1181</sup> *RIBA Transactions* (1835–1836) 31.

<sup>1182</sup> *RIBA Transactions* (1835–1836) 34.

<sup>1183</sup> *RIBA Transactions* (1835–1836) 34.

<sup>1184</sup> *RIBA Transactions* (1835–1836) 38.

<sup>1185</sup> *RIBA Transactions* (1835–1836) 41.

<sup>1186</sup> *RIBA Transactions* (1835–1836) 41.

<sup>1187</sup> RIBA, 1.2.1, I, 'Report of Council on 'Contributors to the Collection of the Library', 7 May 1838.

<sup>1188</sup> RIBA, 1.2.1, I, 'Report of Council on 'Contributors to the Collection of the Library', 25 June 1838.

<sup>1189</sup> RIBA, 1.2.1, I, minute of a meeting held on 11 May 1840.

<sup>1190</sup> RIBA, 1.2.1, II, minute of a meeting held on 17 April 1848.

17 April 1848	'Model of Radcliffe Church'	Britton, John.	White of Bristol
17 April 1848	'Model of the Cannyng Monument'	Britton, John.	White of Bristol
7 June 1849 <sup>1191</sup>	'Four Models of the Agrigentine Temples, executed in the native stone'	Barbe, John St.	Unknown
2 June 1862 <sup>1192</sup>	'A case containing models of the friezes of the Partheon, and temple of Apollo Epicurius, Bassae by E. Henning'	Foxhall, E. M.	Unknown
13 January 1882 <sup>1193</sup>	'Two models of the arch on Constitution Hill and the Façade Entrance to Hyde Park'.	Burton, Decimus	Unknown (possibly Richard Day junior)

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<sup>1191</sup> RIBA, 1.2.3, LC/3/2/4, Letter to Council from C. R. Cockerell, 7 June 1849.

<sup>1192</sup> RIBA, 1.2.1, IV, minute of a meeting held on 2 June 1862.

<sup>1193</sup> RIBA, 1.2.3, LC/20/6/17, Letter to Council from Executors of Decimus Burton's estate, 13 January 1882.

Appendix 2: RIBA Meetings with models in the nineteenth century

Date	Speaker	Title
28 March 1836 <sup>1194</sup>	Fox, Charles	“On the construction of Skew Arches, with explanatory drawings and models.”
8 July 1839 <sup>1195</sup>	Barnfather, William.	“A paper was read descriptive of a bridge of wood erected over the river Aln, in Alnwick Park, Northumberland, by Mr. William Barnfather, accompanied by a model.”
16 December 1839 <sup>1196</sup>	Cottani, Mr.	“Mr. Cottani delivered a discourse on the manufacture of bricks by machinery, illustrated by models, and drawings of the Marquis of Tweeddale's machines for making of bricks and tiles.”
6 March 1843 <sup>1197</sup>	Perring, Mr.	“A communication was read from Mr. Perring, on the Great Pyramid, a model of which was exhibited to the meeting which had been made by him”
6 November 1843 <sup>1198</sup>	Donaldson, T. L.	“Some account of Models of Churches preserved in Henry V's Chantry, Westminster Abbey.”
16 December 1844 <sup>1199</sup>	Unknown	“Models and Drawings will be exhibited illustrative of the removal of the Light-house at Sunderland”.
9 February 1846 <sup>1200</sup>	Lucas, R. C.	“An Essay on the Parthenon, with a dissertation on the Restoration of the same now in the British Museum”
25 January 1847 <sup>1201</sup>	Dampier, Mr.	“Mr. Dampier exhibited Specimens and Models of the Architectural Tile Company's patent Roofing and Facing Tiles.”

<sup>1194</sup> C. Fox, ‘On the construction of Skew Arches, with explanatory drawings and models’, *The Architectural Magazine* 3.28 (June 1836) 251–260.

<sup>1195</sup> ‘Royal Institute of British Architects’, *The Civil Engineer and Architect's Journal*, 2 (August 1839) 312.

<sup>1196</sup> ‘Royal Institute of British Architects’, *The Civil Engineer and Architect's Journal*, 3 (February 1840) 69.

<sup>1197</sup> RIBA, BAL, RIBA/GM/2, General Meetings Minutes, 6 March 1843.

<sup>1198</sup> *Proceedings of the Institute of British Architects: Sessions 1842 – 1849*, 6 November 1843, p.43.

<sup>1199</sup> *Proceedings of the Institute of British Architects: Sessions 1842 – 1849*, 16 December 1844, p.95.

<sup>1200</sup> *Proceedings of the Institute of British Architects: Sessions 1849 – 1850*, 9 February 1846, p.143.

<sup>1201</sup> *Proceedings of the Institute of British Architects: Sessions 1842 – 1849*, 25 January 1847, p.185.

17 May 1847 <sup>1202</sup>	Wood Johns, J.	“A Model of the Church of the Holy Sepulchre was exhibited by J. Wood Johns, Esq.”
14 June 1847 <sup>1203</sup>	Merrell, Mr.	“Models illustrative of a new Principle of Ventilating Brick-work, the invention of Mr. Merrell, of Woodbridge, were exhibited and explained.”
28 June 1847 <sup>1204</sup>	Donaldson, T. L.	“A curious Model of a Chinese Chemist’s House and Shop were exhibited to the Meeting, and the several arrangements explained by Professor Donaldson.”
11 December 1848 <sup>1205</sup>	Barrett, Mr.	“A Paper was read by Mr. Barrett, one of the Proprietors, descriptive of Dr. Fox’s Patent Mode of constructing Fire Proof Roofs, Floors, and Ceilings, illustrated by a Model and Drawings.”
11 February 1850 <sup>1206</sup>	Naylor, J.	“Models of Naylor’s patent Ventilating Panes for Windows were also exhibited.”
8 January 1855	Baker, A. J.	“A Model, in plaster, of the Dome of Muhammed’s Tomb at Beejapore, was exhibited” <sup>1207</sup>
26 February 1855		“A Model of Blake’s Self-acting Spring Slides for doors and windows was exhibited”. <sup>1208</sup>
14 May 1855	Hill, Edwin	“A Model and Drawings of Mr. Edwin Hill’s Equilibrium Doors was exhibited and explained by the inventor” <sup>1209</sup>
21 May 1855		“Models of Z. Round’s Patent Bricks to supersede the use of Wood Bricks, were exhibited and explained by W. Wiggington, Associate”. <sup>1210</sup>
16 November 1857		“A Model of a contrivance for striking the lengths of centering used in constructing circular drains, invented by James Buckle, was laid on the table.” <sup>1211</sup>
1 February 1858	Edward M. Barry	Model of tower at Houses of Parliament. <sup>1212</sup>

<sup>1202</sup> *Proceedings of the Institute of British Architects: Sessions 1842 – 1849*, 17 May 1847, pp.207-208.

<sup>1203</sup> *Proceedings of the Institute of British Architects: Sessions 1842 – 1849*, 14 June 1847, pp.211-212.

<sup>1204</sup> *Proceedings of the Institute of British Architects: Sessions 1842 – 1849*, 28 June 1847, pp.213-214.

<sup>1205</sup> *Proceedings of the Institute of British Architects: Sessions 1842 – 1849*, 11 December 1848, p.272.

<sup>1206</sup> *Proceedings of the Institute of British Architects: Sessions 1849 – 1850*, 11 February 1850, p.39.

<sup>1207</sup> *Proceedings 1854-55*, p.12

<sup>1208</sup> *Proceedings 1854-55*, p.24

<sup>1209</sup> *Proceedings 1854-55*, p.43

<sup>1210</sup> *Proceedings 1854-55*, p.46

<sup>1211</sup> *Proceedings 1857-58*, p.9



7 February 1863	F. Marrable	‘A Discussion upon the Practical Ventilation of Buildings’, Demonstrated via a model a ventilator invented by Mr. Haworth and exhibited at the 1862 International Exhibition. “Here is a small model of it. I was in hopes I should have had the same model as shown in the Exhibition, and which elucidated the matter very fully.” <sup>1213</sup>
8 January 1873		‘On the Lantern of Ely Cathedral [...] illustrated by a number of large diagrams and a model of the timbers of the lantern’. <sup>1214</sup>

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<sup>1212</sup> *Proceedings 1857-58*, p.86

<sup>1213</sup> *Transactions 1862-63*, p.127

<sup>1214</sup> ‘The Lantern of Ely Cathedral: Royal Institute of British Architects’, *Builder* (8 January 1873) 30-31.



Appendix 3: Models displayed at the Architectural Exhibition

Date	Architect	Maker	Title of Model
1849	Fripp, C.		Study for a Façade
1852		Day, Richard	Martyrs' Monument
1852		Day, Richard	Portico of the Parthenon
1852		Pearson, Charles	Great Central Terminus
1855		Tracey, S. W.	Model of Gateway to Cardinal Wolsey's College, Ipswich
1855		Lambert, R.	Accurate Model of Cheshunt Church, Herts, four feet to the inch, showing its exact appearance at the present time
1855		Hesketh, R.	Model of Florence Cathedral
1855		Thompson, P.	Model of a Block of Labourers' Cottages
1855		Mabey, J.	Model of a design for a font
1855		Mabey, J.	Model of a Conservatory
1855		Waugh, Lieut. - Col.	Model of a Rifle-practice Gallery, Barracks, and Drill-shed
1855		Parminter, G.	Model of a portion of a proposed new Line of Street, along the centre of the Thames, from Westminster to London Bridge
1856		Howell, A. P.	Model of a Font
1856		Griffiths, W. P.	Portland Stone Model of a Font with Drain
1856	Colling, J. R.	Taylor, W. J.	A Plaster Model, showing Two Capitals
1857		Salomons, E.	Model of the Entrance Doorway to Warehouse, &c., at Manchester (see Drawing no.45)
1857	Salvin, A.	Dick, W. R.	Model of a proposed Spire for St. Mark's Church, Torquay, made from the designs of A. Salvin, Esq. by
1859	Tite, William	Monteath, J.	Model of St James Church, Gerrards Cross
1859	Roger Smith, T.		Model of Roof over New Independent Chapel, Highgate

1859	Johnson, R. J.		Model of St Andrews, Heckington
1859	Burn, GA.		Model showing arrangement of a Double Staircase
1860			No arch models but Model of Edwar'd's Patent Chimney Bar and Ventilating Heat Plate and Model and specimens of Vieille Montagne Zinc Roofing
1861	Waterhouse, A.		Model of Manchester Assize Courts. Scale 1/8 inch to a foot
1861	Brandon, R.		Model of a Church of the Holy Trinity, Knightsbridge
1861	Dawkes, S. M.	Forsyth, James	Working model of a font
1862		Birch, G. H	Model of a Cathedral suitable for the Nineteenth Century
1862		Miles, D.	Model of Miles's Patent Sashes - David Miles, 36 Ruperra Street, Monmouth
1863			Model of Parlor's Prize Ventilator
1863	Roberts, E.		Model for Railing to Enclose Playground Christ's College, Finchley
1863	Barber, W. H.	Potts, R.	Model of the Choragic Monument of Lysicrates at Athenes,(more details see cat.)
1864	Smirke, S	Harrison, W.	Model - Portion of the Arcades and Terraces at the Horticultural Gardens, South Kensington.
1864		Priest, E. R.	Model - Kensington Railway Station
1864	Wintle, W. S.	Priest, E. R.	Model of a design for Middle Class Schools
1864	Percy Goodman, A.	Percy Goodman, A.	Model of a small Church
1865	Street, G. E.	Thwaite, C. N.	Model (Cardboard) of Church of St. James-the-less, Great Garden Street, Westminster
1865		Thwaite, C. N.	Model (Cardboard) of Parish Church, Bowden
1865		Thwaite, C. N.	Model (Cardboard) New Dairy, Appleton Hall, Cheshire
1865		Thwaite, C. N.	Model (Cardboard) The Woodlands, Over Darwin, Lancashire, the residence of Thomas Ashton, Esq.

1865		Thwaite, C. N.	Model (Cardboard) The Priory, Windermere, the residence of W. Carver, Esq.
1865		Thwaite, C. N.	Model of Kettering Church (Plaster)
1866	Wiggington, W.	Thwaite, C. N.	Model of West Window (new church), S. Paul's, Charlton, Kent
1866	Roger Smith, T.	Thwaite, C. N.	Model of South Front, Shephalbury, the residence of Unwin Heathcote, Esq.
1866	Wiggington, W.	Thwaite, C. N.	Model of East Window (new church), S. Paul's, Charlton, Kent
1867	Seddon, J. P.		Four General Views of Model of Building (photographs of designs sent in competition for the New Law Courts)
1867	Dale, John		Model of Church proposed to be erected near London
1867	Dale, John		Model of Sudbury Hall, near Harrow. Built in Bath Stone. Cost £4,000
1868	Barry, Charles		Model of the Birmingham Grammar School.
1868	Styan, Henry	Thwaite, C. N.	Model of House, erected at Grasmere for Stephen Helis, Esq.
1868	Darbishire, H. A.	Thwaite, C. N.	Model of a House at Holly Village, Highgate, erected for Miss Burdett Coutts
1868		Thwaite, C. N.	Model of Birthplace of Shakespeare
1868		Thwaite, C. N.	Model of Anne Hathaway's Cottage
1870	L'Anson, E.		Plaster Model of one Bay of the British and Foreign Bible Society's New House, Blackfriars

