RADICAL PEDAGOGIES

RADICAL PEDAGOGIES
ARCHITECTURAL EDUCATION
AND THE BRITISH TRADITION

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PREFACE
RADICAL PEDAGOGIES:
INSTABILITY, INNOVATION
AND EMERGENCE WITHIN
ARCHITECTURAL EDUCATION

PROFESSOR DAVID GLOSTER

'Sensuous frontline existence is there, hateful
and repellent, unforgettable and inescapable...' [1]

Perplexingly, the education of students to join a profession that is often regarded with envy by those on the outside is, in fact, grounded in conflict. Some readers will, however, be used to the idea that architecture education is a scene of instruction against which *sacrifice* has to be made; the axiom that 'if it doesn't kill you, then you're no good'.[2] All those participating in the teaching of architecture should recognise this truth without feeling satisfied in making such acknowledgement.

The condition of instability – a key word in this book's title, fundamental to its ethos – is not one many people feel comfortable with. A queasy sense of imbalance and uncertainty, few absolute values, and no guarantees of anything other than an even more dubious future are what the majority of us avoid in life and work. But this is *architecture* we're talking about. Imbalance and ambiguity richly oxygenate debate of the subject in Britain, providing the fuel for those scenes of white-knuckled, temple-popping disagreement schools host under the dignifying banner of the design jury.

This introduction will not question whether such delicate and improbable structures for criticism of The Project remain appropriate to an environment in which students now accumulate six-figure debts. Instead, it celebrates those intellectually restless environments created by schools of architecture to reinvent the discipline (often in less time than the mainstream profession can pronounce 'improved procurement routes'). This is scholarship executed under combat conditions, against the punishing deadlines of the semester system. It bears little resemblance to research and enquiry in almost any other academic discipline; this is in itself an achievement.

The unique milieu of British architecture education is surely taken for granted, meaning this book *had* to be written. We need a marker set and published before ruthless commodification in the global economy reduces the entire built environment to the vocabulary of house builders. Our curiosity thirsts for evaluation of the UK's alterity in architectural education, and how the occasional detachment of this from practice may actually have enhanced the progressive professional reputation of UK practitioners (as well as their profitability). We should revel in the way radical pedagogies developed in the vagabond academia of UK architecture schools have established multiple strata of theories and scholarship for the discriminating student (in the broadest sense) of architecture to luxuriate in. And build on.

Propositions advanced in the following chapters inevitably need to be tested by *doing*; the timeless dilemma faced by emergence. However, raw enthusiasm remains a priceless asset of the architect and aspiring architect; maturity and authenticity in educational practice can be retrofitted. If we are to be brave in how we teach, we should accept that complete coherence at the outset of any new initiative is no guarantee of intellectual progression.

Distinct cultural realignments followed both of the 20th century's catastrophic global wars. In architecture, design methods and spatial language emerged that we now blanket under the descriptor of modernism. Irrespective of location, this proposed that at the heart of many traditional cultures lay corrosive elements that had fundamentally contributed to conflict. To avoid future repetition of this, the stuff of culture had to be radically reappraised, and traditional values subverted. Modernism acquired traction because of its appeal as a panacea to a world shocked at the depth of the destruction it had wrought on itself.

Fundamental to the renegade mentality of British schools of architecture, however, is an argument that they may never have understood or accepted modernism – whether by accident or design is now irrelevant. From British critical perspectives, modernism represented intellectual oversimplification. A stand-off between, say, Aalto and Corbusier in even quite dull British schools was instinctively understood to lack dimensionality; such conversations just pecked at the *language* of architecture. The critical modification of the architectural project by creatively factoring in the variables posed by cultural, intellectual, historical and technological data was just not visible in modernist methodology.

Thus, post-war British academia shook the debris of the Blitz from its threadbare tweeds, and reacted to the crude recital of modernism's virtues by creating a multivalent and pluralistic teaching culture. A culture emerged grounded in the belief that the very question of *what architecture was* became subject to continuous debate. This move mirrored the generous and unquestioning absorption of émigré European architects into the British professional landscape between the world wars, with enormous benefits to the breadth and depth of the post-Edwardian built

environment. Thus, 'no easy answers' provided the leitmotif for a new generation of architecture's tutors, embedding the intrinsically bloody dynamic of the modern British school of architecture.

In response to the unravelling of European and global certainties by Freud, Marx and Hitler, British architectural education developed an impenetrable and dizzying intricacy. The themes determining its taxonomy over the last half century have included:

Adding Complexity (Rowe, Rykwert, Vidler): the immeasurable, phenomenological capacity of architecture to create the sublime and terrible. Inevitably hard to objectify, and thus a critical strand free from the pseudo-science of functionalism.

Script Ripping (Price, Archigram, FAT): embracing modernist principles of free plan and universal space, the invitation is actually for wholly different patterns of civic identification, spatial usage and technical resolution to emerge, freeing architecture from typological cul-de-sacs.

Geometries and Ordering (Alexander, Critchlow, DRL): in many ways an alternative Beaux Arts classicism, pattern recognition restored the legitimacy of Greek and Roman geometry to the curriculum, and – improbably – became echoed through advanced software in form finding for parametric urbanism.

Locating Architecture Outside Architecture (Rudowsky, E. F. Schumacher, Jencks): the emergence of 'non-pedigreed'[3] construction, exchange systems and professional disciplines as staging for the development of a parallel theoretical and critical discourse on architecture.

A proper historical account of these shifts is the responsibility of other contributors. The purpose of mentioning them here is that, through clasping apparently irreconcilable opposites, has emerged one of the most energised systems (sic) of education in the world.

[the] '…globalised architect must become more than just an artful visionary, but also master of the art of the political nudge willing to act in multiple mediums and the simultaneous scales of the chaotic new world disorder'[4]

Whilst worrying about the future may only be for the very old, it's undeniable that the speed and scale of change in building production (30 storeys in 15 days, anyone?[5]) is producing some remarkably banal results; target figures in the construction industry (and workplace) apparently supersede the need for real substance in the 'architecture' produced. Maybe we have finally reached the crossroads where meaning separates from production; emphatically – and without further reference. The daily business news lionises warp speed growth in developing economies, blind to any unintended consequences. Thus, the critical reflection earnestly ad-

vocated in the following chapters is more than a recital of arguments for breadth and depth in thinking about architecture; it is, rather, pleading for a necessary pause in which to draw breath and ask about *values* in architectural education.

It might be appealing to suggest that architecture's unmourned descent to hell is imminent. Yet it's a lazy way of strategising the future to insist that the dimly remembered, bucolic idyll of architecture's past values can never be repeated. Instead, we should endorse and embrace the thoughtfulness, resistance, rage and invention of the contributions that follow. These and other propositions for change are where hope resides. Within such restive and contested debate lie multiple futures for architecture, each suffused with real potential.

'If it bleeds, we can kill it.'[6]

Ignoring those intangible, visceral qualities that contribute narrative to architecture, and neglecting the communication of these to our graduates and emergent practitioners, promotes the creation of a bloodless architecture. Its delivery to the client may have been impeccable, and the professional service offered of the highest order, but if the results do not dwell within the memory, to placate, perturb and excite, they will be worthless. Then we truly would have nothing to kill.

Inert for 30 years, European legislation governing frameworks for architectural education has finally been revised; we now have a pretext and context for further, radical change.[7] This book's testament suggests there are many trajectories that may continue to achieve the intellectual, social and practical complexity separating architecture from building. Together these constitute an ambition to see and do the 'less than obvious' – and hopefully downright audacious – that we can proudly identify, rather exclusively, with British architectural education.

BIOGRAPHY **PROFESSOR DAVID GLOSTER**

Professor David Gloster studied at the AA and Imperial College, and has taught design, technology, and histories and theories of architecture at the AA, London South Bank University, the Hogeschool in Arnhem, and Hanoi Architecture University, North Vietnam. He has worked in professional practice for over 20 years and is currently Director of Education at the RIBA.

[1] Siegfried Sassoon, writing on Isaac Rosenberg's poem 'Break of Day in the Trenches', in his foreword to *Collected Poems*, 1937.
[2] Zaha Hadid, interviewed by Jonathan Glancey, The Guardian, 9 October 2006.
[3] *Architecture Without Architects: A Short Introduction to Non-Pedigreed Architecture* (1964) remains Bernard Rudowsky's best-known work, although this diminishes the sophistication and breadth of his cultural criticism.
[4] Jenson M (2014) *Mapping the Global Architect of Alterity: Practice,*

Representation, and Education, London: Routledge, p. 10.
[5] Constructed by Broad Sustainable Building, Changsha, China (2011): 'It's not a construction company', the chairman Zhang Yue says, 'it's a structural revolution'.
[6] Quote from Alan 'Dutch' Schaefer (Arnold Schwarzenegger) in 'Predator', 1987.
[7] The new Professional Qualifications Directive (specifically, Section 8, Article 46 of Directive 2005/36/EC) was approved by the European Parliament in October 2013.

INTRODUCTION
HARRIET HARRISS

'In constrained, straitened times, the human spirit and imagination can combine with deep insight, expertise and a terrier-like tenacity to move the debate beyond its current critical deadlock.'

Like any educator alchemically combining teaching, administration and research, the decision to make this book happen was a result of extreme fatigue. I'm not tired of my job, but rather of the endless questioning of how we make architectural education 'better'. Better is simply no longer good enough, and doesn't address the fundamental challenges that today's educators and students face. These require new reserves of imagination, tenacity and the ability not just to dream but to deliver. 'Better' implies building on what you already have. There's nothing wrong with incrementalism – but that's not what this book examines, champions or celebrates. Professionalism must go beyond compliance-driven tropes of credentialism that maintain the status quo. In other words, maybe we need to do more than just accept, or tweak, the established system.

Architectural practice asks schools to produce practice-ready Freddies – whilst simultaneously graduating a maverick Mina or two – who, it is assumed, will be able to invigorate and keep alive a profession where commercial value and social relevance appear in terminal decline. To graduate both archetypes at the same time is surely an impossible task. And yet somehow, schools do it. And, somehow, another generation of architects – and educators – survives.

To teach to *survive* – by imparting the professional curriculum – is a necessary but insufficient skill. To teach to *live*, however, means to constantly experiment, adapt, reinvent, critique, contribute and, most crucially, to foster these capabilities in the imaginations and hearts of our students.[8] After all, it is our students who provide testimony of the efficacy of any pedagogy. Subsequently, a 'radical pedagogy' – one that is not afraid to question its purpose – must involve caring more about the best way for students to learn, and not just the best ways for schools to teach. Regrettably, not all commentators on architectural education appreciate that distinction.

RADICAL BY DEFAULT AND NOT DESIGN
In ancient Greece a *paid-agogus* or pedagogue was a leader of the young. But for an aspiring 'radical' pedagogue, educating involves more than leading, and learning involves more than being led. A radical pedagogy involves stepping away from orthodox practices[9] and revisiting the real – and surreal – fundamentals of what and whom an education is for, and who delivers it.

The authors gathered together by this book might not all be school-situated, but we are all involved in educating, and in sensing that established pedagogical aims and practices may be ineffective in promoting learning and social change. This is what this book proudly captures. None of the selected students, educators, strategists, artists, developers or practitioners were flying flags for radical pedagogy, making it easy for us to spot them on the battlefield. We found them because they – like many others – provide fascinating and prototypical examples of how to step away from orthodox teaching or practice in their everyday work. In doing so, they help catalyse a creative strategy against the challenges of uncertainty and change faced by both schools and sector. Bringing them together in one place forced the realisation that they form a formidable proto-movement and momentum particular to this point in time.

The act of reading this book diminishes distinctions between radical writer and radical reader. If you're reading it, even if you wouldn't define yourself as 'radical', you're probably curious, and that's often the first symptom.[10] But this book is more of a signpost than a script, and every signpost needs some terrain upon which to situate itself. We can surmise that the terrain is in a state of transformative disruption and shifting constantly; cracks are showing in the terra firma of firmness, commodity and delight.[11] What the following chapters capture are the moments when new possibilities push up from between the cracks. Rather than waiting for the sky to fall, schools have an opportunity to embrace other forces of transformation affecting all areas of HE provision in the UK and beyond, and even to lead by example. As the book illustrates, British architectural education has a long-established tradition of pedagogic pioneering, so this should be business as usual for us. And whilst predicting the future might be beyond the remit of radical, a brief examination of the *drivers* for change sets the mandate to which all schools will be compelled to respond.

DRIVER 01: THE COST OF ACADEMIC–COMMERCIAL COLLABORATION
The rising cost of higher education – now transferred to the shoulders of individual students – has fuelled arguments in favour of a Bologna-aligned reduction in the duration of architectural training from 7 to 5 years (although in reality, the average UK architecture student takes 9 years to breach the Part 3 barrier).[12] Yet even a 5-year course costs approximately £100,000 for fees and living costs,[13] which will take them until their 50s to pay off.[14] Add to this the attrition rate of 14 in every 15 architecture students failing to qualify as architects,[15] and the meaning of 'vocation' assumes ascetic and not just economic resonance. Whilst the RIBA may

have 'outlawed' unpaid internships or 'exploiternships',[16] there are many uncharted yet high-profile firms who feel entitled to offer them. Yet outside of architecture, there is a rising trend in the corporate funding of degrees, driven to some extent by the mass university bankruptcies forecast within the next two decades.[17] Where once corporate incursions into the 'purer' pastures of academia were uniformly derided, we may soon be unable to afford ourselves this luxury. And in the case of architecture practices – who are rarely global sweat-shop championing conglomerates – playing a more active role in sharing educational responsibilities with schools could open up positive possibilities for curriculum content in terms of both co-authorship and implementation. Subsequently, taking the initiative to explore how we de-partition what is learnt in school and in practice sooner rather than later allows us time to consider carefully how to develop ethical and sustainable professional qualifications that are not only relevant to more than just the architectural industry, but that are also financially accessible to a more diverse range of students.

DRIVER 02: STUDENTS AS PRODUCERS NOT CUSTOMERS

The young and talented are increasingly seeking access to real-world work experience during rather than after their university degree. Many are opting for emergent programmes that offer student-led co-authored, autonomous and autodidactic learning programmes at a fraction of the cost.[18,19] Online learning is increasingly common but only as a prop to solution-oriented collaborative projects that maximise face–time interactions.[20] Even within traditional institutions student-producers take greater responsibility for learning.[21] Schools that champion open systems with continuous access, allowing students to leave and re-enter the system and to transfer credits from other unconventional sources, will be among those who will cross-breed more authentically with independent avant-garde models.[22] Moreover, this apparent shift towards a more student-led curriculum is pedagogically endorsed. In learning theory, for example, the threshold between knowing and understanding something relies on the student's ability to frame questions, not simply iterate answers.[23] A good architectural educator therefore needs to be more than an expert knowledge purveyor. Rather than enabling students to identify good architectural education, educators will increasingly encourage them to examine 'what is it – and by implication what are they – good for?' This shift in power balance gives students the agency needed to use their intellectual and practical freedom to imagine not only school but practice alternatives.[24] Educating students to become citizens as well as professionals would enable them to prove that both school and profession have not outlived their usefulness. By creating a culture that emphasises innovation over iteration we give our students professional tools for nurturing a new ecology of architectural practice, even a 'new professionalism' moving beyond the 'better' or dainty optimisation of existing education services, and hollow cypher of credentialist pose. Instead, it takes us to places and tropes that are more inspirational, exacting, desirable and useful inside and outside the school.[25]

DRIVER 03: SPECIALIST PRACTICES SPECALIST SCHOOLS

Despite the annual agonising of educators over the Times and Guardian school league tables, we seem determined to dispute our place in a hierarchy focused on a remarkably small slice of intellectual territory. Few schools have attempted to offer a learning experience that is authentically distinct from other schools, despite the ease with which the validating curriculum could be more broadly interpreted and applied. Given the diverse range of practices out there, are schools labouring under a misapprehension that they are truly able to graduate 'employable everywhere' architecture students? With the number of specialist practices set to increase, schools might soon have no choice other than to differentiate themselves – not only as a means to maintain a competitive advantage in attracting the best students, but in order to remain relevant to divergent practices.[26] For many, the introduction of full fees in public universities amounts to privatisation by stealth,[27] but it also means that the rising number of students who are seeking more distinct and bespoke learning experiences will have greater influence over how these schools might position their offer.[28] Yet, whilst the pressure to specialise presumes commodification and marketisation of education, all architecture schools will still need a clear, overarching identity to connect the multifarious learning and qualification possibilities.[29]

Whilst the focus here is British radical pedagogy, this book is not alone in asserting that architectural education is at its root radical. Commentators elsewhere are also wrestling back the discourse on architectural 'radicalism' from the biomorphs and CAD consummates. Their evidence suggests that much of today's architecture teaching rests upon paradigms introduced through fringe experiments that questioned, redefined and reshaped both architecture and orthodox thinking.[30] Subsequently, some radical pedagogies may consist of historically rooted reiterations. Yet, despite its pledge to capture radical pedagogies, the scale and scope of this book is humble. Its educators, practitioners and students approach fundamental questions more with humility than with answers. Not because we don't have conclusions we think are important, but because all of us learnt the hard way how difficult learning, teaching and practising architecture can be. What follows are responses: some thoughtful, some visceral, all useful. They illustrate that in constrained, straitened times, the human spirit and imagination can combine with deep insight, expertise and a terrier-like tenacity to move the debate beyond its current critical deadlock.

As David Gloster suggests in his Foreword, impending changes in the duration and structure of architectural education provide a pretext and context for further, radical, change. To radically respond to these shifts constitutes an ambition to see and do the 'less than obvious' that characterises British architectural education.

In the first section of the book, dedicated to the historical palimpsest of radical British architectural education, Alan Powers testifies that whilst we have endlessly transformed the content of British architectural educa-

tion, the institutional structures for architectural education have remained largely static. This bodes poorly for a feed-forward future. Through an examination of UK art schools, Mel Dodd argues that an architectural education is more complicit with capital than we choose to admit, with schools vacillating between cultural fluidity and professional fixity. As Tim Ivison suggests in his counterfactual essay, it is the responses of students and teachers to the status of their education, both historically and currently, that truly matter. The historical section concludes with a chapter by co-editor Daisy Froud reflecting upon the implications for architects, and for their relationship to and understanding of the wider world, of changing attitudes from official bodies (the state and the professional institute) to the architectural education of the public.

The second section of the book explores institutional antagonisms in more detail. Jack Self assesses the way today's students engage with higher education, and asks should the student expect to be educated, or to purchase an educational experience? James Benedict Brown examines how his encounter with Freire as a student informs his chastening experience as an early career architectural educator. He explores the relevance of critical pedagogy to an architectural education that is focused on professional validation, and on the delivery of the technical skills demanded by an ever-changing economy. Hayley Chivers sets up a similar prototyping paradigm. She tests the mettle of her student experience against the demands of practice. As Chivers sees it, graduates with an integrated professional and creative stance can transition more smoothly from academia to practice, knowing not only what they need to do, but why they are doing it, and offer an invaluable resource to practices in the process. In contrast, head of school Matt Gaskin exchanges emails with students Rob Dutton and Devon Telberg concerning the gap between professor and undergraduate students who are keen to become active participants in their education. The possibility that a radical education might be simply a matter of delivering an 'appropriate education' is examined by Tatjana Schneider. Schneider insists we need to challenge the tight-fit-functionalism permeating curricula up and down the country and create curricular 'slack spaces', offering more wholehearted live learning experiences. If 'live' and 'real' mean 'people' and 'public', then Chris Brown – the CEO of Igloo, a UK company widely respected for its intelligent and creative approach to development – is an important voice to include in the conversation. He argues that the architectural education system fully prepares young professionals neither for the contemporary development context, nor for the directions in which this and construction procurement models are heading.
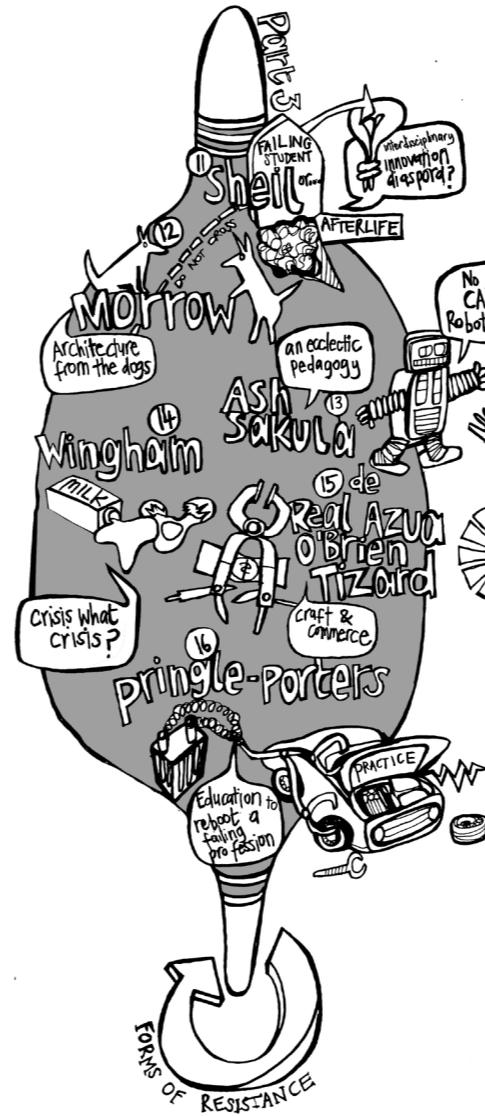
But is it possible to cram yet more information into an already over-obligated professional curriculum? Bob Sheil launches the book's third section by insisting we move beyond thinking that schools of architecture should be exclusively focused on educating architects, and that an architectural education can have other valuable purposes and applications. Sheil argues that instead of deriding those choosing to drop off the professionalisation conveyor belt, such individuals should be formally recognised

for their roles in furthering understanding, authorship, procurement and evolution of better environments and buildings. Ruth Morrow's chapter considers, from the perspective of a senior educator, the challenges and opportunities of teaching architecture in a fractured post-conflict world. Practitioners Cany Ash and Robert Sakula discuss other areas of focus for schools. They contend that schools should focus on developing creative speculation and capacity building. In their view the maverick students are the ones with the skills that will prove more valuable to practices in the profession facing uncertain change.

But does a contested and contingent curriculum really mean that architectural education is in a state of crisis?[31] Or does the endless predicament of what constitutes an architecturally grounded project provide tools for new conceptions of pedagogy, systems of space and, ultimately, forms of production? Rather than maintaining disciplinary silos, an emergent pedagogy models ways of practising that hybridise disciplines and transpose other forms of skills-focused learning – as recent graduates and practice entrepreneurs Lionel Real De Azua, Ciaran O'Brien and Lucas Tizard vividly demonstrate. Writing from the perspective of commercially successful but craft-inspired directors of practice, they argue that encouraging students to grapple with traditional or root craft processes embeds skills about expertise and innovation as effectively as any practice, management and law modules might aspire to. Architecture schools of course need to respond to technological opportunities. As an antidote to the artist's advocacy of the previous chapter, architects Jack Pringle and Holly Porter show that even orthodox, large-scale and commercially successful practices can propose radical solutions, advancing an innovation-focused mandate to reboot what they identify as a failing profession.

But should the radical future raze the institution, or simply ask us to engage differently with it? The fourth and final section of the book returns to the educational front line. Beginning with the example of 'Learning from Kilburn', Tom Keeley explains how a tiny, experimental university using its local area as both curriculum and campus, and presents an alternative educational model to interrogate the everyday. As well as documenting what makes Kilburn what it is, and informing future decision-making in the area, it equips local people with tools to look closer and demand better. Following on, Nina Shen-Poblete describes the each-one-teach-one STORE school model. This emerged from a series of self-initiated projects, divergent practices and experimental pedagogies, and is increasingly driven by concern with current crises in the culture and value of education, and the need for more intuitive and tactile responses.

Whilst STORE shares characteristics with the origins of the Architectural Association, Sam Jacob's parasite 'AA Night School' – an on-going speculative project that aims to turn an architecture school inside out – offers what are usually internal activities to a wider audience of professionals, clients, other creative practitioners and the general public, as well as students. As a counterpoint to previous examples of embedded urbanism, architecture journalist Laura Mark describes her deeply rural learning

The invitation card for the A.A. Soirée in the year that the compulsory Associateship Exam was instituted, shows the RIBA President, Sir Horace Jones, offering doubtful prizes, while young architects jump the hurdles of examination and crowd into the RIBA's doorway.

experiences at the Centre for Alternative Technology (CAT) in Wales: a school that encouraged its members to consider sustainable design as being about public interactions and not just buildings.

And the final case study – the emergent London School of Architecture, described by Nigel Coates and Will Hunter in an interview – proposes a new financial and pedagogic model that rather than treating academia and practice as binary opposites, unites practitioners and students in design and research. The London School of Architecture (LSA) seeks to position architecture in relation to those huge advances taking place in other disciplines and industries, to create a restless, progressive and opti-mistic architectural culture emphasising the opportunity to develop new operational strategies for the profession.

Whilst this particular radical pedagogy involves only a small and loosely formed group of hackademics,[32] what can be transposed between school and practice is their commitment to the processes of rapid prototyping, quick learning and a willingness to fail: processes which commit them to reimagining and, in many cases, redesigning both the school and the profession. No one chapter presents a 'winning alternative'. Instead, they each allude to strong alternatives to the incrementalist strategies that simply reshuffle or blend old and new material.

To doubt the status can feel destabilising, even risky. But the doubts we all have – about what we are and also what we are for – amount to a positive consequence of the unreasonable expectations placed upon today's prac-titioners, schools, educators and students – providing us with a significant chance to exact meaningful change.

If doubt is a precursor to hope then the hope is that disruptions might well bring architectural education back to its core mission – one that is con-veniently surmised in the RIBA crest, *Usui civium, decori urbium* (Public Service and Civic Ornament). In essence, this commits us to delivering the material but also cultural and social enrichment of the public realm and the lives of all its citizens. To do this requires us to have hope born not of stubbornness to simply survive as professionals but instead out of a concrete, existential imperative to make a professional contribution of consequence and meaning.[33]

8 Inspired by the Solomon Northup character's statement in '12 Years a Slave' (2013, directed by Steve McQueen): 'I don't want to survive. I want to live.'
9 In Latin, 'radicalis' means 'of or having roots.'
10 During the 1980s, Governor Regan argued that education should no longer be free on the basis that 'the state should not fund intellectual curiosity'.
11 Vitruvius allegedly quoted in Wotton's 1624 version of *The Elements of Architecture*.
12 Sourced from the RIBA Education Secretary David Gloster's 'RIBA Education Review', currently on tour across accredited UK architecture schools.
13 Source: http://www.topuniversities.com/student-info/student-finance/uk-tuition-fees-how-much-does-it-cost-study-uk (accessed 4 March 2015).
14 Source: http://www.bbc.com/news/education-26954901 (accessed 4 March 2015).
15 Source: http://www.topuniversities.com/student-info/student-finance/uk-tuition-fees-how-much-does-it-cost-study-uk (accessed 4 March 2015).
16 As former RIBA President, Angela Brady, was quoted as calling them. Source: http://www.bradymallalieu.com/president.html (accessed 4 March 2015).
17 The future of universities, The digital degree, The Economist, 28 June 2014, http://www.economist.com/news/briefing/21605899-staid-higher-education-business-about-experience-welcome-earthquake-digital (accessed 4 March 2015).
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23 Meyer J and Land R (2003) Threshold concepts and troublesome knowledge: linkages to ways of thinking and practising within the disciplines, Edinburgh: University of Edinburgh.
24 Hooks B (2014) *Teaching to Transgress*, London: Routledge.
25 The last time anyone was brave enough to dedicate a book exclusively to the subject of architectural education was David Nichol and Simon Pilling in 2005, with *Changing Architectural Education: Towards a New Professionalism* (London: Taylor & Francis). Their view was that only an education willing to submit itself to market forces would be capable of producing a 'new professionalism'.
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27 Thornton M (2012) *Privatising the Public University: The Case of Law*, London: Routledge.
28 The university of 2020: predicting the future of higher education, Eliza Anyangwe, The Guardian, 24 August 2012, http://www.theguardian.com/higher-education-network/blog/2012/aug/24/higher-education-in-2020 (accessed 4 March 2015).
29 The university of 2020: predicting the future of higher education, Eliza Anyangwe, The Guardian, 24 August 2012, http://www.theguardian.com/higher-education-network/blog/2012/aug/24/higher-education-in-2020 (accessed 4 March 2015).
30 School's Out' in Uncube Magazine (October 2014, No. 26, p. 18) provides an accessible account of the globally situated radical pedagogies Beatrice Columina's collaborative PhD at Princeton examines.
31 Architectural education must change, Sam Jacobs, Dezeen online, 18 April 2013, http://www.dezeen.com/2013/04/18/sam-jacob-opinion-architectural-education-crisis/ (accessed 4 March 2015).
32 Hackademics' is a phrase coined from the UnCollege movement in the USA, http://www.uncollege.org/4-more-important-skills-for-hackademics-to-develop (accessed 4 March 2015). See also: Stephens D J (2013) *Hacking Your Education: Ditch the Lectures, Save Tens of Thousands, and Learn More Than Your Peers Ever Will*, London: Penguin.
33 Freire P (2000) *Pedagogy of the Oppressed*, London: Bloomsbury. He stated: 'I am hopeful not out of mere stubbornness, but out of an existential, concrete imperative.'