COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

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M. MANAGEMENT

As in any other project that requires a certain degree of planning, collaborative architectural procurement needs to address the aspect of management. The tools presented here focus on methods that might differ from traditional approaches by including citizen engagement as it affects the organisation, stakeholder agency, phasing, and decision-making.

The inclusion of citizen engagement in the procurement phases of projects can be seen as a process of democratisation in urban decision-making, as a practice enabling, as Henri Lefebvre termed it, the “right to the city” (Lefebvre, 2017 originally from 1968) as a collective responsibility that is exercised individually, as an opportunity to enrich the discussion in its different phases and improve the design, from diagnosis to decision-making, or as an opportunity to enhance neighbourhood mutual support networks and peer learning. Their detractors argue that it is unworkable and inefficient, heavily time-consuming, and reliant on voluntary work, that decisions might be taken without sufficient information, and that it might result in conflict (seen as negative and destructive – but this could also be seen as a catalyst if instrumentalised). While both sides of the argument have a point, their different readings of the situation derive from a binary evaluation of objectives: direct democracy as a right on the one hand, and time-efficiency and pragmatism on the other. In addition, while its detractors understand the delivery of a tangible outcome as the main goal of the process, its supporters prioritise the process as an outcome in itself, whereby society gains tools for self-governance and political awareness in a process of collective maturing. Remarkably, both offer a binary reading of the user: as proactive and aware in the first case, and as a passive recipient of (public) policies and services in the second.

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Left: participation without challenging power relations maintains the *status quo* and is instrumentalised for the benefit of those in power. Right: ladder of citizen participation. Source: Arnstein, S. R. (1969) 'A Ladder of Citizen Participation', *Journal of the American Planning Association,* 85 (1), pp.24-34.

Although this topic is addressed in depth in the theoretical section of the PhD, a brief framing discussion is relevant here.

The conversation about management directly tackles questions around whose responsibility it is to take decisions, who takes decisions on behalf of, and for the benefit of whom, and who feels legitimised to make those decisions in a context that often involves the competing interests of grassroots organizations, local government, private interests and lay people. On a higher level, it raises the question of who sets the rules of the game: who decides who sits at the table (and who is left out), which topics will be discussed openly and which will be considered technical decisions.

I would argue that all architecture is “participative” and “social” by definition, since there is always a certain degree of involvement of different stakeholders, and architecture always responds to social needs, be these communitarian, public or private. In my opinion, the term “participative process” should be avoided, since it simplifies and includes many different forms of civic engagement with the same label. After some decades of misuse and political manipulation, "participation" has become a word empty of meaning that serves to describe too many different processes. Thus, I would argue that there is no such thing as "participation" as an abstract substantive, nor a “participative process”, and rather that there are specific participative methods applied to specific decision-making stages of the design process.

The distinction is crucial for two reasons. First, citizen engagement is not a binary issue, nor a one-time action. On the contrary, civic engagement can take place in very different phases with very different intensities, from the diagnostic phase in which needs and problems are mapped, to co-design, co-construction, post-inhabitation manipulation, etc. In addition, civic engagement is formed by a complex network of multidirectional relationships, both vertical and horizontal in relation to power, and groups presented as homogeneous are often very diverse, even within the local authority administration.

The second reason is that the simplification of classifying a process as either participatory or non-participatory may produce major management and political misunderstandings: once a process qualifies as “participatory” and it fulfils a requirement in an administrative checklist, it tends to legitimise further decisions taken by “experts”. This is often used in opportunistic political agendas that aim to legitimise decisions that have already been taken under a false facade of democratisation, rather than trying to articulate real and operational citizen engagement in decision-making and city governance. A typical example is that of “participative processes” that only refer to the diagnostic phases of a project, leaving out decisions taken at other stages: for example, strategic planning or design decisions. These processes ultimately undermine the perception of collaborative architecture in the long term, as it is seen by stakeholders as ineffective and manipulative.

Who sits on the decision-making table? Source: Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis, p.28.

The role of different stakeholders in public procurement, private development, and community-led projects. In both public and private there is a consecutive lead on different phases, with minimum overlapping of stakeholders. In both, architects are involved strictly in the design and execution phases, and users only appear at the end of the process, during inhabitation. These clear boundaries are blurred in some community-led projects such as cooperative housing through a process that enables a continuous dialogue between parts, which has a direct impact on the evaluation and model improvement in all its different phases. Source: author's drawing.

As Sherry Arnstein discussed using the term "ladder of citizen participation", which classified citizen engagement in eight categories from manipulation to citizen control, what is ultimately at stake is power relations (Arnstein, 1969). To my understanding, Arnstein's approach requires the breaking down of these power relations in the different phases of the procurement process, revealing who is involved, in which phases, with what agency (and also who is not included). The key question, then, is how citizen engagement is articulated in the different phases of procurement in terms of multiple social and political agendas, power relations and asymmetrical levels of expertise.

In summary, in the diagnostic and strategic analysis phases, citizen engagement can be seen as a mechanism for collective urban governance and decision-making, not only defining problems, needs and opportunities but also contributing to the definition of aims, goals, evaluation indicators, and priorities. In the design phases, the involvement of the user opens the door to design opportunities derived from users taking direct responsibility for design decisions. This is very clear in the case of cooperative housing where, as opposed to conservative private and public procurement dynamics, residents engage in typological, material and environmental innovation. This impact extends beyond the design phases to the execution and post-occupancy phases, with improvements in appropriation, manipulation and performance.

The first group of tools in this chapter refers to PLANNING: a definition of phases and anticipated timeline, both of which should be reviewed, along with the evolution of the process. Collaborative architecture may fall into the categories of both strategy and tactics, as defined by Michel de Certeau in *The Practice of Everyday Life* (de Certeau, 2008). Strategy is linked to planning protocols, and tactics rely on fragmented, temporary actions in a permanent search for opportunities. In other words, strategy is linked with the duration of time, while tactics are short-term, and often provocative, actions in space. Planning tools will mainly apply to strategic projects. However, collaborative architecture is often a non-linear process in which it is not possible (or even desirable) to engage with planning from the start of a project, since certain steps rely on previous ones in an open process which is sometimes non-deterministic in terms of outcome. In addition, the traditional work plan or design stages scheme prescribed in each country by its respective architectural regulatory organisation may not apply here, since the entry point of collaborative architecture is highly variable: it may emerge from a social demand, the availability of resources such as plots or construction materials, the need to develop a cartography of an urban location to understand its problems, or the opportunity arising from the context in the form of an event, to name a few. With the aim of expressing a degree of openness in planning, certain tools that could belong to this section have been placed in the A3. Strategy section of the Analysis & Strategy chapter. This responds to the fact that although some planning should be undertaken at the start of a project, it is only after site data collection and cartographic development that a picture that is complete enough to allow planning will emerge.

Two procurement schemes defined by stages, seen from the point of view of architects' involvement. Top: Royal Institute of British Architects (RIBA) Plan of Work 2020. Processes are presented as linear with clear outcomes in each phase. Source top: RIBA; below: URBACT (2018) *Imagina Badia: Strategy for the transformation of the fringe in Badia del Vallès (AMB)*. In the central circle different stakeholders are displayed, from the lead group to others including politicians, experts, citizens, associations and civic groups. The outer perimeter indicates actions and phases. The evaluation phase turns a linear process into a circular one. Report available at: www.urbact.eu.

The second set of tools addresses DECISION-MAKING as a process that should not be taken for granted. Given that the process will be conditioned by an asymmetrical balance of power and knowledge, confrontation between different legitimacies, and possibly situations of conflict, the tools presented here aim to identify which groups of stakeholders are involved, and what their roles and agency in the process are. Some crucial issues affect this stage, which are discussed briefly below.

With a sociological and psychological approach, Cembranos and Medina, in their book *Grupos Inteligentes* (Cembranos and Medina, 2014), insightfully analyse the nature of heterogeneous "intelligent groups" in decision-making. Remarkably, the authors claim that collective intelligence is not based on the individual intelligence of members, but on the method used to make decisions. Grounded in their experience

Scheme proposed for Neighbourhood Territorial Action in Chile, where there is a clear distinction between promoters of the model (1), enablers (2), local coordinators (3), local social networks (4) and local public and private institutions (5). Source: Jeri *et al.* (2018), p.38.

as theoreticians and activists, the authors propose several methods and tools for collaborative decision-making, which enable the horizontal distribution of power, the inclusion of all voices and direct democracy. Authors argue that disagreement is a necessary trigger for constructive discussion and that often the total consensus is unnecessary, but an agreement on the basics is enough. The benefits, Cembranos and Medina argue, are the great potential offered by collective creativity, multiple approaches to solution-finding, the inclusion of many perspectives, and the possibility of facing more complex realities. At a political level, they underline the way that the assembly becomes a key method for horizontal democracies and self-empowerment. However, the way the method is used is crucial for avoiding the problems of the polarisation of opinions and lack of coordination, which results in ineffective operations and is severely time-consuming. In relation to this, the authors propose a useful set of tools for the different points of the discussion: organisation, discussion and thinking, encouraging participation, decision-making, and managing conflict. However, they emphasise how the quality of the conversation will be influenced by the quality of thinking by individual members, including those who are well informed and thoughtful.

The third group of tools, ENGAGEMENT, explores the possibility of partnering with other stakeholders, in either organising or developing a project as a tool to guarantee the feasibility of a project, whether this is the local authority, institutions of a different sort, private partners, individuals, or civic groups such as associations or cooperatives. For this to happen, it is crucial to understand other stakeholders' motivations since, despite their different agendas, their friendly collaboration might be beneficial for a common goal or for both their different aims.

While Cembranos and Medina's proposal is grounded in urban decision-making, several questions arise from the scenario in which the architect is placed between multiple stakeholder agendas, agencies and degrees of involvement, users' desires, and investor possibilities. Five key terms have been identified: power asymmetries, stakeholder legitimacy, process leadership, decision-making and knowledge asymmetries. All of these emerge from and point to urban governance.

The first term refers to the power asymmetries and motivations of the different stakeholders participating in the process, including public procurement agencies, local government departments, public or private institutions, self-organised neighbourhood groups, etc. Closely linked to this is legitimacy: whose responsibility it is to make decisions, who takes decisions on behalf of whom (and for the benefit of whom), and who feels legitimised to make those decisions in a context that often involves the conflicting interests of grassroots organizations, the local government, private interests and citizens. A typical example of this is that since the local government cannot satisfy the interests of each and every citizen, it is often criticised for prioritising those of the most privileged sectors of society.

Power asymmetries and stakeholder legitimacy are closely linked to the definition of process leadership. In other words, who defines the rules of the game: who decides

Project stages in relation to toolkit chapters, key decisions, and citizen engagement.

who sits at the table (or assembly), which phases there will be, and with which aims, which stakeholders will be included in each phase, and with what agency. Equally relevant is who has been left out of that decision-making. In this regard, it is important to distinguish who finances the project from who leads it: community architecture/planning, as a process in which users are involved in one or more stages, is not necessarily the same as community-led architecture, in which users take leadership in this process, shifting the traditional systems of power relations in urban transformation projects. Both can have multiple sources of finance, from public investment to self-promotion or even privately-driven funds. From the point of view of mediators and technical staff, it is crucial to differentiate between financial bodies and users, to allow technical staff to operate autonomously and without interference from political parties or the agendas of local government.

The three issues discussed above – power asymmetries, stakeholder legitimacy, and process leadership – are articulated around specific protocols of procurement and the definition of stakeholder agency. This raises the fourth topic, decision-making, within specific phases of a stage, about the design of the process as a whole. In other words, defining which decisions are taken at which points in the process, and who is responsible for them. The fifth key term which derives from decision-making is the knowledge asymmetries between different stakeholders in a situation in which different kinds of knowledge are mixed: for example, technical and strategical with aesthetic. If knowledge asymmetries are overlapped with power asymmetries, political decisions may be hidden behind technical ones. It is often the case that technical information is incomprehensible for social movements that do not involve technical staff. Making an analogy, it is like attending a trial without a lawyer. In this regard, the existence of autonomous technical teams, publicly financed but representing local communities, is desirable in processes of urban transformation.

Once the project phases and the stakeholders involved – as derived from the discussion on project leadership – are defined, decision-making and knowledge asymmetries can be broken down into specific stages. At the initial level, a discussion takes place on the identification of the problem and the opportunities that emerge from the reading of the social and urban context. Second, there is a strategy discussion, in which strategies, aims and priorities are defined, with a breakdown of the programme and planning. Then, at the design stage, there is a discussion of how technical and aesthetic decisions will fulfil the project's strategical aims. This is closely linked to the execution and post-occupancy stages, which relate to the appropriation of the space and its management and maintenance. Each of the stages is conditioned by previous ones, with the involvement of different stakeholders. Thus, an awareness of this situation is crucial to avoid what Arnstein defined as manipulation (Arnstein, 1969). The tools presented in this chapter aim to facilitate planning and clarify the roles and agency of stakeholders in relation to the parameters discussed.

Helmut Schulitz, TEST system, el Centro, California. Decision-making, production and aesthetics are defined together through a system that determines different responsibilities to technical staff (control, in axonometry) and users (participation) in specific design stages. As a result of the inclusion of dwellers in decision-making given a system, the masterplan offers a degree of unity with specific variations that avoid the repetitiveness typical of large systems. Source: Hatch, C. R. (1984) *The Scope Of Social Architecture*. New York: Van Nostrand Reinhold, pp.78-89.

It is always crucial to state the responsibility for the different parts, including the municipal government and its technical staff, or architects and planners as designers. In the best-case scenario, different stakeholders' involvement includes a constant dialogue between the parts in which decisions are explained and data is offered transparently. In addition, psychologist Robert Sommer, in *Personal Space* (Sommer, 1969), argued that people have difficulty expressing their ideas about architecture in precise terms, and they most often articulate feelings, rather than rational thoughts. Hence the importance of both tools that allow a clear discussion, and the role of mediators and facilitators.

Finally, it needs to be considered that while independent technical staff and local authority staff operate within conditions of employment, people's involvement in projects most commonly takes place in a voluntary and unpaid context. Since this requires personal effort and is time-consuming, the management and planning of collaborative architectural projects should respect people's time, and utilise efficient and diligent methods.

A final remark. This toolkit has been organised around the procurement stage, for the sake of comprehensiveness and with the aim of facilitating its readability. However, it should not be understood as a manual, or as a closed phases-and-tools recipe. Once the reader is more familiar with the toolkit and has acquired a certain amount of experience in collaborative processes, they will find it easy to apply different tools at different points during procurement. Likewise, this process management section is not presented as a lens through which to view projects, or as a way to organise them, but as a conscious set of tools to articulate design decisions and enable the feasibility of processes. The projects presented in this toolkit do not necessarily conform to planning, municipal or managerial structures but exemplify different kinds of leadership, project aims, and variable entry points to the process of the project, and designs that fall either within or outside regulations.

Jorge Mario Jáuregui, diagram on the methodology for "community participation" , in phases and stages. Source: Jáuregui, J. M. and Gutiérrez, M. A. (2013) *Estrategias de Articulación Urbana*. Bogotá: Ediciones de la U.

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UN-Habitat (2021) 'Our City Plans: An Incremental and Participatory Toolbox for Urban Planning'. Nairobi: UN-Habitat.

Wates, N. (2000) *The Community Planning Handbook: How People Can Shape Their Cities, Towns And Villages In Any Part Of The World.* London: Earthscan Ltd.

_Group management and conflict management:

Sostre Cívic and Associació Col·lectiva Matriu (2019) *La Construcció i la Cura dels Grups.* Available at: www.sostrecivic.coop/publicacions-i-descarregues.

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M11

DEFINITION OF PHASES

A graphic description of the whole process allows different phases to be discussed chronologically, including partial goals, methods, eventual scenarios and the range of stakeholders operating in them. The strength of the diagram resides in its capacity to synthesise, which allows a clear overview. However, to avoid this approach becoming reductive, it is necessary to extend the information in the diagram in the form of complementary descriptions of each of the phases. To do so, the other tools discussed in this chapter may be of use.

A phases definition diagram is an important document for projects linked to the notion of planning – for "strategic" projects more than for "tactical" ones, following Michel de Certeau (1988). While strategic projects rely on long-term planning, tactical ones rely on fragmented, temporary actions in a continuous search for opportunities.

The phases definition diagram should be elaborated at the beginning of the process, which allows a strategic discussion from the early stages of the project, and it should be reviewed as the project evolves, new stakeholders are incorporated, or conditions change, particularly if the phases definition tool is applied before the data-gathering stage.

The four typical phases represented in this diagram include diagnosis and analysis; design and strategy; execution, and evaluation. However, each project requires the definition of a bespoke stage, depending on local circumstances and project aims, in which the definition of this diagram becomes a crucial design step.

.a | N'UNDO, Accessibility plan for the historic centre of Guadalupe (Cáceres), 2017. N'Undo's diagram for the accessibility plan for the historic centre of Guadalupe (Cáceres) consists of four main steps: analysis and diagnosis, proposals, realisation, and evaluation. Each of them defines phases, activities and the stakeholders involved. Noticeably, it identifies what sort of intermediary results are expected and when, so that each step builds on the previous ones. It also includes several phases of revision of the previous results and the evaluation phase turns the process into a circular dynamic. Source: www.nundo.org.

.b | Raons Públiques, diagram of phases and activities in dynamisation of public space for uses definition of Sants neighbourhoods railway coverage. The process is divided into three phases: information; analysis, and return and closing. Note the dotted lines, which represent the opening and closing phases in terms of widening the discussion or aiming for a consensus. Activities are organised in linked themes and aim at specific outcomes. Source: www.raonspubliques.org.

Further reading:

See bibliography of the introductory essay of this chapter.

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ANTICIPATED TIMESCALE

The expected timeline diagram allows the timescale of the planning strategy to be anticipated. Beyond its organisational purposes, the inclusion of the time perspective is very important in managing the expectations of stakeholders, whose volunteer activity is linked to their expectations of accomplishments being achieved within a reasonable timescale.

The higher the dependence on external factors (such as political support), the more difficult it is to anticipate the timing of phases of development. In many collaborative projects that aim for a transformative impact, this might be highly speculative, since challenging prescribed procurement stages or regulations produces a high degree of temporal uncertainty. For example, La Borda housing cooperative took from 2012 (first claims), to 2014 (agreement with the municipality for the cession of the land), to 2018 (inhabitation). During that time, the cooperative achieved several milestones, ranging from regulatory changes (a bespoke regulation to allow the cession of public land and a change in the regulations affecting the parking requirements in cooperative housing developments) to the inclusion of new construction methods, including self-construction. Thanks to the efforts of La Borda, subsequent cooperative projects in Barcelona have gradually reduced the procurement time.

It is also important to consider external events that might affect the process, such as political cycles and elections, or planned events in which partnering might be beneficial for both, for example architecture festivals.

Finally, as discussed in the introduction to this chapter, collaborative architecture is often a non-linear process, where planning is not possible, or even desirable, from the beginning of the project. In this case, the process should be left open to a certain degree, and the process developed through potential scenarios.

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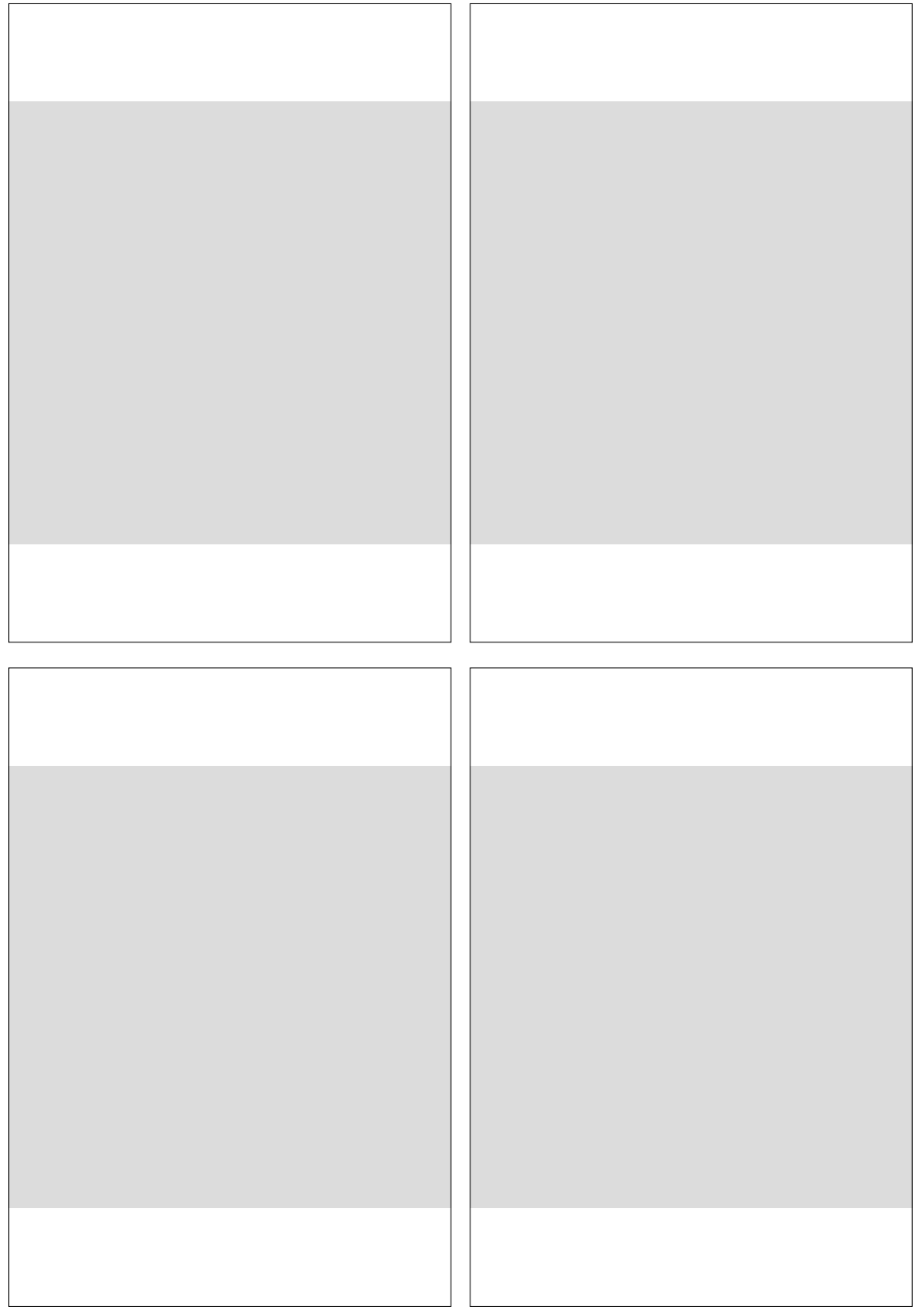

.a | Nick Wates, different timelines responding to the different processes of community planning. Each of them is tailored to the specificities of the project, stakeholders and expected outcome. Source: Wates, 2000.

Further reading:

Wates, N. (2000) *The Community Planning Handbook: How People Can Shape Their Cities, Towns And Villages In Any Part Of The World.* London: Earthscan Ltd.

MAP OF STAKEHOLDER ROLES

A map of stakeholder roles is a synthesis tool to clarify who should be involved, in which phases, and with what agency. This allows the extent of impact or influence of certain groups to be defined in decisions regarding the diagnosis, aims, or design. Although this crucial activity always takes place, sometimes it does not happen in an open manner.

To avoid political interference, collaborative design processes fostered by the local government should rely on external and autonomous teams. Thus, it is important to frame who is part of this abstract concept of "society" as users and where the boundaries of the process are in terms of social influence. Typically, stakeholders are organised into three concentric groups: the core group (those directly involved in the management and organisation); those in contact with the project who take part sporadically in certain phases or activities, and users affected by the project. This basic diagram requires detail according to the social and geographic limits of the project, and appears very differently in projects on different scales.This design approach can take place both at a urban scale [.a] and building [.b].

To discuss stakeholder roles, it is necessary to identify the stakeholders in the first place (see tool Identify Stakeholders in the Stakeholders chapter). In this context, technical and professional responsibility should never be avoided, with a transparent process and clear frameworks to avoid frustrations and misunderstandings. To be complete, an evaluation of stakeholders should include stakeholders who might oppose the project, aiming to understand their motivations and, ideally, find ways to make it attractive for them.

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.a | URBACT, Imagina Badia, 2018. Stakeholders are labelled according to relevance for the project: central debate group, enlarged group, neighbourhood, and others (top). Each of these groups is given specific functions in the design and transformation process. Source: URBACT (2018) *Imagina Badia: Strategy for the transformation of the fringe in Badia del Vallès (AMB)*, pp.44-45 (fragment). Report available at www.urbact.eu.

b | Helmut Schulitz, TEST system, 1970s. Stakeholders, namely users and professionals, ae given specific roles in design decisions, classified as "control", "participation" or blank (in the left axis), shifting the leadership of the process in different moments. While some actions rely on one or another, most of them depend on a negotiation. Source: Hatch, C. R. (1984) *The Scope of Social Architecture*. New York: Van Nostrand Reinhold, pp.78-89.

Further reading:

See bibliography of the introductory essay of this chapter.

URBACT (2019) *Maintaining Involvement of Local Stakeholders and Organising Decision-Making For Implementation.* Available at: www.urbact.eu/participatory-approach-implementation.

M22

CORE GROUP DIAGRAM

The organisational diagram defines the core group of the project in terms of decision-making and management functions in relation to other stakeholders. Highly variable depending on who forms the core group and the scope of the project, it typically includes the different kinds of expertise required to develop the project: technical teams (architecture and planning, financial, legal, mediation, etc.) and promoters and/or procurement agencies (the local authority team). The functioning of these teams is framed by the nature of the procurement agency and the roles of different stakeholders, ranging from a local government department in public-led projects [.a], self-managed groups [.b] to a heterogeneous assembly with work groups in the case of community-led projects such as cooperative housing projects [.c].

As the example of the La Borda housing cooperative evidences [.c], the organisational diagram is not fixed, but evolves as the project does, in terms of both growing and shrinking at different stages responding to changing procurement needs. In this regard, this diagram might be helpful for new teams joining the project, since it provides an overview of the current state of play as well as the historical evolution of the project.

To avoid manipulation of the process, in public-led projects the core group must operate autonomously, and avoid being influenced by political agendas during the process. In other words, detaching the client (who pays) from users (who will benefit from the project). Otherwise, what takes place is a banalisation of collaborative projects, which become a superficial operation in which political decisions taken beforehand are implemented with a false appearance of democratisation, undermining the whole process and producing a long-term effect of distrust towards collaborative procurement.

.a | Organisation chart for a community design centre. Source: Wates and Knevitt (1987) p.39.

.b | ETSAB TAP-PUD, Ringo Rango Route, Les Planes, 2015. Organisational diagram of the teams working in the project and their agency in them. Below, members' portraits grouped in teams. Source: www.rutaringorango.weebly.com/lequip.

.c | Lacol architects, La Borda cooperative housing organisational scheme development from 2012 to 2018, including phases of project approach, project development and materialisation. The number of involved members is represented with pictograms. Image courtesy of Lacol.

Further reading:

See bibliography of the introductory essay of this chapter.

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.C

DECISION-MAKING SCHEME

A decision-making scheme defines who will decide what, in which phases, and with which tools. All projects go through this decision-making stage, although its elements are often accepted as given without being questioned. Typically, in both public and private procurement, diagnostic and strategic analysis phases are determined by political agendas and/or local authority technical staff. Design and execution leadership belongs to architects who operate either within procurement agencies or autonomously, and coordinate other teams of experts. Finally, post-occupancy is the phase when residents inhabit or use the space. Collaborative architecture and community-led projects can challenge this structure, which conditions the outcome. The two tools presented here allow us to discuss stakeholder agency in decision-making in different phases of projects. In other words, to show evidence of power relations and establish the agency of experts, institutions, users, and other stakeholders.

There is no single best decision-making scheme scenario for all projects, but rather several possibilities, depending on different stakeholder roles and collaborative dynamics in different phases. As an example, in the architecture of Walter Segal or John Habraken, architects take a leadership role in defining the system, while residents take the lead in construction and habitation decisions, according to the pre-defined rules set by the architects. In other cases, such as self-managed cooperative housing, all the phases are characterised by a collaborative process defined by future residents, organised around a general assembly and work groups.

Decisions can be taken by using different methods, such as core group decision-making, work groups, consensus, or by votation (see Sánchez Alonso 2007, pp 41-46 and Cembranos and Medina 2014, pp.118-137; both books contain useful information and tools for decision-making in heterogeneous groups).

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.a | Diagram of different forms of decision-making in different stages. Source: author.

.b | Stakeholder engagement concerning different procurement phases, where specific participative methods can be applied. This engagement can take place in single or multiple phases, depending on the project. Source: author.

Further reading:

Sánchez Alonso, M. (2007) *La Participación: Metodología y Práctica*. Madrid: Popular.

Cembranos, F. and Medina, J. A. (2014) *Grupos Inteligentes: Teoría y Práctica del Trabajo en Equipo.* Madrid: Popular.

M31

CO-ORGANISE / DEVELOP WITH

Doing something “with” someone is an operation that is fundamentally different from organising or providing something “for” someone, and as such it entails different processes and outcomes. Co-organisation is not merely an act of political participation, as opposed to passively receiving services but, as Arun Agrawal (Agrawal, 2005) concluded in relation to environmental policies, the inclusion of communities in governance produces a parallel transformation in the interdependent dimensions of “knowledge”, “politics”, “institutions” and “subjectivities”. Thus, partnering should not be seen merely as a means to an end, the goal of which is restricted to spatial transformation, but as a committed process of citizen engagement from which learning, caring for the city and others, reciprocity and political awareness emerge.

Agreements between stakeholders range from allowing temporary uses and the cession of spaces or material to direct funding. As the examples show, agreements can involve many different partners, on multiple scales from landscape to building, and timeframes, from informal short-term to long-term signed agreements.

.a | ETSAV and Arqbag, Pas a Pas les Planes, 2014. In the agreement between Sant Cugat municipal council, ETSAV University, Fundació Engrunes, residents and private companies enabled the development of the platform Pas a Pas, which built permanent urban interventions including a community centre, dynamic housing refurbishment, public space (Ringo Rango Route, left), and public facilities (Espai Pere Grau, right). Source left: www.plataformaarquitectura.cl; source right: www.arquitectura catalana.cat; photo Marc Diaz.

.b | Can Batlló has been a cooperative, self-managed cluster since 2011. Warehouse 11 was mostly self-built by residents, with financial support from the Catalan Association of Architects (COAC) and the local authority. Risky construction work, including demolition and structural reinforcement, were executed through the public company for trades education Barcelona Activa. Source: www.lacol.coop.

.c | La Comunal, Lacol architects, 2019. La Comunal is an old factory hosting eight workers’ cooperatives. The owner is a commercial property investor, who saw refurbishment through a cooperative project as an opportunity, since the building was protected and a housing development unfeasible. See www.lacomunal.coop. Source: www.lacol.coop.

.d | Arquitectos de Cabecera, Safaretjos, 2018. Community events were organised, partnering with residents, the local authority and a range of associations. In the image, the Opening Speech (Pregón) was recorded with residents, who encouraged friends and colleagues to attend the event. Screenshot from Pregón, video available at http://youtu.be/z6G_f7jgoOs. Source: AC Archive.

.e | “Moravia Florece para la Vida", Medellín, Colombia., 2013-15. Transformation of a landfill facility into a garden, including land decontamination, developed through cooperation between the local authority and communities. More information and images: www.ozonotv.digital/transforman-un-vertedero-de-basura-en-un-mega-jardin-que-ayuda-a-las-abejas.

Further reading:

Agrawal, A. (2005) *Environmentality: Technologies of Government and the Making of Subjects.* Durham: Duke University Press.

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.c

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INVOLVING DECISIVE PARTNERS

Involving decisive partners is a crucial strategy when the diagnosis evidences that the problems faced are outside the field of architecture and design, perhaps due to the lack of means or maybe because decisions rely on higher levels of decision-making, such as legislation or local government (see A13. Design Limits Map in the Analysis & Strategy chapter).

Involving partners is a common strategy for the public sector in inviting private developers to develop city sectors as exchange for profit. However, it can also be employed by social movements as a tool to promote the social advantages for other stakeholders. The key question, in the end, is how to present collaboration proposals in a way that is perceived as aligning with all the individual stakeholders in the quest for common goals. The expertise of architects may play a relevant role in this negotiation, along with other fields such as economics or legislation, in which arguments often depart from social and spatial concerns, extending beyond them.

.a | Arquitectos de Cabecera + Pei.Lab Javeriana de Bogotá, Can 60, WAC 2015. In 2015, Can 60 consisted of housing and several cultural activities under a rental scheme in a historical industrial building known as a casa-fàbrica (house-factory). The whole block was facing the threat of eviction by new owners, who planned to build a commercial property development after demolishing the building. Many associations and entities collaborated, including residents and associations such as Tot Raval and Fundació Arrels, to compile a technical report to convince the local authority to take a stand in the struggle and preserve the building. Arguments included the loss of the heritage aspect of the building as much as the social impact on the neighbourhood, and the fact that the planned luxury tourist flats would intensify the gentrification process of the city centre. After a year-long process of negotiation, in September 2016 the municipality bought the building and also listed several remaining casas fábricas in the neighbourhood. Souce: AC Archive and newspaper el Periódico.

.b | Can Batlló is an industrial settlement in Sants neighbourhood, a large area within historical walls; when industrial activity ceased, it was abandoned for years. While the private owner planned a large property development, the neighbourhood organisation Can Batlló és pel Barri (Can Batlló is for the neighbourhood) claimed ownership of the facilities and public space. After a long struggle, in 2011 the local residents achieved the cession of some of the spaces through a three-party agreement: part of Can Batlló would be transferred to public ownership in exchange for plots in other areas of the city for private housing, and the local authority gave some of it to the Can Batlló és pel Barri (Can Batlló is for the neighbourhood) platform to be used as self-managed facilities. The local authority acted as an intermediary – both mediator and guarantor – for the cession of the space from private ownership to the organisation; remarkably, both agreements were signed in the same meeting. Can Batlló is nowadays a cluster of self-managed initiatives and cooperatives with a high socio-economic impact. Images: Can Batlló's different self-managed facilities built by residents, courtesy of Joan Massagué.

Further reading:

Voss, C. and Raz, T. (2017) *Never Split The Difference: Negotiating As If Your Life Depends On It.* London: Random House Business.

.a

.b

M33 DISCUSSION WORKSHOPS (I)

Workshops are highly efficient frameworks for collective discussion. They are organised around specific activities and enabled by mediators who are responsible for achieving the aims of the discussion as planned. Mediators are responsible for preparing the required material, guiding activities, keeping time, taking notes, and guaranteeing respect and the opportunity for expression for all the participants, and may eventually write down a report of the meeting.

The goals of the workshops depend on the stage at which they might be developed:

_DATA GATHERING: collective diagnosis with the identification of problems, needs, and opportunities.

_ANALYSIS: setting project guidelines, strategies, priorities and evaluation indicators.

_DESIGN: co-design decisions regarding project material strategies, atmosphere, criteria and design principles.

_EXECUTION: construction or training workshops, potentially practice-based and developed on site.

_POST-OCCUPANCY: post-occupancy technical support to dwellers, building monitoring, evaluation workshops, knowledge transfer and experience-sharing with other stakeholders.

Some of the activities that can be developed are explained on the next page. Data gathering and co-design workshops are described in more detail in the corresponding chapters, due to the high degree of specificity of the activities developed in these phases.

Further reading:

Cembranos, F. and Medina, J. A. (2014) *Grupos Inteligentes: Teoría y Práctica del Trabajo en Equipo.* Madrid: Popular.

Chambers, R. (2011) *Participatory Workshops: A Sourcebook Of 21 Sets Of Ideas And Activities*. London: Earthscan.

Lacol (2018) *Building collectively: Participation in Architecture and Urban Planning*. Barcelona: Pol·len Edicions.

URBACT (2020) *Getting Results Thought Animated Meetings*. Available at: www.urbact.eu/getting-results-through-animated-meetings.

URBACT Participative Working Toolbox, tools for engaging stakeholders. Available at: www.urbact.eu/tool-category/engaging-stakeholders

The goal of a workshop (linked to a specific stage) and the activities planned should be stated in the publicity and at the beginning of the session. As discussed by Cembranos and Medina (2014), discussion in smaller groups creates a more comfortable environment that encourages participation, after which a bigger group discussion can take place. In addition, chatting in small groups focuses the discussion from common agreements, addresses issues from diverse positions and multiple voices, and makes manipulation more difficult. To avoid negative responses to other participants' suggestions, the authors suggest a preliminary period of personal reflection on the topic, writing down ideas and thoughts (for a full list of meeting tools see Cembranos and Medina, pp.167-197). In some cases, it might be useful to use complementary materials to support the discussion, such as models, plans, photographs, or other kinds of communicative documents. Some of the most popular activities for this kind of workshop are described below. See this tool's bibliography for further detailed information.

SNOWBALLING:
"This activity works with small groups that work simultaneously, slowly gathering together to form the plenary group. The result in each round is the prioritization of one or several proposals reached through consensus. The participants begin in groups of two or three people and are tasked with debating a proposal. In the following round, they join with another group now consisting of 4 or 6 people. They share their decisions with the newcomers and as a group they must produce a result. This continues until we reach the plenary session." Source: Lacol (2018) p.79.

THE WORLD CAFE:

"In this activity the participants are distributed evenly to tables each assigned one organizer who will act as the table's host. Each table will deal with a different issue. After the first round of debate, half of the participants at the table will move to one table and the other half will move to move to another. We will make as many movements as possible so that everyone visits every table. During each new round the host will present the previous group's conclusions and the discussions. In this way, everyone has an opportunity to talk about all of the issues in small groups and the participants are mixed." Source: text: Lacol (2018) p.79, image: Urbact Participative Working online toolbox: urbact.eu/toolbox-home.

DISCUSSION WORKSHOPS (II)

THE FISHBOWL :
"The fishbowl tool enables the facilitation of large group dialogue by focusing on a small group discussion in an inner circle while the rest of the group listens and observes from the outer circle. Participants join the inner circle when they want to or ask questions and leave the circle once they have contributed enough. This technique can help bring transparency to the decision-making process and increase trust and understanding about complex issues". Source: URBACT Participative Working online toolbox: www.urbact.eu/toolbox-home.

THE POST-IT POSTER:
a large poster with written titles according to the topics to be discussed is placed in front of everyone. By turns, participants suggest ideas concerning those topics, which are written down in post-its by mediators and placed under the corresponding topic. A variation of this tool includes the “Problems Tree”, where post-its are placed in the trunk (problem), roots (cases) or branches (effects). Source images: top left and below: analysis discussion about the future of la Mariola neighbourhood, Lleida, 2018. Picture by author; top right: URBACT Participative Working online toolbox: www.urbact.eu/toolbox-home.

DE BONO THINKING HATS (FOR EVALUATION OF IDEAS) :
Developed by Edward de Bono, it is "a mental roleplay based on (imaginary or not) thinking hats which will encourage the participants to use different mindsets and creativity to think, discuss and evaluate their projects and topics". Source: URBACT Participative Working online toolbox: urbact.eu/toolbox-home.

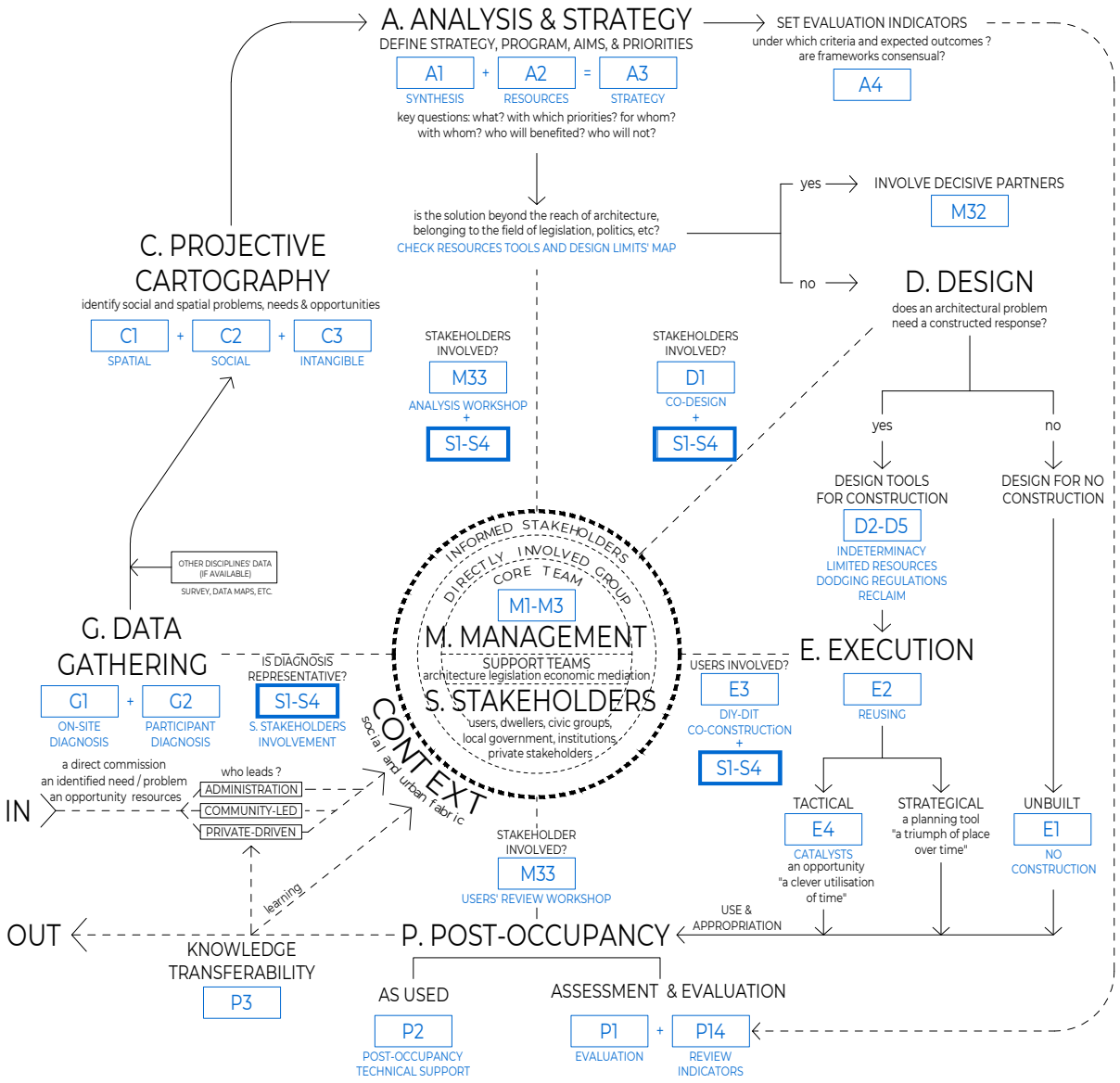
4W AND 5W (FOR PROBLEM FRAMING):

"Framing a problem is all about identifying the right problem to solve and understanding it perfectly. By tendency, we often jump into problem-solving without critically evaluating the problem itself. The 4Ws method helps you to take time exploring a problem space and formulating a problem statement so you know what you are solving for. The method consists in answering questions gathered in 4 categories: who, what, where and why".

"The 5 Whys Technique is an iterative interrogative problem framing/solving method used to explore the cause-and-effect relationships underlying a particular problem. This technique was originally developed in the 1930's by Sakichi Toyoda, founder of Toyota industries. It is a simple method that helps identifying the root cause(s) of a problem by repeating the question "Why?". Each answer consists in the basis of the next question. Even if the name of the technique is "5 Whys", you can repeat the question as many times as you need to achieve to the root cause of the problem".

Source and more information: URBACT Participative Working online toolbox: www.urbact.eu/toolbox-home.

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

S. STAKEHOLDERS

TOOLS INVENTORY

M. PROCESS MANAGEMENT
M1. PLANNING
- M11 Definition of phases
- M12 Anticipated timescale

M2. DECISION-MAKING
- M21 Map of stakeholder roles
- M22 Core group diagram
- M23 Decision-making scheme

M3. STAKEHOLDER ENGAGEMENT
- M31 Co-organise / develop with
- M32 Involving decisive partners
- M33 Discussion workshops (I-II)

S. STAKEHOLDERS
S1. MAPPING
- S11 Identify stakeholders
- S12 Engagement matrix
- S13 Sociogram
- S14 Powergram

S2. REACHING BY SEDUCTION
- S21 Direct invitation
- S22 Indirect contact
- S23 Make it fun
- S24 Food as social ritual
- S25 Provide a platform for expression

S3. REACHING BY PROVOCATION
- S31 Artefacts invade public space
- S32 Spatial alteration
- S33 Confrontation

S4. REACHING VIA MAKING VISIBLE
- S41 Collaboration with external events
- S42 Printed media
- S43 Digital platforms
- S44 Billboard hacking
- S45 Public exhibition
- S46 Interactive map
- S47 Video / documentary

G. DATA GATHERING
G1. ON-SITE DIAGNOSIS
- G11 Ethnographic observation
- G12 Group walk
- G13 On-site technical support office

G2. PARTICIPANT DIAGNOSIS
- G21 Diagnostic workshops (I-II)
- G22 Meetings with stakeholders
- G23 Interview / survey

C. PROJECTIVE CARTOGRAPHY
C1. SPATIAL & MORPHOLOGICAL
- C11 Drawing the domestic
- C12 Picturing the domestic
- C13 Building as socio-spatial ecosystem
- C14 Facade as mediator
- C15 Urban void
- C16 Neighbourhood
- C17 Urban landmarks
- C18 Systemic urban elements

C2. SOCIAL DIAGRAMS
- C21 User portraits
- C22 Routines & habits
- C23 Users' needs (I): individual
- C24 Users' needs (II): collective
- C25 Morphology to patterns of behaviour
- C26 Rituals & social activities
- C27 Diagrams of relational activities

C3. THE INTANGIBLE
- C31 Subjective perception maps
- C32 Collective perception
- C33 Proximity or isolation
- C34 Movement
- C35 Memory
- C36 The uncanny
- C37 Invisible borders
- C38 Temporalised space
- C39 Control
- C40 Conflict (I): maps
- C41 Conflict (II): events
- C42 Conflict (III): effects

A. ANALYSIS & STRATEGY
A1. SYNTHESIS
- A11 The (yellow) manifesto
- A12 Mind map
- A13 Design limits' map

A2. RESOURCES
- A21 Financial analysis & co-finance strategies
- A22 Available resources (I): inventory
- A23 Available resources (II): "harvest map"

A3. STRATEGY
- A31 Strategic action plan
- A32 Actions & tools breakdown
- A33 Viability map
- A34 Consequences map

A4. EVALUATION INDICATORS
- A41 Technical indicators
- A42 Perceptual indicators
- A43 Typological indicators
- A44 Cross-qualitative & quantitative data

D.DESIGN
D1. CO-DESIGN
- D11 Co-design workshops (I-IV)
- D12 Proposing an alternative

D2. INDETERMINACY
- D21 Enabling: user appropriation
- D22 Enabling: user manipulation
- D23 Enabling: adaptable system
- D24 Typological variations
- D25 Multiple scenarios

D3. LIMITED RESOURCES
- D31 Intermediary situations: "the meanwhile"
- D32 Leveraging material scarcity
- D33 Designing for low-risk construction
- D34 Split large interventions
- D35 Nomadic facilities

D4. DODGING REGULATIONS
- D41 Legislative blind spot
- D42 Camouflage
- D43 Declaring a Temporary Autonomous Zone

D5. RECLAIM
- D51 Reclaiming empty plots
- D52 Filling in the gap
- D53 Regaining infrastructure

E. EXECUTION
E1. NO-CONSTRUCTION
- E11 Do not do (I): maintain
- E12 Do not do (II): connect
- E13 Reprogramming time in space
- E14 Relocation
- E15 Undoing

E2. REUSING
- E21 Borrow - barter
- E22 Recycling & reclaiming components
- E23 Dismantling & reassembling buildings
- E24 Parasite

E3. DIY-DIT CO-CONSTRUCTION
- E31 Technical specifications
- E32 User to execute
- E33 User to complete
- E34 User to expand
- E35 Collective assisted DIY-DIT

E4. CATALYSTS
- E41 Generative actions
- E42 Tactical on-site prototypes
- E43 Do it anyway

P. POST-OCCUPANCY
P1. ASSESSMENT & EVALUATION
- P11 Process overview
- P12 External evaluation: stakeholder review
- P13 Internal evaluation: tools & methods (I-IV)
- P14 Evaluation indicators review

P2. POST-OCCUPANCY TECHNICAL SUPPORT
- P21 Post-occupancy technical support
- P22 Building monitoring

P3. KNOWLEDGE TRANSFERABILITY
- P31 Manuals & toolkits (I-III)
- P32 Plans sets
- P33 Process reports
- P34 Online resources

body of practice

COLLABORATIVE ARCHITECTURE BARCELONA: THE ARCHITECT AS ENABLER

Raül P. Avilla-Royo

COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

as part of

COLLABORATIVE ARCHITECTURE BARCELONA:
THE ARCHITECT AS ENABLER

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S. STAKEHOLDERS

Collaborative architecture is characterised by the inclusion of a collective subject at one or more stages of the procurement process. This chapter addresses specific questions around the incorporation of different stakeholders in the process: who they are, why they might want to engage with the process, and how to increase their interest in participating in any of the above-mentioned procurement phases.

The first group of tools addresses STAKEHOLDER MAPPING, a crucial step in understanding the social context in which a certain intervention will take place. Architects and planners must approach the city with the understanding that they are part of a long process of transformation in which they are neither the first nor the last to intervene. Identification tools aim to reveal the agents operating in a location, with special attention to minorities and to those who are not physically present. Importantly, the relationships between them need to be analysed in detail with specific tools, in the case of both positive synergies from which design opportunities emerge and conflict.

A crucial question is why people would want to engage. At this point, a clear distinction needs to be made between the procurement agency (public, private or community led), the scope of impact (long term vs. short term) and the motivation (needs vs. desires). Short-term projects which affect situations of need or collective protest usually generate far more engagement than long-term ones that improve existing situations that are “not too bad”. Likewise, in community-led self-managed processes there is a high chance of social involvement derived from a feeling of rights and responsibility. When the local authority leads these processes other issues, such as a lack of confidence, might appear.

In a nutshell, there is pretty much only one strategy to increase group engagement in collaborative architecture, no matter who is leading: to generate trust and confidence in the process and confidence in its benefits. For this, the process must be transparent and have clearly defined goals, methods and phases; it must be inclusive, and expectations must be matched. Participation in successful collaborative projects produces a positive effect on engaging in further experiences; in contrast, consultation projects that do not balance power relations in decision-making between different stakeholders are perceived as simply non-binding consultations, and thus a waste of time and energy for participants.

While there will always be a core motivated group whose involvement derives from genuine interest – for example, an awareness of external threat or anticipation of the possibility of improvement – the tactics in this section address the previous step: how to expand this group and reach people who are less well-disposed towards it or unaware of it. It might be the case that different stakeholders are not willing to participate, and this can be for a myriad of reasons, including lack of interest, time availability, or lack of political awareness. Despite the long-term benefits of engaging in participatory design methods, social action can also be exhausting, time-consuming and not without frustrations and disappointments. Processes that rely on citizen engagement may fail or lack credibility if there is a small attendance at meetings, if attendees feel their engagement does not translate into influencing the binding decision-making process, or if the process is not representative of certain demographics who do not feel welcomed or comfortable about joining.

Source: Wates, N. and Knevitt, C. (1987) *Community Architecture*. London: Penguin.

Urbact in Imagina Badia grouped stakeholders in labels according to relevance to the project: central debate group, enlarged group, neighbourhood, and others (top). Each of these groups is given specific functions in the design and transformation process. Source: URBACT (2018) *Imagina Badia: Strategy for the transformation of the fringe in Badia del Vallès (AMB)*, pp.44-45 (fragment). Report available at: www.urbact.eu.

The engagement with new stakeholders has been organised into three groups of tools: the first is reaching them by SEDUCTION, which refers to making the process attractive; the second is by PROVOCATION, creating a framework that directly challenges the audience, and the third is MAKING VISIBLE the process in different sorts of media. A common strategy in all of these is to move the process to public space rather than expecting people to gather in institutional buildings, which are often less appealing, or even directly intimidating. These tools for stakeholder involvement are instrumental and can be applied to any phase, from diagnosis to co-designing, co-execution and evaluation, and to different procurement leaderships.

Finally, it is important to mention the participants' emotions as a fundamental feature of collaborative architecture, since such projects can be time-consuming and exhausting. For this, it is crucial to address the management of expectations and the potential outcome of a conflict from the very beginning. The Knowledge Transferability section in the Post-Occupancy chapter addresses this issue with further references

Architect Xavier Valls explaining the Popular Plan of Santa Coloma in 1978, pioneer in incorporating neighbourhood claims and grassroots movements as project drivers. Source: Madueño, E. (1988) *Xavier Valls: l'arquitecte de la solidaritat*. Barcelona: CEUMT, p.49.

Further reading:

URBACT (2019) *Setting Up and Running a Multi-Stakeholder Group*. Available at: www.urbact.eu/how-set-and-run-multi-stakeholder-group.

STAKEHOLDER ENGAGEMENT IN DIFFERENT STAGES

Participatory planning activities in the UK during 1980s. Source: Wates, N. and Knevitt, C. (1987) *Community Architecture*. London: Penguin.

Lucien Kroll, Coabita, Watermael-Boitsfort (Brussels), 1970. Collaborative design. Source: Kroll, L. and Pehnt, W. (1987) *Lucien Kroll: Buildings and Projects*. London: Thames and Hudson, p.35.

An action claiming for the democratisation of public space and questioning specificity of uses needed the engagement of passengers to become relevant. Barcelona, 2019. Source: makeatuvida.net andbasurama.org.

Renzo Piano Building Workshop, UNESCO District Workshop, Otranto (Italy), 1979. Community involvement in reconstruction. Source: Wates, N. and Knevitt, C. (1987) *Community Architecture*. London: Penguin.

Walter Segal construction method for dwellers' self-construction. Source: www.ribaj.com, M. Charles, J. Broome.

La Borda cooperative housing members in an active engagement about building energetic performance monitoring system. Barcelona, 2019. Source: courtesy of Lacol.

IDENTIFY STAKEHOLDERS

A conscious identification of stakeholders is the first step towards understanding the dynamics at play in an urban area. On the one hand, there are those who use and activate the space. This is particularly relevant in areas which are animated by users: for example, weekly markets or places where there are street vendors, which play a fundamental role in the identitarian definition of the area. On the other, there are stakeholders who are potentially overlooked, whether because they belong to demographic minorities, or because, despite their influence, they are not physically present in the area.

The second step is the analysis of their different motivations, potential interests, spatial needs, and preferences for certain activities. Such an examination of the nature and behaviour of the stakeholders – explained further in the Projective Cartography chapter – allows their needs and requirements to be identified more accurately, while critically questioning who – or which project – might, or might not, be the beneficiary.

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.a | Manuel Bailo, Urban Space Catalysts. Study of the informal market in Eucalyptus Park, Kinshasa. In the image, space is animated by several specific stakeholders: the notary, spokesperson, prostitutes, barbers, and a car workshop. Each of them sits under a tree forest (left plan), where its shadow provides the necessary urban and environmental conditions. Trees segregate the space, affording a degree of privacy to the users. Source: Bailo Esteve, 2015.

.b | Arquitectos de Cabecera + Pei.Lab Javeriana de Bogotá. Can 60 stakeholders map, WAC Raval 2015, Barcelona. Diagram of the impact that the different organisations and activities of the casa-fàbrica (house-factory) Can 60 have at different scales, from neighbourhood significance to worldwide impact and heritage. Since Can 60 was threatened by a speculative property investor that planned to demolish it, this diagram evidences the immaterial heritage that would be lost with the building, including associations with a social impact in the neighbourhood, workshops and studios, and internationally recognised cultural associations. This document became key in convincing the municipality to preserve the building. Source: AC Archive.

Further reading:

Bailo Esteve, M. (2015) *Public Catalyst = Catalyst Drawn*. New York: ActarD Inc..

Pybaro, C. and Batzenschlager, T. (2013) 'Anatomy of a Chinese City'. Available at: www.issuu.com/thomasbatzenschlagerportfolio.

URBACT Stakeholders Analysis Table. Available online at: www.urbact.eu/stakeholders-analysis-table.

ENGAGEMENT MATRIX

The engagement matrix analyses the different stakeholders who are potentially involved in a planning process and sets them against their power to support or obstruct the process. It is extracted from the UN's "Stakeholders' Mapping" Tool (UN-Habitat, 2021, pp. 100-103): "The stakeholders' mapping matrix will generate a graphic representation of the social and institutional structure of the context in which the planning process will take place. The results will help the team define how to engage with each stakeholder, and define a steering committee and an advisory committee to help guide the process".

The engagement matrix works by first listing all the stakeholders and checking that participants in the process will be representative (top), which could be developed by any public, private or community-led procurement agency. Second, as shown below, it categorises stakeholders in relation to their power and affinity with the project. Thus, it analyses how they will perceive the potential impact of the project and assesses their predisposition to get involved.

The map can include different symbols, such as colour codes indicating the nature of the stakeholders, or different types of arrow to underline the relationships between them. Importantly, an analysis of how stakeholders see each other may be an entry point to multiple collaborations, or can facilitate agreements. In addition, acknowledging conflict as a condition of urban life can also reveal how certain actions by some stakeholders may be perceived negatively by third parties.

Finally, the map can be used to discuss engagement strategies that relate to the individual profiles of stakeholders, which are described later in this chapter.

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Governmental institutions that should be involved in the planning process

Names of institutions or authorities	Engagement strategies
.....	.....

Non-governmental institutions that should be involved due to their interest or influence on the project

Names of stakeholders	Engagement strategies
Private sector	
.....	.....
NGOs, civil society associations	
.....	.....
Religious and/or ethnic groups	
.....	.....
Women and girls (associations or organisations)	
.....	.....
Children and youth (associations or organisations)	
.....	.....
Older persons (associations or organisations)	
.....	.....
Persons with disabilities (associations or organisations)	
.....	.....
Migrants, refugees, stateless, internally displaced persons or indigenous people (associations or organisations, if any)	
.....	.....
Other vulnerable and minority groups	
.....	.....
Other independent actors or relevant stakeholders	
.....	.....
Steering and advisory committees	
.....	.....

.a | UN-Habitat, "Stakeholders' Mapping Tool" to determine representative and engagement strategies (top) and stakeholders affinity and power in the process (below). Source: UN-Habitat, 2021, pp.100-103.

Further reading:

UN-Habitat (2021) 'Our City Plans: An Incremental and Participatory Toolbox for Urban Planning'. Available at: www.unhabitat.org.

Revista Acordes (2015) 'Herramientas para la Participación Social'. Cuenca (Ecuador): Universidad de Cuenca, pp.28-31.

URBACT Stakeholders Power/Interest Matrix. Available at www. urbact.eu/stakeholders-powerinterest-matrix.

SOCIOGRAM

The sociogram is a diagram that organises the identified stakeholders visually and emphasises their relationships. It is based on the notion that understanding individual stakeholders and their motivations and agendas is as important as understanding their relationships and interdependencies. Stakeholders can certainly become crucial proactive vectors in a project and catalysers of initiatives. However, sometimes stakeholders may become crucial not only because they are directly engaged but also in their capacity as facilitators or mediators. A better understanding of these connections may result in design opportunities derived from interrelationships, interdependencies, and social connections. On the contrary, it might be relevant to identify if certain stakeholders had important disagreements in the past, and thus a collaboration between them is unlikely.

Quite commonly, the evolution of a project derives from a deeper understanding of its social context, for which the sociogram should be reviewed regularly.

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.a | Jordi Mitjans and Bernat Colomé, ETSAV MSc theses, 2014. Mitjans and Colomé developed this sociogram as part of the analysis for improving housing conditions against energetic poverty. Since the cooperation of stakeholders was crucial for the project, Mitjans represented them as an ecosystem in the diagnosis phase: politicians, neighbours in increasing poverty, neighbourhood association representatives, technical staff, mediators, participants, etc. Note that Mitjans and Colomé place themselves in the diagram (top right). The project was executed in 2014. Source: upcommons.upc.edu.

.b | Fent Ciutat, Valencia, 2014. Stakeholder sociogram relating different entities and associations. Colour-coded connections represent the kinds of relations between associations, and the thickness of the line the strength of those connections. Source: fentestudi.com.

Further reading:

Mitjans Escobar, J. (2014) *Millorem els habitatges de Les Planes (Sant Cugat del Vallès)*. MSc thesis. Universitat Politècnica de Catalunya. Available at: www.upcommons.upc.edu.

Colomé, B. (2014) *Millorem els habitatges de Les Planes: habitatge C/Carena, núm. 3.* MSc thesis. Universitat Politècnica de Catalunya. Available at: www.upcommons.upc.edu.

www.fentestudi.com

POWERGRAM

A powergram is a sociogram developed in the context of conflict. Rather than being horizontal or multidirectional, the powergram includes a vertical approach to the dominance of power and the struggles against it. What is at stake by negotiating the urban space is ultimately a struggle for power relations, multiple legitimacies and interests, and social responsibilities and rights. Since the city is by definition a meeting place for people with different agendas, political and economic interests and preferences, conflict becomes an inherent condition of the city. Thus, architects must be as concerned with conflict as with concrete or bricks, in terms of taking it into account and managing it.

While conflict has traditionally been narrated as a negative situation to be avoided, some authors claim that conflict could be seen as a proactive condition for urban governance. Manuel Castells, for instance, framed conflict as a driving force for change within social and class struggle, and Richard Sennett advocated for the instrumentalisation of non-violent conflict in a self-organised society. Much more recently, the manifesto of the Campo de la Cebada (a self-managed neighbourhood facility on public land that existed in Madrid from 2011 to 2017) included the following: "Campo de la Cebada is born of controversy and the management that is created from it, without trying to minimise it. Instead of the elimination of conflicts, we propose to inhabit them."

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.a | Straddle3. Sociogram/Powergram of Can Ricart, a warehouse in Poblenou affected by the neighbourhood regeneration masterplan 22@, which led to one of the biggest gentrification processes in the city. The powergram connects neighbourhood associations, industrial companies, living artists, technical staff, the platform Save Can Ricart, owners, property interests and local authority departments. Source: Col·lectiu Repensar Barcelona, 2008.

.b | "Powergram of El Forat de la Vergonya (Hole of Shame), February 2007, attempt 1", showing the power relations between stakeholders during the polemic transformation of a public square in Barcelona city centre in the early 2000s. The struggle turned into a confrontation between the local authority and different neighbour groups, and included violent episodes. Author unknown. Source: Col·lectiu Repensar Barcelona, 2008.

Further reading:

Castells, M. (1983) *The City and the Grassroots: a Cross-cultural Theory of Urban Social Movements*. London: Arnold.

Sennett, R. (2008 [1970]) *The Uses of Disorder: Personal Identity and City Life*. New Haven, Conn: Yale University Press.

Col·lectiu Repensar Barcelona, Grup de Participació (2008) *A Barcelona la Participació Canta!* Available at: www.straddle3.net.

DIRECT INVITATION

An invitation seeking someone's participation in, or attendance at, a particular event must give the necessary information about the event (place, time, contact). Most importantly, it should be attractive and engage visually with the invitees, and show how the event will be beneficial for its participants.

While some invitees might be familiar with the context, for example in the case of long-term neighbourhood struggles, for others this is an opportunity to become familiar with a specific context. Thus, the invitations should respond to different audiences accordingly.

Invitations can be sent via different media, from street posters to postal invitations, and also virtually, from social media to email. Since each medium is used more frequently by a certain demographic profile, it is important to use a diverse range of communication channels to reach a broader spectrum of participants.

.a | Posters to encourage participation in the planting of trees in El Forat de la Vergonya (Hole of Shame) square, Barcelona, ca. 2006. In this action, residents were protesting against the local authority's masterplan for a "hard square" and aimed to start transforming the area with green, soft surfaces. Source: courtesy of Architects Without Borders Spain (ASFE) archive.

.b | Col·lectiu Repensar Barcelona, Posters to participate in an open debate on 9 June 2006, as part of the Forat de la Vergonya struggle. Source: ASFE archive.

.c | Municipality of Barcelona, Decidim Barcelona campaign, 2020. Poster to encourage participation in the decision-making for the spending of 75 million euros that had been allocated to improve the neighbourhoods of the city directly through citizens' decisions. Authorship: Soon in Tokyo. Source: www.ajuntament.barcelona.cat.

.d | Arquitectos de Cabecera Studio (Marianna Sedrakian), Fem Festa Fem Safaretjos, 2018. Invitations to the final event of the workshop were left in residents' post-boxes. Source: AC Archive.

.e | Arquitectos de Cabecera. WAC La Escocesa Poblenou 2019. Origami blow-up invitation put through the door of each artist's studio at La Escocesa. Since the topic of the summer workshop was air structures, the invitation took the form of an origami sculpture that had to be blown to reveal information about the event, thus already turning the recipient of the invitation into a participant. Source: AC Archive.

Further reading:

Müller-Brockmann, J. (2021 [1981]) *Grid Systems In Graphic Design: A Visual Communication Manual For Graphic Designers, Typographers, And Three Dimensional Designers.* Salenstein: Niggli.

Lupton, E. (2013) *Thinking With Type: A Critical Guide For Designers, Writers, Editors, and Students.* New York: Princeton Architectural.

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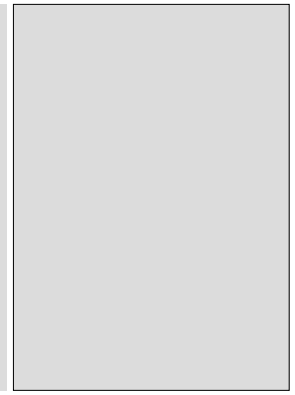

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INDIRECT CONTACT

Indirect contact aims to involve stakeholders through alternative methods when direct invitation fails. Some social groups are difficult to reach, for a myriad of reasons, including lack of interest or connection with the project, or distrust in the process. Ideally, acquaintances will contact each other to participate: an invitation from a friend or acquaintance is likely to be much more effective than an anonymous poster in the street. This applies to any project phase or specific event.

When developing interviews with residents, Arquitectos de Cabecera concludes the conversation by asking the interviewee if they have friends or colleagues who may perhaps be interested in the project, thus reaching potential participants through the recommendation of a resident who has already collaborated, which generates immediate trust.

In addition, certain social groups are likely to act as catalysts for others. Beyond being a social group with specific needs, children are very easy to interest and are able to engage with many other age groups, including relatives, and even passers-by. In addition, they are typically part of different social networks, such as schools or sports clubs. Last but not least, their involvement in collaborative architecture produces a long-term pedagogical effect, starting from a young age, in which they perceive social engagement in urban governance as a logical approach.

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.a | Arquitectos de Cabecera, Pei.Lab Javeriana de Bogotá and Zuloark, Bocachica, Colombia, 2016. Local people were reluctant to get involved in a participatory diagnostic phase. Contacting adults (below) was easier through organising initial workshops with the primary school (top), for which early conversations with teachers took place. Afterwards, children involved their parents and, finally, family acquaintances. Source: AC Archive.

.b | Arquitectos de Cabecera, TTAC Fem Festa Fem Safaretjos, 2018. The involvement of adults in the debate about the neighbourhood's urban problems was achieved through a wide range of activities for all ages, in which children played a fundamental role. In addition, different associations were involved. Source: AC Archive.

.c | Arquitectos de Cabecera, WAC Poblenou, Barcelona, 2016. Group interview: residents joined the interview spontaneously: their curiosity was piqued by seeing a friend being interviewed. Source: AC Archive.

MAKE IT FUN

Quite often leisure activities are an underestimated strategy for social engagement in architecture. As Johan Huizinga described in *Homo Ludens* (Huizinga 1938), playful activities are a key element of culture and society. The character of public space is closely linked to its opportunities for play, as Aldo van Eyck discovered in post-war Amsterdam, when a layer of thick snow made people's behaviour more playful and children "rediscovered" the city.

Having fun is not restricted to children, nor should it be seen in contrast to politically charged events or transformative actions: on the contrary, it is a potential catalyst for them to take place. Indeed, if an event is political, effective and enjoyable, people may join for different reasons.

On the one hand, serious conversations can take place joyfully and such a positive environment will be likely to have an impact on social cohesion. This principle can be applied through games as tools in workshops that include discussions or decision-making. On the other hand, people are likely to find interesting unexpected activities that help them escape from routine, and that involve doing something different or new, such as construction workshops.

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.a | Basurama and Makea Tu Vida, Todo Sobre Ruedas (Everything on Wheels), Àngels square, within Eme3 Festival, Barcelona, 2009. A project reclaiming the democratisation of public space and questioning its restricted use. In this case, a square in the centre of Barcelona is mostly used by tourists and skaters, which prevents other uses by other collectives. The action of building wheels on furniture subverts the use of the square, while at the same time every participant is turned into a skater, making both an exciting event and a political claim for inclusivity of public space. Participation in this action does not aim to receive feedback or to diagnose a problem, but to turn passengers into accomplices in a political activation of public space. Remarkably, without people's engagement this action would have not made sense. Source: www.makeatuvida.net (left) and www.basurama.org (right).

.b | Die Baupiloten developed a series of games which enable playful discussions for participants in design workshops. Source and more information: Hofmann, 2014, pp.108-115.

.c | Arquitectos de Cabecera, TTAC Safaretjos, Santa Coloma de Gramenet, 2017. Fem Festa, Fem Safaretjos was based on several activities for different age groups. Fun and games were included in most of them and coexisted with academic and professional debates about problems and challenges of the neighbourhood, which gathered together experts from different fields, residents and politicians. Screenshots from the video: http://youtube.com/watch?v=_O9HLhiFZ_I. Source: AC Archive.

Further reading:

Huizinga, J. (2000) *Homo Ludens*. London: Routledge.

Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis.

Pérez de Arce, R. (2018) *City of Play: an Architectural and Urban History of Recreation and Leisure.* London: Blooms-bury Visual Arts.

FOOD AS SOCIAL RITUAL

In every culture, sharing food is an act of profound symbolism and is universally understood as a friendly, welcoming gesture, encouraging conversation despite social, economic or political differences. The provision of food can pursue different goals, from encouraging participants to join to feeding them during long events or providing the framework to engage in informal conversations. In addition, sharing food becomes an opportunity for informal meetings. Bruce Mau, in his “Incomplete Manifesto for Growth”, (Mau, 1988), suggests that “Real growth often happens outside of where we intend it to, in the interstitial spaces – what Dr. Seuss calls ‘the waiting place’. Hans Ulrich Obrist once organised a science and art conference with all of the infrastructure of a conference – the parties, chats, lunches, airport arrivals – but with no actual conference. Apparently it was hugely successful and spawned many ongoing collaborations.” At a political level, the study of food reveals power relations, governance issues and social inequalities in the different stages of the food chain (from agriculture to waste management), including rituals in public space. In this regard, food protocols can become the object of the design itself, evidencing food’s political dimension and the social rituals that it involves.

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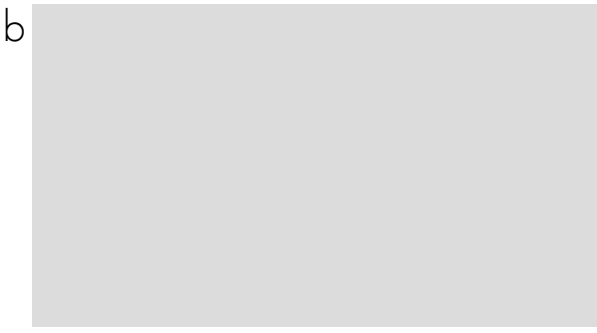

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.a | ETSAV professor and chef Coque Claret preparing a paella for the 2015 WAC Safaretjos community event in Santa Coloma de Gramenet, organised by Arquitectos de Cabecera. Source: AC Archive.

.b | Desayuno con Viandantes, Valencia, a Saturday in November 2008; and other events. The table is set for breakfast, and 60-120 people bring food: everything is shared, and everyone is each other’s guest. Organised as part of the Permanent Breakfast movement (permanentbreakfast.org) that emerged in Vienna in 1996, public space is transformed through a temporary occupation, claiming the street as a place for collective enjoyment without the need for bureaucratic permits. Source: Desayuno con Viandantes, www.yorokobu.es.

.c | Leve architects, “General Rehearsal”, within FAD fest 2016, Barcelona. The data: 30% of food that is produced is thrown away; food production is responsible for 25% of CO_2 emissions. Described by authors as activism, the event became a critique of food waste and the unsustainable food chain. Sustainability was considered at all stages of the creation of a 900-person meal, including the objects used, transport, the food itself and the design of the space (shade was created by reusing hot-air balloon fabric). The event brought together more than 200 volunteers and achieved 96% waste recycling, lowered emissions by 55% and reduced the carbon footprint by 87%. Source: www.levenet.com.

.d | Marco Vidal, Aperitivos Urbanos, Santiago de Chile, 2014 and 2015. Suppers were organised in public spaces where they were explicitly forbidden. Food was offered by the host under the condition of faking an expensive celebration. The explicit passivity of the police in the face of illegal actions revealed class bias. Photography: M. Chahin and T. Rebolledo. Source: @Marco Vidal Facebook page.

Further reading:

Burrows, D. (2020) *Politics of Food*. Berlin: Sternberg Press; London: Delfina Foundation.

Lambert, L. (2020) 'Politics of Food'. *The Funambulist Journal,* 31.

Steel, C. (2013) *Hungry City: How Food Shapes Our Lives*. London: Vintage.

S25 PROVIDE A PLATFORM FOR EXPRESSION

Temporary spaces for spontaneous expression make individual protests and concerns visible. Expression in urban space can take many forms (Hou, 2010), from temporary and improvised appropriations of public space to reclaiming it or transgressing restrictions. In all of these, citizens constantly redefine the notion of the public understanding of the city. While all these forms take place more or less spontaneously, they can also become a platform for expression in a tacit dialogue between those who impose rules of behaviour on public space and those who continue to claim it as theirs.

While a platform for expression as a goal can become an innocuous action, by calling the attention of passers-by to the ongoing process it can also be included as a complementary tool for diagnosis. Although it might be useful to take messages on board, these can also include ones that are disrespectful, or could include details of personal situations that are not relevant to the project. Typically, politically charged messages are mixed with trivial ones. This tactic can be of great use if it is instrumentalised: areas of interest can be grouped and analysed, colour codes can be used by age groups or topics, and ultimately the board can become a collaborative mind map.

.a | "The Country that We Dream", Centro Gabriela Mistral, Santiago de Chile, 2014. A chalk blackboard was set as an invitation to express a personal opinion. The blackboard was erased every week (whether the results were recorded or not is unknown) and the title changed every few weeks. Each message was prefaced by the phrase "I imagine Chile…". Results included pleas for sexual, religious and political freedom and the liberalisation of drug laws, and personal messages of love. Source: author's pictures.

.b | Lacol and Equal Saree, 2018, board created as part of the participative process to define 23 criteria for points of intervention in the historic la Model prison building. Source: www.lacol.coop.

.c | La Galería de Magdalena, #NeveraUrbana (top) and #TeVi (below) art interventions, several Metro stations in Madrid, Christmas 2014-2015, as part of Línea Zero, a project for art and civic engagement in public space in which 26 artists participated at six metro stations, curated by the Madrid Street Art Project. Source: www.madridstreetartproject.com.

Further reading:

Hou, J. (2010) *Insurgent Public Space Guerrilla Urbanism And The Remaking Of Contemporary Cities.* London: Routledge.

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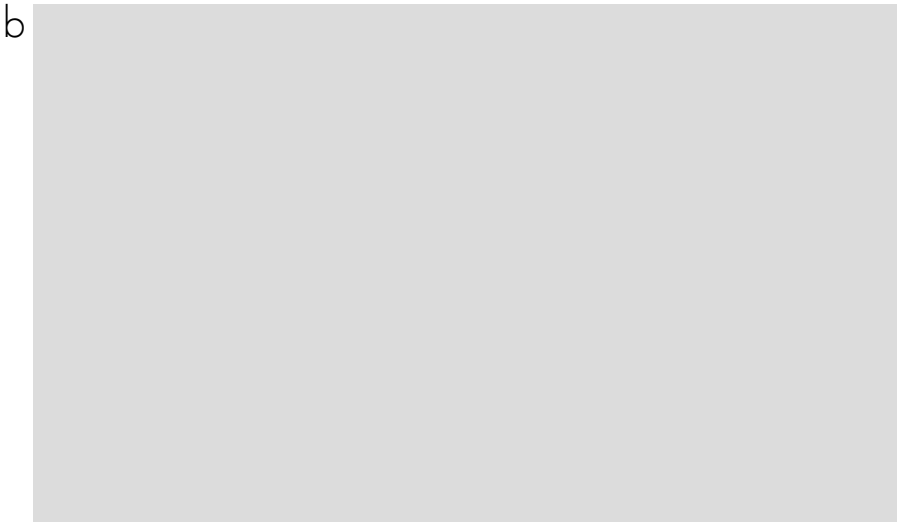

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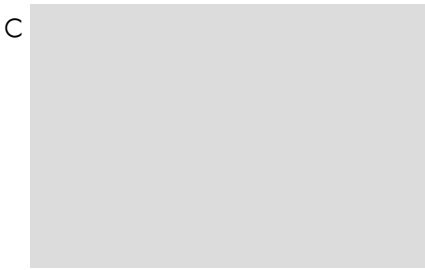

ARTEFACTS INVADE PUBLIC SPACE

A movable architectural device is a useful tool for reaching passers-by in the street. Artefacts can be used for many different purposes, from energising campaigns to informing or gathering data, tactical urbanism or political critique. Beyond its specific use and the way it articulates a certain activity, an artefact tends to attract people's attention and fosters curiosity, thus producing a connecting effect.

Artefacts are often built with light elements or assembled structures, which allow them to be easily moved (with wheels) or dismantled and reassembled in different places. The size of the artefacts can vary from "objects" to "buildings"; they can become movable elements of discovery or temporary landmarks in specific areas. In addition, they can be used as an on-site technical support office [.a] (discussed in the Data Gathering chapter).

.a | Renzo Piano Building Workshop, UNESCO District Workshop, Otranto (Italy), 1979. An on-site office for post-earthquake village reconstruction took the shape of an artefact installed in public space. The artefact became a meaningful design in itself, allowing different configurations depending on the activities developed. Source: Buchanan, P. (1993) *Renzo Piano Building Workshop: Complete Works.* Vol. 1. London: Phaidon.

.b | Makea Tu Vida, Vía Pere IV and Fundació del Poblenou. O.B.N.I (Ocupación Barrial No Invasiva; Non-Invasive Neighbourhood Occupation), Barcelona, 2012. OBNI was established through participative self-construction workshops reusing materials: its aims were to create a proactive involvement of citizens in public space management and to address specific problems through collective conversations. Source: www.makeatuvida.net.

.c | Todo por la Praxis, Island TAZ, 2015. "Despite its small low-cost scale and its temporary nature, it aims to improve the area where it is located. During the three months that the device remained, the square between the Boulevard de la Pétrusse and the Passerelle/Viaduc was transformed into a communal space, open to the city, that created an alternative to the closed-off empty unused space that it had been until then." Source: www.todoporlapraxis.es; www.archivetaz.org (discontinued).

.d | Makea Tu Vida. Movable artefact used for the promotion of the Municipal and District Act Programme (PAM-PAD), Barcelona, 2020. Source: www.makeatuvida.net.

.e | Arquitectos de Cabecera, Pei.Lab Javeriana de Bogotá and Makea Tu Vida, WAC Safaretjos, 2017. A geodesic dome was placed in a public square to attract people's attention, inviting them to participate in the neighbourhood diagnostic cartographic activity. Source: AC Archive.

Further reading:

www.makeatuvida.net

www.todoporlapraxis.es

Echavarria, M. P. and Ockrassa, A. (2008) *Portable Architecture and Unpredictable Surroundings*. Barcelona: Links International.

Seonwook, K. and Miyoung, P. (2012) *Construction and Design Manual Mobile Architecture.* Berlin: DOM.

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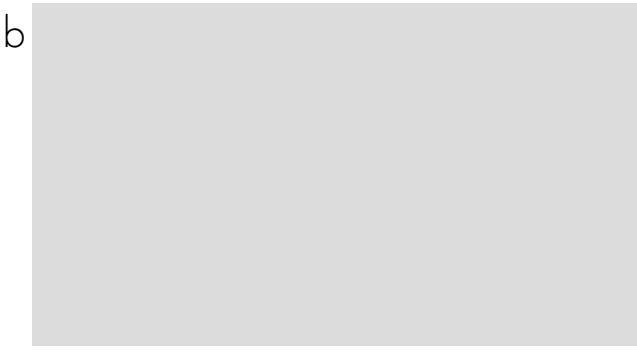

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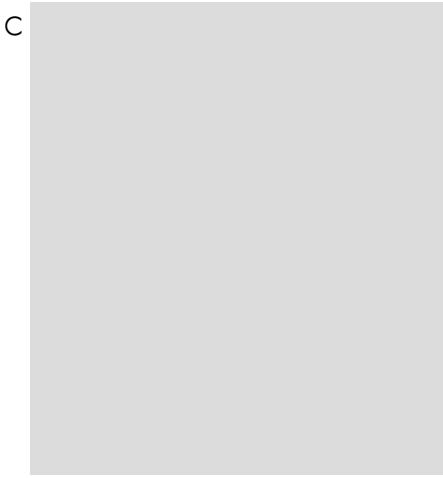

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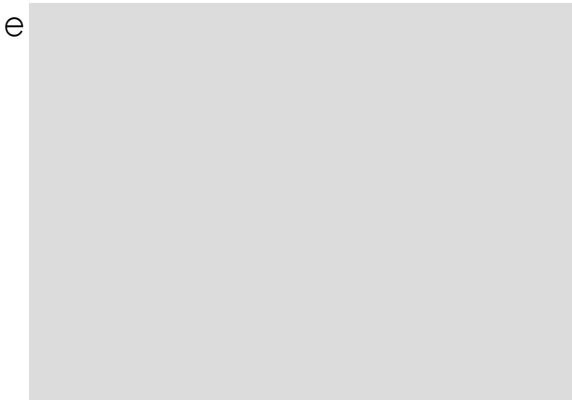

SPATIAL ALTERATION

Like urban artefacts, spatial alteration works by fostering curiosity and atttracting people's attention. Because of its scale, it encourages the discovery of a specific location and allows participants to engage in a spatial and potentially playful experience. Curiosity can be instrumentalised to engage people with other related activities, or to call attention to a previously unobserved urban condition, emphasising social or political critique.

Spatial alterations can change people's behaviour and performance; entering a new spatial condition may translate into shifting the mental state into one of playfulness.

.a | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, la Escocesa, 2019. In La Escocesa summer workshop, the construction of inflatable structures became an invitation to rediscover a space that had been locked for decades. Three structures were connected as a thick threshold towards the main warehouse space. Interestingly enough, we realised that not only was the space altered, but also people's behaviour in it: entering a different and unexpected spatial condition changed people's mental and behavioural approach and made it a playful zone where people's mood altered, as well as social rituals that took place within the structure. Photography: Conchi Berenguer, AC Archive.

.b | Santiago Cirugeda and Recetas Urbanas. Project with Lights, Sevilla, 1996. Santiago Cirugeda, a spatial alteration to attract attention to something that had been intended to go unnoticed: "a strategy for catalysing community interest in a piece of land that had been approved for development without proper consultation. Fourteen neighbours and friends wore backpacks fitted with two 40-watt fluorescent bulbs. Members of the group were connected by a long extension cord; moving the group necessitated finding new sources of energy, so neighbours were invited to donate minutes of energy for the twenty-eight lights, involving them in the discussion around the event." Source: www.cca.qc.ca. See also: Cirugeda, S. (2015) p.86.

.c | 'Mmm... Divided Street', Valencia, 2015. In a situation that resembled Lars von Trier's film *Five Obstructions* (2003), 'Mmm' created "a transparent plastic wall, three metres tall, [that] cuts a pedestrian street into two. You can see what happens on the other side but you cannot cross. Standing in front of the stretched plastic wall, passers-by make eye contact with others in the same situation on the other side of the translucent barrier. Someone gets closer to touch the plastic. The membrane divides the street in two. To get to the other side you have to find alternative routes." From the project documentation. Source: www.mmmm.tv.

.d | Mmm... Between Curtains. Alcalá de Henares, 2017. From the description of the project: "Between the two parallel curtains, six metres tall, a space of square proportions is created. An isolated space that intrigues, misplaces and disorients, a place of encounter or failed meeting that provokes unique situations. The action takes the theatre out into the public space, creating a singular setting in the street, where pedestrians can star in their own experiences." Source: www.mmmm.tv.

Further reading:

Borasi, G. and Zardini, M. (eds.) (2008) *Actions: What You Can Do With the City*. Montréal: Canadian Centre for Architecture. See also www.cca.qc.ca/actions.

Cirugeda, S. (2015) *Situaciones Urbanas.* Barcelona: Tenov.

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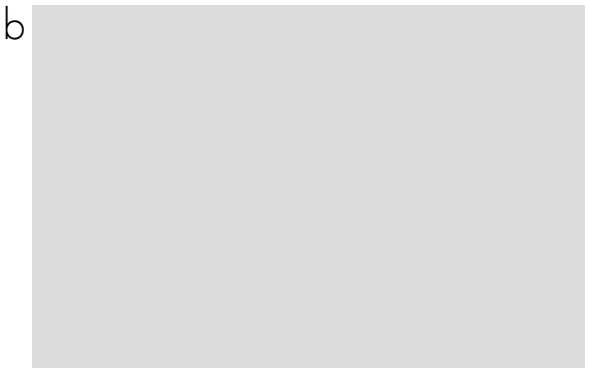

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CONFRONTATION

"Our bodies, as thinking and desiring bodies, are embedded in a network of interdependencies at multiple scales. (…) In the crisis of words in which we find ourselves, deafened by the incessant noise of communication, positioning the body becomes the essential, and primary, condition for starting to think. It is not about everyone setting themselves on fire. Or is it…?"
— Marina Garcés, "Poner el cuerpo" (Positioning the body), in *Un mundo común* (2013) (translated by author).

As opposed to theoretical revolutionary discourses inherited from the past, Garcés' reference to Mohamed Bouazizi's self-immolation on 17 December 2010, the catalyst for the Tunisian revolution and Arab Spring in 2011, argues for a direct daily and transformative involvement.

In this vein, the tactic of confrontation aims to seek a certain degree of conflict, discomfort or polemic by placing the spectator's body in an uncomfortable position. Confrontations target cultural, social and political constructs, work from abstraction to talk about real situations, and point out society's interdependencies to translate someone else's problems and conflicts into individual experience. Following Garcés, we must confront reality by "positioning the body".

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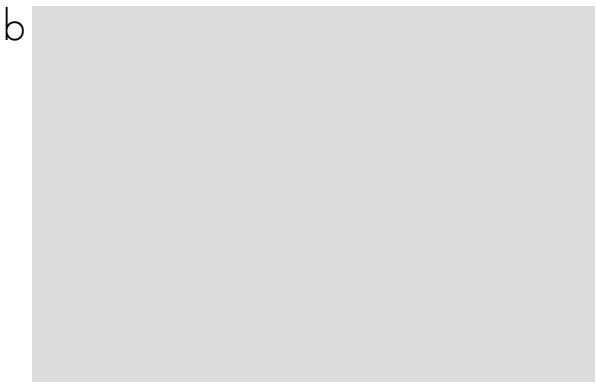

.a | Por un Habitar Digno (Towards a Dignified Way of Life), Plaza Italia, Santiago de Chile, 2019. A simple gesture of drawing with chalk on the ground in a public square (as in *Dogville*, directed by Lars von Trier (2003)) becomes the simplest way to create a fictional architectural space. The confrontation is a double one; on the one hand in terms of the location, Plaza Italia (later popularly renamed Plaza de la Dignidad) — a psychological border in the city of Santiago between two different socio-economic neighbourhoods, and on the other, the motif: minimum apartments, protesting against spatial and social injustice and encouraging participation in the social unrest of 2019. Source: "Estudiantes de Arquitectura Protestan Dibujando con Tiza Costosos Departamentos de 17 m^2 en Plaza Italia", www.eldesconcierto.cl. Photo: T. Bravo.

.b | Cadelas Verdes Collective, Spanish Dream, 2011. A daily performance of activities in unfinished and abandoned construction projects places the spectator in the image through the overlapping of two familiar but decontextualised situations. The power of the image, denouncing the lack of affordable housing and construction company abuses, lies in both the simplicity of the image and the familiarity of the actions performed. Source: www.plataformaarquitectura.cl.

Further reading:

Garcés, M. (2013) *Un Mundo Común.* Barcelona: Ediciones Bellaterra, pp.66-67.

COLLABORATION WITH EXTERNAL EVENTS

Out-of-the-ordinary events of any kind, from festivals to workshops or exhibitions, can produce a beneficial symbiotic relationship between project organisers and specific activities in terms of raising awareness, making claims visible, and joining forces and networking.

Most interestingly, some events can mitigate regulatory restrictions, or even suspend them. Clear examples are art and architecture festivals, and academic events in public space, where the space is often occupied or temporarily transformed. The strategy of generating autonomous areas at the margin of the state's socio-political control as a way of developing an agenda autonomously was described by Hakim Bey as creating "Temporary Autonomous Zones" (TAZ) (Bey, 1991). In some events, the adoption of TAZ can camouflage politically charged activities as harmless in the eyes of local government, which would be reluctant to cooperate otherwise. This tactic was further developed by the Madrid architecture collective Todo por la Praxis. Activist architect Santiago Cirugeda famously benefits from these events as alibis for carrying out architectural experiments and his extralegal – or illegal – "Urban Recipes".

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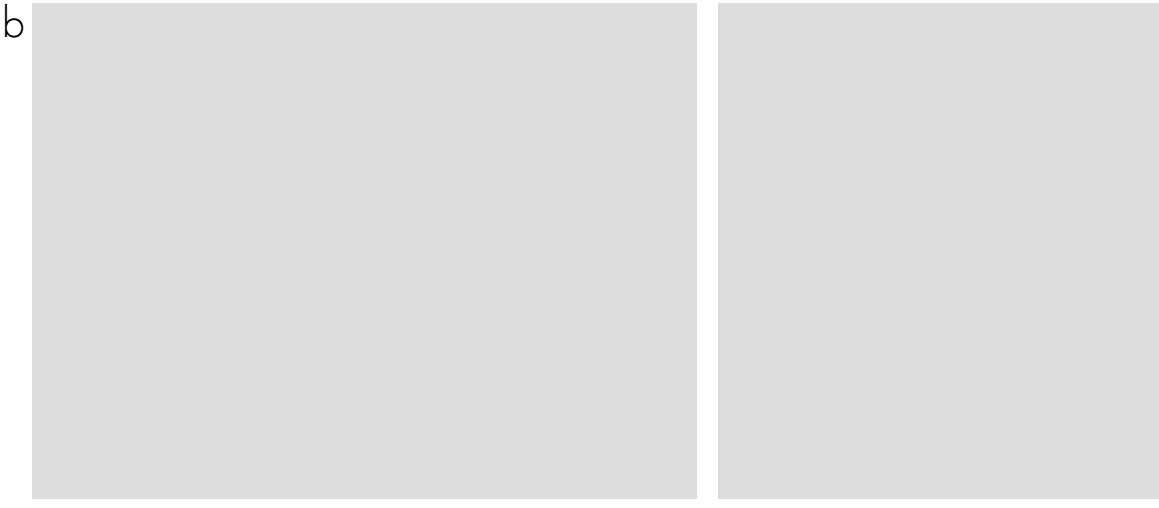

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.a | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, Can 60 event to make the struggle visible was organised to coincide with a neighbourhood festival in August 2015 and included a community event and an open exhibition. Source: AC Archive.

.b | Santiago Cirugeda, Chicken House, 2005. Very controversial prototype built in Poblenou under the auspices of the Construmat international construction fair, eme3 architecture festival and APTM Experimental Housing Exhibition. The house complied with operating permits until the administration understood that it was not a piece of art but a real proposal to be replicated as a self-built (unauthorised) unit in empty plots of the city. At a certain point, it was considered unsuitable for public habitation since the staircase did not comply with regulations – a staircase that nevertheless previously followed the regulations as part of another pavilion that also hosted public events. Source: www.recetasurbanas.net.

.c | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, Citizen's Technical Consultation Office (Oficina d'Atenció al Ciutadà): Arquitectos de Cabecera offered a free citizens' architectural consulting office during the Piso Piloto exhibition at the Centre de Cultura Contemporània de Barcelona (CCCB) in 2015 for a month (Piso Piloto Exhibition, Barcelona, 2015). Previous examples include "Free Consulting Office on Alegal Housing" in 2007 (Recetas Urbanas, within "Interferencias 07", Rambla Santa Mónica) and "Free Architecture Office" in 2009 (PKMN Architects, CCCB Eme3 festival, CCCB Barcelona). Source: AC Archive.

Further reading:

Bey, H. (1991) *TAZ: the Temporary Autonomous Zone.* Seattle: Pacific Publishing Studio.

www.todoporlapraxis.es

PRINTED MEDIA

Broadcasting through printed media aims to reach an audience through paper-based formats, including postcards, pamphlets, flyers, posters and others. The information included can range from invitations to attend events such as workshops or decision-making processes to details or publicity about activities being developed, or to raise public awareness of specific urban changes being developed.

The format can be adjusted to fit both the content to be printed and its method of distribution. For small formats, postcards or pamphlets are easy to distribute in post-boxes. Posters are appropriate for pinning up in the street or local stores, and newspapers are large-scale formats that are cheap to print, particularly in black and white.

All sorts of printed media can also be distributed at events, becoming “souvenirs” for those attending the events and bibliographic documentation of certain events that can be consulted in the future.

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.a | “Urban Conflict Map, ‘Renovation’ process of Barcelona, 2002-2003”. Architects Without Borders Barcelona, ASFE, Postcards, 2003. Source: courtesy of ASFE.

.b | Arquitectos de Cabecera, WAC Poblenou, Barcelona, 2016. Flyers. Source: AC Archive.

.c | Arquitectos de Cabecera, WAC Poblenou, Barcelona, 2016. Pamphlet publicising research on gentrification. Source: AC Archive.

Further reading:

Müller-Brockmann, J. (2021 [1981]) *Grid Systems In Graphic Design: A Visual Communication Manual For Graphic Designers, Typographers, And Three Dimensional Designers.* Salenstein: Niggli.

Lupton, E. (2013) *Thinking With Type: A Critical Guide For Designers, Writers, Editors, and Students.* New York: Princeton Architectural.

DIGITAL PLATFORMS

Collaborative architecture has found in digital platforms an excellent medium for broadcasting its activities, due to an open-access information policy and the opportunity it offers to network with other collectives. Digital media can also be used to encourage attendance at specific events, or become a platform for participative decision-making methods.

In comparison with printed media, digital platforms are cheaper, more agile and more flexible. In addition, some age groups might be easier to reach through social media than through paper media, and, in contrast, digital platforms might not be accessed by all age groups.

Since digital platform visitor data is easy to track, social media can become an instrument to measure the impact that an event or a public decision-making process has generated in its different stages.

.a | Arquitecturas Colectivas website: arquitecturascolectivas.net

.b | Arquitectos de Cabecera youtube repository, including lectures and videos of the different activities organised by the association.

.c | Paisaje Transversal, Virgen de Begoña, 2015. Website to develop the neighbourhood integral refurbishment participative masterplan. Available at vdebegona.wordpress.com.

.d | Arquitectos de Cabecera, Fem Festa Fem Safaretjos, 2018. Home page of the event on Facebook. Source: Facebook.

Further reading:

Moreno Páez, S., Pérez de Lama, J. and Andrade, L. H. (2012) *Wikiplaza: Request For Comments*. Barcelona: Dpr-barcelona.

Sherman, A. and Smith, D. E. (2013) *Social Media Engagement For Dummies*. New Jersey: John Wiley and Sons.

Sabin-Wilson, L. (2015) *Wordpress For Dummies*. New Jersey: John Wiley and Sons.

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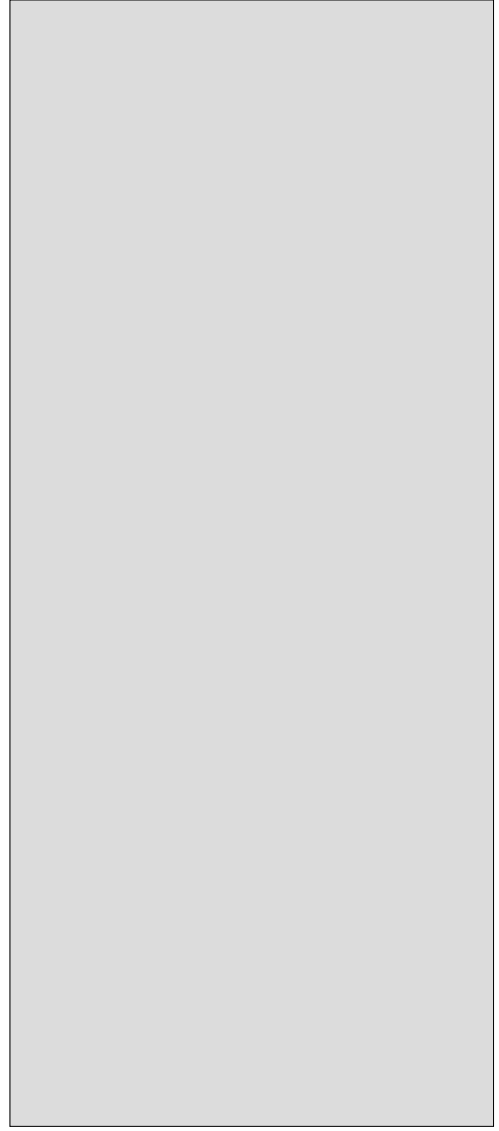

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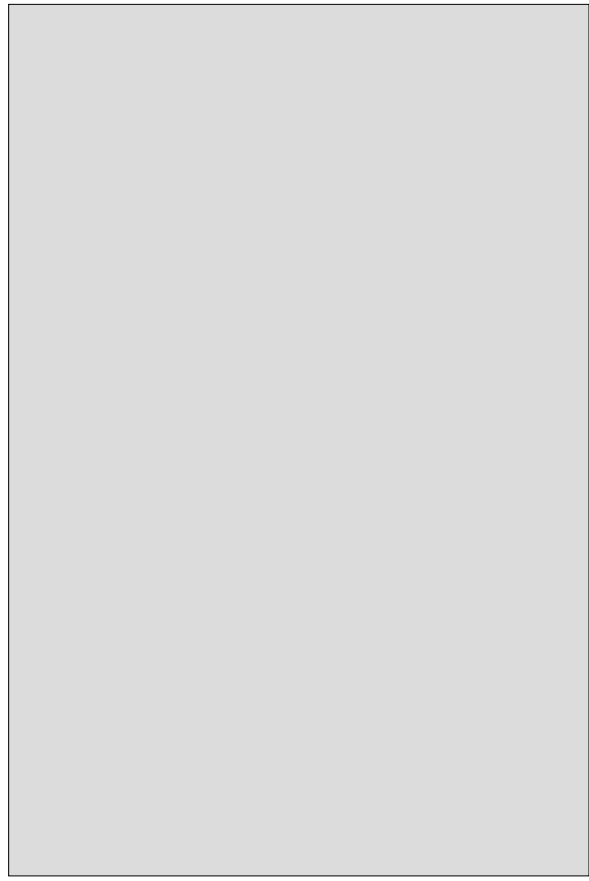

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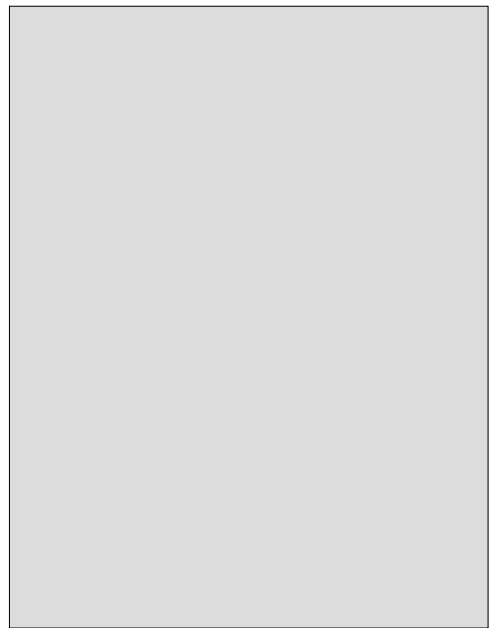

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BILLBOARD HACKING

Billboard Hacking is common in activism. It is a subversive strategy that consists of replacing an existing advertisement with another one, similar in aesthetics but with different content. While some of the examples openly declare that they are fake, others may constitute potentially illegal actions by pretending to be the official posters. Billboard hacking can become a platform to make claims visible or to generate debate about a certain topic by creating confusion or curiosity as part of the long-term project strategy – as Cirugeda did in Fuerteventura [.a].

.a | Santiago Cirugeda. Territorial Restoration in Fuerteventura, 2007. Billboard hacking was the first step towards the demolition of an illegal road in a natural environment. The billboard raised local debate and played a key role in convincing a local construction worker to carry out the demolition without a permit. Since the action was justified as part of an art festival, there were no consequences for "the artist" (see "Collaboration with external events" tool in this chapter). Source: www.recetasurbanas.net

.b | Todo por la Praxis. Speculator, Madrid, 2008. A protest against speculation through a fictional superhero presented on a billboard. Source: www.todoporlapraxis.es.

.c | Todo por la Praxis. Empty World, Madrid, 2008. A property agency for empty flats that resembled the original but was in fact a critique of property companies' housing activity. Source: www.todoporlapraxis.es.

.d | Autoenganys, Barricidi. Publicity Billboard Hacking Workshop advertisement, project Art I Part Poble Sec. Barricidi claims to "hack billboards to transform and defend the neighbourhood". The poster reverses a property company's online platform message: "your house is mine". Source: Twitter @Auto_EnGanYS. Also see Twitter: @art_bcn and @Auto_EnGanYS.

.e | Architects Without Borders Spain, ASFE. Billboard created during the Forat de la Vergonya conflict, 2003. Generic local government poster hacked by residents. "We are building new Housing for the Elderly in front of 'El Forat de la Vergonya'", "Architects: residents of the area willing to join". Source: ASFE Archive.

.f | Extinction Rebellion, hacking of bus stop publicity. "Reveal or there will be no trees". Source: Twitter @XRBarcelona.

.g | ETSAB school of architecture is advertised on a property website to denounce the forces of privatisation, within a context of student mobilisation against the Bologna Plan, 2013. Source: www.etsabenlluita.blogspot.com.

Further reading:

Chapman, S. (1996) 'Civil Disobendience and Tobacco Control: the Case of BUGA UP', in *Tobacco Control,* 5, pp.179-185. Available at: www.web.archive.org.

www.billboardliberation.com

www.twitter.com/Auto_EnGanYS

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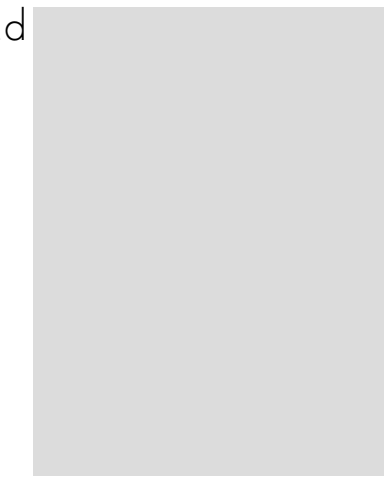

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PUBLIC EXHIBITION

Exhibitions in public spaces bring the work of architects closer to residents and give their actions visibility in the neighbourhood. They can easily become informal meeting spaces to discuss proposals and receive feedback on actions.

Exhibitions can either be organised as a workshop or just happen spontaneously, and range from one-day events to permanent ones. The space should be designed according to the material exhibited, and the content should be presented in a way that is both attractive and easily comprehensible for the audience. Technical data or slogans can be mixed with longer arguments and typical methods of architectural representation, such as plans, drawings or models, and be accompanied by speeches or debates. In particular, models are easier for a general audience to understand than drawings, and tend to kindle people's interest.

When they take place in public space, exhibitions typically need some sort of local authority permission. If they are organised as part of a larger event happening nearby, exhibitions potentially attract a larger audience and partnering possibilities emerge naturally (see the Collaboration with external events tool in this chapter).

.a | Arquitectos de Cabecera, One-Day Exhibition in Àngels Square within Open ETSAB week, Barcelona, June 2013. The exhibition included videos projected in "MACBA's glass box", and a table with models and documentation of the work developed during the previous fortnight. Source: AC Archive.

.b | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, exhibition in Can 60, WAC 2015, Raval, Barcelona. Source: AC Archive.

.b | Arquitectos de Cabecera, Permanent Exhibition in Besos Riverfront Park, Santa Coloma de Gramenet, established in 2018. Source: AC Archive.

Further reading:

Hughes, P. (2015) *Exhibition Design: An Introduction*. London: Laurence King Publishing.

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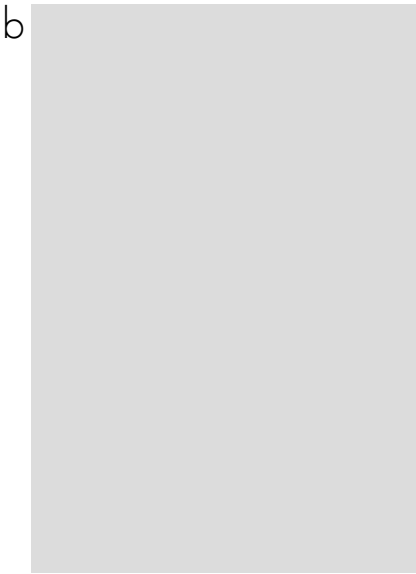

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INTERACTIVE MAP

An interactive map, most commonly in digital format, enables interaction between the organisers and the audience, who can freely add or modify information collaboratively. The interactive map can be used to increase awareness of a certain situation or make it visible through storytelling, but also to collect information about the history of a place, suggestions for transformations, or to help with the organisation of events in a public place in terms of activities and where these could take place.

The base map can be developed with free software, which allows an easy interface with users who might not necessarily be familiar with website editing.

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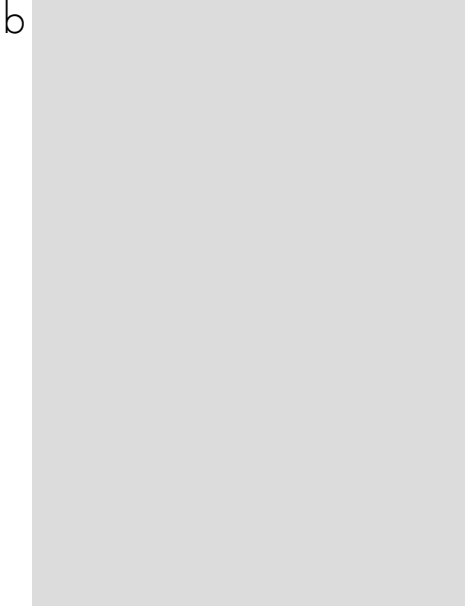

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.a | Mmmm... Rape Map, 2012-2019. Rape Map collected testimonies of sexual crimes to challenge the stigma of being raped. Source: www.rapemap.mmmm.tv.

.b | Todo por la Praxis, los Madriles maps, 2018. Re-labs, "an unfinished atlas of Madrid and its neighbourhood initiatives that have created new spaces of possibility through self-management and participation." Source: www.losmadriles.org.

.c | EJAtlas - Global Atlas of Environmental Justice. Digital mapping of local communities' struggles for environmental justice derived from extractive productive logic. Source: www.ejatlas.org.

Further reading:

www. ejatlas.org

www.openstreetmap.org

VIDEO / DOCUMENTARY

The use of video or documentary film can reach a lay public in an entertaining way. While the use of documentary film in architecture is not new, what has recently attracted attention to this tool is that recent documentaries are not films about architects or buildings, but instead make visible the social claims that architects support, thus becoming an explicit tool for taking a political position. This is the case, for example, with Santiago Cirugeda and the denouncement of the property bubble in Spain and its causes [.a], or Lacol and the urban struggle around the Can Batlló complex in the Sants neighbourhood, Barcelona [.b]. Since architects may not be familiar with the tools and know-how of documentary film-making, they often collaborate with video- or documentary film-makers.

Videos can be long – documentaries, for instance – but can also be short productions in the form of invitations or advertisements, aiming to directly communicate a small amount of information. For example, Arquitectos de Cabecera develops two-minute videos as cartography in motion or to explain a catalysing action [.c].

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.a | *€spanish Dr€am* (2009). Directed by Guillermo Cruz. Spain: Santiago Cirugeda by Guillermo Cruz. Available at: www.vimeo.com/yermotv/docespanishdream. Image source: naranjas-dehiroshima.com.

.b | Panóptica and Lacol (2011) Com un Gegant Invisible' (documentary). Barcelona. Available at: www.vimeo.com/82442928, with English subtitles.

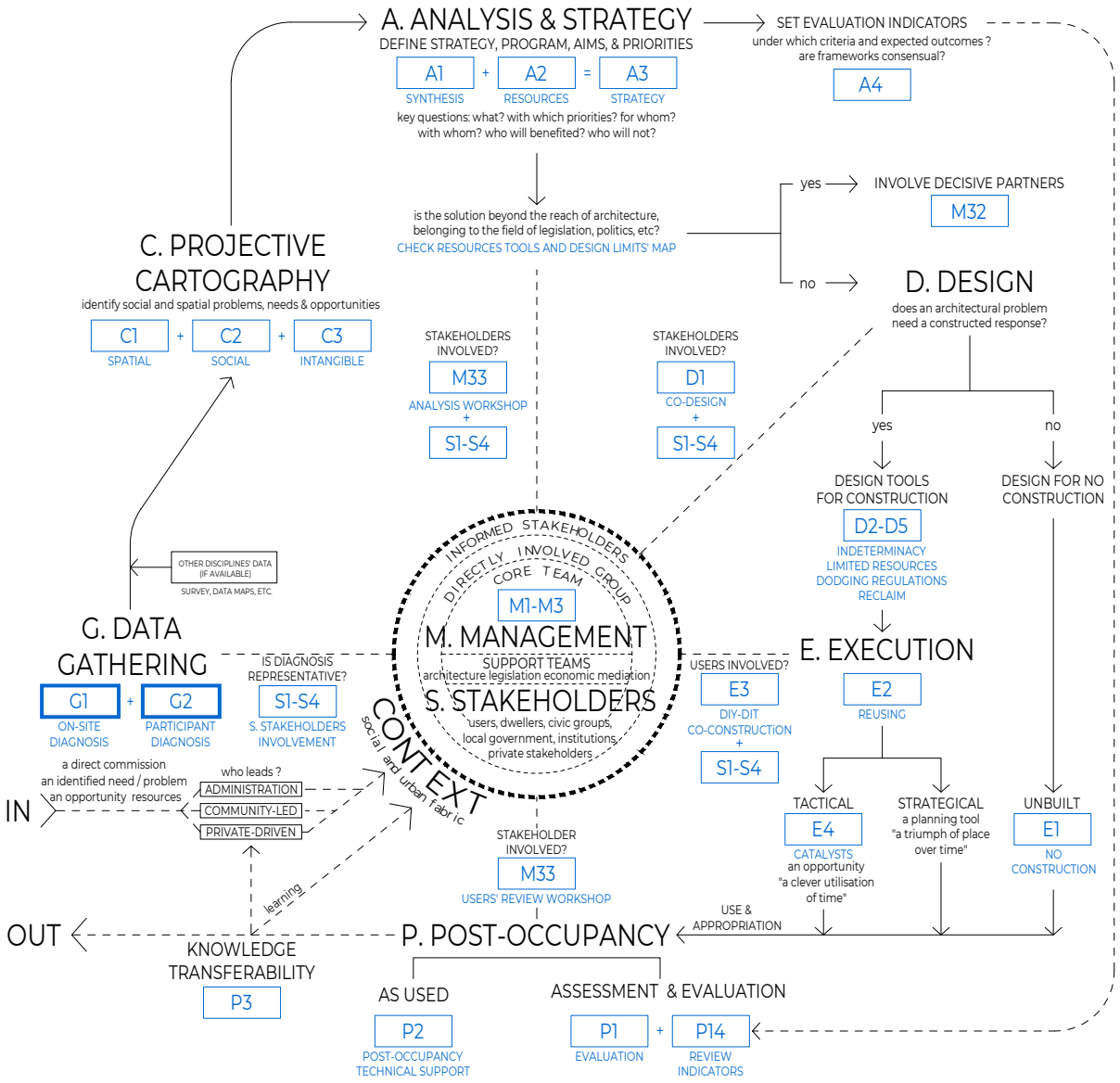
.c | Arquitectos de Cabecera Studio (Taras Adomovic and Olha Tsybina), TTAC20. Video on the spatial operation of the non-profit organisation Cáritas, which works with homeless people. Available at: https://youtu.be/8xydUHr_xgk. Caption from the video.

Further reading:

Harding, T. (2001) *The Video Activist Handbook*. London: Pluto.

Carucci, J. (2022) *Adobe Premiere Pro CC for Dummies.* Chichester: John Wiley and Sons.

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

D. DATA GATHERING

TOOLS INVENTORY

G. DATA GATHERING
G1. ON-SITE DIAGNOSIS
- G11 Ethnographic observation
- G12 Group walk
- G13 On-site technical support office

G2. PARTICIPANT DIAGNOSIS
- G21 Diagnostic workshops (I-II)
- G22 Meetings with stakeholders
- G23 Interview / survey

C. PROJECTIVE CARTOGRAPHY
C1. SPATIAL & MORPHOLOGICAL
- C11 Drawing the domestic
- C12 Picturing the domestic
- C13 Building as socio-spatial ecosystem
- C14 Facade as mediator
- C15 Urban void
- C16 Neighbourhood
- C17 Urban landmarks
- C18 Systemic urban elements

C2. SOCIAL DIAGRAMS
- C21 User portraits
- C22 Routines & habits
- C23 Users' needs (I): individual
- C24 Users' needs (II): collective
- C25 Morphology to patterns of behaviour
- C26 Rituals & social activities
- C27 Diagrams of relational activities

C3. THE INTANGIBLE
- C31 Subjective perception maps
- C32 Collective perception
- C33 Proximity or isolation
- C34 Movement
- C35 Memory
- C36 The uncanny
- C37 Invisible borders
- C38 Temporalised space
- C39 Control
- C40 Conflict (I): maps
- C41 Conflict (II): events
- C42 Conflict (III): effects

A. ANALYSIS & STRATEGY
A1. SYNTHESIS
- A11 The (yellow) manifesto
- A12 Mind map
- A13 Design limits' map

A2. RESOURCES
- A21 Financial analysis & co-finance strategies
- A22 Available resources (I): inventory
- A23 Available resources (II): "harvest map"

A3. STRATEGY
- A31 Strategic action plan
- A32 Actions & tools breakdown
- A33 Viability map
- A34 Consequences map

A4. EVALUATION INDICATORS
- A41 Technical indicators
- A42 Perceptual indicators
- A43 Typological indicators
- A44 Cross-qualitative & quantitative data

D.DESIGN
D1. CO-DESIGN
- D11 Co-design workshops (I-IV)
- D12 Proposing an alternative

D2. INDETERMINACY
- D21 Enabling: user appropriation
- D22 Enabling: user manipulation
- D23 Enabling: adaptable system
- D24 Typological variations
- D25 Multiple scenarios

D3. LIMITED RESOURCES
- D31 Intermediary situations: "the meanwhile"
- D32 Leveraging material scarcity
- D33 Designing for low-risk construction
- D34 Split large interventions
- D35 Nomadic facilities

D4. DODGING REGULATIONS
- D41 Legislative blind spot
- D42 Camouflage
- D43 Declaring a Temporary Autonomous Zone

D5. RECLAIM
- D51 Reclaiming empty plots
- D52 Filling in the gap
- D53 Regaining infrastructure

E. EXECUTION
E1. NO-CONSTRUCTION
- E11 Do not do (I): maintain
- E12 Do not do (II): connect
- E13 Reprogramming time in space
- E14 Relocation
- E15 Undoing

E2. REUSING
- E21 Borrow - barter
- E22 Recycling & reclaiming components
- E23 Dismantling & reassembling buildings
- E24 Parasite

E3. DIY-DIT CO-CONSTRUCTION
- E31 Technical specifications
- E32 User to execute
- E33 User to complete
- E34 User to expand
- E35 Collective assisted DIY-DIT

E4. CATALYSTS
- E41 Generative actions
- E42 Tactical on-site prototypes
- E43 Do it anyway

M. PROCESS MANAGEMENT
M1. PLANNING
- M11 Definition of phases
- M12 Anticipated timescale

M2. DECISION-MAKING
- M21 Map of stakeholder roles
- M22 Core group diagram
- M23 Decision-making scheme

M3. STAKEHOLDER ENGAGEMENT
- M31 Co-organise / develop with
- M32 Involving decisive partners
- M33 Discussion workshops (I-II)

S. STAKEHOLDERS
S1. MAPPING
- S11 Identify stakeholders
- S12 Engagement matrix
- S13 Sociogram
- S14 Powergram

S2. REACHING BY SEDUCTION
- S21 Direct invitation
- S22 Indirect contact
- S23 Make it fun
- S24 Food as social ritual
- S25 Provide a platform for expression

S3. REACHING BY PROVOCATION
- S31 Artefacts invade public space
- S32 Spatial alteration
- S33 Confrontation

S4. REACHING VIA MAKING VISIBLE
- S41 Collaboration with external events
- S42 Printed media
- S43 Digital platforms
- S44 Billboard hacking
- S45 Public exhibition
- S46 Interactive map
- S47 Video / documentary

P. POST-OCCUPANCY
P1. ASSESSMENT & EVALUATION
- P11 Process overview
- P12 External evaluation: stakeholder review
- P13 Internal evaluation: tools & methods (I-IV)
- P14 Evaluation indicators review

P2. POST-OCCUPANCY TECHNICAL SUPPORT
- P21 Post-occupancy technical support
- P22 Building monitoring

P3. KNOWLEDGE TRANSFERABILITY
- P31 Manuals & toolkits (I-III)
- P32 Plans sets
- P33 Process reports
- P34 Online resources

COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

as part of

COLLABORATIVE ARCHITECTURE BARCELONA:
THE ARCHITECT AS ENABLER

PhD By Practice | Royal College of Art | School of Architecture | London | 2018-2022
Supervisors: Dr.-Ing. Sam Jacoby (SoA-RCA) & Ibon Bilbao (ETSAB-UPC)

Raül P. Avilla-Royo

G. DATA GATHERING

The data gathering phase aims to identify the needs, problems and opportunities that a particular project should respond to. For this reason, it typically takes place at the beginning of any project, even though it might not be made explicit as a phase, nor developed systematically. The diagnostic tools presented in this chapter can be used at any phase of the project to incorporate new input or to evaluate decisions or changes.

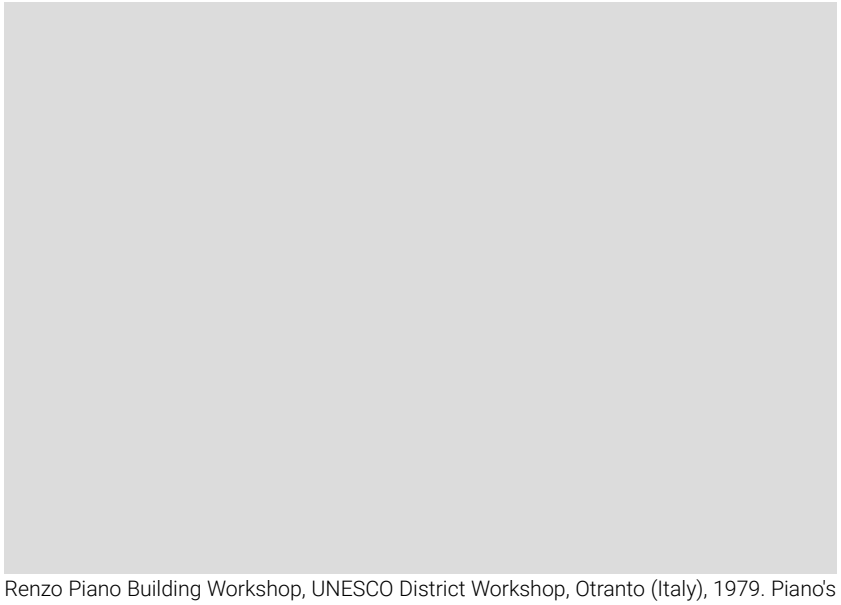
In public procurement, while the definition of what needs to be done, and for whom, is traditionally the responsibility of local authority technical and professional staff, informed by political agendas, there is an increasing interest in incorporating local citizens in the diagnostic phase, with the understanding that decision-making is a right and acknowledging that by the mere fact of living in a certain place users are aware of its opportunities, problems and priorities. Giving the same importance to the social fabric as to the urban one means that space should be addressed in terms of the way

Ralph Erskine's Byker housing (1969-74), in Newcastle Upon Tyne. Erskine set an on-site office to involve residents in the design of the neighbourhood. Source: Wates, N. and Knevitt, C. (1987) *Community Architecture*. London: Penguin.

it is performed, perceived and desired by users. For architects, this entails the understanding that they will not be the first, nor the last, to intervene in a particular urban fabric, and thus it is imperative to engage with those who are already active there.

Thus, apart from the managerial team decisions, diagnosis becomes the first opportunity for citizen engagement with decision-making and collective urban thinking. However, if citizen involvement is limited to the diagnostic phase, with no cession of power from institutional decision-makers (typically defined as "participatory processes"), the whole process may become meaningless and may be easily manipulated by political agendas that produce outcomes that are the opposite of those that had been anticipated, as discussed in more detail in the Process Management chapter.

Diagnostic tools allow the gathering of quantitative and qualitative data about urban and social contexts, which for a comprehensive and optimal understanding should be contrasted through a multi-disciplinary approach that combines research methods (for example a Geographic Information System (GIS) with social sciences and urban planning tools). Since each diagnostic tool provides a different set of data, it is useful to conduct several activities and evaluate the results together. The question of who is questioned becomes crucial, since a bias in the groups involved might produce a bias in the definition of the aims in the strategic analysis stage – for example, if a certain social group has not been consulted, or minorities have been ignored.



Renzo Piano Building Workshop, UNESCO District Workshop, Otranto (Italy), 1979. Piano's on-site office allowed "to empower a traditional community and its craftsmen to repair their ancient town". Source: Buchanan, P. (1993) *Renzo Piano Building Workshop: Complete Works.* Vol. 1. London: Phaidon.

In comparison with social sciences data, which is typically represented with graphics or described with words, architectural tools employ drawings as key communication and design tools. The outcome of diagnostic tools can be translated into drawings, which is discussed in the Projective Cartography chapter. It should be noted that the tools presented in this chapter do not necessarily translate into better design outcomes. However, their strength resides in approaching urban contexts from a broader perspective, and their aim to include as many voices as possible to the design processes, which produces a more complex response to urban problems and responds to as many different social needs as possible.

Arqbag, Community Energy Refurbishment (REC), within Pas a Pas project, les Planes, 2014-2015. Neighbourhood survey in order to identify housing sanitary and energetic problems of the neighbourhood. Source: courtesy of Arqbag.

Raons Públiques, Post-attendance report on sessions of the process with goals, methods and outcomes definition. URBACT (2018) *Imagina Badia: Strategy for the transformation of the fringe in Badia del Vallès (AMB)*, p.38. Report available at: www.urbact.eu.

ETHNOGRAPHIC OBSERVATION

Ethnographic methods aim to gather data from people's performance, behaviour and rituals in space through field observation: who uses the space and how, the social dynamics that take place and how these are influenced by specific spatial conditions. They are based on inductive reasoning, and aim to extract general rules from the study of particular cases, taking an approach that expands the analysis from the singular to the global.

The data extracted can be both qualitative and quantitative, depending on the interest of the study. Ethnographic studies may be intrusive or non-intrusive, depending on whether researchers interact directly with users.

Ethnographic observation methods offer a primary source of information about how users inform design decisions; space is directly assessed against use and performance. However, the data collected may not be representative. For this reason the choice of case studies is crucial: they must be relevant, in terms of including the full spectrum of potential situations, and should be sufficiently comprehensive. Ideally, ethnographic data should be contrasted with other forms of enquiry, such as interviews or surveys.

Ethnographic methods emerge from social sciences studies, and when adopted in architecture they can be translated into drawings, or cartographies. A separate chapter, Projective Cartography, focuses specifically on this issue.

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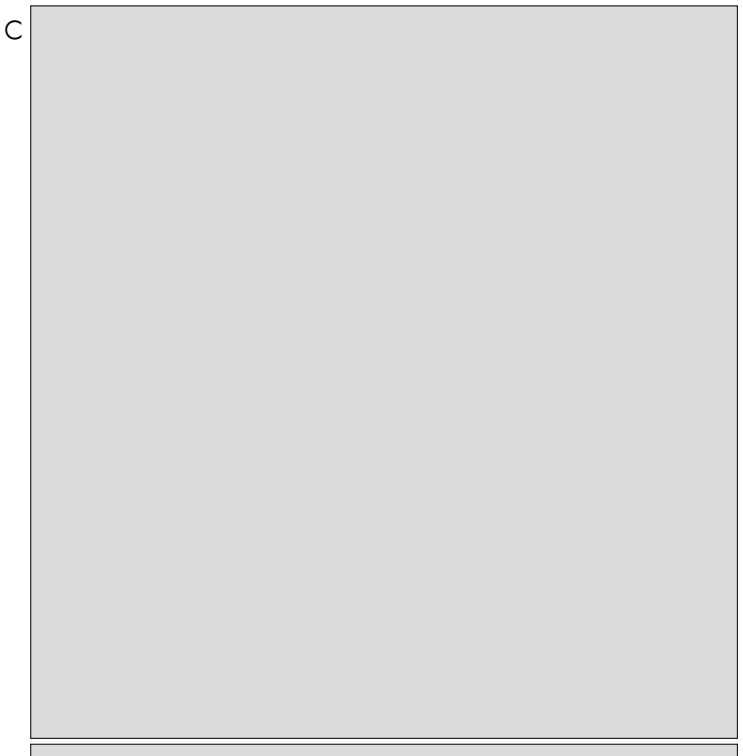

.a | Arquitectos de Cabecera Pei.Lab Javeriana de Bogotá. Invasive ethnographic survey in Tupolevs, WAC Poblenou, 2016. Source: AC Archive.

.b | Arquitectos de Cabecera. An ethnographic survey in Raval, combined with an interview with the residents, Open ETSAB-ETSAV, 2013. Source: AC Archive.

.c | Equal Saree, “School Playgrounds in Equity” 2017, Barcelona. Equal Saree developed a toolbox manual for a non-invasive ethnographic study of children's behaviour in school playgrounds, framed by a gender perspective over the roles and use of the space. This systematic observation enabled them to describe conventional playgrounds as gender-determined and soccer-centric and to propose alternatives based on rigorous data. Available at: www.equalsaree.org/publicacions. Source: www.equalsaree.org.

Further reading:

Abásolo Llaría, J. (2021) 'El Arquitecto como Etnógrafo: Trabajo de campo y representación en las investigaciones de Kon Wajirô', 1917-31. *Rita*, 15, pp.116- 125.

Equal Saree (2019) *El Pati de l'Escola en Igualtat: Guia de Diagnosi i d'Intervenció amb Perspectiva de Gènere*. Barcelona: Pol·len Edicions.

Gehl, J., Svarre, B. and Steenhard, K. A. (2013) *How to Study Public Life.* Washington: Island Press.

Pink, S. (2017) *Home: Ethnography And Design*. London: Bloomsbury Academic.

Sigler, J. (ed.) (2017) *Architectural Ethnography: Atelier Bow-Wow.* Tokyo: Toto Publishing.

Reilly, K. (2012) *Ethnographic Methods*. Abingdon: Routledge.

GROUP WALK

Following Jane Jacobs' (1916-2006) community-led approach to urbanism, a group walk in the neighbourhood aims to open up discussion, enable an exchange of ideas *in situ* and collectively discover a particular area through the eyes of others. It allows the transfer of knowledge between peers and the sharing of experience by professionals and lay people, e.g. the history of the location, why certain decisions were taken, the problems that are being encountered, how the space is perceived, etc. A group walk acknowledges the subjective character of the city; despite the fact that the data gathered is partial and subjective, it can also become a unique source of information through direct testimonies and in-situ discussions. Meeting others in the neighbourhood strengthens social networks when different opinions are listened to with equal interest and, potentially, enables a horizontal conversation between users and professionals. Group walks involve a level of participation between architects and local stakeholders, with the assumption that the professionals are not the first to make urban interventions, and that those already living there have a better awareness of the problems and opportunities.

A strategy that complements a group walk is a collective mapping workshop of the area visited, registering shared feelings and problems: for example, insecurity, traffic-derived problems or lack of areas for certain activities (See the Collective Perception tool in the Projective Cartography chapter).

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.a | Municipality of Cartagena. Poster Jacobs Walk in Cartagena, 2017. Discovery walk hosted by the local authority. Source: www.cartagena.es.

.b | Members of the Design Workshop in an on-site discussion, Ranaoke Design '79, Virginia. Source: Hatch, C. R. (1984) *The Scope Of Social Architecture*. New York: Van Nostrand Reinhold, p.289.

.c | Col·lectiu Punt 6, Jane Jacobs Walks in different neighbourhoods of Barcelona, organised by architects since 2011. Right: architect Zaida Muxí leading a walk. Source: www.punt6.org.

.d | Arquitectos de Cabecera organises group walks led by residents as the initial activity of a project. Left: Antoni Marzo, president of the neighbourhood association, leading the walk; WAC 2017, Safaretjos, Santa Coloma de Gramenet. Right: Bike tour with Taula Pere IV association members, TTAC 2019-20, Poblenou, Barcelona. Source: AC Archive.

Further information:

Jacobs, J. (2019) *Jane Jacobs: Cuatro Entrevistas*. Barcelona: Gustavo Gili.

"Jane Jacobs Walk" movement: www.janejacobswalk.org

URBACT Walkshop tool: www.urbact.eu/walkshop

G13

ON-SITE TECHNICAL SUPPORT OFFICE

An on-site technical support office allows professionals to work locally, which produces several outcomes. On the one hand, it creates a positive perception the architect as a close technician. On the other, by being on site, professionals gain an ongoing perception of the location and and on-site data, unlike that gained from a single visit, and engage with local communities in informal encounters.

A problem here might be a lack of infrastructure, which can be solved by partnering with the local authority or neighbourhood associations. In this sense, on-site offices are both a result of, and catalyst for, partnerships between different stakeholders, allowing many informal encounters to take place, from which collaborations and opportunities emerge naturally.

To avoid undervaluing the work of the architect, it is important to note that, although some technical support offices that work with the local population are perceived as "free architectural services", they are in fact subsidised.

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.a | Renzo Piano Building Workshop, UNESCO District Workshop, Otranto (Italy), 1979. Piano's on-site office allowed him "to empower a traditional community and its craftsmen to repair their ancient town". Opposing the approach to the urban redevelopment of the previous decade, which was seen as disruptive and a cause of gentrification, Piano's project aimed to involve the community throughout the process, allowing citizens to transform their city themselves, in which having an on-site studio became a key strategy. Source: Buchanan, P. (1993) *Renzo Piano Building Workshop: Complete Works.* Vol. 1. London: Phaidon.

.b | Ralph Erskine's Byker housing (1969-74), in Newcastle Upon Tyne. Erskine set up an on-site office in a disused funeral parlour to involve residents in the design of the neighbourhood. Source: Wates, N. and Knevitt, C. (1987) *Community Architecture*. London: Penguin.

.c | Santiago Cirugeda & Recetas Urbanas, "Office and Free Consultation" on constructing alegal housing on terraced roofs within "Interferencias 07" in Rambla Santa Mónica (2007). Source: Cirugeda, S. (2010) *Camiones, Contenedores, Colectivos = Trucks, Containers, Collectives*. Sevilla: Vib[o]k.

.d | Aquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, Citizen's Technical Consultation Office, Barcelona, 2015. A free Citizen's Technical Consultation Office was set up in 2015 at the Centre de Cultura Contemporànea de Barcelona, during the Piso Piloto exhibition, by architecture students and academics for local residents to discuss their ideas and enquiries about the architectural aspects of housing (Piso Piloto Exhibition, Barcelona, 2015). Previous experiences include "Free Consultation Office on Alegal Housing" in 2007 (Recetas Urbanas, within "Interferencias 07", Rambla Santa Mónica) and "Free Architecture Office" in 2009 (PKMN Architects, CCCB Eme3 Festival, CCCB Barcelona). Image: AC Archive.

.e | Arquitectos de Cabecera, Citizen's Technical Consultation Office, placed in a public civic centre (Safaretjos, Santa Coloma de Gramenet) during July 2017. Source: AC Archive.

DIAGNOSTIC WORKSHOPS (I)

Workshops organised during the data gathering stage are intensive group activities, the goal of which is to develop collective diagnosis, or mapping, which can potentially be transformed into the demands of the programme and the requirements of use. Collective diagnostic workshops are based on direct participation and involvement.

With a clear goal and structure, mediators, or enablers, ensure that the discussion moves forward and goals are successfully achieved by organising activities that encourage participation, some of which use architectural models or drawings. Mediators' skills include enabling, conflict handling, coordination and leadership, ethical awareness, conscious listening and the ability to synthesise.

Workshops should be inclusive and representative of the population. They collect qualitative opinions, perceptions, proposals and criteria, which can be either individual or agreed. Opinions should be respected and listened to, avoiding negative leadership or dominance. Workshops strengthen social dynamics, neighbours' knowledge of each other, and the perception of citizens' rights to engage in direct decision-making.

However, there is a danger that they may fall into a false sense of democracy or collective governance; asking about needs and criteria is very different from self-governance. To avoid this, the workshop should not be understood as a goal in itself (in a checklist), but as part of a process in which diagnosis is followed by co-design and planning workshops, the outcomes of which result in decisions which are binding.

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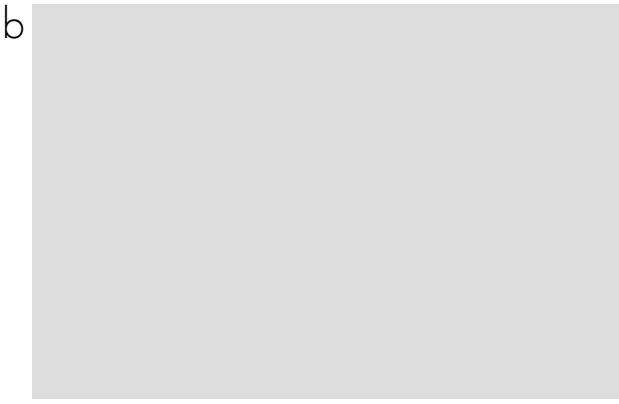

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.a | Lacol and Raons Publiques, Use Definition in Sants' Railtracks Coverage Rooftop. Source: www.lacol.coop and www.raons.coop.

.a | Lacol and Equal Saree, participative process to define 23 criteria points of intervention in the historic building of la Model prison. Source: www.lacol.coop.

.c | Arquitectos de Cabecera Studio (Roser Roca, Carmen Chacón and Julia Durán), Participative process in Lezo, Gipuzkoa, 2021. Source: AC Archive.

DIAGNOSTIC WORKSHOPS (II)

DIAGNOSIS PHASE AND PRELIMINARY DISCUSSION OF IDEAS:

Cembranos and Medina (2014) suggest working from the “long-term logic” in group discussions, in order to avoid short-term impatience in participants. Proposals should be understood not as a catalogue of desires, but as a description of desired situations, which can be classified according to feasibility: those that can be easily implemented, those that can be achieved if certain parameters are fulfilled, and those which are unfeasible but which may be helpful in setting guidelines for future activity.

In some cases, it might be useful to use complementary materials to support the discussion, such as models, plans, photographs, or other kinds of communicative document. These group activities might be also useful to develop collective mapping (see the tool in the Projective Cartography chapter).

The following are some of the most popular activities for this kind of workshop. For more detailed information see Cembranos and Medina, 2014, pp.167-197; Lacol, 2018, p.78-79; and the online toolkit www.urbact.eu/tool-category/engaging-stakeholders. See also the Discussion Workshops tool in the Process Management chapter.

Further reading:

Cembranos, F. and Medina, J. A. (2014) *Grupos Inteligentes: Teoría y Práctica del Trabajo en Equipo.* Madrid: Popular.

Chambers, R. (2011) *Participatory Workshops: A Sourcebook Of 21 Sets Of Ideas And Activities*. London: Earthscan.

Lacol (2018) *Building collectively: Participation in Architecture and Urban Planning.* Barcelona: Pol·len Edicions.

Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis.

URBACT (online) 'Getting Results Thought Animated Meetings'. Available at: www. urbact.eu/getting-results-through-animated-meetings.

Wates, N. (2000) The Community Planning Handbook: How People Can Shape Their Cities, Towns And Villages In Any Part Of The World. London: Earthscan Ltd.

Snowballing and World Coffees activities are some of the most useful ones. Source: Lacol (2018) *Building collectively: Participation in Architecture and Urban Planning*. Barcelona: Pol·len Edicions. p.78-79.

SNOWBALLING:

the group is split into pairs, who discuss the topic for five minutes. After this, each pair combines with another pair to form a larger group that discusses the topic again, starting the conversation by presenting the conclusions of the previous dialogue. This action takes place every five minutes until the whole group is reunited and general conclusions are extracted.

WORLD COFFEES:

small discussions around several tables of about four to eight people, each with a topic and a moderator, take place. After five minutes the participants move to the next table, but the moderator remains and introduces the topic of discussion and the main conclusions. At the end, moderators explain the conclusions to the whole group.

POST-IT POSTER:

a large poster with a list of topics to be discussed is placed in front of everyone. In turns, participants suggest ideas concerning those topics, which are written down on post-its by mediators and placed under the corresponding topic. A variation of this tool includes the “Problems Tree”, where post-its are placed in the roots (causes), trunk (problem) or branches (effects).

Post-it poster. Left: analysis discussion about the future of la Mariola neighbourhood, Lleida, 2018. Picture by author. Right: URBACT Participative Working online toolbox: www.urbact.eu/toolbox-home.

G22

MEETINGS WITH STAKEHOLDERS

An open discussion within a small group of people enables a conversation between different stakeholders. Unlike workshops, meetings are not articulated around specific activities, and are directed by facilitators. However, the meeting can be led or semi-led by moderators if the group is large. Although this is not a specific tool for community architecture, the inclusion of different stakeholders at the table, and an awareness of who might be missing, makes all the difference. It is important to discuss who is perceived by other stakeholders as a legitimate voice in a particular process of urban transformation.

When developed with representatives such as community leaders, small meetings are potentially more productive than workshops, but inevitably less inclusive. The possibility that these representatives may have their own agenda and interests needs to be taken into account. As discussed by Cembranos and Medina (2014), the delegation of work by large assemblies to sub-committees that can discuss particular issues in smaller meetings (by themselves or with other stakeholders) can be highly effective.

.a | Renzo Piano Building Workshop, UNESCO District Workshop, Otranto (Italy), 1979. Architects meet with residents in the temporary on-site office. Source: Wates, N. and Knevitt, C. (1987) *Community Architecture*. London: Penguin.

.b | Alvaro Siza, assembly with residents for the Quinta do Malagueira project, Evora, 1973-77. Despite acknowledging that these meetings were time-consuming and exhausting, Siza considered including citizens crucial for the development of the project. Source: Fleck, B. (2013) *Malagueira. Álvaro Siza in Évora*. Freiburg: Syntagma-verlag. p.26.

.c | Ottokar Uhl, SAR SWohnen Morgen, Hollabrunn, Austria. Image of the regular meetings between architects and the cooperative representatives during the design phase. Source: Hatch, C. R. (1984) *The Scope Of Social Architecture.* New York: Van Nostrand Reinhold, p.43.

.d | Lacol, meeting with residents during an early stage of the La Borda cooperative housing building, 2012. Source: courtesy of Lacol.

.e | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá. Can 60, WAC Raval 2015, Barcelona. The first meeting with Can 60 users and associations revealed that they all faced the same threat of gentrification and, crucially, this enabled a collective response. Source: AC Archive.

.f | Arquitectos de Cabecera. Interview with Dolors, WAC 2013, Raval, Barcelona. Since Dolors was unable to leave her home due to her reduced mobility, meetings took place at her home before, during and after the design. Source: AC Archive.

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<u>Further reading:</u>

Cembranos, F. and Medina, J. A. (2014) *Grupos Inteligentes: Teoría y Práctica del Trabajo en Equipo.* Madrid: Popular.

Sánchez Alonso, M. (1986) *La Participación: Metodología y Práctica*. Madrid: Popular.

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INTERVIEW / SURVEY

Interviews are conversations with stakeholders concerning specific topics, potentially employing recorded video, audio or notes, which are further transcribed. Interviews can be structured (based on predetermined questions), open (based on a conversation as it evolves) or semi-structured (with certain questions to be used as guidelines but allowing spontaneous conversation in response). Interviews aim to gather qualitative data and primary information as a collection of testimony. When developed on a broader scale and questionnaire-based, they can be part of surveys.

Interviews are framed by an inductive approach, based on the specificity of case studies. Thus, they are based on subjective experience and thoughts. Permission is needed, and participants must be informed about how data will be used. A group interview [.a] is less personal but allows the interviewer to grasp a bigger picture, and opinions can be contrasted more clearly. As a general guideline, it is important to start with general questions that generate confidence, which can then be developed into further personal questions if required. Interviewers need to generate confidence, and have conversational skills and the capacity for conscious listening and synthesising information.

Surveys and questionnaires are a less personal form of gathering information from participants, but have an advantage in that they can be developed much faster and reach a wider audience. Surveys enable an understanding of general preferences and can gather statistics about participants. They can be carried out in either paper or digital form; the latter is a much faster method but can exclude some participants, particularly elderly people.

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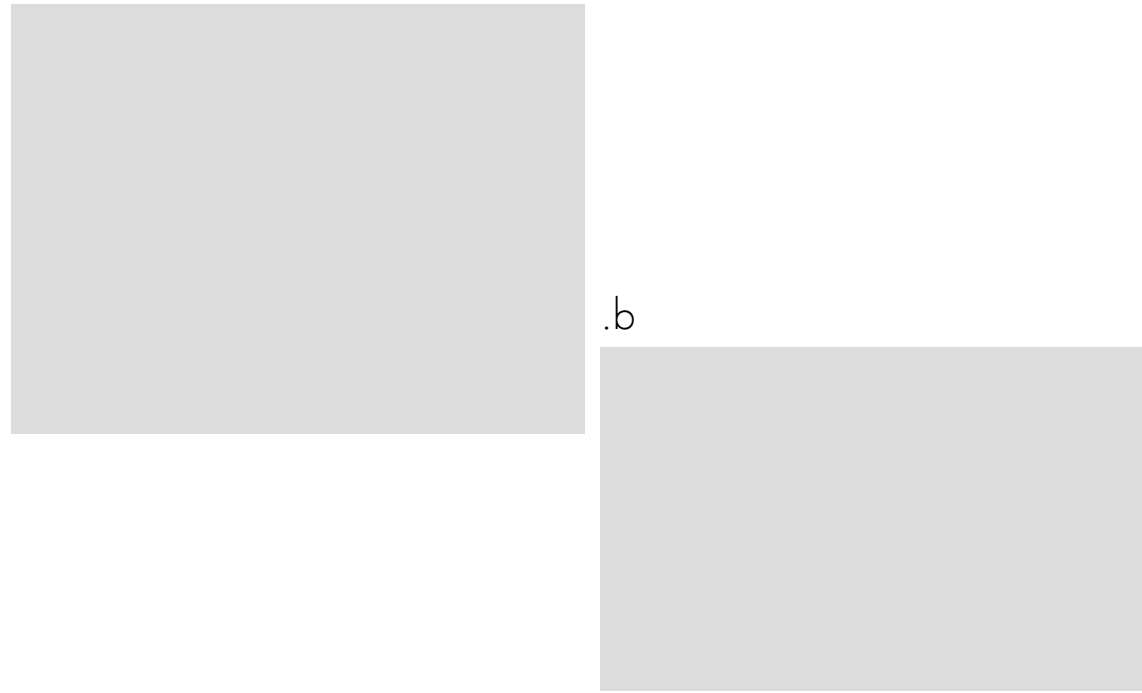

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.a | Arquitectos de Cabecera, interview presented as a video (left) or graphically (right). WAC 2016, Poblenou & WAC 2017 Santa Coloma de Gramenet. Source: AC Archive.

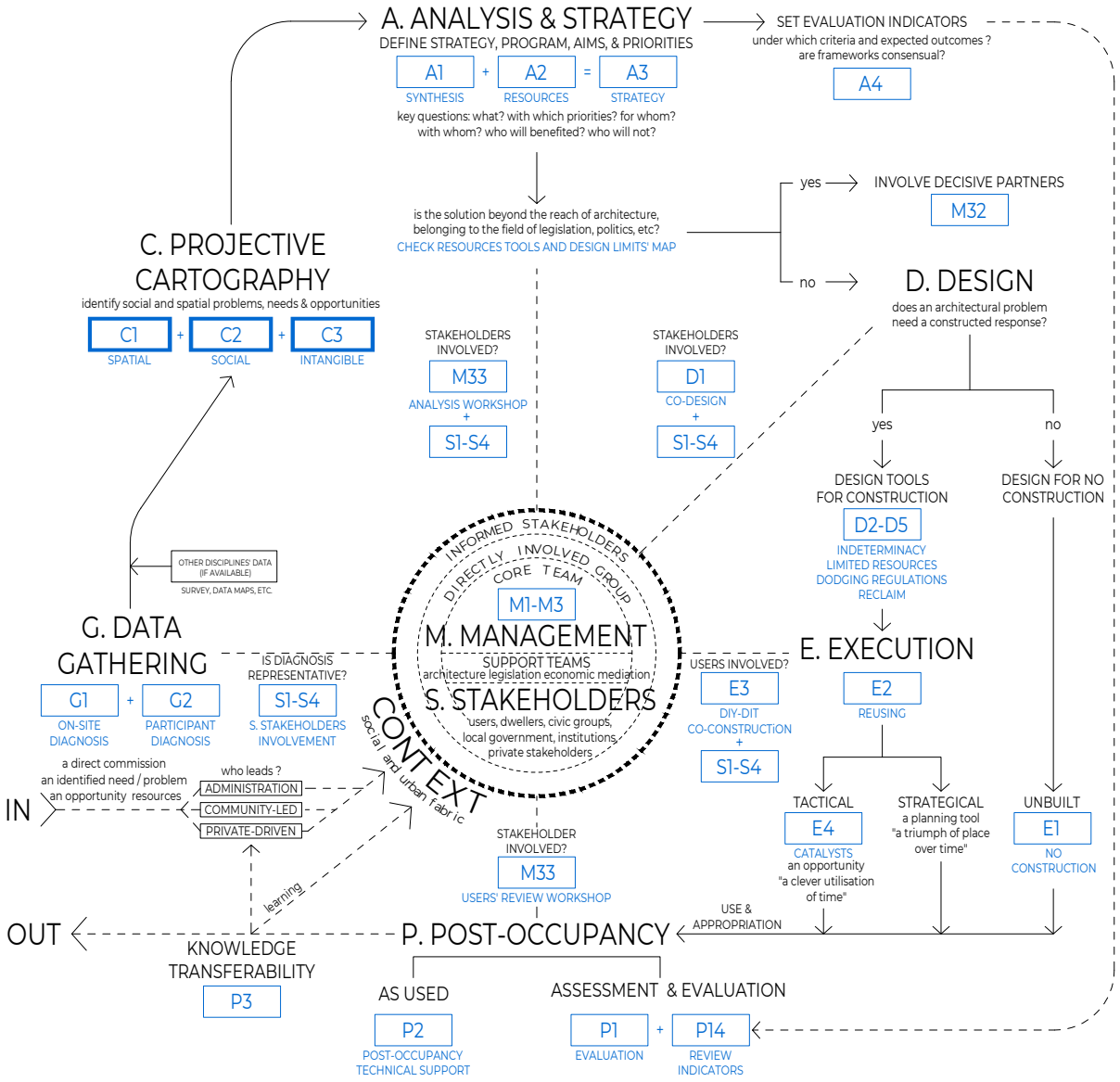
.b | Arquitectos de Cabecera. Two students interview Julian and Fernando, showing them their design proposal, in the Raval neighbourhood of Barcelona. Source: AC Archive.

.c | Arquitectos de Cabecera Studio (Marc Cuevas y Josep Maria Mallarach), TTAC20, Pas a Pas. Video available at: https://youtu.be/yZ_15StleTA.

Further reading:

Fujii, L. A. (2018) *Interviewing in Social Science Research: a Relational Approach*. New York: Routledge.

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

C. PROJECTIVE CARTOGRAPHY

TOOLS INVENTORY

M. PROCESS MANAGEMENT
M1. PLANNING
- M11 Definition of phases
- M12 Anticipated timescale

M2. DECISION-MAKING
- M21 Map of stakeholder roles
- M22 Core group diagram
- M23 Decision-making scheme

M3. STAKEHOLDER ENGAGEMENT
- M31 Co-organise / develop with
- M32 Involving decisive partners
- M33 Discussion workshops (I-II)

S. STAKEHOLDERS
S1. MAPPING
- S11 Identify stakeholders
- S12 Engagement matrix
- S13 Sociogram
- S14 Powergram

S2. REACHING BY SEDUCTION
- S21 Direct invitation
- S22 Indirect contact
- S23 Make it fun
- S24 Food as social ritual
- S25 Provide a platform for expression

S3. REACHING BY PROVOCATION
- S31 Artefacts invade public space
- S32 Spatial alteration
- S33 Confrontation

S4. REACHING VIA MAKING VISIBLE
- S41 Collaboration with external events
- S42 Printed media
- S43 Digital platforms
- S44 Billboard hacking
- S45 Public exhibition
- S46 Interactive map
- S47 Video / documentary

G. DATA GATHERING
G1. ON-SITE DIAGNOSIS
- G11 Ethnographic observation
- G12 Group walk
- G13 On-site technical support office

G2. PARTICIPANT DIAGNOSIS
- G21 Diagnostic workshops (I-II)
- G22 Meetings with stakeholders
- G23 Interview / survey

C. PROJECTIVE CARTOGRAPHY
C1. SPATIAL & MORPHOLOGICAL
- C11 Drawing the domestic
- C12 Picturing the domestic
- C13 Building as socio-spatial ecosystem
- C14 Facade as mediator
- C15 Urban void
- C16 Neighbourhood
- C17 Urban landmarks
- C18 Systemic urban elements

C2. SOCIAL DIAGRAMS
- C21 User portraits
- C22 Routines & habits
- C23 Users' needs (I): individual
- C24 Users' needs (II): collective
- C25 Morphology to patterns of behaviour
- C26 Rituals & social activities
- C27 Diagrams of relational activities

C3. THE INTANGIBLE
- C31 Subjective perception maps
- C32 Collective perception
- C33 Proximity or isolation
- C34 Movement
- C35 Memory
- C36 The uncanny
- C37 Invisible borders
- C38 Temporalised space
- C39 Control
- C40 Conflict (I): maps
- C41 Conflict (II): events
- C42 Conflict (III): effects

A. ANALYSIS & STRATEGY
A1. SYNTHESIS
- A11 The (yellow) manifesto
- A12 Mind map
- A13 Design limits' map

A2. RESOURCES
- A21 Financial analysis & co-finance strategies
- A22 Available resources (I): inventory
- A23 Available resources (II): "harvest map"

A3. STRATEGY
- A31 Strategic action plan
- A32 Actions & tools breakdown
- A33 Viability map
- A34 Consequences map

A4. EVALUATION INDICATORS
- A41 Technical indicators
- A42 Perceptual indicators
- A43 Typological indicators
- A44 Cross-qualitative & quantitative data

D.DESIGN
D1. CO-DESIGN
- D11 Co-design workshops (I-IV)
- D12 Proposing an alternative

D2. INDETERMINACY
- D21 Enabling: user appropriation
- D22 Enabling: user manipulation
- D23 Enabling: adaptable system
- D24 Typological variations
- D25 Multiple scenarios

D3. LIMITED RESOURCES
- D31 Intermediary situations: "the meanwhile"
- D32 Leveraging material scarcity
- D33 Designing for low-risk construction
- D34 Split large interventions
- D35 Nomadic facilities

D4. DODGING REGULATIONS
- D41 Legislative blind spot
- D42 Camouflage
- D43 Declaring a Temporary Autonomous Zone

D5. RECLAIM
- D51 Reclaiming empty plots
- D52 Filling in the gap
- D53 Regaining infrastructure

E. EXECUTION
E1. NO-CONSTRUCTION
- E11 Do not do (I): maintain
- E12 Do not do (II): connect
- E13 Reprogramming time in space
- E14 Relocation
- E15 Undoing

E2. REUSING
- E21 Borrow - barter
- E22 Recycling & reclaiming components
- E23 Dismantling & reassembling buildings
- E24 Parasite

E3. DIY-DIT CO-CONSTRUCTION
- E31 Technical specifications
- E32 User to execute
- E33 User to complete
- E34 User to expand
- E35 Collective assisted DIY-DIT

E4. CATALYSTS
- E41 Generative actions
- E42 Tactical on-site prototypes
- E43 Do it anyway

P. POST-OCCUPANCY
P1. ASSESSMENT & EVALUATION
- P11 Process overview
- P12 External evaluation: stakeholder review
- P13 Internal evaluation: tools & methods (I-IV)
- P14 Evaluation indicators review

P2. POST-OCCUPANCY TECHNICAL SUPPORT
- P21 Post-occupancy technical support
- P22 Building monitoring

P3. KNOWLEDGE TRANSFERABILITY
- P31 Manuals & toolkits (I-III)
- P32 Plans sets
- P33 Process reports
- P34 Online resources

body of practice

COLLABORATIVE ARCHITECTURE BARCELONA: THE ARCHITECT AS ENABLER

Raül P. Avilla-Royo

COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

as part of

COLLABORATIVE ARCHITECTURE BARCELONA:
THE ARCHITECT AS ENABLER

PhD By Practice | Royal College of Art | School of Architecture | London | 2018-2022
Supervisors: Dr.-Ing. Sam Jacoby (SoA-RCA) & Ibon Bilbao (ETSAB-UPC)

Raül P. Avilla-Royo

C. PROJECTIVE CARTOGRAPHY

Projective cartography translates data gathered at the diagnostic stage into architectural drawings as a form of representation that enables further discussion and decision-making. How data is represented plays a crucial role in further decision-making, as Edward Tufte suggests in his book *Visual Explanations* (Tufte, 1997), in his discussion of the way John Snow's mapping of cholera disease and the locations of water pumps became crucial to identify the source of the cholera transmission in mid-nineteenth century London – and thus to reduce its spread. The connection between representation and projective thinking for urban designers was discussed by Henri Lefebvre, who argued that their comprehension is limited to what they can translate into graphic operations. That is, designers think through drawing (Lefebvre, 2017, p.5). In *The Production of Space*, Lefebvre notes how the representation of reality is distinct from the one that is lived in and perceived as a subjective space (Lefebvre, 2013, p.35). Both of these features mean, for Lefebvre, that tools of representation are not neutral data transmitters but are means of production, translating the abstraction of the representation – both drawings and models – into the abstraction of the produced space. In other words, the limitations of reality represented by the media result in the limitations of the project in addressing reality.

However, given that the tools that communicate architecture mostly produce drawings and images, it is worth questioning the role of representation as either an enabling or a limiting tool in a wider disciplinary context. Drawing, in all its variations, is undoubtedly a key tool for architects, who require tools of communication both in terms of the technical and constructive aspects of their work and to express spatial ideas and strategies. The contradiction for designers emerges when the need to represent

John Snow Cholera Map of Soho, London, 1854. Cartography as decision-making tools. Source image: wikipedia.org.

space – a static image – overlaps with the impossibility of capturing all its complexity, defined by the changing qualities of the social space.

In *The Developed Surface*, Robin Evans argued that architectural drawings and techniques of representation are always partial and biased, and are an ensemble of conscious decisions which in turn invite the draughtsperson to think about architecture in a certain specific way, as both spatial definition and social intercourse (Evans, 1989). Since a mode of investigation requires a specific type of drawing (Evans, 1989), I suggest that looking at how other disciplines have included the subject's experience in space will reveal the limitations of architectural representation and bring determining insights into the work of architects.

In the left-hand image of the next page there is a typical annotated plan – an orthogonal projection that uses technical language to transmit building instructions. The right-hand image is Lara Agosti's annotated photograph of a kitchen with a presence; the space is no longer empty, but is inhabited by a specific human being, 165 cm tall, female and elderly, that drastically changes the meaning of the drawing. While the annotations in the first image address its quantitative values – its material qualities, the time required to build it, its proportions, as prescribed by regulations – in the second image it is the human figure, her identity and habits projected into the space, that allows a critical spatial assessment, questioning the suitability of certain furniture and its comfort for the specific user's needs. With the same strategy, in *Spanish Dream* the architects' collective Cadelas Verdes contrast an abandoned construction site with the unexpected presence of a single user performing a domestic activity. The rawness of the construction, contrasted with the nakedness of the user, dressed only in a towel, is used to expose the fragility of citizens in the face of economic power and the construction industry, and the systematic abandonment of construction sites throughout Spain after the 2008 property bubble burst. Once again, the presence of the subject drastically changes the meaning of the image.

Photography – and video documentary – is probably the discipline that has been able to portray most directly the interdependence between user and space. Projects like *Where Children Sleep* (James Mollison, 2010) or *Teenagers in their Bedrooms* (Adrienne Salinger, 1995) show the projection of the subject's identity – and their parents', given their age – into the space, as well as their gender, class, cultural background and material conditions. In the same vein, Bogdan Girbovan captures the same room from different floors of an apartment building, showing that two living rooms built identically become two very different spaces once they are inhabited by

Annotated plan for construction. Source: Avilla-Vallès-Jiménez, author's archive.

Lara Agosti, title and date unknown + Hugh Strange, Drawing Matter Archive, Somerset, 2012. Source: instagram @aseriesofrooms

Spanish Dream, Cadelas Verdes, 2012. Unveiling the political dimension of housing, and the consequences of real estate bubble burst through depicting daily activities in half-built dwellings. Source: www.plataformaarquitectura.cl.

residents. Likewise, Michael Wolf's project *100x100* documents 100 pictures of 100 rooms of 100 square feet, placing their occupants at the centre of the spatial portrait. In Hong Kong, Benny Lam's photographs of a series of tiny rooms become an implicit condemnation of minuscule living conditions in which all daily activities have to take place in a single room. While empty space cannot be assessed on its suitability – "against what?" is the key question – Lam's images contrast measurements with users, objects and activities, mimicking the projection of a plan and evidencing the impossibility of these rooms to respond to all the activities required in them with even the minimum amount of comfort.

With the same approach, some artists have interrogated empty space. Chinese photographer Huan Qingjun, in *Family Stuff*, portrays several families in front of their houses, emptied of objects. Qingjung suggests that the house, empty of dwellers and objects, is no longer a home and that objects, subjects and containers must be understood as a single interdependent ecosystem. A similar distorting effect is produced by the simple action of stacking all the furniture in one corner of the room, seen in *All I Own* (Sannah Kvist) and *Stacked Hotel Room* (Adam Dade and Sonia Hanney). The gesture that seems to free the space produces the opposite effect by disabling the objects that specifically give sense to the room. Kvist does not even show the entire room, but rather the space occupied by objects, raising the question of whether "all that I own" includes the space itself. On the other hand, Dade and Hanney question whether rooms with no attributes or qualities, or those with useless furniture, serve the purpose of occupying them, and whether a stacked-up hotel room can still be called a hotel room.

James Mollison, "Where Children Sleep". From top left, clockwise: Indira (7) Kathmandu, Nepal; Justin (6) New Jersey, USA; Kaya (4) Tokyo, Japan; Thais (11) Rio de Janeiro, Brazil. Source: www.jamesmollison.com/where-children-sleep.

Adrienne Salinger, "Teenagers in their Bedrooms", 1990s. Source: www.anatomyfilms.com.

Bogdan Girbovan, "10/1", 2008. Series of pictures of the same space in different dwellings of the same building. Source: www.girbovan.ro/10pe1-2008.

Huang Qingjun, "Family Stuff". From top left, clockwise: 40 year old artist Wenjue-He, Beijing; Mongolian Batu Aoqier and AoYong Qimuge in front of their yurt, Inner-Mongolia, 2007; Yang Liu, Beijing, 2014. Bottom right: unknown. Source: www.huangqingjun.com/cg/family-stuff.

These examples crucially underline the importance of addressing the "who" condition in relation to space. All the examples evidence the space-object-subject-identity-activity-social form relation. They also reveal that space, objects and occupants are interlocking dimensions against which design should be measured. When it focuses only on the constructed envelope and either ignores future users or takes an unexisting universal citizen definition, architecture risks detaching itself from the social dimension intrinsic to it.

Surprisingly, empty spaces are typically the way in which architects choose to communicate in architectural drawings and their disciplinary media. The means of representation themselves become places of architectural production, not merely spaces for publicising architecture (Colomina, 1996). Prevailing historical narratives of architecture have not only considered the user a passive recipient of experts' design but almost an unwanted intruder in the space, drawings and photographs. Architects' curatorial approach to their built work commonly freezes with the arrival of users, who will presumably manipulate the space "wrongly". This is a privilege that, nevertheless, architects themselves maintain in depicting architecture as aseptic settings falsely inhabited (with furniture of their choice) and with post-production image manipulation. This artificiality, and designers' detachment from further scenarios of occupation, was sharply caricatured by Rem Koolhaas when he pictured his Villa dall'Ava with a giraffe. In contrast, architectural practices such as Lacaton & Vassal famously photograph their buildings with everyday furniture, acknowledging that it is the right of the user to appropriate the space and the responsibility of the architect to allow those mechanisms of appropriation. These mechanisms are a result of a way of thinking (in the appropriation of space by users), which in turn relies on a way of representing.

The focus on spatial appropriation and ethnographic methods is not something new for architects, although it has recently gained particular relevance. There are many examples of the representation of an "inhabited layer" in architectural drawings, from Atelier Bow-Wow's Graphic Anatomy ethnographic drawings, which give equal importance to information about technical construction and the use of space, to Gio Ponti's annotated plans which describe uses and feelings which would be unrepresentable otherwise in the same document. Interestingly, some of Cedric Price's project drawings were driven by activities rather than by elements of construction. Similarly, Ricardo Bofill Taller d'Arquitectura substituted the furniture typical of architectural plans with labels identifying the activities that are expected to take place there: cooking, relaxing, entertaining friends, cohabitation, intimacy, etc. Bruno Taut developed a number of studies on domestic circulation – and thus opportunities for encounter – for the housing he designed in Leipzig in 1924, while Gio Ponti captured in his plans not only the circulation of the different users and hierarchies (owners and servants) but also the intersecting views around the plan, consciously deciding which areas should be exposed or hidden from others. These examples reveal how design decisions were directly informed by users' appropriation or activation of the space.

Sannah Kvist, "All I Own". Source: www.gessato.com/all-i-own-by-sannah-kvist.

Adam Dade and Sonia Hanney Stacked Hotel Room No. 10, 2002. Source: www.ikon-gallery.org.

Benny Lam, "Subdivided Flats", Hong-Kong, between 2012 and 2015. Source: www.photography-ofchina.com.

Activity as room standard. Left: the size of the minimum bedroom of 6 m^2 as determined by Spanish regulations. Right: size of a bedroom that allows a multiplicity of uses beyond seleeping. Source: author's drawing as in Avilla-Royo R. (2018) *The Role of Public Housing in Barcelona*. MPhil dissertation. Architectural Association.

In this regard, the Belgian studio Dogma, in *The Room of One's Own* interestingly counterposes Louis Kahn's reading of the room as a timeless and universal space with Virginia Woolf's approach to space, which was grounded in everyday class and gender struggles and thus the result of specific historical and political conditions (Dogma, 2017, p.4). Although both see the room as a space for personal reflection and a state of mind, Kahn's rationale for the room identifies the space as a universal element – architecture in the most conventional, and arguably limiting, understanding of the discipline – while Woolf determines that the specific user is crucial to give a sense and meaning to that space.

Architectural drawings evidence design decisions that have an impact on the intangible, relating the social activity with the perception and physical definition of space. The exploration of the social dimension of architecture requires research tools from social science. These imported analytical methods provide relevant information that informs the project, but they also entail a disciplinary challenge, maybe what Lefebvre claimed as a necessary "science of the relations and interrelations of urban life" (Lefebvre, 2017, p.164). Mixing social sciences research methods and modes of architectural representation, projective cartography aims to be a systematic mode of inquiry and produce a communicable knowledge that informs design decisions based on the relational, subjective, and dependent nature of the city. It is in this regard that cartography becomes both a tool of critical inquiry and a projective design method.

Bruno Taut, study of movements in *Leipzig housing* (1924). Source: archidrawings.info.

Bruno Taut, studies for Taut house (1926). Source: Taut, B. (1995) *Ein Wohnhaus*. Berlin: Gebr. Mann.

Ricardo Bofill Taller d'Arquitectura, Moratalaz housing near Madrid, 1970, 'Espagne, Madrid, Barcelone'. *L' Architecture d'aujord'hui*, 148.

Atelier Bow-Wow, a buliding's anatomical section mixing constructive and social layers. Source: Atelier Bow-Wow and Tsukamoto, Y. (2014) *Graphic Anatomy*. Tokyo: TOTO Publishing.

Gio Ponti, Villa Namazee Tehran, Iran. 1957-64. Source: Ponti, L. and Germano, C. (1990) *Gio Ponti: The Complete Work 1923-1978*. Milano: Passigli Progetti, p.208.

Gio Ponti, Piccola Casa Ideale. Source: *Domus Journal*, 138, p.41.

On the one hand, as tools of critical inquiry, maps become a representation of urban space that is informed by the appropriation, experience, needs and desires of the user, overlaid with personal circumstances of gender, race, and economic, cultural and social background. Since architecture is more dependent on contingency – such as people, time, politics, ethics and other external factors – than on the architect's will (Till, 2013), cartography aims to represent and thus make visible, emphasise and enable a discussion about these contingencies. Hence, they are a subjective reading of the space that can be individual or collective, and whose limits reveal the boundaries of the user's perception of the space in terms of use and appropriation. When it comes to drawings, choosing a specific scale for representation is an active decision about the kind of relations – both spatial and social – that need to be emphasised.

On the other hand, as projective design methods, drawing the map is not a mere diagnostic tool, but becomes evidence of a specific understanding of the context, and thus an early framing of intentions. Cartographic representations decisively inform design decisions, becoming projective exercises in the way they announce potential strategies and reveal problems, opportunities, users' needs and contextual possibilities. In this regard, these drawings are relational and operate through the superposition of interconnected layers of information.

The acknowledgement of operating in the inhabited city – a *tabula plena*, both physically and socially – requires a reversal of the design approach traditionally employed in the discipline of urbanism, defined by Ildefons Cerdà (1867) as a matter of universal guidelines and general theories (Cerdà, 1867). While architecture has often been presented in relation to the universal user (reduced to the white, male, middle-class, healthy man), from Le Corbusier's *Modulor* to design manuals of any kind, a brief observation of the use of public space quickly challenges that hypothesis. On the contrary, user-centred representations focus on the subject as the vertebral axis of the disciplinary approach to the space, taking from social sciences not only methods of enquiry but also their inductive approach: rather than a universal framework or a general rule, inductive methods aim to explain principles through a multiplicity of case studies, by understanding specificities and relevant and representative singular scenarios.

Each cartographic representation becomes a narrative of a place from a user-derived point of view, and thus, rather than being presented as absolute, objective or totalising drawings, they acknowledge their partial, political and biased condition – the same condition that institutional maps have, but here explicitly acknowledged. The strength of cartography derives precisely from its overlapping of multifaceted and partial readings of the city; rendering visible existing conditions that are underrepresented in other forms of drawing, from social structures to habits, from feelings to perceptions. As in Italo Calvino noted in his novel *Invisible Cities* (1972), there are many Venices in Venice. To be comprehensive, several complementary forms of cartography should be developed in parallel, to complement other conventional forms of enquiry. What is represented is as relevant as what has been left out, and thus it is important to define the scope of the design and be aware of omissions.

The cartographic approaches presented in this chapter have been classified into three different categories. First, SPATIAL AND MORPHOLOGICAL cartography aims to represent the physical space: what is measurable, based on the user. Emerging from ethnographic research methods, spatial cartography reveals how the space is appropriated by its occupants. As Herman Hertzberger (2006 [1991]) observed, socialisation or appropriation relies on specific spatial elements – both measurements and material qualities (Hertzberger, 2016 [1991]).

Second, diagrams of the SOCIAL FORM focus on personal interactions in space, including use and behaviour patterns. Borrowing Lefebvre's concepts (1974), the cartography of social diagrams addresses the intersection between the "city" – the physical environment – and the "urban" – the intangible social form that inhabits it (Lefebvre, 2013). While this field has been studied by writers such as William Whyte, Jan Gehl, Herman Hertzberger and Christopher Alexander, mostly using photographs and diagrams, the maps presented here focus on drawings. A key example is Manuel Bailo's study of specific architectural elements that act as urban catalysts in making spaces successful in terms of activities and urban life (Bailo Esteve, 2015).

Finally, the third group addresses the perceptive and psychological dimensions of the space that have an impact on behaviour and urban conduct: THE INTANGIBLE. In this cartographical approach, a subjective perception, depending on gender, age, cultural background, financial status, etc., is even more relevant than in the other kinds. The

William Whyte, studies of use in Mies van der Rohe's Segram's square. The diagram depicts in vertical the sections on ledge where people sit and times in columns. Whyte discusses through this analysis that "in their instinctive way people have a nice sense of what is right for a place". Source: Whyte, W. H. (2012 [1988]) *City: Rediscovering the Center.* Philadelphia: University of Pennsylvania Press.

intangible conditions that reveal effects on behaviour include collective perception, memory, uncanny perception, invisible borders, control or conflict, among others. While the intangible is probably one of the most difficult conditions to express by drawing, it may be one of the most conditioning ones as well. A relevant example is Jorge Mario Jáuregui's diagrams' "reading of the structure of a place", which summarise the general diagnostic and provide an entry point to design decisions (Jáuregui and Gutiérrez, 2013). Jáuregui developed these drawings in the context of Brazil, where the understanding of the city, and particularly the informal favela settlements, needed a specific kind of drawing that included the information that was not evidenced in urban plans. To Jáuregui, drawing maps of conflict entailed questioning the institutional notion of the city, registering mobile realities and allowing its transformation.

A concluding remark: the list of different kinds of cartography presented is not exhaustive, nor does it attempt to be so. I invite the reader to fill the inevitable gaps by developing a bespoke cartographic approach according to each project's needs and contextual specificities.

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Lefebvre, H. (2013 [1974]) *La Producción del Espacio [The Production of Space].* Madrid: Capitán Swing.

Till, J. (2013) *Architecture Depends*. Cambridge, MA: The MIT Press.

Tufte, E. R. (1997) *Visual Explanations: Images and Quantities, Evidence and Narrative.* Cheshire, Conn: Graphics Press.

Jorge Mario Jáuregui, diagram of "reading of the structure of a place" of Favela Mangueira, Rio de Janeiro. Source: Jáuregui, J. M. and Gutiérrez, M. A. (2013) *Estrategias de Articulación Urbana.* Bogotá: Ediciones de la U, p.91.

Left: Barcelona "Map of Conflict", circa 2005. Right: touristic map of Barcelona, around 2000. Two contemporary maps of Barcelona evidence the importance of mapping the narrative of events and the bias of representation methods. Note that they differ not only in their target audience (local population versus visitors) or at what they represent (conflicts versus monuments and attractions) but also in the limits of the drawing – the tourist map of the city "ends" in Glòries square, hiding the non-attractive part of the city. This area is shown in tourist maps after the Forum 2004 and 22@ urban renovation masterplans. Ultimately, while the tourist map presents the city as a pacific desirable area, the conflict map becomes a critique of the role of local government. Source left: Barcelona map of conflict, circa 2005, ASFE (Architects Without Borders Spain), courtesy of Matteo Caravatti. Source right: www.tripandrate.com.

DRAWING THE DOMESTIC

Domestic cartography reads space through the subjective experience and modes of inhabitation of its occupants. According to Bourdieu (1970), domestic space as a universe is shaped by its inhabitants' technical and functional requirements and cultural beliefs and habits, from solid constructions that create different spatial and atmospheric conditions in the house to objects which allow their use. Domestic objects also make visible the immaterial relations and the invisible limits of shared spaces, showing modes of occupation and revealing gender roles, social claims, shared memories, ownership or authority. The appropriation of space by users evidences that the home is a site for the display of the individual or collective culture: a condition that is highly variable in both geographic and cultural contexts.

Domestic cartography becomes, then, a portrait of the interrelationship between users, the physical space and the process of inhabitation: "The interior is not just the universe but also the étui of the private individual. To live means to leave traces" (Benjamin 1972, p.183). These revealing traces take the form of use marks on surfaces, but also furniture and objects, which become marks of domestic protocols, enablers of activities and indexes of daily routines and habits. Furniture and smaller objects become projections of the subjectivity of those who inhabit the unstable and transient condition of domestic space, both functionally and emotionally. They evidence status, aesthetic preferences, and personality, and become catalysts for activities that are capable of constantly redefining the space, and thus articulating social activities.

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.a | Arquitectos de Cabecera, WAC 2013, Raval, Barcelona. Cartographic representation merging two pencil line strokes: straight for the spatial morphology, and a vibrant hand drawing representing the unstable condition of the domestic. Source: AC Archive.

.b | Arquitectos de Cabecera Studio (J. Velilla), room activities, Mil Casas en Tu Casa, TTAC 2020. During the 2020 Covid-19 lockdown, AC studio enquired into how the domestic condition had changed, based on self-ethnographic methods. In the image, the cartography of the small room evidenced that during lockdown small spaces had to assume many more activities than the ones initially intended for them. Source: AC Archive.

Further reading:

Arquitectos de Cabecera. Virtual exhibition: "Cartographies of Covid-19 Lockdown, 2020". www.arquitectosdecabecera.org/AC/portfolio/milcasasentucasa.

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Cirici, A. and Altisent, A. (1979) *Botigues de Barcelona*. Barcelona: Lumen.

PICTURING THE DOMESTIC

Complementary to domestic drawings, and also emerging from ethnographic research methods, photographs and video offer a frozen portrait of domestic inhabitation. Visual media reveal the relationship between morphological space and its qualities of use and appropriation, filtered by the lifestyle, culture and identity of its users. This allows different spaces, or moments, and modes of inhabitation to be compared easily.

For example, media can be used to study spatial appropriation at different moments of the day, which members of the household use the space and for what purpose, the nature of the activities pursued (individual/relational; leisure, work, domestic labour), or how the space can absorb a certain degree of transformation. The latter is a method used productively by architects such as Lacaton & Vassal to inform their transformational housing projects [.a]. It can also be employed to study how dwellings in a building with the same layout are inhabited differently, resulting in very different architectural forms, as the example of Bogdan Girbovan's *10/1* (2008), described in the introductory essay this chapter.

.a | Lacaton & Vassal, picturing the domestic as a projective tool for a conscious transformation of the space. Top: Bois-le-Prêtre Tower, Paris, 2005-2011, picturing the domestic as base projective document. Below: the transformation of 530 dwellings in Bordeaux, 2011-2017: before and after comparison. Source: *El Croquis* 177/178, pp.228 and 254.

.b | Arquitectos de Cabecera Studio (M. Simó, P. Flotats), Mil Casas en Tu Casa TTAC 2020. Overlapping uses of living rooms during the COVID-19 lockdown in 2020. The multiple activities performed evidence the need for generous domestic spaces – as opposed to atomised and specialised rooms – allowing the user to interpret the space according to changing daily and seasonal needs. Source: AC Archive.

.c | Arquitectos de Cabecera Studio (A. Bobis and A. Cruanyes), TTAC 2020-21. Magdalena, a 76-year-old woman, is portrayed through her belongings accumulated in "the empty room", an empty space that evidences the absence of her grown-up daughters, filled with objects accumulated through a lifetime. As part of the analysis, objects are isolated and classified. Source: AC Archive.

.d | Arquitectos de Cabecera Studio (V. Mandredi), Mil Casas en Tu Casa TTAC 2020. A similar exercise to the previous example, in this case analysing a table as a continent space where the activities of cooking, eating, leisure and work take place. Probably the most versatile piece of furniture in the house, a big table, accessible from multiple sides, allows individual and relational activities, including leisure, work, and nourishment, to take place. Source: AC Archive.

Further reading:

Druot, F. , Lacaton, A. and Vassal, J. -P. (2007) *Plus: Large-Scale Housing Developments : An Exceptional Case.* Barcelona: Gustavo Gili.

Bogdan Girbovan, "10/1" series (2008): www.girbovan.ro/10pe1-2008.

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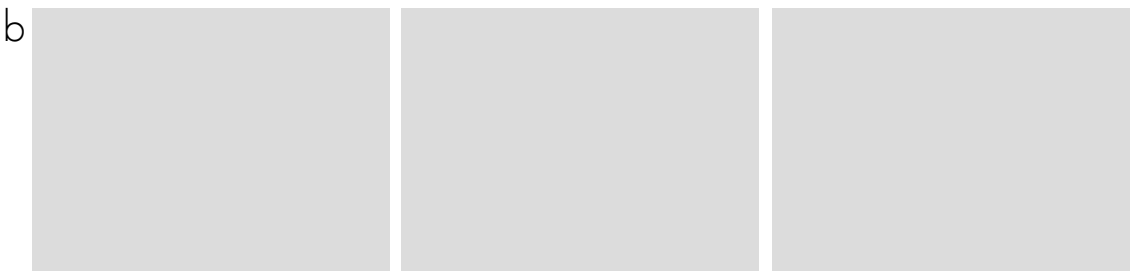

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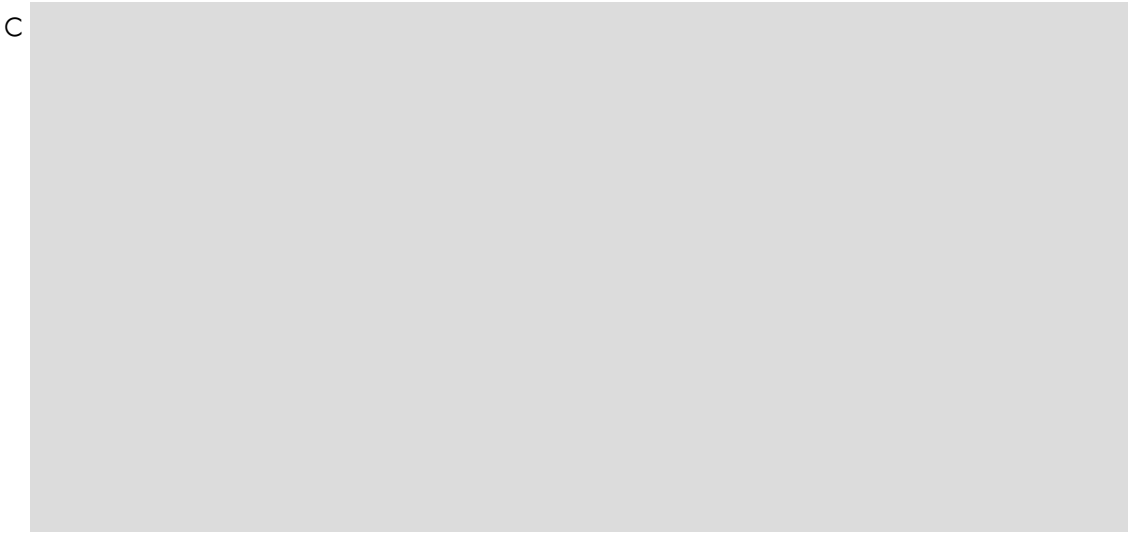

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C13

BUILDING AS SOCIO-SPATIAL ECOSYSTEM

The cartography of a building as a socio-spatial ecosystem underlines the interdependency between its inhabitants, and between them and their shared building. From the perspective of property, buildings are understood as an aggregation of individually owned and autonomously managed apartments; however, the reality of buildings is that they operate much more as ecosystems. Not only because to some degree there are several shared spaces, but also because the contact between apartments that share construction elements forces a constant negotiation between residents about how to live collectively, enforced by the social interrelationships that derive from living together and that transcend property boundaries. This interdependency is explicitly encouraged as a design strategy in cooperative housing buildings, for mutual benefit.

Understanding the building as an ecosystem requires an analysis of its physical infrastructure and the social fabric that inhabits it in parallel, studying both spheres not independently but in the way they overlap in multiple spatial forms: individual cells, collective areas, and the street that supports the building. Methods of enquiry can include ethnography and interviews.

In literature, the building as an ecosystem is beautifully depicted in George Perec's *Life: a User's Manual* (1978), that portrays a fictional building located in 11 rue Simon-Crubellier, in the 17th arrondissement of Paris.

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.a | Arquitectos de Cabecera, Lancaster 24 "Guernika", WAC 2015, Raval, Barcelona. After lying empty for some years, the Lancaster building was a squatted building with evident substandard housing conditions. The building was inhabited by a wide range of people in social need, ranging from single mothers to elderly people. As a conclusion of the diagnosis, the building was in urgent need of improved sanitary conditions. Given the lack of funding, the strategy undertaken was based on "microprojects" that residents could execute whenever they had a budget for the materials or time to invest. The socio-spatial cartography was revealed to be crucial for establishing this strategy, where not only building pathologies, but also residents' construction skills and availability, were identified. Note that some rooms are not represented in the spatial section, since some neighbours preferred either not to collaborate in the study or not to reveal a particular room. Source: AC Archive.

Further reading

Perec, G. (2020) *Life: a User's Manual.* Boston: Verba Mundi.

www.arquitectosdecabecera.org

C14

FACADE AS MEDIATOR

This form of cartography studies the ambiguous nature of the facade – between inside and outside, home and street, individual window and collective identity – and its condition as a constructed mediator in terms of privacy, domestic versus urban scale, and environmental conditions. Facades are elements that are paramount in the definition of cities, in terms of both identity and use. Whether the facade is approached from the domestic side or the urban one as a point of entry, it needs to be studied jointly, understanding the interdependency between the street and the house. In other words, houses qualify the street in the same way that streets qualify dwellings. The facade can be studied from multiple aspects, all of them interrelated: its construction and environmental performance, the space (inside or outside) it encloses, the thresholds and their thicknesses they hold, the relationships it enables, the openings and elements it contains, etc.

The domestic is often revealed outside the facade, and has a visual impact that responds to users' needs. Users' belongings are not something placed "on top of architecture"' but an intrinsic part of the architecture derived from user appropriation that needs to be understood and studied as such.

.a | Windowscape, Tokyo Institute of Technology. Systematic analysis of windows from their materialisation and the activities they allow on their thresholds. Three systematic documents allow a comparison: interior and exterior images, and dimensioned axonometric drawings in relation to the human body. Source: Tsukamoto, 2011.

.b | Arquitectos de Cabecera, Omar House, WAC 2015, Raval, Barcelona. While architectural facades are commonly represented as bare constructions, a detailed analysis reveals that traces of inhabitation are also left on the facade. In the Raval neighbourhood, the limited space that their homes offer means that residents occupy the space in front of their windows as an external room. While the drawing portrays the facade "as found", in the photograph the facade is no longer "hard" but reveals the users' impact on it. The facade is ultimately composed of several layers which make the surface into a palimpsest of different moments of construction, where users reveal their identity and domestic life. Source: AC Archive.

.c | Arquitectos de Cabecera, Mrs. Carmen's house, WAC 2015, Raval, Barcelona. Domestic space may extend beyond the facade of the house. In the case of Mrs Carmen, her house is significantly affected by the Plaça dels Àngels (Àngels square), one of the most crowded areas of the neighbourhood and the tourist epicentre of the city, generating constant nuisance. The cartography of the house evidences public space as an intrinsic condition of Carmen's dwelling. Source: AC Archive.

<u>Further reading:</u>

Tsukamoto, Y. (2011) *Windowscape 3.* Singapore: Page One.

Pybaro, C. and Batzenschlager, T. (2013) 'Anatomy of a Chinese City'. Available at www.issuu.com/thomasbatzenschlagerportfolio.

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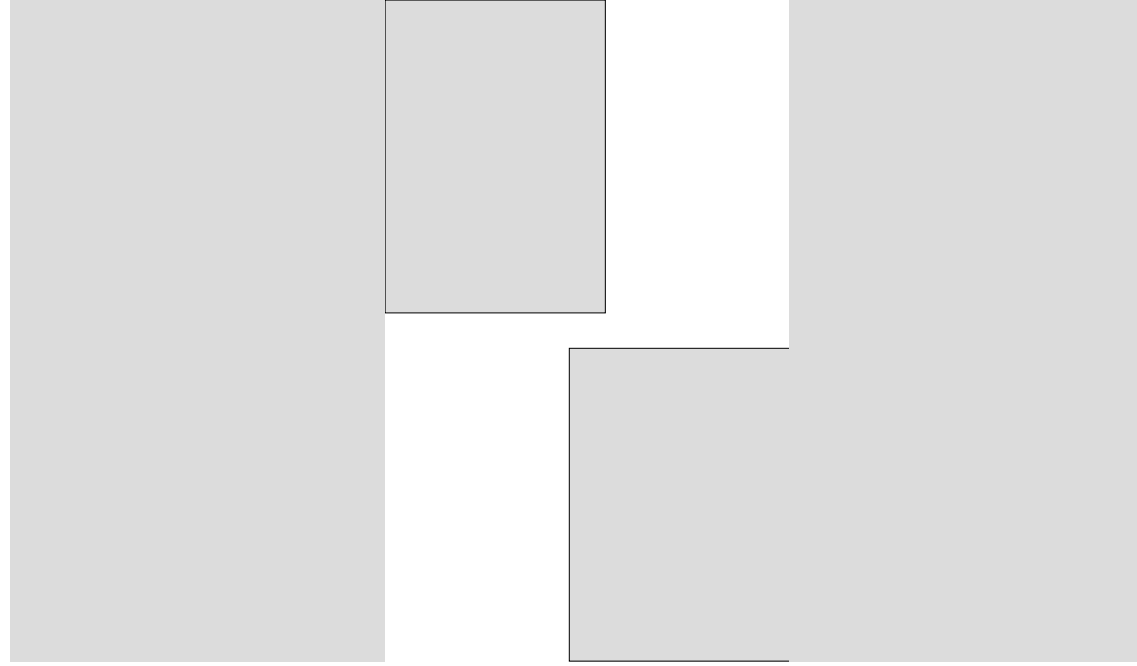

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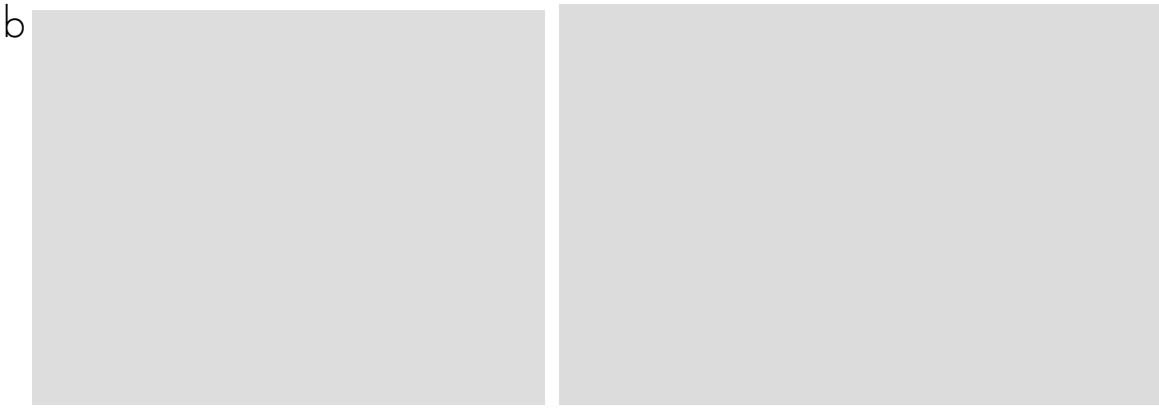

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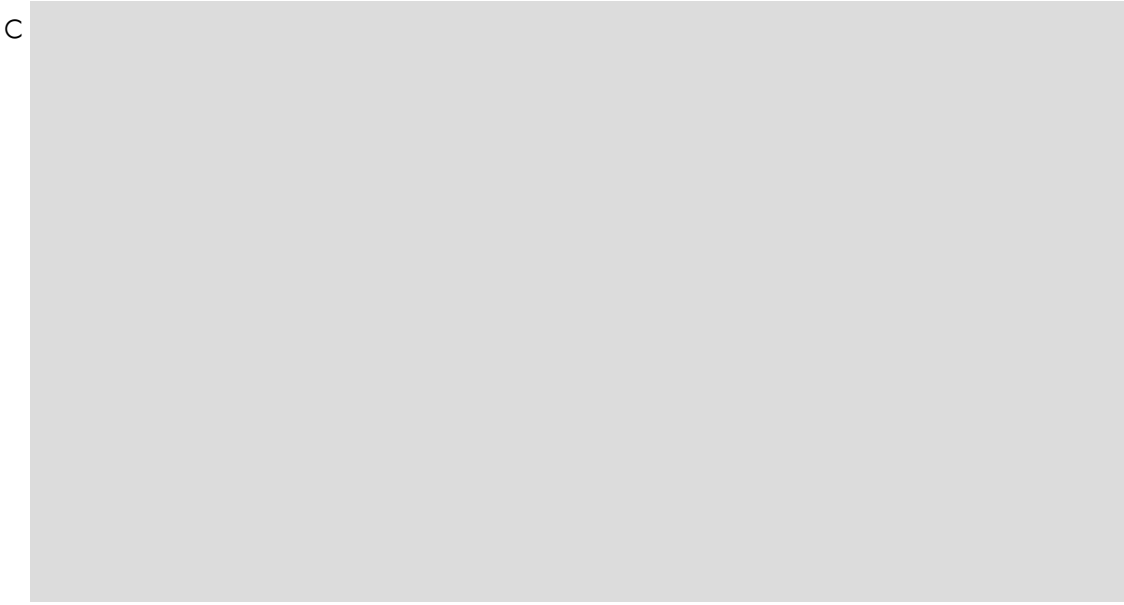

URBAN VOID

A street or a square is not an empty space between buildings, but a “charged void”, as defined by the Smithsons (2005), due to its capacity to be appropriated by users and its relational nature. Urban spaces are always context-dependent, both morphologically – on adjacent spaces and street infrastructure – and socially – embedded in neighbourhood dynamics, identity and culture.

The relational and consecutive reading of the space plays a fundamental role in the perception of it, and thus behaviour within it. Two urban voids of the same dimension might be perceived differently if they approached from diverse spaces; that is the case of those churches placed in squares and those than have an entry point from a narrow street.

In addition to the study of spaces in relation to their context, other aspects play a fundamental role when studying urban voids, such as use – for example how commercial spaces activate the street – ground floor porosity, the enabling effect of street furniture, and other elements that impact user behaviour and perception.

.a | Urban friction in the city. Analysis of the square of an open block, where perception and behaviour are understood as a continuum through what we understand as different scales of drawing. Thus, rather than dividing spaces into scales of drawing, this document emphasises the relational character of urban spaces, where each space is perceived against the preceding one. Source: author’s drawing.

.b | Bruno Seve, "Comparison of the same 14 m-wide street on an ordinary day and a *t*iangui day". A tiangui is a specific type of market that takes place daily in Mexico. The street changes in character and in the way it is appropriated. Source: Seve, 2020, p.95.

.c | Campo de la Cebada, Madrid, 2011-2017. Axonometric representation of a public space and its different uses. The condition of the square as an open platform allows a certain degree of specialisation in the different areas, while at the same time enabling multiple activities to take place. Available at: plataformaarquitectura.cl.

.d | Manuel Bailo Esteve, Study of the urban context of the church of Vistabella by Josep Maria Jujol (1923), which dominates the square. The urban void is represented by the overlapping of technical drawings and photographs of the facade of the square. The church presides the square from the corner, which is activated by people attending mass on Sundays. Source: Bailo Esteve, 2015, p.86.

<u>Further reading:</u>

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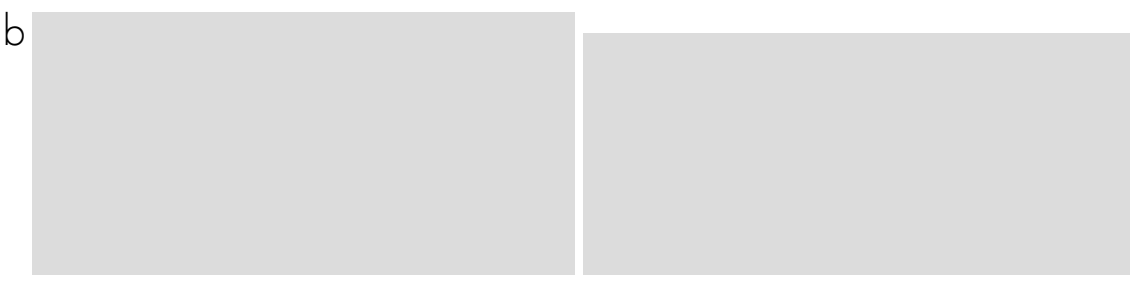

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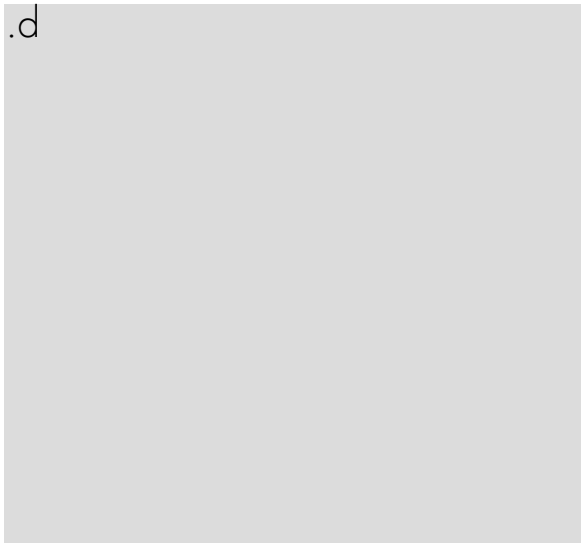

NEIGHBOURHOOD

Neighbourhood cartography represents the social-spatial dimensions of a specific area under analysis. Since neighbourhoods are by definition porous and constantly changing, neighbourhood cartography will inevitably be partial and reductive. What is important is not so much an extensive representation of the space, but the capturing of the social and spatial elements which are most relevant for the project being developed. Cartographic representations of neighbourhoods can be organised around maps, concepts or diagrams, and mix different types of drawing methods and kinds of information.

This kind of cartography operates with inductive logic, starting with specific case studies. The selection of cases to portray is crucial, since individual examples explain recurring situations, and thus should be inclusive and representative of the field studied.

The cartographic representation of a neighbourhood connects physical and social circumstances, enabling an overview and eventually allowing connections to be drawn between case studies for analysis (whether similar or interrelated) and projects (matching needs and opportunities).

This drawing can also serve as a table of contents of the overall area, with further partial cartographic representations and case studies developed in other documents.

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.a | Arquitectos de Cabecera Studio, Cartographic representation of Raval neighbourhood, TTAC 2017, Safaretjos, Santa Coloma de Gramenet. Metadrawing: an overall axonometry serves as a framework to zoom in on certain areas, explaining social interactions or relevant narratives. This drawing is also named “60-hand drawing” since the entire studio participated in the drawing, that measures 500 x 300 cm and is on permanent display in Besos Riverfront Metropolitan Park, Barcelona. Source: AC Archive.

.b | Arquitectos de Cabecera. Mind map of case studies in the Raval neighbourhood in the form of cartography, WAC Raval 2015, Barcelona. The social diversity of the neighbourhood is represented qualitatively through a socio-spatial analysis of inhabitant profiles: people in transit, squatters, residents who unexpectedly share a house, planned sharing, lonely people, and tourists. The partial taxonomy was complemented by a more in-depth analysis of each of the case studies. Source: AC Archive.

Further reading:

www.arquitectosdecabecera.org

C17

URBAN LANDMARKS

This kind of cartography analyses urban landmarks as recognisable iconic places that serve as reference points because of their uniqueness. They play a key role in providing identity to the surrounding area. They vary significantly in size and form, ranging from whole buildings to small elements or urban voids, are easily identifiable and form part of the collective memory of the city. They may have functional (hosting activities), symbolic (of heritage or cultural memory), or morphological (their monumentality) relevance, or an uneven combination of these.

The study of the landmark should document how, as a unique element, it enables particular activities, sometimes acting as a catalyst for specific social behaviour or as a meeting point.

The taxonomy of these places reveals how they are perceived and used in ways that are different from other, more common urban elements, in terms of both behaviour and the social relations that take place.

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.a | Atelier Bow-Wow, Temple of Heaven, Beijing, China. Architectural Behaviorology Studies. Specific areas are represented axonometrically with an emphasis on the actions and people, with zooms detailing certain activities. Source: Atelier Bow-Wow, 2015.

.a | Manuel Bailo's analysis of the Zócalo, in Mexico City, emphasises the contradiction between its function as the most important square in the city (at least institutionally speaking, since it hosts governmental and Cathedral buildings) and the impossibility of using it at certain times of the year due to adverse environmental conditions. To Bailo, the political decision to erect a giant flag creates an unexpected outcome – a shadow – that turns a political element into an architectural one that improves the liveability of the space. Source: Bailo Esteve, 2015.

Further reading:

Atelier Bow-Wow (2015) *Commonalities*. Santiago (Chile): Ediciones ARQ.

Bailo Esteve, M. (2015) *Public Catalyst = Catalyst Drawn*. New York: ActarD Inc.

Lynch, K. (1960) *The Image of the City*. Cambridge, MA: The MIT Press.

C18

SYSTEMIC URBAN ELEMENTS

Recurring urban elements act as multiple landmarks in a city. Rather than being unique, they provide urban identity through the repetition of more or less common elements which make a certain area recognisable from others and provide a unique spatial identity.

Rather than being planned, quite often recurring urban elements are a result of existing frameworks, such as legislative or regulatory ordinances, administrative agendas, ownership schemes or topographic constraints.

A study of systemic urban elements analyses them as a system, considering that there might not be an archetype or universal model, but rather a logic that is repeated with multiple variations and adaptations according to the requirements of specific contexts. It might be the case that any of the elements are singular enough to stand out by themselves; their particularity resides in reading them as a coherent urban system.

The singularity of the components that makes such recurring elements recognisable may encourage certain specific activities around them, which also become an intrinsic part of the urban landscape.

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.a | Batzenschlager, Combette, Pybaro, "Valparaiso Público", 2017. Graphic representation of one of the most recognisable urban typologies of Valparaiso (Chile), urban staircases, created as a result of the city's topography. Fifty exterior spaces are analysed systematically and compared in plan, section and axonometrically. plataformaarquitectura.cl. Available at issuu.com/proyecto.valparaiso.publico/docs/valparaiso_publico.

.b | Atelier Bow-Wow, "Pet Architecture", 2002. Study of tiny buildings "squeezed into leftover urban spaces" in Tokyo, as a distinctive building type that results from planning legislation and property boundaries. Source: Atelier Bow-Wow 2003, pp.34-35, 38-39, 126-127.

Further reading:

Atelier Bow-Wow (2003) *Pet Architecture Guide Book*. Japan: World Photo Press.

Batzenschlager, T., Combette, M. and Pybaro, C. (2018) 'Valpariso Público: a graphic inventory of 50 exterior public spaces situated in 10 of the 42 urbanized hills of Valparaiso, Chile.' Available at www.issuu.com/thomasbatzenschlagerportfolio.

USER PORTRAITS

Given the binding relationship between the container (built space), its contents (objects and furniture), and its occupants (who give sense to both), the aim of portraying a subject is to inform design decisions by understanding who the user of that space will be. A portrait of a user moves the design approach from a universal space towards an occupant-specific one, acknowledging that there is no such thing as the universal or standard subject or household.

The analysis of subjects cannot be detached from the form they inhabit: space-object-subject-identity-activity-social forms are interdependent and interlocking dimensions against which design should be measured. The analysis of the subject starts in their immediate surroundings, their personal space, and can extend towards public space, which is an extension, and a necessary complement to the domestic.

In a similar way, people require objects or tools in order to interact with others and to carry out activities. Certain objects or possessions are sometimes an intrinsic part of the subject's identity, as the portraits by James Mollison evidence [.b]. Georges Perec demonstrates an awareness of this in his beautiful descriptions of the characters in *Life: a User's Manual* through never-ending lists of the objects they possessed, which were stored in the basement.

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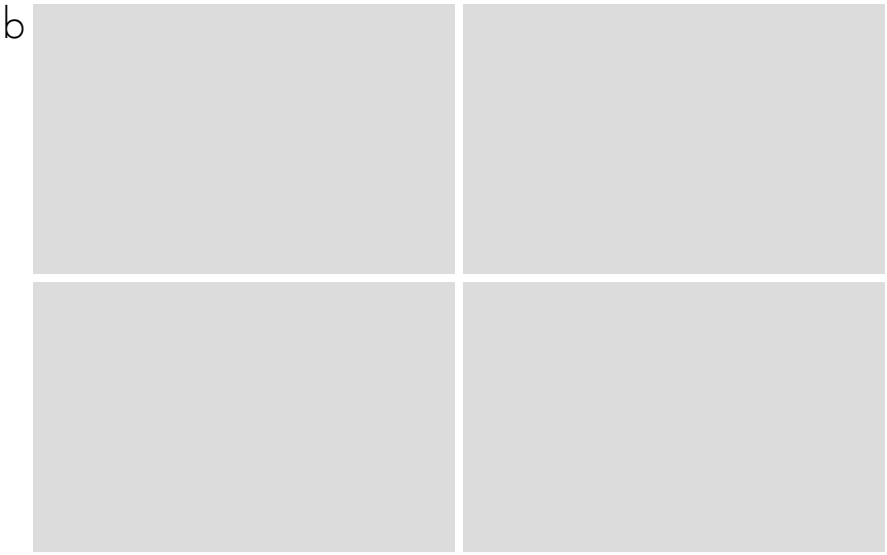

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.a | Huang Qingjun, *Family Stuff*. Portraits of several families in front of their houses, which are empty of objects. Top right: Mongolian Batu Aoqier and AoYong Qimuge in front of their yurt, Inner Mongolia, 2007. Bottom right: Unknown. Top left: 40-year-old artist Wenjue-He, Beijing. Bottom left: Yang Liu, Beijing, 2014. Source: www.huangqingjun.com/cg/family-stuff.

.b | James Mollison, "Where Children Sleep". From top left, clockwise: Indira (7) Kathmandu, Nepal; Justin (6) New Jersey, USA; Kaya (4) Tokyo, Japan; Thais (11) Rio de Janeiro, Brazil. Source: www.jamesmollison.com/where-children-sleep.

.c | Subjects' portraits on a study of customised vehicles. Source: Pybaro & Batzenschlager (2013).

Further reading:

Pybaro, C. and Batzenschlager, T. (2013) 'Anatomy of a Chinese City'. Available online at www.issuu.com/thomasbatzenschlagerportfolio.

www.huangqingjun.com/cg/family-stuff

www.jamesmollison.com/where-children-sleep

C22

ROUTINES & HABITS

The cartography of routines and habitual patterns of movement allows a spatial analysis that proceeds from the use of space in identifying recurring activities: which spaces are used by whom, and for which activities. Routines and habits can be studied either in domestic space or on an urban scale as an extension of domestic inhabitation onto the street. They can refer to either movement or specific activities and may respond to many different motivations, from work and domestic labour activities to social and leisure activities.

With an inductive method, a cartographic representation of habits and routines allows the space to be read in motion from individual experience and to identify the causes that are perceived to affect behaviour. The analysis of habits allows an enquiry into why a certain space is used more than others for particular uses, which may depend on spatial conditions, user preference, or external factors. For example, a domestic space may be conditioned by the composition of the household, while at a city scale an analysis of mobility indicating why users choose some streets over others can be carried out.

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.a | Arquitectos de Cabecera Studio (A. Bobis and A. Cruanyes), Seminar TTAC 2021-22. Domestic routine of Mario, aged 15, in his house in the Poblenou neighbourhood. The most frequently used spaces of the house are highlighted, which not always correspond with areas with the best light conditions. Source: AC Archive.

.b | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, WAC 2015 Raval. El Raval neighbourhood according to Mrs Carmen, an elderly neighbour living in Plaça dels Àngels (Àngels square). The streets that conform her routine patterns of movement are highlighted in relation to her activities: work, seeing friends, visiting her daughter, going to market. Note that in some routines she walks down the same street every time, while for others different choices are made depending on the day. Source: AC Archive.

.c | Arquitectos de Cabecera Studio (A. Bobis and A. Cruanyes), TTAC 2020-21. Patterns of movement of Magdalena, a 76-year-old woman. Due to her reduced mobility and the physical barriers of her environment, she can only manage short outings from her flat (top left) to nearby grocery stores every two days, and has no social or leisure activities in the public space. Source: AC Archive.

Further reading:

Carfri, F. (2017) *Walkscapes: el Andar como Práctica Estética.* Barcelona: Gustavo Gili.

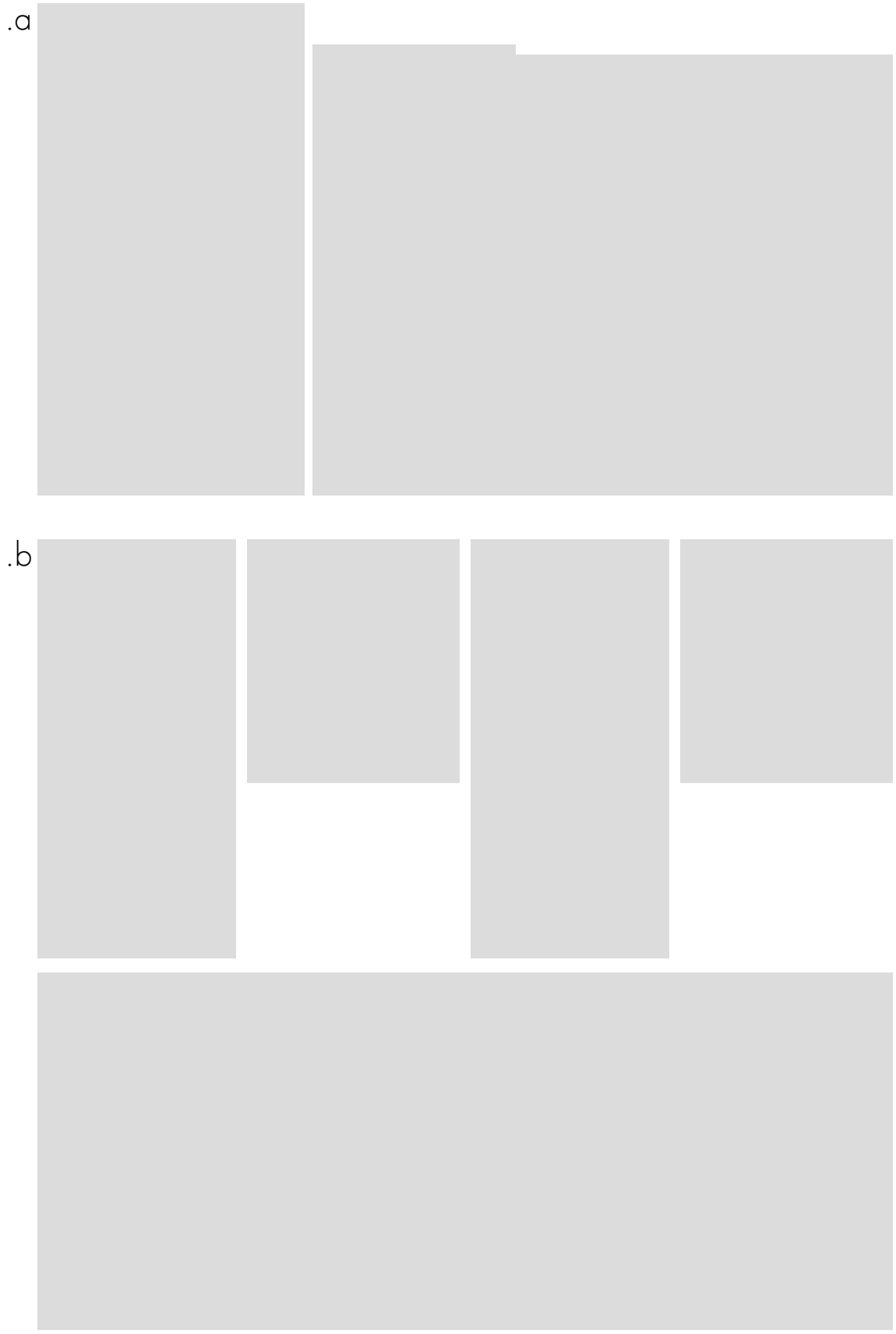
C23

USERS' NEEDS (I): INDIVIDUAL

Once subjects have been identified, this tool organises users' current and future needs in terms of activities that spatial design needs to respond to. As with all cartographic representation, primary data is extracted with diagnostic tools, which can be in the form of interviews or surveys. The parameters should be adapted to the size and impact of each specific project; typically an analysis of individual users is useful when their spatial needs are very specific.

The detection and analysis of needs enables a bespoke design for household members while understanding that these will inevitably change over time. In other words, this data allows a design programme to be formulated.

For example, a cartographic representation of users for a housing project may include personal information about each of the members in the household, as well as an overview of the household unit as an ecosystem and as the primary social structure. Among the different issues addressed, it can include current and potential changes in household structure, energy demands, or activities performed inside and outside the domestic space. The household income is analysed in a separate sheet focusing on financial analysis.



.a | Lacol architects cooperative, La Borda cooperative housing, 2014-2018. A survey (left-hand list) was carried out to acquire knowledge about individual households. Part 1 is concerned with household structure and the background of its members, transport, access to housing and income. Part 2 concerns energy consumption and needs. The 30 potential household units were summarised in a diagram that allowed a clear overview of the complex. Since La Borda's design distinguished between three different sizes of apartment (S, M, L), and interchangeable rooms could potentially belong to any of the adjacent dwellings, this diagram became crucial in matching specific dwellings appropriately to residents. Image courtesy of Lacol architects.

.b | Arqbag architects cooperative, Guimerà Senior Cohousing, 2017. An analysis of household members, including personal information and preferences. In addition, details of habits framed by household members' daily schedules and whether these take place inside the house or outside of it. This enables the activities that will take place in the domestic space to be identified, as well as different household members' shared moments in the cooperative housing building. Information was represented individually (top) and as an overview of all the members (below, each member is a concentric circle; colours indicate activities: blue = sleeping; red = eating; orange = leisure; green and yellow = housekeeping). Image courtesy of Arqbag.

Further reading:

La ciutat invisible and Mansilla, E. (2021) *Construïm Habitatge per Construir Comunitat: Guia per a Grups d'Habitatge Cooperatiu: Recull d'Experiències i Caixa d'Eines.* Barcelona: La Dinamo Fundació.

USERS' NEEDS (II): COLLECTIVE

Like our individual needs, collective activities are an essential part of the urban project, and should be studied as inputs. As social beings, there are some needs that we can only fulfil collectively. This may refer not only to social activities but also to leisure, productive or economic activity. Individual activities require analysis and, likewise, all the collective ones should include the dimension of time to foresee future needs. However, unlike the former, these may rely on collective design decisions (see Co-design Workshops tool in the Design chapter).

Rather than making a binary distinction between individual and collective activities, it might be more useful to discuss specific activities around the notion of degrees of privacy and negotiation of shared spaces. According to this logic, the house (or maybe the bedroom) becomes the primary shared space within the household and the street the most shared space outside it, where the neighbourhood is a continuation of the domestic space, making the street space crucial for the development of certain activities, and where people can meet each other. In between, there are many different options of shared spaces, including an extended household, cluster living, and co-housing, with shared spaces such as a living room, meeting area, dining room and kitchen, library, leisure area and storage spaces included in each unit. Each of these circles of privacy might respond to specific collective and subjective needs as extensions of personal space towards collectivity.

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.a | Die Baugruppe, co-existence diagram, which could also be read as a diagram of collective needs. Hofmann, 2014, p.137.

.b | The Scattered House, Avilla-Royo, R. (2018) *The Role of Public Housing in Barcelona*. MPhil dissertation. Architectural Association. A theoretical project developed from the identification of different activities developed in the grey zone between the extremes of the notions of private and public. On the left-hand side, an example of a diagram that can be used to allocate activities in different circles (degrees) of privacy. Source: author's drawing.

Further reading:

Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis.

La ciutat invisible and Mansilla, E. (2021) *Construïm Habitatge per Construir Comunitat: Guia per a Grups d'Habitatge Cooperatiu: Recull d'Experiències i Caixa d'Eines.* Barcelona: La Dinamo Fundació.

C25

MORPHOLOGY TO PATTERNS OF BEHAVIOUR

The study of patterns of behaviour enables a better understanding of how people relate to the built environment. Studying a specific city location can provide design input for its transformation, and these can serve as precedents when proposing specific spatial configurations.

According to Henry Lefebvre (1974), the design of space is never neutral but is instead a human-made, culturally dependent product that is at the same time an outcome of, and conditioned by, social relations. The key question is, then, how this happens. Interestingly, studies in recent decades have matched specific behaviours to specific geometries, spatial dimensions and urban conditions, what Christopher Alexander identified in 1977 as “patterns”.

It should be noted that the use of space is not universal but subject to the bias of background (gender, age, race, culture, financial situation, memories, etc) and external conditions such as weather. In a similar way, design proposals also respond to political agendas, which might result in certain uses being either promoted or discouraged by space design.

.a | William Whyte, studies on social behaviour in corners. Source: Whyte, 2012 [1988], p.22 & 109.

.b | SWA (E. Schlickman and A. Domlesky), “Field Guide to Life in Urban Plazas. Field Study in NY”. Field Guide to Life in Urban Plazas classified 25 social patterns deriving from urban morphology, among them the doughnut effect, view-philia, schooling, lizarding, self-corralling and ephemera-philia. Available online at swagroup.com.

.c | Manuel Bailo, Urban Space Catalysts. Study of the plinth-bench of the Palazzo Farnese in Rome, built by Antonio da Sangallo the Younger and Michelangelo in the sixteenth century. Bailo underpins the importance of the bench as a mediator of scale between the grandeur of the palazzo and the human scale; the bench enables users to approach the building, which is otherwise merely perceived as monumental from a distance. Soure: Bailo Esteve, 2015, p.42.

Further reading:

Alexander, C., Ishikawa, S. and Silverstein, M. (1977) *A Pattern Language: Towns, Buildings, Construction*. Center for Environmental Structure Series. New York: Oxford University Press.

Bailo Esteve, M. (2015) *Public Catalyst = Catalyst Drawn*. New York: ActarD Inc.

Gehl, J., Svarre, B. and Steenhard, K. A. (2013) *How to Study Public Life.* Washington: Island Press.

Lefebvre, H. (2013 [1974]) *La Producción del Espacio.* Madrid: Capitán Swing.

Sommer, R. (1969) *Personal Space; the Behavioral Basis of Design*. New Jersey: Prentice-Hall.

Schlickman E. and Domlesky, A. (2019) *Field Guide to Life in Urban Plazas. Field Study in NY*. Washington: Island Press.

Whyte, W. H. (2012 [1988]) *City: Rediscovering the Center*. Philadelphia: University of Pennsylvania Press.

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C26

RITUALS & SOCIAL ACTIVITIES

This tool develops the study of urban space to the social relations it enables, encourages or prevents. The city becomes the framework where social rituals constantly take place, as interactions with and/or in the presence of others, framed by the specificities of the urban context and of the demographic that inhabits it. In addition, activities in public spaces are conditioned by issues such as the weather, the day of the week, or special events that may occur in the city. Interrogating the city from the activities that take place there allows a double analysis: on the one hand, asking how the space is used, and which activities the space enables, and on the other addressing issues about inclusivity and accessibility, asking who is not using that space, and why.

Social behaviour in public space was studied on a scientific and systematic basis by William H. Whyte in the 1970s, using direct observation and recordings (Whyte, 1980). Later, Jan Gehl notably developed a specific method to study public space. Gehl identified three categories of activity that people perform in public spaces: those that are necessary, those that are optional and those that are social (Gehl, 2006 [1980], pp.11-14). While activities that are necessary happen regardless of urban conditions, optional ones are linked to the quality of public space, and social activities cannot be forced, require the presence of others and generate a feeling of belonging, identity and care. On a smaller scale, the studies by Herman Herzberger (2016 [1991]) are notable for their identification of the spatial elements – and their specific qualities – that allow unexpected opportunities for socialisation or appropriation.

.a | Nigel Henderson, *Chisenhale Road, 1951*. Between 1949 and 1952 Henderson photographed London's East End streets, documenting the daily activities of their inhabitants. Source: Henderson, N. and Coward, C. (2017) *Streets: Nigel Henderson's Photographs of London's East End 1949-53.* London: Tate Publishing.

.b | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, meeting with Bocachica community, Colombia, 2019. Source: AC Archive.

.c | Manuel Bailo Esteve, study of the social behaviour in the porch of Vistabella's Sagrat Cor church, designed by Josep Maria Jujol in 1923, enabled by its spatial form. Source: Bailo Esteve, M. (2015) *Public Catalyst = Catalyst Drawn*. New York: ActarD Inc., p.269-271.

.d | Wiliam Whyte, study of activities occurring in a building podium. Source: Whyte, W. H. (2012 [1988]). *City: Rediscovering the Center.* Philadelphia: University of Pennsylvania Press, p.41.

.e | Jan Gehl, Social activities in public space. Source: Gehl, 2006 [1980], p.27 & 34.

Further reading:

Gehl, J. (2006) *Life between the Buildings*. Copenhagen: Danish Architectural Press.

Hertzberger, H. (2016) *Lessons for Students in Architecture*. Rotterdam: Nai010 Publishers.

Whyte, W. H. (1980) *The Social Life of Small Urban Spaces.* Washington: Conservation Foundation.

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C27 DIAGRAMS OF RELATIONAL ACTIVITIES

The recording of social interactions with photographs and drawings described above might be a relevant tool to explain specific actions, but might equally be limited in evidencing the overall context. To fill that gap, drawing a diagram might be useful to document activities, places, times and demographic profiles. Both tools are complementary in the information they present and can be developed to study how a certain space is used at different moments.

From Perez del Pulgar *et al.* (2020, p.4): "We designed a diagramming tool to keep systematic track of the users of the parks physical activity levels, activity modes/types, estimated age, gender and ethnic groupings, which we classified alongside the intensity of the physical activity and the interacting elements/ agents – these were our proxy for the type of play and socio-material interaction. Furthermore, we employed a field notebook with detailed descriptions of the type, location and duration of activities, informal conversations, observable aspects of participants' ethnic and socio-demographic characteristics, and the relations and interactions developed in the space. We built, adjusted, and completed our diagram and detailed descriptions continuously throughout the fieldwork while moving around the park and stopping for longer intervals of observation in each park's most crowded areas."

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.a | William Whyte, studies of the use of Mies van der Rohe's Seagram Plaza. The diagram depicts in the vertical columns the sections of the ledge where people sit and the length of time they do this in the horizontal columns. Whyte concludes from this analysis that “in their instinctive way people have a nice sense of what is right for a place”. Source: Whyte 2012 [1988], p.72.

.b | Perez del Pulgar *et al.* The diagram compares two weekdays in Nou Barris and documents different activities describing the kind of interactions that take place and the age of the participants. The authors place them in a two-axis structure in relation to interaction with people or the built/natural environment (vertical axis) and low-high intensity of physical activity (horizontal axis). For a deeper analysis, this diagram could be complemented with a study of the specific activities (see the "Rituals & social activities" tool in this chapter). This system would allow a comparison between two different spaces, days, or seasons. Source: Perez del Pulgar *et al.* 2020, p.6.

Further reading:

Perez del Pulgar, C., Anguelovsky, I. and Connolly, J. (2020) 'Toward a green and playful city: Understanding the Social and Political Production of Children's Relational Wellbeing in Barcelona', *Cities*.

Whyte, W. H. (2012 [1988]) *City: Rediscovering the Center*. Philadelphia: University of Pennsylvania Press.

C31

SUBJECTIVE PERCEPTION MAPS

A subjective mapping of the perception of space represents how space is lived in and used by specific individuals. Subjective perception maps oppose the reading of space as neutral and universal and are instead informed by the subject's background (gender, race, culture, financial situation, etc.). Thus, there are as many readings of the space as there are users. This is precisely the entry point of feminist urbanism (Col·lectiu Punt 6, 2019), which claims that the historical representation of space, that has focused mostly on morphological and circulatory dimensions, was designed from a single point of view: the one of the white male framed by a patriarchal society.

Subjective maps allow the inclusion of many layers of information which are not necessarily measurable, and that can be developed to spaces of various sizes, from houses or larger buildings to neighbourhoods. They are based on ethnographic observation or interviews, representing only what is relevant for that individual or group. The acknowledgement of the partial representation of space can be complemented by the multiplicity of representations [.b].

Subjective maps enable the inclusion of the perceptive dimension in the representation of the space, including the boundaries of the space, and emphasise the spaces and uses that are most relevant. Mixing different techniques of representation, such as drawings and photographs, allows a multifaceted reading of the space.

.a | "Cognitive maps of Los Angeles" as perceived by predominantly Anglo-American residents of Westwood and predominantly African-American residents of Avalon. Source: The Visual Environment of Los Angeles, Los Angeles Department of City Planning, April 1971, pp.9-10; extracted from Hayden, D. (1995) *The Power Of Place: Urban Landscapes As Public History.* Cambridge, MA: The MIT Press, pp.28-29.

.b | Arquitectos de Cabecera Studio (B. Briceño), TTAC20 Mil Casas en Tu Casa, 2020. The same house is differently perceived by the four members of the household. The uses of the space of the house are highly conditioned by the subjective perception of each member of the household, all of which use different areas of the house, claiming some while negotiating the use of others. Source: AC Archive.

.c | El Tinglado, "Fem Escola - Fem Barri al 22@". Mixed-method study, including Geographic Information System (GIS) technologies and workshops to grasp subjective experience, analysing the neighbourhood according to different social profiles. In the drawing, mapping the neighbourhood from the point of view of children reveals a fragmented and unique use of the space and services. Source: www.eltinglado.org

Further reading:

Col·lectiu 6 (2019) *Urbanismo Feminista: por una Transformación Radical de los Espacios de Vida*. Barcelona: Virus. Available at: www.viruseditorial.net.

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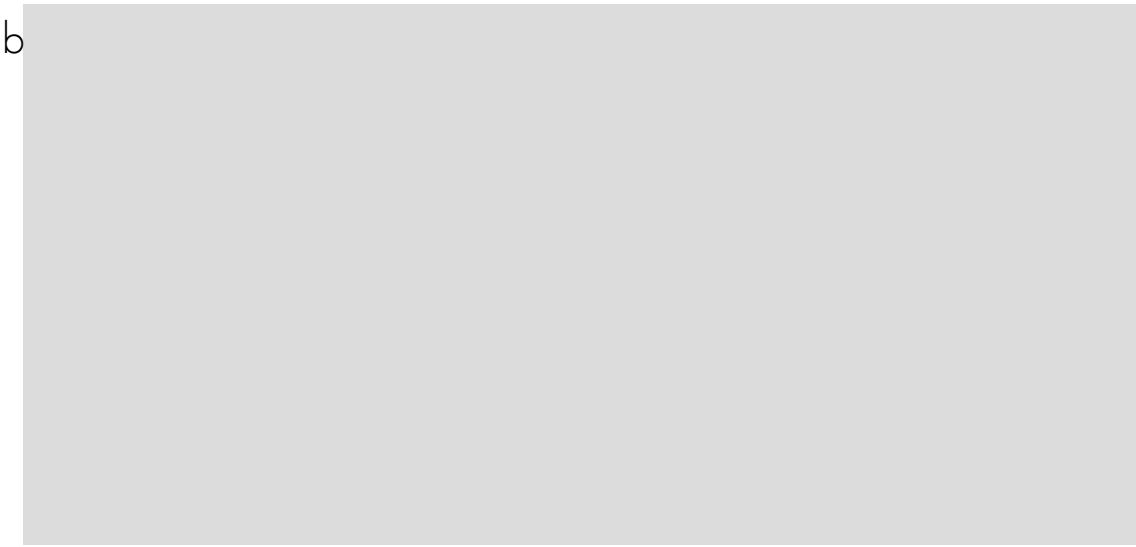

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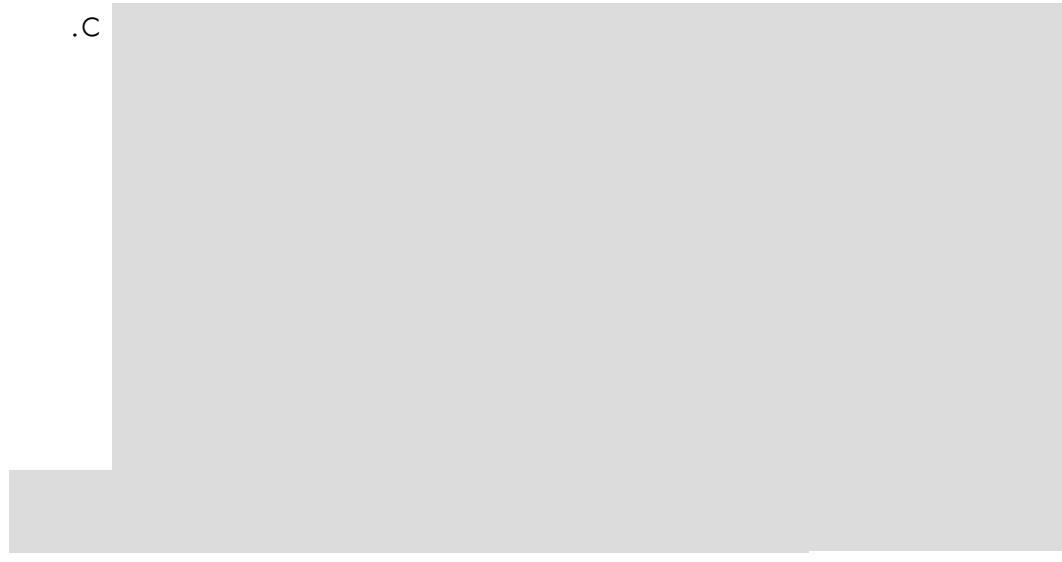

C32

COLLECTIVE PERCEPTION

Collective mapping is based on subjective qualitative perceptions shared among a certain group of people, developed either in a group workshop or after a group walk (see the Diagnosis chapter), that aim to identify features that are not usually shown on official or administrative maps and yet have a strong impact on the use, activities and reading of urban space (perceptions, feelings, desires...). Mapping can be developed to reflect the perceptions of a general group of people, or be developed more specifically according to social profile: gender, age, racial/cultural origin, etc.

Bearing in mind that for designers what is represented is what matters, the aim of collective perception maps is twofold. On the one hand, they complement morphological drawings with perceptive ones, thus emphasising the importance of space as it is actually used. On the other, they counterbalance the representation in official maps, which, as Iconoclasistas (2013) discuss, are often falsely presented as objective but are by their nature institutional ideological devices. Collective maps suggest that a transversal and inclusive debate on the city should be based on multiple representations of the space.

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.a | Collective mapping from workshops, Col·lectiu Punt 6, 2012. Outcome of the diagnostic workshop “from the daily experience of women”. Post-its with colour codes are placed on top of printed maps to highlight specific areas of interest for the diagnosis, including notes on perceptions of the space. Source: Col·lectiu Punt 6, 2014.

.b | Urbino Mind Map, ILAUD. A map of Urbino is annotated with information that cannot be expressed through drawings, such as dilapidated areas, places lacking in activity, and places that are inaccessible to those with reduced mobility. This map is not only analytical but also suggests potential strategies of intervention. Source: Exhibition “27 years of ILAUD and ETSAB”. December 2019 to February 2020 at Hall ETSAB.

.c | Iconoclasistas, collective mapping with collage technique. Source: Iconoclasistas, 2013.

.d | El Tinglado, Serravella school mapping, 2016-2017. Collective mapping of problems (red), existing uses (green) and desired uses (yellow). Source: www.eltinglado.org.

Further reading:

Chambers, R. (2006) 'Participatory Mapping and Geographic Information Systems: Whose Map? Who is Empowered and Who Disempowered? Who Gains and Who Loses?' *The Electronic Journal of Information Systems in Developing Countries,* 25, pp.1-11.

Col·lectiu Punt 6 (2014) *Mujeres Trabajando. Guía De Reconocimiento Urbano Con Perspectiva De Género.* Barcelona: Comanegra. Available at: www.punt6.org.

Iconoclasistas (2013) *Manual de Mapeo Colectivo*. Available at: www.geoactivismo.org.

C33

PROXIMITY OR ISOLATION

Proximity or isolation maps are time-based representations that determine access to services, which can potentially result in zoning, social segregation and gentrification. They have been included in this chapter due to the bias of mobility infrastructure in relation to the subject who travels: there is a pattern for certain social groups to use certain modes of transport such as walking, private cars or buses in metropolitan areas depending on their socio-economic background.

As Lefebvre (1974) observed, buying a house entails buying the time required to cover the distance from it to other places, which entails buying the use of time. To the architect David Bravo Bordas, “housing is the first mobility infrastructure”. In other words, planning housing in a certain way (compact, dense, with a diversity of uses and enabling short journeys to amenities) can prevent the need for large mobility infrastructures and, in the case of suburban structures, the need for individual private cars, which are highly polluting and space-consuming, and generate infrastructures that are expensive to maintain. Based on the long history of Isochronal Maps (Mohorte, 2016), ultimately a mobility map reveals how democratic the access to services in a particular city is, and can be an indicator of the diversity of uses in a city and the proximity of its services to each other (also known as the “15-minutes city”).

.a | Arquitectos de Cabecera, "Isochronal Map", or map of proximity and isolation. WAC 2017, Safaretjos, Santa Coloma de Gramenet. From iso = same and chronas = time; this map represents how far can someone get in ten minutes on foot, by bike, by car and on public transport, and overlays that information with a list of public services. The same map was drawn for a five- and thirty-minute time period, using Google Maps as a tool. Source: AC Archive.

Further reading:

Desai, K. (2008) 'Isochrones: Analysis of Local Geographic Markets'. Mayer Brown. Available at: www.mayerbrown.com.

Lefebvre, H. (2013 [1974]) *La Producción del Espacio* Madrid: Capitán Swing.

Mohorte (2016) 'Mapas isócronos: cuando medir los tiempos de un viaje a cualquier rincón del mundo era un arte'. Available at: www.magnet.xataka.com.

Online tools:

Isochrones with public transport: www.mapnificent.net; www.app.traveltime.com; www.classic-maps.openrouteservice.org

Isochrone calculator: www.owlapps.net/application-geomarketing.

15 minutes city: www.15-minutes.city

MOVEMENT

This cartographic approach analyses the street as understood by people's movements. The movements and journeys of city-dwellers are both conditioned by and have an impact on public space, a measure of urban circulation that is often overlooked in favour of studies of road traffic. For example, in a square full of restaurant terraces, the constant movement of waiters becomes as physical as the presence of street furniture, despite being chaotic and immaterial.

An approach that takes account of intangible movement represents an approach to public space that is distinct from that which regards it as a self-contained static void. In contrast it analyses the city from the point of view of journeys as determined by the slow and non-motorised infrastructural mobility network and the reasons for those journeys. Compulsory journeys are closely linked to urban dynamics and planning, which particularly affects zoned districts.

Users' movements should not be approached as if they are universal. The comparison of the city journeys of three age groups – young parkour practitioners [.a], elderly people [.b] and children [.c], – show how the subjective perception of the city is also bound up in the subject's ability to move around it. It could have also included, among many others, those in wheelchairs, with baby buggies or prams or delivering heavy parcels. Thus, once more, it is relevant to question the inclusivity of urban design in relation to mobility.

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.a | Manuel Bailo Esteve. Study of urban parkour movements through a section drawing and the range of movements performed. Source: Bailo Esteve, 2015, p.140.

.b | Arquitectos de Cabecera Studio (M. Cuevas y J. M. Mallarach), TTAC20, Pas a Pas, 2020. Video analysis of the route walked by an elderly woman with a shopping trolley. The narrowness of the pavement and the lack of places to rest for short breaks results in hindered mobility for elderly people. Video available at: https://youtu.be/yZ_15StIeTA

.c | Enric Miralles, *The Stairs of San Giorgio Maggiore*, Venice, 1999. Photocomposition of Miralles' children climbing the stairs up to the Palladian church. Miralles portrays the action as an event of discovery through different moments: crawling up the stairs, walking on the landing, trying to climb the column, being surprised by an object on the floor. Photograph by the author from the exhibition "Miralles. Photos & Collages", Arts Santa Mònica, Barcelona, June 2021.

Further reading:

Bailo Esteve, M. (2015) *Public Catalyst = Catalyst Drawn*. New York: ActarD Inc.

MEMORY

A memory cartography aims to reveal the history of a place against the (sometimes institutional and deliberate) erasure of memory and obscuring of history. This is particularly impactful in urban renovation activity. Memorials in any form (urban landmarks, streets names, books, etc.) are an outcome of conflict over the dominant version of events between different political forces, including institutional and social ones. The conservation of memory is not simply nostalgia, but part of the urban struggle to resist the dynamics of globalisation and their impact on the homogenisation of cities, as well as to counterbalance dominant historical narratives.

It is in this regard that memory maps can become instrumental in enabling discussions about memories associated with places that can actively inform design decisions. Representations may include places or activities connected with everyday life or specific events. Data can be extracted from primary sources, such as accounts narrated by those who experienced the events, or secondary sources such as books, historical photographs, or other published accounts.

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.a | Saray Bosch, "Trialéctica del Espacio", hand-drawn Map of the Memory and History of Poblenou, 2016. Map of Poblenou neighbourhood as a palimpsest of historical scenarios as an argument for resistance to the rapid transformation of the neighbourhood under the 22@ masterplan: the eighteenth-century citadel, now a park, coexists with the nineteenth-century industrial buildings, modernist twentieth-century architecture, and contemporary buildings; two coastlines are presented, natural and man-made; Cerdà's Eixample from the 1860s is contrasted with the pre-existing agrarian land preserved later in the non-orthogonal street layout. Source: courtesy of Saray Bosch.

.b | AC, WAC 2017, Safaretjos. "The commerce that we lost" is a video journey that explores the decline of commercial activity in a particular neighbourhood as a result of social and political abandonment. The video includes a contemporary journey through the area, with historical photographs. Available online: https://youtu.be/RDzb6BYxwJ8. Source: AC Archive.

Further reading:

Boyer, M. C. (1994) *The city of collective memory: its historical imagery and architectural entertainments*. Cambridge, MA: The MIT Press.

Hayden, D. (1995) *The Power Of Place: Urban Landscapes As Public History*. Cambridge, MA: The MIT Press.

THE UNCANNY

The cartography of the uncanny, closely linked to mapping of collective perception, is cartography “by absence”. It represents a specific feeling produced by the lack of the presence of others by erasing those parts of the map where there is a lack of activity. In contrast to maps indicating intensity of use, mapping the uncanny reveals underused and empty areas, which might be perceived as potentially dangerous by certain passers-by. The perception of the uncanny reveals the importance of understanding the city beyond its morphology: the same morphological space in two different neighbourhoods or social contexts may result in contrasting feelings in the perceiver.

This emptiness does not necessarily refer to the lack of buildings, but the lack of inhabited buildings at certain times of the day or linked to a certain use – for example, office or industrial districts at night. This approach follows Jane Jacobs’ (1961) argument for the crucial importance of having “eyes in the street”: people on the pavements and buildings facing the street that would result in reciprocal care and a feeling of being protected in the public street space, even in an unfamiliar context.

Being ultimately subjective, maps of the uncanny are bound to a particular demographic profile and its background. These places, which are perhaps travelled through very little in the case of peripheral areas, may not belong to collective memory.

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.a | Arquitectos de Cabecera, “Map of the Inhospitable”. WAC 2017, Safaretjos, Santa Coloma de Gramenet. Through the collecting of multiple subjective readings of the neighbourhood (right), selected according to the range of social profiles of the interviewees, this map shows little-used “empty areas”, perceived as uncanny. This map became instrumental in identifying areas of opportunity: it was used to discuss the reconversion of an abandoned warehouse placed on the blank space on the map that would connect two streets as an area of public encounter. Source: AC Archive.

.b | J. Segalas and M. Sans, “Participative map with a gender perspective”, as part of the framework of the “Architecture and Politics” course, Professors J. M. Montaner and Z. Muxí, 2021. “Maps of Fear”, representing La Bisbal de l’Empordà during the day and at night, elaborated with exploratory walks and interview methods. In the report, these maps are followed by photographs identifying specific places and interviews with users. Image courtesy of Z. Muxí.

Further reading:

Jacobs, J. (1961) *The Death and Life of Great American Cities*. New York: Vintage Books.

Paricio, A. (2019) *Manual d’Urbanisme de la Vida Quotidiana. Urbanisme amb Perspectiva de Gènere.* Barcelona: Ajuntament de Barcelona. Available at: www.bcnroc.ajuntament.barcelona.cat/jspui/handle/11703/112461.

C37

INVISIBLE BORDERS

Mapping invisible borders aims to reveal the hidden limits that are not evident as constructed elements, or are the result of a change in the urban fabric, but that nevertheless condition urban life. Intangible inner-city borders have their origin in urban inequalities or territorial dominance, and sometimes they become as influential on citizens' behaviour as physical barriers, especially in highly segregated cities. In some cases, these limits will be revealed when working with a Geographic Information System (GIS) or mapping tools with socio-economic data, or simply by looking at property prices.

Thus, an analysis of the invisible borders reveals what happens differently on both sides of the limit. This study could be developed with two approaches: one would be to understand the space, a specific street affected by the condition of being boundaried. Another would be to analyse spaces inside the neighbourhoods that the boundary divides. In both cases, the cartographic representation may include photographs and drawings of the morphology, activities and users in the area.

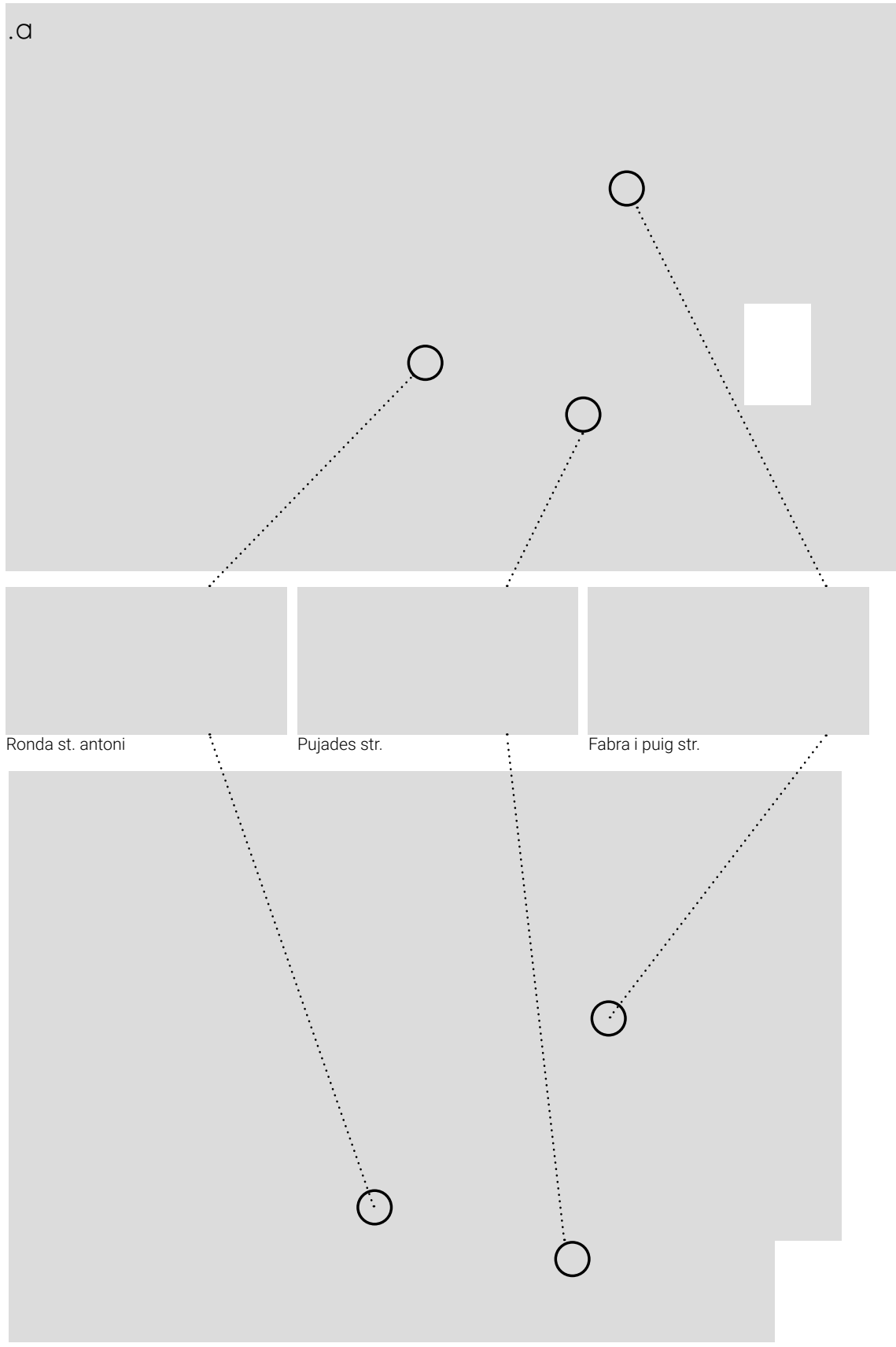
.a | Two examples of maps that reveal Barcelona's invisible borders. Photographs of the borders evidence that the different conditions that prevail on each side of the street cannot be perceived with the naked eye.

Top: Map identifying spaces where university graduates live in Barcelona. The graduate population is concentrated in two areas of the city: the high-income districts of the Upper Diagonal area and the Vila Olimpica district, created after the 1992 Olympic Games. While there is a gradual incline in the boundary of the former, in the latter there is a straight line between the two extremes of the social spectrum, attributable to the housing prices in a newly created area. Source: Rueda, S. (2002) *Barcelona, a Compact and Complex Mediterranean City*. Barcelona: Ayuntamiento de Barcelona; Agencia de Ecología Urbana. Available at: www.bcnecologia.net. Images: Google Earth.

Below: Barcelona Residential Vulnerability Map. Source: Garcia Almirall, P. (2017), "Estudi i Detecció a la Ciutat de Barcelona d'Àmbits de Vulnerabilitat Residencial", Report Ajuntament de Barcelona and UPC, p.37. Available at: www.upcommons.upc.edu. Images: Google Earth.

Further reading:

Awan, N. (2020) *Diasporic Agencies: Mapping The City Otherwise.* London: Routledge.



TEMPORALISED SPACE

Chronological maps express the multiplicities of uses, scenarios, and activities in an area at different times. They represent an approach based on the potential of appropriation, and stem from the transient condition of architecture. As Jeremy Till suggests, “time, and not space, should be seen as the primary context in which architecture is conceived”, moving from Sigfrid Giedion’s “spatialized time” towards “temporalised space” (Till 2013, p.95-96).

Thus, chronological cartography aims to overcome the limitations of drawing as a static media – as opposed to video, for example – by overlapping different moments in one space, for which different graphic representations might allow a clearer reading of the drawing. For example, it can be helpful to map the different intensities of activities in a street at different times of the day or when specific events, such as the weekly market, take place; or the different ways in which a room can be inhabited.

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.a | Sarah Wigglesworth’s design for a table for the Straw Bale House (2001). Showing rituals of eating in different moments, time is the parameter against which architectural order is measured. From left to right: “The Lay of the Table: an architectural ordering of place, status and function. A frozen moment of perfection”; centre: “The Meal: use begins to undermine the apparent stability of the (architectural) order. Traces of occupation in time. The recognition of life’s disorder”; right: “The Trace: the dirty tablecloth, witness of disorder. Between space and time. The palimpsest”. Source: Wigglesworth and Till, 1998.

.b | Mar Hernández Riquelme, “Estratos: Arqueología del Tiempo”, exhibition at the Museo Regional de Arte Moderno de Cartagena (MURAM), March to May 2016. The artist paints moments of other realities over photographs and walls. Source: estonoesarte.com.

Further reading:

Till, J. (2013). *Architecture Depends.* Cambridge, MA: The MIT Press.

Source: Wigglesworth, S. and Till, J. (guest eds.) (1998) 'The Everyday and Architecture' in *Architectural Design,* 134, p.34. London: John Wiley.

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CONTROL

“Silence is order, because silence is the absence of social interaction”.

Richard Sennett, *The Fall of Public Man*, 1977.

The cartography of control reveals the dynamics of segregation embodied in urban space and questions official agendas in “public space”. These maps analyse the role of design in policing urban behaviour while questioning the apparent neutrality of design, and aim to demonstrate class bias and undemocratic practices in public space.

While the production of urban space has been framed by forces of domination and resistance to domination (Lefebvre, 1974), institutional forms of control are increasing and becoming more explicit in terms of their methods. Hostile architecture disciplines and segregates; it is "explicitly coercive, violent and unjustly aimed at those towards the bottom of the socio-political spectrum, while other forms of social control and division remain largely invisible (normative) and therefore not the target of vociferous public outrage" (Petty, 2016, p.73). This approach was controversial in London a decade ago: "[spikes] revealed to the public the extent to which cities are constructed for the benefit of those who can adhere to dominant socio-cultural norms and politico-legal codes, often to the detriment of those who cannot" (Petty, 2016, p.77).

.a | Camera Map, identifying cameras in the area of the city under most surveillance and monitoring. The other image shows the red area marking the cameras’ blind spots. Worksop Elisava. Image courtesy of Josep Bohigas.

.b | "Anti-sites", by Survival Group (A. Elfort & G. Schaller); image from Ecosistema Urbano, 2014. The full map, in the form of a virtual album, is available at www.flickr.com/photos/7211263@N02/albums/72157602377494963.

.c | Sarah Ross, "Archsuits" (2005-2006), which allow comfort to be found in hostile architectures of Los Angeles. An architectural device becomes an antidote to design. www. insecurespaces.net/archisuits.html.

Further reading:

Ecosistema Urbano (2014) "La ciudad Hostil: Ángulos y Púas Contra los Ciudadanos". Available at: www.ecosistemaurbano.org.

Delgado, M. (2015) *El Espacio Público como Ideología*. Madrid: Catarata.

Foucault, M. and Sheridan, A. (2020 [1977]) *Discipline And Punish: The Birth Of The Prison.* London: Penguin Books.

Lefebvre, H. (2013 [1974]) *La Producción del Espacio.* Madrid: Capitán Swing.

Petty, J. (2016) 'The London spikes controversy: Homelessness, urban securitisation and the question of ‘hostile architecture". *International Journal for Crime, Justice and Social Democracy* 5(1), pp.67-81.

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C40

CONFLICT (I): MAPS

Conflict is as intrisic in cities as concrete. And yet, there is a remarkable lack of the represention of conflict in architectural media. To provide an alternative narrative to the official city maps, and to reveal social struggles, architects design maps of social conflict and contested locations, which evidence political awareness and social commitment. The following tools focus on conflict from three approaches: territory, events, and effects.

This first tool, conflict at a territorial scale, allows a geographic understanding of the conflict in terms of size, distribution and causes. It could be seen as parallel to the "site plan", a tool in urban planning: in this case what is underlined is not a specific project, but the events that have occurred there. Since any representation follows a narrative, these maps play a crucial role in making conflicts visible. With the title “On the city that needs to be included on the map: the architect as a mapper of conflicts”, Jorge Mario Jáuregui writes: “Informal areas are the sum of places and intersecting flows, in a context of fragmentary and contradictory emergence. Different spheres of public power overlap without coordination, unable to produce resubjectivizing effects. The construction of the map of each place becomes a task that combines the interpretation of signs with the meaning of risks and conflicts, questioning the very institutional notion of the city. Mapping mobile realities like that of the favelas require the strategic factors capable of enabling evolutions and interactions to be identified. This is why these maps resemble diagrams. (…) The map is understood as a register of ‘conflict cartography’: the place that enables its transformation. It is a static simulation of dynamic processes that implies a diagnosis that can read, process, represent and synthesize objective and subjective information at the same time.” Source: www.jauregui.arq.br/favelas_mapeador_conflictos.html, translated by the author.

.a | Jorge Mario Jáuregui, diagram of "reading of the structure of a place" relating to Complexo do Alemao, Rio de Janeiro. Source: Jáuregui, J. M. and Gutiérrez, M. A. (2013) *Estrategias de Articulación Urbana*. Bogotá: Ediciones de la U, pp.90-91.

.b | A territorial map for the location of bombings on the 8th of March 2015 on the Turkish-Syrian border. Source: Weizman, 2019, p.105.

.c | Todo por la Praxis. “Map of Conflict in Cañada Real”. Source: www.todoporlapraxis.es/006-cartografia-canada-real. "Plan Cañada" report available at: www.issuu.com/todoporlapraxis.

Further reading:

The Funambulist Journal: www.thefunambulist.net

Lambert, L. (2012) *Weaponized Architecture: the Impossibility of Innocence.* Barcelona: Dpr-barcelona.

Weizman, E. (2019) *Forensic Architecture: Violence at the Threshold of Detectability.* New York: Zone Books.

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CONFLICT (II): EVENTS

This kind of cartography aims to explain conflicts as specific events in the urban framework. With a forensic approach, the cartography of events reveals the facts and stakeholders involved in urban conflict, and specific key moments are presented through a storyboard.

The London-based group Forensic Architecture, led by Eyal Weizman, has specialised in using architectural tools to find spatial evidence of conflicts, from human rights violations to international crimes. Their work is presented as evidence in international courts and truth commissions [.a].

The aim of analysing instances of conflict is not only to offer a potential critique of illicit activities or behaviour, but also to contribute analytically to a discussion about the use of public space and the control exerted over it.

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.a | Forensic Architecture, The Architectural-Image-Complex, Rafah: Black Friday, 2015. Source: Forensic Architecture, 2017, p.96.

.b | Group "Por un Habitar Digno", Chile, 2019. Analysis of instances of conflict during the social unrest in October 2019 in Santiago de Chile. Actions are presented as scenes by the group "Por Un Habitar Digno", formed by architects and lawyers, that includes students and tutors from Universidad San Sebastián and Universidad Diego Portales, both in Santiago de Chile. The drawings register the violent confrontations between demonstrators and police and denounce human rights violations by the latter. The images are entitled: "Dragged after being hit by a bullet, Chacabuco, 20 October 2019". Author: Rocio Maldonado. Image courtesy of Por un Habitar Digno.

Further reading:

Lambert, L. (2012) *Weaponized Architecture: The Impossibility Of Innocence.* Barcelona: Dpr-barcelona

Forensic Architecture (2017) *Forensic Architecture: Hacia Una Estética Investigativa*. Barcelona: MACBA, Museu d'Art Contemporani de Barcelona.

Weizman, E. (2019) *Forensic Architecture: Violence at the Threshold of Detectability.* New York: Zone Books.

CONFLICT (III): EFFECTS

Complementary to the examples of cartography above, this tool aims to discuss conflict after it occurs and places an emphasis on its effects. This tool is particularly useful for silent conflicts: those that do not take place suddenly but over a longer period, which makes them less obvious and, more importantly, more difficult to oppose.

Typical examples are the displacement of the local population and gentrification after urban renewal projects, as a result of profit-driven urban conflict. When a place is "improved" it becomes more attractive to people with greater economic means, making it inaccessible to former residents. Gentrification is often slow and silent; those displaced are no longer there, therefore their voices cannot be heard. While maps and drawings representing urbanisation tend to focus on the state of the area before the intervention and the project to be built, there is a common lack of representation – and thus interest – in analysing the consequences of such urbanisation, from the physical changes to the beneficiaries.

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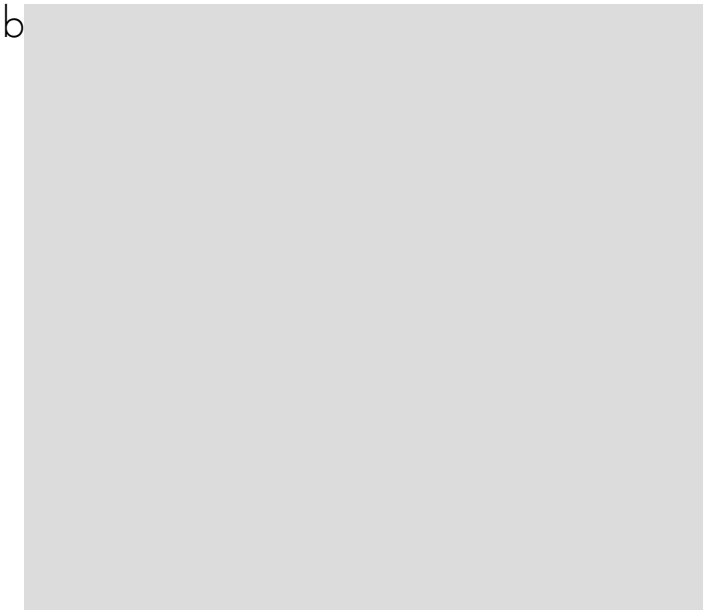


.a | "Heygate Estate Leaseholders' Displacement Map", London. Forced to sell their houses for the implementation of an urban renewal masterplan in Elephant and Castle, many leaseholders moved far away, breaking their bonds with local neighbours and mutual support networks, and potentially having an impact on daily commuting time. Source: London Tenants Federation *et al.* (2014) 'Staying Put: An anti-Gentrification Handbook for Council Estates in London'. Available at: www.justspace.org.uk/2014/06/19/staying-put-an-anti-gentrification-handbook-for-council-estates-in-london.

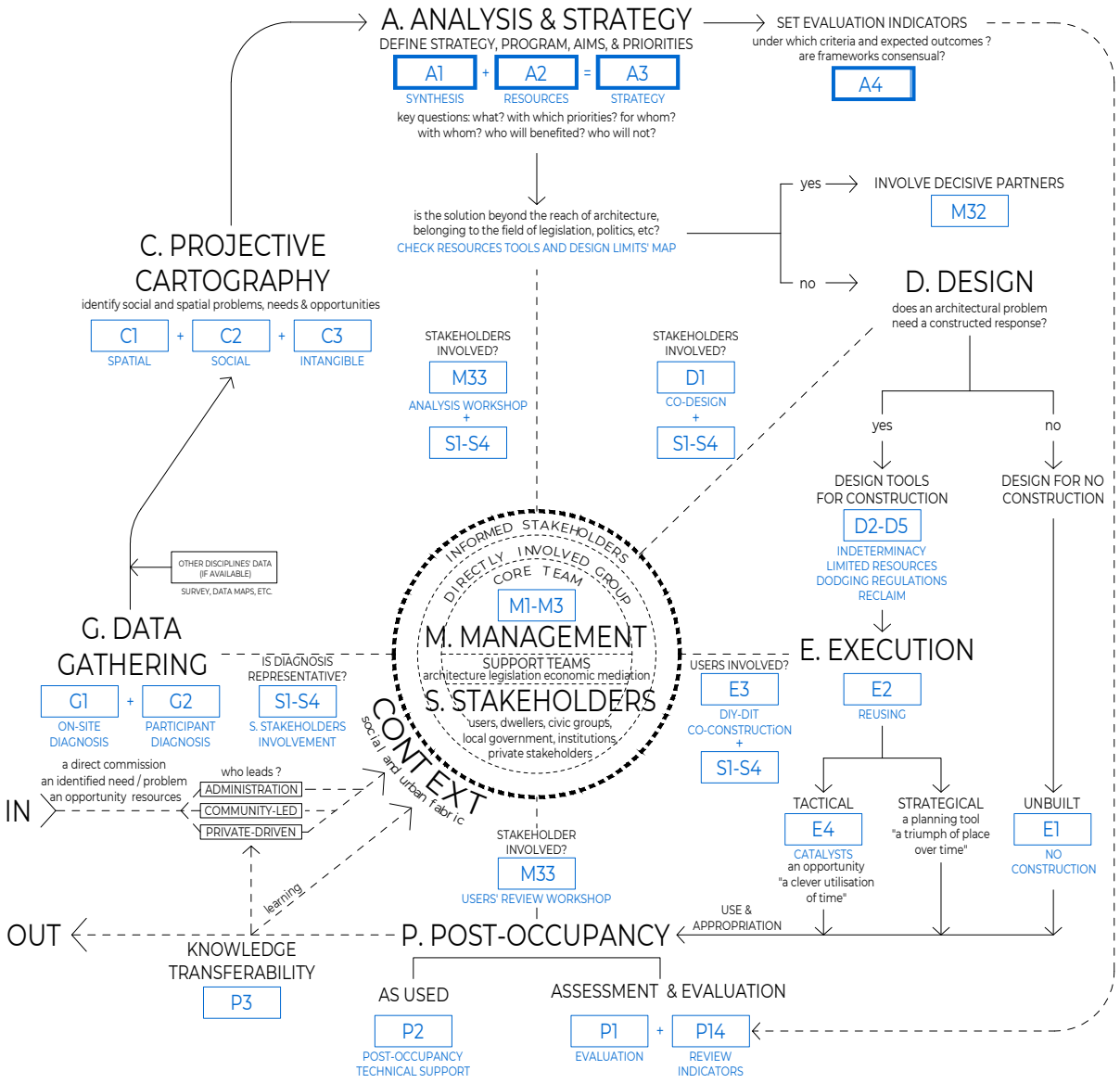
.b | Straddle3. "Victims of 22@". Companies that had to leave Poblenou's Can Ricart as a result of the implementation of the urban renewal 22@ masterplan, Barcelona. 22@ resulted in a deep shift in the economic structure of the area, shifting from a collection of workshops to large tech companies. Source: Col·lectiu Repensar Barcelona, Grup De Participació, 2008.

Further reading:

Col·lectiu Repensar Barcelona, Grup de Participació (2008) 'A Barcelona la Participació Canta!'. Available at: www.straddle3.net.

Vollmer, L. (2019) *Estrategias Contra La Gentrificación*. Iruñea-Pamplona: Katakrak.

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

A. ANALYSIS & STRATEGY

TOOLS INVENTORY

M. PROCESS MANAGEMENT
M1. PLANNING
- M11 Definition of phases
- M12 Anticipated timescale

M2. DECISION-MAKING
- M21 Map of stakeholder roles
- M22 Core group diagram
- M23 Decision-making scheme

M3. STAKEHOLDER ENGAGEMENT
- M31 Co-organise / develop with
- M32 Involving decisive partners
- M33 Discussion workshops (I-II)

S. STAKEHOLDERS
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- S13 Sociogram
- S14 Powergram

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- S22 Indirect contact
- S23 Make it fun
- S24 Food as social ritual
- S25 Provide a platform for expression

S3. REACHING BY PROVOCATION
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- S33 Confrontation

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- S43 Digital platforms
- S44 Billboard hacking
- S45 Public exhibition
- S46 Interactive map
- S47 Video / documentary

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- G23 Interview / survey

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- C24 Users' needs (II): collective
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- C27 Diagrams of relational activities

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- C32 Collective perception
- C33 Proximity or isolation
- C34 Movement
- C35 Memory
- C36 The uncanny
- C37 Invisible borders
- C38 Temporalised space
- C39 Control
- C40 Conflict (I): maps
- C41 Conflict (II): events
- C42 Conflict (III): effects

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- A13 Design limits' map

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- A23 Available resources (II): "harvest map"

A3. STRATEGY
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- A43 Typological indicators
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- D12 Proposing an alternative

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- D22 Enabling: user manipulation
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- D32 Leveraging material scarcity
- D33 Designing for low-risk construction
- D34 Split large interventions
- D35 Nomadic facilities

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- D52 Filling in the gap
- D53 Regaining infrastructure

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- E12 Do not do (II): connect
- E13 Reprogramming time in space
- E14 Relocation
- E15 Undoing

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- E22 Recycling & reclaiming components
- E23 Dismantling & reassembling buildings
- E24 Parasite

E3. DIY-DIT CO-CONSTRUCTION
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- E33 User to complete
- E34 User to expand
- E35 Collective assisted DIY-DIT

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- E43 Do it anyway

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P2. POST-OCCUPANCY TECHNICAL SUPPORT
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- P31 Manuals & toolkits (I-III)
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body of practice

COLLABORATIVE ARCHITECTURE BARCELONA: THE ARCHITECT AS ENABLER

Raül P. Avilla-Royo

COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

as part of

COLLABORATIVE ARCHITECTURE BARCELONA:
THE ARCHITECT AS ENABLER

PhD By Practice | Royal College of Art | School of Architecture | London | 2018-2022
Supervisors: Dr.-Ing. Sam Jacoby (SoA-RCA) & Ibon Bilbao (ETSAB-UPC)

Raül P. Avilla-Royo

A. ANALYSIS & STRATEGY

The Analysis & Strategy phase involves the critical evaluation of the data gathered to define the overall strategy and guidelines. This concerns the definition of the project's aims, interventions, beneficiaries, means, phasing, and the stakeholders involved (and their roles and agency in decision-making) in each of the following phases, including, among others, public procurement agencies, local government, public or private institutions, self-organised community groups, private stakeholders, etc.

While traditionally the definition of project strategy has relied on procurement agencies and institutions (for example, public facilities tend to follow political agendas), community-led self-managed projects such as Can Batlló are questioning the existing protocols of decision-making. These issues have been discussed in more detail in the Introductory essay in the Process Management chapter. The tools discussed in this chapter, presented in four groups, aim to become instrumental to conversations about analysis and strategy definition.

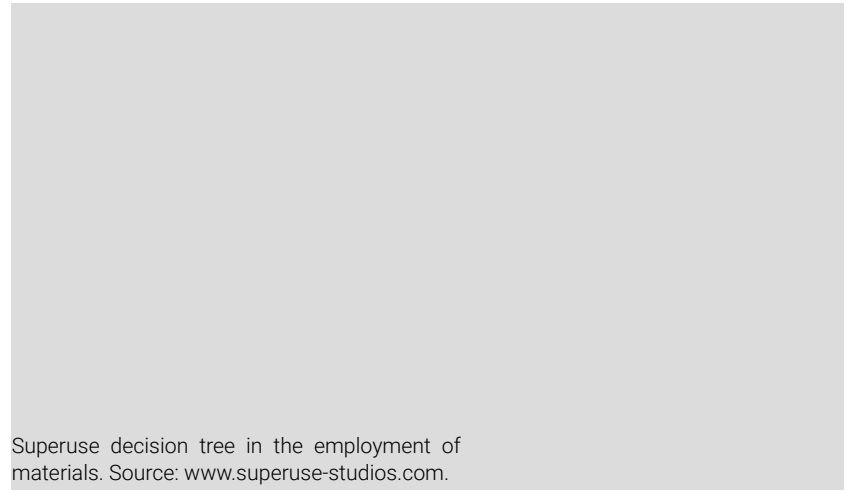
First, there are tools whose goal is to enable a SYNTHESIS of the situation to organise and clarify relevant information at any given moment to facilitate discussions with large amounts of data. As the author discussed elsewhere (Bilbao and Avilla-Royo, 2019), the formulation of the appropriate question to ask in relation to architectural problems becomes fundamental for the design outcome; often poor urban and architectural interventions are the result of an inadequate approach to the problem and context rather than bad design.

Given the multidimensional approach to collaborative architecture, the wide variety of inputs that need to be taken into consideration and the complexity of the data gathered, a list of programmatic requirements or a description of the brief can become

limiting as a framework for design. The collaborative architectural approach entails a fundamentally different design approach and project thinking from that required to design a response to a standard brief, whether this is public or private, in terms of both method and outcomes. To enable clearer and more comprehensive strategic thinking, the organisation of information graphically through diagrams and drawings is suggested, an approach that advances conceptual thinking and requires the ability to synthesise information. Three complementary tools are discussed in this section: the (yellow) Manifesto, the Mind Map and the Design Limits' Map. They can be elaborated by technical teams, or can form activities as part of group workshops. Ideally, the documents that emerge from the use of these tools will be revisited and reevaluated regularly alongside the evolution of the project.

Second, RESOURCES: tools to study the financial and material feasibility of the project, since quite often well-intentioned proposals, if not grounded in concrete possibilities, simply become naïve ideas. In particular, after the 2008 property bubble burst, the scarcity of resources has brought the need to design "with whatever available" as an entry point to the project, thus turning problems into design opportunities through distinctive disciplinary thinking. In some cases, the collaborative dimension of architecture may also include co-financial strategies. In addition, strategies that reuse and recycle materials have gained in importance for both environmental awareness and cost-saving strategies. Reuse and recycle are two distinctive actions: while recycling involves wasted of energy in terms of material transformation and a reshaping of the material, reusing only involves dismantling, storing and reassembling.

Synthesis diagrams for strategy definition in Fent Estudi, Fent Ciutat, 2013. Left: diagram trees of resources (roots) and aims (branches). Right: diagram relating concepts "we can control" (left column) with we can influence (right) organised around topics (in rows) Source: www.fentestudi.com.



Superuse decision tree in the employment of materials. Source: www.superuse-studios.com.

STRATEGY tools include those that help to clarify objectives, goals and actions, and the analysis of the viability and consequences of the project. Thus, key evaluative questions include: what will be done? with whom? with what priorities? who will benefit? who will not? At a higher level, it includes a consideration of the limits of design and whether the necessary tools are easily available (in a multidisciplinary approach) or not (and thus depend on legislation, political agendas, etc.) and whether an architectural problem needs a built response. Sometimes, addressing urban problems in an unusual manner can prove much more efficient than targeting the problem head-on; as Cedric Price beautifully discussed in Architectural Association lecture series in 1975, architecture sometimes should set its target by "aiming to miss".

Finally, and of paramount importance, the definition of EVALUATION INDICATORS plays a crucial role in determining which parameters the design will have to respond to, and under which conditions an intervention will be acknowledged as successful. Setting qualitative and quantitative indicators at the beginning of the process enables the identification of determining parameters in an instrumental discussion between different stakeholders, where achieving agreement on indicators translates into achieving consensus regarding a project's aims and objectives. In addition, indicators enable the project guidelines to remain constant through procurement and possible deviations to be identified, as well as a final assessment once the intervention has taken place. In this regard, the conversation about who sits at the table to decide these indicators becomes crucial in relation to project management and urban governance. A clear example of divergent readings of a project are urban transformations that result in (sometimes planned) processes of gentrification, where the social impact of the intervention is overlooked in the interests of the morphological transformation and the economic impact for property-owners.

Bibliography

Bilbao, I. and Avilla-Royo, R. (2019) 'The Precise Question'. *BAc (Boletín Académico. Revista de Investigación de Arquitectura Contemporánea),* 9, pp.147–152.

THE (YELLOW) MANIFESTO

A Manifesto is a straightforward informative document that synthesises in a few lines the urban issues involved and the strategies that are planned to address them. The creation of this Manifesto requires significant ability to synthesise information in terms of identifying problems, opportunities and needs, and it can be represented simply as a list, or as a diagram relating different concepts and prioritising them.

To highlight concepts, the Manifesto can be organised around categories in which straightforward claims are presented. This was the case with "The Yellow Manifesto", an avant-garde artists' manifesto signed in 1928 by Salvador Dalí, Lluís Montanyà and Sebastià Gasch, which has inspired this tool.

More recently, Arquitectos de Cabecera has employed the manifesto as a stepping stone between analysis and action, organised in three intertwined topics where the diagnosis is followed by the aims and by strategies that have been planned to achieve them: "we identify", which summarises the main problems and diagnoses the challenges; "we aim", identifying the agreed goals and objectives; and "we propose", announcing the strategies for achieving the project.

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.a | Arquitectos de Cabecera, Pei.Lab Javeriana de Bogotá and Zuloark, Carta de Bocachica, Colombia, 2016. Bocachica village, near Cartagena de Indias, saw its economy drastically reduced from fishing to mere subsistence due to river water pollution. Despite the fact that the village lacked basic services, the area was being developed for tourist purposes. Named "la Carta de Bocachica" (the Charter of Bocachica), the manifesto became a roadmap agreed by institutions and the community to foster the socially, politically and economically sustainable development of the region. Source: AC Archive.

.b | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, Manifesto for Can 60 casa-fàbrica (house-factory), 2015, which was under threat of eviction – destroying the social impact of the associations that Can 60 hosted – building demolition – producing a loss in terms of civic heritage – and property development: potentially intensifying the gentrification of the area. Source: AC Archive.

.c | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, Manifesto for Safaretjos, Santa Coloma de Gramenet, 2017. Source: AC Archive.

Further reading:

Pichler, M. (2019) *Publishing Manifestos: An International Anthology From Artists And Writers.* Cambridge, MA: The MIT Press.

Salvador Dalí, Lluís Montanyà and Sebastià Gasch (March 1928) "El Manifest Groc". Available at: www.enciclopedia.cat.

MIND MAP

Mind maps are maps that synthesise information and mix drawings and diagrams. This hybrid representation technique allows diagnosis to be connected with strategies, stakeholders with urban situations, and key concepts with circumstances, both existing and aimed for. The relational basis of mind maps enables a clear conceptual understanding and becomes a useful projective and strategic tool.

Mind Maps have been widely analysed as a teaching and thinking method. They allow a deep conceptual understanding, a clear and hierarchical organisation of data and more effective teaching through the modification of existing knowledge structures (Novak, 1990). They evidence a deep understanding of how different aspects of the design process are interconnected in complex situations (Sims-Knight *et al.*, 2004). Applied to the discipline of architecture, Mind Maps incorporate a strong element of architectural drawings and tools, aiming to fill the gap between what words and drawings fail to explain as separate tools.

Like any other map, Mind Maps are partial and biased, and what is included is as relevant as what is left out.

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.a | Arquitectos de Cabecera Studio (P. Royo, J. R. Pou, & A. Planas), TTAC 2017, Santa Coloma de Gramenet. Source: AC Archive.

.b | Arquitectos de Cabecera Studio (C. Berenguer, I. Urbisdondo and J. Bakaikoa), TTAC 2017, Santa Coloma de Gramenet. Source: AC Archive.

Further reading:

Rodríguez, J. (2014) 'El Mapa Del Proceso Culinario'. Available at: www.elpais.com, published 18 February 2014.

Novak, J. (1990) 'Concept Mapping: A Useful Tool for Science Education'. *Journal of Research in Science Teaching,* 27(10), pp.937-949.

DESIGN LIMITS' MAP

A Design Limits' Map is a drawing or diagram that analyses the necessary conditions to produce a specific predictable outcome, such as the implications of the involvement of certain stakeholders, resources that can be mobilised, and strategies that can be used. This diagram contextualises design possibilities within the broader context of political or administrative decisions, along with other forms of stakeholder agency. They also allow the evaluation of whether specific impacts can be achieved, given the possibilities of influence and the control of certain parameters by the project team. It can also be used as a framework to discuss priorities against a project's feasibility.

A Design Limits' Map evidences the designers' awareness of how their own disciplinary tools are limited by looking at ways to overcome them. By doing so, they enable discussion around the suitability of enlarging technical teams by including practitioners from other disciplines, the suitability of a particular strategy, or the need to involve new partners to guarantee the feasibility of a project.

.a | Fent Estudi, Fent Ciutat, 2013. Diagram trees of resources (roots) and aims (branches). Source: www.fentestudi.com.

.b | Fent Estudi, Fent Ciutat, 2013. Diagram relating concepts that "we can control" (left column) with concepts that "we can influence" (right) organised around topics (in rows) such as physical space, education, unemployment, networks, commerce, local government. Source: www.fentestudi.com.

.c | Tool for prioritising activities or actions concerning possibilities. It could be complemented with an activity where participants vote for their preferences in order of priority. Source: Wates, N. and Knevitt, C. (1987) *Community Architecture*. London: Penguin, p.104.

.d | URBACT Imagina Badia, action plan and transformation timeline for Badia del Vallès, where each strategy, grouped by topic, is defined by its time commitment, action type (legal framework, construction, policies) and the necessary stakeholders involved (associations, institutions, universities, governmental agencies). Source: URBACT, 2018, pp. 44-45.

Further reading:

Tufte, E. R. (1997) *Visual Explanations: Images and Quantities, Evidence and Narrative*. Cheshire: Graphics Press.

URBACT (2018) *Imagina Badia: Strategy for the Transformation of the Fringe in Badia del Vallès (AMB)*. Report available at: www.urbact.eu.

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FINANCIAL ANALYSIS & CO-FINANCE STRATEGIES

Financial analysis is crucial to guarantee the feasibility of the project and to avoid generating expectations for users that will not be fulfilled. It is developed by economics experts in technical teams; however, since architects are part of the multidisciplinary teams discussing the feasibility of a project, certain notions might be necessary. In smaller community-led projects with no financial expertise on board, architects must sometimes develop their own financial analysis, and seek funding themselves.

In circumstances where there is a lack of public funding (derived from the local government agenda) or private investment (aiming to make a profit), many self-managed initiatives develop co-financial strategies. This may include loans from ethical banks, grants, or donations. The latter can be either economic, and include co-funding campaigns, or material: the donation of materials (waste materials from construction, pieces with minor imperfections not suitable for the market, etc). In addition, voluntary work at the co-construction stages can be considered, bearing in mind the specific context of non-professional construction skills (see the DIY/DIT Co-construction section in the Execution chapter).

An interesting source of income is public subsidies, if available. For example, the Municipality of Barcelona issues an annual open call for associations to develop projects with social and cultural impact that are in accord with their political agenda. However, despite there are helpful for specific projects, they do not guarantee long-term stability for community-led projects model.

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.a | Lacol Architects, La Borda cooperative housing, 2014-2018. Financial analysis and strategy. Top left: the socioeconomic accounts of a specific household, including its income, current access to housing, forced and voluntary mobility, and demand for energy. This information allowed the financial team to create an overview of the whole community (top right), and to identify the differences between households. The analysis provided key information to develop a financial strategy for the building development (below), including, from left to right, self-funding, loans and titles, and grants. Source: courtesy of Lacol architects.

.b | Municipality of Barcelona, call for projects by associations with social impact subsidies, 2022. Source: screenshot from www.tjussana.cat.

.c | MUT, Escola School, Can Batlló, 2021. The transformation of the school space was partially financed by a co-financing online campaign through the website goteo.org. In addition, some tools and materials were donated by a construction company. Source: screenshot from www.goteo.org.

Further reading:

Carrillo, N. and Peiró i Compains, I. (2018) *Finances Ètiques i Solidàries*. Barcelona: Pol·len Edicions.

URBACT Resourcing online tools available at: www.urbact.eu/tool-category/resourcing.

AVAILABLE RESOURCES (I): INVENTORY

A list of resources complements the financial analysis in discussing the economic feasibility of a project and adapting design decisions to existing possibilities. This is particularly useful in a context of limited means, where awareness of available resources enables a clear organisation of the project, from small actions to large projects that are developed through “whatever is available” (see also E2. Reuse section in Execution chapter).

The inventory lists and describes the available resources and their features, conditions, and potential application. The quantitative list can be accompanied by qualitative information. In terms of material resources and tools, it describes what they are and where can be found. For instance, if they are borrowed, it points out where to source them, for how long will they be available, etc. The resources Inventory might be a complementary tool to the “Harvest map” tool [.a]. If materials have not yet been stored and organised, the “Harvest map“ indicates where they can be found.

The inventory also enables the organisation of individual tasks, listing who has which skills or experience, their availability to collaborate, their available transport resources, and the participants' preferences in relation to taking part in certain construction activities or being part of different work groups. Some skills that are underestimated in conventional architecture become crucial when addressing collaborative projects: for example, knowing who is a good “resource finder”, convincing, explaining, editing, who feels comfortable with organisational duties, speaking in public, etc.

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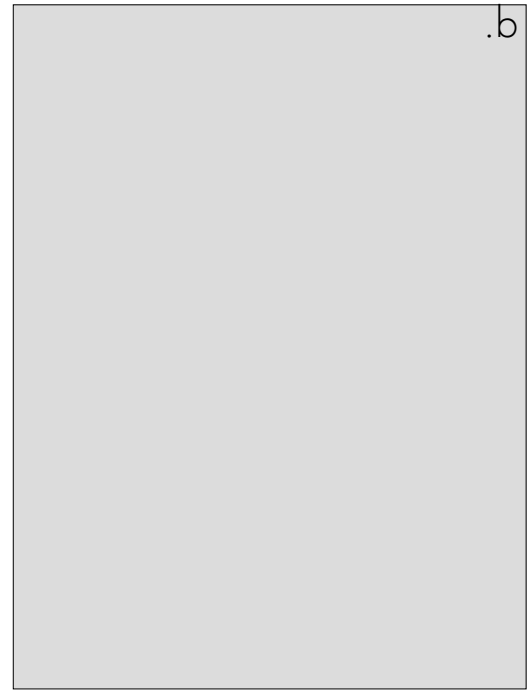

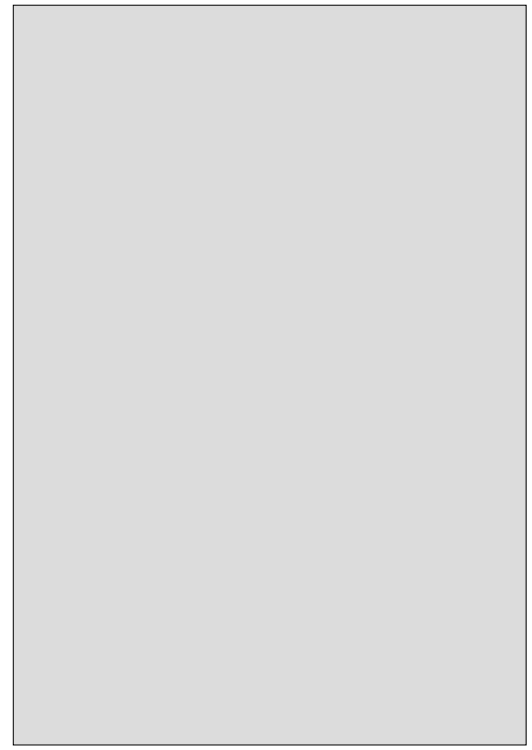

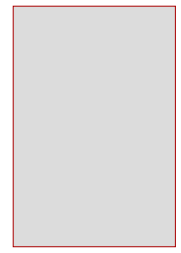

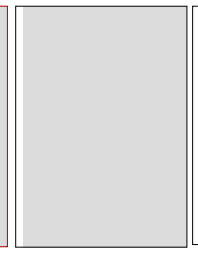

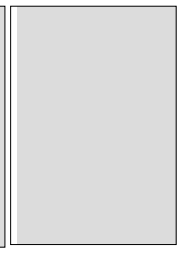

.a | Arquitectos de Cabecera, Fem Festa Fem Safarejos, Santa Coloma de Gramenet, 2018. Material and personal inventory for community action. The inventory was classified into group-owned resources, inventory of material available from the municipality’s area services (top), human resources available in the teams (communication, participation, design and execution, administration and coordination, finance, masterplan and teachers) (middle), and material borrowed from participants (below). Source: AC Archive.

.b | MUT, Can Batlló "Harvest map" of waste materials and resources. As part of the of Arcàdia school refurbishment project in the same industrial complex, MUT locates photographs and systematically classifies all the available materials in abandoned warehouses, shifting their understanding from waste materials to resources. An Excel file becomes a useful tool to organise all this information. Source: instagram MUT.etsav.

AVAILABLE RESOURCES (II): "HARVEST MAP"

A “Harvest map” enables the locating of certain materials and resources that are available. They should have been located in an earlier phase, maybe by a specific work team, or may be identified from previous projects. “Harvest maps“ are an excellent opportunity for cooperation between different community-led initiatives.

“Harvest maps“ prioritise the reuse of existing materials over the use of new or recycled materials, both of which require larger quantities of energy consumption and, in the case of new materials, the extraction of primary resources.

The reuse of construction materials requires careful management in terms of dismantling, storage, transport, and assembly, and might be difficult in relation to certain materials, such as structural elements, due to a lack of guarantees in terms of legislation. This is not the case for cladding materials (see also the Reuse section in the Execution chapter).

Components from the careful demolition of buildings and waste from construction sites or abandoned buildings are excellent places to harvest materials from. In recent years, online platforms have been encouraging the reuse of construction materials due to the high negative impact of construction on the environment. In addition, architectural practices are increasingly recycling components; Office Superuse in the Netherlands considers “harvesting” and “collecting materials” as project design stages.

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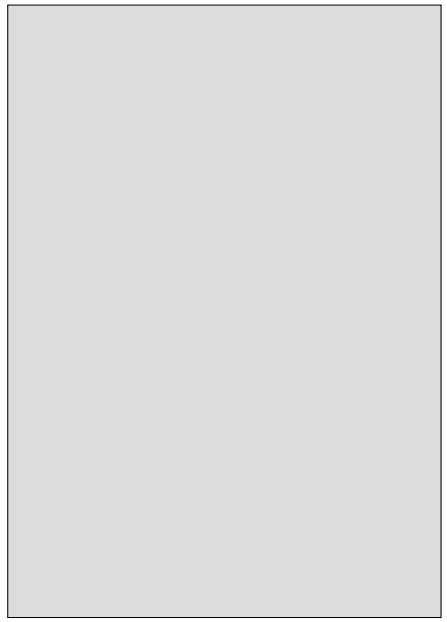

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.a | APTM Experimental Housing Exhibition, within Eme3 architecture festival, Barcelona, 2005. Harvesting within a workshop: a file to be filled by participants in the building deconstruction workshop indicating personal data, tools available to lend, preferences for construction tasks, and time availability for participation. Source: courtesy of Josep Bohigas.

.b | MUT, Can Batlló "Harvest map" of residues and resources in an empty warehouse in Can Batlló; an abandoned building becomes an excellent place for materias harvesting. Source: instagram MUT.etsav.

.b | Straddle3 and Sergi Arenas, La Santa Urban Sports Park, Santa Coloma de Gramenet, 2016. Harvest map and inventory. Source: courtesy of Straddle3.

Further reading:

Hinte, E. V., Peeren, C. and Jongert, J. (2007) *Superuse: Constructing New Architecture By Shortcutting Material Flows*. Rotterdam: 010 Publishers.

Reuse materials platforms:

www.grrr.tools (Spain)

www.rotordc.com (Brussels)

www.oogstkaart.nl (Netherlands)

STRATEGIC ACTION PLAN

This tool becomes a crucial step in connecting the diagnostic phases with those of design and execution. The Strategic Action Plan diagram draws connections between guidelines, aims, actions, and means. Given the relational basis of the diagram, it becomes a useful tool to discuss the different interrelated features which are common to all phases of the project and that need to be justified by themselves as well as within the larger context, from discussions on general strategy, the definition of goals, the clarification of projects, and their feasibility. In a managerial framework, it enables direct connections to be made between decisions taken by different stakeholders.

This diagram might take many different forms depending on the goals and reach of the project, but it invariably allows information to be organised strategically. The general guidelines, cross-referenced with details of the different proposals included in the overall strategy, enable the different parts to be discussed without forgetting the general scope and context. This diagram might include as many parameters as are needed: time, resources, stakeholders, impact, priorities, etc.

The action plan diagram requires significant strategic thinking and skills of synthesising information. Since it may include too much information, it might be useful to put more detailed information on additional pages. Decision-makers need to bear in mind that the process may not be linear: thus its design should be open enough to allow adaptations or potential changes of scenario.

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.a | URBACT Imagina Badia. The action plan and renovation timeline for Badia del Vallès (Urbact) is organised in columns that allow connections to be made easily. 1- Guidelines: as they emerged from a diagnosis with participative methods and organised by themes. Colour-coded lines emerge from this first column and allow the tracking of guidelines through the aims, interventions and means. 2- Objectives and intended results, also organised by topic and related to indicators (blue lettering). 3- Specific strategies and actions needed to achieve those objectives. Each is defined by its timescale, type of action (legal framework, construction, policies) and the stakeholders involved (associations, institutions, universities, local government), and further analysed in the report. This column tackles strategic limits by analysing the necessary means (see Design Limits' Map). Source: URBACT (2018) *Imagina Badia: Strategy for the transformation of the fringe in Badia del Vallès (AMB)*, pp.44-45. Report available at: www.urbact.eu.

Further reading:

URBACT Integration Assessment Grid tool: www.urbact.eu/integration-assessment-grid.

Complementary tools:

URBACT 4 C's Review tool (Coherence, Completeness, Concerns and Continuation): www.urbact.eu/four-cs.

URBACT Coherence Checklist tool: www.urbact.eu/coherence-checklist.

ACTIONS & TOOLS BREAKDOWN

Tools Breakdown is a planning tool that specifies which tools should be employed in each phase. It is framed by the general Action Plan, which specifies goals and outcomes, stakeholders and expected timeline. Tools Breakdown enables discussion of the means of achieving the desired outcomes of each phase, as well as anticipating who will be included in these activities and what materials will be needed, for example in the case of organising workshops for decision-making or analysis, or construction activities. Actions and Tools Breakdown should be developed with a consideration of the definition phases and the expected timeline.

Actions and Tools Breakdown can be represented as a multidimensional diagram that relates the overall project aims to specific stages, defining each of their actions, the stakeholders involved, and the requirements to be fulfilled. It can be employed at the beginning of the project, when setting the overall strategy, or after diagnosis phase, unfolding strategies discussed in the Analysis & Strategy phase.

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.a | URBACT Imagina Badia: Detailed breakdown, on different pages, of the different actions proposed in the project. Each page includes a description of the action, the stakeholders involved, the financial requirements, the risk evaluation and the timetable. In addition, each action has details about the different activities developed, including outputs, problems and related activities. Source: URBACT, 2018. Report available at: www.urbact.eu.

.b | Arquitectos de Cabecera Studio (M.Lopez), Seminar TTAC 2021-22. Diagram of the process by which the specific tools in this toolbox, and some that have been proposed by the author, are specified at different stages of the process (vertical axis) and in relation to the different areas of intervention in the project (three central columns). Source: AC Archive.

Further reading:

URBACT (2018) *Imagina Badia: Strategy for the Transformation of the Fringe in Badia del Vallès (AMB).* Available at: www.badiadelvalles.cat; report available at www.urbact.eu.

Complementary tools:

URBACT Action table tool: www.urbact.eu/action-table.

URBACT Refining an action tool: www.urbact.eu/refining-action.

VIABILITY MAP

A Viability map allows the discussion of the feasibility of the project according to the prevailing legal, economic, social, regulatory and urban context, whether this applies immediately or in the future, linked to potential changes. This tool complements the Design Limits' Map discussed in this chapter.

The multidisciplinary design of the Viability Strategy may include the details of the legal framework and regulations, ownership schemes, the stakeholders that are required to be involved and their motivations, the urban and architectural context, the required resources… and further maintenance and management in the post-occupancy stage. Viability maps also determine the conditions without which the project cannot take place, and allow the evaluation of alternatives regarding the external conditions.

Sometimes, when it entails the proposal of new models that have not existed previously, the management strategy can become a project in itself. ATRI (Tactical Accommodations for Inclusive Repopulation, see www.atri.city) is an example of this [.a]. A multidisciplinary team that included architects, lawyers, economists and activists devised a strategy that instrumentalised housing as a tool for urban improvement, aiming for an impact at every point of the procurement process: from the access to land (refilling urban voids), public tenure competitions (re-distributing economic impact), design and construction (based on Habraken's "supports" theory) and self-management.

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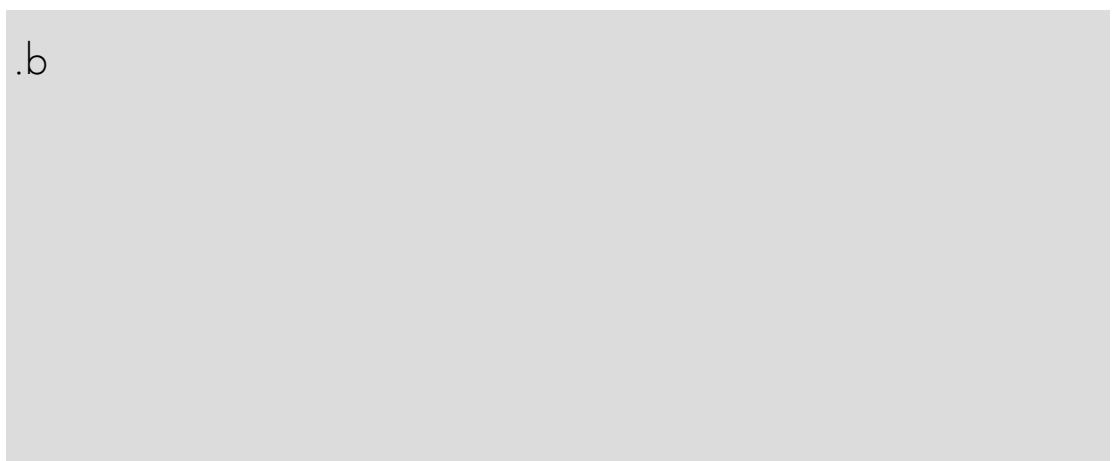

.a | ATRI project, "management: how to make an #atri?", organised by steps and flowcharts. 1: detection of voids; 2: usefulness of voids; 3: obtaining the use of voids; 4: filling of voids. Source: www.straddle3.net.

.b | Viability strategy tool concerning different scenarios and conditions that pertain. This could also include the interdependency of different steps, for example, if municipal permission is granted, financial support is achieved, etc. Source: author.

Further reading:

URBACT iPESTLE tool to analyse the seven conditioning parameters: Information, Political, Economic, Social, Technological, Legal and Environmental. Available at: www.urbact.eu/ipestle.

www.atri.city

CONSEQUENCES MAP

A Consequences Map enables the discussion of the potential outcome of a certain tactical action or long-term strategy. It should include parameters such as who is affected by the design and the positive, neutral or negative impact it might have. These parameters should include the dimensions of time and resources and can be reviewed over time as the project moves forward.

A Consequences Map operates as a mirror of the synthesis involved in the Mind Map: while the latter becomes a summary concluding the analysis of an existing situation, the Consequences Map aims to anticipate what will happen to the context after the disruption of a project, whether this involves minor changes or structural outcomes. Outcomes may include both morphological parameters and intangible social ones, and the impacts on the performance of the space.

When representing the potential outcomes of projects, architects tend to make naïve promises in the form of idealised rendered scenes filled with activities performed by (typically white) happy people. The Consequences Map can be used as a guiding tool for the anticipated performance of the space when it is developed, on the basis of existing projects and by analysing their verified outcomes (see Data Gathering chapter). The Consequences Map should be discussed in relation to contrasting comparable projects, despite their inevitable differences.

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PROJECT OR ACTIVITY	AREA	INVOLVED STAKE-HOLDERS	SHORT-TERM IMPACT		SHORT-TERM IMPACT	
			Positive	Negative	Positive	Negative
activity 1						
activity 2						
activity 3'						

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.a | Architecture00, Impact Hub Kings Cross, London, 2005. Diagram describing spatial tactics, organised in a vertical axis from "physical" to "social", with a diverse range of outcomes, from spatial and emotional to relational. Source: www.spatialagency.net. More info: www.architecture00.net.

.b | Table analysing the outcomes and consequences of specific projects or actions. It could be developed in more detail, breaking down the kind of impact involved (social, urban, etc) and establishing monitoring indicators. Source: author.

.c | ETSAV and Arqbag, Espai Pere Grau roof cover, within Pas a Pas projects. Diagram explaining the work required and its impact in terms of thermal comfort, beneficiaries, cost, difficulty of execution, time involved, multifunctionality, and management in three different stages of the project. Source: www.arqbag.coop.

Further reading:

URBACT From Actions To Impacts Game: www.urbact.eu/actions-impacts-game.

TECHNICAL INDICATORS

Setting evaluation indicators at the beginning of the process enables the identification of the conditions within which a project will be acknowledged as successful. Setting indicators is part of a crucial discussion that includes strategic goals and aims. Who sets the indicators becomes an equally paramount question in urban governance. Indicators can be grouped into three major categories: technical, perceptual and typological. Ideally, indicators should be set in a consensual basis at the beginning of the process and reviewed regularly to check the evolution of the project, and at the end to measure the specific outcomes.

Technical Indicators can be defined according to any parameter that the project aims to improve or that is considered relevant, as long as it can be measured objectively with objective and quantifiable data – for example, air quality, areas of green space, noise pollution, access to transport, etc. An evaluation will ideally consider several different types of indicators, which can be represented in multiple forms, from text descriptions to maps or diagrams. Indicators should be followed throughout the process and reviewed at the end to assess the process and the outcome. Territorial authorities typically define their own set of indicators, grouped in categories; a look at these might serve as a reference to define bespoke indicators. However, it needs to be borne in mind that indicators should refer to measurable parameters with available instruments, and the results should be compared with ideal parameters as references, whether these are standards or recommendations, or other urban situations.

.a | Agència d'Ecologia Urbana de Barcelona, Sant Feliu de Llobregat (2019). Analysis through urban indicators that can be used before and after renovation. Source: Agència d'Ecologia Urbana, 2021, p.84.

.b | Paisaje Transversal, park JH in Torrelodones, 2015. Evaluation of space in relation to comfort (green = good, yellow = deteriorated, red = very deteriorated). From left to right: thermal and acoustic comfort, appropriateness and quality of street furniture, sustainability of the system's metabolism, and urban brand identity. Source: paisajetransversal.com.

Further reading:

Agència d'Ecologia Urbana de Barcelona (2021) *BCN Ecologia: 20 anys de l'Agència d'Ecologia Urbana de Barcelona*. Barcelona: Ajuntament de Barcelona, p.84.

UN-Habitat, 'Five Principles for Urban Planning'. Available at: www.unhabitat.org/a-new-strategy-of-sustainable-neighbourhood-planning-five-principles.

UN-Habitat, City-Scale Plan Assessement tool, available at: www.drive.google.com/file/d/1k3o-owOl7kREa6qrfK4VbQEO5VnHR1Sr/view.

URBACT Performance in Policy-Making tool: www.urbact.eu/performance-policy-making.

URBACT (2019) *Setting Up Efficient Indicators and Monitoring Systems To Measure Performance*. Available at: www.urbact.eu/measuring-performance-implementation.

See Process Reports tool in the Post-occupancy chapter.

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PERCEPTUAL INDICATORS

(A general introduction about Indicators can be found in the previous tool)

The second group of indicators focuses on the collective subjective experience of users in relation to the qualities that are chosen to be evaluated. Perceptual Indicators recognise that those who will use the space have a say in its evaluation, which does not rely solely on objective parameters or professional opinion.

Data for Perceptual Indicators can be extracted from questionnaires, either physical or online, or through Discussion Workshops (see the tool in the Process Management chapter).

The particular parameters can either be defined by designers or can be part of a collective discussion with stakeholders, which already entails a definition of user priorities.

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.a | Christian Riettelmeyer, perceptual evaluation: "Semantic differential evaluation of two contrasting school buildings". Note that there is a symmetrical tendency: both buildings are read as contrasting in terms of their qualities: the building that is seen as “liberating” is also considered light and cheerful, while the “oppressive” one is regarded as heavy and gloomy, and so on. This tool could easily be transformed into a co-design workshop activity. Source: Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects*. Berlin: Jovis, p.24.

.b | Raons Públiques, co-creation process with children in two parks in Barcelona. "Resultats del procés de cocreació amb infants de dos parcs de Barcelona”. Evaluation of areas to improve as part of a co-creation process with children, from data emerging from a workshop. Users’ perception of what "Needs to be improved" and what is "Clearly valued" (orange/green lines); of spatial qualities (radial in the circle) organised by areas (colour-coded sections). Source: Institut Infància i Adolescència (2018). This diagram could be complemented with a third colour line, evaluating, after the renovation of the space, whether the result met prior expectations. Available at: www.institutinfancia.cat.

Further reading:

See Process Reports tool in the Post-occupancy chapter for examples.

TYPOLOGICAL INDICATORS

A typological evaluation of the space determines whether it can respond to selected parameters through typological analysis. The study of the plan ultimately aims to focus on the performative possibilities of the space. It can take into consideration absolute indicators (such as measurements or surface area), the activities allowed, the potential for adaptation, or relational aspects (functions, spaces). It is particularly useful when applied to several projects, since it enables them to be compared, and for guidelines for optimal performance for further projects to be set.

Unlike quantitative parameters defined by Technical Indicators, which are universal and measurable, and Perceptual Indicators, which are subjective and qualitative, Typological Indicators are based on measurable dimensions (or material definitions) that nevertheless are bound to both the cultural reading of the space and contemporary disciplinary concerns. Since what society expects from a particular space varies over time, these parameters should be updated regularly and a retroactive analysis should be done carefully. This is particularly obvious in housing units, where historically there has been an additional interest framed by contemporary debates – for instance, the house size and sanitary conditions (since 1920s-40s), flexibility and incremental housing (since 1960s-70s), and a gender perspective and working from home (since 2000s-10s).

.a | Montaner, Muxi & Falagan developed a systematic analysis of housing units responding to four sets of parameters to measure needs: social, urban, technology, and resources. This cross-cutting analysis enables the interrelation of concepts that have a direct impact on the quality of the domestic space, such as accessibility, spatial hierarchies, relation with the street, the coexistence of functions, adaptability, or the use of passive energy systems, among others. Source: Montaner et al, 2011.

.b | David Falagan, typological analysis of housing units in relation to their flexibility and daily use. With this analysis, the author underlines the relevance of spatial qualities beyond strict compliance with regulations, which often become standards (and not minimums) for public housing units. Interestingly enough, the author includes some parameters linked to everyday use, such as storage space, the laundry cycle, food processing and cooking, and workspaces. Source: Falagan, D. (2019) 'Flexibility and Gender Equality in Housing', in Ajuntament de Barcelona *et al.* (2019), pp.11-54.

Further reading:

Ajuntament de Barcelona *et al.* (2019) 'Flexibility and Gender Equality in Housing'. *Qüestions d'Habitatge* 22. Barcelona: Barcelona City Council, Municipal Housing Board.

Jacoby, S. (2016) 'Typal And Typological Reasoning: a Diagrammatic Practice of Architecture'. *The Journal of Architecture*, 20 (6).

Jacoby, S. (2016) *Drawing Architecture And The Urban.* Chichester: Wiley.

Montaner, J. M., Muxí Z., Falagan, D. H. and Hastings, A. (2011) *Herramientas Para Habitar El Presente: La Vivienda Del Siglo XXI = Tools For Inhabiting The Present: Housing In The 21St Century.* Bogotá: Ediciones de la U.

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CROSS-QUANTITATIVE AND QUALITATIVE DATA

Cross-referencing different sorts of data overcomes the limitations that each of the previous indicators (Technical, Perceptual and Typological) have when considered separately. Thus, a cross-data indicator will be more reliable and can include a greater amount of input.

Madrid-based office Paisaje Transversal developed an interesting tool that crosses technical data with citizen perception. Named InPar (Tool for Social Audit of Urban Sustainability), this tool enables the evaluation of parameters that are applicable to each project (for example green space, public space, mobility, economic activity and social cohesion) through both the technical dimension (which can be checked with objective data on the one hand and whose responsibility belongs to “experts” in different disciplines) and the perceptual dimension (that relies on users’ experience and the everyday use of urban spaces). Since each parameter is described and analysed in comparison to a reference optimal value, InPar allows decisions to be made in a more transparent way and technical decisions to be balanced with information about preferences, enabling a conversation between decision-makers and users. It also fosters the establishment of design priorities, while encouraging citizen engagement in the decision-making process.

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.a | Paisaje Transversal, Virgen de Begoña, 2015. Source: paisajetransversal.com & issuu.com/paisajetransversal. More information: www.vdebegona.wordpress.com and www.`issuu.com/paisajetransversal/docs/pier_vdb.

.b | Heatmap of problematic areas in Ciutat Vella, Barcelona, within its "Uses Plan", with two parallel and complementary approaches developed by 300.000km/s and Raons Públiques. Left: quantitative data as reported to authorities analysed through GIS. Source: 300.000 km/s. Right: qualitative data from interviews carried out on-site. Source: courtesy of the Raons Públiques. The whole study can be found at: www.300000kms.net/case_study/ciutat-vella.

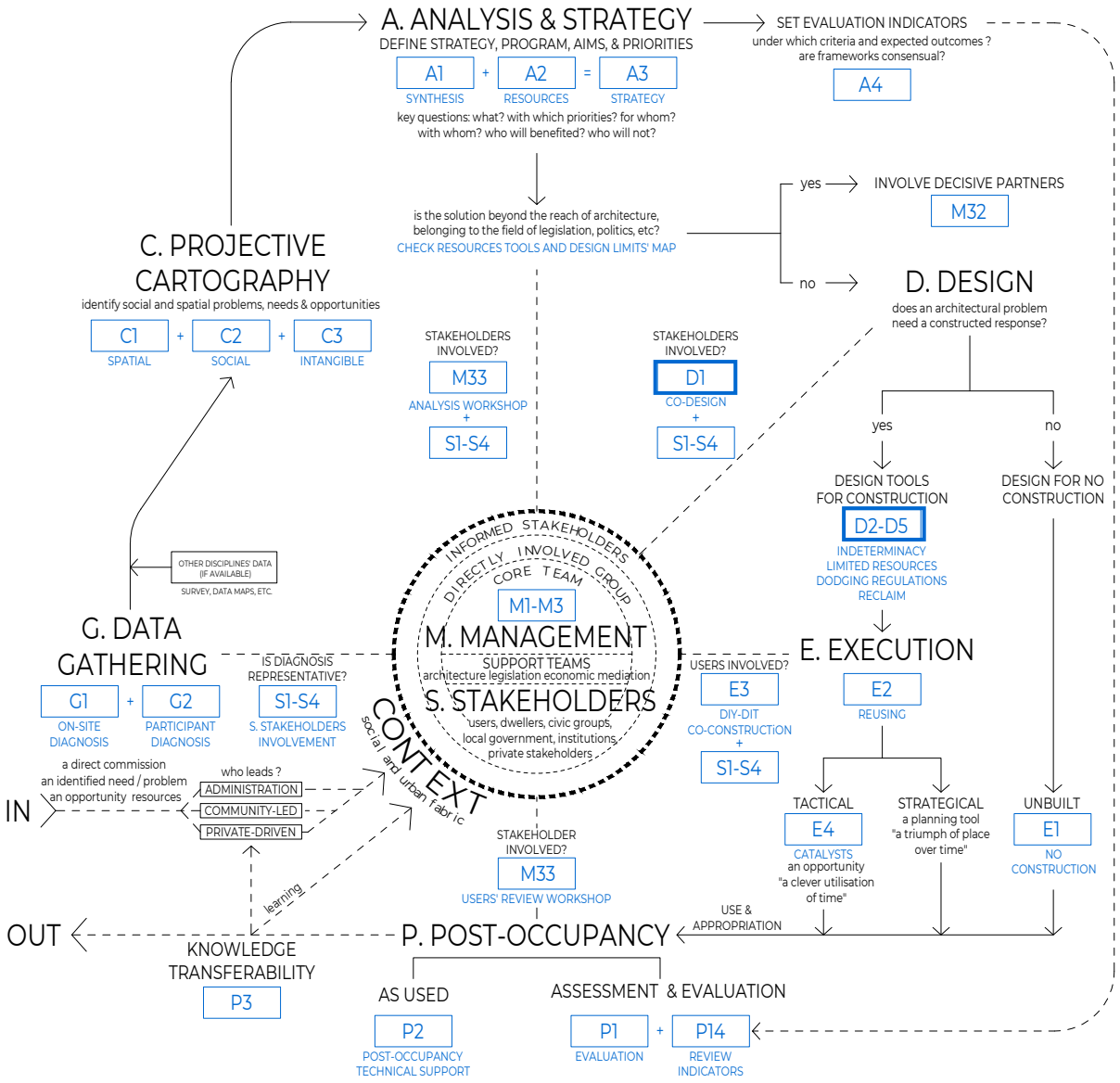
Further reading:

Paisaje Transversal (2015) *PIER Plan Integral de Estrategias de Regeneración.* Available at: www.issuu.com/paisajetransversal/docs/metodologia_pier

Paisaje Transversal (2016) “[InPar] Herramienta para la auditoría social de la sostenibilidad urbana“. Available at: www.paisajetransversal.org/2016/02/inpar-herramienta-para-la-auditoria-social-de-la-sostenibilidad-urbana-planur-e.

Paisaje Transversal (2018) *Escuchar y Transformar la Ciudad: Urbanismo Colaborativo y Participación Ciudadana.* Madrid: Catarata.

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

D. DESIGN

TOOLS INVENTORY

M. PROCESS MANAGEMENT
M1. PLANNING
- M11 Definition of phases
- M12 Anticipated timescale

M2. DECISION-MAKING
- M21 Map of stakeholder roles
- M22 Core group diagram
- M23 Decision-making scheme

M3. STAKEHOLDER ENGAGEMENT
- M31 Co-organise / develop with
- M32 Involving decisive partners
- M33 Discussion workshops (I-II)

S. STAKEHOLDERS
S1. MAPPING
- S11 Identify stakeholders
- S12 Engagement matrix
- S13 Sociogram
- S14 Powergram

S2. REACHING BY SEDUCTION
- S21 Direct invitation
- S22 Indirect contact
- S23 Make it fun
- S24 Food as social ritual
- S25 Provide a platform for expression

S3. REACHING BY PROVOCATION
- S31 Artefacts invade public space
- S32 Spatial alteration
- S33 Confrontation

S4. REACHING VIA MAKING VISIBLE
- S41 Collaboration with external events
- S42 Printed media
- S43 Digital platforms
- S44 Billboard hacking
- S45 Public exhibition
- S46 Interactive map
- S47 Video / documentary

G. DATA GATHERING
G1. ON-SITE DIAGNOSIS
- G11 Ethnographic observation
- G12 Group walk
- G13 On-site technical support office

G2. PARTICIPANT DIAGNOSIS
- G21 Diagnostic workshops (I-II)
- G22 Meetings with stakeholders
- G23 Interview / survey

C. PROJECTIVE CARTOGRAPHY
C1. SPATIAL & MORPHOLOGICAL
- C11 Drawing the domestic
- C12 Picturing the domestic
- C13 Building as socio-spatial ecosystem
- C14 Facade as mediator
- C15 Urban void
- C16 Neighbourhood
- C17 Urban landmarks
- C18 Systemic urban elements

C2. SOCIAL DIAGRAMS
- C21 User portraits
- C22 Routines & habits
- C23 Users' needs (I): individual
- C24 Users' needs (II): collective
- C25 Morphology to patterns of behaviour
- C26 Rituals & social activities
- C27 Diagrams of relational activities

C3. THE INTANGIBLE
- C31 Subjective perception maps
- C32 Collective perception
- C33 Proximity or isolation
- C34 Movement
- C35 Memory
- C36 The uncanny
- C37 Invisible borders
- C38 Temporalised space
- C39 Control
- C40 Conflict (I): maps
- C41 Conflict (II): events
- C42 Conflict (III): effects

A. ANALYSIS & STRATEGY
A1. SYNTHESIS
- A11 The (yellow) manifesto
- A12 Mind map
- A13 Design limits' map

A2. RESOURCES
- A21 Financial analysis & co-finance strategies
- A22 Available resources (I): inventory
- A23 Available resources (II): "harvest map"

A3. STRATEGY
- A31 Strategic action plan
- A32 Actions & tools breakdown
- A33 Viability map
- A34 Consequences map

A4. EVALUATION INDICATORS
- A41 Technical indicators
- A42 Perceptual indicators
- A43 Typological indicators
- A44 Cross-qualitative & quantitative data

D.DESIGN
D1. CO-DESIGN
- D11 Co-design workshops (I-IV)
- D12 Proposing an alternative

D2. INDETERMINACY
- D21 Enabling: user appropriation
- D22 Enabling: user manipulation
- D23 Enabling: adaptable system
- D24 Typological variations
- D25 Multiple scenarios

D3. LIMITED RESOURCES
- D31 Intermediary situations: "the meanwhile"
- D32 Leveraging material scarcity
- D33 Designing for low-risk construction
- D34 Split large interventions
- D35 Nomadic facilities

D4. DODGING REGULATIONS
- D41 Legislative blind spot
- D42 Camouflage
- D43 Declaring a Temporary Autonomous Zone

D5. RECLAIM
- D51 Reclaiming empty plots
- D52 Filling in the gap
- D53 Regaining infrastructure

E. EXECUTION
E1. NO-CONSTRUCTION
- E11 Do not do (I): maintain
- E12 Do not do (II): connect
- E13 Reprogramming time in space
- E14 Relocation
- E15 Undoing

E2. REUSING
- E21 Borrow - barter
- E22 Recycling & reclaiming components
- E23 Dismantling & reassembling buildings
- E24 Parasite

E3. DIY-DIT CO-CONSTRUCTION
- E31 Technical specifications
- E32 User to execute
- E33 User to complete
- E34 User to expand
- E35 Collective assisted DIY-DIT

E4. CATALYSTS
- E41 Generative actions
- E42 Tactical on-site prototypes
- E43 Do it anyway

P. POST-OCCUPANCY
P1. ASSESSMENT & EVALUATION
- P11 Process overview
- P12 External evaluation: stakeholder review
- P13 Internal evaluation: tools & methods (I-IV)
- P14 Evaluation indicators review

P2. POST-OCCUPANCY TECHNICAL SUPPORT
- P21 Post-occupancy technical support
- P22 Building monitoring

P3. KNOWLEDGE TRANSFERABILITY
- P31 Manuals & toolkits (I-III)
- P32 Plans sets
- P33 Process reports
- P34 Online resources

body of practice

COLLABORATIVE ARCHITECTURE BARCELONA: THE ARCHITECT AS ENABLER

Raül P. Avilla-Royo

COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

as part of

COLLABORATIVE ARCHITECTURE BARCELONA:
THE ARCHITECT AS ENABLER

PhD By Practice | Royal College of Art | School of Architecture | London | 2018-2022
Supervisors: Dr.-Ing. Sam Jacoby (SoA-RCA) & Ibon Bilbao (ETSAB-UPC)

Raül P. Avilla-Royo

D. DESIGN

The design phase sits between analysis – (what should be done? how? for whom? with which resources? etc. – and execution – the actual intervention that aims for a specific impact, which may or may not be a construction.

To overcome the limitations of their discipline, architects work with multidisciplinary teams and learn from them, for example, the need to adapt social sciences tools when including different stakeholders and users during the procurement process, as has been discussed in the Data Gathering chapter. However, architects' entry point to urban and design problems is unique: the project, which is to my understanding the essence of architectural thinking.

The design of a new building is the most common response to urban needs within the traditional welfare state approach, a strategy that evidenced limitations after the 2008 austerity policy. However, for collaborative architecture, a detailed approach to the urban and social context, as well as a deep concern about building efficiency and intelligent resource management, often questions the traditional solutions which are assumed to be appropriate within public procurement. Challenging them means that the object that the architect designs might not be a building or a space, but rather a process, a managerial strategy, or an interpretation of legislation. As the tools in this book intend to evidence, an architectural project can take many different forms within and beyond the physical construction – and many, such as writing, have not been included.

While non-construction strategies are addressed in the Execution chapter, the Design chapter focuses on the parameters that distinguish collaborative design from conventional design approaches. In terms of common ground, material, economic and

regulatory limitations, and management of resources and phasing, are shared frameworks. The different approaches and conditions of collaborative design may include the incorporation of the user during the design, construction and post-occupancy phases; a potential lack of investment stemming from the absence of public funding (being on the margins of institutional political agendas) or private investment (it is not driven by profit), and an individual political agenda in the form of activism. All these parameters mean that collaborative design is more exposed to contingency, limited budgets, shifts in stakeholders' agendas, or unexpected changes as it questions regulatory frameworks and traditional approaches to design. To respond to those limitations, new tools have emerged.

Candilis, Josic and Woods, Honeycomb housing project, Casablanca Morocco, 1952-53, as built and as transformed by users. Source left: Photothèque Rabat, from www.parallel-archive.org. Source right: www.uncubemagazine.com; photography by Jean-Louis Cohen.

Nuria Salvadó, comparison of two images of the public housing building in Sant Andreu, Barcelona, by Lopez Rivera architects, 2007. Left: the imaginary of architects in the photograph session. Right: the day of Salvadó visit, the reality of its management by the public company Adigsa. The open relation of the house and the corridor resulted in an hermetic scenario. Source: Salvadó, N. (2013) *Intervals Habitats*. PhD thesis. Universitat Politècnica de Catalunya, p.212.

CO-DESIGN tools include co-design workshops as instrumental tools through which users can participate in decision-making during the design phase. While this tool is presented here as an instrument, its raison d'etre is analysed in depth in the theoretical part of the PhD. In this regard, designing the process can become as relevant as the outcome, having an impact beyond the building in strengthening local support networks and instrumentalising co-design as a platform to democratise urban governance.

To consider users' preferences and needs becomes crucial and, I would argue, is a design opportunity rather than an obstacle. In the short term, design opportunities derive from users taking direct responsibility for their decisions and the risks resulting from them, as opposed to public and private attitudes, which are typically conservative. Thus community-led projects, in including cooperative housing, are an opportunity for typological, managerial, material and constructive experimentation. This is most obvious when cooperative housing is compared to public and private procurement (Avilla-Royo *et al.*, 2021). In the long term, the incorporation of users during decision-making – that is, being a a proactive agent rather than merely a recipient of others' design work – guarantees a more enthusiastic acceptance of the design (collective identity and memory), its performance (the development of uses and activities), and its care (preventing deterioration; reducing maintenance costs).

Second, tools that allow a certain proportion of the project to be left to INDETERMINACY, to be interpreted by others in the future, whether this is at later design stages, construction or post-occupancy. In this regard, it is worth mentioning the book Flexible Housing (Schneider and Till, 2007), which offers a multidimensional approach that includes, but is not restricted to, user modification.

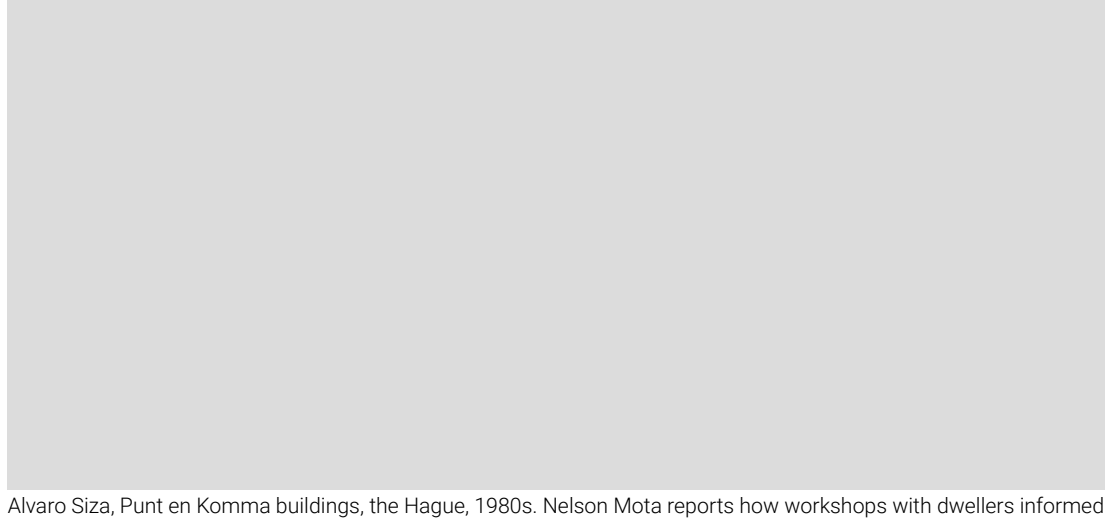
As a provocative example, the Candilis-Josic-Woods housing in Atbat (Casablanca, Morocco, 1952-53) evidences that, at some point, the building construction took an unexpected turn. This may have been for a number of reasons: a poorly defined commission, a lack of understanding of local culture, a failure to identify residents' preferences, or simply the changing needs of residents over time, a change in legislation, unanticipated management of the building, among many others. In any case, what seems obvious is that the residents' perspective was not taken into account regarding either their original needs or their future ones, nor was the need for the building to adapt to future requirements considered – as result of the building modifications more indoor space has been included, smaller windows have been built. In contrast, considering the active role of residents within guidelines defined by designers allows a much more enriching dialogue between the infrastructure and the forms of inhabitation through strategies of appropriation, manipulation and transformation. With this approach, design is never finished or complete, but constantly revisited, improved and adapted.

The third group, working with LIMITED RESOURCES, addresses tactics for designing within a context of limited funding. As Jeremy Till observes (Till, 2012), in a context of

scarcity young architects have managed to “do things differently” instead of “do[ing] the same thing with less”; therefore what has emerged is the need to think differently and to take advantage of existing resources, whether these are buildings, materials, or future users as builders. In this regard, designs that include non-construction strategies can be found in the Execution chapter.

The fourth set of tactics, DODGING REGULATIONS, addresses the activist dimension of architecture that sees regulatory restrictions and institutional frameworks as conservative and limiting in addressing social needs. These tactics aim to overcome the slowness of administrative and political decisions in addressing urgent matters by provoking new situations, turning architectural projects into drivers for legislative change, and enabling unexpected uses that have not been contemplated previously.

Finally, tools that RECLAIM unused or underused urban spaces, whether these are plots, buildings, or infrastructures. Reclaiming land is carried out with the understanding that its ultimate purpose is to serve as a common good, and that there is no justification for wastelands in compact cities when there is a need for community spaces. Thus, available land can potentially be reclaimed for collective appropriation and use. These tools thus question the underuse of urban land and built resources in a situation of climate emergency as a result of significant land consumption by the forces of urbanisation.



Alvaro Siza, Punt en Komma buildings, the Hague, 1980s. Nelson Mota reports how workshops with dwellers informed design decisions, with the difficulty of aiming a consensus between different cultural communities since, according to Siza, different culture-specific design solutions would have increased ethnic tensions. Image left: Siza during workshops. Right: evolution of the housing plan as informed by dwellers. Source: Mota, N (2014) *An Archeology of the Ordinary*. PhD thesis. Delft University of Technology.

Nabeel Hamdi, Adelaide Road, London, 1977. Left: Hamdi meets tenants for a design discussion. Source: Hatch, C. R. (1984) *The Scope Of Social Architecture.* New York: Van Nostrand Reinhold, p.57. Right: Primary Supports Structure Housing Action Kit model (PSSHAK), based on Habraken supports and infill design method. Source: www.ribapix.com.

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D11

CO-DESIGN WORKSHOPS (I)

Co-design workshops are intensive meetings that are instrumentalised for design decision-making purposes, whose goals may vary depending on which phase they take place in, from concept ideas to specific decisions. Co-design workshops do not entail the abandoning of the responsibility of the architect, but an opportunity to include more voices in decision-making. In this regard, they are crucial for agreement on users' commitment to building performance (e.g. environmental systems) and maintenance in the post-occupancy phase, offering design opportunities at typological, managerial, material and construction levels. Such workshops allow direct engagement, balancing social dynamics, neighbourhood knowledge, and the perception of citizens' rights in direct decision-making.

Workshops are led by facilitators, who prepare the activities and material needed for the meeting, guarantee that the aims of the workshop are achieved, keep time, make sure voices are respected, and write a report at the end of it, if necessary. Workshops can be open to the general public or specifically organised for certain social groups, for example, children, and need to be inclusive and representative.

See also the Discussion Workshops tool in the Process Management chapter.

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.a | Lucien Kroll, Coabita, Watermael-Boitsfort (Brussels), 1970. Kroll in a co-design workshop for 150 dwelling units. Source: Kroll, L. (1988) *Lucien Kroll: Buildings and Projects*. London: Thames and Hudson, p.35.

.b | Frei Otto's ÖkoHaus, in Berlin (1983-88). The building's collaged appearance is a result of the residents' decision-making process. Source: www.solidar-architekten.de.

.c | Charles Moore, St. Matthews Episcopal Church, Los Angeles, 1984. 200 parishioners participated in four co-design workshops. Source: Left: Keim, P. K.(1996) *An Architectural Life. Memoir & Memories of Charles Moore.* Boston: Bulfinch Press, p.159. Right: www.moore-rubleyudell.com.

.d | Lacol Architects, co-design workshop for La Borda cooperative housing, 2014-18. Source: courtesy of Lacol.

.e | Straddle3, design process for Pineda de Mar skate park, Spain. Source: straddle3.

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Further readings:

Cembranos, F. and Medina, J. A. (2014) *Grupos Inteligentes: Teoría y Práctica del Trabajo en Equipo.* Madrid: Popular.

Chambers, R. (2011) *Participatory Workshops: A Sourcebook of 21 Sets of Ideas and Activities*. London: Earthscan.

Lacol (2018) *Building Collectively: Participation in Architecture and Urban Planning*. Barcelona: Pol·len Edicions.

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Wates, N. (2000) *The Community Planning Handbook: How People Can Shape Their Cities, Towns And Villages In Any Part Of The World.* London: Earthscan Ltd.

CO-DESIGN WORKSHOPS (II)

TECHNICAL DESIGN PHASE ACTIVITIES

The focus of co-design workshops may vary according to the design phase they take place in, and can include the following: defining design principles, atmospheric qualities and perceptive aims, discussing construction particulars or preferences, or validating architects' proposals given inputs discussed previously. To be effective, each workshop can be organised around a specific topic. Workshops should be sequential and agreements should be taken in a continuous incremental conversation.

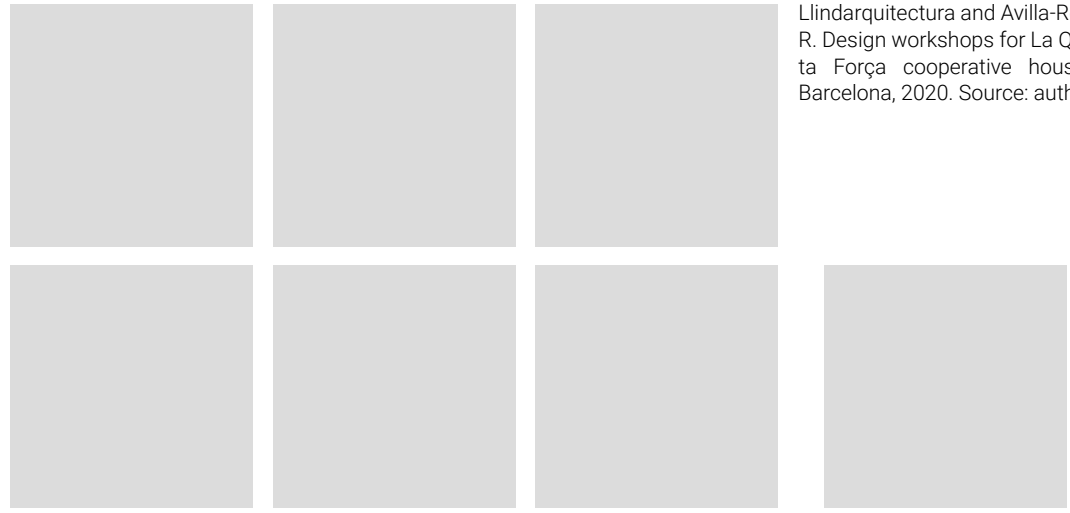
The first workshops typically concern concepts and ideas. Susanne Hofmann, in *Architecture is Participation* (2014) developed a method of co-design based on workshops that enable a discussion of the abstract categories of "the atmosphere", which then is interpreted by architects and translated into specific architectural designs. Architects and technical staff become then mediators between desires and reality, between different stakeholders' interests and agendas, and between needs and possibilities.

The technical design responsibility resides in the technical teams, who should develop the project according to users' and participants' input. The responsibility and knowledge of the architects should not be ignored: this includes technical knowledge, typological understanding, and material and construction expertise.

Technical concepts should be explained in plain language, and architectural design tools (drawings, models, diagrams, or visualisation) become crucial for grounding abstract discussions.

Lacol, cooperative housing design workshops for la Raval cooperative housing, 2018-2019. Source: www.lacol.coop.

Lacol, cooperative housing design workshops for La Borda cooperative housing, Barcelona, 2014-2018. Different activities were organized in different moments of the design project, targeting specific topics. Each of them requires a bespoke preparation, including different group activities, group discussion sizes, room organisation, and supporting material. Source: www.lacol.coop.



Llindarquitectura and Avilla-Royo, R. Design workshops for La Quinta Força cooperative housing, Barcelona, 2020. Source: author.

CO-DESIGN WORKSHOPS (III)

CONCEPT DESIGN PHASE ACTIVITIES

Creating a welcoming warm-up conversation and establishing the primary issues of common interest between participants. These activities should take place before the architects draw the building plans, to gain initial input and preferences, which need to be added to the diagnostic data about needs and possibilities. The examples here refer to cooperative housing projects, but can be used elsewhere.

THE SOUVENIR:

Presentation activity to introduce participants to each other and offer a relevant personal point of view on the topic discussed. Participants form a circle. Each of them introduces themself presenting a “souvenir” from their current home, explaining why it is relevant for their understanding of the domestic (in the case of housing, can be adapted to the specific topic discussed). Objects are left in the centre, creating a shared collection.

IMAGINARY PIN-UP:

The aim of this activity is to form a collage with pictures, either of people performing activities or of objects. Initial images, as well as the supporting posters, are prepared by facilitators. Participants can add notes or stickers to discuss ideas suggested by others. This activity can be organised as a "post-it poster" session, with a single conversation, or in a "coffees of the world" arrangement in which different conversations regarding spaces or activities take place (see Discussion Workshops tool in the Process Management chapter for definition).

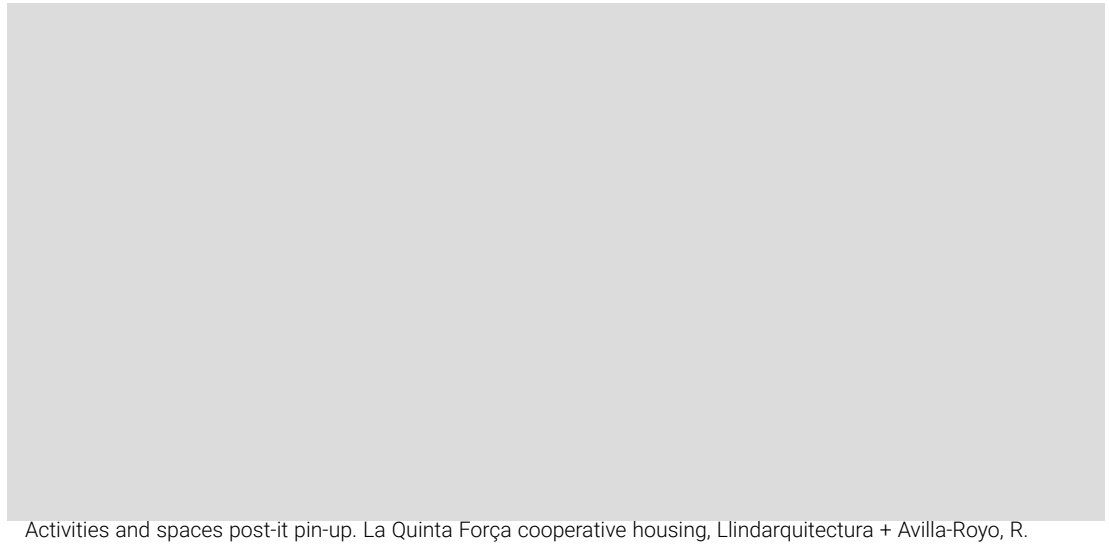
ACTIVITIES AND SPACES POST-IT PIN-UP:

A board is divided into quadrants based on two axes: the vertical one shows group versus individual activities ; the horizontal demonstrates shared spaces versus private spaces. Participants are given post-its and a pen. They write the name of an activity and place it where they imagine themselves performing it in the future building. A colour code can be used to differentiate, for example, between domestic tasks, work and leisure activities.

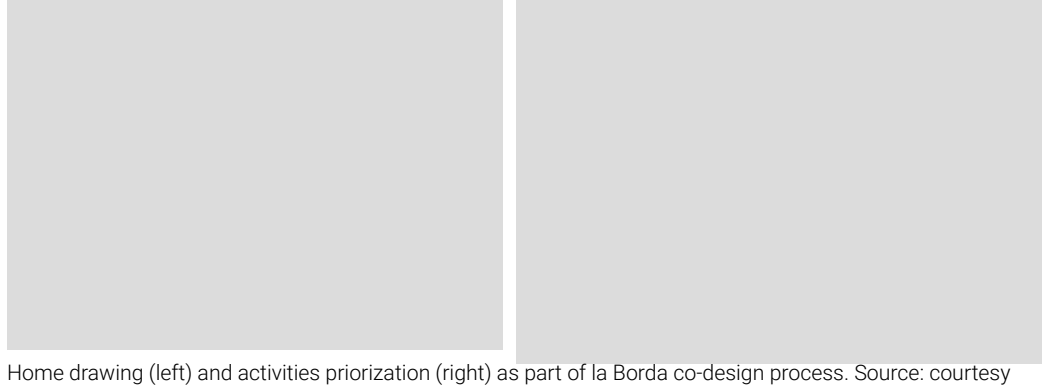
DRAW YOUR HOME:

In advance of the workshop, each participant is given graph paper and asked to draw their home at scale. This activity allows future residents to become familiar with plans and architectural representation.

Imaginary pin-up of the 'care activities' (left) and collective dinning and kitchen rooms (right). La Quinta Força cooperative housing, Llindarquitectura + Avilla-Royo, R. Source: author's archive.



Activities and spaces post-it pin-up. La Quinta Força cooperative housing, Llindarquitectura + Avilla-Royo, R. Source: author's archive.



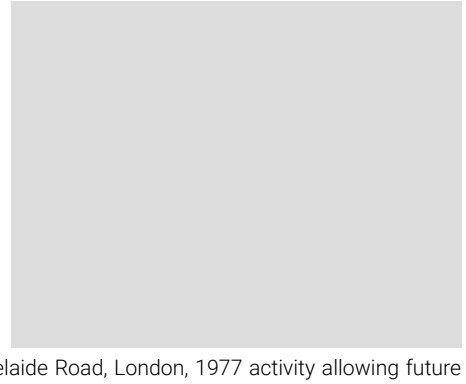
Home drawing (left) and activities priorization (right) as part of la Borda co-design process. Source: courtesy of Lacol.

CO-DESIGN WORKSHOPS (IV)

COMUNICATION TOOLS AND DEVICES:

The language used to communicate becomes particularly important when people with different levels of expertise gather around a table. To focus the discussion on specifics and avoid abstract discussions, which is often confusing and ineffective, architects and designers can use several enabling and mediating elements. Beyond the traditional tools of communication, the most common being architectural plans and models, there are many other elements that are in frequent use, some of which are presented here. All of them are instrumentalised for the building of a collective narrative based on shared imagination. These elements can be combined with the workshops presented in the previous pages.

Pin-up walls. Very useful for group discussions, they can be manipulated by mediators or directly by participants. In the image: analysis discussion about the future of la Mariola neighbourhood, Lleida, 2018. Source: author's archive.



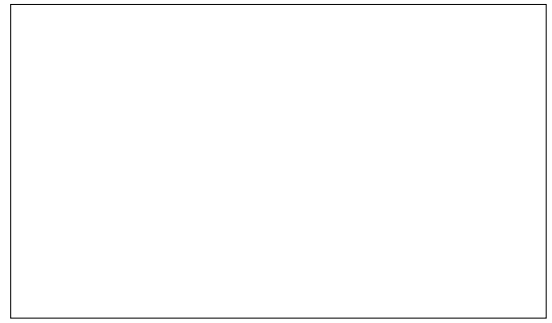
Nabeel Hamdi, Tenants' Manual for Adelaide Road, London, 1977 activity allowing future dwellers to discuss furniture. Source: Hatch, C. R. (1984) *The Scope Of Social Architecture.* New York: Van Nostrand Reinhold, p.56.

For references on games see: Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis, pp.108-115.

Plans. A daily tool for architects, but might be difficult for some users. Picture: la Borda, courtesy of Lacol.

Pictures, collages. They can serve as references to discuss potential uses, imaginary maps, or atmospheres. Image: collage workshop, die Baupiloten.

1:1 paint on the floor. It allows an inmediate understanding of dimensions at a real scale, and it may include furniture.



Sound. Recording sounds of places may enable a discussion of a desired atmosphere or activities.

Diagrams. They use an abstract form of representation, but can clarify concepts and relationships. Source: arqbag.

Models, three--dimensional scalar representations. Image: la Borda co-design workshop, courtesy Lacol.

Movable artifacts. Source: Makea tu Vida.

Everyday objects. Objects embody activities, preferences, memories and identities. Source: author.

PROPOSING AN ALTERNATIVE

"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete."
— Buckminster Fuller

In front of urban development plans perceived as negative, proposing an alternative aims to offer different solutions. Proposing an alternative, even when it is assumed to be incorrect, allows the discussion to move from a limited yes/no conversation into a consideration of the qualities and problems of each alternative. To overcome blocking, an architectural project can become an effective mediator between opposing views, shifting from what Cembranos & Medina (2014) define ass systemic opposition (idea A against B) towards addition (A + B) or even multiplication from which new proposals can emerge through stakeholders cooperation (A x B = C). As precedent, in Barcelona during the decade of 1970s architects collaborated with the Plans Populars (Popular Plans) or Contraplans (Counterplans) organised by neighbourhood associations, offering technical support to grassroots claims (Magro Huertas, 2014). Sometimes an initiative by the local authority prompts systemic civic opposition, for many potential reasons, potentially deriving in a situation of blocking.

.a | In 1971 five neighbours' associations affected by the "Ribera Plan" in the north of Barcelona organised an competition for ideas for a "counterplan", which was supported by four professional associations (Colegios Profesionales). The winning entry of the Laboratory of Urbanism in ETSAB, led by Solà-Morales, heavily criticised the capitalist approach to the development of the official masterplan. Source: Solà Morales *et al.*, 1974.

.b | Arquitectos de Cabecera + Pei.Lab Javeriana de Bogotá, Safaretjos neighbourhood, Santa Coloma de Gramenet, 2017. Despite acknowledging the need for increased housing density, civic groups opposed the masterplan approved by the local authority (left image: ARE, Area Residencial Estratègica" Safaretjos"). The social diagnosis revealed that neighbours did not oppose the masterplan because of its increase in density, but because of its formalisation and visual impact. In parallel, urban cartography detected many building opportunities within the neighbourhood. The alternative M(ARE) masterplan (image right) relocated new spaces in strategic areas avoiding unwanted high-volume buildings, preventing the segregation of population profiles by areas (old vs. new, higher income); and filling the empty gaps, both spatially and socially, in the neighbourhood, which was suffering a process of decay due to social degrowth and urban abandonment. Source: AC Archive.

.c | Left: Modification of the General Masterplan (MPGM) for Can Batlló-Magòria, Batlle & Roig Architects, 2006-2008. Source: www.batlleiroig.com. Right: Can Batlló, distribution of use proposal, outcome of the participative process. Source: Participative Process memory.

Further reading:

Cembranos, F. and Medina, J. A. (2014) *Grupos Inteligentes: Teoría y Práctica del Trabajo en Equipo.* Madrid: Popular.

Solà-Morales i Rubió, M. D. (1974) *Barcelona: Remodelación Capitalista O Desarrollo En El Sector De La Ribera Oriental*. Barcelona: Gustavo Gili.

Magro Huertas, M. T. (2014) *Hacia La Ciudad Inclusiva. Prácticas Sociales Urbanas En Barcelona, 1969-1979.* PhD thesis. Universitat Politècnica de Catalunya.

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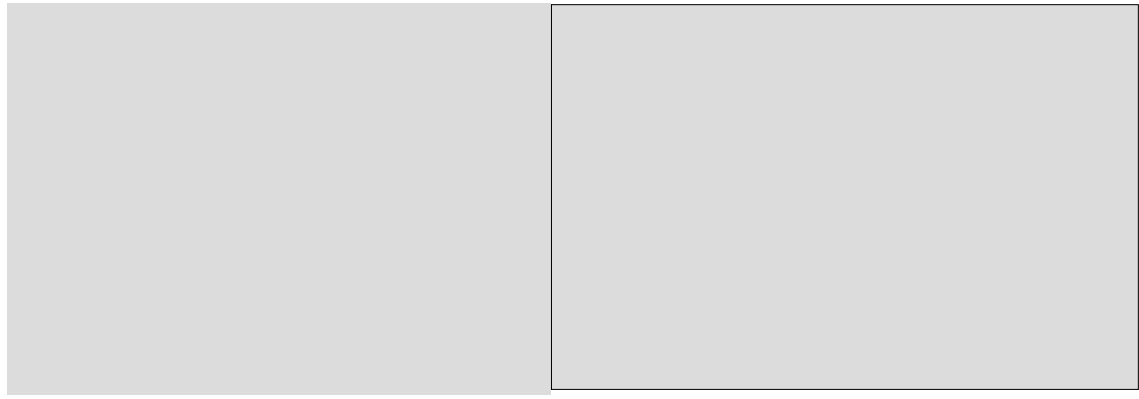

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D21

ENABLING: USER APPROPRIATION

The inclusion of the user in the improvement of the building during its use and inhabitation has three different levels: appropriation, manipulation, and layout changes (adaptable floorplan). Despite the fact that the action of the user takes place in a post-occupancy phase, it needs to be considered as part of the design phase.

The appropriation of the space by its users is the easiest to realise: furniture and objects in common areas of the building extend the house beyond its physical limits and evidence trust and confidence between neighbours. Objects placed in intermediary spaces evidence activities and contribute to a more domestic perception of the space, but also become markers of identity and appropriation.

User appropriation was encouraged by members of Team X, especially from the 1960s. Herman Hertzberger (1991) developed studies on the material conditions of architecture and its possibilities for appropriation, focusing user behaviour on specific spatial features. He developed the concept of “in-between” as an alternative to the clear division between private and shared spaces. Instead, he claimed that it is precisely in the thresholds of intermediary spaces that architecture could offer most potential for appropriation, through its “inviting form”.

Appropriation can also be applied to the façade, which challenges the architect’s complete control of the building’s appearance. This strategy relies on residents to provide and decide upon the collective identity of the building that is presented to the city. "Inhabited facades" were proposed by Gio Ponti (Casa in via Dezza, 1957), Yves Lion (Domus Demain, 1984), and Herman Hertzberger (Drie Hoven Retirement Home, 1971).

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a | Appropriation of shared spaces by users: the collective as an extension of the private. The appropriative condition is evidenced by objects and furniture that encourage informal interactions, and resuts in increased trust between neighbours. Left: Herman Hertzberger, Drie Hoven, 1971. Source: ahh.nl Right: Lacol, La Borda, 2019. Source: author.

.b | Facade appropriation. Left: Gio Ponti, Casa in via Dezza, Milan, 1957. Façades by day and by night reveal two scales of perception: the urban and the domestic. Source: Ponti, L. and Germano, C. (1990) *Gio Ponti: The Complete Work 1923-1978*. Milano: Passigli Progetti, p.194. Right top: Herman Hertzberger, Drie Hoven Retirement Home, picture by W. Diepraam. Source: www.architectsjournal.co.uk. Right below: Yves Lion, Domus Demain, 1984. Source: www.hiddenarchitecture.net.

Further reading:

Hertzberger, H. (1991) *Lessons For Students In Architecture*. Rotterdam: Nai010 Publishers.

Smithson, A. and Smithson, P. (1979) *Signs of Occupancy: Signos de Ocupación.* London: Pidgeon Audio Visuel.

ENABLING: USER MANIPULATION

User manipulation refers to the activation of devices or architectural elements on different scales. It is the second level of the strategy of including residents in the improvement of a space, sitting between appropriation and layout changes (adaptable floorplans) in terms of spatial impact. Although the manipulation of architectural elements happens during the post-occupancy stage, it needs to be planned at the design stage. If systems are complex, post-occupancy technical support workshops or manuals are a complementary tool.

A classic example in the Modern movement is the sliding walls of the Schröeder house by Gerrit Rietveld (1924), which enabled a larger space to be divided for independent uses, for the purpose of flexibility. There are many examples of domestic spaces that rely on users' manipulation of sliding panels, including Gio Ponti's *Single-space House for Four People* (1957) or Steven Holl's *Fukuoka Housing* (1991). At a facilities level, Cedric Price's *Fun Palace* (1972) was designed to be reprogrammed interactively.

Finally, user manipulation also applies to passive energy systems such as solar protection of any kind (Lacaton & Vassal's housing greenhouses), or greenhouses at a building scale (La Borda) entailing a collective understanding of the building as a single social and spatial whole. Rather than relying on sophisticated technological devices, enabling the user to manipulate environmental devices increases their awareness of building performance and responsibility towards their carbon footprint, while it does not need (often expensive) maintenance. In other words, intelligent users are often more efficient than intelligent houses.

.a | Cedric Price, Fun Palace (1972). An architecture of reprogramming and interaction. Source: Price, C. (2003) *The Square Book.* Chichester: Wiley-Academy, p.58

.b | Abalos Herreros' proposal for Housing and City competition, 1988. User manipulation of domestic furniture as a domestic design strategy. Source: *Quaderns d'Arquitectura i Urbanisme* 176 (1988) 'Housing and the City International Project Competition', pp.60-61.

.c | Shigeru Ban, Naked House, 2000. The house is designed as a containing space with tatami rooms on wheels, that can be moved around the house for different purposes. Echavarria, M., P. and Ockrassa, A. (2008) *Portable Architecture And Unpredictable Surroundings*. Barcelona: Links International, pp.224-225.

.d | Lacaton & Vassal, housing in Trignac, 2010. Environmental passive systems include greenhouse and textile solar protection. Source: *El Croquis* 177/178 (2015) 'Post-Media Horizon'. Madrid: El Croquis, p.221.

.e| Lacol architecture cooperative, greenhouse covering the courtyard in cooperative housing, La Borda, 2019. Source: www.ingetecnia.com.

Further reading:

Hill, J. (2003) *Actions Of Architecture Architects And Creative Users*. London: Routledge.

Schneider, T. and Till, J. (2007) *Flexible Housing.* Oxford: Architectural Press.

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D23

ENABLING: ADAPTABLE SYSTEM

"A building is not something you finish. A building is something you start" — Steward Brand, *How Buildings Learn,* 1994.

"Or something you continue", it could be added. The third level on which users are able to make changes to the building is spatial transformation of adaptable floorplans, which means that the layout of the space is changed.

Adaptable floorplans aim for a higher degree of flexibility and changes over time through neutral and generous spaces and a strategic disposition of fixed infrastructural elements, such as circulation and technical cores. The space is designed as neutral and enabling, rather than a rigid layout suitable only for specific limited dimensions. Importantly, neutral does not mean “empty”, but equipped with the necessary elements that allow a multiplicity of uses.

Applying the spatial and construction logic of office buildings, where partitions can change the space easily, John N. Habraken designed the “supports and infill” housing system based on the overlapping of two construction logics: supporting infrastructure (structure and installations created for the long term) and a soft infill that could be customised and changed easily (walls, furniture). This strategy allows changes and adaptations to be developed by users, given certain systemic rules defined by the architect. Adaptable floorplan design can be applied to any building type beyond housing or office space, such as facilities or public space.

.a | John Habraken “Supports and Infills” system. This was further applied by many architects such as Frei Otto (ÖkoHaus, Berlin, 1983-88) or Yositika Utida (Next 21 Osaka, 1984). Source: Habraken, 2000 [1971], pp.115, 186, 187.

.b | Frei Otto’s ÖkoHaus, in Berlin (1983-88). The building is the result of a collage from the dwellers' decision-making process and enabling platforms. Source: solidar-architekten.de.

.c | Lacaton & Vassal, Nantes School of Architecture, 2002-2008. The building is defined by its double structure: three new concrete floors with generous double heights and connected by ramps, infilled with light metal structures. The result is a neutral space that meets the requirements of experimental approach of the school and the possibility of further changes. Source: *El Croquis* 177-178, pp.194-195.

.d | Campo de la Cebada, Madrid, 2011-2017. Technical accompaniment by Zuloark, Basurama, Todo por la Praxis and Estudio PKMN. The multifunctional area was zoned according to different activities. Space flexibility was increased through the construction of movable architectural devices. Source: www.plataformaarquitectura.cl.

Further reading:

Brand, S. (1994) *How Buildings Learn: What Happens After They're Built*. New York: Phoenix Illustrated.

Habraken, N. J. (2000 [1971]) *El Diseño de Soportes.* Barcelona: Gustavo Gili.

Schneider, T. and Till, J. (2007) *Flexible Housing.* Oxford: Architectural Press.

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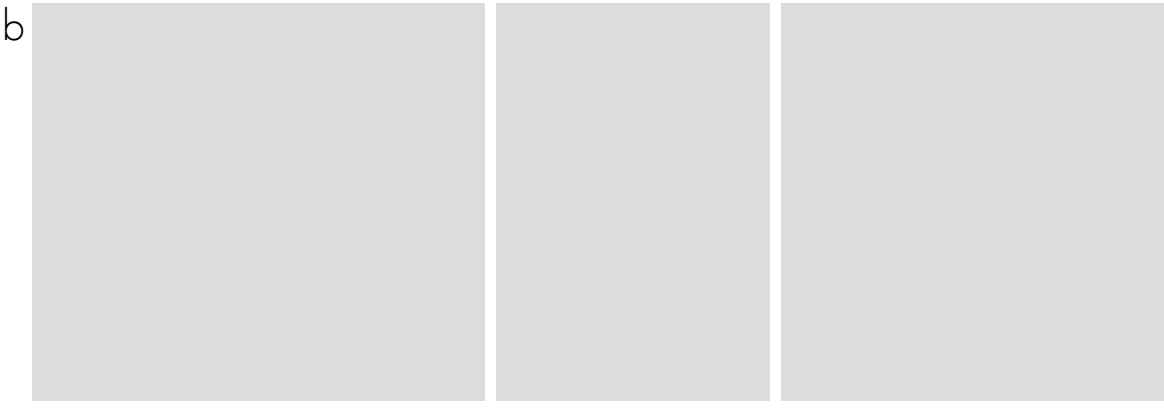

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TYPOLOGICAL VARIATIONS

While adaptable floorplans are based on a constructive approach to allow adaptability during occupancy, systemic variations rely on a typological strategy through a strategic disposition of space during the design. This tool aims to close the gap between the need for a certain degree of standardisation, required for construction, and the specificity of its use and community.

Systemic variations can be applied at three different points. The first is in the design phase, when different situations and programme requirements need to be addressed, for example, Alvaro Siza in Quinta da Malagueira [.a] or Giancarlo de Carlo in Villaggio Matteotti [.b]. The second is during the execution of the building. An interesting case is Helmut Schulitz's TEST system, in which systemic variations are established at the beginning of the process and design decisions about specific steps are taken by architects or users [.c]. This had an impact on the customisation of houses as well as fragmenting the appearance of the building within a system designed by the architect. Finally, in post-occupancy phases, when a limited number of modifications to the building allows typological adaptation. La Borda cooperative housing [.c] is exemplary of the first and third situations: on the one hand, defining different sizes of flat according to different household sizes (S, M, L sizes were used, that did not pre-define different kinds of household composition) and on the other enabling the interchangeability of rooms among the flats (yellow) over time during the building's occupancy.

.a | Alvaro Siza, Quinta da Malagueira, Evora, 1973-77. The challenge of this project entailed designing 1.200 public and cooperative housing units within the SAAL housing programme in Portugal. To allow their adaptation to different requirements, given the vast number of households involved, Siza developed a system of grammar and variation addressesing different household compositions and user preferences. Source: Fleck, 2013, pp. 246-247 (left) and 218 (right).

.b | Giancarlo de Carlo, Villaggio Matteotti in Terni, 1970-71. To accommodate different users' needs, de Carlo designed five buildings with fifteen different housing typologies. In addition, these housing layouts were agreed with their occupants. Souce: *l'Architecture d'Aujourd'hui* 177 (1975) 'Team 10 + 20', pp.38-43.

.c | Lacol Architects, La Borda cooperative housing, 2014-2018. Typological adaptations made by designing units according to household size (S, M and L), in which rooms can be interchanged with neighbouring units, and thus can grow or shrink, given the framework of a collective property (top). Source: courtesy of Lacol.

.d | Helmut Schulitz, TEST system, 1970s. Note the left axis with two dotted lines, indicating professionals and users. While some actions rely on one or another (the building method used by the architects, the ratio of numbers of rooms to residents), most of them depend on a negotiation which privileges either users' or professionals' opinions. Source: Hatch, C. R. (1984) *The Scope of Social Architecture*. New York: Van Nostrand Reinhold, pp.78-89.

Further reading:

Fleck, B. (2013) *Malagueira. Álvaro Siza in Évora*. Freiburg: Syntagma-verlag.

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MULTIPLE SCENARIOS

Multiple scenarios is an enabling tool to address the uncertainty resulting from a strong dependence on external contingencies. As part of an ongoing process, and anticipating a lack of flexibility in later phases, scenarios operate from a multiplicity of potential project ramifications, given certain variables. Thus, the first step is to evaluate these variables and the extent to which they will impact on the project's evolution.

The downside of this tool is that it requires extra design work, since it ultimately entails developing different proposals or allowing multiple solutions to fit a single proposal. It becomes a time-saving tool for the future at the expense of a higher investment of resources in the short term. In addition, the evaluation of future outcomes may serve as a useful tool for process decision-making. In this regard, presenting multiple scenarios enables a discussion of different options and the evaluation of potential outcomes and allows the stakeholders involved to be aware of predicted outcomes to anticipate or avoid.

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.a | Arquitectos de Cabecera, Omar, WAC 2015, Raval, Barcelona. Omar was an illegal immigrant squatting in a flat who accepted an offer to collaborate with AC in exchange for the writing of his CV. Given his precarious living and working circumstances, the proposal for Omar consisted of three scenarios, offering both an improvement or a worsening of his personal conditions. 1 (top) the best-case scenario: obtaining a stable job that would allow him to buy the flat and carry out a full refurbishment; 2 (middle) the stabilisation of his current conditions with minimum improvements to the dwelling through an agreement with the owner; 3 (bottom) given that he was squatting, he was under constant threat of eviction. If he didn't have his own home, he would at least need a bag that would allow him to leave promptly with some utensils, that could turn into a tent to be used as an emergency shelter. Source: AC Archive.

.b | Lacol Architects, La Borda cooperative housing, 2019. Generous space allows the subdivision of rooms to accommodate later potential uses and needs. Source: courtesy of Lacol.

.c | Llindarquitectura and Avilla-Royo, R., Quinta Força cooperative housing, 2020. Housing layout can change as a result of two conditions of household composition: the size of the household and the need for privacy – from nuclear families and extended households to cluster living. All three options can be studied at the procurement phases and allow post-occupancy changes derived from the cooperative's single ownership of the whole building. Source: Avilla-Royo, R. & Llindarquitectura.

Further reading:

Schneider, T. and Till, J. (2007) *Flexible Housing.* Oxford: Architectural Press.

D31

INTERMEDIARY SITUATIONS: “THE MEANWHILE”

The Intermediary Situations tool is effective from the point at which administrative decisions are taken until the time they are executed, and allows the space to be used immediately, with temporary occupancy. It is also a useful strategy when there is a lack of funding for a full refurbishment. The (often exasperating) slowness of urban transformations questions our cultural notions of permanence: in the urban rhythm, something that was meant to be temporary can easily last for decades.

Although they are not performing fully, buildings which are partially used, even if this is minimally, will always be better than an enclosed situation of decay, which is arguably unacceptable in the case of public buildings. Without aiming for a consolidation of precarious conditions, designing for “the meanwhile” can become a successful argument against planned deterioration in historical buildings, that often results in their complete demolition. The intermediary situation includes the understanding that the existing intervention will be removed, at least partially, for its improvement.

Understanding “the meanwhile” as a permanent condition of architecture enables buildings to be approached as infrastructures in constant need of improvement and re-evaluation and to be adapted for needs that are inevitably changing, working in progressive phases.

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.a | Arquitectos de Cabecera and Saray Bosch. La Escocesa, 2019. In La Escocesa industrial complex, Foseco Warehouse (right-hand side below) collapsed, with refurbishment plans drawn up after an architectural competition; administrative and political procedures lasted bit more than a decade, impacted by the economic crisis. To prevent this from happening in the neighbouring Warehouse L, and knowing that what makes heritage sites deteriorate fastest is a lack of use, Arquitectos de Cabecera, together with the artists’ association La Escocesa, opened up the space and built temporary artists’ studios (left). A “meanwhile” phase of uncertain duration (three years, so far) that, far from exacerbating the building’s precarious conditions, aims to create an intermediary state that enables explicitly temporary uses that improve conditions for an immediate use. Source: AC Archive.

.b | Lacol, CoòpolisBCN. Phase 0, 2016-2019. Phase 0 aimed to provide a provisional space for CoopolisBCN, a cooperative cluster in Can Batlló, financed with public investment but self-managed. This early phase consisted of the habilitation of a few spaces, and enclosed a 64 m2 work studio to enable their use, while the following phases had a more permanent character and a larger budget and it is intended to move CoopolisBCN to another warehouse in the future. Source: www.bcn-mes.com.

More information:

www.arquitectosdecabecera.org

www.lacol.coop

LEVERAGING MATERIAL SCARCITY

Material scarcity may be a common design context in certain community architecture projects if there is a lack of public or private investment. Rather than an insoluble obstacle, this can result in creative design solutions that can give character to the project and highlight designers' virtuosity in adverse circumstances.

Some strategies may include the use of raw materials, recycled components, or "design with whatever available" as an entry point. Not only does the material itself need to be considered, but often more limiting is its assembly or whether it can be manipulated easily. The choice of material will determine the design up to a point, in terms of its durability, construction methods and performance.

The challenges of material scarcity could be mitigated by the involvement of non-specialist workers in the building work, a circumstance that requires often inventive construction solutions and deployment of materials (see the Designing for low-risk construction tool in this chapter).

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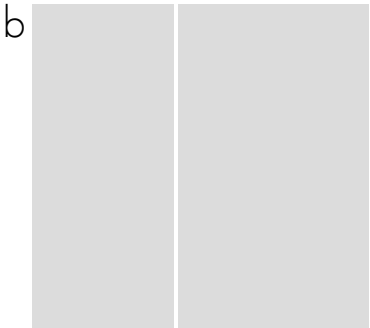

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.a | Shigeru Ban, Paper Partition System for Emergency Shelters. Top: A system devised for Japan in 2011, after the major earthquake and tsunami. Ban's quick-response system fulfilled many requirements: it was light to transport, easy to assemble, and available everywhere. Although living conditions are not optimal, due to the lack of acoustic privacy, they provide visual privacy and a clear improvement on previous conditions. Below: Ban and his team with the partition system in Kanagawa, which can be assembled in 30 minutes with no nails. Below right: Plastic Coca-Cola boxes used as sanitary foundation slabs: recycled, very cheap and easily available. Source: Ban, 2014, pp.216-217, 167, 271)

.b | Arquitectos de Cabecera, windows and door for the low-cost "meanwhile" refurbishment of Warehouse L, la Escocesa. The material cost of each window was under 30€, using translucent sliding polycarbonate, painted wooden frames and metal plates. A three-element door was built with recycled wood, which determined the size of the partitions; a minimum investment was made in metal hardware. Source: left: G. Bortoluzzi; right: author.

.c | Todo por la Praxis, Matrioska Home, 2009. This cupboard was used for a shelter for homeless people: cheap, simple to manipulate and repair, light to transport, and easily foldable into a suitcase. Source: www.todoporlapraxis.es.

Further reading:

Ban, S. (2014) *Shigeru Ban: Humanitarian Architecture*. New York: D.A.P./Distributed Art Publishers.

Aaronson, D. and Sinclair, C. (2006) *Design Like you Give a Damn*. London: Thames and Hudson.

D33 DESIGNING FOR LOW-RISK CONSTRUCTION

Designing for low-risk construction targets non-professionals as builders. Despite the effectiveness of this tool during the construction phase, it should be considered from the design phase onwards. This tool can be applied in co-construction processes (see the specific section E3 in Execution chapter), which can result from the need to save money, the need for intervention and the lack of possibilities, or to enhance community bonds with an activity. While the execution process can benefit from a large number of participants, it is crucial to understand the users' non-professional capacity and motivation.

Amateur builders often compensate for their lack of professional skills with a high level of motivation, especially when they participate voluntarily. To minimise the possibility of damage and accidents, the use of powerful construction tools should be minimised, and they should be operated only by professionals. Likewise, construction cannot involve complicated details or complex material handling. Construction operations need to be supervised by experts, and training workshops might be useful at the beginning of the process.

.a | Instant City, Benito, Lambarri and Prada, Eivissa, 1971. Built to host the VII Congress International Council of Societies of Industrial Design (ICSID) in Ibiza. A minimum budget, an available plot of land, and a donation of a roll of PVC were the starting point to host a thousand international design students for a few days. The architects realised that this would only be possible if the occupants were included in a quick, easy construction process: a pneumatic city. Facility rooms and the main thoroughfares were built by the organisation. On arrival, each participant was given a piece of plastic cloth and construction instructions, including patterns and details. To add a new module to the existing city, the construction process was as simple as cutting, stapling and taping; participants added new streets and houses on demand, based on a masterplan. After the event, the plastic was reused for agricultural purposes by local farmers. Source: *Palimpsesto*, 18, available at: www.upcommons.upc.edu.

.b | Arquitectos de Cabecera, Pei.Lab Javeriana de Bogotá and Zuloark, Fuerte de San Fernando, Bocachica (Colombia), 2016. Given the impossibility of hammering even a single nail into a listed fortress and the need to create a shadow for a national heritage event, the low-tech construction method selected consisted of hanging umbrellas tied to strings around the courtyard balustrade. The weight of bricks provided tension for the whole structure (in the right image), which was easily disassembled. This allowed the participation of the community's children, which encouraged them to take part in the later event.

.c | Arquitectos de Cabecera. "Fem Festa, Fem Safaretjos", Santa Coloma de Gramenet, 2018. The construction of the pool was carried out by architects and neighbours using the superadobe construction method developed by Nader Khalili, since it allowed the participation of people of all ages. Source: AC Archive.

Further reading:

Aaronson, D. and Sinclair, C. (2006) *Design Like you Give a Damn*. London: Thames and Hudson.

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D34

SPLIT LARGE INTERVENTIONS

Multiple smaller interventions may be easier to achieve than a major intervention if there are budget or resources restrictions. The splitting of costs into achievable phases increases feasibility, enables time to evaluate the decisions made in previous phases, and often enables more precise management, planning and execution.

But beyond pragmatic reasons, microprojects entail a fundamentally different projective approach, as described by Christopher Alexander (1975). To him, small interventions are an alternative to a general masterplan, seen as a rigid operation of totalitarian volumetric definition and land use that alienates users from decision-making, and that is unable to anticipate future needs. In contrast to this, Alexander proposed the idea of acting through "piecemeal growth", allowing users to acquire agency in decision-making, and enabling a constant assessment and needs evaluation. To Alexander, the masterplan becomes a "replacement" for obsolete buildings operations, in that the requirement for large budgets and major resources prevents the possibility of smaller projects. In contrast, small operations are an open process of "repair" in a constant trajectory of transformation that optimises resources, assuming buildings to be imperfect and thus always improbable and adaptable.

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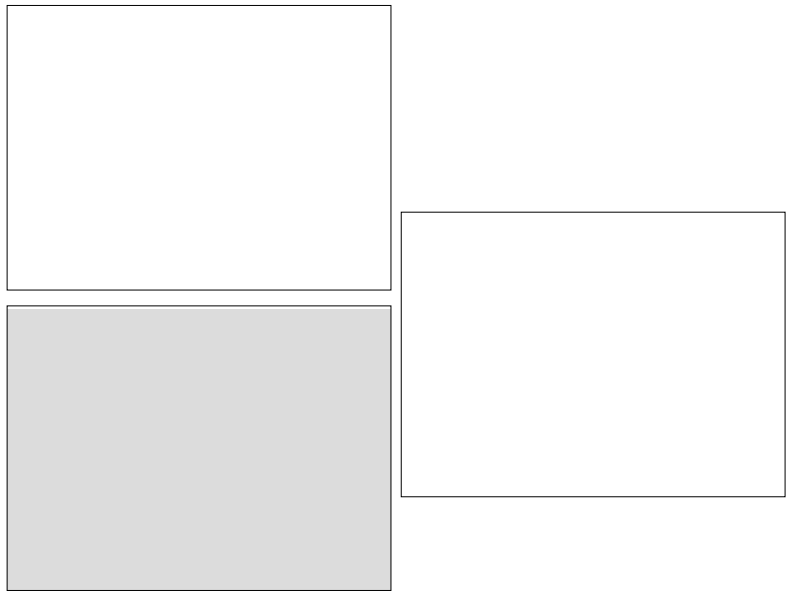

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.a | Christopher Alexander, piecemeal growth. Source: Alexander, 1975, p.75.

.b | Arquitectos de Cabecera, Lancaster “Guernika”, Raval, Barcelona 2015. The Guernika building presented several pathologies and deficiencies of different levels of importance, including a lack of hygienic conditions. As a squatted building with no budget for intervention, the work of AC consisted of proposing several microprojects detailing steps in reports to be consulted by residents. The technical consultancy included the planning of the interventions, as well as the description of tools, people and instructions to carry them out, to be carried out by residents over time, depending on urgency and time availability. The interventions included the improvement of the light and ventilation in the building, waterproofing of the roof, the installation of a solar heater and its plumbing, and the opening of a window at the ground floor for a collective space. Source: AC Archive.

.c | ETSAV and Arqbag, Pas a Pas les Planes, 2014. Four small projects were developed with community engagement and social impact by the platform Pas a Pas. Interventions included the pavilion (e)co prototype, dynamic housing refurbishment (REC), improving street accessibility (Ringo Rango Route), and the covering of an outdoor sports hall, Espai Pere Gran. More information: www.projectepasapas.wixsite.com/pasapaslesplanes. Source: www.plataformaarquitectura.cl.

Further reading:

Alexander, C. (1975) *The Oregon Experiment*. New York: Oxford University Press.

NOMADIC FACILITIES

Nomadic facilities aim to achieve the maximum geographical impact with the smallest material effort through movable devices. They are highly effective when there is a lack of materials or financial means that prevents the building of as many facilities as are needed, a typical situation in areas with little urban density.

Mobile facilities often take the shape of devices or artefacts that operate as enabling platforms (see Artefacts invade public space tool in the Stakeholders chapter). Artefacts allow a high degree of adaptability: their use, location and materiality can be reframed to respond to location-specific requirements or address changing needs.

Most commonly, these devices are single elements with limited impact. The question that arises is the impact they could achieve with the intervention of significant state support, such as Cedric Price's Potteries Thinkbelt, or if these artefacts became part of the systemic provision of services in cities.

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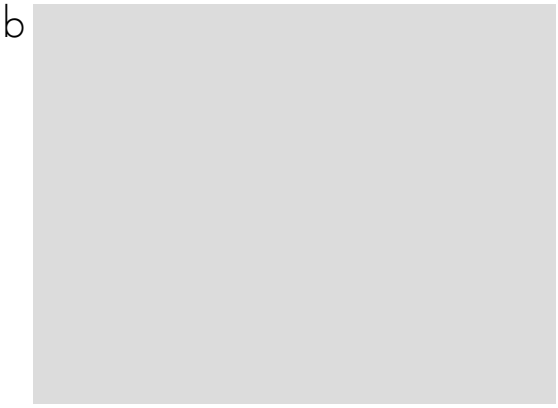

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.a | Cedric Price, Potteries Thinkbelt, Staffordshire, England, 1964-66. The opportunity left by an abandoned industrial infrastructure and the need for higher education institutions were matched in this project of a mobile university, aiming for the urban development of a depopulated area. Left: plan of Desire Lines-Physical and Mental Exchange. Right: view of Mobile Teaching Machines. Source: www.moma.org.

.b | Bookmobiles are classic examples of a facility that is easy to transport to unpopulated areas. In the image, the first bookmobile of the Cincinnati Public library, c. 1927. Source: www.rarehistoricalphotos.com.

.c | Straddle3 and Makea Tu Vida, Urbanmaking: Inclusive Urban Elements, 2015. "Furniture or urban elements that are catalysts for, and pioneers of, new surroundings capable of moving activities to the street that are not traditionally present – elements that are set in the least represented sectors and that promote a greater social inclusiveness. Elements that are flexible, inspiring and adaptable. They promote dialogue, games, culture and art: in short, they support a city capable of creating new situations of interaction and socialization" (from the project memory, translated by author). Source: www.straddle3.net/es/proyectos/urbanmaking.

.d | Straddle3 and Todo por la Praxis, Urban Making Codi7 Nomadic Facility, Gorg neighbourhood, Badalona, 2011. As a response to "the abandonment of the development of public facilities by the neighbourhood" and due to the impossibility of achieving the cession of an empty plot for self-management, the strategy consists of portable and mobile devices to make visible and catalyse neighbourhood demands. Source: www.straddle3.net/es/proyectos/codi7.

.e | Tools for Actions, Air Barricades Against Climate Change, 2017. The minimum infrastructure for this project is a monumental thick wall with a soft texture, offering an easy way to delimit space, to enclose, to interrupt the normal functioning of the street and create a new spatial situation. It is easy to inflate and to move around, contrasting with its image of opacity. Source: www.toolsforaction.net and www.cca.qc.ca.

LEGISLATIVE BLIND SPOT

The legislative blind spot aims to find design opportunities in the gaps in normative contexts. Since legislation and regulations are often perceived by designers as limiting, challenging them not only explores legislative gaps which can be followed through in subsequent projects; they also become a direct interrogation of these limiting regulations. Finding blind spots means looking for unanticipated uses, or reading a regulation in an oblique manner by applying it differently from the way it is commonly followed.

This strategy evidences a straightforward transformative capacity. Examples range across the scale of design, from Santiago Cirugeda, who creates public and leisure spaces in overlooked wastelands [.a], to Lacol, who subverted legislative frameworks to enable typological strategies derived from the single property of the cooperative housing [.b], or Park(ing) day, which challenges the assumed priority of the car in cities through temporary actions [.c]. All these cases sparked a debate about updating obsolete regulations that responded to out-of-date needs, aims, and political agendas.

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.a | Santiago Cirugeda - Recetas Urbanas, "Subversive Strategies of Urban Occupation". Carrying out actions that are of dubious legality, Santiago Cirugeda systematically challenges the uses of public space and municipal regulations. In the image, a regulation relating to the temporary use of empty plots which allowed the stockpiling of construction materials was used to design public squares with construction elements and open them up to the community. With this project Cirugeda asked why commercial and construction activities are privileged over the collective enjoyment of public space. Source: Cirugeda, 2015.

.b | La Borda cooperative housing, Lacol architects, 2019. The legislation concerned the use of shared areas of the building as common spaces, typically for circulation and service areas. Using an existing procedure in an unprecedented way, Lacol architects registered some of the rooms (in yellow) as such, as a strategic decision, enabling the possibility of these rooms to serve any of the adjacent flats and change over time. Source: courtesy of Lacol.

.c | Park(ing) Day is a global event since 2005 which was started by the Rebar design team in San Francisco, who observed that it was not illegal to place things other than cars in a parking space. Their action consisted of renting a car park for alternative uses as an act of allocating less space for the car (top image). Source and information about the event: www.myparkingday.org.

Further reading:

Cirugeda, S. (2015) *Situaciones Urbanas.* Barcelona: Tenov.

Hou, J. (2010) *Insurgent Public Space Guerrilla Urbanism and the Remaking of Contemporary Cities*. London: Routledge.

D42

CAMOUFLAGE

Camouflage enables design goals to be achieved through confusing aesthetics. The need for camouflage may respond to a myriad of situations, depending on the project and who the audience is.

On the one hand, camouflage aims to dodge regulatory restrictions more or less explicitly, or to carry out activities that are of dubious legality – but arguably legitimate [.a, .b]. More familiar equals less harmful, less offensive, less polemic... but equally effective.

In other cases, camouflage may not pursue goals through a confrontation with legality but can be adopted to produce a more familiar atmosphere, which allows users a better performance or readability [.c]. When playing with cultural meanings, camouflage may also serve to stimulate curiosity in an audience (see Reaching by seduction section in Stakeholders chapter).

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.a | Santiago Cirugeda, Rigid Sheets, Seville, 2005. As discussed by Cirugeda, Spain has a shortage of housing stock for rent, contrasting sharply with the number of houses that are unoccupied. The bureaucratic complexity of erecting roof extensions has forced some citizens to create illegal constructions. In this controversial project, the architect designed a structure with rigid insulation sheets, that is camouflaged as a clothes dryer and makes the construction invisible to the control mechanisms of the local authority, which are based on aerial photographs. Source: www.recetasurbanas.net.

.b | Santiago Cirugeda - Recetas Urbanas, KUVAS SC, Sevilla, 1997. Cirugeda received permission from the authorities to place a container for construction site rubble in a public space, but used the space on top of the container as a playground. Rather than for the purpose for which permission had been granted, the architect aimed to provide the neighbourhood with missing leisure spaces. The project allows an unexpected activity to take place and becomes an argument for permission for this kind of use of public space. Source: www.recetasurbanas.net.

.c | Leve Projects (E. Serrats and F. Pla), Arrels Fundació and Elisava School of Design, Arrels Zero Flat, 2016. Given the difficulty that homeless people experience in adapting to night shelters, due to both their spatial configuration and prescriptive rules of behaviour, Zero Flat is designed as an intermediate space between the street and the house: a house camouflaged as a street, or a street within a house. Minimum infrastructure is provided: a mattress, a light source, water and a Mediterranean shutter to guarantee a minimum of privacy. Source: Cid Moragas *et al.*, 2019.

.c

Further reading:

Cid Moragas, D., Serrats, E. and Pla, F. (2019) 'Zero Flat: The Design Of A New Type Of Apartment For Chronically Homeless People'. *European Journal of Homelessness,* 13, pp.75–92.

Cirugeda, S. (2015) *Situaciones Urbanas.* Barcelona: Tenov.

D43

DECLARING A TEMPORARY AUTONOMOUS ZONE (TAZ)

The Temporary Autonomous Zone (TAZ) is a socio-urban area that temporarily suspends regulations up to a particular point. The TAZ derives from Hakim Bey's book (1991) that describes the strategy of generating autonomous self-managed areas on the margins of the state's socio-political control. In architecture, Todo por la Praxis developed a TAZ in the form of an autonomous experimental pavilion and an online archive of self-managed urban initiatives (www.archivetaz.org).

In a TAZ, what disappears are not the actions themselves but the context that makes them potentially threatening in the eyes of the local authority. An experimental TAZ can be developed for political reasons, thus allowing spaces and activities otherwise considered harmless by the authorities, or for testing purposes, to develop prototypes that challenge current regulations. Examples of a TAZ are architecture festivals, where often the space is occupied or temporary transformed, or university facilities, which become an excellent field for prototyping and testing without municipal restrictions and regulations. In addition, there are examples in which urban space has been declared a TAZ by the local authority, which has recognised the positive character of the event [.d]. Rather than perceiving the lack of control as a threat, the administration could benefit from the TAZ's experimental character in testing non-conventional solutions or experimenting with prototypes.

.a | Santiago Cirugeda, Chicken House, 2005. Very controversial prototype built in Poblenou under the framework of the Construmat international construction fair, eme3 architecture festival and APTM Experimental Housing Exhibition. The house complied with planning permission until the administration understood that it was not a piece of art but a real proposal to be replicated as self-built (unauthorised) units in empty plots of the city. Source: www.recetasurbanas.net.

.b | The Bridge of Styx, 1988, Architectural Association. "There comes a time as an architectural student when you just want to say fuck the conceptual crap, the drawings, the smart talk... I just want to build something. I think we all felt that." Mary Bowman, AA Projects Review, 1988. Architecture school premises often operate as a TAZ, allowing a higher degree of experimentation. Source: www.collectionsblog.aaschool.ac.uk/bridge-of-styx (top left and bottom; AArchitecture journal Issue 8, picture John McMinn top right.

.c | ETSAV School of Architecture campus is a place of experimentation where construction workshops are organised for students to build prototypes – and even self-manage some of the premises. In the image, (e)co pavilion. Source: courtesy of Arqbag.

.d | ETSAV School of Architecture and Arqbag, within the Pas a Pas Project, 2014-2017. To guarantee the possibility of work by non-professionals in a public space, including insurance, the area was officially declared an "experimental campus", like a university campus, with the support of the local authority. Source: courtesy of Arqbag.

Further reading:

Attout, A. (2018) *Usted Está Aquí: Recetas Urbanas 2018.* Madrid: Ediciones Asimétricas.

Bey, H. (1991) *TAZ: the Temporary Autonomous Zone*. Seattle: Pacific Publishing Studio.

www.todoporlapraxis.es

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D51

RECLAIMING EMPTY PLOTS

Reclaiming empty plots interrogates unused wastelands as areas of collective appropriation and use. If land and territory are understood as common goods, unused empty plots are unjustifiable given the shortage of land and the need for open-air areas in compact cities. While this affects all kinds of land, it is particularly obvious in publicly-owned land and property, which are often reclaimed by local communities to develop self-managed projects.

In Barcelona and worldwide, several plots are occupied and self-managed by neighbours as “released spaces”. With that, neighbours claim that can manage public resources (land) better than the municipality, in line with the global movement Reclaim the Streets. Sometimes the “meanwhile” condition in the urban context might last years, or even decades. Responding to this condition, the municipality of Barcelona developed Pla de Buits (Empty Plots Plan, 2012 & 2015), which sought to temporarily activate empty, unused plots of public land with community-led projects that would develop activities in the public interest. In 2017, the Citizen Assets programme (2017) consolidated communitarian self-management.

.a | Amsterdam Playgrounds, Aldo van Eyck and Jakoba Mulder, 1947-1978. Working within the Amsterdam Urban Development Department immediately after World War II, van Eyck and Mulder transformed more than 700 plots in derelict areas into playgrounds for children. They not only enabled spaces for leisure but had an impact on the psychological recovery of the city after the war. In the image, Zeedijk playground, 1955, before and after the intervention. Source: www.openresearch.amsterdam.

.b | Examples of empty plots reclaimed by local communities in different Spanish cities.

Top: Recetas Urbanas, “Temporary Plots Application and Occupation”, Seville, 2004. Reclamation of empty plots as a form of activism. Source: www.recetasurbanas.net

Below left: Campo de la Cebada, Madrid, 2011-2017. The construction of a municipal sports centre was halted during the austerity crisis and then claimed by residents as a self-managed space: first it was occupied during a cultural festival and then used legally through an agreement with the municipality. Source: www.plataformaarquitectura.cl.

Below right: Esto no es un solar (This is not an empty plot) Patrizia Di Monte e Ignacio Grávalos, Zaragoza, 2009-2010. 29 interventions developed by the municipality.

.c | Barcelona Municipality. APROP. “Allotjaments de PROximitat Provisionals” (Provisional Proximity Lodgings). The project addresses the construction of temporary emergency shelters in long-term empty plots. Container and modular constructions make the building a nomadic infrastructure that can be reassembled elsewhere. Source images: Straddle3 and Adrià Goula (photography); el Periódico newspaper (construction).

Further reading:

Arquitecturas Colectivas (Todo por la Praxis) (2014) *Guia Práctica para la activación de espacios: SOLARES*. Available at: www.arquitecturascolectivas.net.

Cirugeda, S. (2015) *Situaciones Urbanas.* Barcelona: Tenov.

Lefaivre, L. and Roode, I. D. (2002) *Aldo Van Eyck: The Playgrounds And The City.* Rotterdam: Nai010 Publishers.

www.ajuntament.barcelona.cat

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D52

FILLING IN THE GAP

"Filling in the Gap" tools understand the city as a common good beyond property frameworks, and allow existing underdeveloped urban structures to be claimed for the common good. While it presents some similarities with the Reclaiming Empty Plots tool, the fact that it is located on top of existing buildings creates a different condition; while many of these projects have been proposed as tools of regenerative tactics, not many have been executed, due to legal difficulties and ownership schemes. Thus, it is crucial to approach this tool from a multidisciplinary point of view to guarantee urban, financial, regulatory and social viability.

A relevant example is the ATRI project, developed by the multidisciplinary ATRI team. Originally developed for Barcelona but with potential application elsewhere, addressing the exhaustion of available building capacity is explained as an "urban dentistry" tactic. ATRI aims to be a transformative project in all its phases, from production (combining industrial, on-site, and do-it-yourself approaches) to management (combining property schemes).

.a | ATRI project, proposals for Barcelona and Manhattan. "Urban Dentistry" proposes the improvement of the existing urban fabric through the completion of vacant buildings with public housing in three different situations: Insertions (rehabilitate, change of use, fill), superpositions (overcome, superpose), and juxtapositions (attach, connect to consolidated party walls). Source: www.atri.city

.b | Adamo Faiden, MuReRe Houses, Buenos Aires province, 2009. Social housing units are placed on top of existing suburban houses. Built from light metallic structures, MuReRe houses become a critique of the low-density expansion of the metropolis and its resulting lack of infrastructure, aiming to regenerate existing neighbourhoods in terms of homes, infrastructure and sustainability. Source: *2G Journal,* 65, 'Adamo Faiden', 2013, pp. 72-79.

.c | In the exhibition Piso Piloto (CCCB, Barcelona, 2015), the vast amount of empty buildings in the city was discussed by ETSAB academic Xavier Monteys by referencing the hermit crab, an animal that reuses other animals' empty shelters to accommodate its own requirements. When the house is too small, the crab moves to a bigger one, leaving the previous one available: an example of efficiency in reusing. Drawing by Alejandro Giménez Imirizaldu.

.d | Todo por la Praxis, Vivienda Esqueleto (Skeleton Dwellings), 2013. The project argues against construction waste resulting from economic crisis through the "colonization of the structural skeleton of an unfinished building for the development of a mixed housing/ micro productive program" with a temporary and reversible intervention. Source: www.todoporlapraxis.es.

Further reading:

www.atri.city

www.todoporlapraxis.es

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REGAINING INFRASTRUCTURE

Regaining infrastructure is the act of reclaiming all types of infrastructure for uses other than their current ones, whether these are due to obsolescence [.a], inadequacy [.b], or potential new uses [.c]. This tool looks at built elements beyond buildings as appropriable material for design projects, making the most of infrastructure as a pre-existing context that can host a certain degree of adaptation. Mobility infrastructure is probably the most expensive building that authorities construct. Thus, reusing infrastructure aims to make the most of an existing structure whose investment has been considered paid off, or in the case where demolition/dismantling might be more expensive than tactical reuse.

Tactics of regaining infrastructure can be applied to the fixed elements of geographical scale, quite often exuberant in form and generous in their capacity, or movable devices, shorter-lasting but linked to the potential of nomadism (see Nomadic facilities tool in this chapter).

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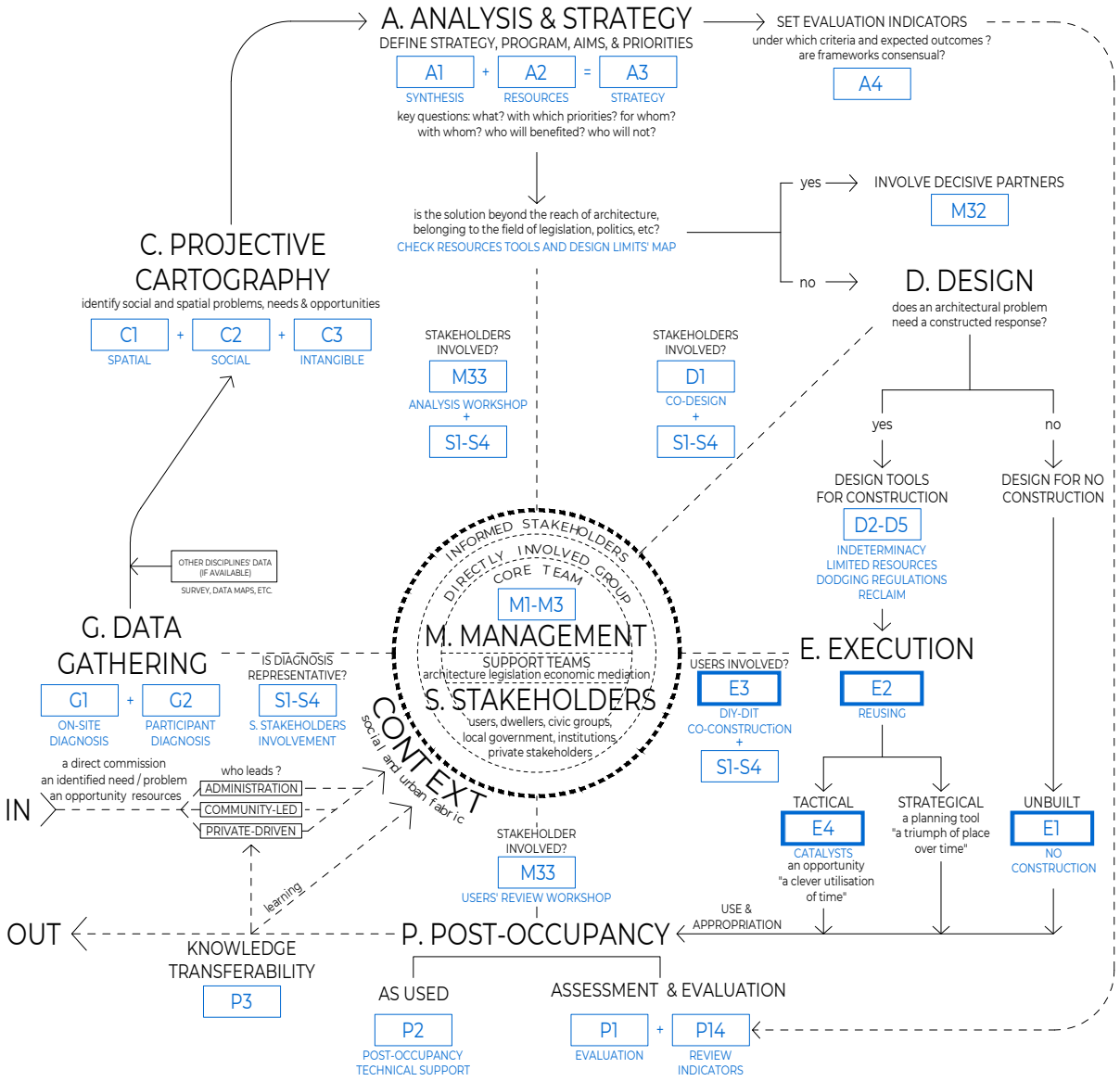
.a | Cedric Price, Potteries Thinkbelt, Staffordshire, England, 1964-66. The opportunity left by an abandoned industrial infrastructure and the need for higher education institutions were matched in this project of a mobile university that aimed to achieve the urban development of a depopulated area. Left: Madeley Transfer Area; Right: plan of Desire Lines-Physical and Mental Exchange. Source: www.moma.org.

.b | Latent Design + Architecture for Humanity Chicago, Fresh Moves, Chicago, 2011. A decommissioned transit bus becomes a mobile infrastructure, offering retail services and providing health knowledge in partnership with local stakeholders such as schools, churches and community organisations. The project has been replicated in seven US cities. Source: www.latentdesign.net.

.c | David Bravo Bordas, covering of Barcelona's ring road with public housing. Bravo claims that Barcelona needs more public housing and less space dedicated to private vehicles. Barcelona's ring road became the largest city investment in the 1980s and is used almost exclusively by private cars. Both problems could be addressed, according to Bravo, by considering the ring road as a massive empty plot and covering it with housing blocks rather than using it as public space, the most common use. In addition, he adds, a light railway could circulate in the central lanes of the road to improve the public transport network. See revistadiagonal.com/articles/ciutats/cobrir-la-ronda-amb-habitatge. Source image: www.barcelona.cat.

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

E. EXECUTION

TOOLS INVENTORY

M. PROCESS MANAGEMENT
M1. PLANNING
- M11 Definition of phases
- M12 Anticipated timescale

M2. DECISION-MAKING
- M21 Map of stakeholder roles
- M22 Core group diagram
- M23 Decision-making scheme

M3. STAKEHOLDER ENGAGEMENT
- M31 Co-organise / develop with
- M32 Involving decisive partners
- M33 Discussion workshops (I-II)

S. STAKEHOLDERS
S1. MAPPING
- S11 Identify stakeholders
- S12 Engagement matrix
- S13 Sociogram
- S14 Powergram

S2. REACHING BY SEDUCTION
- S21 Direct invitation
- S22 Indirect contact
- S23 Make it fun
- S24 Food as social ritual
- S25 Provide a platform for expression

S3. REACHING BY PROVOCATION
- S31 Artefacts invade public space
- S32 Spatial alteration
- S33 Confrontation

S4. REACHING VIA MAKING VISIBLE
- S41 Collaboration with external events
- S42 Printed media
- S43 Digital platforms
- S44 Billboard hacking
- S45 Public exhibition
- S46 Interactive map
- S47 Video / documentary

G. DATA GATHERING
G1. ON-SITE DIAGNOSIS
- G11 Ethnographic observation
- G12 Group walk
- G13 On-site technical support office

G2. PARTICIPANT DIAGNOSIS
- G21 Diagnostic workshops (I-II)
- G22 Meetings with stakeholders
- G23 Interview / survey

C. PROJECTIVE CARTOGRAPHY
C1. SPATIAL & MORPHOLOGICAL
- C11 Drawing the domestic
- C12 Picturing the domestic
- C13 Building as socio-spatial ecosystem
- C14 Facade as mediator
- C15 Urban void
- C16 Neighbourhood
- C17 Urban landmarks
- C18 Systemic urban elements

C2. SOCIAL DIAGRAMS
- C21 User portraits
- C22 Routines & habits
- C23 Users' needs (I): individual
- C24 Users' needs (II): collective
- C25 Morphology to patterns of behaviour
- C26 Rituals & social activities
- C27 Diagrams of relational activities

C3. THE INTANGIBLE
- C31 Subjective perception maps
- C32 Collective perception
- C33 Proximity or isolation
- C34 Movement
- C35 Memory
- C36 The uncanny
- C37 Invisible borders
- C38 Temporalised space
- C39 Control
- C40 Conflict (I): maps
- C41 Conflict (II): events
- C42 Conflict (III): effects

A. ANALYSIS & STRATEGY
A1. SYNTHESIS
- A11 The (yellow) manifesto
- A12 Mind map
- A13 Design limits' map

A2. RESOURCES
- A21 Financial analysis & co-finance strategies
- A22 Available resources (I): inventory
- A23 Available resources (II): "harvest map"

A3. STRATEGY
- A31 Strategic action plan
- A32 Actions & tools breakdown
- A33 Viability map
- A34 Consequences map

A4. EVALUATION INDICATORS
- A41 Technical indicators
- A42 Perceptual indicators
- A43 Typological indicators
- A44 Cross-qualitative & quantitative data

D.DESIGN
D1. CO-DESIGN
- D11 Co-design workshops (I-IV)
- D12 Proposing an alternative

D2. INDETERMINACY
- D21 Enabling: user appropriation
- D22 Enabling: user manipulation
- D23 Enabling: adaptable system
- D24 Typological variations
- D25 Multiple scenarios

D3. LIMITED RESOURCES
- D31 Intermediary situations: "the meanwhile"
- D32 Leveraging material scarcity
- D33 Designing for low-risk construction
- D34 Split large interventions
- D35 Nomadic facilities

D4. DODGING REGULATIONS
- D41 Legislative blind spot
- D42 Camouflage
- D43 Declaring a Temporary Autonomous Zone

D5. RECLAIM
- D51 Reclaiming empty plots
- D52 Filling in the gap
- D53 Regaining infrastructure

E. EXECUTION
E1. NO-CONSTRUCTION
- E11 Do not do (I): maintain
- E12 Do not do (II): connect
- E13 Reprogramming time in space
- E14 Relocation
- E15 Undoing

E2. REUSING
- E21 Borrow - barter
- E22 Recycling & reclaiming components
- E23 Dismantling & reassembling buildings
- E24 Parasite

E3. DIY-DIT CO-CONSTRUCTION
- E31 Technical specifications
- E32 User to execute
- E33 User to complete
- E34 User to expand
- E35 Collective assisted DIY-DIT

E4. CATALYSTS
- E41 Generative actions
- E42 Tactical on-site prototypes
- E43 Do it anyway

P. POST-OCCUPANCY
P1. ASSESSMENT & EVALUATION
- P11 Process overview
- P12 External evaluation: stakeholder review
- P13 Internal evaluation: tools & methods (I-IV)
- P14 Evaluation indicators review

P2. POST-OCCUPANCY TECHNICAL SUPPORT
- P21 Post-occupancy technical support
- P22 Building monitoring

P3. KNOWLEDGE TRANSFERABILITY
- P31 Manuals & toolkits (I-III)
- P32 Plans sets
- P33 Process reports
- P34 Online resources

body of practice

COLLABORATIVE ARCHITECTURE BARCELONA: THE ARCHITECT AS ENABLER

Raül P. Avilla-Royo

COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

as part of

COLLABORATIVE ARCHITECTURE BARCELONA:
THE ARCHITECT AS ENABLER

PhD By Practice | Royal College of Art | School of Architecture | London | 2018-2022
Supervisors: Dr.-Ing. Sam Jacoby (SoA-RCA) & Ibon Bilbao (ETSAB-UPC)

Raül P. Avilla-Royo

E. EXECUTION

“We've spent some time watching what happened there. We've conversed with a few of the local inhabitants. Then we asked ourselves about a development project on this square with a view to its embellishment. What does the idea of "embellishment" boil down to? Does it involve replacing one groundcover with another? A wooden bench with a more up-to-date design in stone? Or a lamp standard with another, more fashionable, one? Nothing calls for too great a set of changes. Embellishment has no place here. Quality, charm, life exist. The square is already beautiful.” — Lacaton & Vassal, L&V website memory, Aucoc Square in Bordeaux, 1996.

Lacaton & Vassal, Place Léon Aucoc, Bordeaux, 1996. Source: lacatonvassal.com.

E

Lacaton & Vassal's drastic response of "not executing" in the disciplinary context of formal excess during the 1990s not only questioned the competition's brief and architects' approach to it, but also the instrumentalisation of design and cultural values in urban renewal. Interestingly enough, their response emerged from careful ethnographic observation and the consideration of local people's opinions as design drivers.

Execution is probably one of the most engaging moments in architecture, and certainly the most time-consuming and economically demanding. While physical interventions often significantly support social change, they have their limits and may not be successful, or even necessary to achieve the desired outcome. To include residents in the process and provide more efficient responses, collaborative architecture is challenging the protocols of execution and methods of building.

The tools presented in the four sections of this chapter, once more, only operate through a multidisciplinary approach to the social and morphological context that strategically connects needs with opportunities and resources (see the section on Resources in the Analysis & Strategy chapter).

The first group of tactics gathers around the idea that an architect's design strategy may include NO CONSTRUCTION. It may well be that an architectural problem is better addressed through a non-constructed response or, at least, not in the way that welfare states used to address an issue before the 2008 economic crisis, when a new building was seen as a predetermined solution for urban and social problems.

The tools described in this section do not address the design of a building or a space, but rather a process or a strategy that optimises existing resources beyond form itself. Thus, the first set of tools includes tactics such as maintaining, connecting, reprogramming, relocating, and undoing. By making the most of what exists already, these tools enable much more effective proposals with fewer means and, despite the lack of spectacularity that a new building would offer, whenever possible they attempt to provide the most intelligent design approach.

For example, rather than expanding a school, as the competition brief required, Architecture 00 proposed the reprogramming of the school's timetable, as a response to overcrowded corridors; Lacaton & Vassal rejected the plan to refurbish a square in Bordeaux, since they considered the space already had all the qualities it required, and n'Undo proposed the dismantling of an illegally-constructed hotel in the southern Spain as an opportunity to reuse materials and generate a social impact, as well as restoring the natural landscape. All of them presented spatial problems, and thus concerned architecture as a discipline. However, architects wisely decided to not approach them as construction problems, but as issues of scheduling, maintenance, and demolition respectively.

The second group of tactics is REUSING as a conscious approach to material resources, waste management and environmental impact. Tools in this group include borrowing and bartering, recycling and reclaiming components, dismantling and reassembling buildings, and reusing an existing building as a host to a parasite structure. These strategies can be applied regardless of scale or project aims; for example, and despite their differences, I would argue that Santiago Cirugeda's Scaffold Room and Lacaton & Vassal's apartment tower refurbishment share a similar architectural thinking, to a great extent.

The third group of tactics aims to include dwellers in the construction process through different forms and degrees of DIY/DIT CO-CONSTRUCTION. While traditional architecture's on-site roles typically refer to supervisory tasks, on-site collaborative architecture entails working with non-professionals; the contribution of voluntary work both extends the time it takes to execute and saves on costs. On the other hand, user engagement becomes a pedagogical process that allows the participant to acquire knowledge about the built environment and develop a caring approach to what has required a significant effort on their part. When developed as part of a collective do-it-yourself (DIY) or do-it-together (DIT) approach, supervised by architects, these processes produce social cohesion and peer learning. To make this process effective, it is necessary to design tasks that do not require the use of complex machines or present health risks (see the section Limited Resources in the Design chapter). The non-professional workforce has an impact on how tasks are organised, the language through which instructions are given, the careful supervision of health and safety measures, and the non-expert skills of participants.

Lacaton & Vassal, Transformation of an Apartment Towers in Bordeaux (2011-2017). Source: El Croquis 177/178.

Santiago Cirugeda, Scaffold Room, Sevilla, 1998. Source: www.recetasurbanas.net.

DIY/DIT co-construction can have a different balance depending on the role allocated to users, and three forms have been identified. The first approach is when users build the entire structure by themselves, following a set of instructions prepared beforehand, which are followed to a greater or lesser degree. The second is when users are given an unfinished structure that relies on residents to be complete it and take active design decisions according to their needs and preferences. The third case is best exemplified by incremental housing, when a complete functioning house is given to residents, who extend it over time according to their needs.

Finally, some tools exemplify the role of actions as provocations and CATALYSTS that trigger other events or administrative decisions. Manuel Bailo Esteve (Bailo Esteve, 2015) defined "public catalysts" as elements on a minor scale, either formal or ephemeral, that trigger activity and transform "indifferent" areas" in public spaces. Bailo classifies them in five categories: environmental modification (shadow, humidity, water); the interpretation of symbols of culture and customs; creating infrastructure for trade and leisure; artistic interventions, and scalar conversion (architectural elements that mediate between monumental and human scale). These provocations can also take the form of tactical prototypes – which include so-called "tactical urbanism" – but also actions such as demolishing, painting, performing, etc. This section also includes what Santiago Cirugeda defines as "necessary illegalities": activities developed outside or against regulations that agitate for a shift in what is considered unfair legislation or urban decision-making.

The tools in this chapter are highly dependent on socio-economic and legislative frameworks, since in European countries construction is the most highly regulated stage of architectural procurement, while self-construction is common in many countries of the Global South. Examples such as the Uruguayan Mutual Help Institutes Federation (www.fucvam.org.uy) are very relevant since they articulate, in a collective and organised manner, the advantages of self-construction for the purposes of mutual support. In Spain, despite being discouraged by law, the right to self-build is increasingly claimed by the cooperative housing movement. Architect Santiago Cirugeda frequently involves users in building construction as a political strategy, proving that entire buildings can be built with participatory construction methods.

Bibliography

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DO NOT DO (I): MAINTAIN

"John Ruskin, in *The Seven Lamps of Architecture*, says: 'Don't build if you can avoid it.' Quetglas adds [...] 'an architect is not the one who builds, but the one who makes room for human activities. If to make a place, to make space, it is inevitable or appropriate to build, then build. But this is not always necessary. In any case, to build is not the goal of architecture but the lesser evil.' "
— From Santiago de Molina, 2021 (translated by author).

Maintaining something involves highlighting the importance of what already exists, which derives from a highly effective attitude of intervening as little as possible, whenever possible. This attitude reveals a crucial shift in the disciplinary approach, contrasting with the approach of the architect who is eager to build, and the bigger the better.

Lacaton & Vassal famously questioned whether the physical transformation of a square in Bordeaux would bring benefits to users. In doing so, they challenged notions of aesthetics and modernisation and questioned the political agendas and urban dynamics of the required renovation. The strength of the project resides in its radicality and its renouncement of authorship in design, in sharp contrast to the formal excess of 1990s design. Remarkably, they reached this conclusion after a critical approach to the brief and by asking the opinions of local people, who praised the existing beauty and character of the square.

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.a | Lacaton & Vassal, Place Léon Aucoc, Bordeaux, 1996. "We've spent some time watching what happened there. We've conversed with a few of the local inhabitants. Then we asked ourselves about a development project on this square with a view to its embellishment. What does the idea of "embellishment" boil down to? Does it involve replacing one groundcover with another? A wooden bench with a more up-to-date design in stone? Or a lamp standard with another, more fashionable, one? Nothing calls for too great a set of changes. Embellishment has no place here. Quality, charm, life exist. The square is already beautiful." Source quote and images: www.lacatonvassal.com.

.b | n'UNDO, first prize, European 12 competition, Don Benito, Spain, 2013. While European housing projects are commonly addressed as building problems, "n'UNDO proposes for Don Benito the improvement of its municipality, deriving from "No Construction, Minimization, Reuse, and Dismantling (...) Acting from a network of small sequenced interventions against large localized scale, and giving priority to investment in the typical values and pre-existences of the municipality". Source: www.nundo.org.

Further reading:

De Molina, S. (2021) 'Formas de no hacer'. Available at: www.santiagodemolina.com.

Lacaton, A. and Vassal, J. (2017) *Actitud*. Barcelona: Gustavo Gili.

DO NOT DO (II): CONNECT

This tool seeks out opportunities that emerge from connecting different stakeholders' needs, inviting them to collaborate. By avoiding high economic investment, and focusing on the agreement between the stakeholders for mutual benefit, it represents a highly effective strategy. This does not mean that there is no architectural project, but rather it involves moving from a construction-based approach towards strategic and managerial considerations.

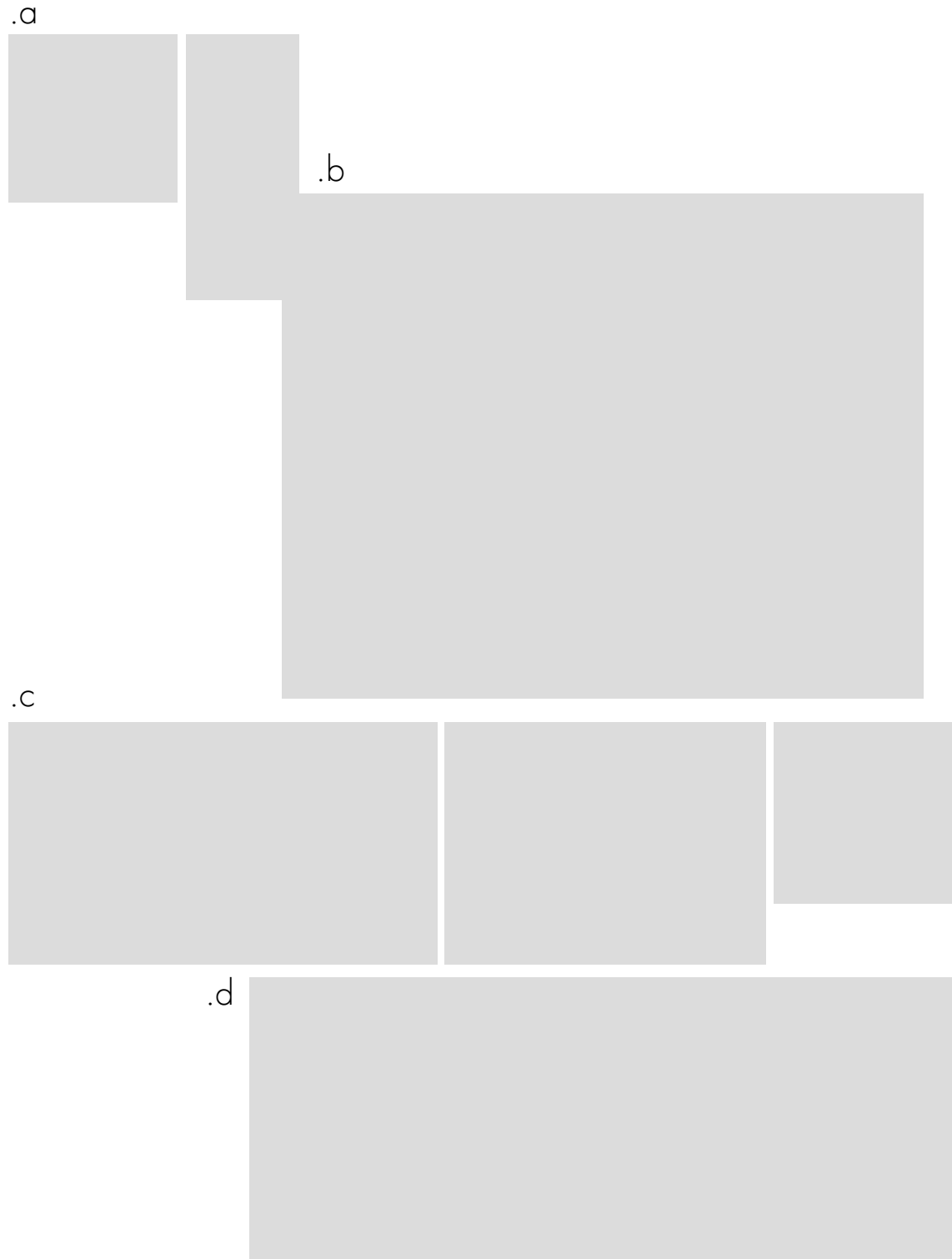
This tool reveals the importance of getting to know the different stakeholders who are involved, or may have an interest in a certain area, in which social cartography becomes crucial (see section Mapping in Stakeholders chapter). In addition, connecting different stakeholders may result in a useful synergy, because they may share needs or claims, and they are then taking the first step towards a joint organisation.

.a | Arquitectos de Cabecera and Pei.Lab Javeriana Bogotá, Dolors & Omar, WAC Raval 2015, Barcelona. The cartographic representation of the neighbourhood developed by different student groups showed the possibility of connecting two people with opposing needs. On the one hand, Omar was a Mali migrant living in poor conditions in a flat that lacked the conditions suitable for habitation. On the other hand, Dolors was an elderly woman in the same neighbourhood with empty rooms in her flat; she could not reach the street due to her reduced mobility and the lack of a lift in an old building. Both of them were suffering from unwanted solitude. In exchange for a room, Omar would do grocery and pharmacy shopping, while both would enjoy each other's company. Unfortunately, the agreement did not succeed due to the opposition of Dolors' relatives. Source: AC Archive.

.b | Die Baupiloten, Resource Swap, Ageing in the Neighbourhood project, Berlin, 2014. Diagram developed through a workshop aiming to enable acquaintances and strengthen mutual support networks. Source: Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis, p.36

.c | Arquitectos de Cabecera, Pei.Lab Javeriana de Bogotá and Zuloark, Bocachica, Colombia, 2016. In 2016, the Colombian Ministry of Culture invited local universities (U. Tadeo, U. Pereira, Pei and Nuevos Territorios Universidad Javeriana de Bogotá) and Spanish Collectives Arquitectos de Cabecera and Zuloark to refurbish the San Fernando Fortress, in Bocachica – Cartagena de Indias Bay – to host the final event of a national heritage conference. The short-term strategy aimed to change Bocachica's citizens' perception of the fortress from an institutional military building to a local facility that hosts cultural events. The long-term strategy consisted of connecting a disused fort, the national heritage institution that manages the building, and the Escuela Taller Cartagena de Indias, which runs the Taller de Carpintería de Ribera (Boat-building Joinery Workshop). As a result, since 2016 the Workshop has organised joinery and carpentry training workshops in the fort as part of the revitalisation of traditional Caribbean wooden construction techniques for boats, houses and furniture. Image: Boat Building Carpentry workshop in San Fernando de Bocachica Fortress. Source: courtesy of Carlos Hernández (PUJ).

.d | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, Can 60, WAC 2015. A meeting between different associations became a key step in uniting stakeholders and forming common cause against their expulsion from the building by a new property owner. Surprisingly, despite all being inhabitants of the same building, they were not aware of their shared problems. Source: AC Archive.



E13

REPROGRAMMING TIME IN SPACE

Reprogramming time in space tool aims to solve problems of the over-occupation of space through better organisation of the activities, rather than by increasing the built environment. Considering the dimension of time as an entry point for spatial problems means incorporating as many activities as possible at different moments of the day or week, addressing spatial problems through scheduling management tools.

Despite its main programmatic use, that might be the reason that a space or device exists, rescheduling activities offers the opportunity to include a wider range of user profiles and activities, multiplying the potential impact of architecture. This multiplicity of activities has an impact on the formalisation of design, in terms of both form and materialisation.

This tactic requires a considered knowledge of users and their needs, as well as those of the stakeholders in the area. For this, social cartography should be carried out (see section Social Diagrams in the Projective Cartography chapter).

.a | Charles Correa, Hawkers Pavement, Dadabhai Naoroji Road, Bombay, 1968. Correa approached the refurbishment of the street from the section and its users, proposing the construction of 2-metre wide platforms separating pedestrians and cars. This space was programmed differently at different times: during the day hawkers could sit there, elevating them from the floor, and at night it could be used by homeless people to sleep on. The infrastructure included water taps every 30 metres. It was never executed. Source: Correa, C. and Parikh, R. (2016) *Buildings as Ideas: The Un-Built Works of Charles Correa* (exhibition catalogue) Mumbai: Gallery MMB; Urban Design Research Institute, p.43.

.b | Curro Claret, 'For the Love of God', 2010-2017. Industrial designer Claret designed a church bench that could be transformed into a bed for homeless people, with the aim of recovering "the open spirit of the church", which had historically offered its benches for sleeping on, as part of a 24-hour open-door policy. Several benches have been built in different locations. Source: www.curroclaret.com and www.neo2.com.

.c | Designing with time means shifting the focus from a spatial problem to a scheduling problem, as described by Jeremy Till in "Scarcity Contra Austerity", describing "spatial intelligence" of Architecture 00 studio in a competition "to redesign the congested corridor of a secondary school (...). They spent days carefully watching the space, noting when and how it was used, and then, rather than proposing a redesign, they proposed easing the crowding by retiming and staggering the daily breaks. The physical arrangement of the corridor would remain as it was." Source: Till, J. (2012) 'Scarcity contra Austerity'. *Places*.

.d | Arqbag, Pau Gargallo school, 2016. Addressing the challenge of the lack of space, architects designed an app to operate the school under a "contra-schedule", optimising the use of school facilities by detecting rooms that were not being used. Source: courtesy of Arqbag.

.e | Municipality of Barcelona, "Open the Streets", 2020. As a response to the municipal confinement during the Covid-19 pandemic, which restricted mobility outside the city borders, the city council pedestrianised major streets around the city at the weekend. This strategy, tested at the Sant Antoni Sunday book market during refurbishment works, became very successful and was enjoyed by pedestrians. Its flexible approach to street use allowed the urban space to respond to major demands according to the time at which they took place: traffic mobility during the working week, leisure on weekends. Source: www.barcelona.cat.

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This space has been left blank on purpose; ingenious architectural designs are not necessary communicated with a representative image.

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RELOCATION

The relocation of users entails aims to improve a situation by changing the user's spatial allocation, not (just) space itself. While relocation can be a tactical project in itself, it can also result from the possibility offered by a larger intervention [.b]. This strategy involves an understanding of the significant benefits of belonging to a community and that social bonds created with neighbours decisively contribute to people's quality of life through mutual support networks. Relocation relies on managerial strategies and tools, and places a high value on users' preferences. When relocation affects several households, the communication of information in a clear and non-technical manner is crucial, in order to avoid misunderstandings or confusion.

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This space has been left blank on purpose; ingenious architectural designs are not necessary communicated with a representative image.

.a | Ralph Erskine's Byker housing (1969-74), in Newcastle Upon Tyne. The transformation of an existing neighbourhood of two-up-two-down brick houses with sanitary problems and a strong sense of community included refurbishment and partial demolition. For a better understanding of the existing conditions, two of the architects' studio employees moved to live in the area before the design phase. A careful strategy of avoiding splitting up families or dissolving social bonds was developed in the construction of a new building, bounded by the highway. Source: Egelius, M. (1990) *Ralph Erskine, Architect*. Stockolm: Byggförlaget.

.b | Druot, Lacaton and Vassal, Tour Bois-le-Prêtre, Paris, 2011. The conversion of the tower was seen as an opportunity to respond to residents' housing preferences, in addition to saving half of the cost of demolition and new building. The image shows the internal movement of residents during refurbishment according to their preferences. While refurbishment often produces the effect of gentrification, splits up households or dissolves social bonds, a prefabricated construction system and careful planning allowed residents to remain on site during construction works. Progressive intervention allowed each home to be affected by construction for a minimum length of time, during which the house was inhabited. Some units were joined together to respond to new household size requirements. Source: Druot, F., Lacaton, A. and Vassal, J. -P. (2007) *Plus: Large-Scale Housing Developments: an Exceptional Case*. Barcelona: Gustavo Gili, p.227.

.c | Social Superblock, Municipality of Barcelona, from 2017. The implementation of the urban superblock has been followed by the "social superblock", a new management model for domestic social care services based on the Netherlands' Buurtzorg model. In Barcelona, 17.500 elderly inhabitants are receivers of the Domestic Attention Service (SAD), which has 3500 workers, mostly women with part-time contracts, of which half are migrants. The former model produced employment precarity and a high turnover of staff. The traditional service was optimised by allocating a stable team of social care service workers to a group of 40-60 users living in nearby areas – a "social superblock". This produced an improvement in the quality of the service, coordination, trust between workers and users, as well as employment conditions. The success of the pilot project in four social superblocks resulted in the envisioning of its replicability. More information at: www.slideshare.net/CUIMPB-CEL/superilles-socials-la-proximitat-a-lestratgia-denvelliment-de-lajuntament-de-barcelona.

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Druot F., Lacaton, A. and Vassal, J. -P. (2007) *Plus: Large-Scale Housing Developments: An Exceptional Case.* Barcelona: Gustavo Gili.

UNDOING

To improve a location it might be necessary to go back to an earlier situation by undoing, dismantling, or deconstructing. Undoing questions why resources were originally spent on the intervention, and whether the intervention improved or worsened the existing conditions. While architects have traditionally aimed to produce major construction projects, some voices argue for de-urbanisation as a step forward.

This is particularly relevant in places like Spain, when for decades economic growth was based on an insufficiently controlled construction industry and urban development, sometimes accompanied by cases of political corruption. The complicity of architects in projects that are dubious ethically – sometimes even declared illegal in courts of law – produced innumerable examples of the destruction of the natural environment and massive over-consumption of land.

Since dismantling entails the management of resources, both material and personal, it may be seen as an opportunity to have an impact on the local economy and social fabric of the area, as the project by N'Undo for the Cabo de Gata hotel brilliantly proposes [.b].

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.a | Santiago Cirugeda. Landscape Restoration in Fuerteventura, 2007. To challenge the breaching of natural environment protection regulations in favour of urban expansion, along with urban and political corruption, Cirugeda partially demolished the road leading to the natural area that was being destroyed. The road had been declared illegal and was closed after a court trial, and yet it had been operative for years. Cirugeda's strategy was framed by an arts festival, and included a fake billboard to announce the intervention, generate favourable public opinion, and obtain the support of the excavation operator who carried out the work and who was unaware of the nature of the operation. Since the illegal action was done on a road that was illegal in the first place, and given the "artistic nature" of the intervention, there were no legal consequences for the architect. Source: www.recetasurbanas.net.

.b | Hotel in Cabo de Gata-Níjar Natural Park. N'Undo: strategy diagram. N'Undo collaborated with Greenpeace in 2012 to devise a strategy for the demolition of an illegal hotel in the protected area of the Natural Park of Cabo de Gata-Níjar, in Almeria. While demolition often involves a high cost and the avoidance of the assumption of responsibility, N'Undo proposed the demolition as a creative activity with a socio-economic project involving local stakeholders to dismantle the hotel, manage waste, and restore the natural park. This generated a positive outcome in terms not only of landscape restoration but also of job creation, increased social awareness and community engagement. Source: archivo-es.greenpeace.es.org and nundo.org. Source photo: *La Voz del Sur.* For more information see: "El Algarrobico, la Oportunidad Bajo los Escombros", report available at www.archivo-es.greenpeace.org/espana/es/reports.

Further reading:

N'Undo (2017) *Desde la Resta*. Barcelona: Dpr-barcelona.

BORROW – BARTER

Borrowing and bartering are very useful in absence of tools or materials to implement projects. They are both based on collaboration between different stakeholders and mutual support and trust, although they differ in terms of the scheduled return of the resources.

Borrowing entails a temporary loan of an object, that is to be returned after its use. It does not necessarily involve an agreement about how the favour will be returned but it is open-ended, based on the tacit agreement to reciprocate the help when it is required. Bartering is a win-win agreement between actors in which the exchange is established at the moment of the agreement. Both sides offer and receive resources, typically materials or tools.

Borrowing and bartering can be applied to materials, but also to spaces. In Catalonia, there is a historic tradition of masoveria, that originally emerged from agricultural practices and that has been implemented in recent decades in urban environments. With this agreement, owners temporarily lease property to residents in exchange for its maintenance and the development of improvement work, as agreed. In addition, architects can offer their services, including technical inspections of buildings, as part of an exchange.

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.a | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, Bocachica, Colombia, 2016. The need to domesticate a military fortress for an institutional heritage event was achieved with furniture. Broken furniture was borrowed from neighbours in exchange for returning it fixed once the event concluded. Local villagers participated in the furniture restoration workshop, which stimulated their interest in the event and encouraged their attendance. Source: AC Archive.

.b | Arquitectos de Cabecera and Pei.Lab Javeriana de Bogotá, la Escocesa workshop, 2019. In la Escocesa, Arquitectos de Cabecera achieved an urban masoveria agreement with the artists' association La Escocesa, which managed the warehouse: the use of the space for a summer workshop (below) was exchanged for improvements made during the workshop. It entailed the opening of windows (top) and the construction of a strategic door connecting the existing studios (middle). After the workshop, the agreement was extended and the warehouse was refurbished with new artists' studios, which are still operating. Source: AC Archive.

Further reading:

Straddle3 (2017) *Guía para la Aplicación de la Masovería Urbana en el Ensanche.* Barcelona: Ajuntament de Barcelona. Available at: www.straddle3.net.

Celobert (2014) *Estudio de Modelos Alternativos de Acceso y Tenencia de la Vivienda.* Barcelona: Consell Nacional de Joventut de Catalunya. Available at: www.celobert.coop.

Diputació de Barcelona (2017) *Guía Metodológica de Masovería Urbana*. Barcelona: Diputació de Barcelona.

E22 RECYCLING & RECLAIMING COMPONENTS

Waste is in the eye of the beholder. Recycling and Reclaiming Components become an argument against the vast amount of materials wasted in a construction industry that prioritises time and budget over conserving resources. Rubbish and left-over materials cost almost nothing. Building with them implies a deep understanding of their properties and construction logic, rethinking their formalisation and questioning standard aesthetics. Some practices, such as Superuse, Rotor, Basurama or Makea, among many others, have become specialists in recycling waste materials and working with left-over material. The use of internet platforms such as www.grrr.tools, www.rotordc.com, www.el-recetario.net (promoted by MakeaTuVida), www.oogstkaart.nl, or www.re-use.eu encourage the reuse and recycling of materials in an open-access knowledge system.

.a | Matteo Ferroni, Foroba Yelen, Mali, 2010. While collective daily activities often take place under the shadow of a tree in Mali, there is not enough light to allow those social and commercial activities to happen at night. To address this situation, Mateo Ferroni designed a movable lamp built from recycled bicycles. The lamp has a solar charger and, due to its mobility, can be used for multiple activities and shared between different communities – thus enforcing mutual support. Source: www.plataformaarquitectura.cl and Matteo Ferroni.

.b | Rural Studio (RS) projects develop practical research into unusual ways of recycling and reusing materials. In the Mason's Bed Comunity Center (2000) RS created a façade with a recycled automobile windshield fixed to a wooden cypress sub-structure. In the Cardboard Pod (2001), walls were built with waste corrugated cardboard. Cupboard bales are made of layered compressed left-over material and impregnated with wax, which makes it very difficult to recycle, but makes them water-resistant and ideal for construction. In another pod in the same complex, RS used reversed car plates as metal facade tiles. Source: Dean, A. O. and Mockbee, S. (2008) *Rural Studio*. New York: Princeton Architectural Press. Photograph by T. Hursley, pp.59, 81, 82 and 83.

.c | Barcelona Municipality. APROP. "Allotjaments de PROximitat Provisionals" (= Provisional Proximity Accommodations), built by reusing shipping containers, a system that had been developed previously in the Netherlands. Source: www.elperiodico.cat.

.d | Superuse, Netherlands. Left: BlueCity, Rotterdam, 2017. In addition to structural steel elements, reused window frames became partition walls. Photo: Frank Hanswijk. Source: superuse-studios.com. Centre: Buitenplaats Brienenoord, 2020. 90 per cent of the building is made from reused components from an old building. Source: superuse-studios.com. Right: Wessel van Geffen & Superuse, Afvalbrengstation The Hague, 2017. Source: archdaily.

Further reading:

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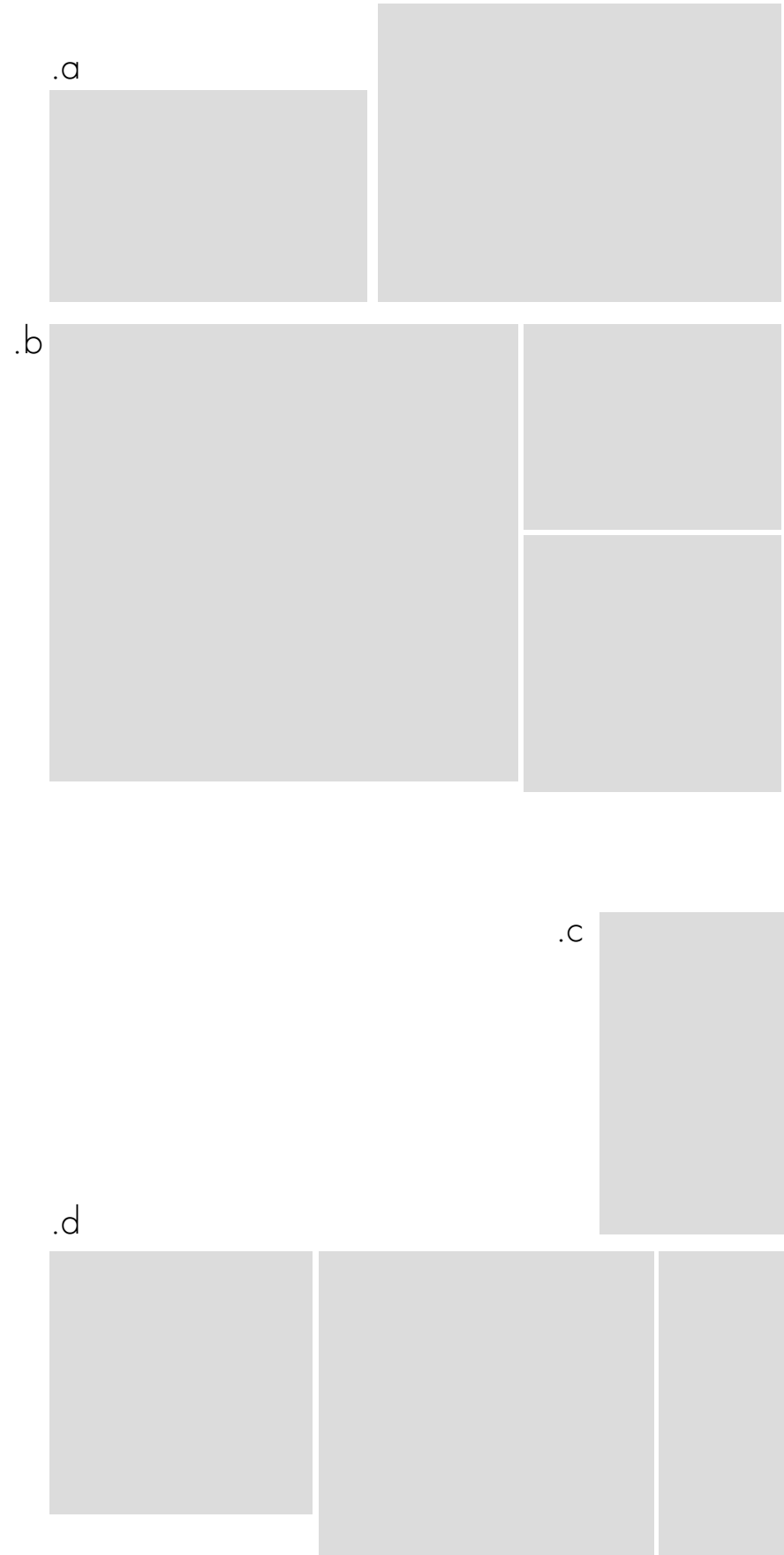

E23 DISMANTLING & REASSEMBLING BUILDINGS

Dismantling and Reassembling tools allow reassembly of buildings in new locations, questioning the single use of buildings or their parts and the concept of permanence in architecture. They challenge the assumption that the best way to build is to fabricate materials anew and discard ones that have already been used, offering the possibility of re-assembling them in a way that responds better to changing needs or distributing the impact that a certain building may have in several projects [.b]. Reassembling buildings entails careful control of management, storage, transport and disassembling processes.

Planning a building's disassembly invites the designer to think about architectural projects differently, assuming that in the future someone else might dismantle and reassemble the building with predetermined rules, like a collaborative game that welcomes a new player, or a musical score interpreted by a musician.

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.a | Santiago Cirugeda and Recetas Urbanas. Asociación Aula Abierta (AAAbierta, 2004) dismantled a building in Granada that was going to be demolished, donated by the local authority (Diputación de Granada, left), and afterwards reassembled the building as part of a course on health and safety in construction by the Fine Arts Faculty of Granada University (right). The building became a self-managed space in the university. Source: recetasurbanas.net; see many other examples there.

.b | Santiago Cirugeda and Recetas Urbanas, "Frankenstein Staircase": relationship between different components of the original staircase and the different projects they were assembled in. Some components were reused several times in different projects. Source: Recetas Urbanas (2019) *Usted Está Aquí*. Madrid: Ediciones Asimétricas, pp.170-171.

.c | ETSAV's competition entries for Solar Decathlon Europe, reassembled in the Vallès region. Left and Centre: (E)co prototype developed by ETSAV and Arqbag, 2012-2016, on the Solar Decathlon competition site and in Les Planes neighbourhood as a community centre (since 2015). Source: eco.upc.edu; espaiecosantcugat.cat; arqbag.coop. Right: 2014 Ressó pavilion was reinstalled as a civic centre in Sant Muç Rubí. Source: www.resso.upc.edu.

.d | Reuse of containers in several projects. First, as workshop platforms in Martorell. Secondly, in the Free Consultation Office for alegal housing on terrace roofs within "Interferencias 07" in Rambla Santa Mónica (left, 2007). A third planned use, as artists' studios in Martorell, was not achieved. Finally, they were reused by Straddle3 in Arbúcies in the Park-a-part project (right, 2008) as a social gathering space for multiple uses. These containers are part of a larger project in which 45 housing containers donated by the administration were allocated to different assemblies, cooperatives, collectives and associations. Source: Cirugeda, 2010.

Further reading:

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E24

PARASITE

Emerging from biology, an architectural parasite is an expansion that benefits from a host structure. Parasite architecture was developed as an architectural strategy in the 1960s and 70s, with paradigmatic projects such as the Plug-in City by Archigram (1964). The parasite might establish different programmatic relationships with the host, a good parasite being one that, beyond exploiting the host's services and resources, achieves a symbiotic relationship by complementing them.

A parasite can entail different degrees of performance, from long-term, temporary or occasional protest actions. While parasitising has been a common strategy for activism, recent acclaimed projects, such as Lacaton & Vassal's social housing refurbishment in France, propose a more permanent reading of this tactic [.a]. As opposed to systematic demolition of the pre-existing mid-twentieth-century structures, Lacaton & Vassal consider them excellent hosts, due to their construction features.

.a | Lacaton & Vassal, Transformation of an apartment tower in Bordeaux (2011-) and La Chesnaie (2006-2014). In the first case (left), the old building is parasitised with a thick light façade that increases the apartment's surface and becomes a winter garden, a new non-programmatic space. In the second one (right), the building is parasitised by a new set of apartments in new built spaces that duplicate the original surface. While the former reads the parasite as a matter of thickness, that is, through the section, the latter develops parasites as extensions through the plan. Source: *El Croquis* 177/178 (2015), 'Post-Media Horizon'.

.b | Njiric+, Non-Stop House (Grandturismo House), Silves, Portugal, 2005-2008. Inspired by camp-site architecture, and making the most of the suburban setting, an undetermined number of living units (and potentially relatives) are parasites on a larger infrastructure and services. Source: Njiric+(2011) *2G Journal,* 57, p.31.

.c | Santiago Cirugeda, Scaffold Room, Seville, 1998. An extra room for a house was temporarily built on a scaffold installed for repainting the façade after a graffiti. Source: www.recetasurbanas.net.

.d | Michael Rakowitz. paraSITE homeless shelter, 1997. Minimum transportable polyethene shelter that parasitises a building's heating ventilation system to improve temperature conditions. However, the author is aware of the limitations of design: "these shelters should disappear, as the problem should. In this case, the real designers are the policymakers." Source: www.moma.org.

.e | ATRI team, ATRI System, 2018, exemplified in Sant Pau Social Gym. As Sant Pau was under threat of eviction for financial reasons, the project aimed to guarantee protection for the building, a typical traditional casa-fàbrica (house-factory) and the financial stability of the cooperative by building affordable housing units on top of the existing building. Source: courtesy of Straddle3.

Further reading:

Melis, L. (2003) *Parasite Paradise: A Manifesto For Temporary Architecture And Flexible Urbanism*. Rotterdam: NAi010 Publishers.

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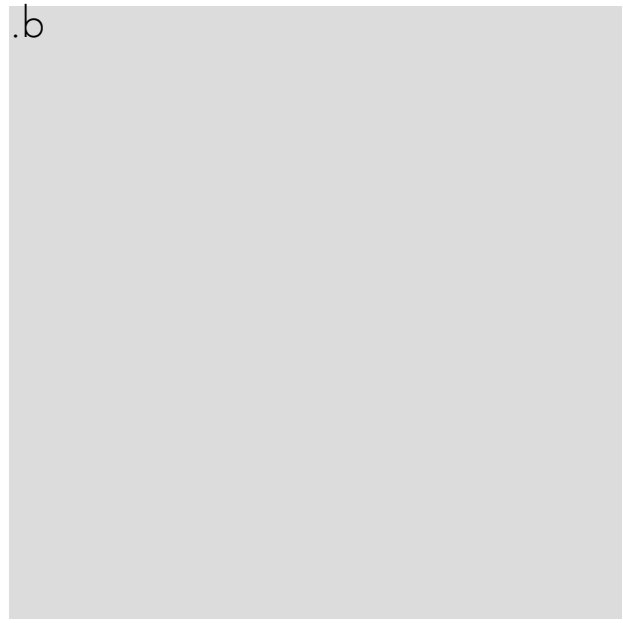

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TECHNICAL SPECIFICATIONS

Collaborative tools in the construction phase entail the inclusion of users and non-professionals on the construction site. When non-expert participants have to carry out supervised construction work, a description of activities, in terms of organisation and technical information, is necessary to organise administrative permits, coordinate people and tasks, resources and material management, construction details, deadlines, health and safety risks, etc.

Technical specifications apply to all sorts of construction projects, from the most permanent, such as buildings, to tactical actions. In addition, the availability of technical data enables a deeper learning by users and replicability in further projects with open and accessible knowledge. Information should be explained with comprehensible drawings, and should avoid complex technical language.

The kind of information displayed depends very much on the role that is played by the user, which is analysed in further detail in the following pages. Users might be responsible for do-it-yourself (DIY) execution following step-by-step instructions, may be expected to interpret instructions and complete a construction that is given to them unfinished, or expand a construction that can already be used, in the case of incremental housing. In addition, these processes can take place collaboratively and are supervised by designers, which include do-it-together (DIT) processes.

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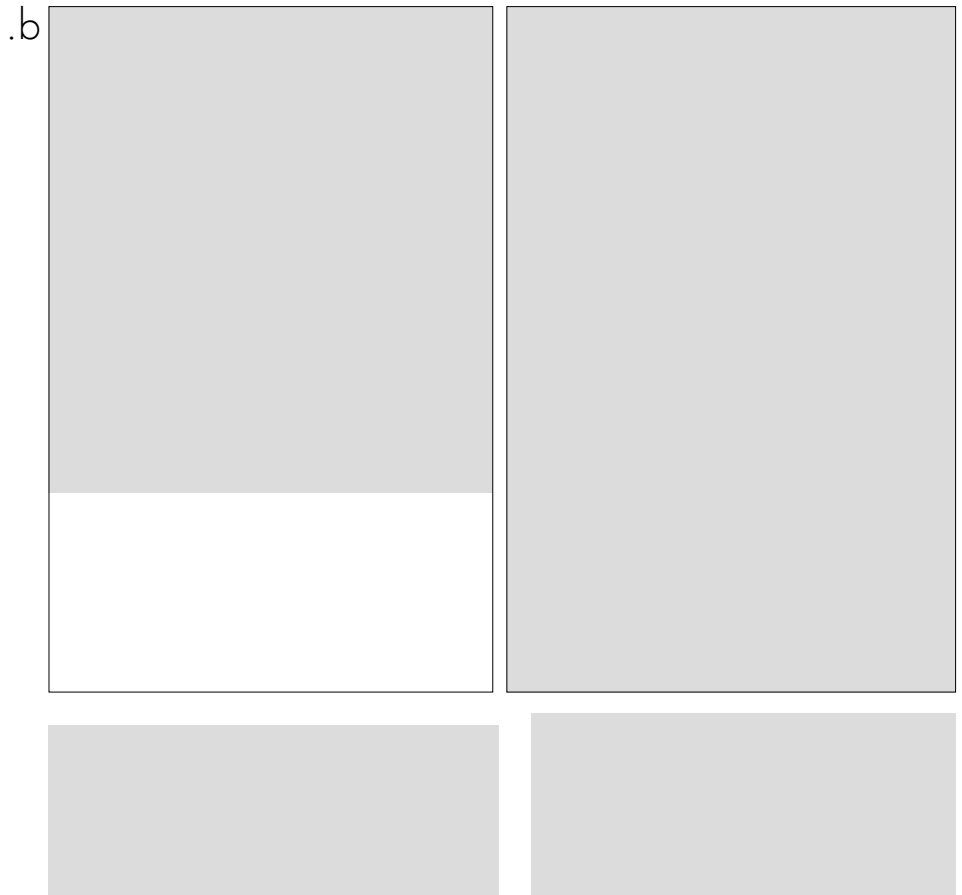

.a | Recetas Urbanas, Refurbishment of the settlement As Rañas, A Coruña, 2006. Recetas Urbanas develops these sets of instructions for each co-construction project. The manual includes step-by-step guidelines on the use of materials, health and safety and clarification of technical concepts. Each sheet includes the necessary resources (people, tools, personal protection). Source: www.recetasurbanas.net.

.b | Arquitectos de Cabecera. Fem Festa, Fem Safaretjos, 2018. “Fem Festa, Fem Safaretjos”. Inspired by Recetas Urbanas, a set of instructions were designed. Source: AC Archive.

Further reading:

Alexander, C. *et al.* (1985) *The Production of Houses*. New York: Oxford University Press.

Broome, J. (1986) 'The Segal Method', *The Architects' Journal.* Explanation of the system in 19 steps, from structure to detail, including material management, building instructions and component definitions.

www.recetasurbanas.net

E32

USER TO EXECUTE

Co-execution tools include three degrees of user involvement: execution, completion, and expansion. In User to Execute processes, the user is responsible for the construction of the design from scratch, following a set of instructions prepared by designers. Ideally, only basic and easily available tools should be required, information should be communicated with clear drawings and plain language comprehensible by the non-expert.

The outcome is defined by the designer with different degrees of openness to modification by users, from aesthetics to straightforward assembly with a predetermined outcome [.c]. A particular case is designs that function as systems that the user is expected to interpret according to needs, expertise or preferences. For example Ken Isaacs' (1974) manual for wood structures made of standard strips and boards, or Christopher Alexander's (1985) project in Mexicali using traditional construction methods [.b]. Other examples are Antfarm, who developed a system for inflatable temporary structures, and Enzo Mari (2002, first in 1975 with Proposta per un'Autoprogettazione), who saw DIY furniture assembling as a process of design democratisation.

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.a | Instant City, Benito, Lambarri & Prada, Eivissa, 1971, built to host the VII Congress of the International Council of Societies of Industrial Design (ICSID). On arrival, each participant was given a piece of plastic roll and construction instructions, including patterns and details, to add a new module to the existing city. The construction process was as simple as cutting, stapling and taping, and participants added new streets and houses on demand. Source: *Palimpsesto* 18, available at www.upcommons.upc.edu.

.b | Christopher Alexander, Mexicali Community low-cost housing (Baja California, 1975). Residents built their own houses, assisted by students. A "sequence of operations" was developed, as well as a construction system and building pattern, to be interpreted by residents with no pre-fixed layout design. Source: Alexander, 1985, pp.259, 218-219, 234.

.c | Enzo Mari, Autoprogettazione?. In 1974 Enzo Mari published a manual for the self-construction of furniture. Pine boards could be ordered already pre-cut and ready to be assembled only with a hammer and nails. The publication of design plans, their simplicity and the fact that users were an intrinsic part of the design were seen as a process of democratising design. Source: www.plataformaarquitectura.cl.

Further reading:

Alexander, C. *et al.* (1985) *The Production of Houses*. New York: Oxford University Press.

Ant Farm (1973) *Inflatocookbook*. San Francisco: Ant Corps.

Isaacs, K. (2009 [1974]) *How To Build Your Own Living Structures.* New York: Harmony Books.

Mari, E. (2002) *Autoprogettazione?* Mantova: Corraini.

Fichter, R. and Turner, J. F. C. (1972) *Freedom To Build: Dweller Control Of The Housing Process*. New York: MacMillan.

E33

USER TO COMPLETE

The User to Complete approach is based on the delivery of an unfinished design to users. Users' involvement is crucial to finish the incomplete object, the production process of which started before them. This strategy avoids pre-defined forms and works with formal indetermination.

User to Complete design means that users not only build, they also interpret and also take crucial decisions about design aesthetics and operativity. Instructions may not be provided, or at least may not define the outcome. The role of the designer is to set an infrastructural system that can host as many variations by users as required, thus being restrictive enough to become a coherent and functioning system, but open enough to allow multiple interpretations.

The User to Complete approach is a common tool in Barcelona's cooperative housing, where some parts of the building, such as furniture and fittings, are left unfinished, with the agreement of residents, who will complete them during occupancy. Beyond financial savings, this allows users to take decisions after testing the space out for a while and bring the community together if construction tasks are developed collectively.

.a | Curro Claret, Piece T300. Originally designed in 2010 with social organisations for homeless people (Fundació Arrels), la pieza (the piece) allows the joining of any three legs and seats, chosen by the user. The object of professional design, the piece itself, is hidden in the result, while the final appearance is provided fully by the user's choices. Source: www.curroclaret.com.

.b | Steven Holl, James Tanner & John Crooper, Manila, international competition entry for a "new community for 3.500 people", 1975. The competition brief, framed by the World Bank and UN Development Programme in the 1970s aimed to address minimum living standards for local communities. The architects' proposal was based on the construction of public services infrastructure and a minimum concrete structure as a spatial frame, to be completed by users "spontaneously". Left: initial condition; right: "spontaneous house plans". Below: intermediary phases. Source: Holl, S. (1989) *Anchoring: Selected Projects, 1975-1988.* New York, NY: Princeton Architectural Press, p.15.

As a historical precedent for this project, Le Corbusier's Plan Obus (1930) was designed as a large mobile infrastructure with multiple floors that could be filled with very different constructions.

.c | Lucien Kroll, Medical Faculty Louvain, Woluwé-Saint Lambert, Brussels, 1970-76. Using a SAR system by John Habraken, Kroll designed an open-plan structure in which partitioning walls could be assembled by students themselves, deciding on the distribution of the space. Source: Kroll, L. (1988) *Lucien Kroll: Buildings and Projects.* London: Thames and Hudson, pp.44-45.

Further reading:

Habraken, N. J. (2000 [1971]) *El Diseño de Soportes.* Barcelona: Gustavo Gili.

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E34

USER TO EXPAND

In the User to Expand tool, design can be considered fully functional when it is received by users, who can start using it immediately. However, the design anticipates a process of modification and extension during residents' occupancy, which will have an impact on the volume and aesthetics of the building. These layers that are added over time are taken into consideration by designers since, as discussed by Brand (1994), modifications will take place anyway, resulting from the need to adapt buildings to changing needs.

The User to Expand approach is based on the informal work of residents to complete their building with more or less professional support. A relevant example is so-called "incremental housing", promoted especially after the 1960s as an alternative to both traditional public housing procurement and self-construction. A basic house was provided, and residents took control afterwards. However, incremental housing has been criticised as a form of public housing procurement, since it burdens residents with the responsibility to carry out professional work, which relies on their time availability, financial situation and personal effort.

In some countries, housing projects are framed by collective forms of cooperation, such as mingas or mutirao in South America.

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.a | PREVI experimental incremental housing competition, Lima, 1966. Comparison of original plan and changes by users. Left: Castro family and Charles Correa housing. Right: Cárcamo family and the Crousse, Páez, Pérez-León project. Source: García-Huidobro *et al.*, 2008, pp.120 and 100.

.b | Balkrishna Doshi, housing for workers of the government-owned company Life Insurance Corporation of India (1973-76) in Ahmedabad, pictures from 1976 and 2019. Two photographs, spanning four decades. Other similar projects in India from the period 1983-86 are the Indore low-cost housing project and Aranya Housing, both by Doshi (1983-66); and Belapur housing project by Charles Correa. Left: original construction; source: Curtis, W. J. R. (2015) *Balkrishna Doshi: An Architecture for India.* USA: Mapin Publishing, p.83. Right: as transformed in 2019; source: author.

Further reading:

Brand, S. (1994) *How Buildings Learn: What Happens After They're Built*. New York: Phoenix Illustrated.

García-Huidobro, F., Torres Torriti, D. and Tugas, N. (2008) *¡El Tiempo Construye!* Barcelona: Gustavo Gili.

COLLECTIVE ASSISTED DIY-DIT

In assisted “Do it Yourself” (DIY) and “Do it Together" (DIT, sometimes also referred to as "Do it with Others” DIWO) scenarios, residents receive technical support for a collective self-construction process. DIY-DIT enables costs to be cut and technical construction skills to be developed, and increases awareness of building care and maintenance by the community. At a social level, collective construction processes strengthen mutual support, knowledge of others and peer learning. Training workshops might be very helpful during the construction, responding to the skills required at specific stages of the project . These processes are very common in some countries: the Uruguayan mutual help cooperative housing model, for instance, or informally, such as mingas in Spanish-speaking South American countries and mutirao in Brazil. In Europe, this model was developed by Walter Segal in the UK, where residents developed construction tasks through the Segal methods with technical assistance from the architect.

.a | Walter Segal developed a construction method based on timber frame construction that allowed residents to design their own houses: they were given a modular constructive system based on standardised building elements that were easy to find, with the architect as supervisor of the works. This was famously put in practice in Lewisham during the 1970s. There are over 200 houses built using the Segal method in the UK. Source: ribaj.com, M. Charles, J. Broome (pictures) and Broome, 1986 (sketch).

.b | Santiago Cirugeda & Recetas Urbanas, Socio Community Center in Cañada Real, Madrid, 2019. The centre was self-built through public-volunteer cooperation, on a plot offered by the Regional Government and financed by 200.000 euros from the Municipality. The modules were built in four different locations (Soto del Real Prison, Hipatia-Fuhem School, ESDM Design School and Matadero Cultural Center) and translated on site. Construction work was developed by 1.200 volunteers from different backgrounds, including gipsy communities, victims of gender violence, prisoners, high school and university students, and associations. Source: www.grrr.tools.

.c | Oasiurbà, Fint, Barcelona, 2017. Improvements in comfort, habitability and sanitary conditions for a family of six members living in a 20 m^2 flat. Source: www.oasiurba.org/project/oasi-fint-2.

.d | Lacol, La Borda cooperative housing under construction by users, c.2018. Although discouraged by Spanish regulations, La Borda’s common areas were built by residents and people supporting the project, under the supervision of architects, at the weekend so as not to interfere with professional workers. This allowed the saving of costs and gave visibility to the model, introducing it to interested participants in the co-construction workshops. Source: courtesy of Lacol.

Further reading:

Broome, J. (1986) 'The Segal Method', *The Architects' Journal.* Explanation of the system in 19 steps, from structure to detail, including material management, building instructions and component definitions.

Usina Ctah (Brasil): www.usina-ctah.org.br

Mutual Help Institutes Federation (Uruguay): www.fucvam.org.uy

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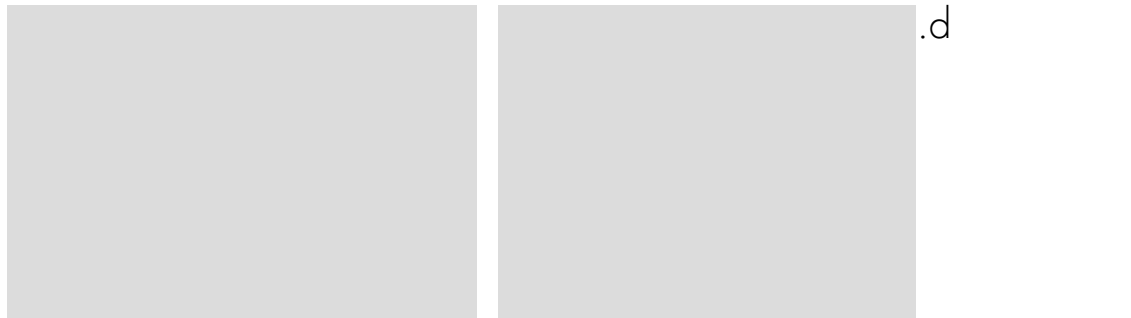

E41

GENERATIVE ACTION

A generative action is a specific spatial catalyst for other events to occur. The action does not necessarily include a construction (a prototype) but can include demolishing, painting, performances, etc. What is relevant is how space is activated differently through a provocation in the form of an alteration. This tool can be used as a simulation of unexpected urban situations, which can trigger other actions or push decision-makers to respond to social claims.

Generative Actions can be studied from the point of view of storytelling, analysing key moments where specific actions or reactions took place and how those affected the morphological composition of the space and its use or appropriation [.a].

.a | Manuel Bailo, Urban Catalysts. Analysis of the artist Alexandre Orion's action in Max Feffer tunnel, São Paulo, July 2006. Orion created a 120m mural with graffiti of skulls in São Paulo to call attention to the dirty condition of the tunnel as a consequence of air pollution caused by heavy traffic. The tunnel was also used by pedestrians and homeless people. Police intercepted Orion while he was working on the graffiti, but surprisingly the graffiti was not actually being added to the walls: Orion was, in reality, cleaning off the dirt by drawing in it, not by adding, but by subtracting matter. The police could not challenge an act of cleaning as vandalism. As a result, the authorities cleaned not only the tunnel walls but those of all the tunnels in the city. The action was documented by Bailo through architectural drawings made at three points: before Orion's action, during the action and when the tunnel was being cleaned. Source: Bailo Esteve, 2015.

.b | The Can Batlló industrial premises became an obstacle on an urban scale, as a massive walled area in the neighbourhood of La Bordeta, in Sants (Barcelona). Confronted by the lack of administrative action, and as part of a long-term struggle for the reconversion of Can Batlló into an area of public facilities and a park, the community group "Can Batlló és pel Barri" ("Can Batlló is for the neighbourhood") started demolishing of the perimeter wall, after which the municipality demolished the rest of it. Source: courtesy of Lacol.

.a | Basurama and Makea Tu Vida, Todo Sobre Ruedas (Everything on Wheels), Àngels square, within the Eme3 Festival, Barcelona, 2009. A project arguing for the democratisation of public space and questioning the specificity of the use of space. In this case, a square in the centre of Barcelona is mostly used by tourists and skateboarders, which prevents other uses by other collectives. The action of building wheels on furniture subverts the use of the square, while at the same time turning every participant into a skateboarder, making both an exciting event and a political argument for the inclusivity of city uses. In the left-hand image: skateboarders watch the unexpected use of the square. Source: www.basurama.org.

Further reading:

Bailo Esteve, M. (2015) *Public Catalyst = Catalyst Drawn*. New York: ActarD Inc.

Cirugeda, S. *et al.* (2019) *Usted Está Aquí: Recetas Urbanas 2018*. León: MUSAC.

Dodd, M. (2020) *Spatial Practices: Modes of Action And Engagement with the City*. London: Routledge.

Ocupa tu calle, ONU-Habitat and Fundación Avina (2018) *Intervenciones Urbanas Hechas por Ciudadanos: Estrategias Hacia Mejores Espacios Públicos*. Self-published.

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TACTICAL ON-SITE PROTOTYPES

An On-site Prototype is a tactical temporary intervention in the form of a provocation and an inquiry into public space. Also named tactical urbanism, it is "decentralised, bottom-up, extraordinarily agile, networked, low-cost and low-tech" (Lyndon and Garcia, 2015, p.xii) and allows "the immediate reclamation, redesign, or reprogramming of public space" (ibid, p.3), which is often reversible but can result in permanent interventions or shifts in policy.

It can be either planned and institutional, or informal and derived from activism. In the latter scenario, tactical actions emerge from residents' legitimacy to intervene in the public space by seeking a collective interest (Henri Lefebvre's "right to the city") and become a perfect platform for translating social resistance movements tactics to the realm of urbanism, opposing institutional strategies of power and control over public space (Mozas, in Fernández Per and Mozas, 2011, p.11-12), or hacking the city through unexpected actions (Borasi and Zardini, 2008).

.a | Barcelona Municipality, Superblock, from 2016. The controversial implementation of the Barcelona superblock (pedestrianisation of strategic streets and crossroads) originated in a tactical urbanism action (middle) followed by a public debate (left) and ongoing city-wide implementation (right). Sources: left: Twitter Barcelona en Comú; centre: www.publicspace.org; right: Leku Studio, www.plataformaarquitectura.cl.

.b | Ravetllat Ribas, Compte Urgell street closure, 2011, Barcelona. A major street was closed on Sunday mornings to host the book market during the years-long refurbishment of the Sant Antoni market, questioning the permanent use of streets for traffic. Source: www.plataformaarquitectura.cl.

.b | Arquitectos de Cabecera, TTAC Fem Festa, Fem Safaretjos, Santa Coloma de Gramenet, 2017. Wastelands and abandoned neighbourhood spaces were reclaimed. In the image, a road infrastructure that typically creates an unwanted wasteland is used as support for a large outdoor cinema screen. Source. AC Archive.

.d | Straddle3, "Consell Decent": Tactical Interventions for Few Days Without Cars, Barcelona, 2016. Materials were reused in Pere Vila school's playground. Source: www.straddle3.net.

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Further reading:

Architecture 00 and Studio Weave (2017) *Small Change, Big Impact: a practical guide to changing London's public spaces*. Available at: www.content.tfl.gov.uk/small-change-big-impact.pdf.

Borasi, G. and Zardini, M. (eds) (2008) *Actions: What You Can Do With the City*. Montréal: Canadian Centre for Architecture. Complementary website: www.cca.qc.ca/actions.

Fernández Per, A. and Mozas, J. (2011) *Strategy and Tactics in Public Space*. Vitoria-Gasteiz: A+T, n38.

Lydon, M. and García, A. (2015) *Tactical Urbanism: Short-Term Action for Long-Term Change*. London: Island Press.

Tactical Urbanism Guides: www.tacticalurbanismguide.com/portfolio-tag/guide.

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E43

DO IT ANYWAY

The Do it Anyway approach aims to execute urban transformations despite the lack of official permits, or against regulations. Guerrilla urban illicit-but-arguably-legitimate actions are a response to local authority passivity in the face of social demands and community claims. They aim either to directly improve a situation or to put issues on the table that have lacked a response due to political indifference or administrative ineffectiveness.

In a situation of administrative silence in the face of social demands, or when dialogue with the authority is considered impossible, activists claim that social interest justifies infringing regulations: “as citizens, we must commit illegalities to prove that these illegalities might be correct, and produce a change of mentality and a political shift. Illegalities are necessary”, in words of Santiago Cirugeda, whose projects are often positioned on the borders of legality (source: youtube.com/watch?v=Db0ttwgQxCM min 1:30).

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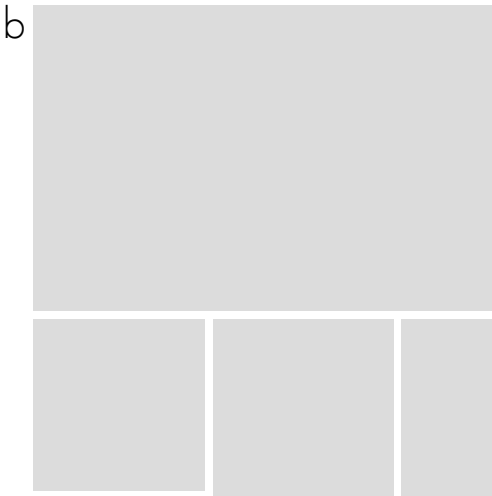

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.a | Colectivo Haz Ciudad, construction of Wikicarril bicycle lane markers to increase bicycle safety. México, 2011. Source: www.hazciudad.blogspot.com.

.b | Colectivo Haz Ciudad, Wikibanqueta, Mexico, 2011. Construction of a pedestrian walk, images from the original state , several phases of intervention and the final state. Source: www.hazciudad.blogspot.com.

.c | "Toronto’s Urban Repair Squad grew tired of waiting for the municipal authorities to create adequate bicycle lanes and began to install their own DIY infrastructure, encouraging others to take action against car culture. Since 2005, the group has painted over six kilometres of bicycle lanes on major and minor streets in Toronto while disguised as municipal workers – official City of Toronto workers attempt to remove the markings as fast as they are painted", from www.cca.qc.ca/actions/actions/illicit-stencil-saves-cyclists. Source: Martin Reis, from same website.

.d | Guerrilla Gardening is a term coined by Liz Christy in New York in 1973, defined as the volunteer illicit cultivation of plants “in a war against the neglect and scarcity of public space as a place to grow things", according to London-based guerrilla gardener Richard Reynolds. The movement has activists worldwide. Source: www.guerrillagardening.org.

More information:

Borasi, G. and Zardini, M. (eds) (2008) *Actions: What You Can Do With the City*. Montréal, Canadian Centre for Architecture. See also www.cca.qc.ca/actions.

Hou, J. (2010) *Insurgent Public Space Guerrilla Urbanism and the Remaking of Contemporary Cities*. London: Routledge.

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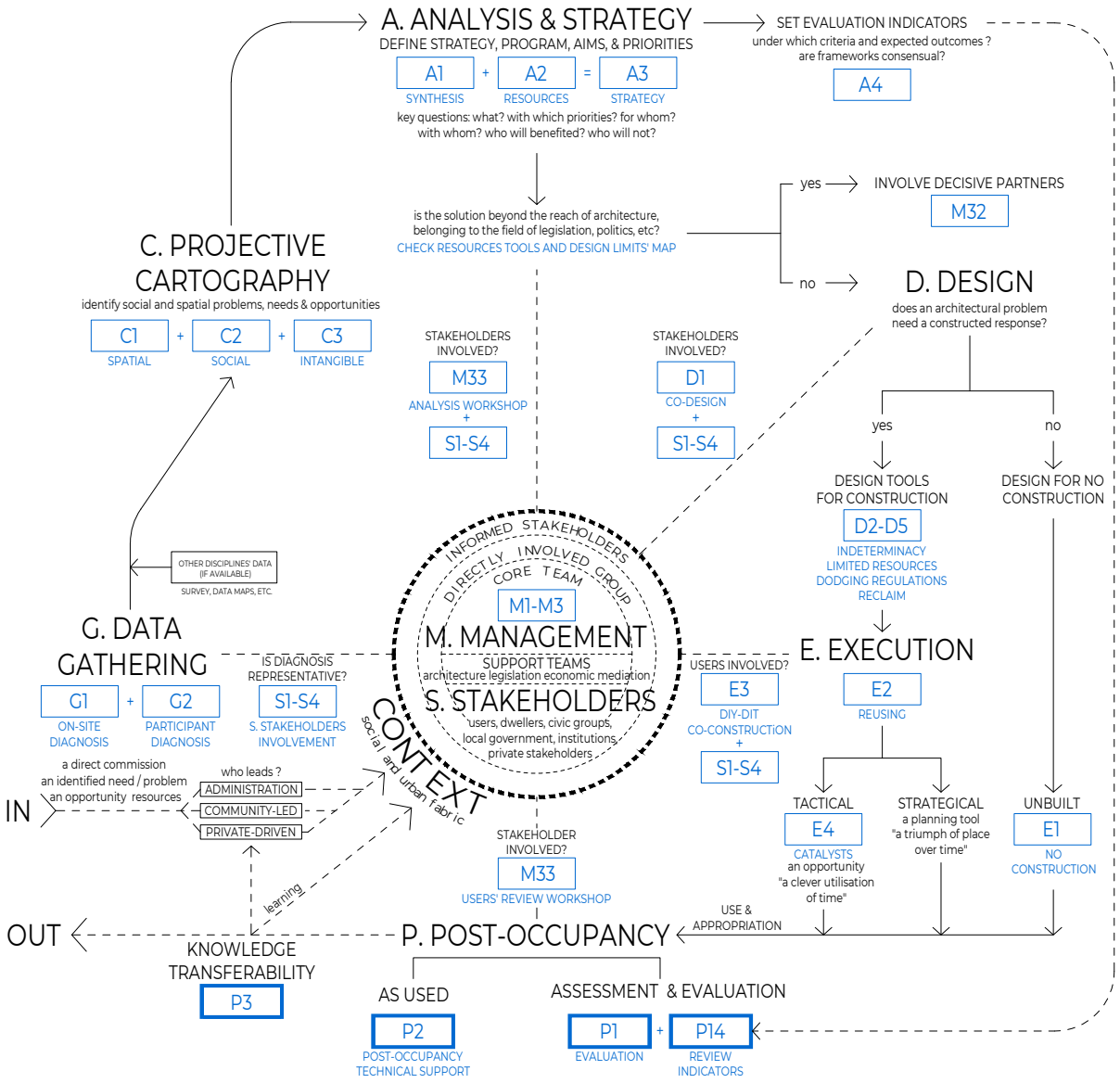
Reynolds, R. (2009) *On Guerrilla Gardening: A Handbook for Gardening Without Boundaries*. London: Bloomsbury.

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

P. POST-OCCUPANCY

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body of practice

COLLABORATIVE ARCHITECTURE BARCELONA: THE ARCHITECT AS ENABLER

Raül P. Avilla-Royo

COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

as part of

COLLABORATIVE ARCHITECTURE BARCELONA:
THE ARCHITECT AS ENABLER

PhD By Practice | Royal College of Art | School of Architecture | London | 2018-2022
Supervisors: Dr.-Ing. Sam Jacoby (SoA-RCA) & Ibon Bilbao (ETSAB-UPC)

Raül P. Avilla-Royo

P. POST-OCCUPANCY

The role of the community architect is not necessarily restricted to the designing and building phases of a project. In the same way that their engagement may start before the programme and the definition of the brief – being part of the diagnosis or discussing the feasibility of the project – it may also do so after the building/action/transformation is occupied by clients/users. ASSESSMENT & EVALUATION

Typical procurement phases with key actions in them. Source: author's drawing.

tools allow both the process and the outcome to be critically appraised, with the aim of improving the system for further replicability. They do so by reviewing the tools, methods and activities employed in different stages. What is particularly relevant is to assess the process against the outcome, in order to improve the method: up to which point was the diagnosis enabling, did the strategies work, was the execution feasible, and the aims and impact achieved? At a social level, was the process was transparent, inclusive, well-articulated: which decisions were taken in specific phases, how were power relations and knowledge asymmetries managed in decision-making mechanisms, how did the different stakeholders' involvement produce a certain outcome, and how were expectations and technical requirements fulfilled? Evaluation

can take place in two ways: on the one hand, participants have the opportunity to be critical and suggest improvements; on the other, an internal evaluation by the whole team allows them to review the decision-making process, the inclusivity of the project and the management of expectations, the design methods, and the management of resources against the impact achieved.

The Evaluation Indicators Review tool presented in this section is a crucial step at the end of the process that reveals whether the project guidelines (which are ideally consensual between different stakeholders) were followed and if so, to what degree the intervention can be considered successful according to qualitative and/or quantitative parameters. Community architecture underlines the importance of measuring spatial quality and innovation against users' performance (activities developed, and by whom) and needs (identified directly and not assumed or imposed by the local authority), closing the circle opened in the diagnostic phase of the project. For this to be possible, evaluation indicators need to be set earlier, during strategy definition (see the tools in the Analysis & Strategy chapter). This does not mean that spatial qualities, typological innovation or "good design" are less relevant (whatever "good" means in different discussions), but that a new set of parameters and requirements are additionally incorporated and given major importance. For example, one could question whether an urban transformation should be understood autonomously or should also include its negative side-effects as evaluated outcomes. A typical example is urban renewal operations or transformations of public space that result in gentrification; while the design might be outstanding, it may also become highly damaging for the social structure of the area, since new owners might benefit at the expense of existing residents. This approach may exceed the boundaries of architecture towards other fields – for example, legislation on housing market price regulation to prevent gentrification.

The second group of tools refers to supporting occupants during inhabitation: POST-OCCUPANCY TECHNICAL SUPPORT, whether this is in helping residents to improve building performance or in assisting them with spatial refurbishments or adaptations. This becomes, I would argue, a win-win situation for both sides. On the one hand, users are supported and assisted by architects in understanding design decisions, and how the building can be modified and its performance improved. On the other, contact with inhabitants allows architects to learn from their mistakes and check whether the design hypothesis was successful; a kind of learning that is impossible if architects do not revisit their work from time to time and understand the perspectives of users. In addition, monitoring building performance against design hypotheses at different levels, from space to energy consumption and environmental parameters, results in the direct application of scientific data in later cases. In the case of La Borda cooperative housing project, data evidenced how its building performance is significantly more efficient than that of traditional public housing. In addition, the monitoring process also plays a pedagogical role for occupants, who become aware of, and are trained in, the issue of building performance. Beyond the building itself, this data opens up a larger discussion around the incorporation of active users in public housing procurement and of systems that rely on active residents, questioning local authority procurement, standards and the understanding of the user as passive.

Assessment and evaluation tools, as well as post-occupant technical support, are often not taken into account in contracts. That is, either they are not considered relevant for the procurement agency, or architects are expected to engage in this activity in their own time. In my understanding, a shift needs to occur in this regard, given the major opportunities of systemic improvement that derive from evaluation and monitoring during the post-occupancy stage.

A final group of tools targets KNOWLEDGE TRANSFERABILITY in the form of process reports, manuals, toolkits, or online resources, allowing the know-how generated to be transferred, as well as enabling its replicability in subsequent experiences. Placing an emphasis on these sorts of publications is characteristic of architects' collectives, in their aim for an experience-based peer learning that has a transformative impact beyond the specific project itself.

PROCESS OVERVIEW

A process overview offers a chronological synopsis of the entire process, analysing key moments, the stakeholders involved in specific phases, methods employed, and relevant decisions taken. A process overview aims to serve as a framework for the evaluation of specific ideas, actions, or activities contextualised in the larger process.

Specifically, the process overview serves to evaluate the resources included in the Strategy section in the Analysis & Strategy chapter as means that anticipate an expected impact with the application of specific tools and actions. Thus, the process overview becomes the primary mechanism for reviewing a process in a whole-to-detail approach.

The process overview is typically represented in chronological order, which can have different divisions referring to different project dimensions [.a] or activities leadership [.b]. It can also serve to analyse the dichotomy between internal events promoted by the organisation and the impact of external ones such as political decisions, regulatory changes, or the incorporation of new stakeholders in the process [.a]. Each of the events represented in the timeline can then be subject to a deeper analysis with the tools presented in the following pages. Ultimately, assessment and evaluation tools aim for an a posteriori analysis to improve methods towards further replicability.

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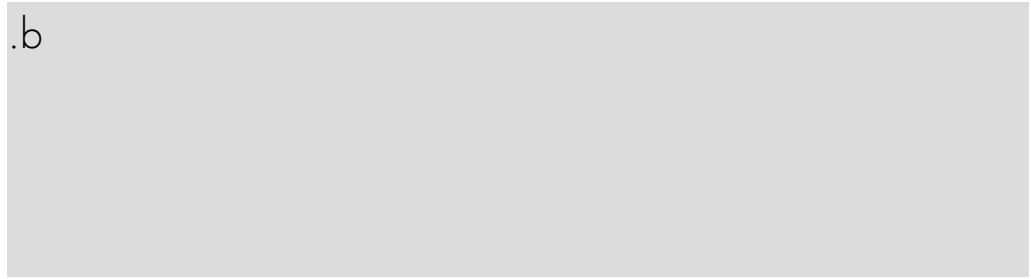

.a | Lacol Architects, La Borda cooperative housing, 2014-2018. A posteriori overview diagram of the La Borda procurement process. The timeline in the horizontal axis describes three interdependent dimensions of the process (top-down): architecture and construction, legal and financial, and group organisation. Note that while the two top ones are represented by specific events, the group organisation requires a diagram that evidences the growth of the team. Source: courtesy of Lacol.

.b | Die Baupiloten, Ageing in Neighbourhood project, Berlin, 2014. Timeline of the process and activities, distinguishing the "work stage" as technical work developed by professional teams, and "participation", which includes users' and residents' activity. Note the importance given to the moment of "fiction", where "creative workshops" with users take place. Source: Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis, pp.130-133.

Complementary tool:

Monitoring & Performance Table tool: www. urbact.eu/monitoring-performance-table.

EXTERNAL EVALUATION: STAKEHOLDER REVIEW

The External Evaluation aims to receive quantitative and qualitative feedback from participants in the process. It can either be a discussion, such as the ones described in the Stakeholders Involvement chapter, or a digital or printed straight-forward questionnaire. This tool aims to evaluate the process from the point of view of the different stakeholders' expectations as they contrast with reality, including users, the architects involved, associations and the administration. Questions can be organised by phases of the project or refer to specific activities, and discussions should not direct the answers. For example, a neutral question such as "how was the process/activity?" is more open to interpretation than "did you find the activity engaging" or "did you find the workshop fun?", which lead to a yes/no answer and already include qualitative adjectives. The following is a short list of possible questions:

REGARDING ENGAGEMENT: Did you find the process was inclusive and you had the chance to get involved adequately? What was the most positive aspect? And the most negative? Which attitudes were positive or negative? Were participants' opinions considered in the final proposal? Was there an opportunity to evaluate and reconsider? Were the original agreements by different stakeholders kept?

REGARDING METHODS: How was the process/activity? Was it well organised and with the appropriate material? Was information well communicated in plain language? Have you felt frustrated for any reason? What have you learned, if anything? Would you repeat the experience? Why? What would you do differently? Are you satisfied with the results of the process?

REGARDING INHABITATION: is the house comfortable? How do you live in the house (which activities are developed in which spaces)? What about the materials? Can you hear noise from neighbours? What about shared spaces: are they kept clean and are they used often?

.a | Evaluation form for a community planning activity. Source: Wates, 2000, p.171.

.b | Herman Hertzberger, Diagoon Houses, 1971. Summary of the report of the interview with five families during the post-occupancy stage. Findings include evaluation of the design hypothesis and use of the space. Source: Hatch, C. R. (1984) *The Scope Of Social Architecture.* New York: Van Nostrand Reinhold, p.20-21.

Further reading:

La Ciutat Invisible and Mansilla, E. (2021) *Construïm Habitatge per Construir Comunitat: Guia per a Grups d'Habitatge Cooperatiu: Recull d'Experiències i Caixa d'Eines.* Barcelona: La Dinamo Fundació, pp.72-73.

Wates, N. (2000) *The Community Planning Handbook: How People Can Shape Their Cities, Towns And Villages In Any Part Of The World*. London: Earthscan Ltd., p.171.

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INTERNAL EVALUATION: TOOLS & METHODS (I)

Internal Evaluation analyses disciplinary tools and methods and their effectiveness against the aims and outcomes of the process. It examines them separately and within the whole, questioning whether they were well organised and produced a satisfactory outcome that contributed positively to the project. Ultimately, the internal evaluation aims to improve protocols, tools and methods for further replicability.

Evaluation can be applied to a specific stage – for example, asking whether the diagnosis was efficient in detecting problems and needs, or the cartography enabled further discussions, whether analysis and strategy tools allowed a clear organisation that guaranteed the feasibility of the whole process, whether design and execution tools achieved expectations and potentially incorporated dwellers as desired, and whether post-occupancy tools allowed a critical review of the process and a positive post-occupant technical support process.

Disciplinary evaluation can also be applied to specific activities which involve the participation of different stakeholders, such as workshops of any kind or data-gathering activities, enquiring whether instructions were clear, whether facilitators' work resulted in efficient activities, and if the outcomes became instrumental for later phases.

Cutting across all of these reside the dimensions of power and knowledge asymmetries, leadership, and language between stakeholders, social inclusion, decision-making, organisational terms, the management of expectations, and the methods employed.

Further reading:

Anduiza, E. and De Maya, S. (2005) *La Qualitat en la Participació: una Proposta d'Indicadors.* Barcelona: Fundació Jaume Bofill.

Lacol (2018) *Building collectively: Participation in Architecture and Urban Planning.* Barcelona: Pol·len Edicions.

Wates, N. (2000) *The Community Planning Handbook: How People Can Shape Their Cities, Towns And Villages In Any Part Of The World.* London: Earthscan Ltd.

Complementary tool:

URBACT Stakeholders Group Self-Assessment tool:
www.urbact.eu/stakeholders-group-self-assessment.

According to Raons Públiques, the following points should be reviewed after the planning and initial stages (see Lacol, 2018, pp.62-63):

MOBILIZATION PHASE:
Extension: how many people?
Representation: are participants representative of the area's demographic profile?
Plurality: is there a diversity of opinions?

RESULTS PHASE:
Decision-making: were there transparent and directly democratic methods?
Influence: has the process of discussion informed the outcome?
Satisfaction: are participants satisfied with the results?
Evaluation of the leading team, both in terms of development and results.

These could be complemented with the following questions, among many others:

DIAGNOSTIC PHASE:
- Was the diagnosis effective, and did it efficiently reveal problems and opportunities? Were the problems encountered during procurement predictable?
- Which tools and methods were used, at which moment? Were tools and methods instrumental to the expected dynamics and outcomes?
- In the case of specific activities, were they well organised and dynamic? Were the instructions clear? Did the outcomes match expectations?

DESIGN PHASE:
- Did the diagnostic phase inform the design outcomes? How were contradictory inputs managed? Acccording to what criteria are some voices prioritised over others?
- In the case of co-design, was the process well organised and inclusive?
- Who took decisions about different topics, such as aesthetics, technical matters, aims, indicators, etc.? (see Decision-making tools in the Management chapter).

EXECUTION PHASE:
- Was the execution completed on time? Were resources available?
- Were users involved in construction? Did they understand the instructions? Did they take leadership roles in some of the processes? Has health and safety been guaranteed throughout all the processes?

POST-OCCUPANCY
- Was the post-occupancy technical support useful to improve building performance?
- Is there new knowledge generated in this project that may be useful to others, and if so, would a manual or toolkit be desirable?
- Can documentation of the process be found to enable transmission of the know-how and process replicability?

INTERNAL EVALUATION: TOOLS & METHODS (II)

DECISION-MAKING PROCESS

Raons Públiques (in Lacol (2018) *Building Collectively*, pp.62-63) differentiate the criteria for participation in different stages:

0: planning, according to leadership and existing frameworks
1: initiative, concerning socio-political conditions, aims, schedule, resources and interest
2: mobilisation, regarding extension, representation and plurality
3: development: information and negotiation channels, diversity, training and follow-up; and
4: results, decision-making, influence, satisfaction and self-evaluation of organising team.

As an example, Dafne Saldaña analyses the process for the transformation of the school playgrounds in Santa Coloma de Gramenet developed by Equal Saree architects (Saldaña, D. (2020) *El Espacio como Agente Coeducador*. PhD thesis, Universitat Politècnica de Catalunya, pp.262-264). Saldaña discusses different moments in the process, together with strategies to overcome these problems on later occasions. Some fragments are extracted here as examples:

Regarding gender roles on leadership and decision-making during co-design workshops, dominated by male students:

"Como investigadora externa a la comunidad educativa he podido comprobar que, aunque los resultados del análisis y las propuestas muestran una reflexión sobre el uso del espacio y buscan una organización más equitativa y la promoción de otros valores, durante el proceso se han seguido reproduciendo roles de género, que no solo tienen que ver con la cantidad de espacio físico que se ocupa sino también con el simbólico. Por poner un ejemplo, en una de las actividades que realizamos con el alumnado les pedimos que trabajaran por grupos de cuatro, dos niños y dos niñas. Al final de la dinámica, una perso-na tenía que hacer de portavoz mientras otra tenía que escribir los acuerdos. En todos los grupos, en total cinco, el portavoz elegido fue un niño, mientras que las que tuvieron la tarea de escribir fueron niñas en todos los casos. Aquí vemos como las niñas asumen una mayor carga de trabajo invisibilizado mientras los niños ocupan los lugares de visibilidad y reconocimien-to social. En otra ocasión, trabajamos con la asamblea de representantes. Esta asamblea, integrada por un representante de cada aula, se encarga de defender los intereses de sus compañeros y compañeras y de generar acuerdos transversales a toda la escuela. Cada año escolar, las aulas eligen a sus representantes. Este curso, de un total de 13 miembros, nueve son niños y solo cuatro son niñas. ¿Cómo es posible que existan estas diferencias tan evidentes y, sin embargo, tan normalizadas? Como se ha tratado en el marco teórico (ver apartado 2.2.1), los estereotipos de género y los roles jerárquicos están todavía muy integrados en nuestra sociedad y se reproducen y transmiten de manera insconsciente por el profesorado."

Concerning the involvement between technical teams and the school community, both senior and students:

"Las comunidades educativas sintieron que los anteproyectos representaban sus ideas, aunque realiza-ron algunas aportaciones que fueron incorporadas por las arquitectas en la siguiente fase de elabora-ción técnica de los proyectos. En este proyecto, la participación ha sido contemplada solamente de manera parcial en la fase de implemetación de las obras. En futuros procesos sería interesante incorporar atoda la comunidad y, especialmente al alumnado, en estas últimas etapas del proyecto (...) hubiera sido deseable ampliar la participación para elaborar parte del mobiliario u otros elementos de la propuesta. Además de aumentar el sentimiento de pertenencia y cuidado del espacio, a nivel pedagógico es una forma de aprender haciendo."

About the role of the local authority, for which collaborative practices are new and cause problems of discoordination:

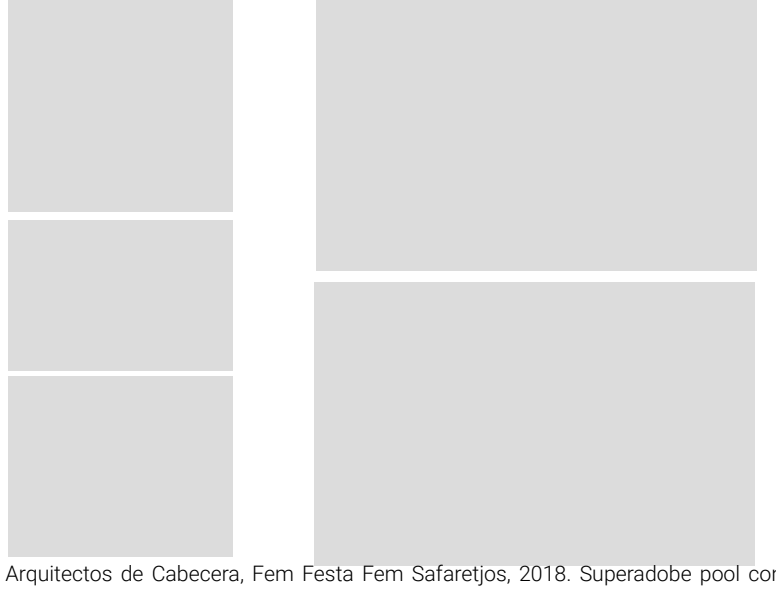
"Las cuestiones más problemáticas del proceso han tenido lugar durante la fase de implementación de las propuestas. Las complicaciones han sido debidas a los efectos de la falta de transversalidad entre los diferentes departamentos de la administración municipal que estaban implicados, a la falta de planificación de esta última parte del proceso que no se tuvo en cuenta en la calendarización inicial y a la dilatación de los tiempos de ejecución, en parte, debida a su sujeción a los procedimientos legales para la construcción de obras públicas. Por otra parte, cabe destacar la apuesta del ayuntamiento por este tipo de proyectos innovadores para los que es necesaria la colaboración transversal entre los diferentes departamentos. Estas formas de colaboración transversal todavía no son habituales en las rígidas estructuras adminis-trativas y siguen constituyendo una práctica novedosa, lo que permitiría justificar, en cierta manera, los desajustes en la ejecución y en el alcance de las propuestas. Sin embargo, esta descoordi-nación ha tenido efectos muy negativos para las comunidades participantes en el proceso. Por un lado, ha generado molestias en los equipos directivos y docentes de las escuelas, ya que el tiempo invertido en el proceso no se ha visto compensado por los resultados alcanzados, al menos desde una perspec-tiva física y visible. Por otro lado, ha podido generar frustraciones y descontento en el alumnado, ya que algunos niños y niñas han terminado su período escolar sin ver implementadas las propuestas en su totalidad. Como aprendizaje para futuros procesos, será importante la implicación de todos los agentes y departamentos necesarios desde las primeras etapas de organización del proyecto y la planificación temporal de todas las fases incluída la ejecución de las obras, si es el caso, teniendo en cuenta los plazos legales que requieren este tipo de acciones de ámbito público. Por otro lado, el hecho de presentarse como un programa municipal y de desarrollarse paralelamente en cinco centros educativos ha tenido un impacto positivo en la visibilidad de las acciones y como incentivador para que otras es-cuelas inicien procesos similares."

INTERNAL EVALUATION: TOOLS & METHODS (III)

ACTION EVALUATION

Action evaluation assesses a specific activity or action concerning different parameters, such as social engagement, attendance, satisfaction, collective behaviour, impact, investment in terms of resources and energies, or conflicts that emerged. While some of these parameters are easily quantifiable (for example, attendance), others rely on a more subjective perception (fun, degree of conflict). Data can be extracted either from direct observation or through questionnaires to attendees.

If an “as built” plan reveals unexpected changes that took place during construction concerning construction plans, “as actioned” emphasises the action as performed against the action as expected. These spatial analyses aim to make visible the social and spatial relations that took place during the process, underlining their importance as an outcome in themselves. This tool can be very useful when certain dynamics or activities are expected to be repeated in different projects, allowing learning derived from comparing expectations with reality and contrasting it with a critical reading of how the process was developed.



Top: Arquitectos de Cabecera, Fem Festa Fem Safaretjos, 2018. Superadobe pool construction workshop. Process as planned (left) and as executed (right).

Right page: Arquitectos de Cabecera. Fem Festa Fem Safaretjos, 2018. Evaluative diagram of two-day events in Safaretjos, Santa Coloma de Gramenet. Timeline (horizontal) and list of workshops, conflicts, participants, fun and impact in terms of expectations-interest-reality. Human and material resources are contrasted with level of community engagement in the different activities. Source: AC Archive. More information: www.arquitectosdecabecera.org/AC/portfolio/fem-festa-fem-safaretjos.

INTERNAL EVALUATION: TOOLS & METHODS (IV)

RESOURCES & FINANCES

Resources management and finance evaluation aim to analyse the origin of the resources, the relative difficulty of obtaining them, and whether they were spent in the best possible way. This analysis can be developed about specific actions or larger projects of urban transformation and should be developed in parallel with the analysis of activities and outcomes. Although it is better carried out by financial technical teams, sometimes architects might have to manage finances as well. This tool serves to evaluate the Resources tools presented in the Analysis & Strategy chapter.

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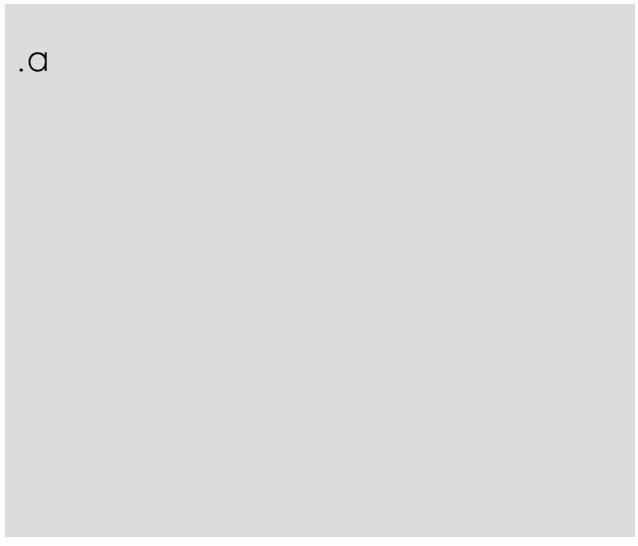

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Examples from Arquitectos de Cabecera, Fem Festa Fem Safaretjos, 2018, Finances Team. Source: AC Archive. More information: www.arquitectosdecabecera.org/AC/portfolio/fem-festa-fem-safaretjos.

.a | Resource management in terms of material, time and investment of each of the processes for the construction of superadobe laundry pool (left) and audiovisual activities (right).

.b | Diagram of funding, relating the process in time with stakeholders visited, contacts made, and material obtained. Source: AC Archive.

.c | Funding and expenses, organised by topics. Below, hours spent by members are counted as a non-economic investment.

EVALUATION INDICATORS REVIEW

An Evaluation Indicators Review allows closure of the process, starting with the evaluation indicators, which evaluate the outcome against parameters strategically discussed in earlier phases of the process (see the Evaluation Indicators section in the Analysis & Strategy chapter). As has been discussed in the Analysis & Strategy chapter, the question of who sets the evaluation indicators plays a fundamental role in urban governance. Indicators can be of different kinds: technical, perceptual, typological, or linking qualitative and quantitative data.

In addition, a useful tool is the comparison of 'before' and 'after' cartographic representations, for which data needs to be gathered with equivalent conditions at both times (that is, considering space performance may vary to a large extent depending on the weather and season, day of the week, and time of the day). In addition, data-gathering tools can be employed in intermediary stages to measure the partial evolution of the project and, if need be, to reevaluate decisions.

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.a | Lacol Architects, La Borda cooperative housing, 2014-2018. Monitoring of the energy performance of the building allows the energy consumption of the building to be compared with a CTE NZEB certificated building. Source: courtesy of Lacol architects and ingetecnia.com (top left).

.b | Agència d'Ecologia Urbana de Barcelona, Vitoria-Gasteiz. Evaluation indicators concerning habitability parameters, at three different points: the original situation (left), with the application of the masterplan in 2009 (middle), and the expected results with the future implantation of the superblock (right). Source: Agència d'Ecologia Urbana de Barcelona, 2021, p.131.

.c| Lacaton & Vassal, before and after comparison of the transformation of 530 dwellings in Bordeaux, 2011-2017. Source: *El Croquis* 177/178, p.254.

Further reading:

Evaluation Indicators in Analysis & Strategy chapter.

Agència d'Ecologia Urbana de Barcelona (2021) *BCN Ecologia: 20 anys de l'Agència d'Ecologia Urbana de Barcelona*. Barcelona: Ajuntament de Barcelona.

UN-Habitat (2020) City-Scale Plan Assessment Tool. Available at: www.unhabitat.org.

URBACT Measuring Performance in Implementation tool: www.urbact.eu/measuring-performance-implementation

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POST-OCCUPANCY TECHNICAL SUPPORT

Technical support and monitoring of the building after occupation assumes that the role of the architect does not finish when the construction phase is completed, and that there is a need for continuity concerning users, the building and technical staff.

On the one hand, considering the building as a device that will permanently be adapted and readjusted by dwellers, there is a potential lack of understanding about how to operate buildings – for example, when, and for how long, do homes need to be ventilated in different seasons of the year, or more obviously about new environmental systems that residents might not be familiar with.

For architects, user technical support allows the reviewing of design decisions to generate know-how that can be further employed in future projects; a learning that can only be produced if there is direct feedback from users during the post-occupation phase.

These meetings for post-occupancy technical support can take place both formally – as an organised workshop with a meeting agenda and a number of activities defined to discuss certain topics [.a] – or informally, receiving feedback from residents and resolving issues with the building in a more convivial leisure environment [.b].

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.a | Lacol Architects, La Borda cooperative housing, 2014-2018. Post-occupancy workshops in which users learn about energy performance monitoring systems. The workshop is given by architects and sustainability consultants. Source: courtesy of Lacol.

.b | ETSAV and Arqbag, Espai Pere Grau, within Pas a Pas Les Planes, 2014. An informal meeting took place in the (e)co platform after the Pere Grau Space renovation concluded, in which discussions were organised around models and a paella. Source: courtesy of Arqbag.

BUILDING MONITORING

The monitoring of building performance enables the way a building is used by its occupants to be improved, for example regarding energy or space usage. As post-occupancy technical support, the monitoring of a building allows design decisions to be evaluated against building performance, producing valuable knowledge for architects. For example, whether the passive energy systems built are easy enough to be operated by users or uncomfortable, and thus unused; whether users are keeping their commitment as discussed in co-design workshops concerning the maintenance of the building or whether expectations should have been lower; and whether the energy calculations made during the design phase were accurate. In certain aspects, such as environmental performance, building monitoring requires the installation of measuring devices.

Building monitoring is an unusual procedure in housing, although it is more common in institutional buildings. However, pioneer examples such as La Borda, which monitors the environmental conditions of the greenhouse, the occupation rate of guest rooms, or usage of shared washing machines, evidence how housing monitoring can produce a positive and pedagogical effect in occupants, teaching them how the built environment has a decisive impact on the carbon footprint and the optimisation of shared resources [.a]. Residents' agreement about building monitoring needs to be discussed in advance.

The impact of building improvement can take different forms. The REC project by ETSAV included three complementary 'before and after' monitoring processes [.b]: building's climatic conditions, dwellers healthcare, and the perception of emotional, material and physical wellbeing of residents.

.a | Lacol Architects, La Borda cooperative housing, 2014-2018. Monitoring of the energy performance of La Borda by the sustainability consultants Societat Orgànica, who developed the energy strategy for the building. Top: comfortable temperature variation and CO_2 footprint. Centre: improvement in energy consumption in comparison with a building that conforms strictly to Spanish energy regulations. Source: courtesy of Lacol and ingetecnia.com (top left).

.b | Arqbag, Community Energy Refurbishment (REC), within Pas a Pas project, les Planes, 2014-2015. Review of indicators pre and post-intervention in housing units. In parallel to the energy monitoring of the building (top), a questionnaire was completed by residents concerning emotional, material and physical wellbeing parameters (diagram below). Red squares mark below standard parameters, evidencing a general improvement. Finally, the monitoring of the intervention showed the improvement in residents' health, which was initially poor due to the lack of sanitary conditions and energy poverty (bottom-right). This situation evidenced the importance of housing refurbishment as a healthpromoting measure. Source: courtesy of Arqbag.

Further reading:

www.lacol.coop/actualitat/sostenible-realment-borda; www.societatorganica.com.

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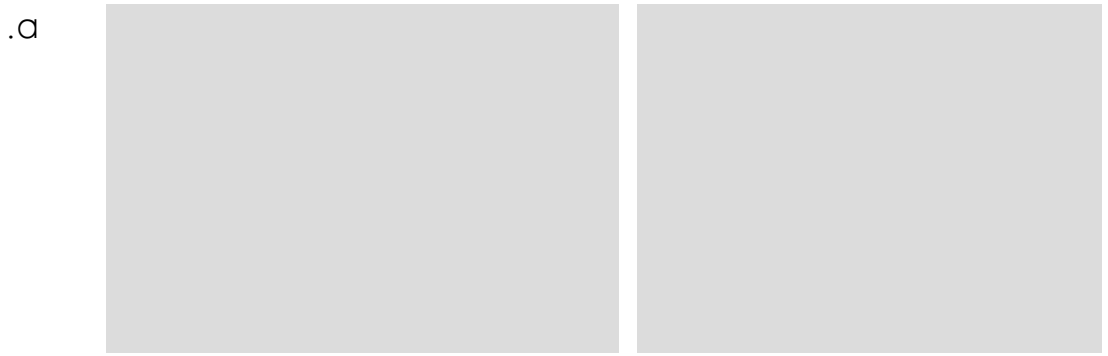

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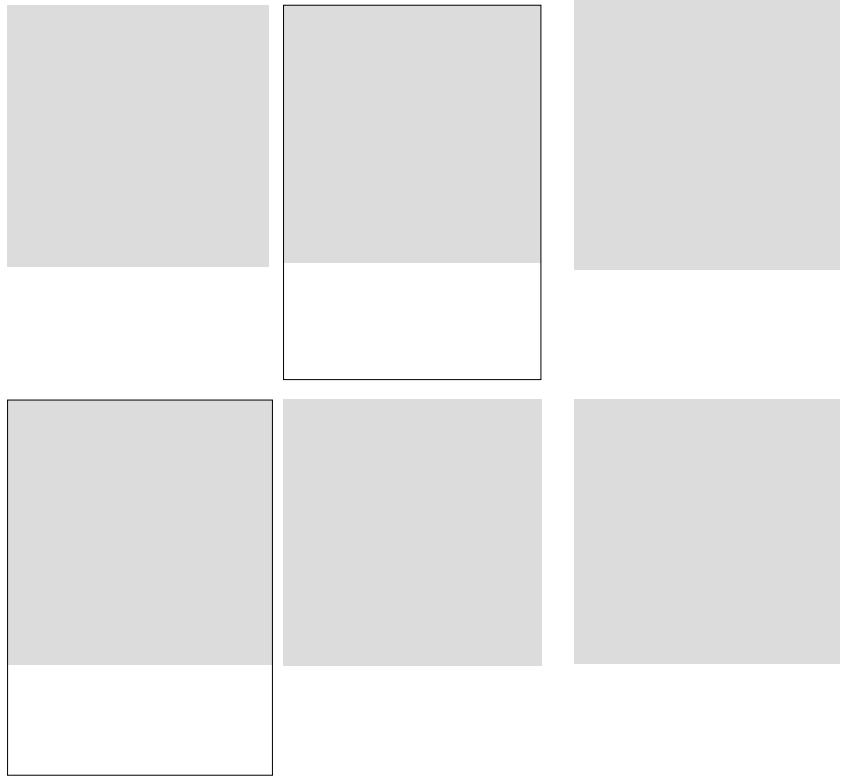
MANUALS & TOOLKITS (I)

Manuals and toolkits of all sorts are published by architecture collectives to enable knowledge transfer and project replicability, and to broadcast their work. Their audience can range from professionals to the general public. Many of them are generously published under the creative commons licence and can be downloaded as PDFs. A short thematic bibliography is presented here, organised by co-creation and participatory methods, public space, policy and planning, housing, and group management. Complementary to this, each of the tools presented in this toolkit includes a short bibliography with further information.



Essential toolkits:

.a | Cembranos and Medina (2014) *Grupos Inteligentes: Teoría y Práctica del Trabajo en Equipo*

.b | Hofmann, S. (2014) *Architecture is Participation: Die Baupiloten: Methods and Projects.* Berlin: Jovis.

.c | Lacol (2018) *Construir en Col·lectiu: Participació en Arquitectura i Urbanisme*. Barcelona: Pol·len Edicions.

.d | Col·lectiu Punt 6 (2014) *Mujeres Trabajando. Guía De Reconocimiento Urbano Con Perspectiva De Género.* Barcelona: Comanegra.

.e | UN-Habitat (2021) *Our City Plans: An Incremental and Participatory Toolbox for Urban Planning*.

.f | Wates, N. (2000) *The Community Planning Handbook: How People Can Shape Their Cities, Towns And Villages In Any Part Of The World.* London: Earthscan Ltd.

CO-CREATION &
PARTICIPATORY METHODS

Barcelona, Diputació de Barcelona. ***Eines de participación ciutadana. Metodologies i tècniques per a l'acompanyament de processos participatius.*** Methods and techniques for citizen participation, published by Barcelona provincial council in 2018. Available online: www.diba.cat/uliep/pdf/60547.pdf.

DYITOOLKIT. Social Innovation Toolkit. Presents a number of tools for strategical thinking, most of the time through diagrams. Easily applicable to design processes. Available online: www.diytoolkit.org/media/DIY-Toolkit-Full-Download-A4-Size.pdf.

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PLANS SETS

Plans sets are one of the most important tools that allow knowledge transfer between architects and designers. The fact that the audience is professional represents a crucial difference from co-construction technical specification tools in the Execution chapter. Plans include general forms as well as details, materials required and actions to reach a specific outcome, aiming for the reproduction of the architectural work. However, this tool may also include specifications beyond the strict confines of design, as in the case of Recetas Urbanas' "recipes", that also include legislative and managerial guidelines.

Collaborative architecture practices often publish the plans of their designs, particularly those of designs that can be reproduced in multiple scenarios. This is common in the case of emergency architecture, such as Shigeru Ban's emergency shelters or Todo por la Praxis Matrioska Home for homeless people.

Plans sets should be interpreted according to local specifics, whether this is this material availability, needs, or management possibilities.

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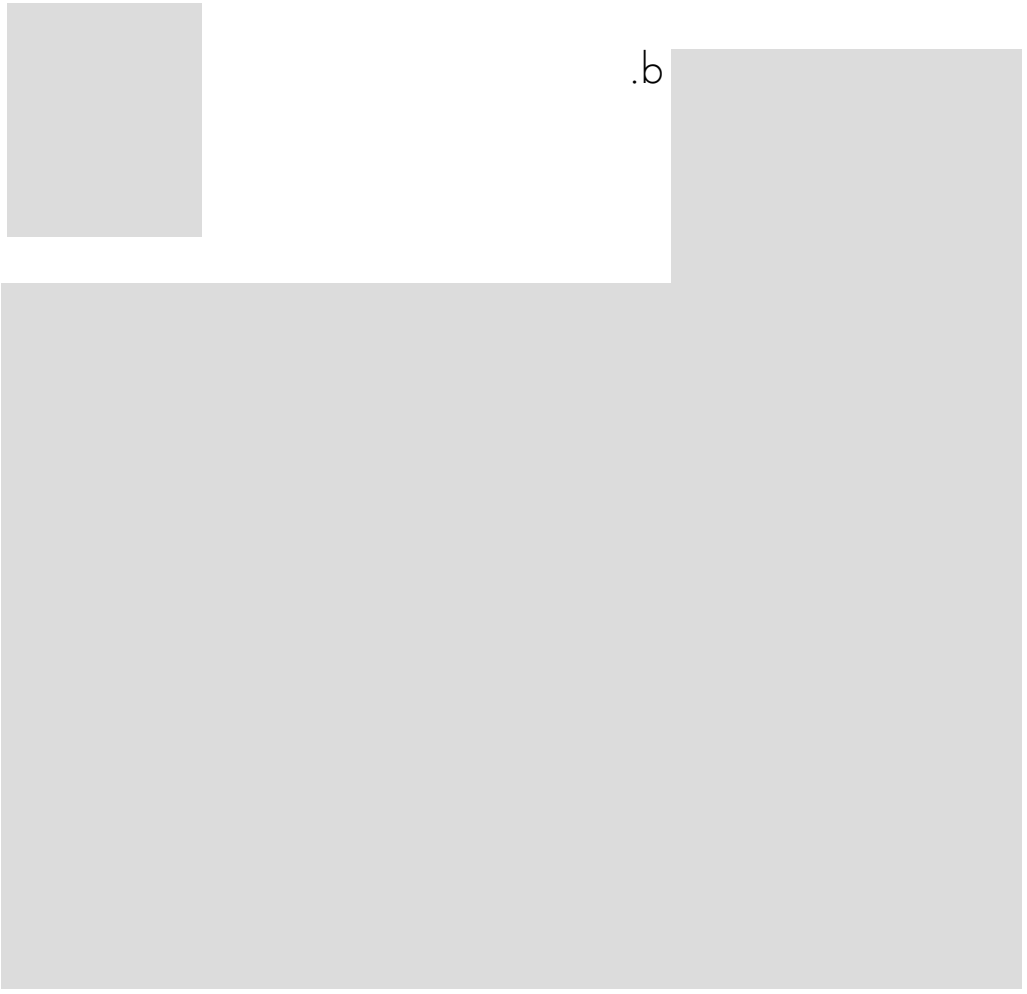

.b

.a | Shigeru Ban, Paper Partition System for Emergency Shelters instructions. Source: Ban, 2014, pp.172-173.

.b | Todo por la Praxis, Matrioska Home instructions, 2009. Cupboard used for homeless people shelter. Source: www.todoporlapraxis.es.

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www.todoporlapraxis.es

PROCESS REPORTS

Process reports are compiled at the end of the project and explain what was carried out and how, hence enabling knowledge transmission and replicability. Looking at process reports is a very useful way to understand the problems and opportunities that collaborative design offers, and the evaluation of the process and outcome achieved by technical and professional staff. They are also a crucial platform to build know-how collaboratively between different projects, making knowledge and tools available. A list of easily available reports is provided here as a reference.

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.a | Arquitectos de Cabecera (2018) *Fem Festa, Fem Safaretjos.*

.b | M-ETXEA (2018) *Dossier Proceso Participativo Errebal, Eibar.*

.c | Voltes Cooperativa (2016) *Carregades de Raons.*

.d | URBACT (2018) *Imagina Badia: Strategy for the transformation of the fringe in Badia del Vallès* (AMB). Report available at: www.urbact.eu.

.e | Institut Infància i Adolescència de Barcelona (2018). Report 'Childhood spaces co-creation'.

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Arquitectos de Cabecera. Reports of many projects available in the website. Available at: issuu.com/arquitectosdecabecera

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Paisaje Transversal publish online reports on large scale masterplans based on participative methods (issuu.com/paisajetransversal) . See, for example, Planea Fuenlabrada, Pinto Plan Ciudad, or DOT Euskadi.

Raons Públiques" Resultats del procés de co-creació amb infants de dos parcs de Barcelona". (2018). Co-creation process with children of two parks in Barcelona. Available online: institutinfancia.cat.

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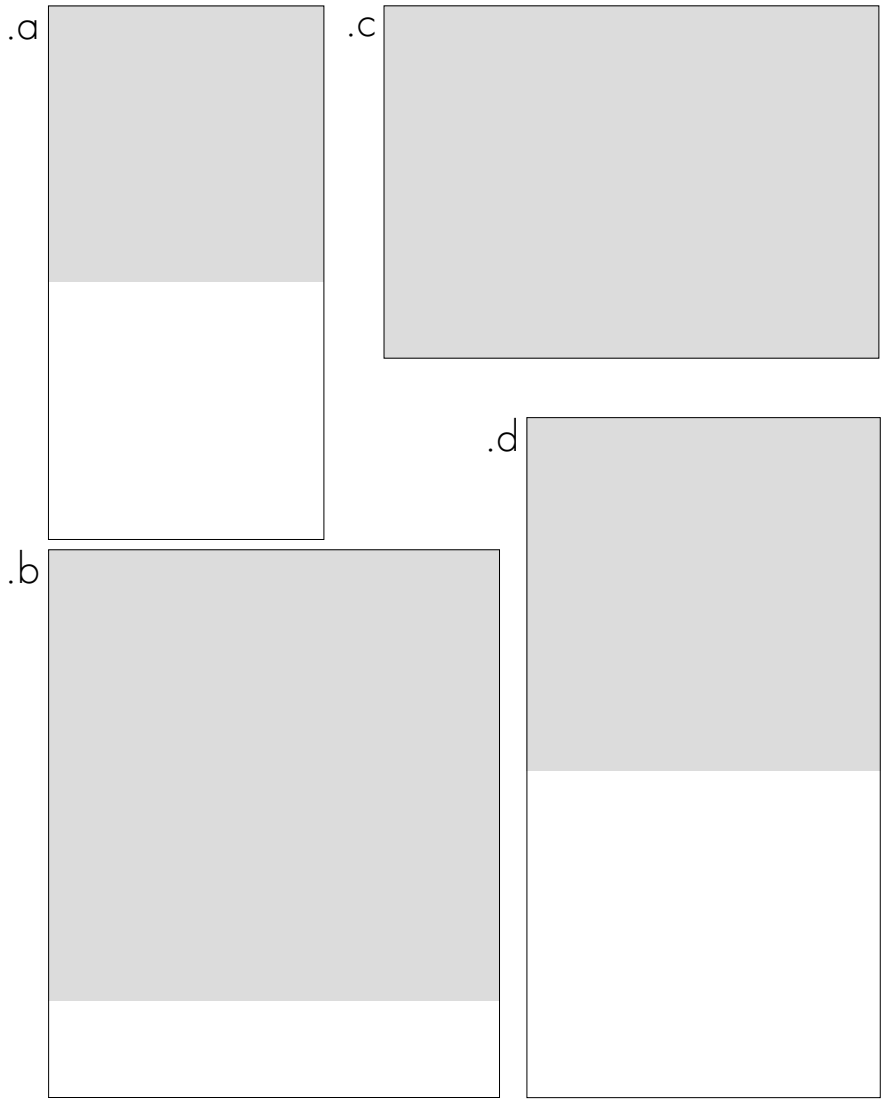
ONLINE RESOURCES

Since online publications are free of charge, interactive and constantly updated, architecture collectives take full advantage of the internet as an open platform that enables collaborative databases and open networks to be built. A short list of architects' networked platforms and online toolkits can be found here.



.a | www.inteligenciascolectivas.org

.b | El-Recetario.net, online platform with DIY furniture and material recycle free manual, directed by Makea tu Vida. Source: www.www.el-recetario.net.

.c | Recetas Urbanas, Urban Recipies, Santiago Cirugeda website. Source: www.recetas-urbanas.net

.d | www.arquitecturascolectivas.net

ARCHITECTS' NETWORK PLATFORMS:

Collective Intelligences:
www.inteligenciascolectivas.org

Collective Architectures:
www.arquitecturascolectivas.net

DATA MAPS:

Atlas or Urban Vulnerability (Spain, Ministerio de Fomento):
www.atlasvulnerabilidadurbana.fomento.es

Natural Resources Maps Database:
www.wri.org/resources/data-platforms

Atlas of Climate Change Vulnerability:
www.climatedatalibrary.cl (Chile and Southamerica).

Municipal Housing Indicators:
www.media.diba.cat/diba/indicadors-habitatge/index

Observatori Habitatge Barcelona:
www.ohb.cat/visor

Raw Maps:
www.awmaps.300000kms.net

Data Tools Directory (extensive):
www.edc.300000kms.net/en/tools
www.edc.300000kms.net/en/projectes

ONLINE TOOLKIT PLATFORMS:

Urbact toolbox for participatory planning:

www.urbact.eu/toolbox-home

ASF Participate:
www.asfparticipate.org

El Recetario:
www.el-recetario.net

Fixperts
www.fixing.education/fixperts

GRRR Reuse and redistribution of resources:
www.grrr.tools

Ocupa tu Calle Toolkit:
www.ocupatucalle.com/caja

Public Space Tools:
www.publicspace.tools

Re-Use EU
www.re-use.eu

Recetas Urbanas (Santiago Cirugeda). Online resource with "urban recipes" ranging from subversive strategies to collaboration methods. Available at: www.recetasurbanas.net.

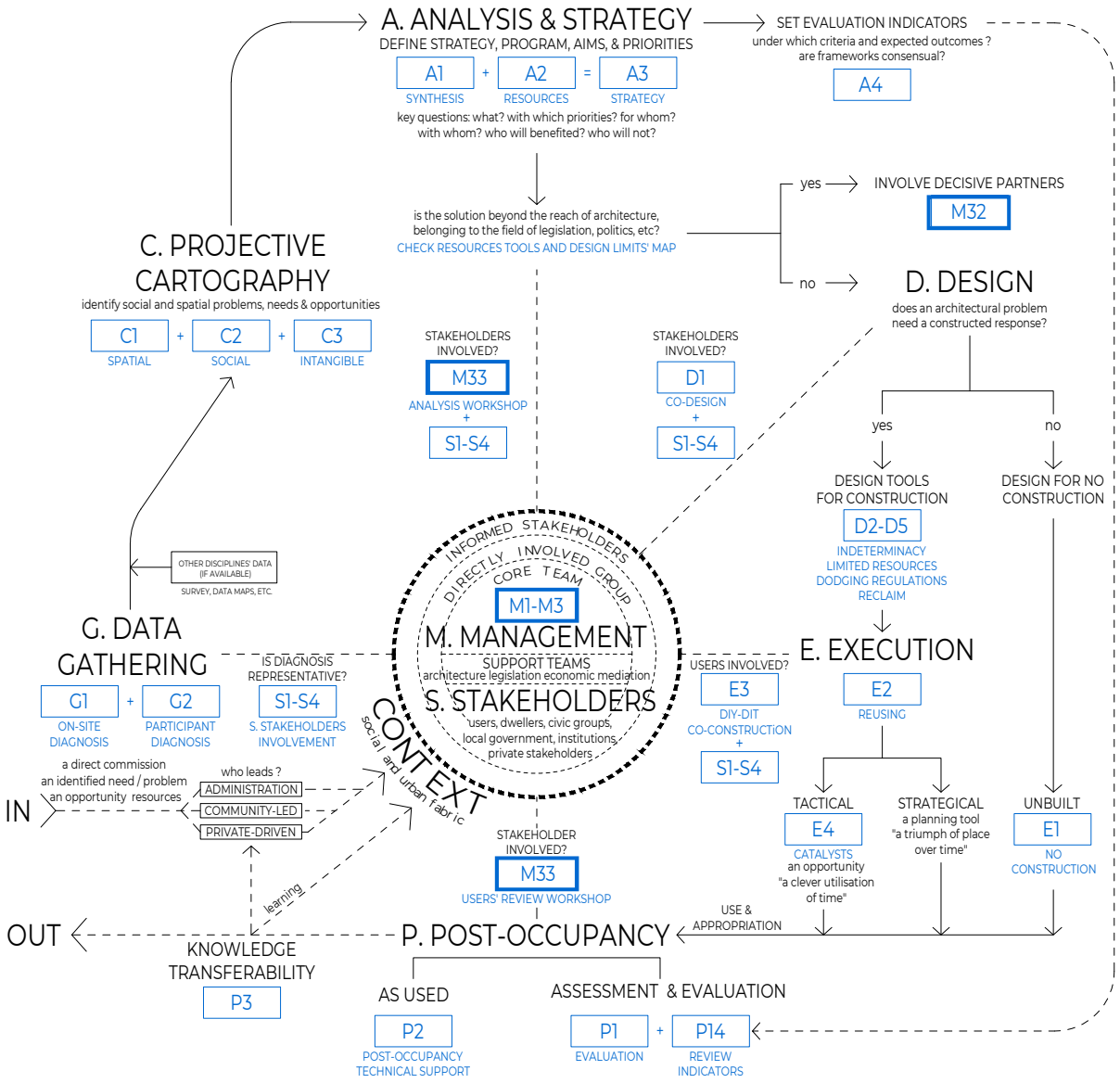
Rehogar Catalogues (Makea Tu Vida):
www.issuu.com/makeatuvida

Rotor Deconstruction, construction materials reuse:
www.rotordc.com

Tools for Actions:
www.cca.qc.ca

Ecosistema Urbano Social Toolbox:
www.ecosistemaurbano.org/blog/social-toolbox

COLLABORATIVE ARCHITECTURE TOOLKIT FLOWCHART



COLLABORATIVE ARCHITECTURE TOOLKIT: A METHODOLOGY

W. WORKS

TOOLS INVENTORY

M. PROCESS MANAGEMENT
M1. PLANNING
- M11 Definition of phases
- M12 Anticipated timescale

M2. DECISION-MAKING
- M21 Map of stakeholder roles
- M22 Core group diagram
- M23 Decision-making scheme

M3. STAKEHOLDER ENGAGEMENT
- M31 Co-organise / develop with
- M32 Involving decisive partners
- M33 Discussion workshops (I-II)

S. STAKEHOLDERS
S1. MAPPING
- S11 Identify stakeholders
- S12 Engagement matrix
- S13 Sociogram
- S14 Powergram

S2. REACHING BY SEDUCTION
- S21 Direct invitation
- S22 Indirect contact
- S23 Make it fun
- S24 Food as social ritual
- S25 Provide a platform for expression

S3. REACHING BY PROVOCATION
- S31 Artefacts invade public space
- S32 Spatial alteration
- S33 Confrontation

S4. REACHING VIA MAKING VISIBLE
- S41 Collaboration with external events
- S42 Printed media
- S43 Digital platforms
- S44 Billboard hacking
- S45 Public exhibition
- S46 Interactive map
- S47 Video / documentary

G. DATA GATHERING
G1. ON-SITE DIAGNOSIS
- G11 Ethnographic observation
- G12 Group walk
- G13 On-site technical support office

G2. PARTICIPANT DIAGNOSIS
- G21 Diagnostic workshops (I-II)
- G22 Meetings with stakeholders
- G23 Interview / survey

C. PROJECTIVE CARTOGRAPHY
C1. SPATIAL & MORPHOLOGICAL
- C11 Drawing the domestic
- C12 Picturing the domestic
- C13 Building as socio-spatial ecosystem
- C14 Facade as mediator
- C15 Urban void
- C16 Neighbourhood
- C17 Urban landmarks
- C18 Systemic urban elements

C2. SOCIAL DIAGRAMS
- C21 User portraits
- C22 Routines & habits
- C23 Users' needs (I): individual
- C24 Users' needs (II): collective
- C25 Morphology to patterns of behaviour
- C26 Rituals & social activities
- C27 Diagrams of relational activities

C3. THE INTANGIBLE
- C31 Subjective perception maps
- C32 Collective perception
- C33 Proximity or isolation
- C34 Movement
- C35 Memory
- C36 The uncanny
- C37 Invisible borders
- C38 Temporalised space
- C39 Control
- C40 Conflict (I): maps
- C41 Conflict (II): events
- C42 Conflict (III): effects

A. ANALYSIS & STRATEGY
A1. SYNTHESIS
- A11 The (yellow) manifesto
- A12 Mind map
- A13 Design limits' map

A2. RESOURCES
- A21 Financial analysis & co-finance strategies
- A22 Available resources (I): inventory
- A23 Available resources (II): "harvest map"

A3. STRATEGY
- A31 Strategic action plan
- A32 Actions & tools breakdown
- A33 Viability map
- A34 Consequences map

A4. EVALUATION INDICATORS
- A41 Technical indicators
- A42 Perceptual indicators
- A43 Typological indicators
- A44 Cross-qualitative & quantitative data

D.DESIGN
D1. CO-DESIGN
- D11 Co-design workshops (I-IV)
- D12 Proposing an alternative

D2. INDETERMINACY
- D21 Enabling: user appropriation
- D22 Enabling: user manipulation
- D23 Enabling: adaptable system
- D24 Typological variations
- D25 Multiple scenarios

D3. LIMITED RESOURCES
- D31 Intermediary situations: "the meanwhile"
- D32 Leveraging material scarcity
- D33 Designing for low-risk construction
- D34 Split large interventions
- D35 Nomadic facilities

D4. DODGING REGULATIONS
- D41 Legislative blind spot
- D42 Camouflage
- D43 Declaring a Temporary Autonomous Zone

D5. RECLAIM
- D51 Reclaiming empty plots
- D52 Filling in the gap
- D53 Regaining infrastructure

E. EXECUTION
E1. NO-CONSTRUCTION
- E11 Do not do (I): maintain
- E12 Do not do (II): connect
- E13 Reprogramming time in space
- E14 Relocation
- E15 Undoing

E2. REUSING
- E21 Borrow - barter
- E22 Recycling & reclaiming components
- E23 Dismantling & reassembling buildings
- E24 Parasite

E3. DIY-DIT CO-CONSTRUCTION
- E31 Technical specifications
- E32 User to execute
- E33 User to complete
- E34 User to expand
- E35 Collective assisted DIY-DIT

E4. CATALYSTS
- E41 Generative actions
- E42 Tactical on-site prototypes
- E43 Do it anyway

P. POST-OCCUPANCY
P1. ASSESSMENT & EVALUATION
- P11 Process overview
- P12 External evaluation: stakeholder review
- P13 Internal evaluation: tools & methods (I-IV)
- P14 Evaluation indicators review

P2. POST-OCCUPANCY TECHNICAL SUPPORT
- P21 Post-occupancy technical support
- P22 Building monitoring

P3. KNOWLEDGE TRANSFERABILITY
- P31 Manuals & toolkits (I-III)
- P32 Plans sets
- P33 Process reports
- P34 Online resources

body of practice

COLLABORATIVE ARCHITECTURE BARCELONA: THE ARCHITECT AS ENABLER

Raül P. Avilla-Royo