

Notes on The Future of Open Building

Open building is no longer a speculative idea of a few pioneering practitioners and theorists. The seeds were planted in the 1960's in Europe by the pioneer of what is now called open building – John Habraken (www.habraken.org). Parallel developments were happening in Japan not long after that. A great deal was written and published during those early years, both theory and about results in practice. A certain turning point occurred in 1996 with the formalization of an international network – the CIB W104 Open Building Implementation (www.open-building.org) at a meeting in Tokyo. Since then, a sizable number of books, reports and collections of essays have been published on the subject, in English, Dutch, Finnish, French, Spanish, German, Korean, Chinese and Japanese, and dozens of technical reports have been produced in several languages. Open building is referred to in countless books, scholarly papers, dissertations, and articles in professional journals. In-depth country reports and studies have emerged in Finland, the Netherlands, China and Japan.

Most important, a sizeable number of projects have been built around the world, some of which are quite unremarkable while nevertheless significant, but a number of which are worthy of praise from any mainstream architectural perspective.

Disseminating information in professional journals, books and scholarly publications about the technical, organizational and methodological dimensions of open building still makes sense. Reporting on and evaluating built projects also makes sense. But it is also time to pose new questions and reenergize old ones. In the last few years, developments internationally suggest that those advocating open building stand to benefit from moving outside what some might consider an overly self-referential discourse, expand its arenas of investigation, and continue efforts to engage in dialogue with mainstream architects, researchers, policy makers, clients and educators.

What is Open Building?

Open Building is the term used to indicate a number of different but related ideas about the making of environment, for instance:

- *The idea of **distinct levels of intervention** in the built environment, such as those represented by 'support' (or 'base building'), and 'infill' (or 'fit-out'). Urban design and architecture also represent two discrete levels of decision-making.*
- *The idea that **users / inhabitants may make design decisions** in their sphere of control, as well as professionals;*
- *The idea that, more generally, **designing is a process with multiple participants** among whom are different kinds of professionals;*
- *The idea that the **interface between technical systems allows the replacement of one system with another** performing the same function - as with different fit-out systems (e.g. from different suppliers) capable of being installed in a given base building;*
- *The idea that **built environment is in constant transformation**, and that, as a consequence, change must be recognized;*
- *The idea that **built environment is the product of an ongoing, never ending design process** in which environment transforms part by part.* (www.habraken.org)

Levels of Intervention + Distributed Control + Change

Open building is fundamentally concerned with cultivating the quality of everyday environment. Its methods therefore address distribution of control or responsibility, a key ingredient of a healthy everyday environment. We recognize that built environment is never finished and that no single party does or can control everything over the long arc of history or even in the initial implementation of built environment. Open building implementation seeks to avoid centralization of control from the top, or, conversely, the chaos that can result from the lack of a well-understood distribution of responsibility from the bottom up. Instead, we recognize a hierarchy of levels in the making of sustainable environment. We recognize this as universally relevant and a matter of great importance to understand and enhance. Our methods are designed to assure that environmental coherence is possible (in any place and over time), but that at the same time, the small-scale can prosper, not by artifice, but by an authentic locus of control in the intermediate and the smallest units of society. That is the meaning of levels and distributed control: some decisions are appropriately and importantly made at higher levels in respect to sustainable and widely accepted norms and values. Other decisions must be possible at lower levels. Otherwise, rigidity and unsustainable environment results. In this sense, open building is opposed to integrated, centralized or unified top-down control, no matter the politics or economic theory at work.

Open Building and Technology

Open Building is not first of all about technical matters, and is certainly not about large “open,” neutral and unobstructed structural skeletons. Since technical systems emerge, are used and evolve in a kind of ecology of production, directly corresponding with societal structures, open building products and processes are most successful when they are not inventions but cultivations of existing technical and human resources.

Design Methods

To handle the complexity of levels of intervention, distributed control and change, open building practitioners apply particular design methods. These include capacity analysis (also called “test fits”) in the design of supports or base buildings; the use of zones and margins as a means of describing the limits of variation in spatial terms; and dimensional and positioning grids to facilitate communication between different parties each responsible for different building elements.

What lies in the future for Open Building?

The question needs to be asked, is there a future for open building? Or is it the case that what was once speculative is now sufficiently conventional in practice that it no longer deserves a place in architectural discourse? To the contrary, three core topics seem to be very important in the coming years:

- **DESIGNING THE COMMONS**
- **SUPPORTING INHABITATION**
- **TEACHING and RESEARCH**

Designing the Commons

The “commons” is a term most familiar in studies of the natural environment. Ecologists teach us that stewardship of the commons is critical to our survival as a species and to the fulfillment of both community and individual aspirations.

In terms of the built environment, the “commons” is a manifestation – in built form - of shared aspirations. But the idea of “common” is not found very much in the design fields, perhaps with the exception of urban planning and urban design. That may be because it speaks to more than technical matters – it reaches into politics and the decidedly non-technical world of agreements, conventions and values, and the fourth dimension - time. It does not emphasize the “one-off.” Its absence may also be explained by the dominant culture of design today, which stresses what is individual and unique, and how breaking the rules is something to be celebrated. In that culture, sharing anything – finding common ground - is too often scorned. This is profoundly unproductive and is ultimately a self-destructive and exhausting proposition. And it should not have to be repeated that celebrating and cultivating what is common does not go against invention and creativity. The “commons” in environmental design is, therefore, something to be taken seriously.

Several dimensions of “the commons” can be mentioned as deserving continued study and development in practice.

Urban Tissue Design

First is the design of urban tissues, an activity that is fundamentally concerned with “the commons.” Here, the job is shaping public space and the formulation of shared architectural themes, patterns and systems. The goal of urban tissue design is to enable environmental coherence with variety among multiple interventions over time. New ways of notating themes is called for; new task distribution and coordination tools are needed and new governmental regulatory and incentive instruments are needed. Continuity with extant tissues is one very important part of this – wiping the slate clean is not only impossible but is destructive. Establishing new tissue models for “green-field” sites is another equally critical challenge.

Support or Base Building Design

Second, the design of sustainable architectural infrastructure - supports or base buildings or primary systems in open building terms - is fundamentally concerned with what is shared or common. These issues apply to any architectural intervention expected to have a long useful life while its multiple inhabitants and the parts they control change. Here, the questions include:

- **The form and distribution of public (common) space** inside buildings as an extension of the urban tissue;
- **Clarifying the distinction in the design of building facades between what is common and what can be individually decided** and changed, an issue rooted both in culture and technology;
- **The delineation and “marking” of territory** and territorial hierarchies;
- **The articulation of service infrastructures** (mechanical, electrical, plumbing), designed to enable the parts of those systems serving (and controlled by) individualized inhabitation to connect to the parts of the more enduring parts of same systems at higher levels.

Capacity vs. Flexibility

We are beginning to understand new architectural criteria, including the idea of capacity. Like in the design of infrastructures of all kinds, capacity has to do with a hierarchy of dependencies. In environmental hierarchies, the higher level sets the stage for lower level interventions, which enjoy certain opportunities that are possible to exploit without disrupting or forcing change to the higher level. We know this instinctively when we move furniture around without disturbing the walls of the room, or when we see buildings come and go in a stable street and public space network.

The Economics of Open Building

Base buildings do not cost more, depending on how accounting is done (and over what time period) and whose interests are served. This was established by sound economic analysis decades ago for the residential sector, most clearly by work done by Karel Dekker and Templemans Platt in the Netherlands, and more recently in the United Kingdom by William Faucett and his colleagues. Recently, Lingotto, a development company in Amsterdam, built an open building project (Multifunk – ANA Architects). They accepted an initial up-charge of 5% but recouped that investment within two years. The developer was quite happy. This return on investment is evident in the office building and retail sectors, where no investor would consider fixing tenant space before the space is leased or sold. It is interesting to note that little or no building economics’ evaluations have been done to demonstrate empirically what is already a matter of course. Base buildings in the health care sector will soon become the norm, albeit with little in the way of theory or economic analysis to back it up, out of the force of necessity. While there is much to be done in improving the architectural design and construction of sustainable and energy efficient base buildings, we can reasonably say that these developments are already well on their way, often required by governmental regulations if not general market pressure.

The renewal of the commons should be at the center of the design disciplines

The renewal of the commons should be at the center of the design disciplines. What is shared – including methods, attitudes, and principles – is, as we know but too often fail to celebrate, the basis for a profession or a discipline. Good architectural design methods, suited to the challenges of the times, are fundamental for our professions' continued contributions to the built field – not the one-off project but the everyday environment. Open building principles – levels of intervention; distributed control; change - are part of the search for the commons, but themselves are in need of re-articulation and re-formulation in newly complex and uncertain times.

Supporting Inhabitation

The counterpoint to the commons (at many scales) is the intermediate organization, the individual or the household. So, while cultivating the commons, breathing life into it, hammering out agreements about it (or simply living with what others decided before we entered the scene), we ignore individual or intermediate organization aspirations to the peril of the health and vitality of the built environment. We would do well, therefore, to understand and promote all means available by which the individual – the family or other unit of inhabitation – can exercise control, can invest in and help to shape the immediate environment of inhabitation to match its preferences and aspirations.

This means releasing ourselves from the presumption that we can design dwellings, places of work and many other environments, before we know their inhabitants/users. This means developing an understanding of where architectural control serving the commons ends, and where the initiation of control in the service of users begins, whether such control is implemented by experts or by citizens or user groups in do-it-yourself initiatives.

Is it time for a certified Infill Industry?

This support of individual control can take many forms. One of them includes the cultivation of a distinct, certified infill industry to complement the industry already well on its way in mastering the provision of capacious base buildings. Research conducted in the United States in the early 1980's, for example, showed that an increasing percentage of value added in the building sector was moving toward investments in equipment and away from construction. Equipment is the classification of products that are depreciated on a short cycle, as opposed to the 30-year depreciation schedule of real property (base buildings). Equipment constitutes the kinds of products governed by standards organizations that oversee consumer-oriented products and services. Similar evidence surely exists elsewhere, but in general this trend is indicative of the increased importance of "infill" or "fit-out" as part of the built environment.

Learning to deliver variety efficiently

The customarily expensive, disjointed and quality-plagued way of renewing existing buildings – built as open building projects or not - is no longer excusable. There are exceptions in the commercial sector, such as the availability of high cost "systems" manufactured and installed by large multinational companies. These companies are now moving outside of their traditional market niche of premier office space and are investing heavily in the health care sector. Other companies have learned how to deliver just-in-time and fully customized "slab-to-slab" fit-out for branch banks, chain stores, and even branded kindergartens, from central warehouses using locally certified installation crews. Aside from these, current practices produce scheduling complexity, cost overruns, excessive waste and frequent conflict.

In every country, in the highly disaggregated or "fine-grained" residential market, many companies and supply chains operate in the market of serving the user-inhabitant. This constitutes a massive economic reality too little understood as part of the open building story. Some operate with increasing sophistication, supported by advanced logistics software. But few companies have made the transition to a fully integrated fit-out "product-service" whereby they might manage the great diversity of demand in an efficient way. The Matura Infill System in the Netherlands (1985-95) provided an important technical and business model that deserves careful analysis. NEXT-Infill in Japan is finding a market for its fit-out system for the new construction and renovation markets largely in the Tokyo market. It is one of a number of competitive companies offering this renovation service. Due to the aging of the skilled workers in Japan, some companies are moving toward the training of multi-skilled workers to serve the market demand for infill services in projects involving the acquisition of older multifamily buildings in good locations and their rapid and quiet upgrading, often one-dwelling-unit-at-a-time.

From an Open Building perspective, these trends signal the growth potential of a coherent and recognized fit-out industry. In this arena, open building knowledge is crucial.

Teaching and Research

A role continues to exist for academics, other researchers and methodologists. As John Habraken has written:

"For the methodologist whose position is inevitably academic, what happens in the field is of fundamental importance. It is our primary source of knowledge: the inescapable reality where habits and conventions make work possible and where new trends of working appear under the pressure of changing technology and evolving demographic and social forces. The observation of this real world invites clarification of what is emerging, raises new questions to be answered, and opens the possibility of generalization and extrapolation that, in turn, must be tested against what is actually happening on the drafting tables, in the management meetings and on the building site."

This work should encompass not only residential but other ordinary classes of projects where change and distributed responsibility are the norm. Those who teach and conduct research, and students whose job is to develop the habits of life-long learning, will inevitably come face-to-face with the principles of open building in practice, even if the term "open building" is not used. This is evident from the experience of many in the open building network who have reported on their teaching.

Without a doubt, teaching and training methods are fundamental for the development of the skills and attitudes needed for open building implementation in the future. The questions are not discipline specific. They involve decision-making and task partitioning, coordination of distributed design, working on and across levels, making and using constraints, cultivating variety and grappling with environmental transformation. The issues are

not only technical, nor limited to skill-building in handling complex architectural form, and are certainly not part of the conventional discourse dominating university architectural education.

Teaching Methods for Open Building in architecture schools

How do we teach students from an open building perspective? To make form without first knowing functional requirements; to establish themes that others will use, and follow themes made by others; to work with other design disciplines; and so on? As an architectural educator for 35 years, I have been struck by the apparent paucity of teaching methods employed in support of these necessities, but also realize that we have little opportunity to teach students how to work in an open building way. Part of the reason is that architectural design curricula are already crowded with requirements imposed by accreditation bodies. Part of the reason is, however, that we have collectively been largely absent in reporting on experiments with new teaching methods congruent with the challenges that open building addresses. It is also true that these questions do not appear with any regularity in the mainstream academic discourse, so we find ourselves marching to different drummers than most of our colleagues. As we all know, this can be a dangerous if not lonely path.

Continuing Education

Perhaps as important as the education of the beginning student is the acquisition of such skills by those already fully immersed in practice. We know that education doesn't stop by the granting of a diploma. Therefore, just as there are continuing education programs in lean construction, sustainability certification, evidence-based design and so on, we must find ways to initiate professional continuing education for architects in the principles and methods of open building.

Thematic Design

Open building defines distinct skills, attitudes and methods needed to make high quality base buildings and lively urban tissues. Open building advocates must take the lead by pointing out these and related developments in architectural education, not as random events but as signs of new beginnings. A recently released book *Conversations with Form: A Workbook for Students of Architecture* (Habraken, Mignucci and Teicher, 2014, Routledge) makes a significant contribution to these questions, and an accompanying website provides a platform for exchange among students, educators and practitioners about thematic design (thematicdesign.org).

Concluding Notes

The open building perspective lives in different languages – and different cultures. It also goes unspoken, or uses other words. But in all languages and in many formulations, this perspective remains vital, interesting and important. The phrase “open building” is not important as such, except to the extent that it offers a short-hand for more complex concepts, to catch people's attention – a kind of “brand.” Naming a set of concepts is important, but also dangerous – important principles can be overlooked or trivialized by resorting to sound bites. So words count, as does slowing down to think.

Practice

Most fundamentally, open building principles address a number of process and control-of-decision-making issues. Changing decision-making patterns is the most difficult thing to accomplish – and open building is fundamentally concerned with who controls what. So, the excellence in which these decision-making principles manifest in architecture and urban design remains in the hands of gifted architects and good clients. We need more talented architects to bring open building skills to their clients, or to work with clients when they take the lead in demanding open building for their projects. As a well-known developer in the Netherlands (Frank Beijndendijk) once said, he wants architects designing projects for him to design energy efficient, adaptable and loveable buildings. As practitioners, therefore, our task is to bring to our clients the skills, creativity and methods that open building advances in raising the quality and long-term usefulness of everyday environment.

Research

As researchers, our task is to point out where open building is emerging. We need to describe this emergence, clarify it, point out where these realities may be headed and organize research to find out more. As John Habraken has pointed out, the doctor must know the human body to help heal it; the lawyer must know the law to help write new laws and adjudicate existing law. Architects must know the everyday environment – its patterns, systems, types and its transformation – to help make it healthy.

Education

The principles of open building are not academic, but they can and I believe must continue to frame academic studies and to enliven the education of planners, architects, interior architects, product designers and others whose work continues to be employed in cultivating the built field. As educators, our task is therefore to help young and gifted students become comfortable and skillful with - and enjoy – working with the decision-making patterns and design methods that open building recognizes.

The principles of open building do not belong to anybody; they stand on their own. We should celebrate the fact that they thrive in many places, even where people do not know that these same principles are alive and well elsewhere, and note carefully the remarkable buildings and neighborhoods that result from their application. That said, we do the right thing to recognize and build on the pioneers who articulated and applied these principles in the first place, and who continue to bring our attention to their significance and meaning.

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