

Interview



N. J. HABRAKEN EXPLAINS THE POTENTIAL OF THE OPEN BUILDING APPROACH IN ARCHITECTURAL PRACTICE

Denise Morado Nascimento

Abstract

Interview with Dutch architect N. John Habraken; his Supports' theory is made explicit aligned with the approach of the Open Building movement. It aims to understand it in order to make it possible into the context of Brazilian contemporary architecture.

Introduction

I personally met architect N. John Habraken in Boston when I attended the "Architecture in the Fourth Dimension Congress", 2011. I do not know if I was more impressed with his generosity talking to everyone who came to him or with his wisdom expressing ideas and criticisms on contemporary architecture. Those days in Boston were productive but also exciting especially when researchers from the Open Building movement deservedly honored Habraken for his unquestionable contributions in the field of architecture - an unforgettable event organized by Prof. Stephen Kendall from Ball State University, USA.

N. John Habraken, a Dutch citizen, was born in Bandung, Indonesia in 1928. He is one of the most controversial architects of his generation essentially concerned to the redefinition of the role of the architect. His book, entitled 'Supports, an Alternative to Mass Housing', was first published in 1962, (English edition 1972), in which he proposes the separation of 'support' from 'infill' in residential construction and design: the support to be designed by the architect and the infill to be determined by the individual occupant.

Since 2008, John Habraken and I have been exchanging ideas, and thoughts about his Support's theory and how the Brazilian architects could approach it if they are interested to be an active agent in the design processes of a city, but aligned with dwellers and all the other agents. This is the universe to be shared here.



N. J. Habraken Photographer: Martin Hogeboom Source: N. J. Habraken

Supports' theory

Q.1) Your Supports' theory has been seen as a breakthrough in architectural practice, beginning from a critique of the mass production and of the exclusion of the user in the decision-making processes about housing. Although the debate has been provoked in the 1960s, we still have some countries, such as Brazil, implementing social housing programs strongly associated with the construction sector, where a typologically rigid, generic and repetitive unit house is presented as a product to be purchased, not as a process to be built and transformed along time. Also, far away from having shared productive processes between those involved. What are the real possibilities of transforming this scenario considering that the architects, inserted into the knowledge field of architecture, appear to be prisoners of the force mechanisms imposed by the building industry and the public power?

Ans. I do not think the situation in Brazil is basically different from that in other countries. This

question is so general and also so basic that a good answer is only possible at the end of this interview, when various concepts and mechanisms have been discussed in some depth. But I can indicate a few principal issues that may point to more detailed discussion later.

The supports proposal is to re-introduce the inhabitant to the professional and political decision making process wherever he/she is excluded. This is important not only for the inhabitant but also for the quality of the built environment as a living and autonomous entity.

This is, in itself, not a technical or architectural question, but one of a shift in control among the players. To introduce the inhabitant in the game, all players must change their ways. People are always reluctant to give away control. Moreover, adopting a new way of working is always difficult at best. People do not know how to work in the new situation, which makes them feel insecure.

There are, of course, many instances where the user is already recognized as a decision making agent. For instance large commercial office buildings offer empty floor space to be fitted out by occupant companies who hire their own architect. Shopping malls offer empty space to retailers to take care of their own interior design. In suburbia the free standing house owned by the occupant can change. Owners of apartment buildings will change their dwelling over time one way or another. In the informal sector people build their own.

But even in those examples, professionals still do not see the potential of this approach for new technology and a different architecture. Neither see those who pursue a more sustainable environment that a bottom up process in which occupants can take initiative is the major condition for their success.

It is true that architects do not have power but must serve their clients. But if they would see the potential of this basic idea, they could explain to their clients and other professionals the commercial and ecological advantages of it.

Q.2) In order to initiate a deeper discussion about the mechanisms and concepts presented by the Supports' theory, you could start explaining how you propose the resident reintroduction in the decision-making processes related to housing and urban space.

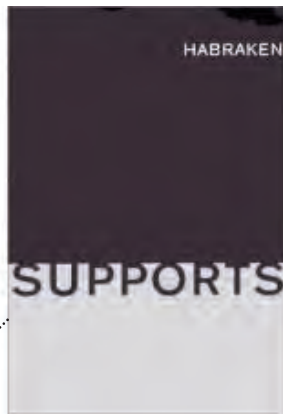
Ans. I have no particular proposal to make on how professionals must act to re-arrange the distribution of control of built environment that is necessary to make built environment healthy and long living. That would be presumptuous. Only practitioners who understand the local situation can do so in a realistic way.

Take, for instance, the recent "long life housing act" passed by the parliament in Japan which rewards technical adaptability for reasons of sustainability. The idea of such a law had never crossed my mind. But it was inspired by the impressive record of Open Building projects done in that country over several decades. The new law's purpose was durability of housing stock but the result is also a way of working that enables individual adaptation of dwellings to user preferences.

For another example: The economic advantages of Open Building have been Studied first by Karel Dekker, building management consultant who could initiate them in practice as member of the board of a housing corporation in the Dutch town of Voorburg in the eighties. More recently Frank Bijdendijk as director of a Amsterdam housing corporation initiated a path breaking project based on his understanding that user adaptability makes possible long term investment for the base building which, in turn, allows a higher initial investment for a higher quality architecture.

In these examples as well as others, we see professionals applying their expertise to real world situations that they understand thoroughly, which gives their initiatives credibility. In the last decade or so, virtually all new Open Building projects were initiated or supported by people in practice for commercial reasons. Those are the kind of examples that can have an impact on things. In turn, the explanations of the people in practice on what they did contribute to our theoretical understanding of the issue. It is this exchange between research, theory, and practice that is only beginning and must be stimulated.

So the short answer to your question is: Inform practitioners about the potential of the Open Building approach in practice and inform researchers about what happens in practice. That mutual information is the best stimulation for innovation and change.



Supports (English edition 1972). Source: N. J. Habraken.

Open Building

Q.3) Perhaps you could explain to us the similarities and differences between the Open Building approach and your Supports proposal, if there is any.

Ans. The Open Building approach is closely linked to the initial idea of separation of Support and Infill as promoted and researched by SAR, the Dutch Foundation for Architect's Research, founded in 1965. It is now identified as a international network of academics and practitioners with a rather informal agenda that can perhaps best be described as pursuing a number of related ideas:

- * The idea of distinct levels of Intervention in the built environment, such as represented by 'support' and 'infill' and urban design and architecture.
- * The idea that users/ inhabitants may make design decisions as well.
- * The idea that designing is a process with multiple participants also including, but not limited to, different kinds of professionals.
- * The idea that the interface between technical systems must allow the replacement of one system with another performing the same function, with minimum disturbance of other systems.
- * The idea that built environment is in constant transformation and that change must be recognized and studied.

The term Open Building has a history that can be summarized as follows.

In the eighties of last century, a group of individuals in the Netherlands, who subscribed to the SAR research effort but were eager to get prac-

tical results, founded another not-for-profit organization with the specific intention to implement in practice the results of the SAR research. This group called itself the Open Building Foundation and was based in Delft Technical University. Eventually both SAR and the OB group had increasing international contacts with academics and practitioners. This network was eventually formalized as a Task Group of the CIB, a world wide "International Congress of Building" founded in 1953 to encourage research in the building industry. (CIB or "Congress International de Batiment" was a French initiative that presently has thousands of building research institutes as members. Its headquarters are now located in Rotterdam). The CIB Open Building task group TG26 was founded in 1996 in Tokyo and as the network grew over time, it convened in a different country every year. In the year 2000 the task group was given a more permanent status as the Commission W104 for Open Building Implementation. Presently, the three joint coordinators of the commission are: Stephen Kendal, prof. at Ball State University USA; Beisi Jia, Assoc. prof. at Hong Kong University, Hong Kong; and Shin Murakami, prof. at Sugiyama Jogakuen University, Nagoya, Japan. The 2011 conference was in Boston, USA and this year the network will meet in November in Beijing, China.

Q.4) It may be difficult for architects to think about distributing control considering not only our educational formation and cultural heritage but also our working tools.

Ans. Many find it indeed difficult to think about it. But nevertheless, in practice, the distribution of design control is a common fact. No practitioner could survive without dealing with it. To begin with, there are the constraints put forward by higher level decisions already taken by other designers. For instance in case of the urban designer who offers a spatial framework for architects to act in. Then there are rules on patterns imposed by local authorities like, for instance, building height, and set-back rules or the use of certain materials and colors. In addition, when the user is not involved, the client will interpret what the user wants and impose a functional program that may be even more restrictive. Finally, in a large design office, teams of designers are assigned to take care of a big job. Somehow tasks must be distributed. In that game, outside consultants for such things as structural design or heating and ventilation are expected to add their own design decisions.



Solid in Amsterdam West, Designed by Tony Fretton.

The difficulty in our profession is that we never consider these constraints and relations as part of the design job. We cling to the ideal of unrestricted freedom in design decisions; an ideology that wants us to believe that freedom is the prime condition for good architecture while, of course, real creativity is triggered by the challenge of constraints. As a result, we do not have any theories about how design relationships can best be organized, how tasks can be distributed that guarantee efficient interaction and minimum friction. We have no explicit methods that help us to decide where one party should take over from another party, or how common principles can be adopted for all involved. It is truly amazing to be part of a profession that does not study its own ways of working and denies the need for cooperation and design distribution. Education too is in full denial of this reality. The things mentioned above are seldom if ever discussed in schools, let alone being included in the curriculum.

If cooperation and distribution of design tasks would be an explicit skill in the profession, the introduction of the inhabitant in the process would not be a big deal. We would be able to rationally discuss how this could best be done. If, therefore, when we propose user involvement, this issue comes up as a problem, it is not because the problem is new, but because it can no longer be denied.



Interior of the empty IJburg solid, Designed by Ditmar Eberle Baumschlager Eberle, architects. Source: N.J. Habraken.

Q.5) Although you have stated you do not have a proposal on how architects should act, how do you understand the work of multiple participants and different kind of professionals in the design process?

Ans. In my book "The Structure of the Ordinary. Form and Control in the built environment" I have tried to answer that question. The way I have approached the topic is not to talk about what professionals must do, but to explain how built environment is a complex physical entity with its own properties that define the kinds of control we can exercise. Thus our freedom to act is defined by the environmental elements we manipulate. If we understand the organization of those elements, our

acts will be most effective. When we play a game of chess we can move the pieces as we see fit; we can act as a free player as long as we do so within the rules of control attached to those pieces. In the built environment we can distinguish three “Orders” within which we operate.

The first is the “Physical Order” which is governed by gravity and the properties of materials. It encompasses decisions about how things are put together. Like with all physically complex things in nature as well as in human artefacts, that order is hierarchically ordered. There are “Levels of Intervention”, that is to say physical organizations that contain one another in the way, for instance, the urban spatial organization contains the buildings in it and the way buildings contain fit-out systems and furniture configurations.

The second is the “Territorial Order” which is about control of space: it is about deciding who and what can go in or out the spaces we build. This is also a hierarchical organization in the way one territory contains other included territories. For instance how a neighborhood contains private homes and gardens, and houses contain private rooms controlled by inhabitants.

Finally, there is the “Order of Understanding” (understanding in the sense of agreed upon ways of working) in which we decide what preferences we have in common. This is where we come to speak about styles, patterns, types of buildings, and systems we work with.

When we design, we operate in all three orders simultaneously, but in each order we relate to other parties in a particular way: parties that operate on higher or lower physical levels than we do, parties that control territories we operate in or who operate in the spaces we control, and parties with whom we share preferences that define our culture.

If we could share an understanding of the built environment in the way of control as summarized above, we would find it much easier to deal with the distribution of control that shapes it.

Q.6) I understand you do not use the word participation in Supports proposal. In this case, what are the mechanisms or instruments that effectively promote and/or ensure the real involvement of residents in the decision-making processes?

Ans. I prefer not to use the term “participation” because it usually means that professionals

are willing to listen to would-be inhabitants, but in the end will make all decisions. “Decision making power”, on the other hand, means that professionals do not make certain decisions but seek to provide a context in which those decisions can be made by inhabitants. This means a shift in the way professionals organize themselves, which, in turn, implies new ways of working in design, financing, management, and technology. They are the subject of both practice in the real world and study in the context of the Open Building Network. Where do you want me to start?

Q.7) Within these 'new ways of working' an important concept is implied. Shared decision-making processes must recognize non-scientific knowledge (essentially from dwellers) to be recognized as a meaningful component added up to the scientific knowledge. Has the Open Building movement actually increased in such issue?

Ans. This question may have intellectual and academic interest but we do not need the distinction between knowledges to implement the Support Infill approach. We are not talking about shared decision-making but about separating decision making. About not telling people what to do, but accept them as legitimate parties to relate to. As John Turner has demonstrated in his writings, people who take responsibility over their own environment are perfectly able to tell professionals what they want. That discussion is about concrete things like physical elements, utility services, and territorial boundaries, that everybody understands. I would argue that everybody understands environmental knowledge. It is not abstract.

Projects

Q.8) Perhaps we should go deeper on what OB wants to do and what has been done both in terms of projects and in terms of ways of working.

Ans. Let me first talk about projects that have been done. There are two sources one can turn to for executed OB projects. In 1999 already, the book titled “Residential Open Building” by Stephen Kendall and Jonathan Teicher lists some 93 executed projects of which some twenty are discussed in more detail. (ISBN 0-419-23830-1, E & FN Spon, London, New York) Presently the website composed by Jia beisi, one of the coordinators of the OB network, adds a large number of more recent projects while also listing some earlier ones

of particular note.

http://open-building.org/archives/booklet2_small.pdf

In his overview a short graph is added to each project stating which of a number of characteristics of OB projects are found in it.

Neither of the two lists mentioned above are exhaustive. In what follows I will mention five projects that each added important new insights to our understanding of the potential of the OB approach.

The so-called MOLENVLIET project in the Dutch town of Papendrecht comprises some one hundred dwelling units for rent. It was completed in 1977 and was the first project in the Netherlands where dwellers of subsidized rental units could select the size and location of their unit and were allowed to do the internal fit-out themselves, aided by the not-for-profit housing corporation. Most importantly, the architect, Frans van der Werf decided that a support structure - because it did not define the dwelling units themselves - could be applied on a large scale and, as such, make for an urban fabric in which public open spaces were shaped. He designed a fabric of courtyards some of which were accessed from a street and gave access to the units in the four floor structure while others served as garden space for the units around it. This ingenious urban layout produced a very specific and architecturally attractive urban environment. It also allowed for a single structural principle to be built continuously and efficiently on a urban scale, without producing deadening repetition or uniformity because the courtyards could all be different in size and the dwelling units also were individually different and could express their individuality by shaping their own facades from predetermined elements and selected colors. The capacity of a support structure principle to shape a urban fabric is still new to professional thinking and after all these years the Molenvliet project is still a path breaking concept still receiving visitors from other countries.

The potential of a support structure as an addition to the urban field was worked out in a different way in the year 1994 in the NEXT21 project in Osaka, Japan. This was an initiative of Osaka Gas Company who asked prof. Yositika Utida to explore the housing of the future with a team of collaborators who all had previous experience in Open Building in Japan. The project comprises a building block in a extant part of Osaka city. Utida

declared that he did not want to do a building but do "three dimensional urban design". The structure is U shaped around a garden courtyard and has a public path going up five floors to end at another public roof garden. One of the major innovations in this project is the fact that Utida, true to his concept of three dimensional urban design, invited other architects to design the interior units of very different sizes. This decision continued the traditional relation between urban designer and architect in a entirely new physical organization. It also demonstrated correctly that the separation of support structure and fit-out need not mean that users had to build with their own hands or design their own units, but would act as clients to professional designers.

The distinction between the responsibilities of different professionals operating on different levels of intervention in a new way was most radically implemented in a more general way in the design of a large intensive care hospital in Bern, Switzerland. Giorgio Macchi, the director of the provincial (Kanton) building office that acted as client for this facility decided that a strict separation of a long term "primary structure" from a short term "secondary structure" would assure better adaptation to new equipment and changing demands of doctors over the life time of the building. Moreover it could speed up the design and building process and could better meet changing functional demands during the years of preparation and building. To implement this approach a first competition was called for the primary structure without any specific functional interior subdivision. Only after construction of the primary structure was under way, a second competition was called for the interior design and an entirely different design office became responsible for this detailed response to present functional demands. The Kanton Building Office is responsible for all public buildings of the Bern region, including buildings for the local university. Giorgio Macchi re-organized his office to apply the two level distinctions to all projects. He thereby followed the practice of commercial developers of office spaces in the United States and elsewhere who leave floor space empty for lease and fit-out by occupant companies. He was the first to implement this strategy for the more complex demands of occupants in public facilities like hospitals and university buildings.

While commercial developers increasingly leave occupancy of office space to the renters of



Molenvliet Project of Frans Van Der Werf near Rotterdam Source: Aerocarto.

such spaces, they remain wary of this approach in residential for-sale projects. There is no doubt that responding to the individual demands of many households in an apartment building is a much more complex task compared to the office building. Not only does one have to deal with many more individual parties each occupying a relatively small floor space, but also the technical complexity increases substantially where bathroom and kitchen equipment occupy a relatively large part of the dwelling surface and must satisfy the particular preferences of the inhabitants. Moreover these technical facilities may be found in very different parts of the dwelling surface.

The issue of increasing complexity was responded to by architect Esko Kahri in Finland when he submitted a proposal for a housing competition called by the city of Helsinki to encourage Open Building solutions. Kahri invited the Tocoman data processing company which had extensive experience in dealing with building projects. Their joint submission to the competition did not only offer a support design but also a detailed procedure in dealing first with individual would-be occupants to help them plan their units providing instant costs information, to then pass on the detailed specification and technical details to the builder. As winners of the competition Khari and Tocoman found Sato development company willing to take on their project. The result was not only that home buyers could decide on their dwelling size, as well as their own floor plan and its finishings, but also that the units were delivered in time and for the agreed upon budget while Sato company made a

good profit. This not only triggered an open ended contract with Khari and Tocoman, but also demonstrated a profitable model for the commercial development of for-sale Open Building residential units. It disproved the general notion that Open Building might be good for the users but could not be profitable for commercial developers.

Where the commercial developer needs to make a short term profit, long term ownership of a support building has its own economic advantages. This was seen most clearly by Frank Bijdendijk, the director of a large not-for-profit housing corporation in Amsterdam. He initiated two large, what he called "Solid" projects that were inspired on the 19th century New York warehouse buildings with their monumental cast iron facades that were still in use today, attracting a wide variety of uses. In his 'solids' people could rent space and fit it out for whatever purpose they fancied, provided they would not harm or disturb their neighbors. Frank Bijdendijk pointed out that long term ownership of the 'Solid' - say for a century or more - made long term investment attractive where the owner did not need to have an immediate return of investment but would make profit in the future. This, in turn allows for a larger initial investment and hence a better quality building. He stated that a building can live for a very long time when two conditions are met: it must have the capacity to adapt to very different uses that change over time, and it must be loved by the occupants and the neighborhood. When a building is loved by people and can be used in many ways, it will not go away. In the year 2011 spaces in the first 'Solid' was auctioned off through



Elevation of IJburg Solid. Source: N.J. Habraken.

the internet. In the middle of a real estate slump the five thousand square meters of the building were all rented out within a day, accepting the entire range of possible uses: varying from individual people who wanted a small apartment of their own to a company that rented an entire floor to start a small hotel.

It is interesting to note that in the same year that Frank Bijdendijk's solids were built, the Japanese government passed the Long Life Housing Act to promote a life time for residential construction of up to two centuries. Both initiatives were made in the conviction, based on research and experience, that long term investment, coupled with adaptability, is the best guarantee for an economic and ecological responsible building policy.

Q.9) In practice, how these professionals, different agents involved in the processes of design and building, have worked together? What are the limitations and further improvements already incorporated into their ways of working?

Ans. Each OB project has its own history. More experience and documented histories are needed before any general conclusions can be drawn. But it is a safe bet that, while new ways of cooperation are the essence of Open Building, there is not one single good model. This is already evident in the five projects mentioned earlier. For a demonstration of sophisticated data processing in support of a commercial housing project, the Arabianranta project in Helsinki by Kahri architects and Tocoman data processing is a prime example. The Next 21 project in Osaka demonstrates how a well thought through modular system helps the separation of sub systems on different levels while also the invitation of fellow architects to take care of the

fit-out was a good demonstration of what "three dimensional urban design" might entail. The INO intensive care hospital project in Bern, Zwitserland, contains valuable experience in the application of the multi-level approach not just in a complex building project, but particularly in the (re-)organization of a institutional organization in control of large public building facilities. The SOLIDS projects initiated by Frank Bijdendijk in Amsterdam demonstrate in particular the investment policy compatible with long life sustainable housing as well as the architectural challenge and opportunities created by such a strategy. The Molenvliet project of the early seventies demanded a new way to value formal approval of subsidized housing as well as a willingness by the non-profit institution that owns the project to support ongoing change of individual dwellings when user preferences shift when children move out or when new occupancy is in order.

We may well expect that over time new models of cooperation will become generally accepted. But while that may be, it seems to me, that this evidence also points out that the future professional establishment will be much more flexible itself and will have the capacity to organize each project in response to its particular needs. A more agile behavior in the organization of projects demands not only the clear identification of each player's professional expertise but, most importantly, a common understanding of the hierarchical structure of the living built environment based on levels of intervention that each have their own life span and the boundaries of which may be drawn somewhat differently in each case.

Short biography

N. John Habraken, a Dutch citizen, was born in Bandung, Indonesia in 1928. He received his architectural training at Delft Technical University, the Netherlands (1948-1955). Author of 'Supports, an Alternative to Mass Housing' (1962), Habraken proposes the separation of 'support' (or base building) from 'infill' (or interior fit-out) in residential construction and design. From 1965 to 1975, he was Director of SAR (Foundation for Architects Research) in the Netherlands, doing research into and development of methods for the design and construction of adaptable housing. Appointed professor at Eindhoven Technical University, 1967, to set up its new Department of Architecture and serve as its first chairperson. Appointed Head of the

Department of Architecture at MIT, Cambridge, MA. 1975-1981. Taught at MIT till his retirement in 1989. Remains occupied with Methods and Theory of architectural and urban design. Lectured on these topics worldwide and is the author of a number of books, research reports, and many articles. Served in a partnership for the invention and development of an infill system for residential construction, from 1987 till 1997. Recipient of the 1988 Creative Achievement Award of the Association of Collegiate Schools in the US; the David Roëll prize 1979 of the Dutch Prince Bernhard Fund, The King Fahd award for desing and research in Islamic Architecture, 1985-86, and the Oevre Award for 1996 of the National Foundation for Art, design, and Architecture.(BKVB oevre prijs) in the Netherlands. Honorary member of the Architectural Institute of Japan. Knight of the Royal Order of the Dutch Lion 2003. Recipient of the 2003 "Kubus for advancing the standing of Architecture", by the BNA, Dutch Association of Architects. His book, titled: "The Structure of the Ordinary", published in 1998 by MIT Press, is an investigation of laws governing built environment as revealed by patterns of transformation. Doctor Honoris Causa from the Technical University Eindhoven 2005. His most recent book: "Palladio's Children" is an attempt to explain why architects do not know how to deal with everyday environment. Habraken is presently working on a new book on "Thematic Design Plays" which is a revision and extension of the exercises he did in MIT course. Presently lives in Apeldoorn, The Netherlands.

Denise Morado Nascimento holds a degree in Architecture and Urbanism by *Faculdades Metodistas Isabela Hendrix*, Master of Arts (Architecture) from the University of York, England and Ph.D. in Information Science/UFMG. She is currently a professor at the School of Architecture, UFMG, Belo Horizonte, Brazil, leader of the research group PRAXIS (*Práticas sociais no espaço urbano* – (www.arq.ufmg.br/praxis), researcher at CNPq, researcher at *Observatório das Metrôpoles*, contributor of CIB W110 Informal Settlements and Affordable Housing and of W104 Open Building and Implementation comissions.



Denise Morado Nascimento (Interviewer)

This interview was realized from dialogues between April to June 2012.