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## Open Building and User Agency Early and Contemporary Experiments in the Netherlands

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## Chapter 10

# Open Building and User Agency

## Early and Contemporary Experiments in the Netherlands

*Íñigo Cornago Bonal and Dirk van den Heuvel*

Recently, the term 'Open Building' has been appropriated and reintroduced by a group of Dutch architects to advance their work and ideas for new housing concepts.<sup>1</sup> Their aim is radical innovation of the housing system involving design, construction, financing, and lifestyle. Through regulatory and constructive systems that allow for change in buildings over time, they intend to achieve, amongst other things, more room for users' agency in the development of their homes.

OpenBuilding.co is a group of Dutch architects, engineers and developers dedicated to extending the lifespan of buildings, significantly lowering the ecological footprint and creating healthy communities. Open Buildings are flexible, adaptable, circular and resilient. With distinct architecture, they contribute to a dynamic urban context. The infill is co-created with future users to encourage and consolidate inclusion and belonging.<sup>2</sup>

To this end, they hark back to the 1960s and the concepts of John Habraken (born 1928), who first formulated similar ambitions in his ground-breaking book of 1961, *De Draggers en de Mensen*, which was translated to English in 1972 as *Supports: An Alternative to Mass Housing*. Interestingly, Habraken is also involved in the new Open Building initiative, thus making it a cross-generational effort. Yet, when Habraken was working as a young architect and researcher, the context of housing production was very different. It was shaped by the welfare state and its strong governmental control of planning and construction, together with the emergence of big building companies, which could provide

standardised mass housing in the large numbers demanded. Today, the notion of Open Building is revived under very different circumstances by this group of entrepreneurial architects seeking to disrupt a housing market dominated by commercial developers.

Early housing projects that follow Habraken's principles were built for the social rental sector and often located in city expansion and suburban areas, such as the projects of Molenvliet in Papendrecht (1976–77) and Keyenburg in Rotterdam (1984–85), both designed by Frans van der Werf (born 1937). Contemporary examples experiment with ownership and business models and are deployed as pioneer projects in the redevelopment of former industrial areas. Projects like Marc Koehler's series of Superlofts (2016–ongoing) and Tom Frantzen's Patch 22 (2016) and Top-Up (2020) exemplify the current experiments in both prefabricated construction and development and financing models. This chapter takes a closer look at the development of the concept of Open Building and its various manifestations, to understand some of the paradoxes at stake, especially when it comes to the place of user agency in this specific discourse on housing.

## The Emergence of User Agency in Housing

Then and now, Open Building concepts are promoted by architects to allow more room for the user, particularly their larger influence on the actual configuration of their house or apartment: the internal finishes, the layout, the facade, or the provision of collective services—during the design process as well as during the life cycle of the building. To understand the Open Building ambition requires us to also investigate the place of user agency in architectural discourse on mass housing. Broadly speaking, user agency in housing can be situated somewhere between the recognition of basic human needs—as a fundamental right to housing; to access and appropriate a home—and the technocracies of equal distribution, available land, and the conjunctural events of the housing market and the consumer economy. This ambivalence is also explicitly formulated by the position of the early protagonists of the Open Building movement. In his many publications Habraken touches on dwelling as an existentialist act, while simultaneously pushing for an advanced building industry, which could meet the diverse and changing demands of consumers.

Although the user, either as an idealised abstraction or an empirical quantity, was already put central by the various reform movements of the nineteenth century, the notion of any individual or autonomous agency of the user is a relatively recent phenomenon to the architectural discipline.<sup>3</sup> Whereas socialist-inspired functionalism sought the emancipation of the working classes in an industrialised society, the understanding of a more individual user in architecture is connected to the arrival of the post-war welfare state, especially in Western Europe, and the recognition of a liberal, pluralistic democracy as a socio-political context for the planning of housing.<sup>4</sup> The Dutch architect Jaap Bakema is one of the first to speak about this individual understanding of user agency in the circles of the CIAM, relating the cause of modern architecture and mass housing to the one of a modern democracy. To him, the architecture and the planning system of an 'open society' can no longer be reduced to expressions of a generalised community and collective life, but also has to be concerned with notions of diversity,

accommodating and expressing the various different ways of life of its citizens.<sup>5</sup> In this context, flexibility attained quite a different meaning than in pre-war functionalism. Rather than a focus on developing efficient house plans to make the most out of the few available resources for housing the lower classes,<sup>6</sup> now flexibility represents a possibility for the inhabitants to appropriate a home in the way they consider best in accordance with their individual needs. Flexibility is thus linked with user agency and would, in turn, reflect the diversity of a plural society.

In the Netherlands, architects sought to accommodate such modern diversity and pluralism in housing by way of architectural and typological invention. An example of this approach are the 'growing houses' in Eindhoven, developed by Bakema in the 1960s and built in the early 1970s.<sup>7</sup> The project started as a bottom-up initiative of young Philips engineers and eventually, led to the development of a new neighbourhood, 't Hool. Another seminal example is the Diagoon housing project, in Delft, in which Herman Hertzberger specified this approach by replacing 'flexibility' with the notion of 'polyvalency'. Following this concept, the spaces are arranged in such a way they can accommodate multiple, shifting domestic functions. Sleeping, living, eating, home working, and play could be mixed and combined in various ways by the inhabitants. Originally planned as an experimental neighbourhood of 324 single-family dwellings, the project was eventually built in 1971 as a prototype of eight terraced houses targeting middle-class buyers.

In parallel, John Habraken set his hopes on a fundamental restructuring of the building industry rather than on new housing typologies. To achieve participation and freedom of choice for the user, Habraken based his theory on the duality of 'support' and 'infill'. In the post-war context of consumerism and industrialisation in construction, he conceived 'supports' to be durable and collective, and to be delivered by the tandem of government and industry. The 'infill', on the other hand, was meant to be changeable and individual, and could be tailored by the inhabitants provided by an advanced consumer economy. Ideally, a frictionless process would be achieved. Thanks to technological innovation and elaborate coordination in the decision-making and control processes, the different levels of 'support' and 'infill' could be disentangled and optimised. As a result, the idea was that both industry and consumer would benefit.<sup>8</sup>

## Technocracy and its Discontents: The Proposition of Open Building

Pursuing these ideals, in 1965 a group of leading architecture firms active in the housing industry joined forces and established the SAR (Architects' Research Foundation).<sup>9</sup> Directed by Habraken, the SAR developed rational design methods based on dimensional rules and the allocation of so-called sectors, zones, and margins for optimisation of the construction process. Relatively independent 'levels' of decision-making, construction flows, technology, expertise, use, and maintenance were thus coordinated to provide and uphold the intended agency for the user.<sup>10</sup> Even when the SAR did not succeed in bringing about the revolution Habraken sought, it had a major impact on Dutch architectural practice and the theorising of housing and construction design. At that time,

students of Habraken and collaborators of the SAR won prominent housing competitions and major journals dedicated theme issues to critically discuss their ideas and methods.<sup>11</sup> Moreover, with the translation of Habraken's work, his ideas travelled abroad and had a significant impact in other contexts too, especially in the US and Japan.<sup>12</sup>

In the late 1970s, Age van Randen (born 1926), a professor of Building Technology at TU Delft, eventually popularised the term 'Open Building' to encapsulate Habraken's ideas.<sup>13</sup> In 1984, he established the Open Building Foundation (SOB—Stichting Open Bouwen) with its own research arm, OBOM (Open Bouwen Ontwikkelings Model), that was both a continuation and practical alternative to the SAR, aiming to finally take the leap from subsidised experimentation to mass industry.<sup>14</sup> Both Habraken and van Randen saw technology as a means to achieve greater efficiency within a growing consumer market. For them, the problem of homogeneity in architecture and typologies within a residential development derived from the economies of scale of the welfare state and the construction industry. Therefore, they proposed alternative construction principles that would not depend on such a large scale to be economically competitive and that would result in diversity.<sup>15</sup>

This diversity was seen as the natural outcome of free choice exercised by individuals with different wishes and needs, but also with different incomes. Speaking of "advantages for the user" and "user friendly adaptation as a result", Habraken criticised the welfare state model of 'one size fits all':

Differences in lifestyle, occupancy, and income cannot be taken into consideration. In the end no one is satisfied. The lowest income tenants feel they cannot afford the new rents. Those with a higher income feel they do not get what they want.<sup>16</sup>

The origin and nature behind those economic disparities and their impact on user agency were not questioned as such. The user-inhabitant was imagined to be a consumer, and their freedom boiled down to choice within the market. Although the SAR and the OBOM, Habraken and van Randen, departed from the premise of an egalitarian, democratic 'open' model, this 'openness' was significantly limited to the user purchasing power and remained restricted by the technical means provided by the building industry. Ultimately, user agency was not regarded as a political question in terms of ideology—as it has been framed by much contemporary research<sup>17</sup>—but one of management of hierarchies and decision-making processes within the planning system and the housing production chain.

## Open Building Then: The Case of Molenvliet

To date, the most often referred to example of SAR principles of user participation in the design and planning process has remained the *Molenvliet* housing complex, by Frans van der Werf. The project, commissioned by a housing association for the social rental sector, was built in 1976 in the expansion of Papendrecht, a municipality south of Rotterdam designated to absorb part of the growth of the Randstad conurbation. Although the initial commission required the design of 80 two-bedroom apartments,

the architect succeeded in arguing for a diversity in size that would in turn result in wider diversity of the residents. As an outcome of a controlled process of user participation and the adoption of innovative construction technology, the project eventually included 123 residential units and 200m<sup>2</sup> of office space from as many as 67 different base types. The dwellings ranged in size from 37m<sup>2</sup> to 116m<sup>2</sup> and in bedroom number from one to six, accommodating around 350 residents.

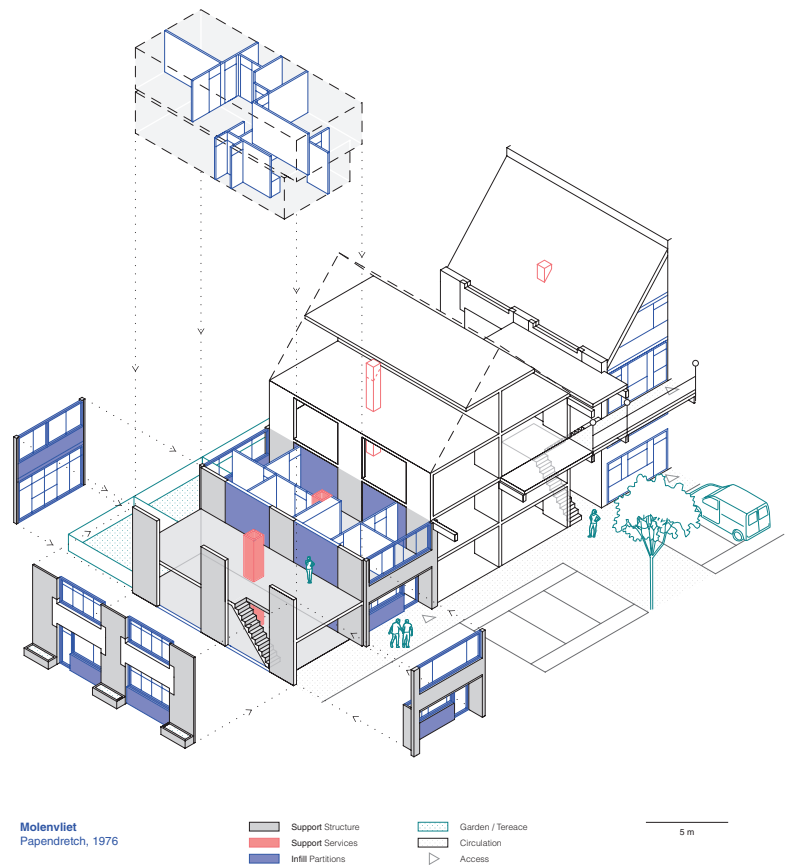
The implementation of Habraken's ideas and the SAR method was not limited to the buildings ('support' and 'infill' levels) but also included the urban scale (the so-called tissue level in the terminology of the SAR). Accordingly, the project was conceived as a fragment of a larger system that could be extended. A street for vehicular access and surface parking divides the project into two parts, each containing two pedestrian courtyards accessed through alleys. The courtyards were meant to act as a transitional space for the community, mediating the privacy of individual homes and the publicness of the streets. Moreover, each dwelling had a private garden or terrace.

Characteristically for the SAR approach, the whole scheme is organised by a grid. The permanent 'supports' were built in concrete and consisted of parallel rows of load-bearing walls, between two and four storeys high, supporting horizontal floor slabs. Each bay contained a services core slightly off centre. Additionally, the facade framework and the roofs—either pitched timber ones or flat terraces—were also predetermined. In contrast, the changeable 'infill' comprised the internal partitions, services, fixtures, and storage units, as well as the party walls and certain facade elements such as windows, opaque panels, and doors. A customised and prefabricated 'infill assembly kit' was delivered to the site to be assembled by specialised contractors (Figure 10.1).

The residents of the project were selected by the Papendrecht housing association, based on socio-economic criteria and following a waiting list. Despite the intentions of the architect, the 'tissue' level and the 'support' level were not devised with any input from the prospective tenants due to the opposition of the local government. The boundaries of each apartment and the allocation of each household were also determined in advance by the architect and the housing association. Nonetheless, after a general information meeting in which the future residents were introduced to the experimental nature of the project, and to their assigned unit, it was possible to accommodate some residents' requests and unit swaps. Thanks to the Open Building approach, it was also possible to provide additional smaller dwellings by subdividing larger ones.<sup>18</sup> At this point, the position of the service cores and the internal stairs within duplex apartments were fixed, and its ensuing openings cast in the floor slab.

User agency was given centre stage in the design of the 'infill' level. However, this agency was limited in scope and time frame and mainly benefited the first tenants of the estate.<sup>19</sup>

Each household met twice with the architect and a representative of the housing association, first to draft their future apartment layout, then to detail the location of



**Figure 10.1** The Open Building principles, as implemented in Molenvliet, Papendrecht, 1976.

Source: Drawing by the authors (CC BY 4.0).

services and the arrangement and colour of facade elements (Figure 10.2). These ‘consultation’ meetings were scheduled to last 45 minutes each and to take place 15 days apart.<sup>20</sup>

The limited amount of information communicated to the tenants in advance, the short time provided to make decisions, and their lack of experience in design were considered minor issues by the parties involved, as the ‘infill’ was thought to be easily changeable afterwards, owing to the constructive independence of ‘support’ and ‘infill’. In fact, a year after residents moved in, and following a thorough evaluation of the project and residents’ satisfaction, some alterations were done to the layout and the facades of certain dwellings. Over time, however, such alterations as well as changes in dwelling boundaries became rare as the conditions and incentives that made them possible disappeared. Around 1995, a comprehensive renovation of the estate was carried out, and today Molenvliet is still social rental housing. While the diversity of the unit types survives, the variety in the colours of the façade panels has been replaced by a unifying shade of green.<sup>21</sup>





**Figure 10.2 Interior view of an apartment in Molenvliet, Papendrecht.**

Source: Photographer unknown. Courtesy of Faculty of Architecture and the Built Environment, TU Delft.

At the time of its construction, the Molenvliet project was considered a success by many as it provided great variation in housing sizes and types within a simple and systematic design and construction.<sup>22</sup> Furthermore, initial resident satisfaction was considerably higher than in other conventional housing projects.<sup>23</sup> Still, rather than provoking the revolution in the building industry and government procedures that Habraken sought, the Molenvliet project—like other projects that implemented the SAR ideas—was made possible only through a special government programme for ‘experimental housing’ and remained an exception.<sup>24</sup>

## A Dutch Tradition of Innovation: The Evolution of Open Building to Now

Over three decades the Open Building approach maintained a solid standing in the Dutch design practice as an innovative force to tackle crises of varied nature. However, in the 1990s, ironically coinciding with a construction boom and a rise in housing

demand, it lost traction. During the following years, some disciples of Habraken and van Randen—such as Stephen Kendall and Ype Cuperus—remained active and sought the internationalisation of the approach.<sup>25</sup> Eventually, in the late 2000s, another crisis proved to be a fertile ground for the resurgence of the approach.

Amongst the recent revivals of Open Building concepts, the one of so-called Solids stands out. Inspired by the squatters' complexes of the 1980s, the housing corporation director Frank Bijdendijk took the initiative to realise two housing projects in Amsterdam. These combined a 'support' and 'infill' approach with a design that allowed multiple uses, in the spirit of Hertzberger and Bakema. The two projects were built between 2004 and 2011 by architects Tony Fretton and Dietmar Eberle, respectively. Regardless, they remained an exception too.<sup>26</sup>

In the aftermath of the global financial crash of 2008 and the subsequent construction crisis in the Netherlands, a number of Dutch architects took an entrepreneurial attitude to develop their practice in what was then a stagnant market. Drawing on Open Building principles to surmount the financial challenges, they offered ideals of sustainability, participation, inclusivity, and alternative lifestyles to people with an economic position to invest in their own housing. This was made possible by a regulatory change that allowed architects to become developers and the fact that the municipality of Amsterdam opened—and favoured—the leasing of land to housing cooperatives and private collectives, so-called CPOs (Collectief Particulier Opdrachtgeverschap).<sup>27</sup> These contemporary projects act as a double-edged sword. While offering an affordable opportunity for entrepreneurial home consumers during the construction crisis, they are also drivers of subsequent gentrification processes.

Robert Winkel and his firm Mei Architects can give a measure of the scale and ambition of the contemporary Open Building approach. His Schiecentrale 4B (2008) and Fenix (2013–19) projects in formerly industrial areas of Rotterdam accommodate a large number of units and programs, all with customised layouts. Other projects by architect and developer Tom Frantzen, such as Patch 22 and Top-up in Amsterdam, are smaller in scale but innovative in sustainable construction. Marc Koehler, one of the founders of the contemporary Open Building platform, has developed the concept of 'Superlofts'. As much a spatial typology as a lifestyle brand, Superlofts turned out to be a quite effective response to the housing crisis in the years 2010–15 in the Netherlands, celebrated in the press and by the profession. A handful of Superlofts projects have been realised, and more are under development.<sup>28</sup> Whereas most of the other initiatives are profoundly project-based, the Superlofts concept has been developed in various projects for different locations, clients, and user groups, and thus presents an interesting case in the versatility, potential, and limits of the Open Building concept today. Besides, they raise comparison with the experiences of the SAR method, epitomised by the Molenvliet project.

## Open Building Now: The Case of Superlofts

The standard typology of a Superloft dwelling is a Corbusian double-height flat that can be internally customised, subdivided into smaller units, or aggregated into larger ones.

It is precisely the possibility of customisation and the flexibility in size that both fulfils and defeats the promise of inclusivity. On the one hand, non-traditional households and lifestyles can be accommodated independent from a paternalistic state or a conservative market. On the other hand, however, they can be accessed by only a limited and relatively well-off part of the population.

The first and most paradigmatic Superlofts projects were built in Houthavens and Buiksloterham, former industrial areas of Amsterdam designated for regeneration. These redevelopments target a diversity of household types, but especially the middle and upper economic classes, a political decision of the city, since historically, social rental housing dominates the Amsterdam housing stock. The projects fully occupy rectangular plots arranged in long rows. Linear buildings of ten storeys high on one side and four to five storeys on the other consolidate the facades to the streets. Together, they enclose a private courtyard built on top of ground-floor parking. This courtyard is divided and accessible only by the lower units. Upper ones have access to a private balcony whose dimensions vary depending on each household's wishes and possibilities. Unlike in older Open Building projects, such as Molenvliet, that aspired to a nostalgic village character through high-density and low-rise construction, Superlofts brings together the imaginary of industrial spaces in a cosmopolitan urban neighbourhood. Despite being a co-housing development, shared areas are kept relatively sparse, especially when compared with the generous, publicly accessible courtyards of Molenvliet.<sup>29</sup>

The notion of 'supports' is incorporated into the Superlofts model and adapted to contemporary conditions. Physically, it again comprises the permanent elements of the building: concrete load-bearing walls and floor slabs, a common framework for the envelope of the building, and circulation and service cores. In legal terms, the 'support' is nowadays the part of the project that the architect and the future residents develop, finance, and commission together, organised under the figure of a CPO.<sup>30</sup> The 'infill'—which concerns the interior of each dwelling—is then financed and commissioned by each household independently, who may hire its own architect or interior designer.<sup>31</sup>

Typo-morphologically, and at the scale of the apartment, Superlofts projects bear important resemblances with SAR projects, as both build longitudinal spaces arranged between parallel load-bearing walls. The innovative difference in Superlofts is that the 'supports' provide a five-metre-high space that the user may subdivide vertically through a mezzanine accessed via an internal staircase, which are both now part of the individual 'infill'. Another significant difference is the larger size of the contemporary apartments, facilitated by the larger span of the structure, and the economical possibilities of the targeted user. The additional volume of the Superlofts apartments directly results in greater agency for its users. The fact that the service cores are not predetermined in a central position of the apartment but fixed against the load-bearing walls also increases the possibilities for the internal layout of the unit (Figure 10.3). Curiously, it was the facade where Molenvliet offered more choice for the user; in Superlofts there is no possibility to incorporate opaque panels or choose the colour of the frame, just the opportunity to further partition the basic facade framework to respond to the interior design (Figure 10.4).

User agency is not only greater in contemporary projects due to size and technology, but it also takes a new dimension as the users have become the real estate developers

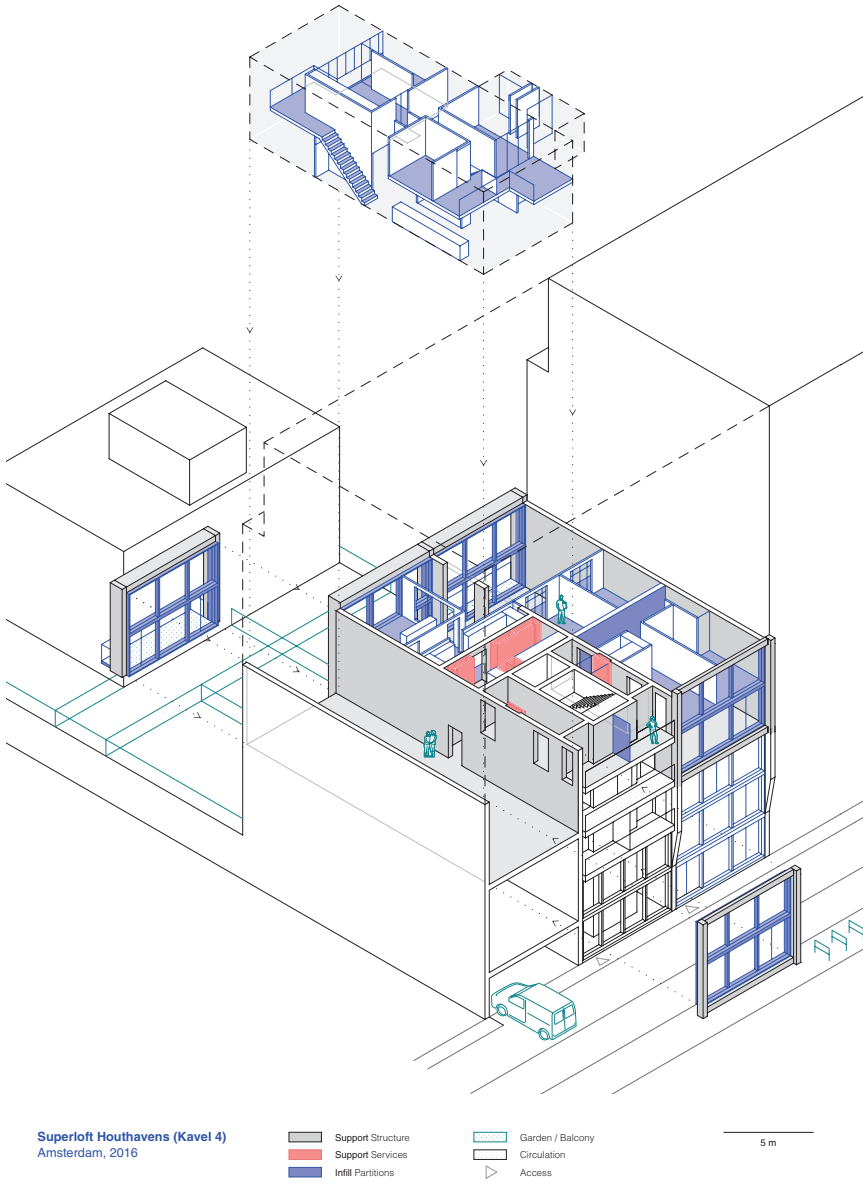


**Figure 10.3 Interior view of apartment in Superloft Houthavens (Plot 1) in Amsterdam.**

*Source:* Photograph by Jansje Klazinga. Courtesy of Marc Koehler Architects.

of the projects, which gives them much more decision power (together with more financial risk). This characteristic implies a significant shift in who the user in the Open Building projects is. Previously, residents were selected to access the social rental market through state-determined criteria based on income. Participating in such an experimental project was effectively not much of a choice as it represented for most of them the best—if not the only—chance of accessing a dwelling at an affordable rent.<sup>32</sup> Conversely, residents of the Superlofts projects hold a much more privileged socio-economic position. They are unsatisfied with a market that offers ready-made products that do not meet their expectations or lifestyle. Allocation of the dwellings now depends on availability and the purchasing power of the future owner, as in any consumer market, in contrast with the former bureaucratic allocation by the housing association. Remarkably, both cases succeed at welcoming a wider diversity of residents than most projects of their context by providing a wide range of unit sizes that are, at least in principle, flexible to adapt to shifting conditions.

Nonetheless, Marc Koehler's declared ambition through Superlofts is not to cater for an exclusive niche market but to radically transform the housing system. The Superlofts brand has proven flexible enough to accommodate a range of projects in different locations in which user participation—in both design and development—and the possibility for future change are less radical. In certain projects, the mezzanine and double-height void are built in as part of the 'support'. Some of them are commercially developed and future residents simply choose from a menu of different floor configurations.<sup>33</sup> Currently, Marc Koehler's office is applying Open Building principles (although not as part of the Superlofts family brand) in Blok 14, a project for the social rental sector in the town of Hoorn, commissioned by the housing association



**Figure 10.4 The Open Building principles, as implemented in Superloft Houthavens (Plot 4), Amsterdam, 2016.**

Source: Drawing by the authors (CC BY 4.0).

Intermaris.<sup>34</sup> As in Molenvliet 50 years earlier, the future inhabitants are invited to participate in the design process.<sup>35</sup> However, the means and end of this participation are quite different.

Those participating now are not the selected inhabitants who have already been assigned to a specific unit, but rather prospective tenants that are interested

in living in such a project but do not know yet if they will be selected. As a result, they do not co-design their apartments in one-to-one meetings with the architect, but participate in on-line workshops with live polls to show their preferences between a number of predesigned layouts, dwelling sizes, and the design of shared areas like the courtyard, terraces, and various common rooms. Participation in these sessions is incentivised by awarding “residential points” to those who are “actively and positively participating”, “supplying and developing a good idea”, or “organising labour-intensive activities”. Fulfilling the socio-economic criteria is no longer enough. Now it is also “important that you feel like investing time and effort in the co-creation process”.<sup>36</sup> Simultaneously, these sessions are useful for the housing association, functioning almost as a market research focus group. The conclusion after the three on-line meetings held in 2020 on Blok 14 has been that there is no demand for as many variations as the architect was proposing.<sup>37</sup> Paradoxically, this type of aggregated participation of potential tenants has been instrumental in limiting the actual choice and agency of the definite residents who will eventually move in.

## Conclusion: User Agency and the Redistribution of Power and Resources

Through the years, the Open Building approach has offered a combination of technological and planning innovations as a response to successive crises in housing construction, underpinned by claims of freedom for the user, economic efficiency, and environmental sustainability. The biggest difference between Open Building then and Open Building today lies in the dominant power structure and how they critically work with its principles. Previous solutions were characterised by the dominance of a strong state and building contractors; today’s context is epitomised by cities that subscribe to market ideologies and developers who dominate the housing market. Surprisingly, the same ideas that were initially used to promote consumerism as an antidote against the homogeneity of mass housing are now being rebranded by its current proponents as leading the way to so-called prosumerism, to “transition from the consumer society to one based on participation, involvement and inclusion”.<sup>38</sup>

The fact that the private market plays a more prominent role nowadays and that public social housing is retreating does not imply that the role of the government has become irrelevant. Government regulation at both state and municipal level has consistently played a key role, albeit a different one, in the development of the Open Building approach in the Dutch housing context. In the 1960s, government programmes subsidised the experiments of the SAR and the supporters of Open Building. After the financial crisis of 2008, local governments have been able to shake up the market by favouring specific types of initiatives in former industrial areas through strategically combining planning permission procedures with tender processes for land lease, thus creating the conditions for the Open Building revival. Looking ahead, proponents of the approach are now lobbying for regulations and incentives favouring circularity in the construction industry in the belief that these will, again, create favourable conditions for their model to thrive further.



Even if the Open Building ambition of transforming the housing system holistically has not been fulfilled in any of its subsequent trends, the architects of today seem more successful than the architects of the 1960s in achieving effective user influence on the design of their homes. Yet, at a certain price for the ideals and values they advocate, user agency increasingly depends on economic means. Early Open Building projects were built for the social rental sector and hosted economically disadvantaged social classes that otherwise would not have the resources and power to shape their own home. Recent projects are inhabited by wealthier classes but still host a diverse population in terms of household structure, background, and lifestyle that saw an opportunity to access a type of house that the mainstream market did not offer. In the contemporary context of financialisation, the user simultaneously plays the roles of consumer and real estate developer to their own advantage, which inevitably implies to the disadvantages of others, even if unintended. Claims of solidarity and inclusivity are capped by the limits of each particular project, while contributing to inequalities and gentrification beyond its boundaries, in the neighbourhood and the city—and even on a national and global scale, in the ongoing competition for maximum ‘liveability’ between the so-called global cities, or superstar cities.<sup>39</sup>

In conclusion, the openness of Open Building is specific and conditional, and perhaps unsurprisingly so. It is the outcome of negotiations and contestations within a larger field of external forces. Open Building concepts may offer certain citizens a richer field of options that suit their needs and wishes, but as a disruption of the housing sector, or even a comprehensive response to the current housing crisis, it remains limited. Yet, it does broaden the landscape of housing possibilities and as such contributes to a more diverse urban ecosystem.

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## Notes

- 1 The platform OpenBuilding.Co has been established, involving, among others, Thijs Asselbergs, Marc Koehler, Tom Frantzen, and Robert Winkel. See “Open Building Network”, [www.openbuilding.co/network](http://www.openbuilding.co/network).
- 2 “Building for the future.” OpenBuilding.Co.
- 3 The theorisation of the very term ‘agency’ in architecture is of even more recent date. See Isabelle Doucet and Kenny Cupers, “Agency in Architecture”, *Footprint 4* (2009): 1–4; Nishat Aswan, Tatiana Schneider, and Jeremy Till, *Spatial Agency* (Oxon: Routledge, 2011); or Esra Akcan, *Open Architecture* (Basel: Birkhäuser, 2018).

- 4 In the context of this chapter, the American discourse on architecture, individualism, community and democracy, epitomised by Louis Sullivan, Frank Lloyd Wright, and Lewis Mumford, is considered parallel to the Dutch and European developments in the field of collective housing.
- 5 van den Heuvel, *Towards an Open Society*; van den Heuvel, *Jaap Bakema and the Open Society*.
- 6 For such an approach in Dutch examples, see the work of Mart Stam and Johannes van den Broek, in Max Risselada, *Functionalisme 1927–1961* (Delft: Publicatiebureau Bouwkunde, 1997).
- 7 For a discussion of the project, see Like Bijlsma, Madeleine Maaskant, and Eireen Schreurs, "Towards a Pluriform Maxihouse", *1970s Revisited*, OASE 57 (2001): 52–61.
- 8 Habraken, "The Open Building Approach"; Habraken, "The Use of Levels".
- 9 Bosma, van Hoogstraten and Vos, *Housing for the Millions*, 144–58. Twelve in total. Among others, Van den Broek and Bakema, and Leo de Jonge.
- 10 Ibid.
- 11 *Plan*, special issue "S.A.R.: De ontwikkeling van een taal", no 3 (1970); *Wonen-TA/BK*, special issue 'SAR Discussie', no. 8 (April 1974).
- 12 See Kendall and Teicher, *Residential Open Building*.
- 13 Bosma, van Hoogstraten and Vos, *Housing for the Millions*, 241. The term 'Open Building' was used from at least 1974 by Jo van Dijk and Professor L.P. Sikkels who worked for the construction company Dura.
- 14 Veld, *Age van Randen*; "Stichting Open Bouwen Archief" OBOM.
- 15 van Randen, "Open Building".
- 16 Habraken, "The Open Building Approach", 2–3.
- 17 See note 3.
- 18 van der Werf and Froyen, "Molenvliet-Wilgendonk", 165. Without changing the 'support' that was already under construction, it was possible to divide 14 dwellings in half and turn one commercial space into another dwelling.
- 19 Gotink, "Commentary on Molenvliet", 38. Of the first tenants, 60% participated in the process and co-designed their dwelling. The remaining tenants were allocated to the project too late and given an ordinarily finished unit.
- 20 van der Werf, "Vital Balance", 34. Sociologist Ans Gotink also attended the meetings as an observer to conduct research.
- 21 Barzilay, Ferwerda, and Blom. *Predicaat experimentele woningbouw*, 108.
- 22 van Rooij, "Molenvliet. Support Housing".
- 23 Gotink, "Commentary", 38–39.
- 24 Ibid. The project received two types of government subsidy: one because it catered for low-income households and another for its experimental qualities.
- 25 See note 12.
- 26 Mensink, *Solids: Radicale Innovatie*.
- 27 See DASH, *Building Together, The Architecture of Collective Private Commissions* (Rotterdam: nai010, 2013).
- 28 *The Superlofts Journey*. Superlofts.
- 29 Shared area varies between Superloft projects, with some including share rooms and rooftops.
- 30 Or more alternatively as a MO (Medeopdrachtgeverschap). In CPOs the residents initiate the project as developers and hire the services of an architect. In MOs the architect initiates the project and recruits residents to join and co-develop it. See: [amsterdam.nl/zelfbouw](http://amsterdam.nl/zelfbouw)
- 31 Bisom-Rap, "Ownership Unpacked".
- 32 Gotink, "Commentary".
- 33 Marc Koehler, interview by the authors, June 2021.
- 34 Marc Koehler, interview by the authors, October 2020.
- 35 "Block 14" Intermaris.
- 36 Ibid.
- 37 Marc Koehler, interview by the authors, June 2021.
- 38 "Manifesto OpenBuilding.Co" [www.openbuilding.co/manifesto](http://www.openbuilding.co/manifesto).
- 39 See Saskia Sassen, *The Global City* (Princeton: Princeton University Press, 1991) and Richard Florida, *The New Urban Crisis* (London: One World, 2017).

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