

Built rationally! Design approaches to housing within the limits of scarcity

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Abstract

This article presents alternative ways of discussing and reacting to conditions of scarcity associated with the delivery of affordable homes exemplified by the Norwegian builder Olav Selvaag. As one of the biggest and most influential private developers of social housing in Norway after the Second World War, he addresses the prevailing conditions of scarcity both through his writings, especially in his seminal books, “Bygg rasjonelt” (Build Rationally) and “Bo eller ikke bo” (To Dwell or Not to Dwell), and through his building projects. In line with the objectives of the research project on “Scarcity and Creativity in the Built Environment” (SCIBE), the article explores further how insights gained by this historical analysis could inform our understanding of design strategies of contemporary architectural practices whose work displays a similar approach toward working within conditions of scarcity, as opposed to fighting against it. The selected French studio “Lacaton & Vassal” and the Norwegian office “Helen & Hard” serve as interesting European examples of practices with strong principles of design in conditions of scarcity, which they showcase both in their housing projects and in writing.

Keywords

Affordable housing; scarcity; design approaches; welfare state; post-war architecture.

Note

The article is a further development of a presentation given at the 1st Annual Conference in Architectural Humanities Research at the Nationalmuseum for Architecture in Oslo in September 2012 and further research presented at the SCIBE PhD conference under the title “Within the limits of scarcity: rethinking space, city and practices” in London February 2013. I am grateful for all valuable comments I received in both occasions.

Within the limits of scarcity

This paper is part of a larger research project on “Scarcity and Creativity in the Built Environment” (SCIBE), a three year HERA-funded research collaboration led by Jeremy Till and teams from the University of Westminster, Vienna University of Technology and the Oslo School of Architecture, which investigates the various parameters that shape the construction of scarcity in different social, cultural, geographic, and temporal contexts. The aim of the research project is to identify the limits within which built environment professionals operate and to examine when and whether scarcity presents a set of inescapable constraints, or whether those conditions stimulate creativity in different and potentially innovative ways.¹

Scarcity is understood as a socio-material condition, influenced by the relationship between available resources and human needs and desires (Till et al., 2013). Even though scarcity is perceived as an absolute condition, for instance as water shortages in the desert, it is always contextual and relational. Scarcity is both situated in a local context and is therefore interrelated with allocation of resources in a geographical and spatial manner. The research is looking for best-practices that address this issues in an innovative way in architecture using qualitative and quantitative methods.

These alternative ways of discussing and reacting to conditions of scarcity associated with the delivery of social housing, are in this paper exemplified by the Norwegian builder Olav Selvaag. As one of the biggest and most influential private developers of social housing in Norway after the Second World War he addresses the prevailing conditions of scarcity both through his writings, especially in his seminal books, “Bygg rasjonelt” (*Build Rationally*) and “Bo eller ikke bo” (*To Dwell or Not to Dwell*), and through his building projects.

In line with the project’s objectives the paper explores further how insights gained by this historical analysis could inform our understanding of design strategies of contemporary architectural practices whose work displays a similar pragmatism² toward working within conditions of scarcity, as opposed to fighting against it. The selected architectural practices are the French studio “Lacaton & Vassal” and the Norwegian office “Helen & Hard,” both of which distinguish themselves in the European context through their strong principles of design in conditions of scarcity. Their approach is based on an understanding of the situatedness of their architecture in a wider socio-material context, which they showcase both in their housing projects and in writing.

1. For more information refer to www.scarcity.eu as well as to Goodbun, J., Till, J. and Iossifova, D., 2012. *Scarcity- Architecture in an age of depleting resources (AD)*. London: Wiley, p.218.

2. For a discussion of the term *pragmatism* refer to Saunders, W. S. ed., 2007. *The new architectural pragmatism: A Harvard design magazine reader*. Minneapolis: University of Minnesota Press.

Build rationally! Olav Selvaag and the austerity debate on housing

One of the most cited voices in the debates on post-war social housing in Norway is the Norwegian engineer and contractor Olav Selvaag. During his active career from 1948 until 1986 with his company Selvaagbygg, he produced 35,000 homes as a “commercial” provider of affordable housing in the Oslo region. His legacy, however, is strongly linked with the debates on alternatives for housing provisions under conditions of scarcity in the post-war period.

As only 13% of the planned 100,000 housing units built between 1945 and 1949 (Selvaag, 1990, p.76) had been provided, a debate on alternative solutions emerged in 1948 in the aftermath of these apparent poor results of the state housing program.

From an unknown engineer and contractor, Selvaag emerged as a public figure leading the debates at the point when the housing issue was discussed more forcefully and less optimistically than right after the war.

During the events of the Second World War, large parts of the country, especially in the North, had been destroyed, necessitating immediate large-scale action against housing shortages. The shortages of building materials, especially imported goods, workforce, and availability of financial means put extra constraints on housing production. The virtual standstill of housing production during the war-years was exacerbated by rural-urban migration to the larger cities, which created further challenges for the housing supply nationwide. The situation in Oslo, especially in the inner-city quarters, where large parts of the working class had been living in insalubrious conditions from before the war, was no exception.

During the post-war period, the demand for workforce, building materials, and financial means clearly outpaced the supply. This condition of economic scarcity enabled the government to actively steer the allocation of resources by rationing the availability of crucial materials, limit the size of housing units, and reduce the amount of available building permits, while simultaneously manipulating the access to financial means for building through the establishment of a state housing bank (Selvaag, 1951, p.32; Torstrup, 1948, pp. 33-35).

The introduction of measures to allocate resources efficiently, such as limitations on the availability of building permits, restrictions on the maximum size of housing units, and restrictions on building materials created further delays in deliveries.

Thus, the state housing programs were not only seen as an emergency reaction to the severe housing shortages, but also as an important cornerstone of the larger ambition to establish a welfare state based on the principle of universalism.³ The social security system, which the state was thought to supply for all citizens, regardless of their social and family background, included health care, unemployment benefits, pensions, education, and housing. It is therefore important to understand that due to these wide-reaching responsibilities of the government toward the citizens, decent and affordable housing was also seen as key in keeping costs down in other areas such as health. Safe and secure living conditions for everyone, with low levels of differences in living standards both nationally and locally, were seen as essential for individual freedom and stable political conditions.

Based on the concept of universalism, whereby ownership of decent housing for all was considered a social right, the government established a system of housing provision that financed housing via subsidized loans granted by the state housing bank. According to social-democratic ideals, profiting from someone else's housing needs was considered inappropriate. In consequence, using private contracting firms such as those of Selvaag for housing provision was viewed critically and housing co-operatives such as the Oslo Building and Housing Association (OBOS), which built and managed dwellings for their members, became the preferred institutionalized system of housing provision.

In this atmosphere, Olav Selvaag sent an open letter to the parliament, published in his book *Bo eller ikke bo (To Dwell or Not to Dwell)*, (Borge-Aaserud, 1949) emphasizing Norway's need to address the housing crisis and build more homes for less money, than was the current practice. As a provocation, he thus wrote in 1949: "With so little housing production, the housing crisis will be more severe in 1953 than it is today." (Borge-Aaserud, 1949, p.3).

He saw the allocation of resources as the crucial factor, as he illustrated in a speech to the student assembly in Trondheim in 1949: "Our society has limited resources, and of those we can only use a certain proportion on housing. We have only a certain amount of materials and a certain amount of work force available to build housing. How many houses we can build for these resources we can decide according to needs and desire." (Borge-Aaserud, 1949, p.17).

His starting point thus is the acceptance of scarcity as a fact and an attempt to improve the impact those conditions have on the housing situation for the greatest number of people. To achieve this goal, he demands a revision of housing standards for social housing. "The road we must walk to solve the problem is to build 30,000 homes per year for 15,000 kroner instead of 15,000 homes for 30,000 kroner" (Borge-Aaserud, 1949, p.3).⁴

3. For an elaborate discussion on welfare state regimes and the notion of equal rights for all independent of social background, refer to: Esping-Andersen, G., 1990. *The three worlds of welfare capitalism*. Cambridge: Polity Press.

4. Selvaag's point of departure was to take 30% of an average worker's annual wage of 3000 kroner, equaling a yearly amount of 650 kroner, and estimating 5% for down payment, interest, and maintenance costs, ending up with 13,000 kroner as the price for a house that an average worker could afford. (Borge-Aaserud, 1949, p. 9).

To keep homes within these limits of the affordable home of an average household income, Selvaag targeted technical innovation in construction and production methods. His design proposal was a semi-detached timber home for two families, vertically divided along the ridge with an area of 77 m². Each housing unit had its own entrance that led to a kitchen, living room, and bathroom on the ground floor and two bedrooms and a storage room on the second floor. Selvaag described the floor plan as “rational,” pointing at the distribution of spaces according to strictly functional criteria.

As his cooperating architect Sven Nicolaysen described in an article in *Bonytt*, 1949, titled “Selvaaghuset”: “The plans are simple, well ordered and the rooms cozy and provide good alternatives for furniture arrangements. [...] The requirements of the building codes for rooms in permanent habitation for people have apparently not been enforced” (Nicolaysen, 1949, p.38).

The reduction of necessary material-consumption led him to minimize the foundations to the limit of what was required for static reasons, resulting in small, ten-centimeter concrete foundation strips and pillars. The traditional storage function was therefore only provided under half the house. The second floor emphasized further economization, as here not only ceiling heights were lowered but also the attic was reduced to 90 m³ to minimize the space volume.

As timber was still a very scarce resource due to necessary exports of wood in exchange for foreign currency (Kielland, 1951), Selvaag aimed to reduce the amount of timber necessary for the construction of a home significantly by introducing American balloon frames as the main load-bearing construction in housing. In his proposed design for the semi-detached house, he optimized the roof-construction by applying a load-bearing division wall along the ridge. The compartments of the wall were filled with rockwool, a new material on the Norwegian market with enhanced thermal qualities compared to the traditional massive outer-wall constructions.

As nails were still scarce, due to shortages of steel in the post-war period, Selvaag suggested assembling the horizontal cladding-panels of the building envelope with clammed overlaps instead of traditional nailing.

Selvaag’s suggestions were widely debated in the media, leading to a challenge by the local newspaper *Morgenposten* to build a prototype of his proposed design for a semi-detached house in Ekeberg in the outskirts of Oslo. The house was erected in 1949 based on his original design sketches and was a success both regarding visitors to the project as well as convincing the critics.

Comparing the design to other homes from this period, for instance,

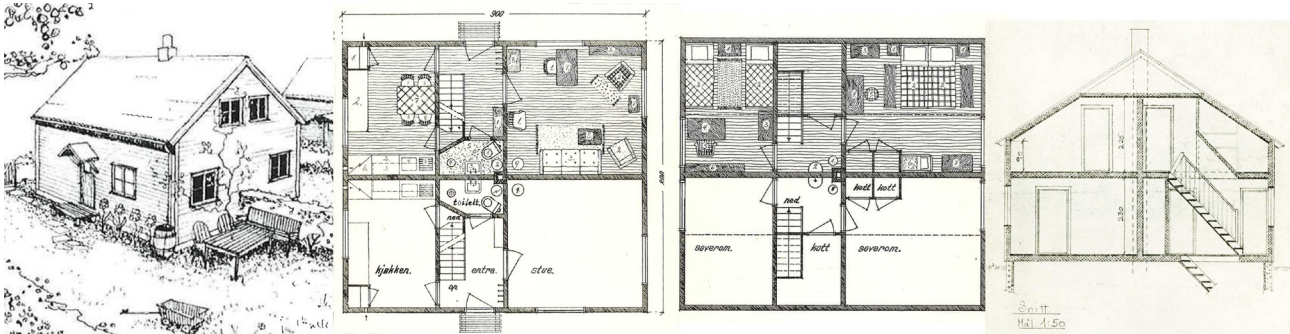


Figure 1.

a. Selvaag's prototype. b. Ground floor plan. c. Second floor plan. d. Section.
Source: (a, b, c, d) Borge-Aaserud, R., 1949. *Bo eller ikke bo?* Oslo: Cammermeyer.

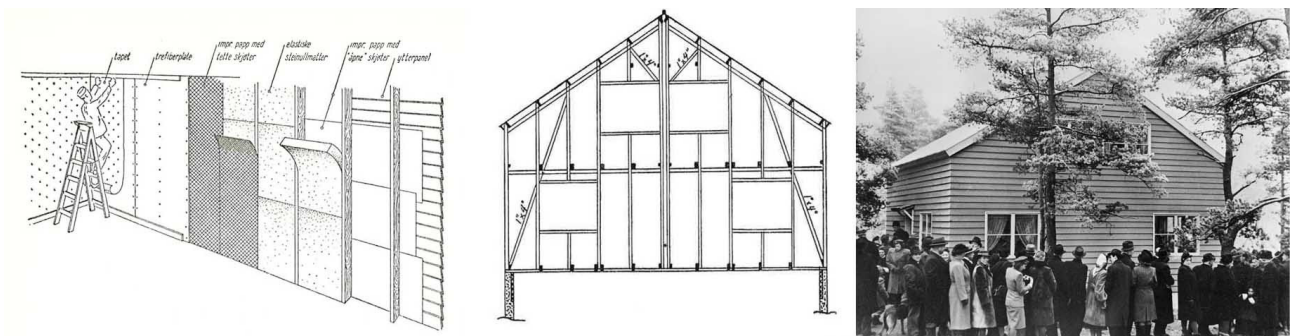


Figure 2.

a. Wall construction suggested by Selvaag. b. Adapted balloon frame construction. c. Opening of the prototype in 1949.
Source: (a, b) Skeie, J., 1998. *Bolig for folk flest: Selvaagbygg 1920-1998*. Oslo: Tano Aschehoug. (c) Unknown photographer, Oslo Museum.



Figure 3.

a. Housing type for housing reconstruction. b. Ekeberg house exterior and bedroom interior. c. Cartoon by Arne Wold.
Source: (a) Boligdirektoratet, 1947. *Gjenreisningens skissebok 1947: Hustyper for Finnmark og Nordtrolls*. Oslo: Boligdirektoratet.
(b) Ørnelund, Oslo Museum. (c) Hasselknippe, O. and Selvaag, O., 1982. *Olav Selvaag: Mannen med ideene*. Oslo: Aschehoug.

the pre-approved small timber homes published in the Housing department's "Gjenreisnings skissebok," architectural sketches for reconstruction, published in 1948, the design does not introduce a new typology or architectural language. Due to the requirements set for subsidized loans from the State Housing Bank, the volume and floor plan are largely defined by the demanded three-room standard and the one-and-a-half storey rule. The archetypical form of a compact traditional rural house with a pitched roof,⁵ without additional ornamentation other than functional details, dominates the architectural language. Although the design of the Ekeberg-house is not fundamentally different from most of the other small timber homes of the reconstruction period in Norway, it redefines some of the technical and architectural features in a new way, diverging from the standard.

It was these technical aspects of his work that were met with the greatest skepticism. Although the Ekeberg-house proved to be structurally sound, thermally well insulated, and even exceeding the floor-area requirements, it was regarded as sub-standard and only suitable for temporary accommodation. As cartoonist Arne Wold commented in his drawing in 1949: "The Oslo Planning Department advises all inhabitants of health hazardous shelters against any dealings with Selvaag-homes, as they are violating all technical building standards" (Hasselknippe and Selvaag, 1982, p.35).

The critique on Selvaag's design might have been politically motivated. Although Selvaag and almost everyone else involved in the housing debate agreed on the principles of universalism for the provision of social housing within the welfare state, their respective strategies toward the goal of "decent housing for all" varied widely.

Selvaag described himself as apolitical (Skeie, 1998, p.179) and a technologist; nevertheless, his alternative approach to allocating resources for housing under conditions of scarcity was seen as a provocation. Especially noteworthy was his underlying critique of the government, which he claimed had failed to solve the housing crisis with their policy that simultaneously tried to raise building standards and provide housing for all of those in need.

In his book *Bygg rasjonelt (Build Rationally)*, his ideas become a manifesto against what he called "asocial sosialpolitik" (un-social social policy), regarding the allocation of (seemingly) limited resources: "In the building sector we thus have distributed ten oranges instead of the available five, with the result that only half the number of families that should have gotten a home did get one. [...] yes, after the war we have certainly distributed between ten to fifty oranges in this sectors, although we don't have resources available for more than five. As a result we only have achieved a half or a tenth of all the units we could have built, if we would have allocated resources smarter" (Selvaag, 1951, p.16).

5. Refer to Waaler, H., 1999. *Villaarkitektur på Østlandet 1945-1955: Bakgrunn og utvalgte arbeider*. Hovedoppgave: Universitet i Bergen., p.15, where the author states that the reintroduction of more local building styles, such as pitched roofs, were influenced by the restricted availability of asphalt-sheets necessary for flat roof constructions.

Selvaag's prototype was not only perceived as an innovative private proposal for re-thinking housing solution, but it was understood as an attack against the institutional framework on which Norwegian post-war social-housing policy was based.

He strongly disagreed with the definitions of "social" and "decent" as translated by the "Boligdirektoratet," the Housing Department, into normative building codes. Furthermore, Selvaag criticized the logic of quality ensured by the use of minimum and maximum floor-areas and restriction of materials as a funding criterion for loans by "Husbanken," the State Housing Bank, introduced in 1946 as a governmental institution for the financing of real estate. He further criticized the municipalities' ineffective organization of housing provision, which he attributed to their sole focus on "Boligbyggelag," housing cooperatives, as the only provider of subsidized social housing and the exclusion of private initiatives.

The institutional framework for post-war housing provision was an outcome of housing research conducted during the war with the intention of providing guidelines for rebuilding the country after liberation. Common ground for most of these documents seems to be the fear of missing the opportunity to combine the reconstruction of the country with the making of a new society.

As Jacob Christie Kielland, a Norwegian architect and the chairman of the team of the extensive housing survey on Oslo, "Mennesker og boliger" ("People and Homes"), (Brochmann et al., 1948) conducted during the war years, wrote in the architectural magazine *Byggekunst*: "It would be even worse if the reconstruction would be based on plans that do not provide an applicable groundwork for a modern, democratic community life" (Kielland, 1945, p.10).

The lessons learned from failed housing projects in the workers' districts of Oslo nurtured the understanding of housing not only as a hygienic, but also a psychological and social problem and contributed to a political atmosphere that was highly skeptical of precipitous decisions and stopgap activities.

Influential architects, such as Frode Rinnan, the architect behind the 1952 Olympics in Oslo and the planner behind Lambertseter, the first satellite town of Oslo, were thus representatives of the prevailing approach to social housing, which embraced the opportunity to introduce ideas of social engineering by building societies from scratch as "new towns" based on the concept of neighborhood clusters inspired by Ebenezer Howard's garden city.

This vision of a "modern society" that Social Democrats and functionalist architects addressed manifested itself in building standards rang-

ing from apartment sizes or number of rooms for homes to detailed technical specifications that were intended to achieve the ambitions of a “decent living standard for all.” These numbers became the core of their ideology and in some way the symbol of the welfare state that needed to be defended against people like Selvaag, who were accused of undermining the ideological objectives by proposing non-durable materials or what was considered bad craftsmanship.

When the Ekeberg-house was debated in those technical details, Selvaag’s reaction toward what he considered administrative stubbornness became obvious: “The first thing that strikes reading through the documents of the housing department is that the department does not seem to have understood the social or economic problems we are facing. [...] It seems as if the department sees that their task is to defend their paragraphs, even if you would expect them to evaluate the project in terms of housing, especially in the context of the housing misery and the productive and economic possibilities here in this country” (Borge-Aaserud, 1949, p.59).

A report by the authorities on the Ekeberg-house concluded that further adaptations had to be made to raise the building standard to an “acceptable” level, which added up to a required further investment of 2000 kroner. This amount was not too far from Selvaag’s original provocation that he would be able to produce homes for half of the current cost. (Skeie, 1998, p.77) Consequently, Selvaag considered his prototype Ekeberg-house a victory of his “rational” design approach under conditions of scarcity that aimed to optimize the cost-value ratio. As an engineer, he was especially pleased with the wide influence of his technical innovations,⁶ claiming: “After 1957, practically no single house has been built in the good old style that everyone in 1948 claimed was the only appropriate way” (Selvaag, 1990, p.79).

But not only his technical innovation had long-lasting effects, but also his general design approach, which he had developed under the conditions of scarcity that continued after the war, although the average income and the gross national product had almost tripled between the late 40s and 60s (Andersen et al., 1972, p.96) and turned Norway into one of the wealthier economies in Europe.

In 1956 Selvaag presented his design for what he claimed was the world’s first “terraced house,” as a reaction to the scarcities of affordable land in Oslo, which had occurred due to the enormous demand for land plots triggered by the rising living standards and reinforced by the implementation of the “markagrense,” the absolute limit to city expansion defined by a strict demarcation of the surrounding forest green-belt. Normally too steep to be found suitable to build on, Selvaag’s site in Ullernåsen, west of the center of Oslo, was still cheap to acquire despite increasing land prices in the Oslo surroundings.

6. This despite the fact that some similar ideas have been presented in a series of articles in search of more efficient solutions for timber construction, for instance in Thams, B., 1948. Trehus av ferdigkappede materialer. *Byggekunst*, p.65.

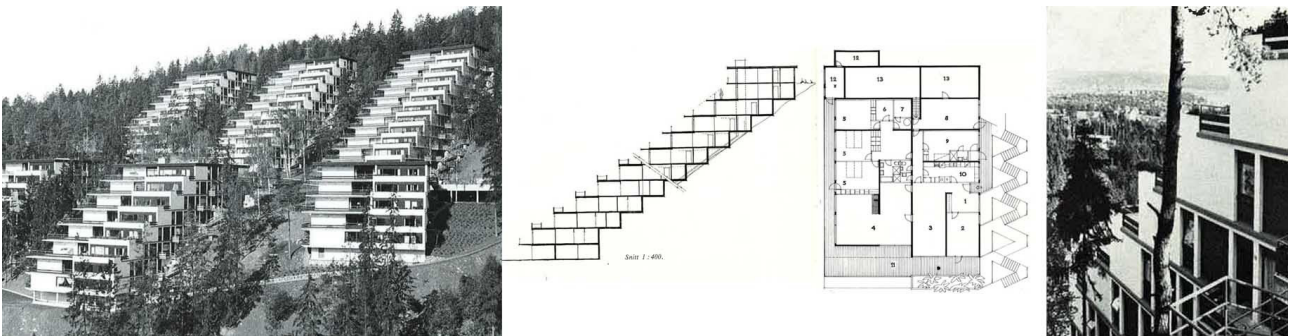


Figure 4.

a. Housing blocks in Ullernåsen. b. Section of one block. C. Plan of one apartment. D. Loping terrain of the site.
Source: (a, b, c) ANONYMOUS, 1965. Øvre Ullern Terrasser 3, Oslo. *Byggekunst*, pp.82-85.
(d) Remlow, A., 1964. Lykkelig løsning på "ubrukbare" tomter. *Bonytt*, pp.268- 272.

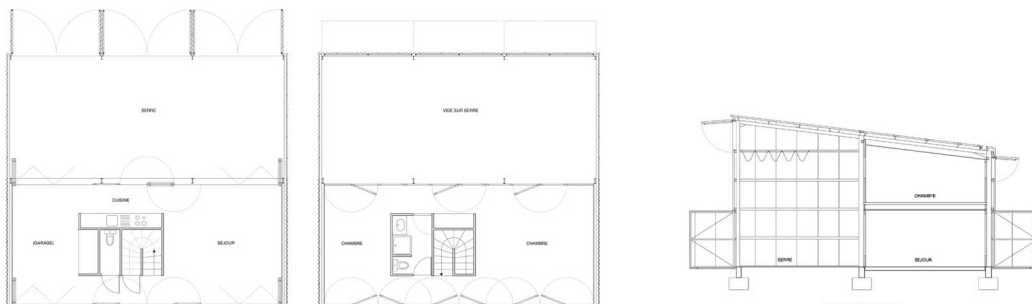


Figure 5.

a. Latapie house ground floor plan. b. Second floor plan. c. Section.
Source: (a, b, c) French studio "Lacaton & Vassal".

The architecture of the six individual blocks of the housing complex, finished in 1964, is defined by the slope of the hill. The 54 rather luxurious apartments are staggered to use the roof of the underlying apartment as a spacious roof-terrace and balconies. Due to this terraced design, the apartments became quite large, with the smallest one measuring 165 m². Large windows framing the view over Oslo added to a feeling of luxury.

Selvaag's focus on affordability led him to introduce prefabrication of the concrete structure, encouraging his cooperating architects Anne-Tinne and Mogens Friis to statically separate the wooden facades from the load-bearing structure. Selvaag's choice to encourage the reduction of excavation costs meant a necessary adaptation of the design to the landscape. As a consequence, the fourth wall, the one facing the hill, could not contain any openings, which led to the inclusion of an area of additional service functions within the flats.

Although the Ullernåsen project is not considered social housing as produced by the state, Selvaag managed to produce homes for the masses that contained architectural quality that was earlier considered a privilege of the financial elite. Although most of Selvaag's ideas are not completely new in a global context and his pragmatic scope as an engineer did not aim at fundamental changes of the conditions under which housing is produced, his proactive attitude toward scarcity as one of several constraints within the production of housing is unique in Norway.

The analysis of the financial and material constraints, regarding the shortage of building materials, time schedules, skills, workforce, or land resources, enabled Selvaag to invent different and innovative concepts by generating technical and spatial alternatives for housing within the limitations set by the given circumstances.

The pragmatic design approach Selvaag applies in the Ekeberg and the Ullernåsen is in both cases based on an underlying social concern, which sets the context for the architectural concept. The proposed technical innovations in the Ekeberg-project are directly linked to the political debate in the emerging welfare state on how to increase the housing supply and how to ensure its quality by national standards. The Ullernåsen project answers this social concern quite differently by manipulating the land demand as a crucial factor for affordability. Selvaag exploits the logic that land is expensive when it is scarce, unless it is not considered suitable for building according to known standards.

The redefinition of those standards by doing things differently seems to be the core of Selvaag's design approach, which he summed up under the title "det ideale krav, det godes fiende" ("The Ideal Requirement, the Enemy of the Good"), (Selvaag, 1990, pp.98-99) where he points

out that general requirements have to be derived from a holistic perspective and not from a singular interest in certain areas to be able to set priorities based on the limited resources.

Contemporary approaches to affordable housing

The historic example of the pragmatic design strategies of Norwegian builder Selvaag reveals valuable insights about housing provision under conditions of scarcity, which allow a comparative analysis of similarities and strategies that are applied by contemporary architectural practices and that emphasize a social concern in housing, such as those of the French office “Lacaton & Vassal” or the Norwegian architects “Helen & Hard.”⁷

Latapie House, a widely cited project by “Lacaton & Vassal” in Floriac in the suburbs of Bourdeaux, shares with Selvaag an ambition to maximize floor-area for the residents within very rigid budgets by systematically exploiting potentials of optimization within the entire framework of the project from load-bearing structure, to choice of materials.

The single-family home, finished in 1993, covering 185 m² over two floors, is based on an open floor plan with a kitchen-bathroom-core as an insulated and heated zone and an extended living space in a two-storey height conservatory. The simple volumes of the project are clad on the inside with wooden panels, contrasted by fiber-cement sheeting as the building envelope of the main space and the transparent polycarbonate sheeting of the conservatory.

To maximize the living area for the clients, the architects started on a journey to make the load-bearing structure more efficient and find better suitable materials and spatial configurations to keep building costs down. “As this project was still too expensive, the structural engineer was consulted again. Why use the same H profile everywhere? The solution: don’t think of Mies van der Rohe any longer and use the most logical element for each room, without any aesthetic concerns” (Lacaton and Vassal, 2009, p.29).

This is surprisingly similar to how Selvaag describes the main concerns in building social housing; “Lacaton & Vassal” express the same pragmatic attitude to form finding within their Latapie project. “The weight of the frame went from 13 to 8 tons. Given the price of the steel, this meant saving 50,000 francs, which brought the project into the budget planned. An unforgettable lesson. Henceforth we no longer thought of the aesthetics of a structure but, on the contrary, we always work as closely as possible on the systems’ efficiency” (Lacaton and Vassal, 2009, p.28).

The work of “Lacaton & Vassal” has been criticized due to the potential

7. “Lacaton & Vassal” and “Helen & Hard” have been chosen as they clearly outline their approach and exemplify a larger tendency. Exhibitions like *Small Scale – Big change – New architectures of Social Engagement at the MoMa and Architecture of Consequence: Dutch Designs on the Future of the NAI* bear witness of this.



Figure 6.

a. Latapie house from the street. b. Threshold between the inside and the conservatory. c. Kitchen area. d. Conservatory.
Source: (a, b, c, d) French studio "Lacaton & Vassal".

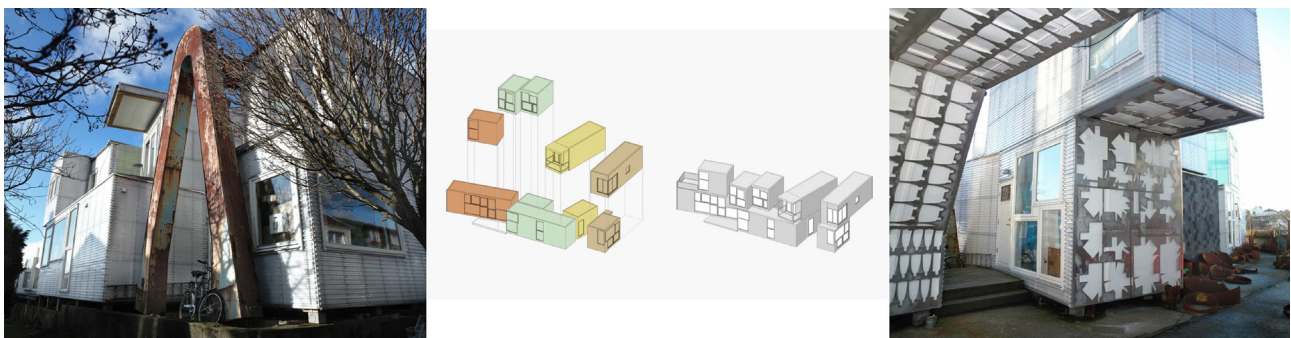


Figure 7.

a. Vindmøllebakken housing. b. Axonometric view. c. Facades made of recycled material.
Source: (a, b, c) Norwegian office "Helen & Hard".

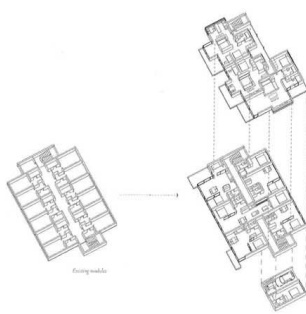


Figure 8.

a. Axonometric view. b. Exterior of the Buøy housing project. c. Interior view of bedroom and living area.
Source: (a, b, c) Norwegian office "Helen & Hard".

danger of encouraging housing associations and developers to further reduce their building budgets according to the lowered square meter price without providing the added architectural qualities.

The architects seem to be very much aware of this discussion, when they write: "Cost-effectiveness, like the terrain, is one constraint among others, but we think it's also an additional means. Furthermore, let's not mix things up: cost-effectiveness isn't the principle of less, of reduction, but that of hierarchy and the minimum" (Puente and Puyuelo, 2007, p. 130).

This search for the minimum and the discussion on the right priorities within the existing context has been a debated topic since Ernst May's work on minimal dwellings, "Die Wohnung fuer das Existenzminimum," in Frankfurt in 1929, which had a parallel emphasis on rich architectural qualities, common facilities, and collective solutions that have often been forgotten in badly copied concepts of the original ideas. To understand the contextual aspect of architectural quality seems therefore to be crucial.

This seems to be the significant difference between Selvaag's approach and the design strategies of contemporary architects "Lacaton & Vassal," independent of all historic reference.

In an interview between Lisbeth Harboe and Anne Lacaton in Oslo in 2009, Anne Lacaton states "reality and the extraordinary [...] must be worked on in parallel," (Harboe, 2012, pp. 201-202) which sums up the super-pragmatic approach of their architectural practice, which focuses on the maximization of architectural qualities, such as sophisticated choice of materials, use of daylight, and site-specific qualities under conditions of scarcity, which goes far beyond the focus on cost efficiency in architecture based on the social concerns that Selvaag is displaying. This relational and situated approach of "optimisation" borrows concepts from ecology and cybernetics, where optimizing is not about a single part, but about the relationship of that part to the whole and the whole to the wider context.⁸

The Norwegian architectural office "Helen & Hard," who started their office in their early career with unusual low-cost housing projects such as Vindmøllebakken or Byøy in the oil-boom town of Stavanger, pursue a similar approach, which they describe in a larger context of "relational design." Vindmøllebakken, an experimental housing project made out of recycled dwelling units from the oil-industry, has been designed as a living and working alternative for young creative individuals on a low budget. The project consists of four studios that vary in size between 25 m² and 35 m². All of the units contain a living room and bedroom, a bathroom, and a small kitchen in a bi-level plan with access to individual terraces. Clad in diverse recycled materials and fitted with surplus win-

8. Refer to www.scarcity.is for further examples of this approach.

dows, the spatial quality of the apartments takes advantage of this material richness and generous daylight conditions.

Byøy, a more commercial follow up of these ideas, consists of 150 apartments, transformed into condominiums out of temporary barrack-style dwelling units of approximately 20 m². The units were grouped and opened up internally in order to create spacious, well-lit homes for first-time buyers for an affordable amount of money. Glass walls and sliding doors between the bedroom and living space maximize the perceived volume of the rather small apartments and add some flexibility within the spatial and economic constraints of the project. A simple steel façade on the outside is painted in different yellow tones, associated with the local oil-industry, and perforated with decorative floral elements.

In both projects, “Helen & Hard” share with Selvaag a pragmatic attitude toward the economic framework and perceived lack of resources, as they explain: “We have no problem accepting that the builder will require substantial profits and require attention. It’s important that we obtain insight into how resources are used, so that we can be party to reformulations of the use of resources. We always ask to have understanding of budgets to see if we can prioritize differently, economize at some point, and move the resources over to another item” (Braathen et al., 2012, p.252).

Interestingly enough, their statement about which kind of working method this would require, plus their approach to relational design have stunning similarities with Selvaag’s critique of predetermined solutions and requirements in housing. Siv Helene Stangeland from “Helen & Hard” specifies their approach in an interview with Martin Braathen in the book *Relational Design*: “In a way we’re also inspired by opposition in the tight conditions there. It’s always been a trigger for creativity. But you need great flexibility, when it comes to results. You can’t go into that kind of dialogue—and now we’re into the relational again -with a fixed concept” (Braathen et al., 2012, p.252).

This open approach to problem solving often results in bottom-up processes in their work and displays obvious anti-authoritarian attitudes. “Through the relational design method we try to formulate a broader, ecological angle of entry into all of our architectural production. Then it enters another dimension that doesn’t involve a battle between architect and builder or government, or between creativity and bureaucracy, but involves helping a global stewardship of resources to arise” (Braathen et al., 2012, p.254). “Helen & Hard” does not call this strategy “explicit politics,” but admits that it does involve aspects of it, through the values that are attached to the relations within design processes such as the influence on money, property, and political power (Braathen et al., 2012, p.253).

New directions

Starting from the historical example of Selvaag, looking at his Ekeberg and Ullernåsen project, the alternative approach to housing design that operates within, rather than against, conditions of scarcity becomes very obvious. Especially Selvaag's written statements, of a more political nature, illustrate his attempts to introduce a more pragmatic approach to welfare in the post-war period, as opposed to more visionary concepts of other, mostly modernist, architects that focus on the ideals of an affluent society, which they struggle to fulfill.

Although Selvaag's Ekeberg house is cheaper than the average standard home, it is also simpler than the average standard home. First in the second example we can truly understand the result of his exploitation of scarcity as a catalyst for creativity. In the Ullernåsen project Selvaag does not only substitute scarce resources but turns them into an architectural alternative that is more interesting and richer than the standard.

This analysis leads us to the more contemporary approaches to social housing by French architects "Lacaton & Vassal" and Norwegian architects "Helen & Hard," that seemingly operate within similar approaches, which are characterized by the same principles of not only accepting the constraints that occur through absolute or perceived scarcities but actively manipulating priorities and the allocation of resources.

This pragmatism displays a call for relational working methods without pre-determined outcomes, to be able to combine architectural quality with tight budgets, restricted availability of materials, or lack of workforce or skills. As a result, the consequences that the constraints set by local conditions of scarcity have on the architectural outcome are not only diminished but turned into positive qualities.

Further research will hopefully generate a deeper understanding of the architectural qualities that these alternative design strategies produce.

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