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Creating Affordable Housing through self-management: Experiences from a Danish concept

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Abstract

The paper presents a case on self-management in the Danish social housing sector as a way of providing affordable housing. It is based on an evaluation of a Danish concept for affordable housing, Social Housing Plus ("AlmenBolig+"). The concept was introduced in 2007, and so far app 1.400 housing units have been established. The concept includes a number of approaches to reduce the rent, some are "traditional" physical-technical approaches for affordable housing, e.g. reducing production costs and limiting standards. However, a central element in the concept has been the introduction of "self-management" amongst the residents, which is a new and controversial approach in the Danish social housing sector, where the traditional approach is a high service level regarding maintenance, operation and administration, but these services also have a high impact on the rent. This paper will outline the ideas behind the Social Housing Plus-concept, the preconditions for the self-management approach, and the experiences so far from the various housing estates built on the concept. This will include a discussion of the social impacts of the self-management among the residents, e.g. in relation to a participation and sense of ownership, but also various challenges in the concept. Broadly speaking, the paper aim to examine and assess the potential for self-management as a way to establish affordable housing, as well as the limits of the concept. Methodologically, the evaluation is based on qualitative interviews and surveys amongst residents and housing associations, as well as quantitative assessments of the outcome regarding rent level and household composition in the housing estates.

Introduction

With increasing urbanization throughout the world, leading to rising housing prices and increasing segregation, the struggle for establishing affordable housing has become a central policy issue in countries and cities. At the same time, many institutions that traditionally has been seen as the providers of affordable housing, such as municipalities and social housing organisations, have increasingly become “marketized”, thereby reducing their capacity for operating beyond the market, and for providing affordable housing. Although the demand and the political interest for affordable housing is increasing, there is not a clear acceptance of what the term covers. A generally used definition in developed and transitional countries is that affordable housing should comprise no more than 30 % of the median household’s income (UNHabitat, 2016). Many countries use this definition, based on the relationship between household income and cost of the accommodation (Whitehead, 1991). Also many financial institutions have applied a rule of not allowing households to take out home loans requiring more than 30 % of gross income for their servicing (Select Committee 2008). This is a model which on paper is easy to work with, but is often difficult to operate when household incomes and housing prices changes over time (O’Neil et al, 2008). Critics have pointed out that the conceptualization and measuring of affordability is just as complex as understanding the causal factors of the housing affordability problem itself (Gabriel et al 2005). Problems of defining the concepts is often due to a simplified understandings of the problem, for instance overlooking that affordability can be experienced by household types in different ways, relating to a number of factors as employment, transport, health etc. (Gabriel et al 2005).

Practical definitions of affordable housing are usually specific to the policy and program context in which they are used. Typically policies have a notion of what comprises affordability and a reference to the target group(s) for whom they are intended (Milligan et al 2007). A typical example is that in many European and North American cities, a rising number of people, essential to the cities basic functions like schoolteachers, policemen and nurses, cannot afford housing near their place of work, which is seen as a problem for providing these core functions in the community. These people often have salaries that exceed the option for living in social housing or public housing, where access to housing is regulated by income, and therefore only can be occupied by people with low incomes. Housing for people unable to buy a home or rent an apartment at market rate, but who exceed the income or need criteria for social or public housing are often labeled *workforce housing* or *intermediate housing* (Lazarovic et al, 2016). Also in the Danish context, the term affordable housing often refers to housing in the cities for keyworkers such as nurses and police officers, or families with children from the broad middle class (Bech Danielsen, 2011).

As a result of the call for affordable housing in urban areas, and the inability of the existing institutions to deliver, various new concepts for affordable housing have been developed internationally. This paper will discuss the first Danish example on developing an affordable housing concept as a part of social housing. The concept addresses core workers, and their chance for finding a home in the larger cities, and includes a number of alternative solutions, that all represents a shift from “normal” practice in the sector. Therefore the concept includes, on one hand, an innovative approach to social housing, and on the other hand a number of risks for failing in relation to reaching the targets. The

concept represents one of the main development projects in the social housing sector over the last decades, and it has gathered immense professional and public attention.

The Danish Housing market as context for affordable housing

The housing market

January 1, 2015 there were 2,785,847 dwellings in Denmark, of which 2,628,338 were inhabited (5,6 million inhabitants in Denmark). 44 % of the Danish homes are single-family houses, 39 % are apartment buildings, while the remaining dwellings are other types of buildings. 58 % of all Danes live in owner-occupied housing. That figure has been relatively stable since 1981, but with internal shifting, with the proportion of younger homeowner's declines and proportion of elderly homeowner increases. The housing market in Denmark is in many ways divided in two parts; a rental market which consists primarily of apartments and an owner housing market which consists primarily of single-family houses (Turkington & Watson, 2015).

The housing market in Copenhagen is in several ways significant different than the rest of Denmark. In Copenhagen 18% of the housing stock are owner-occupied, private rental is 19%, private cooperative housing (private co-ops, in Danish "andelsboliger") represents 33 % and social housing 20 % (kk.dk/boligbarometer 2014). In the largest cities home-ownership is restricted to a large extent to middle and high income earners (Alves & Andersen, 2015).

In Copenhagen, the amount of affordable houses have been reduced in recent years due various changes: An increasing urbanization and immigration (10.000 new inhabitants per year), as well as a privatization of formerly municipal rented flats and an increasing number of private flats being merged.

Urbanization and the lack of affordable housing

Like many European cities, the Danish cities have undergone major change the last 25 years. In the period 2006-2013 the population in Denmark's six largest cities, with the exception of Esbjerg, has grown remarkably. In the Copenhagen metropolitan area population has grown by 13 %, and Århus, the second largest city, the population has grown by 12 % (www.mbbi.dk)

In the early 1990's the housing stock in Copenhagen was characterized by mainly small, worn-out apartments, which meant that the majority of the resourceful citizens chose to vacate the municipality when their economy allowed it. In 1995, the municipal council created a 10-point housing policy program to ensure that a number of domestic policy actions were implemented (Bisgaard 2010). The program's primary objective was to keep and attract resourceful inhabitants who can help to strengthen the city's economy and position. The programs also contain new residential areas to be built and old restoration, and to invest in infrastructure, urban spaces, playgrounds and new institutions. The program also entailed that the City of Copenhagen decided to sell about 19.000 affordable homes that primarily was converted into private cooperative apartments. About a fifth of the private rental stock (about 20.000 apartments) was transformed into private owned dwellings and sold (Factsheet 02, www.kk.dk/boligbarometer). The combination of the increasing urbanization and the abolishment of formerly affordable housing had led to

increasing housing prices in Copenhagen and other larger cities in Denmark, being up to 10 times the national average the last 5 years (for single family houses), and app 50% higher than the national average for flats (see table 1).

Table 1. Price trends in percentages on the single-family houses and flats (Year 2015 figures). Source: Bolig&Tal7, Boligøkonomisk Videncenter 2015

Region	Last 5 years	Since 1st quarter of 1992
Single- Family houses		
Denmark	2,3 %	194,4 %
Capital region	9,8 %	307,5 %
Copenhagen municipality	29,5 %	528,5 %
Flats		
Denmark	25,0 %	288,2%
Capital region	33,3 %	351,4 %
Copenhagen municipality	40,6 %	452, 8 %

An increasing number of people, especially in and around the major cities, experiences difficulties finding a home that match both need and price, and therefore are forced to live in inadequate conditions or live far from work and study (Hansen et al 2014; Hansen and Østerby 2015 et al.). Especially those that are new in the housing market may, among them young households and keyworkers, have difficulty finding affordable housing (Scanlon and Vestergaard 2007). At the same time, national and municipal policies aiming to provide affordable housing have been absent (Dagbladet Information, 2016), or focusing mainly on providing new social housing, but being unable to provide affordable housing in new urban development areas.

The social housing sector in Denmark

The term "Social Housing", although being used as a common concept, has very different meanings internationally. As Abramsson and Borgegard (1998) observe, "*some methodological problems arise when aiming to do an international comparative study*", regarding, for example, comparability (definitions) and underlying explanations (idem: 154). In fact, there is no common definition of social housing across countries and there are many dimensions that distinguish its provision, such as tenures, providers, beneficiaries or funding arrangements.

In the Danish context, social housing is not need-dependent and the sector is accessible to all residents of Denmark, which is the reason that it sometimes is labelled as "public housing" (Skovgaard Nielsen, 2016). However, in this paper we will use the term "social housing".

The social housing sector represents one fifth of the Danish housing stock, and one out of every six Danes are living in the social housing sector. The sector consists approximately of 700 social housing associations, which together cover more than half a million homes which are spread across 8.000 housing estates.

The estates are owned by public housing organizations that are non-profit organizations who manage the homes. The rents are cost-related, which means that each housing estate constitutes a self-employed economic entity. Agreements on building new houses concluded between municipalities, construction companies and social housing organizations, the latter applying the municipality for permission to build public housing. 10 % of the purchase price is financed with community capital base, 2 % is funded by residents' deposits, and 88 % financed by mortgage loans, the State continuously provide service support. In return of their co-funding, municipalities have the right to assign people in acute need of housing (up to 33 % in Copenhagen) (Alves & Andersen, 2015).

The social housing stock is dominated by relatively small homes, 73 % of the homes are blocks of flats and only one in fourth dwelling is more than 90 m².

The social sector had originally a socially broad compositions of tenants, were the working class was the majority of the population. Due to structural changes and general increase in income the populations in the social housing sector changed dramatically in the 1970s and 1980s and the social housing household became marked by marginal groups like immigrants, unemployed, single income household and elderly (Scanlon & Vestergaard, 2007; Alves & Andersen 2015).

The Social Housing Plus-concept

The Social Housing Plus-concept (SH+) was developed by the Copenhagen social Housing Association (KAB) from 2007, as a response to an ongoing political discussion on lack of affordable housing in Copenhagen, as a result of increasing housing prices over recent years.

The development was provoked by the former Mayor of Copenhagen (Ritt Bjerregaard), and the goals from her election campaign in 2005 on establishing affordable housing in Copenhagen, formulated as “5.000 houses for 5.000 Dkr. (700€) a month”. However, the Mayor did not see the social housing associations as a partner in achieving this goal, which provoked the Copenhagen Social Housing Association (in Danish KAB) to develop their own affordable housing concept. In the outset, all types of elements in making housing affordable was discussed, ending up with a concept aimed at a rent 30% lower than comparable new housing, based on the following core elements:

- Large tenders of a standardized housing concept, based on prefabrication with wooden elements reducing production costs and on-site operations, aiming at 10% reduction production price compared to “normal” social housing
- The buildings are constructed as low-energy buildings (according to the Danish Building Regulation (BR 10's energikrav for bygningsklasse 2020)), reducing the energy costs in operation
- The buildings are constructed as “basic concepts” where a number of interior development is left to the residents, e.g. establishing interior dividing walls
- The residents being responsible for the operation for the shared outdoor areas and for large parts of the building operation, meaning there is no operation staff from the housing organization present in the area.

- Costs for maintenance and savings for future renovations are established through a new concept where costs are reduced in the first years

There are other supplementary elements in the concept, e.g. a market-based assessment of the improvements made by the residents (as a contrast to pre-defined regulation of the value of improvements), and a fully digital communication with the housing association through mails and digital platforms.

The houses are established mainly as two-floor row-houses (but also with 1 floor and 3 floor buildings), in units with typically 50-100 flats which was seen as an ideal size, allowing a certain minimum volume for enabling local maintenance, but also not making the estates too large to allow a local community feeling and promoting social relations between the residents. The neighborhood design aimed at the popular urban row-house concept, with small gardens and relatively high density. A main reference for this was the extremely popular "potato-rows", one of the first social housing estates built in Copenhagen (now owner-occupied housing), having a large social sense of community, having a reputation as a place for creative and left-wing intellectuals.

The main target-group for SH+ concept are "core-workers" (typically articulated as "policemen and nurses), who under normal circumstances will have difficulties finding an affordable house or flat in Copenhagen and other larger cities, and therefore are likely to move to the suburbs. The sizes of the flats are up to 130 m² which exceeds the normal maximum size of social housing flats (normally 100 m²). This, as well as many other elements in the concept, was formulated as a "test arrangement" under the Ministry of Housing that permitted various exceptions from the act on social housing, all which were important for the concept as a whole. These exceptions were decided in 2007, allowing up to of 2.000 housing units being built under this concept. The concept was labelled mainly as a development for increasing productivity and competition in the social housing sector, although the goal and focus was much broader. The test-period ran until 2015, and in this period there has been a close dialogue on adapting and evaluating the concept with the Ministry, who also supported the concept financially as a development-project. As a part of this, it was a request that the concept should be externally evaluated. The evaluation was carried out by the Danish Building Research Institute, and is the primary source of information for this paper.

It was a goal for KAB to include a number of other housing associations in the concept, not only to promote the concept, but also to increase the volume that allows the large tenders and subsequent cost-reductions in the production-stage. Therefore KAB in an early stage invited other large social housing associations in Copenhagen to participate. However, there were divided views on the concept amongst the other associations, and only two other social associations in Copenhagen (3B and Domea), joined the project, as well as an association in Aarhus (Østjysk Bolig). Also, it was necessary to have an acceptance from the municipalities where the SH+ was to be built, as they (in accordance with the social housing model in Denmark) provide a financial security for the projects, and might have different preferences for social housing. Besides, the SH+ concept involves potential and imaginary risks, e.g. that the residential operation and maintenance might lead to a decay of the housing units, which eventually might affect the municipal economy. So far, app. 1.300 housing units following the SH+ concept has been built, mainly in

Copenhagen and some surrounding municipalities (Køge, Herlev, Rødovre, Hvidovre, Ishøj, Albertslund, Frederikssund and Roskilde)

The production concept

A main idea of lowering the costs is to base it on pre-fab production of housing modules of a “framework tender”. The production of SH+ has taken place in different “framework tenders”, each consisting of a certain design concept, where different social housing associations have ordered a number of housing units within the same design, with the same producer of buildings. This has enabled larger volumes (100-500 housing units), which again has led to lower production prices. So far, four frameworks, each consisting of between 84 (framework 3) and 525 units (framework 1) have been produced and built. Moreover, two independent frameworks have been produced (in total housing units).

The design of the different framework tenders has been decided through architect competitions where a number of teams of architects and building producers have come up with different concept. The evaluation which this paper is based on consisted mainly of housing estates built within framework 0 (136 housing units) and framework 1 (525 housing units), in the period 2011-2013.



Figure 1. The housing units in SH+ are based on design concepts in frameworks (bundled tenders), allowing indoor prefab production with a large number of housing units (left picture, from the producer ScandiByg, who won the Framework 1 with 525 housing units). For the buyers, small variations are allowed within the general design, e.g. the type of materials on the façade, the size of the flats etc. For this purpose, a 1:1 test-house has been built at the production facility in Løgstør (right picture).

The self-management concept

Traditionally, social housing in Denmark is characterized by having buildings that generally are in good condition and has a high level of service, where janitors and operation staff take care of maintaining and cleaning the outdoor areas and the building operation. Costs of maintenance and building operation represents in average app. 10 % of the rent, equivalent to 4.300 Dkr. (575€) per household per year (Landsbyggefonden, 2013) (There are minor differences between the different housing types). The majority of the cost of maintenance goes to labor costs for operating staff. This administrative expenditure represents in average app. 6 % of social housing estates' total expenditure, corresponding to 3.160 Dkr. (420€) per household per year (Landsbyggefonden, 2013). Reducing these costs through self-management it would be possibly to skip employ operating personnel, thereby reducing costs significantly.

The SH+ concept is based on the residents being responsible for managing the outdoor areas and large parts of the building operation, as well as the administration of the estate. The specific tasks related to the residents' responsibility for the dwellings are divided between administrative tasks (accounting, mail correspondence, meeting convening and holding of general board meeting) and practical tasks (street cleaning and maintenance of common areas such as lawn mowing, snow removal and collection of garbage and some building maintenance like painting, cleaning gutters, regulating heat pumps etc. However, the concept (according to the regulation of the Social Housing sector) still includes an annual professional review of the buildings, which the housing association is responsible for, that will ensure that the buildings stay in good condition, and costs for future building maintenance and renovation is included in the budget.

It is the residents themselves who determine how tasks should be organized. The concept however allows each estate the opportunity to hire a company to clear snow or other tasks. This corresponds largely to the tasks for private co-ops, a predominant type of ownership in Copenhagen and other cities in Denmark, where the residents own the building collectively, and takes care of building operation and administration collectively (but also with the option of outsourcing tasks). When future tenants sign the rental agreement they also sign an allonge, which contains a number of issues including that residents must be committed in participating in the maintenance and administration task, and if the tenants fail to participate they may be charged an extra expense or have terminated their lease.

In order to prepare the residents for the new concept before moving in, a number (4-6) of preparation meetings were held by the housing associations, where the SH+ concept was explained for the residents, including the concept about the flats, the self-management, the digital communication, as well as information to support the formation of the local board. After the first meeting, people interested in a flat could sign up. The access to the houses was regulated by using criteria for "Flexible renting", which is an arrangement introduced in the social housing sector, that enables housing associations and estates to pick certain types of residents according to criteria. For SH+, residents belong to one of the following groups were prioritized: Employed families with children, employed persons with no children living at home, or persons experienced with housing maintenance (including people over the age of 55). For those qualified, the flats were distributed through a lottery, and the remaining applicants were put on a waiting list.

At the remaining introduction meetings, only people who had been appointed a flat were present. The last meeting before moving in functioned as a general assembly, where the local board was settled, and the residents could start making decisions on how to organize the self-management groups, typically by forming different groups being responsible for different issues, and discussion procedures for meetings, communication etc. in the groups.

Controversies and dilemmas on the concept

During the development of the concept a number of critical discussions were raised, concerning some of the core elements of the concept.

A main controversy amongst the housing associations that were invited as potential partners concerned the target group and the concept of self-

management. Typically, the social housing sector has weak groups of residents – a large proportion being without jobs, marginalized, on social welfare etc., and on this background it was argued that the SH+ concept would not be accessible for these groups, and these types of residents would not be able to carry out maintenance, cleaning, gardening etc., which is required by the residents in SH+. On this background, a number of social housing associations declined on participating in developing and building the SH+ concept. The counter-argument from KAB was that “Social Housing” originally has the meaning of being a housing type for the whole population, and not only the weakest groups. It has been a general ambition in the social housing sector over the last decades to bring back the middle class to the social housing sector. The SH+ concepts can be seen as falling in line with this ambition, although this has not been an explicit ambition.

Another main issue was the relation between technical quality and affordability. Especially, a question was raised of the “low basement” being a part of the design concept. Amongst critics this type of basement (for instance the Danish Building Defects Fund) was feared to create problems with mold and poor indoor climate in the wood-based construction, if the ventilation of the basement was not sufficient, or in case of surface water entering the construction. The initiators (KAB housing association) tested this problem in a period by monitoring the level of moist in the basements of selected buildings, but according to these measures the moist level was not critical. Other questions regarding the building quality concerned the assembly process on the site, and the risk of not making the assembly dense to allow moist to get in the buildings.

Research question and methodology

The evaluation that this research is based on had the main purpose to assess some of the core issues of the concept related to:

- The price level: how well did the concept function, and did the concept succeed to reduce housing costs by 30%? As the price reduction consisted of different elements (regarding the production and building process, energy costs, administrative and management costs etc.), which again included a number of regulative changes and exceptions from “traditional” social housing management, in total 14 exceptions regulatory “test-elements”. Also, the question about the technical quality and durability of the buildings was subject to assessment.
- Experiences from the self-management: Which benefits were gained, and what were the challenges? This included questions related to both the practical management, the administrative management and organizational issues, collaboration with the housing association etc. The main question is whether it is actually possible to use the concept of self-management, or if it becomes too problematic due to e.g. lack of participation, lack of knowledge, lack of resources, lack of collaboration between the residents etc. Also, the recruitment process and the actual residential composition were discussed in the evaluation.

As methodology for assessing these themes, various methods were used:

- Interviews amongst housing associations, municipalities, architect, housing producers etc. in order to map and understand the different views on the concept, practical as ideological. In total xx interviews were carried out.
- Qualitative interviews with residents and residents boards about the SH+ concept in general, as well as the self-management concept, as well as interviews with the housing associations regarding the recruiting, and the preparation of the resident for the self-management concept. In total, eight interviews with individual residents were made, and four focus-group interviews with residents (between 4 and 8 participants)
- A survey amongst residents and residents boards on the experiences with the SH+ concept in general and the self-management concept. The survey was sent to 611 persons, and 150 answers were received (25% answer rate). The questionnaire was distributed to the residents from the housing association which might have affected the communication and the answer rate. The answers were analyzed only through descriptive statistics, i.e. frequency tables.
- Various material from the SH+ estates, including rent level and operation costs, energy consumption, reports on technical housing quality and other relevant material was collected as a part of the evaluation, as the resources for the evaluation was limited.
- Expert interviews and expert assessments on the material regarding building quality

In the following sections we will present the main findings from the evaluation (Jensen & Stensgaard, 2016; Jensen & Stensgaard, 2014) with special attention to the self-management approach.

General experiences from the concept

Residents and their views on SH+

The residential composition in the SH+ estates has been compared to the residential composition amongst social housing in the metropolitan area (table 2)

Table 2. Residential segments in Social Housing + estates compared to social housing in the metropolitan region

	couples with children	residents aged 25 to 49 years	residents with long or medium-long education	Single family households without children
SH+	50%	73%	60%	14%
Social housing in the Metropolitan area	13%	41%	22%	50%

The comparison shows a relatively strong over-representation amongst families with children, residents aged 25 to 49 years and residents with long or medium-long education. In contrast, singles without children are under-represented. This indicates that the residents in SH+ are generally strong on resources, compared to social housing in general, and also the general housing market in Copenhagen. A survey amongst the residents showed that more than one third of the residents comes from owner-occupied housing or private co-ops, which is

higher than traditional social housing, indicating that the concept increase the competition to other owner types on the housing market.

The popularity of the concept was first indicated when the concept was announced (in newspapers, websites etc), and a provisional waiting-list soon gathered app 8.000 persons, which (according to representatives from KAB) is unheard of in the social housing sector. Subsequently, a survey made by KAB amongst the residents, a later survey made by SBI as well as qualitative interviews with the residents have showed that residents' satisfaction with the concept is generally very high. The two main reasons for this is the housing type (row-house with own garden) and the low costs (respectively 57% and 64% of the residents had these issues as top priorities). The popularity of the concept is also indicated by the low rate of households leaving the estates in the first years (between 0 and 10%) which is significantly lower than other new-built social housing estates (as an example, moving rates in new social housing estates in Ørestad in the first years have been between 23% and 40%). The figures were supported by a survey amongst the residents where 65% of the residents said they had no plans for leaving. Also in interviews quotations like "*we never want to leave*" and "*I will stay here forever*" are frequent.

Cost reductions in the affordable housing concept

Being labelled as an affordable housing concept, it is relevant to ask about the actual rent reduction achieved in the SH+ concept. This showed up to be a rather difficult question to answer, due to lack of statistics and discussions on the base-line. The actual rent for five SH+ estates showed an average rent on 855 Dkr/m²/year (but with variations between the different estates), whereas the rent in new social housing in the metropolitan area is 1.090 Dkr/m²/year. Compared to this, the SH+ estates have a 22% lower rent. However, comparing with new social housing in the metropolitan area, includes a number of problems, e.g. that the new social housing include buildings established over a longer period (2000-2013), the buildings located in the region are not necessarily close to Copenhagen where land prices are higher, the buildings also include multi-story buildings (and not only row-houses as SH+), the SH+ buildings are being built as a low-energy house which complicates the comparison furthermore.

As a result of the difficulties finding comparable statistics, an alternative assessment method was used, defining a traditional housing concept based on estimated standard prices. From this, the savings reached by the SH+ concept are estimated to 237 Dkr. /m²/ year, corresponding to a reduction on 21% compared to the rent in conventional new-built social housing (row-houses) which are estimated to 1.116 Dkr/m²/year in the metropolitan region.

Tabel 3. Estimated annual rent-savings (DKr per m²) in SH+ compared to comparable traditional new-built social housing

Post	Theoretical annual savings, Dkr./m ² (€/m ²)	Explanation / rationale Costs for a 104 m ² flat
Costs related to building	62 (8,3)	Building costs assumed 10% lower
Administration costs	7 (0,9)	Costs saved according to standard prices for administration
Cleaning	37 (4,9)	Costs saved according to standard prices for cleaning
Reservation for maintenance	85 (11,3)	Lower reservations in the first years due to less wear (caused of fewer relocations amongst residents, and more responsible use)
Shared house / office	46 (6,1)	Shared house of office for local janitor is not included
Energy adjustment	27 (3,6)	SH+ is built as a low-energy buildings which normally would increase the building costs (but this was not the case in SH+ due to the prefab-concept)
Total	237 (31,6)	

As the numbers suggest there are several things to discuss, in relations to the assumptions on cost reductions. For instance, the administration and the cleaning being main parts of the self-management concept represents app. 44 Dkr./m²/year, corresponding to 4% of the rent, whereas the self-management was expected to reduce the rent by 20%. On the other hand, the new concept for reservations for maintenance, which was not mentioned at the outset as a way to reduce the rent, represents the largest part of the savings (85 Dkr/m²/year, or more than one third of the total savings).

Although the overall aim of reducing the rent by 30% was not fully reached, the SH+ estates still have managed to cut off 21-22% of the rent compared to other types of new social housing in the metropolitan area. For a flat on 100 m², this corresponds to a final rent on 950 € per month, which is 263 € cheaper per month, compared to the rent in other new social housing estates. However, the savings were achieved differently than expected, as indicated above. The evaluation also shows that assessing the cost reductions in affordable housing and the degree of affordability can be very difficult, especially when no clear base-line has been defined.

Self-management: Achievements and pitfalls

In the following we will discuss results from the survey, the achievements from the self-management concept as well as problems and challenges. The self-management concept in SH+ divides in three parts: The buildings, the common spaces and the administration. We will argue that the demand for self-management to a large extent have increased the feeling of ownership, and to a large extent have functioned well so far, but also that there are several risks related to the concept.

The buildings

The evaluation shows that there is a general satisfaction with the buildings, in spite of some complaints about certain details, as well as the sparse outfit (no internal separation walls and the low quality of kitchens). This had led to some investments from the residents; a survey in four estates showed that 89% had made investments in improvements so far, and in interviews with residents we found that 29 of 30 had made investments in improvements, ranging from changing the kitchen-tabletop, establishing separation walls, or changing the whole kitchen. In interviews with residents it was however often emphasized that these home improvements increased the feeling of ownership to the buildings:

"...I think it's important that you get the freedom to do things that are not locked....when you invest time or money in it, then you feel a larger ownerships to things" (resident interview)

"..Yes, you could compare SH+ with a private co-op... it's also therefore I could not imagine to move away, we have put our own shape on it ... just as we would have done if we had bought our own house ... we have sort of made it our own" (resident, interview)

The initial improvements and building and building operation maintenance has however not been without problems. Several reviews carried out internally by the housing organizations have pointed out some of the problems encountered in the internal stages. For instance, several residents have reported that the establishment of internal separation walls had led to blocking of ventilation outtakes. Other have pointed to problems related to the heat exchanger and problems of regulating it (the residents have to do this themselves), potentially leading to higher energy bills. So far, there has been no need for larger maintenance jobs on the buildings, and the annual professional building reviews have reported no problems in relation to the buildings.

Although the general picture gives an impression of relative limited problems regarding the building operation, other studies have pointed to problems when residents have to maintain ventilation filters, and potential problems regarding the resident-based building operation (Johansson, ongoing PhD-study). Therefore, the housing associations need continuously to stay in dialogue with the boards and residents.

The common spaces

Generally the perception is that the common spaces in the SH+ estates are well-kept. According to the KAB (the main housing administration) none of the annual inspections made by the housing organizations, have been able to identify poor maintenance or shortage. Two thirds of the residents (66 %) find the common areas all together have a satisfactory appearance. These viewpoints are also supported in interviews with residents and board members.

The operation of the tasks have followed two different principles (according to a survey among residents); either by all households attendance to one or more working groups, each having their work of field (this model used in five estates), or by the estate's various operational rotates among all households (this model used in two estates). The survey also indicate that both types of organization has both advantages and challenges; by the permanent working groups, residents have the opportunity to deal with task that they find interesting or fit

their skills, but are less in touch with what is going on in the rest of the estate. In the estates where duties rotate between households, residents tend to feel a greater responsibility for the entire housing estate's operation, but it may be an inconvenience for some residents to perform a task you do not have much interest in. All estates have joint working-days that complement the daily operations.

The estates have the option for out-sourcing some tasks (for instance snow removal), but according to budgets from five estates this takes place in a very limited degree (0,5 €/ m² / year).

Asked about what kinds of tasks they take part in, residents correspond:

Table 2. "What types of tasks do you take part in?". Source: SBI research.

Tasks	Percent
Common joint days	98%
Janitorial work and Maintenance	92%
Other tasks	83%
Administrative work	35%
Homepage	34%
Event and activity committees	34%

The workload varies from estate to estate, primarily due to the number of households and the extent of common areas which varies from estate to estate. Residents, who do not participate in the administrative task, work an average of 1-2 hours a month. 81% of the residents responded that they find the volume of work appropriate and only 3 % responds that they work too much. 7 % responds that they work too little.

According to the survey, four out of five residents fully or partly agree that resident's responsibility for maintenance and administration leads to greater ownership of the property, and that the organization and execution of the tasks is to create strong cohesion in the estates. This is supported in several interviews, for instance:

"I think that the concept of helping along is great because someone like me who moves in and is alone every second week, I need to know my neighbors, and I think I get to do that ...but also that you feel committed to the place you live, that you pick up waste when you pass somewhere. I think it gives a large sense of responsibility (resident, interview)

An obvious risk relate to the self-management is free-riding. In all estates there are households who fail to participate in maintenance work, but some estates can better accommodate that some of the residents fail to participate in tasks. Only one estate expressed that they occasionally have trouble getting enough residents to participate in the estate's tasks. However, 64% of the residents agreed that lack of participation creates frustrations. Our interviews indicates that estates located further away from the center of Copenhagen, where the common areas typically are larger, also have a higher workload on maintenance and cleaning, and therefore also a higher risk of having residents that do not participate in the tasks. In contrast, estates closest to the center of Copenhagen

have a smaller degree of shared spaces, and therefore also smaller workload and smaller problems with free-riding.

Also, interviews with residents and members of the local boards indicated that the homogeneity of the estates was a background for the well-functioning self-management:

"But it's not without reason that we find it so cozy here. It's because we're a bit the same, we don't have any big conflicts, we're the same kind, the neighbors are just as our friends (resident in Grøndalsvænge)"

For some of the residents operational work is not only something you participate in because you have to, but also an opportunity to learn to know one another. Particularly those estates where the estate board managed to articulate the importance of all helps is necessary to keep expenses down.

When KAB first developed the AlmenBolig + concept they had only seen the self-management-principle as a means to reduce costs and it had not occurred to them that the self-management concept could have a positive influence on the neighborhood and sense of ownership (Stensgaard, 2014).



Figure 2. One of the first SH+ estates (Dorthevej) from 2013, located in Copenhagen. The residents are responsible for maintaining buildings and outdoor areas, as well as taking care of the administration. The estate has 51 homes between 85 and 125 m², some with a small private garden, other with balconies. The average rent in SH+ housing is 855 Dkr/m² per year (2013), which is app. 21% below comparable new social housing in the metropolitan region.

Administration

The self-management concept also includes self-administration, of which the majority lie with the estate board. For example, the estate boards are typically responsible for organizing the ongoing maintenance incl. planning and control of maintenance and making the annual budget. The absence of caretakers and estate office in each estate means that the board members in addition to the traditional board duties such as monthly board meetings, respond to inquiries from residents, communication with housing associations, etc., also stands for a variety of practical tasks including having to contact and wait for artisans, showcase vacant homes etc. The communication between the residents and the central administration is primarily digital.

There has generally been a great interest to join the estates boards. Asked about their motivation, 71% of the board members corresponds that they would like to have influence, and 64% that they like tasks. Compared to traditional social housing estates this enthusiasm for being a board member is highly unusual, as many local estates experiences problems of recruiting members for the local boards. Our evaluation shows, however, that the local board has a high workload which has caused many members to leave the board after some time. In the survey board members were asked to assess a number of tasks. The tasks which directors find most challenging are to handle constructional tasks (71%), communication with the housing organization and accounting and budget (both 50%). The tasks which fewest directors find challenging is the internal cooperation of the estate (21%) and cooperation with working groups and organizing estate meetings (both 29%). In the qualitative interviews the board members describe the responsibilities as time-consuming, and assess that the work-time is 5-7 hours a week. In the survey amongst board members 71% find the workload adequate and 21% that it is too big. Interviews with the boards support this impression:

"It has been insanely demanding, and if I had known that I would never have entered the board" (Board member, SH+ estate)

"..In a housing association which has been running for decades you have all these routines..."this is how we use to do it"...we just don't have them here" (Board member, SH+ estate)

Moreover, a large part of the residents come from other types of ownership, there is a call for better information on about the organization in social housing estates (rights, duties, rules, regulation etc.).

So far, the problems of recruiting new members for the boards have been limited, but over time there could be a risk that no residents will do the voluntary work in the board. This is not unusual in the social housing sector, but it's is more critical in the SH+ concept that is based on self-management.

The value of having to create an organizational culture is evaluated differently by the residents who have been interviewed. Some believe that this particular challenge has resulted in a declining interest in the tenant democracy and the community, while others believe that the effort has been a plus for the estates, since the process has provided a greater ownership of rules and organization.

A few of the interviewed residents who are not board members, have noticed that the board is not only significant for the practical work, but also has an impact on how the estate functions socially.

"The estate is very dependent on the constitution of the board... if the board has an attitude like" we must put up signs and fence ", then that's becomes the benchmark (Resident in SH+)

Results from the survey indicate that the board not only has an impact on how the estates operate organizationally, but influence how culture develops in the estate.

Discussion: Lessons and potentials for self-management

Regarding the self-management, the overall evaluation shows that the concept seems to work. However, there are a number of risks and uncertainties involved in the concept of self-management.

The recruitment and preparation of the residents for the SH+ concept: At the outset it was possible to establish certain procedures for the recruitment of residents, including preparation meetings and requirements according to flexible renting, but after establishing the estate, preparation meetings will not be possible, and the recruitment procedures will be as strict, i.e. that more residents will come directly from the waiting list, having potentially little interest in the self-management concept. If this will be the case, the amount of free-riding will potentially increase. In combination with the limited options for dealing with free-riders this might become a problem. An easy way to solve these problems is to outsource the maintenance tasks, but this will disrupt the self-management concept as well as the affordability, and is also likely to lead to less local engagement and feeling of ownership.

In the case of municipal accommodation it is the responsibility of the municipality to inform the coming residents about the SH+ concept, and it is a demand in the agreement that the residents fulfil the criteria in flexible rent when they move in. However, for these residents there is no preparations meetings, in contrast to the first breed of residents, therefore a generally lower level of preparation amongst new residents is expected over time. However, there are differences amongst the municipalities, as to which degree the use their right to accommodate residents for SH+.

Some of these issues are more at stake in some estates than in other; for instance, the lack of participation (maintenance of outdoor areas and administration) becomes critical in estates with a low number of houses, and in estates with larger outdoor areas. Experiences indicate that the local board is a critical unit for the general function of the estate, and if the workload of the local board gets to large (due to administrations or organizational tasks), this might affect the whole estates ability to take of the operation and maintenance.

The evaluation of SH+ concept shows that the self-management is based on other elements of the concept, including the design (easy-to-maintain design and materials), to the procedure of recruiting residents, to the neighborhood concept (a limited size that allows high level of social contacts), and probably also the ability to attract residents from other types of housing that are used to and willing to operate with self-management. Several of these elements have been enabled by including the Ministry for Foreigners, Integration and Housing in the project, and several of these test-elements are being permanently accepted, allowing the concept to be used in the social housing sector as a whole. So far this has resulted in several estates being built after the end of the experiment-period, but also being further developed for an affordable and temporary housing concept for immigrants and refugees.

Conclusions

Overall we conclude that the SH+ concept is relatively successful for various reasons. Firstly, the concept has taken up a holistic and innovative approach to

affordability, including and combining various measures, from production, operation, sustainability, management of the buildings, and local neighborhood cohesion. Secondly, the concept has to a large extent been successful, especially as the self-management concept has proven to function, and promoting a sense of ownership to the buildings and the neighborhood. This stands in contrast to the classic welfare-approach in social housing, based on a high level of service paid over the rent, and limited responsibility for buildings, shared areas and administration amongst the residents. Thirdly, the concept has proven attractive for groups that normally avoid the social housing sector, which might pave the way for a better and more detailed image of the social housing sector in Denmark. From this point of view, the SH+ concept proves that affordable housing instead of being a burden for the social housing sector, could become a winning case.

There are, however, a number of risks related to the self-management concept, related to the framework for the self-management, in terms of recruitment of residents, quality of the buildings, and options for operation and managing free-riders. In relation to this we argue that the housing associations have to monitor the estates and develop the dialogue with them, as well as with the municipalities on accommodating new residents for the estates; the concept not only re-defines the role of the residents in building management, it also re-defines the role of the housing associations, and their relation to the local estates. From here, it is up to the social housing sector to adapt and develop the concept, as well as elements in the concept, for instance in testing the concept of self-management amongst the existing housing estates, aiming at combining rent reductions with local management and local social cohesion.

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