

Residential design affecting dimensions of equity

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ABSTRACT: In Sweden social sustainability perspectives on housing design are rare, this strikes the group of weaker households. Due to the present housing shortage a dwelling providing a qualitative space for every-day life is not a realistic alternative for many households. The groups of households that not have the economical strength to involve in the housing market have little power to change their residential situation. The housing market focus on the limited group of buyers and the alternative, the rental apartment, implies years of abeyance in a que-system to get hold of an apartment. Meanwhile the on going demographic transformation challenges existing residential design and the design practice in turn tends to employ a narrow perspective on household constructions and residential use.

The research work is focused on residential usability (flexibility) and how this can affect social sustainability dimensions in a residential situation. It also focuses on how social sustainability issues can be activated into the practice of residential floor plan design. The methodological approach is based on a mixed method research where qualitative, empirical studies and research by design are employed. The work embrace a theoretical perspective based on assumptions from Schneider and Till. Findings from the research show that flexibility in residential design represents an important factor in the realisation of a sustainable society. A salient finding is that flexible space can provide more equitable residential solutions as the extended spatial capacity can provide qualitative residential situations for diverse households during a residential process. This paper concentrates on the magnitude of flexible space as an agent for the dimension of equity, presenting parts of the work with empirical studies.

The continuing research intends to delve deeper into the question of residential usability and social sustainability from the perspective of time and the residential process.

Keywords: residence, demographic transformation, residential flexibility, flexible housing, social sustainability, residential design, residential process, equity

1 INTRODUCTION

1.1 *The ongoing research work*

This paper brings up questions from ongoing research focusing on residential usability and social dimensions of the residential situation. The overall aim for the research is to develop knowledge of residential usability and how this can affect social dimensions in a residential situation (Braide Eriksson, 2016). The research has a critical approach on current practices of residential design which is not considered to represent the present plurality of residential needs from a diversity of modern households, something that affects social dimensions of households. The specific aim of this paper is to discuss residential usability from the perspectives of overcrowding and equity. Overcrowded situations can result in dysfunctional residential circumstances and the situation can affect aspects as for example safety, privacy, recreation and social cohesion. However, small contributions to the residential design can result in substantial outcomes when looking at the consequences for the overcrowded situation.

Some terminology needs to be explained. Firstly, the notion social dimensions regards for example security, belonging, identity, quality of life and social cohesion, as well as equity (Boström, 2012). The social dimensions are substantive aspects of social sustainability (ibid.). The notion of social sustainability is understood as contextual, context dependent and comparative notion, which make it difficult to define and quantify (Lehtonen, 2004; Boström, 2012; Dempsey et al., 2011). In my earlier studies Murphy (2012) present four pillars as a conceptual framework for social sustainability: *social cohesion, participation, equity and awareness of sustainability*. The dimensions are considered containing relevant aspects for the questions of residential usability and demographic conditions. Second, the notion residence or dwelling regards apartments in multi-family housing together with other indoor as well as outdoor spaces for common use found outside the individual apartment. Third, I will consequently use the notion residential usability. This notion relates to Schneider and Till's approach to flexible housing (2007), which consider the dwelling's capacity to deal with the volatility of the residential process, with the changing needs for a household over time, as crucial to the task of residential design. Schneider and Till (2007:41) assert that:

Housing has to be flexible enough to deal with two conditions. The first is the need to adapt to the changing needs for individuals as they grow old or less physically able. The second is housing that can respond to the changing constitution of a family as it grows and then contracts.

The flexible residence is *adaptable* or *flexible*, or both (Schneider and Till, 2007: 5). The authors define on the one hand adaptability as something which can be achieved through rooms or units that can be used in a variety of ways. On the other hand, flexibility can be achieved by altering the physical fabric of the building, for example by dividing one room into two.

The research concentrates on apartments in multi-family housing in urban locations, which today represents 45% of the Swedish households (SCB, 2016-a). Current standards and building codes framing contemporary multi-family housing development, the present housing market's conditions as well as current architects' practices for residential design constitutes important frameworks for the research.

The methodology is qualitative and mixed methods has been employed for gathering data for empirical studies. Different residential situations of selected households have been studied through qualitative interviews (Braide Eriksson, 2016). The method for data collection and its analysis is influenced by Grounded Theory as described by Charmaz (2012). In addition, analyses of the furnished floor plans of the apartments where the households live has been based on an established method called form analysis. A method commonly used by architects in their work of designing floor plans. When employed in research, this method can be described as "figurative empirics" (Braide Eriksson, 2016: 31-37). One example of the residential situations that has been studied is presented in this paper.

The results support Schneider and Till's theory on flexible housing. The residential usability can affect several social dimensions in the residential situation and the capacity of the apartment to support a residential process i.e. changing needs of a family as it grows and diminish through different periods of life, something which can be critical for fulfilling qualitative social aspects of the home (Braide Eriksson, 2016). Important social dimensions found in the studies of the households and their residential situations were among others: safety, recreation, social cohesion, continuity and identity (ibid. 79-82).

1.2 *The knowledge field*

The subjects flexible housing and social dimensions have had large influence on architectural practice and has been discussed in literature written by architects. Examples are Habraken's (2011) *Supports*, Hamdi's (1990) *Housing Without Houses* and Schneider and Till's (2007) *Flexible Housing*. In fact, in Europe, in the field of planning and development of housing, flexible housing has been used as a tool for attaining and promoting social aspects since the 1920s. These aspects still have influence, and some recent housing projects that focus on flexible housing and social dimensions are Cité Manifeste (Lacaton and Vassal, 2005) and Quinta Monroy (Elemental, 2003).

Also in the field of housing research, the question of social dimensions is seen as a critical aspect of residential quality. In the 1940s, the government started to engage in housing research in Sweden. This laid the foundation for today's Swedish housing standards and design. The research focused on functional aspects and high qualitative dwellings became a governmental concern (Nylander, 2013: 99). More recent housing research deals with questions of belonging, identity and qualities on a neighbourhood level (Redvall, 1987; Hurtig, 1995; Olsson et al., 1997).

Although the issues encircling social dimensions of housing, in housing research there is few that have linked this to the residential usability and residential process. A research project by Duelund Mortensen, Welling, Livö och Wiell Nordberg (2006) has a similar focus. They study the flexibility of residential space focusing on diverse spatial use, but they do not have the social focus.

The question of residential usability and how this can affect social dimensions in a residential situation must therefore be regarded as an identified research gap. From this perspective the built housing projects together with the residential qualities they can provide constitute a critical base for future research work.

1.3 Housing standards, demography and the housing market

Much indicates that current housing standards and regulations, and how these inform architects in contemporary housing design do not result in housing that cope with current residential demands (Werner, 2007: 61; Jonsdotter et al., 2016). Contemporary housing rarely supplies a flexible use that correspond to residential usability. Housing is designed focusing on the nuclear family, a household group corresponding to 22 % of all Swedish households (SCB, 2016-c). At the same time as Sweden has a high standard for housing, such major factors as on-going demographic transformations and the difficult situation on the housing market where there is a serious housing shortage in which economically weak households are sidelined (Boverket, 2016: 19-20) do not seem to influence the present development of housing. This situation hinders many households to come by a dwelling or to relocate.

Demography should be seen as a base for the residential demands (Schneider & Till, 2007: 37). Today there is an ongoing demographic transformation that involves urbanisation and an aging population. In Sweden, the size of households is decreasing at the same time as the number of diverse household constellations are increasing (SCB, 2016-c). Some households which are not in focus for the present housing provision are: shared custody households, single parent households and people who wish to live collectively. This indicates that there is a need for more diverse residential design and provision that can meet these pluralistic residential needs.

These conditions imply a misfit between an accelerating diversity of articulated consumer preferences and appropriate offers on the housing market. The possibility to come by a dwelling corresponding to the household's residential needs or to have the ability to choose neighbourhood or housing area is limited. The situation means that freedom of choice is limited for many households.

2 A DWELLING – THE RIGHT TO HEALTH, WELL-BEING AND SAFETY?

Overcrowding can imply that important social dimensions of the residential situation are affected. Alternatives for a solution to this situation can be few or no.

2.1 Overcrowding

The notion overcrowding is seen as "a central well-fare indicator" (SOU, 1986:5). The overcrowding standard is today a goal for the housing policy and is used as a benchmark for what is the least acceptable spatial standard. In Sweden, you live in an overcrowded situation if you have less than one room for each household member kitchen plus one living room, if you have cohabiting adults in the household the room demand reduces with one room (overcrowding, norm 3)(SOU, 1984:36, 277).

The norm is framed to attend to the most apparent experienced factors perceived in overcrowded situations: lack of privacy for the personal development and overbalance of stimulation and interaction. The number of persons for each room therefore becomes the relevant measure for overcrowding and the supply of rooms in the apartment becomes a critical factor (Boverkett, 2006: 12, 19). Overcrowding results in practical consequences but can also affect both physical and mental health for both adults and children. The problems identified affect primarily children and families with children (SOU, 1986:5, 47-48).

One reason for overcrowding is that families transform and grow (Baum & Hassan, 1999: 23; Clark et al., 2000: 49; Dieleman, 2001: 250). The dwelling can then be perceived as tight or dysfunctional (dysfunctional sizes of rooms or floor plan disposition). This connects to the question of the residential process and Schneider and Till's (2007) ideal of the flexible housing's capability to function over a period of time in a residential process with different arising needs. This can mean that a dwelling providing residential usability can affect a crowded situation, although out from the household's construction with belonging residential needs there is always a limit for the potential spatial use.

Today 16% of all households in Sweden are overcrowded (SCB, 2016-a). Overcrowding is more common among households with a weak economy, among these, families with many children, single parent households and migrant households are frequently represented (ibid.: 7). Out of the migrant households and the single parent households 33% respective 41% are overcrowded (SCB, 2016-a, b). Overcrowding also increase most in these groups of households.¹

3 OVERCROWDING AND RESIDENTIAL USABILITY – ONE EXAMPLE

In order to illustrate how residential usability can affect an overcrowded household an example of a study of a residential situation (Braide Eriksson, 2016) is presented.

The household is a single parent with one child and an external lodger. The single parent is in a way representative for the more common household groups being overcrowded but being a household with a lodger also distinguish the household as more atypical. Also, the household is not a nuclear family. This means that the example can illuminate how a dwelling designed for a nuclear family can function for other groups of households.

The dwelling is a two-bedroom apartment. In addition to kitchen, bathroom and living room the apartment has a large bedroom, the parent's bedroom, and a small bedroom, the child's room. The apartment is not designed to provide a flexible use corresponding to the significance of the notion residential usability. To reflect the implication of residential usability in the apartment an alternative design providing a flexible solution in the same floor plan is presented. The example is concluded by reflections of how the dwelling functions in the residential situation and how residential usability can affect the situation for the overcrowded household.

3.1A residential situation

The single parent lives together with her daughter and a lodger in a rental apartment. Schools and nursery are located within short distances. The daughter goes to nursery in the vicinity and both the parent and the daughter have social networks among the neighbours. The area provides many qualities that they value. There is a diversity of people living here and there are many children. You can also find nature and a lake nearby.

The parent prefers a two-bedroom apartment instead of a smaller one, but she does not have enough income to live here alone. To solve the situation she has a lodger. One day she might be able to afford the apartment alone. The parent shares the large bedroom with her daughter for sleeping. She has an extension bed that can be pulled out from under the daughter's bed. In daytime the room serves as the daughter's own room. Here she has all her belongings. If she has friends at home they often play in this room. The parent can use the living room or the kitchen as a retreat during the day. The tenant, a twenty-one-year-old student, has the small bedroom. Here she has a convertible bed and a small desk. The kitchen and the living room are used as common

space by the whole household. This can occasionally mean unwanted confrontations, for example when tenant or parent have guests. Sound between the two bedrooms is also easily overheard. The parent thinks that the apartment works for the present use with the lodger, even though there is a lack of living space and not enough room for storage.

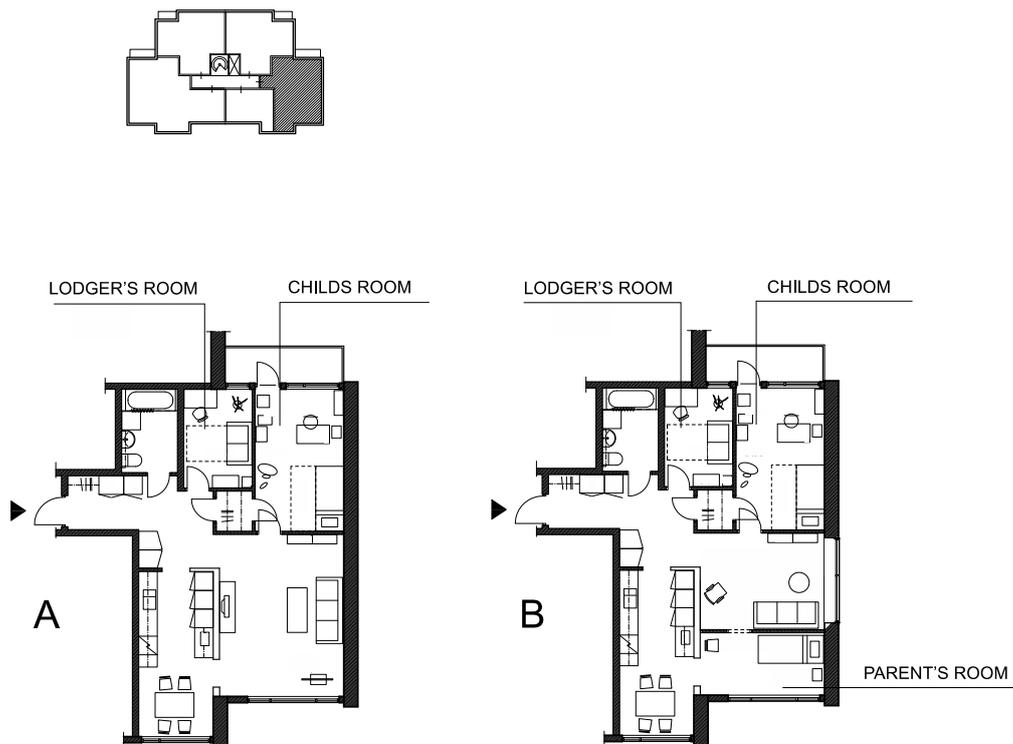


Figure 1. A. shows the floor plan of the apartment. B. shows an alternative design of the floor plan enabling residential usability. The apartment becomes flexible with an additional window.

3.2 Residential usability and social dimensions

The household is crowded as the parent cannot have a room of her own. The dwelling is designed for the nuclear family with the large bedroom and the small bedroom. This design can be questioned when looking at the households needs and reflecting the room sizes and the floor plan layout. The room rented out is small and provides limited options when it comes to for example visitors and storage. Also, a residential situation with less close relations as for example collective living or having a lodger calls for the need of well-defined private and public space to avoid unwanted confrontations and enable privacy. This can for example be accomplished through a neutral space connecting the rooms. However, as shown above, through very simple interventions this apartment could become flexible and thus provide another room. The solution is made possible by an additional window.

The social dimensions attended: The parent has no room of her own for recreation or privacy, this can mean a stressful situation. On the other hand the interview shows that the neighbourhood constitutes many residential qualities, enclosing many social dimensions. To be safe in the neighbourhood, to have social cohesion and continuity is stressed as important aspects in the residential situation, where social interaction with neighbours, qualitative schools,

closeness to nature and well-functioning public transport represents many qualities. Having the possibility to arrange for another room in the apartment would help out the now crowded situation for the household. The possible need for having to change apartment and leave the neighbourhood can be diminished, and residential qualities along with social aspects can be attained.

The example presents one single residential situation and cannot be seen as providing general knowledge of how crowded households experience their situation. The potential of additional rooms in a dwelling though, can be seen as a general, flexible factor in residential design.

4 CONCLUSION

This paper reflects upon the question of residential usability and how it can affect overcrowded situations and also the question of equity.

Overcrowding is a critical question, also aggravated with the current housing shortage. The overcrowding we see today has been increasing during the last years. Among the households with weak economy more than a third is overcrowded (foreign-born households and single parent households). Due to the housing shortage there are not many alternatives for households that are overcrowded and have a weak economy, a dysfunctional residential situation cannot always be solved by moving on to another dwelling.

The overcrowded households can be seen bereaved of residential qualities correlated to practical issues as storing and absence of a room. But the residential situation can also have consequences for social dimensions which the example in this paper shows. The dysfunctional residential situation affects aspects as for example safety, privacy, recreation and social cohesion. From this perspective overcrowded households do not have the same right as other households to a well-functioning every-day life and the social dimensions this can comprise. This situation is not socially sustainable and the question of overcrowded households constitutes a challenge for the question of everyone's equitable right to a dwelling.

Can then dwellings providing residential usability have some affect for the question of overcrowding and equity? The example shows that a dwelling providing residential usability can transform a dysfunctional residential situation by supplying one additional room. A critical issue to observe is that the example demonstrates a situation where small interventions results in substantial outcome when looking at the consequences for an overcrowded situation.

Some questions need to be reflected upon though. There is a risk for developing tight dwelling situations, apartments with many too small rooms. This can be avoided with qualified architects and developers. It also needs to be said that a dwelling, with for example the capacity to provide another room, not generally can be said to solve overcrowding. Out from the household's construction with belonging residential needs there is always a limit for the potential spatial use, and the potential residential usability may not always be employed. But, a dwelling providing residential usability can enable the access for a larger diversity of residential solutions for a larger diversity of households. This provides larger opportunities for solving overcrowded situations. The residential usability is in this context a tool for supplying more equitable residential situations, providing larger opportunities for overcrowded households to solve their situation.

5 ENDNOTES

¹ From 2009-2015 overcrowding has increased with 1,3% in total for all households. For the household groups foreign-born and single parent overcrowding has increased with 4,3% respective 3,9% (SCB 2016-a, b).

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