

Social Sustainability in Residential Solutions – A Swedish Case

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ABSTRACT: Currently there is a mounting demand on housing providers to contribute to sustainability in residential situations and to deliver practical demonstrations and experiments in this field. One such example in Sweden has been initiated as a research based project development process by a cooperative housing association in Göteborg, Riksbyggen EF, also a major actor on national level. During a period of three years a *transdisciplinary* collaboration, involving Chalmers Architecture and the University of Gothenburg, a building project comprising more than a hundred flats has been defined and is now going to be built starting November 2016 at Chalmers University campus site. The collaborative project, the so called *Positive Footprint Housing* claims a future realization of a number of radical implementations in a design strategy of significantly raised residential resilience implemented in *Brf Viva*, as the name given. Examples range from a wide variety of components like sharing of electric car pool, limited parking lots, extensive application of rooftop pv-cells and electric production to the introduction of low cost starter flats for young residents and structural flexibility of apartments in addition to extensive common facilities like a winter garden for parties, meetings and plant cultivation. Efforts to create social sustainable solutions have been both *procedural* and *substantial* in character. This paper will take a critical stance towards this endeavor building upon related conducted research with insights and observations of authors from participation within this process of research informed residential projective realization. The focus has been set on unfolded and identified crucial social aspects of sustainability and related architectural residential solutions in particular of long term alterability and flexibility. Our study shows the inherent vagueness of general sustainability formulations, especially concerning *social* sustainability, and the importance of doing research directly in the conflicting social fabric where sustainability goals are negotiated and given a concrete significance.

INTRODUCTION

Sustainability has today become a catchword in the discourse on housing and many actors in the field try to develop their interpretations and applications of the concept. The municipalities in Sweden have the benefit of a monopoly on planning and often connect land allocation for housing construction with requirements of sustainability plans. This forces construction companies and other entrepreneurs to investigate how their projects can be developed in order to meet these new demands.

One example of this has been initiated as a research based project development process by the cooperative housing association Riksbyggen. Riksbyggen was founded in 1940 and is owned by construction unions, housing associations and by other national cooperative associations. Riksbyggen both builds and manages properties and is a major actor on national level. The organization has an outspoken ambition to be a ‘developer of the society’ (cf. riksbyggen.se) and sustainability is seen as an important part of its cooperative basis and ideology.

In 2011 Riksbyggen set off a collaboration involving among others Chalmers Architecture and the University of Gothenburg, called *Positive Footprint Housing* (from now on PFH). The aim of the project is to create ‘a transdisciplinary knowledge hub’ in order to increase the possibilities of ecological, social and economic sustainability (cf. riksbyggen.se). One important part of the PFH is that it contains best practices ‘demonstration projects’, that is actual housing projects in relation to which ideas and knowledge concerning sustainability can be tested and developed. This far, the planning of the residential quarter Brf Viva has been a main employment for the PFH

so far. A continuation of this experimental commitment is currently unfolding dedicated to low cost residential solutions for young professionals on another site in the river city.

In this paper we will describe and reflect upon experiences from taking part in the PFH and the planning process of Viva, with focus on social sustainability aspects. The authors represent Chalmers Architecture and Department of Social Work, University of Gothenburg, and we have been active researchers in the project from its beginning due to funding by Riksbyggen and The Swedish Research Council Formas within the research environment *AIDAH* hosted by Chalmers Architecture. A related licentiate thesis is one recent result from this collaborative approach. (Braide Eriksson 2016)

POSITIVE FOOTPRINT HOUSING AND VIVA

The construction of the PFH and the relation to the Viva housing project is illustrated in Figure 1. Members of the project carry out their missions either individually or in small groups. However, important for the work process is that most activities and results are reported and discussed in a work group. This work group was formed in 2012 and have had meetings every month. The group has also organized seminars and special sessions open to the public or to invited guests.

Most members of the work group have been the same persons since the start-up. This has been important for the continuity of the process. Also, the mode of working has emphasized that every group member should take part in all discussions, no matter the subject. One goal of the project is to investigate the connections between different aspects of sustainability and therefore it has been understood as important that the discussions have a cross-sectorial approach. It should be underlined that the work group has no authority to take decisions concerning the project. The PFH is lead by Riksbyggen and the organization also provides the main contribution of project resources. We will come back to these matters later in the paper when discussing the sustainability of the internal processes of the project.

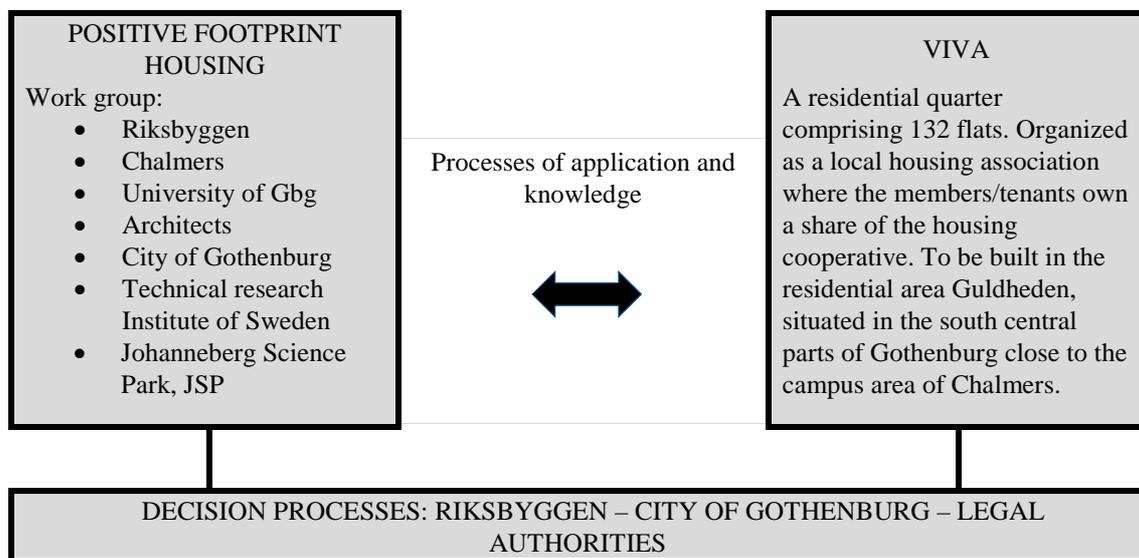


Figure 1. Organisation of Positive Footprint Housing.

Positive Footprint Housing is intended to be a lasting project dealing with transdisciplinary knowledge production in the field of sustainable housing. As mentioned, the idea is that the project shall get parts of its driving force through the application of knowledge on an existing, a 'real', housing project. It has this far been the Viva project that has had the function of being a 'demonstration project'.

The Viva urban residential project is a moderate building project, comprising 132 flats, with Riksbyggen as main contractor. The location of the project is an area just between the south part of Guldheden, a residential area built in the 1940-50's, and the campus of Chalmers University of Technology. This position reflects one of the central aims of the project: to create linkage and

communication between the two areas but also densification. Viva is projected to have an experimental design and the intention is to meet high standards when it comes to sustainable planning and housing.

There is a long tradition of engagement in residential issues among people living in Guldheden. Several local housing co-operatives are active in the area. Also, two local activist organizations have been working with housing and environmental issues for many years. Their goal is to preserve what they consider to be essential qualities in the district; especially the well-ordered balance between built areas and green zones. For this reason, these organizations, called 'Maintain Guldheden' and 'Save the Bog', oppose any densification in the area.

The planning process of Viva began formally in January 2012 with a start meeting at the City Planning Office in Gothenburg. In December 2014 the Land and Environmental court approved the plan and after that Riksbyggen has got building permits for the project. During the planning process the City Planning Office took part in the work group of PFH. The office was responsible for administering the ordinary plan procedure and tried to coordinate and adjust this process in relation to the work in PFH.

SOCIAL SUSTAINABILITY

'Social sustainability' is a concept that has been on the agenda for several years. The discussion started with reference to the Brundtland Report in 1987 (World Commission on Environment and Development), though the concept was never mentioned in this text. It was in the following adaption of the report that the well-known three dimensions of sustainability: social, ecological and economic, was delineated. In 2008 the Marmot report, 'Closing the gap in a generation' (World Health Organization), fuelled the discussion and offered a partly a new entry by using a health perspective. Also the climate crisis contributes to keeping the issue of sustainable development alive.

Of the three dimensions outlined the social is often considered the most difficult to define and give substance; it becomes the 'missing pillar' (Boström, 2012). Efforts made to create definitions have often resulted in very generic and common sense solutions. Stephen McKenzie (2004) has made an ambitious try and ends up with the following suggestion: 'Social sustainability occurs when the formal and informal processes, systems, structures and relationships actively support the capacity of current and future generations to create healthy and liveable communities. Socially sustainable communities are equitable, diverse, connected and democratic and provide a good quality of life' (McKenzie, 2004:18).

Definitely, McKenzie manages to encapsulate a vision of a fair and inclusive society, but, nonetheless, the definition does not give much practical guidance regarding how this may be achieved. For one thing, there is the question of which goals that social sustainability shall aim at: 'Social sustainability is a wide-ranging multi-dimensional concept, with the underlying question 'what are the social goals of sustainable development?', which is open to a multitude of answers, with no consensus on how these goals are defined' (Dempsey et al, 2011:290). And further, as Lehtonen points out: 'Different geographical and temporal scales as well as situational contexts require their own frameworks, which do not necessarily provide a coherent picture, but a mosaic of partly contradicting views of reality' (Lehtonen, 2004:211).

As an alternative to general definitions, keywords are often used to signify the meaning of the concept. Murphy (2012) has made an extensive review of documents and literature concerning social sustainability and claims that the general discussion can be summarized in four dimensions: equity, social cohesion, awareness for sustainability and participation (2012:15). Others have followed the same track; Weingaertner & Moberg, for example, provide a list of seventeen 'social sustainability aspects in the urban context' (2014:125).

The keywords displayed in these various lists tend to overlap one another. This signals at least some basic agreement concerning which direction to travel and what challenges that have to be met in order to move towards social sustainability. One important aspect is that the lists of keywords, as well as McKenzie's definition, contain concepts covering both substantial and process-oriented dimensions of social sustainability. Boström recognizes this and separates between *substantial* aspects, dealing with the 'what-question', and *procedural* aspects, related to

'how' these could be achieved and maintained (2012:6). This division has often been referred to in the PFH-project and we will use it for the presentation below.

To be useful in a more concrete context the concept of social sustainability must be further clarified and operationalized. At another level we can see this being done through the development of a range of models and standards. Well known are BREEAM (breeam.com) and the standards of the Global reporting Initiative (globalreporting.org). In Gothenburg, the City administration has developed what they refer to as a 'knowledge matrix' (socialhallbarhet.se). In this social sustainability is analysed through six dimensions, for example 'a functioning everyday life' and 'identity and experience'. These can then be read off against a spatial scale moving in five steps from the single building to the whole region. The matrix has an interactive design, so each position is clickable and general information and local examples are provided for all possible outcomes. This asset is much used by the City Planning Office and has also been tried in relation to the Viva project.

Finally, it should be noted that the validity of the three-pillar model has been put into question (Kates et al, 2005:19) and that many writers underline the importance of connecting the different aspects. Murphy stress that environmental goals need social arrangements to be fulfilled and suggests a 'social/environmental framework' (2012:19). Peterson, in a recent overview, has pointed at 'the integrated approach to sustainability' that local studies often result in and concludes that "... forcing complex and unprecedented socio-environmental problems into three, four, or seven distinct containers represents an outdated, unduly modernist way of problem-solving that tends to approach environmental, economic, and social issues as independent, and consequently, their solutions as separate' (2016:3).

We will now move further in our contribution to existing local studies and present some results and aspects of the PFH and Viva projects this far.



Figure 2. Digital presentation with the planned Viva residential project encircled. Chalmers campus area to the right and existing housing to the left.

VIVA - SUBSTANTIAL GOALS

This deals with conditions for a sustainable living in the residential area. There is an emphasis on ecological goals, but it is very clear that there is a strong connection between the ecological and the social sustainability.

One central part of the effort to make Viva stand out as an example of environmental awareness is that the residents are expected, and encouraged, not to have private cars. In principle, this is difficult to forbid, but this intention is clearly communicated when the apartments are offered for sale. It is also underlined by the fact that there are no private parking spaces on the premises. The city has a standard regulating the number of private parking spaces that must be offered when a new housing area is built, but Viva has been exempted from this. It should be mentioned that the availability of public transportation is very good in the area.

There are alternative transportation arrangements for the residents of Viva. All members of the housing cooperative have access to a vehicle pool, which includes electric cars, bicycles and cargo bicycles. There is also a lot of space allocated for the storage of bicycles and there is a so-called 'bicycle hub', which is a place for repairs equipped with tools. This hub can also be used for other repairs, such as furniture.

Some spaces are designed to combine utility functions with the possibility of social contacts. One such place is called the 'recycle-room' where people can leave and exchange belongings, for example clothes and toys that they no longer need. Another example is the 'postal and delivery room' where the residents fetches mail and where they also have the possibility to get goods and groceries delivered. These can be left in locked cabinets, which means that there is no need to be present at the time of delivery.

Several areas and rooms are designed for social gathering and meetings. There is a greenhouse that also offers opportunities to cultivate plants and an orangery, which is partially kept tempered during the winter season. This can be booked for private events. One common space has been labelled 'the life room'. It is equipped with large-screen TV, has a small kitchen and can be booked for private purposes.

Viva is designed to be a plus-energy housing complex, it will produce more energy than it consumes. Solar panels, insulation and systems of heat distribution are important means to accomplish this, together with the building materials used. New ways of producing and transporting the concrete have been developed, which will lead to significantly reduced environmental impact during the construction process, compared to normal conditions. There is also a special storage system for electricity, where used car batteries are re-cycled. The intention is that Viva during certain periods of the year will be able to deliver energy to surrounding buildings.

Viva is organized as a local housing cooperative, which means that the apartments are acquired by paying a share and then a monthly rental fee. All residents form a local housing association and exert through this influence over the management of the buildings and the neighbourhood. The local associations are often connected to a larger cooperative organization, like Riksbyggen, which offers services and property management. The residents do not really own their apartment, but rather a proportion of the housing cooperative corresponding to the apartment. Despite this, the apartment, or actually the share, can be sold on the housing market. The development in major Swedish cities has been that the cost of such shares has increased sharply for a number of years, which has contributed to the socio-economical segregation of residential areas. Viva is no exception in this regard; future residents will largely be recruited from groups with good economic conditions.

To somewhat counteract this, Riksbyggen is trying a new model for some apartments of Viva. Six integrated one-bedroom apartments will be sold with certain special conditions. For these, the price of the share is set considerably lower than the market price. At the same time, the monthly rent is higher. These six apartments will not be available on the market, but offered to young people between 18 and 30 years. The city administration of Gothenburg will be involved in the selection of residents. Whoever moves in can stay also after the person concerned has turned 30 years, but the apartment will again be offered at the special conditions once someone is moving away. The price of the share will then be calculated on index-basis, so there will not be any possibility to make profit for the shareholder. The residents of these apartments will be full members of the housing association and have the right to use all common areas and assets in the neighbourhood. This construction concerns only a small part of the total number of apartments, but represents a generally appreciated attempt to contribute to more socially equalizing solutions on the housing market.

VIVA - PROCEDURAL GOALS

The planning process of a new housing project is in many ways quite regulated and routinized. As mentioned all planning of new residential areas is controlled by the municipalities and directed by the City Planning Office; most often carried out in dialogue with contractors and developers. Information is displayed in public and meetings are held in order to give different stakeholders a possibility to follow in the planning process, to contribute with information and ideas and to ensure that their interests are taken into account.

During the planning dialogue of Viva, the City Planning Office took part in some of the meetings in the work group of PFH. Riksbyggen also put an effort into organizing a number of extra opportunities for individuals, groups and organizations to participate in the planning process. Partly, this was quantitative in character; there were more meetings of the same kind as the ones organized by the Planning Office. However, there are also examples of more innovative communication strategies.

For one thing two extra meetings were organized with residents in the local neighbourhood. There are a couple of hundred people living in the close vicinity, so there was a possibility for a quite large audience. However, these meetings were attended by 15-20 people, most of them coming from another housing association in the neighbourhood.

The existing housing area that will be most affected by the Viva buildings is a neighbourhood with rental apartments. Since just one person from this area attended the open meetings some special meetings were arranged in this neighbourhood. The meetings were held in a locale on the premises, organized together with the local caretaker and advertised to each household. Still just two residents turned up.

There was also a special meeting organized with the two interest groups in the area that try to maintain what they feel are essential qualities of Guldheden. These groups are generally very interested in green issues and local housing policy matters. Due to that, the members of the interest groups in many ways seconded the ambitions of PFH and the Viva project. They support housing policies and projects that make a sustainable living possible. During the meeting some representatives said that they wanted the Viva project to be built, however, in another area. They considered that Viva is misplaced and that the wooden hillside that Viva will make use of contains qualities that will be lost forever. On this basis the groups opposed the intentions and one member appealed against the building plan.

Other stakeholders, in relation to whom meetings have been arranged, include politicians from the District Council and officials from the District Administration.

Central thematic meetings have been organized focussing on issues like car-pools, participation and common public spaces in the neighbourhood. These meetings have often been arranged as combinations of expert presentations and workshops. The invited have sometimes been representatives of organizations working with for example housing or green issues. Some participants have just been people interested in the project. There has been a Facebook site organized for the Viva project and some people have attended meetings due to information they have gathered there.

The public has been addressed through media coverage, including newspaper articles, films and commercials, and through conferences and open meetings.

In addition to these exchanges Master students from Chalmers Architecture have been involved in making residential designs for the site that have also been presented to Riksbyggen and the responsible architects in order to open a creative dialogue on specific experimental topics. On the request of Riksbyggen a seminar with a number of other local architects was also arranged midway in the process in order to stimulate a critical assessment of the project at that stage.

DISCUSSION

The PFH/Viva project has been running since 2012. The construction of Viva will begin during the autumn 2016 and the occupation of the new residential quarter is planned to be fully accomplished and inhabited in 2018. What can be evaluated and discussed from a sustainability point of view this far is the planning process of Viva and the structure and process of PFH.

Obviously, PFH/Viva is very much a top down project. It was initiated by Riksbyggen and mirrors an interest from the corporation to investigate how it can develop sustainable strategies and practices, both when it comes to the development of new inventive housing projects and regarding the maintenance and service of existing ones. One basis for this interest is Riksbyggen's background as part of the cooperative social movement and its ambition to function as a 'developer of society'. The ideology of the cooperation movement fits very well into the ideas of sustainability. Actually, one could argue that the cooperative movement was 'sustainable' long before the concept had come into use.

However, there is also another fundamental reason for Riksbyggen to engage in sustainability issues and this has to do with the trademark of Riksbyggen and its convertibility into values and positions on the housing market. It is important for a housing actor like Riksbyggen to have its name and reputation connected to symbols that convey an image of being socially committed and in front of the development. Initiating research-based knowledge production like the organization of PFH and carrying through an experimentally designed housing project like Viva are also parts of this picture. It helps to sell the product in general as also recently proven by the unexpected and overwhelming interest for the project on the market resulting in an almost immediate and total sell out with more than 4000 potential clients.

Quite clearly, the orientation towards the cooperative ideology and the endeavour to be a successful market actor is not always easy to combine. During presentations and discussions we have had with the Riksbyggen Corporation it has become obvious that different segments of the organization emphasizes diverse values and strategies. To some, the PFH/Viva engagement represents a long-wanted effort to enliven the cooperative roots of Riksbyggen. Others have been more sceptical: 'How can we sell this?'

This says something about the three pillars of sustainability. In many ways, the Viva project demonstrates the closeness between the *environmental* and the *social* pillars, just as Murphy (2012) underlines. However, it seems much more complicated to integrate the *economic* aspects. In the beginning of the Viva procedure, economy played a very marginal role in the discussions. It was as if this would have restricted the creative process. But the longer the process progressed, economy was introduced and the people representing this perspective critically engaged in what was really possible to implement. This led for example to a slimming down of space for common purposes in the suggested housing plan and to less experiments with building materials in the construction. So the question is if the three pillars really support the same building?

The top down character of PFH/Viva limits the possibilities for stakeholder participation. Given all the invested interests from Riksbyggen, the aim that the buildings should have an experimental, conspicuous and challenging design plus the ambition to conceive the housing project on research documentation and knowledge, there is really not much left to influence. The efforts made during the planning process with extra meetings and targeted sessions were serious, but did not result in an over-whelming response. As in many similar planning procedures, most of the partakers represented well-to-do strata of society who had their own, sometimes project-negative, agenda (Lindholm et al (eds), 2015). There were steps taken in order to engage other groups, but with poor results. It is possible that a more outreach-based and dialogic method could have produced more contact and better communication. However, there were no resources or preparedness for that kind of strategy inside the PFH organization and it would probably have been difficult to combine with the other activities in the project.

The discussion about participation as an important part of social sustainability has its focus on external relations; that is on how to create relationships to actors outside the core group that organizes the planning process. The experience from the PFH/Viva project is that also internal relations are vital. That is about how the project is kept together and how different partners and participators can express their views and stimulate one another in the process. This is especially valid for a project that contains both independent research activities as well as a concrete making effort. As mentioned earlier the work group of PFH has played an important role for how the project has developed. A core group of participants, among them the authors of this paper, have taken part in the work group for a long time and engaged in mutual discussions across professional background and expertise. This has created continuity in the project and formed a basis for collective understanding as well as a major occasion for academic transgression, for transdisciplinarity in action, involving academia, education and business stakeholders.

From a research point of view this is not an uncomplicated situation. On the one hand it has given us a position from which we have been able to follow internal processes and discussions that would have been concealed to an outside observer. It has also facilitated one of our chief missions as researchers in the PFH: to formulate and disseminate knowledge and existing research/discussion concerning sustainability, foremost social sustainability, and through this affect the development of the project. On the other hand one must be aware that the proximity in the work group creates bonds. Over time a collective belonging is formed and it is difficult for the individual member to see through how this impinge on his/her judgment and actions. It is of course even more obscure for an external observer.

We have tried to counteract the latter problem by way of always emphasizing our role as researchers, never representing any other organizational body than our academic institutions. We have never taken part in any decisions and never positioned ourselves as responsible for any part of PFH/Viva. On the basis of existing knowledge we have given advice and come up with ideas, but we have continuously made clear that a central part of our mission is to undertake a critical evaluation of the whole project. This includes of course actions and results where we have taken part at an earlier stage. Especially in the beginning we had to make our position very clear in relation to Riksbbyggen, but gradually we have achieved agreement and mutual trust.

This process has been facilitated by the possibility to link it to *qualitative* attributes of social sustainability. When discussing how to accomplish and apply social sustainability we have underlined that this is very much about the approach and attitude that characterizes the work. There must be a dialogic way of approaching people that includes openness, listening to other points of view and critique. It is also about transparency: to give everybody access to all relevant existing information. Further, it is important that there is a possibility for change sometimes at the price of taking calculated risks. It is not enough that meetings are arranged and that people can have their say. There must be options to modify plans in relation to suggestions unexpectedly expressed. Finally, this approach must be constantly scrutinized and assessed.

CONCLUSION

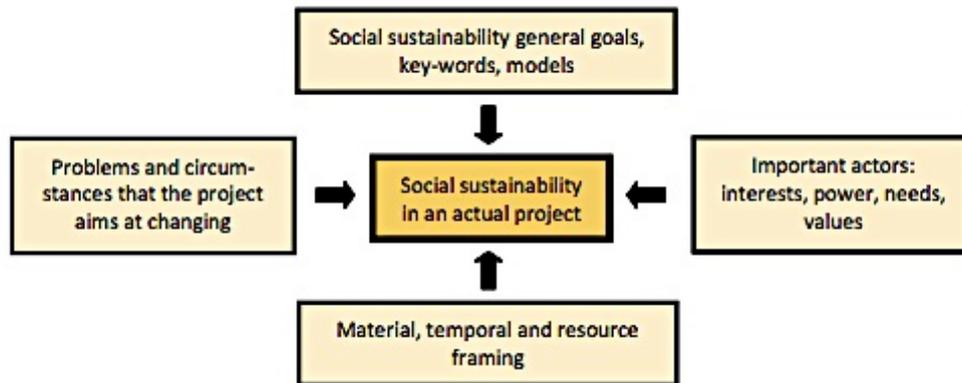
When concluding the experiences from the PFH/Viva effort this far, it is easy to agree with Boström: 'The inherent vagueness and interpretative flexibility of both the sustainability concept in general and social sustainability in particular cannot be fully overcome. (...) The consequence is that (social) sustainable development needs to be framed, filled with content, and interpreted from time to time and place to place' (2012:11).

This is precisely what we can see has happened in this Gothenburg example and our understanding can be summarized through two different characteristics.

The first is that social sustainability is used to serve diverse interests and solve a lot of different problems; it becomes what we would like to call a Swiss knife 'multi-tool concept'. Social sustainability is used as a:

- trend tool: function as key expression to position the project as an interesting experiment on the housing market.
- substantial tool: serve as a basis for the planning of a social sustainable everyday life in the intended housing block.
- process tool: function as a control instrument to make the planning process open and possible to participate in for various stakeholders.
- brand tool: function as a trademark for the entrepreneur, which is compatible with the image the company wants to be connected with.
- inner organizational tool: organize the internal processes of the project organization.
- tool for opposition: articulate resistance to the project from critical activist groups among the inhabitants of the area.
- research tool: work as a concept for conducting research.

The second characteristic is that social sustainability is very much a product of the context in which it is used:



In the discussion there is a lot of emphasis on definitions and keywords. However, these are not deciding factors when the concept is put into everyday practical use. Central actors, problems and temporal circumstances all interact to shape a certain application of social sustainability. This points at the importance of a contextual or *situational* understanding of social sustainability.

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