

# EXPLORING EXISTING GRASSROOTS HOUSING MOVEMENTS FOR ENERGY EFFICIENT DISTRICTS

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## Abstract

*Building collectively has become more popular movement over the last twenty years particularly within the EU countries. This paper investigates the origin of different forms and types of collective housing in Europe, and discusses the degree of their potential to be as grassroots movements towards self-organized energy-efficient districts.*

*In this paper, first a survey is performed of existing typologies of collaborative housing in different countries. By doing so, we attempt to portray the variety in collective behaviors of existing housing initiatives and identify the values of the various collective movement. We secondly look at both commonalities and discrepancies of the portrayed collective housing typologies, and map them based on their main aspects; 1) the level of community intention, and 2) the participatory character in the community establishment. Consequently, we discuss to which degree the variety of collective housing behaviors can boost grassroots, thus self-organized, movements towards energy-efficient districts.*

## 1. Introduction

After WWII, large housing deficits were targeted by governments housing policies in Post War Europe, and resulted in large scale housing construction programmes (Boelhouwer and van der Heijden, 1992). A second stage of governmental housing policies can be observed in characterizing the European housing market, with a shift of focus away from quantity and new construction, towards renovation of existing housing stock up to certain housing standards instead (ibid).

A third stage in housing policy trends can be observed by growing attention to effective housing distribution. As a result of declining public expenditures in housing, also the political power of governmental housing policy was carefully scrutinized (ibid). This stage is further more characterized by widespread reduction of subsidies, like the housing supply subsidies for new construction and further expansion of demand subsidies (for less well-off groups in society). This stage resulted in an obvious decrease in the number of new constructed houses (Boelhouwer and Van der Heijden, 1993).

Guerra identifies a political tendency accompanying the above mentioned third stage, one that could be formulated as privatization of public housing stock and the transference of competences to private housing agents (2008). It further implies a distribution of responsibilities between the private agents (like non-profit housing associations) and the governmental authorities with regard to the housing supply to the less well-off (idem).

As a response to the welfare state becoming too expensive, and overregulation of markets (high taxation, lots of subsidies, high regulation density), the call for less rules, less governmental say became louder and louder over recent times. Politicians gave these voices solid ground, and proposed a shift of responsibilities to local authorities, the so called decentralization movement.

Housing also became a more decentralized issue. Depending on local market conditions, demand and supply, housing construction was primarily left for private real estate developers to deal with. Local authorities (municipalities) were into this deal for the beneficial land transactions. Many municipalities in the Netherlands have speculated with land positions, and obtained high quantities for

future expansion. As the housing expansion hit the ground, due to the financial crisis and the buyers reluctance to invest in new housing; also the need for land turned to a minimal, with all financial consequences as a result (Deloitte, 2012).

Current impasse of existing governments and institutional authorities (like real estate developers or housing associations) to supply housing that meet residents requirements, opens the floor for the individuals and organized collectives to do it themselves. In contemporary urban planning, more and more space is offered for individuals to decide how and what to build. In many cases, the brief of requirements also meets advanced requirements towards sustainability and energy efficiency (SEV, 2010).

This paper is firstly describes the origins of some of the most known forms of Self Organised Housing and Collectives Self Organised Housing typologies that have emerged over time. In describing the various forms and origins. From the analyses, it becomes evident there are some clear and typical characteristics, and commonalities throughout these housing typologies. They are also subject of this study.

Contemporary housing market in Europe is facing some eminent challenges; one of them is energy efficiency, the other the search for effective governance methods to deal with housing demand in the near and further future. In this paper we elaborate the opportunity to position the trend of Grassroots movement and growing awareness with civil society in the housing sector as a possible answer to both eminent challenges.

The paper secondly provides an overview of grassroots movements in housing over Europe. Through literature, the international scene is sketched to map existing housing typologies that deal with collectiveness, district scale. This scene is a basis to identify both commonalities and differences of such of housing movements and to discuss potentials of each typology to be grassroots movements are discussed in the following section.

The paper thirdly introduce a simple analytical framework that attempt to identify tangible and intangible characteristics of existing housing typologies. This framework is intended to help the reader to identify the similarities and dissimilarities in existing movements and elevate the discussions to the question; how to achieve self-organizing collective housing movements that include sustainability ambitions, and apply them to transform existing and new districts in our living environment for the better. The aspects that the framework deals are as 1) shared *values* and driving forces behind collective housing projects, 2) *behaviours* of the community in design and construction as well as occupation phases of the project, 3) *community* profile which either initiates or influence the collective housing and 4) the *program* that becomes the physical and tangible product as an outcome of the shared values and behaviours of the community.

The paper fourthly provides the analysis of the existing housing typologies with regard to the aspects in the framework. This is to discuss the typologies and prepare a basis for the next section; how to define a grassroots movements for reaching energy efficient districts in housing.

In the last section, through the analysis, existing grassroots movements and typologies are mapped. In this map, the level of involvement of participation to the design process and the level of collective movement (self-organized) of existing typologies are identified. The concept of Collective Self-Organizing (CSO) Housing term is introduced as an umbrella term which defines a room of improvement for existing typologies to be grassroots movements towards building energy-efficient districts. Furthermore, conclusions will be drawn to connect the potentials of existing housing movements to be collective self-housing projects which eventually become self-transition towards sustainable districts.

## **2. Background: Existing grassroots movements at district scale**

This section provides the existing housing typologies, which have collectiveness feature to be either an actual or potential development movement to be discussed in building sustainable districts. These typologies consist of familiar structures being either front runners and/or typical examples. The typologies have changing degrees of communal /private life styles, self or collective organization, and participation to the design and construction process as well as differing support from the local or central authorities. Below, these key typologies are provided.

### **2.1 Conventional Serial Housing Project**

This typology differs across the EU countries in details, but primarily it meets the basic way of organisation of housing. It basically starts off with a governmental authority deciding the next urban layout, selecting where will be allowed to develop new housing. From there a commercial real estate developer, acquiring a particular plot of land, working out on a neighbourhood lay out, commission an architect to design different housing types, procure a main contractor to realize the construction work within strict limitations of money and time. In the meantime, the real estate developer sells out the houses (from paper brochures) to future private owner/ occupants. The level of influence and participation of the end-users in this structure of housing provision is limited. At best, an end user is allowed to select the colour of the bathroom tiles, or choose a roof window for additional costs.

However, recent trend of the traditional housing projects propose a certain level of ‘freedom’ for the end-users so that they can configure the components that are within the selected freedom (i.e. kitchen type, bathrooms or the further interior layout). Such options are referred to as consumer oriented building developments. Where the ultimate selection of the freedom work already indicates that the main decisions are given by the real estate developers who pursue mainly the design and construction processes within their objectives regarding time, quality and cost. In a way the real estate developer, together with architect and main contractor determine the degree of freedom, a potential end user can play with; given a selected set of options too.

Although there are different degrees of participation, the end-user has never a full freedom to design, configure, and organize the construction and maintenance processes. The end-user remains ‘buyer’ rather than organizer in these projects. The end-user plays the game within the pre-defined space by the project developer, as they participate to the design decisions which are positioned within this space. Thus, the users acts individual and conduct the participation and make decisions that affects only their private housing.

### **2.2 Cohousing**

Co-housing is an emerging small-scale type of residential housing development that is initiated, developed, and managed by residents (Fenster, 1999). Cohousing projects are neighbourhood developments that creatively mix private and common dwellings to recreate a sense of community, while preserving a high degree of individual privacy (Lietaert, 2010). It is a form of collective organised housing requiring equal degree of participation of end-users, since it is a common-vision among the participants who neglect hierarchical structures (McCamant and Durrett, 2011). Cohousing is driven by a motivation, modern-communal life style, and has an ideal of ‘changing the society starting from one’. Cohousing deals with community building, and realizes intensive shared facilities that make difference in user-specification comparing to the other housing typologies. From spatial perspective, cohousing, as a privately owned entity, called as ‘...*individual residences constructed around “common house” that includes shared cooking, dining, and childcare facilities...*’ by McCamant and Durrett (2011). Thus, cohousing comes along with a community behaviour to which the members need to fit and agree. The values that attach people to become member to cohousing community thus becomes an affinity to communal life style, limited degree of privacy, and rejection of homogeneity in society. Cohousing is initiated often by a core group of enthusiastic leaders who recruit new members through organizational meetings. The decisions are taken by consensus but the

frustration over the progress of development has a potential to group members disband themselves from the community (Fenster, 1999).

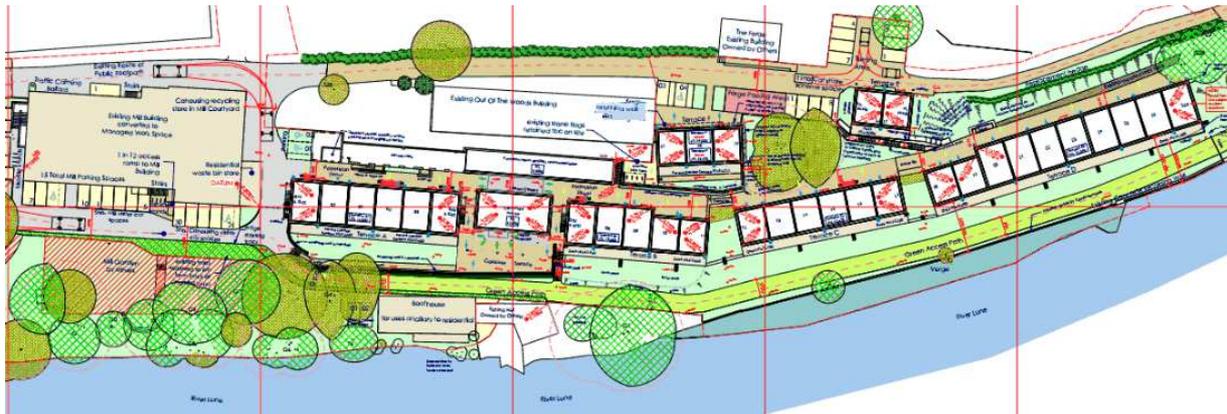


Figure 1. Part of the site plan of Lancaster Cohousing project (source: [www.lancastercohousing.co.uk](http://www.lancastercohousing.co.uk)), in the middle the common house, top some additional shared facilities.

### 2.3 Common Interest Community

Common Interest Community (CIC) is a type of private housing project organized within an association created by either statute or covenants running with the land, whose membership consists of holders of units in the development (Fenster, 1999). A community association refers to the organization in any form of real estate development with a mandatory membership, whereas the common interest community is the development itself (Hyatt 1998). Paik (1998; in Fenster 1999) describes CIC as a central tool to develop private-commercial housing development. CIC has considerable self-governing power, substantial economic resources, a generally high-functioning population, and a vast and growing network of specialized professionals offering their services to this institutional client (McKenzie 2003). McKenzie (2003) claims that any housing typology can be CIC when they share the several characteristics as a) having common ownership, b) having private land use controls (ranging from minimum to voluminous sets of rules dealing lifestyle and/or architectural controls), c) private government, d) master planning, and e) security measures (i.e. entry controls, hardened boundaries, internal surveillance etc.). The driving factors behind CICs are different. The members of the potential CIC projects seek for one or more characteristics to create their own and often criticised of being 'hygienic' districts. There are also developers who drive these projects and try to reach more people, as the developers seek for the gain between individual vs. collectively developed and private districts where developers can develop the same land with narrower streets, attract people even on a smaller lots that normally become challenge to find household and compensate with common areas, amenities etc. (McKenzie 2003).

### 2.4 Collective Housing

Early experiments in Scandinavia have been studied and reported by D.U. Vestbro, in his work on collective housing forms, as early as pre-WW2 (1992, 2000). One of the earliest forms of collective housing stems from the Stockholm experience in 1935 (see fig. 2). Modernisation and a general feeling of improving efficiency initiated the idea of housing with collective services like cooking, child care, cleaning and laundry (Vestbro, 2000). The rationale for collective housing wasn't any fine ideology, but rather focussed on reducing women's housework and retaining women employment even after marriage and having children.

The collective housing projects from these times were specifically designed as apartments around a central kitchen, with food-lifts providing ordered food to each apartment. A central child-care facility, kitchen and laundry hall were all dedicated to reduce the time of individual households, women mainly, being occupied with ordinary housework tasks, and focus on work. More projects arise in

Sweden and Denmark around the 40s and 50s, where some of them more seem a hotel (with serving staff and services) than housing.

Around 1980, the time was ready for projects in the mind of BiG (Bo i Gemenskap - translated in Live in Community), where not modernist ideas of reducing housework was objective, instead the equal distribution of tasks between women and men was aimed for. With individual apartments, accepting a loss of 10% ground floor area to make up for communal spaces like dining room, living room, laundry, workshop and guest room, these type of housing projects would not cost more than ordinary housing projects (Vestbro, 1982).

Experience in Sweden and Denmark shows that municipal housing companies (or associations) have played a crucial role in delivery and construction of collective housing projects in the last century. This type of projects are not distinguished by a high level of participation of end users. Although extensive analysis of existing collective housing projects in Sweden has provided evidence that this form of housing succeeds in a moderate level of community in everyday life, increased safety and a certain degree of collaboration between neighbours (Vestbro and Horelli, 2012).

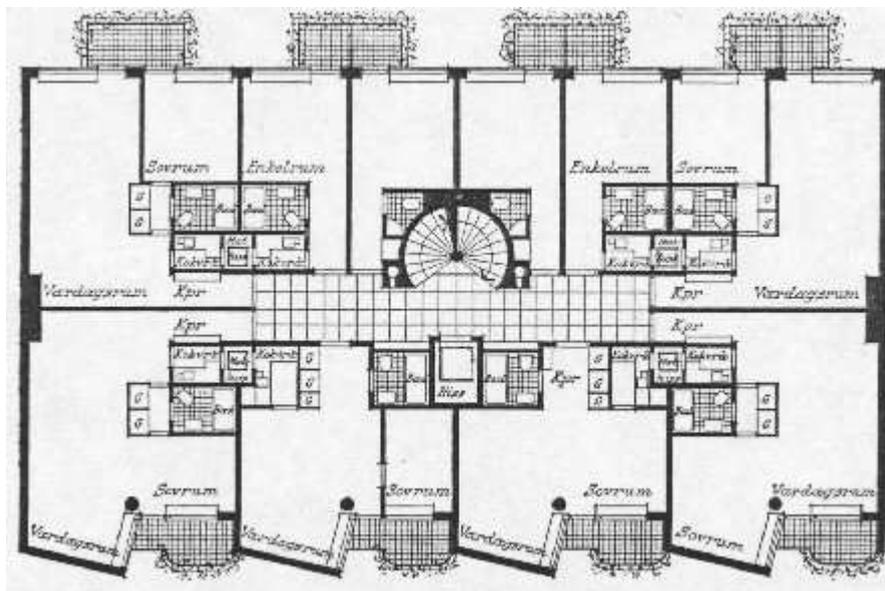


Figure 2. Floor-plan of one of the first collective housing projects in Stockholm, John Ericssonsgatan 6, with common diners, child care and small shop (source: Vestbro, 1992, pp 31)

## 2.5 Self-Build Housing

Housing built by individuals or groups of individuals for their own use. It typically involves individuals commissioning the design and construction of a new house from a builder, contractor or package company or, in a modest number of cases, physically building a house for themselves. [...] By way of context, the Office of Fair Trading defined this house building activity as “any instance where a person is involved...in the production of their new home rather than buying from a speculative homebuilder” (source: [www.oft.gov.uk](http://www.oft.gov.uk)). The owner involves greatly in the construction process by building efforts with a different degree of delegating design and maintenance tasks to the professionals.

Self-build housing often is preferred, since it promises cheaper construction cost (20-40%) (Source: <http://www.selfbuildportal.org.uk/self-build-one-off-home>). But instead is a challenging process, since self-built houses requires intensive time and hard work as well as costly mistakes that might occur due to the unprofessionalism of the end-user as a builder.

Self-provided housing is a major form of housing supply in many of the developed countries of W. Europe, N. America, Scandinavia, and Australasia (Duncan and Rowe 1993). In many, like France or Germany, it accounted for the major part of housing output during the 1980s. Self-provision is often considered with backwardness, or occurred due to limited market development. However, self-provided housing is often a major element in the expansion of European metropolises and sometimes reaches the heights of 'post-fordist' industrial organisation and product development (Duncan and Rowe 1993).

Self-provision lowers the money cost of housing and usually ensures higher quality, and in this way enlarges the housing choices of middle-income nuclear families. Materials and land costs remain substantial barriers to self-provision though. Some barriers are considered to make this form of housing unable for the group less well-off.



Figure 3. Collection of pictures from typical individual commissioned housing, self build typology in Roombeek, Enschede, The Netherlands.

However, the presence of a large self-provided sector can indirectly improve the housing position a lot for the groups less well-off. Housing cycles will be calmed, spatial polarisation will be less severe, and there will be less competition from the more advantaged in rental markets. A significant self-provision sector can also have important effects on the house building industry, both through direct competition and by presenting a different market environment. The net result is likely to be a decline in speculative behaviour and a concentration on longer-term efficiency. Finally, there are various 'models' for a successful self-provided housing sector, where the necessary social support is organized in different ways by different agencies. These will affect the level and distribution of self-provision. Given the importance of self-provided housing in all these ways, it merits considerably further research than has been the case so far.

## 2.6 Community-led housing

Housing where mostly types of organisations are formed in order to enable tenants and leaseholders to “collectively take on responsibility for managing the homes they live in” (NFTMO, 2004). Focus is primarily on tenants, what brings the system of tenure and ownership in mind. Tenants do have a great deal to say when it comes to renovation or even demolishing, but entitlement for starting up (commissioning) building or refurbishment activities on own insight are rather limited.

One such an experiment comes back in the SEV publications, which describes the case of a small housing project in Enschede, the Netherlands (2010). The housing association agreed upon a small

scale experiment, where a group of tenants were selected to participate in the design and programming of their own future housing project. Experience showed that it is rather hard to manage the expectation of tenants, the latter expected a faster process, and had high, and therefore costly ambitions (ibid).

Further experience with Community Led Housing initiatives is found in UK objectives to facilitate the right of building your own house for an affordable target group too. IN this objective, the government offers all kinds of support actions, information exchanges, financial support programmes to get these self-organisations going (HCA, 2014).

## **2.7 Intentional Community**

Intentional Community (IC) is referring to projects where people strive together with a common vision. Many of this type of communities are built upon a shared religious, political, environmental or social ideology rather than simply the desire to have a strong sense of community with their neighbours (Guinther, 2008).

The explicit definition of intentional communities make that also communes, student co-ops houses, eco-houses, urban housing cooperatives and alternative communities can be included in the term community here. Typical is to say that no specific attention is given to the matter of democracy in the process of decision making neither (in operation nor in design and contract). For those cases that do (example of eco – houses) have a democratic process, they would also pass the criteria of a different typology (like cohousing for instance).

## **2.8 Collectively Commissioned Housing**

Collectively Commissioned Housing (CCH) is more than just a plot of land with a (catalogue) house to your own taste. Collectives, groups of individuals that are willing to invest tremendous amounts of time and effort to realize (commission) their housing project, often aim for additional functions and values, not represented in standard housing (de Haan & Tummers, 2007).

The argument for CCH is strongly distinguished from the self-organised, or self-commissioned housing that the city of Almere in the Netherlands has embraced for new construction. Not the individual, with all the best intentions is being addressed here, instead the collective of individuals that act as client, as end users of a future housing project.

CCH becomes increasingly more visible in contemporary urban design and dynamics. Some of the additional spaces created in these collectives, next to workspaces, garden, playground or bike stall, might also serve a wider neighbourhood functionality, like in the case of Vrijburgt, Amsterdam.

The further potential for CCH is more promising than the individual, self organised housing projects, as the financial and organisational power of a group of people is stronger than that of an individual. It has been identified in 2007 that some of the main barriers are the lack of financial instruments for the early design phase, as well as ideas on risk management, setting particular pre-conditions, feasibility studies and proved models of organisation or decision making (de Haan & Tummers, 2007).

The housing movements described above have potentials to be grassroots movements towards building sustainable districts. Therefore these have been selected for elaboration in this paper. IN the next section, the cross-analysis behind these typologies is done based on the simple analytical framework.

## **3. The Simple Analytical Framework**

In this section, a simple analytical framework is introduced. The framework attempts to identify tangible and intangible characteristics of existing housing development movements and discuss similarities and dissimilarities among these movements.

The analytical framework consists of four aspects; 1) values, 2) behaviours, 3) community, and 4) program as illustrated in 4.

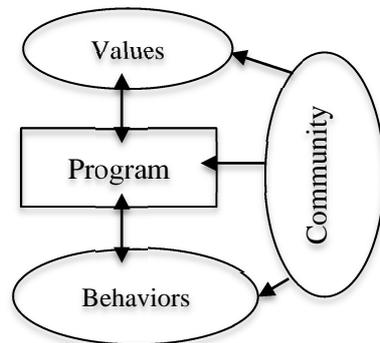


Figure 4. Four typical aspects that describes differing features of collective housing movements

*Values* refer to the driving forces behind the community and behind the movements. There are often intangible and in different degrees depending on the movement. Being different degrees might shape the behaviours, community forming and having consequences on forming the project program.

*Behaviours* refer to the actions of the community towards design process. The behaviours of the community are also intangible and can differ from active to passive in relation with the design, construction and occupation process of the housing. Active behaviour can be exemplified as involving in designing (thus taking design decisions), whereas passive behaviour can be seen in being solely buyer of the end-result, once the decisions are taken. Behaviour is also related with the decision making within the community which is influenced by the values of the community.

*Community* refers to the profile of the group who either initiates or are connected during the grassroots movements. The profile of the community becomes important to describe where the values come from, how the dominance of behaviours (critical mass, if exists) are shaped, and how the people forming community influence the program of such housing movements.

*Program*, as a last aspect of collective housing movements, refers to the physical and tangible outcome of the project which is shaped by the values, behaviours and community profile with changing degrees.

Those four aspects provide an interplay for collective housing movements and becomes crucial to describe to move further to the collective self-organized housing which is not solely associated with certain neither tangible nor intangible aspects. Below, Figure illustrates this interplay of the four aspects in analytical framework.

## 4. Analysis of Existing Housing Typologies

Below, the analysis of the existing housing typologies will be reviewed based on the framework introduced earlier.

### 4.1 Values

Existing typologies portrayed that the shared values do not solely derive from the community members but also from programs that they commit to. And these values influence the behaviour of the community towards design and construction phases in projects. The values behind any housing movement that community involve might derive from the physical expectations of the housing (i.e. reduced cost, more public spaces and playgrounds in collectively commissioned housing, spatially isolated 'hygienic' living environments as in common interest community etc.) and form the community profile and influence the behaviours. These can be called program-driven values.

In cohousing and collective housing typologies, the programs of both are towards increasing the use of communal areas and diminishing the in-house service areas with different driving forces. In collective housing, the shared values are such as modernisation, reduction of women's in-house time and efforts and gender equality, whereas cohousing is to promote communal living and eating together to increase "companionship" or sense of belongings. Thus, both might be driven by different values yet resulting in similar built-environments. These can be called community-driven values.

Regarding the sustainability values, very few housing movements incorporated 'sustainability' in sense of energy-efficiency as a value attached to the movement, except the examples in cohousing, eco-villages, etc. It becomes clear that the existing movements do incorporate sustainability measures for mostly targeting at energy reduction, energy savings but not as an explicit value to form the community around and lead the housing development toward it. In other words, there are several degrees of incorporating energy ambition (particularly in cohousing), but this is not a common driver that is found in each cohousing project.

## **4.2 Community profile**

The typologies make one distinction evident: there is difference between collective building and collective living that shapes communities differentiates the values and result in different behaviours (Tummers, 2011). For collective living, the community has a different pre and post cohousing behaviour of households. This result from the community profiles which particularly in respect to the expectations from the others, privacy and tasks to be performed to be in the community. In other case of typologies (i.e. CIC), this pre/post development (or occupation of housing) is not very distinct. The households keep the same way of living in such projects as they have minor (or even no) changes in their private life at home. In this sense, the community profile becomes important to see how the members are attached to the project and engage to the movement. In many grassroots movements one can identify typical initiators, who take the lead; and obvious followers, that tent to hook on as soon as a project is on its way. Both profiles have different consequences when it comes to the participation to the design process..

## **4.3 Behaviours**

Typologies portrayed different behaviours of community towards design, construction, and organization processes of housing projects. In certain typologies, the pre-design phase, which is community forming and organization, becomes the key process as the initiators find more members and organize the group towards their shared values, similar expectations towards having same programs. Cohousing particularly becomes crucial to look at it for community organizing and building senses. Fenster (1999) defined this feature as 'community by design'. Cohousing thus becomes a self-regulating group which actively involves in design and decision making of the programs and the members of the community (which is democratically governed) defines the programs that reflect their values and match to their community expectations. Thus, community forming and design reflecting the community's requirements play central role to form and control the grassroots movements. To a lesser extent, collectively commissioned housing also seeks for such participation and involvement to the design process, yet their decision making system might be different. One would expect that collective housing would accommodate such participation and involvement of the community members to the design process, yet the members often engage once the local authorities initiate and start realizing the development process. At this sense, it is difficult to say that collective housing is always a grassroots movement. Regarding the collective commissioned housing, the behaviour of the community becomes a professional client which commissions the professionals to develop the housing at district scale. When it comes to the community-led housing, the behaviour deals with the refurbishment issues where the community has limited (if not none) involvement to the commissioning the parties yet making choices for the refurbishment.

#### 4.4 Program

As discussed previously, program is a tangible outcome of housing movements which either is shaped by either the values and/or community profiles. The behaviours of the community influence the way that the program is formed as the degree of participation of the community changes in design process. If we exemplify, collectively commissioned housing at first glance portrays similarities with being common interest community in terms of their program. Both projects aim to include additional physical features of the housing at district scales. Their community behaviours overlap as both aim to result in housing with additional characteristics and both are more towards ‘collective building’ (to a certain degree) rather than communal or collective living. The values of both however distinguish, common interest community is formed with a need of more secure, isolated and homogeneous districts which often criticises as pushing social segregation; whereas collectively commissioned housing is more dealing with open spaces (more accurately semi-public areas) and increasing the quality of living environment which is through shared and public spaces. Collectively commissioned housing does not have to seek for enhanced and hardened boundaries around the district. Except their degree on public spaces vs. private yet shared by only community members (including physical exterior boundaries of the gated community), the program of housing itself (private dwellings) might be similar. In other words, the program regarding the shared spaces might be different due to private use only issues in common interest community.

Cohousing and community-led housing at this moment distinguish themselves for the program definition. Cohousing particularly has a strong reflection of the values, behaviours and community profile on the program of housing. But this does not always reflect a totally different outcome (design) than the traditional housing from outside regarding the private housing. The only program difference is reduced kitchens and service areas, as the common houses provide such services for community use. In other words, the community behaviour and values are different but the members of community keep their individual housing with reduced functionalities. This results in derivation of existing housing from the perspective of housing functionality.

	Shared Values/Drivers	Behaviours	Community Profile	Program
<b>Cohousing</b>	a shared life style towards being heterogeneous and self-regulated group	Lessened private life due to the increased importance of ‘common house’  Self-regulating group active in participation of design and construction process which does not result in totally unique built environment	A group of core people initiates and form the community and assigns (‘appoints’) members towards their willingness to their initial rules and values	Particularly a new housing on distinct level which has an emphasis on having ‘common house’ which becomes the heart of the community and reduced size of housing.
<b>CIC</b>	A shared life based on homogeneity where middle income group acquire housing with extra features that are not found in ‘public’ districts	Private life, no communal behaviour,  Participation to the design process through home owner associations	A group of homogeneous people either formed by developer or -to a lesser extent- end-users itself, criticised initially of	Particularly on new housing at district level with surveillance at the district, private access, entry control, no communal houses

		which owns their own plot yet the design, construction and maintenance activities are jointly done	keeping same income level at the district	but shared amenities (extras which may not be even used).
<b>Collective Housing</b>	Modernization and improvement of efficiency of housing, gender equality (i.e. reducing women's workload at house)	Communal life style and behaviour due to shared facilities, spaces within community, as a result of the program and driving forces. Lacking of participation to the design process to reflect these values	The group formed after/during to the project There is no initiator, as the initiators are often local authorities, thus 'moderate level community' occurs due to the occupants purchasing/buying apartments.	Private housing built around a central and communal facilities (i.e. cooking, laundry, guest rooms etc.) at building level (i.e. apartment blocks), emphasized 'hotel' feeling
<b>Intentional Community</b>	Same ideology (not similar) of shared religious, political, environmental, social ideology	Shared behaviour shaped by the expectations from having same ideology, which is very explicit in using/acting on both private and common areas	Strong sense of community and communal life style, having same ideological background (not necessarily directly on education, income related aspects)	Project at the district scale with strong boundaries towards outside, inclusion of communal and private areas similar to cohousing, but the proportion of such areas or
<b>Collectively Commissioned Housing</b>	Awareness of being financially and organizationally powerful as a group and built around additional functions which are not represented in standard housing which become affordable due to the collectiveness	Client behaviour of the collective group due to the similar program requirements, pure collective building behaviour rather than ideology driven behaviour	Collective group formed to have financial and organizational power	New housing project at district scale with additional features such as garden, playground, even extended to the integration with other districts (unlike CIC)
<b>Community-led Housing</b>	Being contractually at the same level or even being robust towards contractual vulnerability (i.e. leaser/renter who wants to control and manage their housing in a stronger sense)	Collective behaviour towards improving their living environment conditions when/before it is commissioned, and participating to the process of refurbishment (except commissioning)	Collective group formed by similar contractual status	Mostly on refurbishment at district or apartment scale

<b>Self-build/provided</b>	Reduced cost comparing to 'speculative home builder', interest in active construction, building, or organization tasks	Individual and strong drive to undertake actions towards design, construction or organizational aspects of housing,	-	No particular program due to the characteristics of self-building behaviour (except customer-specific requirements)
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Table 1. Summary of the analysis of the existing collective housing movements

## 5. Discussion & Conclusion

Considering the research of background literature and further analyses of a handful of grassroots movements in housing, we can observe there are many different reasons and causes that fuel the various grassroots movements, and bringing people together. The question remains if we are able to distinguish the main important aspects that reveals the potential of a wider collective self organised housing movement in sustainable housing of the future?

In this last section we further explore the potential of collaborative housing forms as we have studies earlier, in their ambition for sustainable and innovative building opportunities and for renewable energy networks. Like Tummers identified many of these housing forms (form cooperatives de lodgement (FR), via genossenschaften (D) to cohousing (UK)), the potential for the transition towards sustainable production and collaborative governance (2011).

Zandvoort et al have built forward on earlier distinctive features pointed out by Tummers in 2011, by referring to collaborative housing projects focussing either on [1] building together, or projects focus on [2] living together, and putting these features into a mapping exercise (2013). Herewith we like to consider the same mapping dimensions, but instead of comparing a group of cohousing projects, map the different grassroots housing movements identified earlier. The housing typologies will be plotted in on these two dimensions, referring to [1] the extent to which end users are participating in the design and process of developing the housing project; [2] the extent to which the community intends a particular collective form of living (see fig. 5).

By this mapping exercise, grassroots housing typologies are being compared and presented in perspective of concurrent typologies. It allows us further to draw some generic conclusions, related to the position and commonalities in terms of their characteristics. It is an attempt to identify a larger area, revealing a distinctive potential for Collective Self-Organized (CSO) Housing for a more sustainable future.

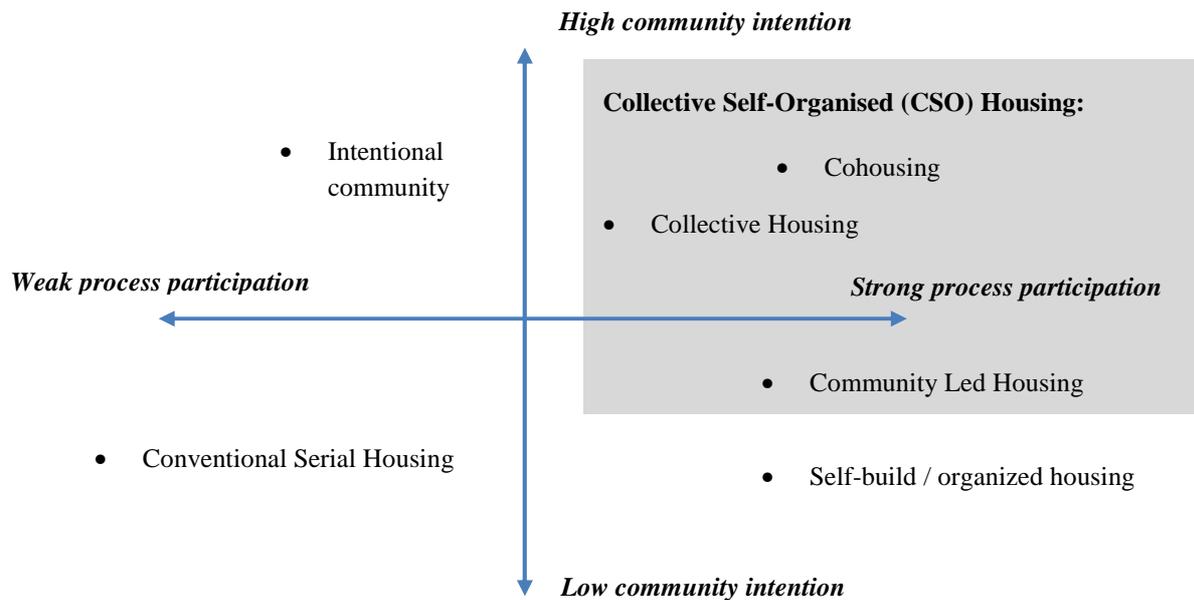


Figure 5. Mapping the identified grassroots housing movements along distinctive dimensions

Interpretation of figure 5, further identifies a potential for housing forms that are currently not within the dimension of CSO Housing (grey), to become a CSO, by organizing activities intended to move along the dimension (either or both horizontal and vertical), until they fit the definition. A formal definition of what the authors refer to as CSO Housing: *a group of individuals that acts in association to organise and commission the processes of formation, requirement definition, planning, design, implementation and / or maintaining their own housing project. A CSO housing project is typically characterized by a mutual dependency between the individuals participating.*

By identifying the a wider umbrella form in collective self organised housing, it also overarches particularities and differences from typical grassroots housing movements observed here. Elaborating further CSO Housing by means of focussing on the four key aspects as they have been outlined in section 3.

➤ Values

Collective intention is crucial. Being part of a collective, provides one with many advantages, like large bargaining power, economies of scale and social belonging. For CSO housing, the intention is not further defined, and ranges from rational reasons to build a project as a collective, up to collectively building a community with a wide range of additional common elements. A particular ambition in terms of sustainability or energy efficiency is recommended to be formulated, but not quantified or mandatory.

➤ Behaviours

Depending on the values and drivers shared, behavior of the collectives in terms of organizing themselves, formulate common and individual requirements, arrange support in design, construction and financial way is evident (so in the stage of design and built). To what extent or level there is explicit collective behavior afterwards, in the phase of occupancy is not defined. This is up to the intentions and willingness of the individuals organizing themselves and their common goals.

➤ Community profile

Strict characteristics are not place here either. As long as there is a well-defined decision making process, based on an equal distribution of weight and entitlement, and there is no shared economy (sometimes seen in intentional communities). It is up to the community to aim for a heterogeneity or more homogeneity (ex. for elder people only) form of profile.

#### ➤ Program

In the physical representation of the community ambition, CSO Housing will contain various forms and expressions. Decisive is if it fulfils the mutual dependency (i.e. is ones development and housing construction mutually depending on the continuity of the rest of the community). The question if common facilities are developed, or a common house is taken into account, if there are communal parking facilities etc is up to be decided upon per community again. As mentioned earlier, no explicit choice is made with respect to new construction or retrofitting. Both are targeted to fit the definition of CSO Housing.

By tracing back the origin of some of the existing collaborative housing typologies, and identifying their values and programmes, we created a better understanding of the motivation and logics behind the variety of housing typologies. It furthermore allowed us to define an umbrella form of collective self-organised housing, a model, as significant trend of how the grassroots movement could change the urban planning and housing provision of the future.

### **5.1 Recommendations**

In housing and urban development, we observe a need for adopting a significant different approach of current housing provision. Housing that is initiated and determined from top-down has served its best times in recovering from the WWII. Now it is time to allow the residents themselves to set the scene, the decide how and where to live. Allow for communities to adopt a favourable lifestyle, one that is often aiming for higher sustainability goals and energy efficiency than is observed from commercial developers and builders (SEV, 2010).

Profiling the distinctive dimensions, and correspondingly drawing a large area as grand potential for more sustainable housing with a grassroots initiative; the most important message to stakeholders in the field of housing (ranging from governmental authorities to housing association and building professionals) is to welcome this transition and facilitate the novelty by facilitating and supporting high community intention and strong participation of end users in the development process.

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