DESIGNING MULTIGENERATIONAL DWELLING: A WORKSHOP WITH FOUR FLEMISH ARCHITECTURE FIRMS

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Abstract
Due to social shifts, demographic changes and spatial challenges, housing is at the top of the social agenda in Flanders. Recently, communal housing concepts are being put forward to strive against these general developments. This paper presents research on multigenerational dwelling, as one possible renewed communal housing concept for Flanders. The authors develop a working definition for multigenerational dwelling, which lays the foundation for the main part of the paper: the translation of a theoretical framework into architectural design. Methodologically the authors use the method of research by design to experiment with this new housing concept in a specific, but realistic setting. More specifically, they organized a workshop with four Flemish architecture firms to investigate different modes of sharing space within a multigenerational dwelling. Furthermore they formulate key considerations for further research and the implementation of this renewed way of dwelling in Flanders.

Keywords: multigenerational dwelling; design; modes of sharing; Flanders

INTRODUCTION
This paper builds upon research by design as a method to question the renewal of the Flemish housing stock, which is largely made up of single family, detached dwellings in a suburban residential environment. As in other European countries (Rodriguez & Siret, 2009), this housing model is under pressure, because it faces demographical economical and spatial challenges. In the context of the ongoing debate, communal housing concepts are put forward as one possible solution. (Declerck et al., 2012; Swinnen, 2013; Van Herck & De Meulder, 2009). Yet we argue that recent research on collective housing in Flanders (Lypens, 2012), and most realized projects (Van Herck & De Meulder, 2009) tend to focus on a more communal approach on the level of the neighborhood. The essence of housing, let alone communal housing, is not really being addressed. Furthermore, within the quest for new housing concepts, the history of communal housing in Flanders is totally neglected. Multigenerational dwelling, as we know it from historical family farm housing, remains undetected.

This paper presents a central part of the authors’ research on multigenerational dwelling. After theoretical inquiry throughout the last years, this paper deals with research by design, to ‘test’ multigenerational dwelling as a new housing concept for Flanders. It is a pathway in which design is used to clarify the potentials and conditions for this ‘new’ way of dwelling.

To elucidate the need for designerly research into the issue of multigenerational dwelling we will present some background information on the case of Flanders. Our choice to focus on this part of federal Belgium is legitimized by the fact that both environmental planning and housing policy are Flemish (regional) competences. We will argue, that demographic trends, confronted with the Flemish Housing Policy implicate the need to rethink traditional housing in Flanders. As one possible answer to the current housing need and need for housing we introduce a renewed definition of multigenerational dwelling. This working definition lays the foundation for the main part of the paper: the translation of our theoretical framework into architectural design.
TOWARDS NEW HOUSING CONCEPTS FOR FLANDERS

Rethinking space and the introduction of new housing concepts in response to new lifestyles and demographic trends is becoming extremely important. In the following part we investigate how current demographic trends rub against the Flemish Housing Policy, and question if a communal housing concepts like multigenerational dwelling might be an option to bridge the gap between the current need for housing on the one hand, and special Flemish housing needs on the other hand.

Demographic trends and their implications

Due to social shifts, such as population aging, family dilution and international migration patterns, the Belgian region of Flanders is confronted with a new housing need. By 2030 the number of Flemish households will raise by 300,000 units (Ryckewaert et al., 2011). Almost one-third of them will be single-households (Lodewijckx, 2008), and face increasing affordability problems (Canfyn, 2012). But undeniably, the universal right to housing (United Nations, 1948) cannot only be realized through the provision of a certain amount of dwellings. Also qualitative housing needs are changing. Kesbeke et al. (2012) argue that the changing family composition is the driving force behind this development. E.g., as the average life expectancy increases, there will be more and more seniors left behind in dwellings on the countryside, which are far too big because they were initially built for larger families with children (Myncke & Vandekerckhove, 2007). In Flanders the group of people older than 60 years will grow from 1,1 million in 2008, to 1,58 million in 2030 (Ryckewaert et al. 2011). Moreover, the population of people older than 80 will increase from 289.00 to 472.000 in the same period of time. Apparently, we are dealing with a rapidly growing group of elderly people, with changing requirements concerning their homes and residential environments (Ryckewaert et al. 2011). Moreover, the average number of children in an average household declined, while there is an increasing number of divorced people, singles and childless couples (Lodewijckx, 2008). The traditional nuclear family (two adults and kids) has lost its importance and representative character in present days. Without doubt, one of the major parameters of Flanders in transformation is the singleness and loneliness of its inhabitants (Heylen, 2010). In this paper we question how to cope with this general evolution, knowing that traditionally most Flemish people prefer to live in detached, suburban, privately owned dwellings.

Flemish housing policy

Already in 1960 half of the Belgian households owned their house. Zooming in on Flanders, in 2005 74.4% of all households owned a home, 5.6% lived in social rental housing, 18.5% lived on the private rental market and 1.5% lived for free (Winter & De Decker, 2009). The spatial consequence of this way of housing in Flanders can best be described as ‘sprawl’ or ‘wild housing’ (De Decker, 2011). Following De Decker (2008) we need to elaborate three structuring tracks in order to understand the development of the Belgian ‘sprawl/home ownership’ model. These may be seen as three sustainable policy lines. First, urbanization was avoided in the political fear of social unrest and rebellion in cities. Second, home ownership was stimulated to counter the twin-development of industrialization-urbanization. Not only liberal policies sustained the model; the initiatives of the Catholic Church also reinforced its foundation (De Decker, 2008). And third, De Decker argues, ‘the very absence of a spatial planning policy facilitates sprawl’ (2008: 157). Until 1962 Belgium had no spatial planning policy. De facto this meant that the post-war private house construction boom occurred almost without any spatial planning.

The combination of these three policy lines led to a continuous evenly spread urban sprawl covering the whole of the Flemish territory. Hoping to counter this trend, the 1997 ‘Ruimtelijk Structuurplan Vlaanderen’ (first comprehensive spatial plan for Flanders) formulated its preference for ‘high quality infill development’ or ‘de-concentrated clustering’ (Declerck et al.,
2012). However, more than ten years on, it has become abundantly clear that the hoped-for break with current trends has not sufficiently happened. Current mechanisms reached their limits and policy makers need to develop future oriented solutions. According to Declerck et al. (2012), scarcity of land, energy efficiency, mobility and especially the need for affordable housing justify this position.

Cohabitation: multigenerational dwelling

Following van de Weijer & Bervoets (2012) the existing housing market in Flanders is quite inert. By consequence changing housing needs need to be captured within the existing housing stock. In practice this is leading to sticking situations. Indeed, today our historically developed residential landscape occurs as a sum of individualistic housing needs (De Decker, 2008). Housing concepts used here are outdated and do no longer suit our changing Flemish society (Declerck et al. 2012). In this regard, housing is at the top of the social agenda in Flanders, and communal housing concepts are introduced as one opportunity to strive against these general developments (Swinnen, 2013; Van Herck & De Meulder, 2009).

Based on three focus sessions with stakeholders involved in the issue of (communal) housing in Flanders (e.g. policymakers, architects, inhabitants) De Ridder (2013) calls for more experimental research. Partially this is done under supervision of Flemish Government Architect Swinnen. In 2013 he started to work on new models of collective housing, which will result in four pilot projects.

Either way, this work by Swinnen, other research on collective housing in Flanders (Lyppens, 2012), and most realized projects (Van Herck & De Meulder, 2009) tend to focus on a more communal approach on the level of the neighborhood. Communal housing under one roof is not really addressed. Furthermore, within the search for new housing concepts, the effective history (Wirkungsgeschichte) of communal housing in Flanders is totally neglected (De Bleeckere & Gerards, 2013). Multigenerational dwelling, as we know it from historical family farm housing remains unnoticed. Yet we learn from international experience that multigenerational housing is ‘staging a comeback’ (Taylor et al., 2010: 4). Whether with family ties between the inhabitants, or without any family ties, several social, spatial, ecological and economic advantages can be booked through living in a multigenerational dwelling. Perhaps the most valuable advantage of multigenerational housing is the fact that it addresses care (especially for elderly) as an increasing social and economic issue.

On the basis of literature research (mainly McCamant & Durrett, 1994), and the focus sessions by De Ridder, we developed a theoretical framework and a working definition for a renewed way of multigenerational dwelling in Flanders. This definition contains seven essential elements: (1) Multigenerational dwelling arises during a convivial process, (2) including at least three different adult generations, and (3) in creative dialogue with a designer. (4) All inhabitants choose for cohabitation in one house. (5) To make the multigenerational dwelling inhabitable for all generations, Universal Design is integrated at least on one level of the house. (6) The multigenerational dwelling is managed by the residents. (7) And finally, the inhabitants have no shared economy, which means that the community is not a source of income for its members.

DESIGN EXPERIMENTS

From an academic perspective we have to question if and how design can play a meaningful part in the development of new housing concepts. From our point of view, design can be put forward as a pragmatic methodology to test and analyze especially the spatial conditions for cohabitation in a multigenerational dwelling. Furthermore, it enables us to formulate important considerations for further research and the implementation of multigenerational dwelling in Flanders.
Design in an academic context

According to Cross (2006), science and design traditionally have a number of methodological contrasts. For example, science is analytic and design is constructive. Yet, Friedman (2008) states, that design can be used as a scientific research method that generates innovative and valuable knowledge. In this case the methodology is called research by design (Friedman, 2008). Following Cross (2006), it has become clear that designing is no normal problem solving. Designing involves a ‘co-evolution’ of ‘finding’ appropriate problems, as well as ‘solving’ them. In order to achieve change, design thinking has to take a critical stance towards the problem as presented. In this sense it has an added value for scientific research. Within the ongoing debate on ‘research by design’, ‘research in design’ and ‘research for design’, we acknowledge that design, especially in an academic environment, can address practical issues that are rooted in society, and generate design ideas to come to practical solutions in an effective way. Additionally, we recognize the fact that design can be used to generate a new interpretation of existing problems and reframe the issues at stake (van de Weijer, Van Cleempoel & Heynen, 2012).

Objects and things

One advantage of designing as a research methodology is the fact that its outcome is not only an object, but also a thing (Binder et al., 2011). Of course it can be seen as a device or artefact, ‘the embodiment of the object of design’, providing users with access to certain functions (in this case inhabiting), but the outcome is also a thing, ready for unexpected use, and opening up new ways of thinking and behaving.

From our point of view, the object of design can be used in an analytical way, to test theoretical research findings in a realistic environment. E.g. a theoretical description of multigenerational dwelling can be transformed into an architectural object. This object of design can be measured and analyzed. Whether a project is realized or not does not really matter. Design is able to densify information in comprehensible scenarios, models and pictures. It helps to visualize and analyze abstract ideas in a realistic environment. In this regard it functions as a feedback loop, which supports more theoretical research.

Just as valuable as the artificial outcome of a design process is its outcome as a thing. According to Binder et al. (2011), the etymology of the English word ‘thing’ reveals a journey from meaning an assembly, which was decided on beforehand to take place at a certain time and at a certain place to deal with certain ‘matters of concern’ to the community, to meaning nothing more than an object. Binder et al. plead to revisit and reverse the etymological history of things. Design things align human and nonhuman resources to move the object of design forward, to support the emergence, translation, and performance of this object (Binder et al., 2011). To use the words of Janssens (2012), designing things has a projective dimension, which helps to make sense of a certain situation. Accordingly, three characteristics of designing things appear on stage (Geldof & Janssens, 2007). First, design happens de facto with an outlook on the future. Second, design is focused on alternatives, which are prospective. They formulate possibilities that go beyond general accepted knowledge and expectations. And third, Geldof and Janssens argue, design stimulates imaginative abilities. Here, pragmatism penetrates both the design of objects and things. Imagination, central to pragmatic thinker Dewey’s work, expands our focus beyond a confused and dizzying present so that we can reflect and act in ways that may eventually bring about more desirable conditions (Fesmire, 2003).

WORKSHOP ‘MULTIGENERATIONAL DWELLING IN TERRACED HOUSING’

In what follows we will present a workshop we carried out in the summer of 2014. It represents a part of our designerly research into the architectural translation of the above given definition of multigenerational dwelling into a spatial design. Three questions, of which the first two focus on the object of design and the last one on its outcome as a thing, are at the heart of
our study. First we want to investigate if multigenerational dwelling is possible within a typical Flemish terraced house. Our choice to focus on terraced housing is legitimized by its representative character within the Flemish housing stock (especially within cities or towns) (ADSEI, 2013), and the fact that it has been put forward as more sustainable and space saving than detached housing (Brennert & Geister, 2004; Dubois, 1996). Second, we want to look at how designers organize private and communal use of the dwelling. Third, we want to find out which constituents drive the transformation of a traditional terraced house into a multigenerational dwelling. In our opinion it is necessary to construct a new vocabulary. In fact, what is sought, is a (new) conceptual basis for thinking about (communal) housing.

The brief

To answer these questions we developed a workshop with Flemish architecture firms Stramien, a2o, lava and BURO II & ARCHI+I. During a first meeting we gave some background information on current developments in Flanders and the need to develop new housing concepts. Additionally we presented our renewed definition of multigenerational dwelling, and gave them an existing terraced house in the city center of Hasselt, a Flemish city, and the capital of the Province Limburg (Figure 1). This building of approximately 200m², contains three habitable levels, cellar, attic and a garden. Each designer was questioned to analyze this building and its possibilities to be transformed into a multigenerational dwelling. The assignment was done individually during a period of one month, and without any interaction with the researchers involved.

Figure 1. (Left) Façade of existing terraced house in Hasselt; (Right) Section (Source: Authors)

To guarantee that the workshop would be finished within one month, we decided to work with five fictive inhabitants instead of real people. During the brief, the clients and future inhabitants (a young mother with a child, a middle-aged couple and an elderly man) were precisely described. Based on age, job and hobby’s, the designers got the chance to design a dwelling which suits to individual needs. Additionally, we requested to investigate if a realistic enlargement of these three households would be possible within the same building.

As a final result, and starting point for a final and joint focusses session, we asked each designer to present three pages (DIN A3), including at least the spatial organization of private and collective use of space within their design of a multigenerational dwelling.

Outcomes of the individual design process

Stramiens’ design (Figure 2) is based on the concept of a street as a meeting point for all
inhabitants. This street crosses the terraced house and connects a night zone at the front side of the street with a day zone at the back of the building. To circulate from day- to night zone, each resident has to pass the communal street, which mainly consist of a communal kitchen.

![Figure 2. Section of the multigenerational dwelling by Stramien (Source: Authors)](image)

In their proposal BURO II & ARCHI+I clearly starts from a different angle. Privacy is of primary importance. Main floor and circulation zones are extended and used as communal areas. Similar to a traditional apartment, each level is home to one household, and can function independently.

Architecture firm Lava designed two different options. Within the first one, the dwelling is organized vertically. As a connector between all levels, the designers introduce a vertical ‘slice’, including all communal functions. To circulate from one private room to another, the inhabitants have to pass the communal zone. For example, the middle-aged couple has a private dining room on the ground level, a living room on the first level and a sleeping room on level 2. This means, that they have to use the communal space as a passage between their own private spaces. The second option is organized horizontally. Each household inhabits one level of the multigenerational dwelling. Circulation between these levels is realize outside the building. Garden, outdoor staircases and balconies serve as communal connector between all households.

a2o finds its inspiration for the design of a multigenerational dwelling in the historical concept to split up the circulation into a staircase for the master and another one for the servant. West European examples include some 19th century buildings by Horta in Brussels. This was done to enable the inhabitants to circulate to their private spaces, without necessarily having to meet one another. Each households inhabits one level of the multigenerational dwelling. Dining is done communally on the ground floor.

**Processing and analysis**

First of all, our workshop points out that the substance of the given terraced house has to be adapted to enable multigenerational dwelling. Nevertheless, no designer preferred new construction of the entire building. All designers enlarged the surface of the building by using the attic and adding extra space at the back of the building. Stramien even speaks about ‘heavy interventions’. Especially when it comes to the ground floor, all designers enlarged the surface. In
view of the fact that an elevator is too expensive for this kind of small-scale building, all architects designed accessible private zones for the elderly man of the ground floor. For the same reason, most important parts of the communal space (kitchen and dining room) had to be designed on this level as well.

Also the typical doorstep, in this case three treads, turns out to be a challenge. To guarantee long-term accessibility, lava and BURO II & ARCHI+I suggest to add an informal entrance at the back of the lot. Before adding a ramp within the building, they argue that an entrance from the back might be a more affordable option.

Table 1: Several modes of sharing space (Source: Authors)

<table>
<thead>
<tr>
<th>Collective use of space</th>
<th>Stramien</th>
<th>a2o</th>
<th>Lava 1</th>
<th>Lava 2</th>
<th>BURO II</th>
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</thead>
<tbody>
<tr>
<td>Shared living space</td>
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<td></td>
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<tr>
<td>kitchen</td>
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<td>dining room</td>
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<td>living room</td>
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<td>Shared entrance inside</td>
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<td>Shared outside space</td>
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<td>Shared service space</td>
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| Private use of space  |         |     |        |        |         |
| Private living space |         |     |        |        |         |
| bedroom              |         |     |        |        |         |
| bathroom             |         |     |        |        |         |
| kitchen              |         |     |        |        |         |
| dining room           |         |     |        |        |         |
| living room           |         |     |        |        |         |
| Private outside space|         |     |        |        |         |

Despite the fact that all designers enlarged the surface of the building, private and collective use of space remains a challenge within the design of a multigenerational dwelling (Table 1). BURO II & ARCHI+I takes privacy as the starting point for their design. By consequence, each household receives a small, but fully equipped apartment. Cooking and eating together with all inhabitants is an option, but never forced. Concerning the mode of sharing, lava’s horizontal design is comparable. The vertical version however is different. Again, each household receives all space to function independently, but the various functions are spread around the whole house. In this sense, interaction between all inhabitants is imposed, but joint activities as cooking are never obliged. The spatial design of the multigenerational dwelling becomes a trigger for social interaction, without a total loss of privacy for the inhabitants. a2o goes a step further by their decision to design a communal kitchen and no private ones. Stramien does the same, and argues that joint activities (e.g. cooking and eating) are central to communal housing concepts, such as multigenerational dwelling.

According to lava, the quality of multigenerational dwelling in general and the shared use of interior and exterior space more specifically, even improves when it is designed on the level of the neighborhood. For example, coupling two terraced houses, creates the opportunity to combine the vertical circulation. Additionally, service space (garage, technical space) and outdoor space (garden, balcony) can easily be used and organized as ‘soft’ ways of cohabitation for more
than three households. During our focus session, Stramien argued, that lavas’ approach on the level of the neighborhood might be the starting point and generator for additional communal activities. In literature (McCamant & Durret, 1994) this is referred to as ‘retrofit cohousing’. Retrofit cohousing involves making use of existing buildings, creating new, cohousing patterns of a shared life together. There are examples of retrofit cohousing which have been created in industrial buildings, urban and suburban neighborhoods, and farms.

Figure 3: Multigenerational dwelling on the level of the neighborhood (Source: Authors)

Summarized, several modes of sharing are possible within terraced housing (Table 1). Naturally it is not our ambition to find the right balance between communal and private space, but to demonstrate that several options are possible within a typical terraced house in Flanders. Still, our focus session at the end of the workshop showed out that privacy remains one of the most important factors. Especially Stramien argued that multigenerational dwelling is not suitable for any kind of household, and considered their design as very specific for the predefined clients and users. Knowing that privacy not only differs between individuals, but that it also shifts from day to day, most designers introduced a certain spatial flexibility within their buildings. For example, a2o designed separate staircases and Stramien planned mobile walls to regulate the privacy of individual inhabitants of the dwelling.

In fact we found out that several ‘constituents’ regulate privacy and communal living in one and the same building. According to Binder et al. ‘constituents of the object of design are in fact a primary source of knowledge about the way the final building took form’ (Binder et al., 2011: 60). These constituents can help future designers during the starting phase of designing communal housing project in general, and multigenerational dwellings more specifically. However, discussing possible constituents for the design of multigenerational dwellings with the designers involved in the workshop turned out to be difficult. Hence, finding the primary generators (Cross, 2006) within each design approach is one thing, finding joint constituents is another. Perhaps, our vocabulary is the biggest obstacle while weaving ‘the web of constituents’. Yet, we are working on something beyond our common consciousness. In fact we have to change our consciousness. According to Harvey (2010), discussing possible futures can be done through the development of a very own language or poetry. Even though he talks about urbanization, it becomes clear that future multigenerational dwelling will only become possible if it is prepared and substantiated with a new vocabulary.
CONCLUSION

Several conclusions could be drawn from this investigation. First, it makes a case for multigenerational housing in Flanders and it shows that this ‘new’ housing concept could just become a reality. On various levels, multigenerational housing is a realistic option. For traditional terraced housing in Flanders, it is an interesting way to cope with contemporary issues such as sustainability, adaptive reuse of existing fabric, and even conservation. Nevertheless, housing policy and spatial planning in Flanders must change in order to stimulate these new ways of cohabitation, instead of being obstacles before, during and after the design process.

Second, by introducing research by design, aspects of multigenerational housing were tested in a real context, i.e. an existing house. New knowledge was generated through research by design. It shows that different modes of sharing are possible within such a house. Design turned out to be a useful method to transcend traditional research. During the workshop, interaction between researchers and designers generated an overview of specific architectural approaches to realize different modes of sharing space. Through the process of designing a multigenerational dwelling, we found interesting approaches which were used as a conceptual basis to find the right balance between privacy and community. In this sense, design practice proves to be essential to making a contribution to the formulation of theory which is inherently architectural. For example, Stramien’s privacy gradation through separating the dwelling into a day and a night zone, Lava’s vertical ‘slice’, connecting private rooms throughout the building, and a2o’s dual circulation strategy, would have stayed out of reach in more traditional research.

Third, in order to refine for example the balance between privacy and community that is so important in communal housing, some efforts were undertaken to find a common language to discuss issues of privacy and community. On this point specifically, more research is needed. And maybe, the right balance can only be found in a participatory process (Sanoff, 2008), with real clients and final users of the multigenerational dwelling. Additionally, more research is needed on what the exact constituents of multigenerational dwelling are. It has become apparent that practicing architects work within a certain design vocabulary they once learned themselves. Subsequently, the necessity arises to develop a new vocabulary which suits better to the letter and spirit of new housing concepts, such as multigenerational dwelling. For this purpose we are in need of new theoretical research. Eventually, the dialogue between architects and clients will gain from a common language or vocabulary to define for example the right balance of privacy and community.

Fourth, research by design might well be a means to test intentions of a certain government in a real, empirical situation. The difference between objects and things, as explained above, could be very instrumental to this. The traditional terraced house, while being a subject of this study, is not just an object anymore, but also a thing. The other way around, complex issues, which gather many actors around them (such as multigenerational housing) could be made transparent through research by design, that is, by focusing on a particular case. So objects become things, and things can be made comprehensible for architects and clients by means of entities that look like simple objects at first. Knowledge is being exchanged between the singular and the more generic (and sometimes idealistic). New and sometimes very unexpected knowledge concerning the social aspects of housing, existing houses, the way houses can function within neighborhoods, and so on, is being generated in between objects and things. Thus, the specific design knowledge architects have is able to inform the higher levels of policy making, and vice versa (De Ridder & Gerards, 2014). Research by design acts as a mediator, which actively generates knowledge, and is therefore a very rewarding method.

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