CHAPTER 16

ENVIRONMENTAL DESIGN FOR AN AGEING POPULATION

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Introduction

Population ageing has been a focus of research since the 1960s (Michael et al. 2006), and it has become a domain of international discussions, debates and research throughout a myriad of disciplines including housing, urban planning and real estate (Buffel and Phillipson 2016, van Bronswijk 2015, Kort 2017). Kazak et al. (2017) described how the ageing population has a profound impact on the real estate market, which is transforming in terms of availability of retirement accommodation for older people including accessibility, adaptability, and the availability of single-floor dwellings. Older people usually have a strong connection with the environment they understand and know well (van Hoof et al. 2016), enabling them to spend the latter years of their life in a familiar setting, which, in turn, influences their self-confidence, independence and the potential to successfully age in place. Older people are encouraged to continue living in their homes a familiar environment to them, instead of moving to an institutional care facility, and this is referred to as "ageing-in-place" (van Hoof 2010). This can be supported by creating a functional and spatial structure of cities that are friendly to older people (van Hoof et al. 2018, van Hoof and Kazak 2018).

In the domain of environmental design, a series of home modifications can be identified. The most frequently encountered measures in and around the home are adaptations to improve the

accessibility of the home (i.e., removal of barriers such as thresholds, installation of stair lifts in multi-storey homes, and the replacement of bath tubs by walk-in showers,). Separately from these expensive measures and adaptations, simple handgrips can improve the accessibility, safety and mobility of older people (van Hoof et al. 2010, van Hoof et al. 2013). A further concern that should be considered within the living environment is the lack of storage space for wheeled walkers and mobility scooters (including a place to charge batteries) whilst living in an apartment block with limited space to manoeuvre on corridors (Kazak et al. 2017).

However, with increasing demands for care, it is not always possible to remain living in one's own home and moving into a residential or nursing facility is the only remaining option; whereby, specialist and/or nursing care can be accessed and provided in these living environments (van Hoof et al. 2009). Policy principles within long-term care aim to provide a home from home environment for their residents (Moise et al. 2004).

Several specialised housing models have been developed in order to facilitate this person-centred care approach, as more traditional institutional settings often do not match with the new holistic and therapeutic goals (Verbeek 2017). Radical alterations have been made in comparison with traditional nursing homes, implementing changes in the organisational, physical and social environment of settings (Verbeek et al. 2009, van Hoof et al. 2009). For example, smaller groups of older people (six to seven persons) form a household, with nursing staff having integrated tasks, including assistance with activities of daily living, preparing meals, organising activities and doing household chores together with residents. Daily life is mainly determined by residents and nursing staff, and the physical environment resembles an archetypal house. With this distinct increase and popular notion of the role real estate plays in ageing-in-place and living well in old age, there is also a shifting focus regarding participation, activation, and helping each other.

Home modifications and the home environment itself have a profound influence on the care provided and received at home. In short, the fewer barriers there are at home, the easier and less onerous responsibilities placed on the family carer(s) (Duijnstee 1992). Family carers themselves need such environmental interventions that support care, and a sense of community and belonging. Enabling one to age-in-place and to successfully age requires more than a simple occupational therapeutic approach of environmental interventions. It requires innovative new housing encompassing suitable technology arrangements that can facilitate and enable older adults to live comfortably into old age, preferably with others and offer family members (i.e., children, grandchildren and spouse).

Furthermore, interconnecting technology into such environments can offer family members the option and opportunity to monitor their loved one remotely whilst all actors know there are additional safety barriers in place.

This chapter discusses and provides innovative examples from a Dutch social housing association and their practices, which illustrates a new approach to environmental design that focuses more on building new communities in conjunction with the building itself, as opposed to the occupational therapeutic approaches and environmental support. First, we take a closer look at why we care for each other, which is the basis of the participation society, in which we must look after people who are near to us. This should ideally be at the basis of new housing arrangements -in which people are stimulated to meet, engage, survey and care- that social housing associations are developing, retrofitting and developing.

The meaning of environmental design for care recipients and family carers

For several decades, efficiency and effectiveness seem to have become more important than solidarity and social security in most Western-European states. These changes have gone hand in hand with an increasing focus on individual responsibility for the well-being of oneself and others, and with less governmental interference. This increased responsibility of citizens and the withdrawal of government interference results in consequences. The first is that an *increasing* number of people who are *increasingly* expected to take responsibility for their own lives as citizens in society. This expectation and notion are particularly assumed when a person is ill, or they have a physical, cognitive or mental disability.

Society has this notion of expectation, and people who may have physical, cognitive or mental disabilities are supposed to act as full members of society and live a full and complete life. One example is the closure of large institutional facilities, for instance, for people with a cognitive or mental disability, it is expected that they live in a regular house situated within the community. However, this requires a process of *socialisation* and integration of ‘unhealthy’ people into society. The second dimension is the so-called *communalisation* of health care. This construct refers to the increasing responsibility of citizens to look after fellow members of society, who are ill or have limitations, and to provide care to them. There are two questions resulting from this: (1) how can communalisation of health care be performed properly, both with respect

to care recipients, family carers and professionals, and (2), how does environmental design fit into this?

The primary question in this domain is why *do* we care, and why *should* we care for each other? This is a philosophical question and it can be answered with the help of the views of two philosophers: Martin Buber and Paul Ricoeur, as has been described by Beneken genaamd Kolmer (2007).

The philosopher Martin Buber (Buber 1957,1958,1966) pointed to the fact that long before the small child can say '*I*' and can reflect on things, the child lives a relationship between him/herself and the other. The child has an innate desire and inclination to enter relationships with other people; first with the mother and then with other people. Only within and through such relationships the child can perceive the world in a meaningful way.

Buber distinguishes between *I-Thou* (you) relations and *I-It* relations. *I-It* designates the subject-object relation, in which an active subject controls and utilises a passive object. *I-Thou* designates the subject-subject relation, which is a relation of mutuality and reciprocity. The *I* in the *I-It* relation is a lonely observer and manipulator, whereas the *I* in the *I-Thou* relation exists only within the context of the relationship. Human beings need *I-It* relations to have grip on the world, to survive. In addition, they need *I-Thou* relations to live a meaningful life, to remain human. Buber's philosophy implies that people *do* care for each other out of an inborn desire to live in relationships with other people, and that people *should* care for each other to be really human and live a meaningful life.

Ricoeur (1992) distinguished between the *idem-identity* and the *ipse-identity*. The idem-identity is a personal identity, the unity of someone's personal traits and characteristics. The ipse-identity is more fluent and active; it reaches out towards the other and takes responsibility, it constitutes my moral identity. Just like Buber, Ricoeur sees the relation between I and the other as symmetrical. Initially, the relation is asymmetrical because I cannot experience the other as immediately as I can experience myself, and because the initiative to take responsibility for the other always starts at one side. But this asymmetry can turn into symmetry when the initiative of the other is acknowledged and when it is understood that I am both different from the other *and* resemble the other. The symmetrical relation stems from acknowledging that the other is both vulnerable and strong: both different from me and just like me. Ricoeur (1995) asserted that we, human beings, give to each other because the world and our existence have been given to us. Ricoeur distinguished

between the adage *do ut des* – I give so that you will give- and the adage *do quia mihi datum est* –I give because there has been given to me.

In the first adage giving occurs with the (sole) intention to receive something in return. It is a selfish kind of giving, in contrast to the giving in the second adage, which Ricoeur prefers. Both types of giving imply some kind of reciprocity: giving requires giving in return. This reciprocity, according to Ricoeur, corrects unique and extreme forms of commitment such as those taken up by Gandhi or Martin Luther King:

"*love your enemies, do good to those who hate you, et cetera*".

Ricoeur considers these forms of commitment to be undesirable because they presuppose a maxim of action that would set up non-equivalence as a general rule. Ricoeur thinks that we *do* care for each other because caring is a way to do something in return. And he thinks we *should* care for each other because this enables us to develop a moral identity.

This brief introduction to philosophical anthropology illustrates that people not only have a moral or existential duty of care for each other for the sake of that other, but also for the sake of themselves. We only can be true human beings with a meaningful life if we care for each other. But where does this responsibility end? Care responsibility ends where it starts to cause the reverse of what this very responsibility is intended to achieve. When our care responsibility becomes a burden, and it threatens the symmetrical relationships we have with others, we have transgressed the boundaries of the caring responsibility and role. Therefore, how can environmental design contribute to maintain the notion of *I-Thou* relations between care recipients and family carers? What is the influence of environmental design on our meaningful lives?

In the proceeding sections, examples of housing models are provided that aim to build new communities in conjunction with the building itself, thereby supporting care recipients and their carers in participating within society and keeping a meaningful life, despite health and social care needs. Furthermore, we conclude with suggestions and recommendations for future work in this domain.

The role of social housing associations

The Netherlands has a long and historical tradition of social housing, encapsulating social housing associations which provide housing to people with limited financial resources. There are approximately 360 social housing associations in the Netherlands, which own and maintain approximately 2.4 million housing units (Aedes 2018). Moreover, a niche

in the domain of social housing is formed by real estate encompassing residential houses and nursing care facilities for older people and people who require a high demand for care (van Hoof et al. 2009). The Dutch Government aims to enable people to live at home for as long as possible and to reduce the number of institutional beds. The Dutch Government has several rationales for this, which include the increase of financial provision associated to professional home care. This includes the maintenance of one's autonomy, independence, a sense of identity, and quality of life, which are all reasons for ageing-in-place (van Hoof 2010).

This implies that Dutch social housing associations, which culminate in a large number of institutional facilities encompassed in their portfolios, are now facing a growing risk of becoming vacant real estate, resulting in financial loss. Evidenced by the United Nations (United Nations 2017) estimated ageing populations are set to increase exponentially and there is the possibility that these vacant buildings may be able to play an integral role in the existing and future housing needs and requirements of older people. Thus, this outdated real estate may offer greater opportunities for existing and future ageing populations resulting in the real estate been given a new lease of life, encapsulating new initiatives which are needed to re-use these buildings.

The case of *Habion*: aims and philosophy

The Dutch social housing association '*Habion*' is proactively working to rejuvenate existing buildings and their communities, not through closure or demolition, but by giving these buildings a second lease of life (Boerenfijn et al. 2018, van Hoof and Boerenfijn 2018). *Habion* specialises in housing for older people in need of care and support services. Currently, there are only a handful of these specialised housing associations, and *Habion* is categorised as the second largest housing association in the Netherlands, which has a total of 4420 housing units in aged-care facilities and nursing homes, 5717 dwellings for ageing in place, and a further 725 units which include: shops, garages and parking lots (Habion 2018). Whilst the average age of the residents is 80 years old.

Habion's mission is to provide a living experience, and not just accommodation and shelter. This experience is not solely in name but also to provide comfort, a sense of purpose, provision of meaningful activities, while also taking into account the aspects of sustainability, safety and security (Habion 2018).

Habion aims to ensure the 'good life' for their older residents, even though support and care may or is required and more so when care is a

necessity. In addition to real estate, *Habion* also invests in a positive atmosphere, ensuring social interaction, accessibility and comfort for all residents.

As one ages, the needs and requirements of one's health changes and *Habion* actively monitors these changing needs to ensure the residents' living experience is not only met but is adapted where necessary. Thus, if the needs of a resident change over a period of time, *Habion* aims to maintain the value, flexibility and atmosphere of the living environment which the resident has come accustomed to. This is regardless of the changes which may have occurred over time due to the residents' health and changing care needs (Habion 2018).

The ethos of *Habion* is to ensure, through teamwork and communication with healthcare local providers (i.e., domestic care, nursing home care, care for people with a mental disability), a continuum of housing and health/home care can be met and delivered to the residents (Boerenfijn et al. 2018).

A unique feature of *Habion's* strategy is their aims and ability to focus across the different levels of the Maslow hierarchy of needs (Maslow 1943). The majority of Dutch social housing associations generally focus on the two lower levels of the pyramid, while having an ambition to also cover the third level (Figure 1). However, *Habion* aims to be more ambitious than other Dutch housing associations, which entails covering all the levels of the pyramid. *Habion's* motivation to cover all levels of the pyramid will ensure all older residents are supported to live a full life in a comfortable environment and where one feels at home (van Hoof et al. 2016, Rijnaard et al. 2016, Eijkelenboom et al. 2017). In addition to this, by aiming to fulfil these ambitious plans, *Habion* aims to ensure their residents can live an autonomous life coupled with the physical space within the respective building(s) there is the opportunity to use the communal meeting space to facilitate spontaneous meetings, activities and gatherings. These meeting spaces are essential elements in being able to live a meaningful life (van der Wal 2018).

Figure 1: Maslow's hierarchy of needs, represented as a pyramid, adjusted for the mission statement of Habion (Habion 2018).

The basis of the Maslow pyramid should be covered, namely the first two bottom levels, which describe a dwelling of good quality according to the residents, which is clean and well-maintained, which offers an adequate service level and provides residents with a sense of safety and security. This is the basis for further expansion towards the top of the pyramid. *Habion* aims to achieve this by focusing on (future) residents, as well as the local communities. The latter is undertaken via the local community been invited into the building, which means that frail people can still be part of the society, within the environment and have their views and opinions considered (van Hoof and Boerenfijn 2018).

Taking into account these aims and objectives, *Habion* believes a home is more than just a house and believes in the personal experience and the emotions of all its residents. However, this type of environment does not occur over night but gradually overtime, developed by the person or people who deem independence, security and their self-identity, choice and memories essential (Molony 2010, Rijnaard et al. 2016, van Hoof et al. 2016, Felix et al. 2015, van der Wal, 2018). The development of a sense of home is associated to the concept of place attachment theory. Place attachment is a multi-dimensional phenomenon that describes the emotional bond between people and place, which is influenced by one's personal experiences (Scannell and Gifford 2010). By inviting the local community to join the residents whether they are frail or not, builds upon the concept of place attachment theory. Ensuring there is a bond between

all interested parties and making an environment that all would want to be a part of.

Transforming existing real estate: housing and additional care services

In 2017, *Habion* witnessed several transformation projects relating to the former aged care facilities which have been transformed into new living communities for older and younger residents (Habion 2018, van Hoof and Boerenfijn 2018). Within these six transformation environments, the existing amenities for the provision of healthcare are still conducted but the quality of housing, community ethos and communal living aim to prevail over an institutional model of care.

Therefore, this means that old real estate is re-used and retrofitted, which includes the installation of new building services throughout the premises. This undertaking forms part of the sustainability strategy which is referred to within the associations' mission statement (Habion 2018, van Hoof and Boerenfijn 2018).

Across the Dutch care sector, there is an average of 30-40 years functional life expectancy for all buildings, and once a building has reached it is usually deemed to be unfit and disposed of resulting in the building been demolished. Habion expects the transformation of another four aged-care facilities in 2018. In the world of real estate, flexibility in terms of square metres and adaptability of buildings is a key priority. This in turn, leads to a continuous cycle of retrofitting. But the process of retrofitting is costly coupled with additional issues including increased hindrance and stress (i.e., emotional, physical or mental) to the respective residents; who usually do not request a building to be retrofitted.

Thus, taking this into account, the challenge to ensure the living environment is functional, flexible yet safe, is paramount. Therefore, the resident should have the opportunity and the ability to live and use the same living space as a younger resident, enabling positive and successful ageing-in-place without the use of care services. Consequently, a resident who may require nursing home care provision and a person who requires domestic care only, residents should have the opportunity to access all options to them, which in turn will enable all residents to live in the same living environment/facility as opposed to living in different housing associations (van Hoof and Boerenfijn 2018).

Subsequently, all residents should receive the same level of care, regardless of the internal layout and designs of their respective living space. This should also include a reduction of retrofitting and redesigning

of residents' space. Taking this notion into account, enables the physical space of social housing associations to become more robust which in turn lead to a reduction in dependency on the national government and respective funding schemes, regarding healthcare real estate. However, future development should consider a flexible design which allows for flexibility within a building with affordable rents, resulting in an environment where residents can live knowing that they will be able to receive support, assistance and care when in time.

Furthermore, the respective building should also accommodate the increasing need for assistance and care (including nursing home care). Enabling those individuals who choose to live independently within the building and who wish to positively and successfully age-in-place. Therefore, the need for retrofitting, or, without the need to move to another premise is reduced. This in turn enables individuals to continue living within a familiar environment. This in turn, offers the opportunity to integrate a myriad of technologies into the building both in the individual and communal space to facilitate residents to stay connected. Staying connected could relate to using platforms such as Skype or WhatsApp to connect in real time with their friends, and family members. While social media platforms offer users and prospective residents the opportunity to share their activities and keep up to date with the activities of their children, grandchildren, networks and community groups. Integrating technology in the retrofitting phase add a new dimension, in particular when aligning to the upper tiers of Maslow's hierarchy.

The integration of accessible Internet can offer the residents (by choice) the opportunity to have virtual/personal assistants (i.e., Echo, Alexa, Google Home) placed around their individual living space. These devices can offer greater opportunities within the home space through voice activation. A virtual/personal assistant can be connected to the lights within the living space, which in turn through voice command (by the resident), can be switched on before getting out of bed. This adds one's safety, reducing the risk of falling via hazards such as rugs or shoes. In addition, voice commands can enable the resident to listen to local and national radio station(s), or the resident can ask for specific information relating to the weather (Marston and Samuels 2019).

Conversely, the transformation of existing real estate means, first and foremost, is the notion of change in the use of the building and its ownership, instead of a costly investment in the structure of the building itself. The basis for these transformations is the concept of living, not the provision of healthcare, keeping in mind it is associated to living with or without the use of care and support services. Thus, implying that there

would be a deduction in the risks associated by healthcare organisations, who choose to rent real estate from *Habion*, the possibility of this risk is continual when there is vacant real estate and more so after a resident has moved out. When someone's living condition changes over time, they can stay living in their current home, and only the rental contract is changed to accommodate for a change in care and support services.

Second Youth Experiments

In 2010 there were approximately 158,000 residential care and nursing home facilities across the Netherlands, while the total number of people aged 80 years and over was 650,000 and is rapidly increasing (Aedes-Actiz Kenniscentrum Wonen-Zorg 2018). In 2013, the consultancy bureau *Berenschot* had forecast the demolition of approximately 800 residential care facilities in the Netherlands (Castelijns et al. 2013).

Yet, in 2017 there were approximately 100,000 residential care and nursing home facilities left for over 700,000 Dutch people above the age of 80 years. Therefore, based on *Habion*'s mission statement, ethos and ambitions, demolition was neither a realistic nor a viable option. The vacant real estate had to be reinvested to accommodate for the increasing number of older people in search for a place to live (van Hoof and Boerenfijn 2018).

As society ages, there becomes the need for a higher demand of suitable and appropriate real estate to ensure older adults have the ability, opportunity and choice to age-in-place (van Hoof 2010, Kazak et al. 2017). Moreover, demolition is not a sustainable option, because it leads to a waste of materials, a loss of affordable housing and a loss of capital. Furthermore, for those residents or people who wish to maintain living in the community that they have known for many years, the concept of moving outside of the area can have a negative affect on them.

In collaboration with (future) residents, partners in healthcare, associations and organisations focusing on sheltered employment, and the local community, *Habion* develops and redevelops its real estate portfolio which has aimed to ascertain and understand the needs and requirements of older adults. This has led to older people wishing to continue living independently for as long as possible in their own local communities. This means that existing residential care facilities need to identify an alternative approach.

Currently, *Habion* is involved in several transformation projects with various local partner organisations. Across each location there are separate and individual opportunities and differences in culture. Therefore, it is

impossible to provide a unique blueprint for understanding and implementing this transformation process. Every transformation project has to start from the beginning, although experiences from previous transformation projects are considered as there are some reoccurring themes that are shared by residents. Such transformation processes are rather iterative, and that is why *Habion* has tried to turn the experiences of the past five years into a methodology coined Røring (based on the Dutch word *reuring*, which means bustle, commotion or buzz) (Maas 2016, 2017, Boerenfijn 2017). The methodology enables the creation of a plan and to commence transformations within a one-year period (van Hoof and Boerenfijn 2018).

Røring is a sequential methodology or a co-design/production process which involves a kick off meeting to facilitate and inspire participants, in workshops leading to information gathering and data analyses, translating to a greater understanding of the needs and requirements which in turn will be integrated into the implementation phase, followed by a formal evaluation.

Throughout each phase, feedback will is required from residents in a bid to stimulate the 'life and soul' of the process (Figure 2). It is important and integral to the process that all current and future residents are at the forefront of these plans and discussions, which, in turn, enables future or existing residents to express their thoughts, views and opinions.

All existing and prospective residents need to be supportive of any suggested plans, in conjunction with participating care and welfare organisations, which in turn facilitate the support, and ethos relating to a commitment for a new attitude and culture within the physical space. The recent discussions and experiments revolve around a positive and shared working goal across all interested partners, organisations and residents (van Hoof and Boerenfijn 2018).

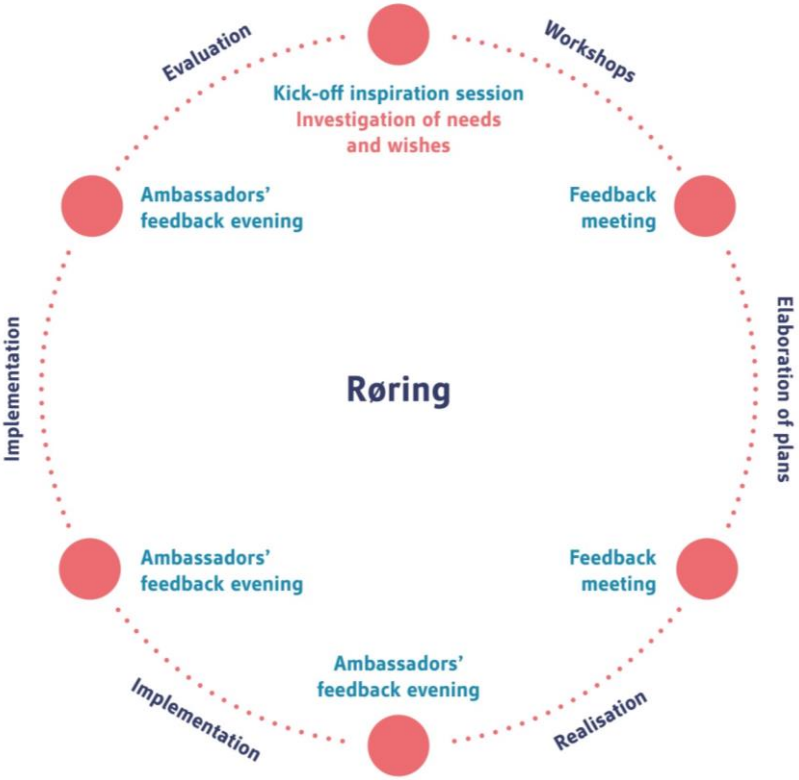

Figure 2: The cycle of the Røring methodology as applied in Second Youth projects (Habion 2018).

To date, the methodology is showing to be successful to *Habion* because it facilitates interested actors and residents to be motivated and enthusiastic, while maintaining inclusivity by nature. Thus, enabling people to change and evolve their attitudes and approaches during the process itself, while the experience of the bustling is created in the building that is being transformed (van Hoof and Boerenfijn 2018).

By integrating and deploying the Røring methodology, *Habion* ensures there is collaboration undertaken with the existing local communities and (future) residents; to identify the needs, requirements and wishes of older people and to identify and ascertain solutions to meet these needs and requirements. Considering the needs, requirements and issues of future residents is also integral for building upon the existing ethos and mission

of *Habion*. Future ageing residents will be technologically savvy, and it is likely that they will have used technology within their own home for a myriad of reasons. Whilst there has been a growth of literature focusing on the behaviour and impact of technology by existing older people; especially when one is wanting to stay connected with dispersed family members and friends (Genoe et al. 2018, Vaziri, et al. 2016, Marston et al. 2019,2017,2016). Therefore, to ensure the mission, ethos and aims of *Habion* are continued following the Maslow and co-design/production process, discussing the technology needs and requirements with existing and future residents is also a facet that cannot be dismissed. Whilst, the approach in which *Habion* is taking, there is also the need to incorporate policy makers into such projects to ensure cross-party understanding is met. Similarly, this can be demonstrated through the work of Marston et al. (2018) and Waights et al. (2018) who presented their respective research at the Northern Irish Assembly, Stormont. Loneliness is also a key issue as one ages, and whilst the UK Government has appointed a minister for Loneliness (UK Government, 2018), recognising the benefits to technology integration into such living spaces is key for ensuring a smooth transition across living spaces and age in place. Thus, by employing a co-design/production approach this enables *Habion* to identify the exact needs, requirements and concerns raised by the residents' during the workshops in conjunction with collaborative partners to identify and ascertain new concepts for ageing in place.

Habion calls for the reinvention of existing residential care facilities, instead of their demolition or disposition. The ownership for such a reinvention is placed with the local communities. This is believed to contribute to a sense of acknowledgement, contact and engagement with others, self-respect and self-worth, and having a good life.

Enabling local communities to have the opportunity and the ability to reinvent their social housing enables the communities to have a sense of self-acknowledgement, self-respect, self-worth, and overall engagement and communication with interested parties, who all share the same ethos and beliefs of enjoying a good life in later life. The transformation makes it much easier for the occupants, society and *Habion* to grant new providers and partners a license to operate in the building. The building, the system and its residents are now flexible and *Habion* itself transforms from being a landlord into a so-called 'timelord'.

De Benring case study

In November 2013, the residential care facility *De Benring* in Voorst (a small village with approximately 2750 inhabitants in the Dutch Province of Gelderland) which has operated in the Netherlands since 1971 was identified for demolition. This decision was based upon the diminishing demand for this type of housing in conjunction with the change in government policies; which called for the closure of this type of housing and care. Resulting in this, the local care institution wanted to end the lease of the contract and relocate the residents to alternative care facilities. This resulted in an advertisement via a public billboard which announced the building would be 'demolished' and was the trigger for over 400 people to stand up and speak out, explaining why it was important that the *De Benring* residential care facility should remain as an integral part of the town's community (van Hoof and Boerenfijn 2018).

This resulted in the villagers to be challenged by the government to take ownership of the building and to express their own dreams and expectations in a co-creation workshop. This resulted in more than 1,000 wishes that were shared by the participants in a workshop following the Røring method. Several perceptions were shared across these workshops and included (van Hoof and Boerenfijn 2018):

- Greater involvement from the community (~65%);
- Greater privacy and independence (~20%);
- Wishes concerning diversity in population (intergenerational population, socio-cultural differences) (~15%);
- Residents noted the need for affordable housing (~75%); and
- The provision of care (~55%).

By taking full responsibility for future functionalities of the building and its prospective future residents, the local community literally 'stepped into' the building. While, the institutional partners 'stepped out' they still continued to facilitate the transition process which enabled the transformation of the building to take place and the expectations of the residents' dreams were implemented (van Hoof and Boerenfijn 2018).

Figure 3: The concept of Extended Living at De Benring was launched in 2016 after a long process of involving tenants and the wider community. The figure shows a view of a communal kitchen area and living room.

De Benring was officially opened in October 2016 and the institutional partners only provide the services that are required by the residents, such as home care. Yet, the primary objectives were to ensure the expectations and functionalities set by the residents alongside the safety and legislation during the transition process. Currently, the residents, being independent occupants now, requested to have a mix of different functionalities available and easily accessible under one roof. For instance, being able to cook together in a communal kitchen area, meeting other residents in a shared living room, or shop together in a commercial second-hand in *De Benring*. Furthermore, the tenants have their own shared fireplace (Figure 3) for meeting fellow residents. Additional involvement in the community has continued since 2016 and includes: the request of the hallways to be larger and transformed into extended living/communal areas which support the vitality of the entire community. This extension has enabled greater social inclusion by the villagers and residents relating to cooking and social activities, while some of the apartments are even used as bed & breakfast facilities and are run by the community (van Hoof and Boerenfijn 2018).

Whilst this concept has improved the living space and experience of the respective residents, there are additional items that should be

considered, for example, the safety regulations (i.e., fire regulations). This concept can make things more difficult for the fire services to cooperate and communicate with. This is because there is an increase risk in false alarms, especially if the place is no longer a single care residence but a cluster of independent apartments. *Habion* is now experimenting with the use of so-called smart fire control units which culminate in double detection (at least two sensors in one dwelling) which in case of an emergency, the alarm will send out an alert to the fire station in order to prevent false alarms from occurring. Examples of false alarms include the steam produced by cooking or showering activities.

The residents had a dream to live a sustainable life style. This was made possible via a crowdfunding initiative encompassing 512 solar panels that were installed on to the roof (Boerenfijn et al. 2018). This installation was another wish of the residents that was granted.

Moreover, every apartment in *De Benring* can facilitate the provision of any kind of healthcare (i.e., domestic care, nursing home care, care for people with a mental disability), whereas in the Netherlands such types of residential healthcare are segregated. Yet, all apartments can either be used as a residential or nursing care unit/dwelling enabling multiple residents and target populations inclusivity. This concept and flexible transition (if required) ensures that care and housing are future-proof against changes in government policy. Thus, enabling every resident the choice to use their own home automated system to continue their respective level of independent living.

Within *De Benring*, there are several residential groups encompassing different age ranges. Prior to the transformation of *De Benring*, there were 18 attached dwellings occupied by independent older people who required some level of monitoring and domestic care. These attached dwellings were renovated in 2014 and are now occupied by younger people up to the age of 22 years (approximately). This contributes to a multi-generational mix of tenants, who are able to provide a positive living approach while learning from one another and in some instances helping one another. On average, about 90% of the tenants are older people (at least 55 years old, but in most case aged 80 years and over), and about 10% are younger tenants. Furthermore, the younger tenants have to take a test to ascertain their level of matching with the goals, aims and ethos of *Habion*, which, in turn, results in them living together across different age groups. In addition to identifying whether the younger prospective tenant(s) would be a suitable candidate for a so-called buddy partnership with a co-resident.

If we take a look at a similar approach occurring in the United Kingdom (UK), there is a scheme called *Homeshare* which enables young

people to rent a room in a private residential home owned by an older person. There are specific areas across the UK which are affiliated with Age UK (2018) and form part of the larger *Homeshare* network. The *Homeshare* network is been piloted and using different approaches and costing models to ascertain which approach offers the most benefit in different geographic locations and populations.

The notion of *Homeshare* (2018) was to offer viable and affordable housing solutions for young people who may be at University or in professions (i.e., National Health Service (NHS) nurse) who may not be able to afford to rent housing in a specific area (i.e., London). The *Homeshare* website details:

- "The gap between the least and most affordable parts of England and Wales has increased over the last two decades
- Housing affordability has worsened in all local authority districts since 1997
- The median price paid for a residential property in England and Wales increased by 259% compared to median annual earnings which have increased by only 68%." (Homeshare 2018)

Analysis from Age UK has ascertained "*[…] there are now 1.2 million people aged 65+ who don't get the help they need with daily living activities and nearly one in eight older people now live with some level of unmet need"* (Homeshare 2018).

This programme further highlights and notes that those young people who have agreed to the tasks via the contract there is *"the benefit of having someone in the house during the night time offering extra peace of mind for both householder and homesharer, and also friends and families alike*" (Homeshare 2018).

Since 2006, *Share & Care* (2018) has been operating across London and the UK to offer older adults and people with disabilities the opportunity to share their home with a person who may offer companionship and reduce loneliness. The *Share & Care* organisation is part of the *Homeshare* network and is required to comply with the Quality Assurance Framework, while also committed to offering a personal and professional service, ensuring safeguarding regulations are adhered to.

For those individuals who are interested in becoming a sharer or who is a homeowner and wishes to become involved in the scheme/network, there are several questions that many will be asking such as:

- "Do I have to have a TV licence if I become a sharer?
- Can I bring my own bed and/or other furniture if I become a sharer?

- How might my council tax be affected by having a sharer?
- Will I lose my benefits if I have sharer?
- Who pays the household bills?
- Why should I use a Homeshare agency to facilitate a Homeshare?"

Many of these questions and more can be answered from the *Homeshare* website, which provides information for Homeshares for families, older people or other interested actors. The former has the benefit to offer children and young adults with physical and/or learning disabilities such as autism, or Down syndrome the opportunity for further companionship, while the family has the opportunity to receive assistance around the home; which may include cooking, shopping, gardening, and other tasks which may be needed. Forming part of the Share and Care agreement, the sharer is usually required to undertake 15 hours per week of assistance around the home whilst, providing personal or nursing care is not permitted (Share and Care 2018). If personal or nursing care is required, then a care package can be agreed in place.

Moreover, this concept has been documented in the British media and in 2016 the Independent newspaper (Harris 2016), reported on the approaches of some Dutch Universities providing homes by older adults to those students. Conversely, in 2015 the Guardian newspaper Slawson (2015) reported this approach to the housing situation in the UK, yet was not positively experienced by the sharer, who was renting a room from an elderly woman in London. The sharer a young woman and student detailed the expectations of the homeowner far outweighed the signed contract and the sharer was expected to undertake more in the additional hours (contracted) in and around the home. This particular experienced ceased not long after the homeowner had to be admitted into hospital and upon discharge, the sharer recalls:

> "*Eight hours in to her first day back at home, after being in hospital, I'd done everything a fully trained – and fully paid – carer would have done bar actually shower her.*" (Slawson 2015).

Furthermore, the sharer explains how in her homesharing contract she was not expected to undertake the personal care of the homeowner. As the article details:

> "*In fact, any form of personal care, such as taking her to the toilet, was actually forbidden in my contract. But I wasn't going to let*

> *her wet the bed. As my mum had predicted, the pressure was on me. Yet, instead of being paid to do it, I was actually paying for the privilege.*" (Slawson 2015)

The final outcome of this resulted in the homeowner hiring full-time carers to assist in her recovery, which also enabled the sharer to give notice on her contract, with greater ease. Knowing the homeowner would have the trained and qualified care needed. However, the sharer notes that there is the likelihood of another student replacing her, yet, she details her own concerns of

> "*how many other older people there are relying on young people who are unpaid and untrained in order to get cheap care in the home. Since leaving my placement with Amie, I've noticed many more adverts for similar homeshare schemes*" (Slawson 2015).

Learning points

Living in dignity in old age is not only a moral imperative as it also makes an economic impact when empowering care recipients in maximising their potential for independent living. Care recipients and their families increasingly demand an active voice and control over their lives. This also includes their living environment and how care can be a part of this. Furthermore, given the growing costs of care and expenditures in long-term care, services are under pressure to improve their accountability and quality for money spent (OECD 2013). However, care delivery is often based and organised according to medical models, emphasising illness instead of promoting (social) health. Rules and routines then govern daily life of care recipients, thereby permitting little individualisation and control over the living environment.

Nowadays, person-centred models of care are prominent in dementia care and emphasise strengthening residents' autonomy and overall wellbeing (Verbeek et al. 2012). Older people should be enabled to continue their lifestyle as before admission to a nursing home. The wider social network within the community and families of care recipients should be included within the specialized and supported housing models. New initiatives have been developed worldwide, that provide health, social and nursing care in a small-scale and homelike environment (Verbeek et al. 2009). Radical alterations have been made in comparison with traditional nursing homes, implementing changes in the organisational, physical and social environment of settings.

An example in which housing associations closely collaborate with long-term care provision are Shared Housing Arrangements (SHA), developed in Germany and often situated in large apartments in urban areas (Fisher et al. 2011, Gräske et al 2015). The first SHA was established by family caregivers of people with dementia, seeking for alternative concepts of care and support (Fischer et al. 2011). Care providers and housings associations are bound by contract to each tenant individually and not to a group of residents as a whole (Wolf-Osterman et al. 2012). Mostly, six to eight tenants live together in these apartments, which have a typical homelike architecture design, including a kitchen, living room and private bedroom. The principle of normalisation is the main objective of SHA, fostering maintenance of self-determination despite high needs of care and support. Initial results indicate that an active participation of family members in SHA contributed to a better quality of life of care recipients, especially for the domains social relationships and social isolation (Gräske et al., 2015).

The flexible use of the real estate, as shown in the transformation projects by *Habion*, makes the building *system-and customer preference proof*. Changes to the funding or the system of care provision have little risks for housing associations or health care organisations who rent the property. Furthermore, the building and the partners in the service chain can adapt to changes. This is based on customer preferences, because their work procedures now focus on the services needed instead of the building and its use. In the years to come the building and its occupants can move on a spectrum from a 100% residential model to a 100% nursing home model.

The concept proposed by the authors of this contribution detail a positive notion of shared and co-creation of housing needs and requirements within the community, even when health, nursing and social care is needed. Moreover, the concept of intergenerational living certainly has its benefits for all, including reduced isolation, sharing and learning from different perspectives and generations, assisting with household tasks and activities. However, the possibilities for intergenerational living should be explored. Further work is needed to establish the positive and negative aspects of intergenerational, and co-creation living, as on a more basic level, the exploration of design of housing with care models.

Conclusions

The concept of re-inventing existing real estate has the potential to offer the wider and future community populations housing. It provides an

opportunity to create additional value and affordable housing for both older and frail adults and younger adults who maybe financially restricted to renting or buying property based on their income or studies. By ensuring the trust to our local communities and giving them the lead and voice to express how they perceive their future living environments. Moreover, safety can be guaranteed by combining local community involvement, the fire and police services, building services as well as assistive technology. The Røring method is a way to establish co-creation between tenants, care recipients and their families, the local community, long-term care service providers, local municipalities and housing associations, hereby increasing active stakeholder participation. It has the affordability to speed up this process, while ensuring the broader community has support for the existing and future plans is crucial for positive but also continual take-up and enthusiasm.

Statement of conflict of interests

Joost van Hoof is a board member of Vastgoed Zorgsector, and member of the supervisory board of Habion.

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