

Architectural Hybrids for living across the Lifespan: Lessons from Dementia

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Abstract

The built environment is essential for wellbeing at old age. The theory of salutogenesis, focusing on health, rather than the disease itself, provides evidence that space contributes to health and wellbeing. This has influenced healthcare architecture through facilities designed to support wellbeing. So, increasingly healthcare facilities aim to look like hotels to improve user experience. This retains conceptual and usage gaps between hospitality and healthcare but supports cross-fertilization of best practice. This paper explores possibilities of synergies between healthcare facilities and hospitality industry. Appropriate services and wellbeing across the lifespan is the ultimate objective and the physical environment is critical in that provision. Examining the architectural typology of the dementia village as case study, it explores healthcare-hospitality hybrids. Learning from both domains can contribute to silver economy while providing the aging population with enhanced environment. Aging population and stakeholders in this ecosystem can benefit from these synergies.

Keywords

Dementia, architecture, hospitality, ageing population, silver economy

Introduction

Most government and international organisations start realizing the importance wellbeing across the prolonged lifespan, as well as the financial implications of the ageing population in pensions, healthcare and social care and urgently seek cost effective, appropriate solutions to support citizens. In Europe, the 15-20 years difference between life expectancy and healthy life years is challenging policymakers and the society globally. Among the major concerns occurring from the increase of the lifespan without a corresponding increase of years lived in health relates to

dementia. Dementia is a condition that affects both the physiology and the perception mostly older of people, yet it does not consist a normal process of ageing. It is a major concern in ageing for its significant socioeconomic implications, i.e., direct medical, social and informal care costs that are estimated around 1% of the total GDP (WHO 2017). Its prevalence, which now is one person every three seconds developing dementia, is expected to double in the next decade and triple by 2050, presenting consequences for the individual and his/her family network and for those reasons it is considered by WHO a public health and social care priority worldwide (WHO & Alzheimer's Disease International 2012). The impact increases if we consider the burden to the informal caregivers that have been characterized as second patients (Brodaty & Donkin 2009). As according to Alzheimer's Disease International (2015) there is not available cure in the foreseeable future, there is a need for integrated care provision, involving every part of our society. So far, ageing initiatives, including those for dementia, focus mostly on healthcare and technology. Yet, neither of those alone cannot address the complexity of problem, even though most R&D and resources concentrate on these fields. This has been raised even by key ICT and health stakeholders such as the CEO Agfa Healthcare, Luc Thijs (2016) who advocated the importance of the environment that healthcare and technology operate.

In architectural education and practice evidence has not been necessarily connected to the design process: values related to heritage, aesthetics or philosophy for instance have been more influential in architectural schools. The importance of design for healing and wellbeing was mostly raised by the medical profession. Nightingale (1860) understood the role of the ward layout and its technical specification such as the importance of window design for light and ventilation for treatment and infection control that in fact constituted the building as a healing instrument. Hospitals gradually became sophisticated where complex equipment, infection

control and staff flows and costs comprised the main concerns (Porter 1982). The incorporation of healing environments in the agenda of the healthcare service occurred when patient-focused care became part of the NHS agenda in the 80s (Francis 1999). The book by Zeisel (1984) on evidence based design and the synchronous paper of Ulrich in Science (Ulrich 1984) supported the role of design in healing and led to a paradigm shift by incorporating scientific methods in the study of healthcare architecture. Due to the potential of attributing competitive advantage to healthcare facilities through research findings (Goldsmith 2013) and the risks deriving from the implications of hospital environment to financial and clinical outcomes, healthcare design has been one of the first areas of architecture to explore and subsequently introduce evidence.

Design for dementia occupies a unique space in raising awareness on the importance of design for service provision and patient wellbeing. Since the 60s environmental gerontology studied the role environment plays for understanding ageing, prolonging health and optimizing the relation between people across the lifespan and their physical environment (Werner & Weisman 2003). Regarding dementia, due to its nature of increased dependency and its disabling effect this becomes obvious. Christenson and Taira (1990) suggest adaptations of the physical environment to counteract cognitive, multi-sensory and kinesthetic impairments related to dementia and the medical press crossed disciplinary boundaries recognizing the importance of practical intervention for service provision and patient quality of life (Cohen & Weisman 1991). The importance of design for dementia has been suggested mainly as a means of overcoming problem behaviours, as opposed to a means of increasing quality of life (Day et al 2002). Marshal (1998) suggests adopting the disability approach instead of the pathology one for dementia as enabling successful intervention. This disability approach is one of the key reasons that environments for healthcare and especially for conditions with multi-morbidities and the range of physical and

cognitive implications of dementia, need to have a unique design approach. The most vulnerable the person is, the most difficult it becomes to overcome the simplest obstacles. Design that incorporates a knowledge and understanding of these physiological and perceptive differences that derive from a disease, illness or health condition could make a difference to carers, staff and mostly patients' quality of life. This understanding is broader than the disability model, constitutes the key principle of therapeutic architecture (Chrysikou 2014) and has been informed by the theory of salutogenesis (Antonovsky 1979, Antonovsky 1987).

There are parallel, overlapping, theoretical approaches that focus on the research and implementation of evidence-based eco-psychosocial interventions aiming to support the mechanisms that generate health or help combat disease. These are known as therapeutic architecture (Chrysikou 2014), generative space (Ruga 2008) or salutogenic design (Dilani 2000); terms having close links to the theory of salutogenesis from the field of Medical Sociology. Salutogenesis refers to the possible impact from interventions to increase individual wellbeing and sense of social coherence. It focuses on psychosocial aspects by exploring those factors that increase health as opposed to investing in the more common pharmacological or medical intervention approaches of combating the disease. Salutogenesis does not claim to substitute medical intervention or treatment. Contrary, the aim is to support staff, carers and patients by decreasing the amount of effort needed to overcome stressful situations and by providing complimentary support. It is a generic theory of the health sciences and it was transferred to the built environment sector by Dilani (2009, Dilani & Armstrong 2008). Dilani advocated that hospitals tend to be designed around equipment and treatment and ignore elements important to patients and staff, such as spaces for social interaction or relaxation and design that incorporates elements such as art, natural daylight access to nature. He argues that these elements

of psychosocially supportive design could support the health and wellbeing of patients and employees and subsequently increase productivity and profitability. Under that sense salutogenic design could be related to the paradigm of transformative services research (TSR) (Anderson and Ostrom 2015) with emphasis on patient and employee centred environments.

Dilani's transfer of salutogenesis to architecture granted the theoretical umbrella in a pre-existing practice and research of employing design for supporting patients' health and wellbeing. This patient focused, i.e., designing around patients instead of moving patients around machines and investing in ambience of the build environment had already started in hospital design in the US and Scandinavia since the 80's (Verderber 1986, Zeisel et al 2003, Shepley et al 2009). Key findings, especially on the use of daylight (Joarder et al 2003) views and nature (Ulrich et al 1991, Alvarsson et al 2010, Verderber 1986) effects of art (Nanda 2012), indicate that there is a correlation between design elements, improved wellbeing and even recovery. This recognition of the interrelation of physical space and health has also been supported by public health professionals. The importance of the physical environment for people across the lifespan has been documented as a factor of health equity, through spatial configuration and quality of construction in the context of the urban scale (The Marmot Review 2010, Marmot 2015). Design that enables physical exercise, social exchange and autonomy has been included among emerging innovations under the term "intangible technologies providing help with everyday living" by research on innovation and services for ageing (Djellal & Gallouj 2006). Moreover, work conducted on other areas of the built environment, could shed more light on the way we design for healthcare.

Salutogenic and eco-psychosocially supportive design could make more difference to patients health and quality of life in conditions that Christensen & Hwang (2009) describe as having low diagnostic and interventional accuracy, including dementia. An argument raised by Zeisel (2010). It is because healthcare comprises by the pharmaceutical/medical treatment part, the human resources staff and the physical context it takes place. Normally, the healthcare budget concentrates on the first. Yet, in the case of dementia, medication has yet little to offer. On the contrary, the other two could make considerable difference in helping patients cope. Thus, Zeisel proposed the manipulation of the physical environment through elements of positive and negative distraction to promote cognition. Finally, one more stream influences research and design for dementia: normalization theory. Normalisation originated from environments for autism, but lately has been advocated as a theory beneficial for dementia patients (Steenwinkel et al 2016). It advocates that design bearing as many references to ordinary life as possible, as opposed to clinical or institutional environments, would benefit children with autism. Yet, the boundaries of its applicability have been stretched and it has influenced most longer-term care provision (Peace 1998), including care homes (Steenwinkel et al 2016).

Parallel, the work of space syntax on social housing (Hanson 2001, Hillier & Hanson 1998) and social housing provision for dementia (Bligh 2016), as well as housing design and active lifestyle (Brookfield et al 2015) and care homes (Coomans et al 2016, Croucher 2008) demonstrate possibilities, where design could affect social cohesion and quality of life for vulnerable groups. However, over-generalisations from one contexts might prove over-simplistic even for similar diagnostic groups, when it comes to facility provision (Chrysikou 2014). Still, a growing body of knowledge on design for vulnerable populations, on perception and neuroscience, combined with

the increased tendency for care in the community and closer to home, indicates that the impact of the field could be much larger than just hospital and healthcare facilities design.

Synergies between healthcare and hospitality

Regarding hospitality settings and their influence on wellbeing, there has been limited exchange of information between the health and hospitality sectors, both part of the field of non-residential architecture. Yet, this appears to change. Hospitality has, since late 90s, influenced healthcare architecture, especially in the UK. Patient focused theories challenged the functionalistic, capital-expenditure friendly Nucleus hospital typology (Francis et al 1999). Also, the patient friendly perspective of the Plane Tree hospital model paved the way for the consumer oriented approaches in hospital design of the US private healthcare sector (Malkin 2002, Frampton et al 2008). This introduced “hotel-like” aesthetics and design solutions (figure 1), such as the single en-suite patient bedroom or the use of carpet and art or even pianos in public hospital design (figure 2). Customer-oriented approaches are expected to have an increased influence in the future (Huisman et al 2012). Hotel-like hospital bedrooms have been liked with higher patient satisfaction regarding hospital service provision compared to standard rooms and higher chances of patients recommending the hospital to others (Swan et al 2003). Hotel-like amenities might make these hospitals more appealing to patients (Goldman & Romley 2008). Occasionally, hotel-like facilities accommodate family members or patients before or after day surgery, under the name of hospitality units (Ellis and Hartley 2012). Also, lessons from hotel management have been suggested to improve patient satisfaction from hospitals (Zygourakis et al 2014).

[Insert Figure 1 here] [Insert Figure 2 here]

Hospitality has been linked to physical and mental restoration and covers an extensive range of activities. Hospitality services accommodate different needs that correspond to a variety of spaces. These include spaces for living and resting, spaces for food/drink preparation and service facilities (bars, pubs, restaurants, etc) as well as entertainment and socialization spaces such as theatres, cinemas. To those we should add more specialized facilities such as conference and meeting spaces or spa-wellness-fitness facilities (Brotherton 1999, Jones and Lockwood 1998, Neuhofer et al 2015). With the development of medical tourism, healthcare spaces intersect with the wider tourism industry. However, this has not been yet identified as an opportunity for specialised hospitality provision rather than the benefit that hotels might get from being close to hospitals with medical tourism services (Reisman 2010). On the contrary, hospitality scholars (Suess & Moby 2016) suggest hybrids such as the hospitality healthscapes, where knowhow from the hospitality sector cross-fertilizes healthcare provision.

Considering the increased patient satisfaction from hospitals with design elements and services associated with hospitality, what about less clinical settings where the environment plays a more crucial role compared to wards catering for pathologies of high diagnostic and interventional accuracy? The research aims to explore the paradigm of the dementia village in terms of architectural typology and identify possible areas where design for hospitality could make a difference. Compared to other provision for dementia, such as care or extra care homes, the Dementia village was chosen for its status as one of the most innovative built environment and service provision interventions for old age (CNN 2013, BBC News 2012, The Guardian 2012). It is acknowledged though that the village is a specialized facility and most people do not require these levels of care. Yet, it is an excellent case to look at and understanding design for dementia can inform inclusive environments, accessible to most people across their lifespan.

Methodology

This paper builds on the above actions and exploratory research. The methodology involves exploratory literature review, high level observation, architectural auditing from a salutogenic perspective and space syntax analysis. The triangulation of all methodologies detects a) therapeutic elements and b) spatial hierarchies and host vs inhabitant relations at the locus of the research (figure 3). The literature took place from March to October 2016. It involved grey literature, UCL Library Services SFX@UCL, PubMed, Academia.edu, ResearchGate, Emerald Insight, SAGE Journals, Wikipedia, Google Scholar, Springerlink, Science Direct, specific journals, i.e., Health Environments Research & Design Journal, Environment and Behaviour, World Health Design, Building and Environment, the Service Industries Journal, Journal of Environmental Psychology, JSTOR, Ageing and Society, Routledge journals, Annals of tourism research under the following keywords: dementia village, hospitality for dementia, accessible tourism, hospitality and accessibility, architecture and hospitality, dementia friendly hotel, dementia friendly tourism, hospitality and the physical environment, space and wellbeing, dementia and architecture, hospitality and architecture, space syntax and dementia, evidence-based design for dementia, quality of life old age and the built environment, quality of life of old age and tourism. It identified gaps on the built environment of the dementia village, architectural research and dementia, including the area of space syntax, architectural literature in relation to hospitality and especially hospitality for healthcare facilities, or accessibility and tourism from the built environment perspective. The interface between health and tourism did not include the building stock or any facilities that could be characterised as hybrids. Regarding the village itself there were press references but very little research, mainly from gerontology.

[Insert Figure 3 here]

The research used as a case study the first and most internationally acknowledged village-type accommodation for dementia, De Hogeweyk a gated facility in Weesp, Netherlands. It replaced a care home to introduce non-institutional, patient-friendly approaches. Its village concept, generated a brand name for dementia accommodation that has been since transferred to other countries, including the UK and Italy. The village developed inwards of a continuous fence-like building, which doubles as a clear boundary between the village and the outskirts of Weesp (figure 4). It comprised 23 houses of six patients, a town square, supermarket, hairdressing salon, theatre, clubroom, and café-restaurant (figure 5). Accommodation consists of individual bedrooms and shared common areas, i.e. kitchen, dining room and lounge. Residents are allocated to houses of relevant style and background. Doors lack locks and residents walk and cycle free within the village. 24 hour care of a 2 to 1 ratio, is provided by a range of plain-clothed professionals. Residents perform everyday chores including supermarket and cooking.

[Insert Figure 4 here] [Insert Figure 5 here]

Fieldwork started in May 2016 after acquiring the architectural plans of the village. Visits took place in July 2016, gathering a photographic record of all street and public areas network avoiding people, and conducting high level observation for understanding the use of space, without observing individuals to respect people's privacy and avoid intrusion. Thus, use of space could be detected but not behavioral patterns that would require involving people. The researchers visited the village in two consecutive days, including a Sunday where some of its public amenities such as the supermarket were closed. This involved sitting for 15' in the restaurant, the square, the main street the area outside the elevator, the upper floor corridor and at the other end of the main street network including the junctions with courtyards. Private areas, i.e., individual homes were not accessed to disrupt the life of the village as little as possible; yet

semi-private areas such as the courtyards outside of the houses had been accessed. Regarding intimate areas, such as toilets, researchers accessed only those inside the public areas and not inside houses. Photographic evidence was collected. However, as patients could not be in the picture there were no photographic records of use of space. In general, it was not easy to determine with who was the resident or the visitor or the staff/volunteers without intruding so the identity of the users of space was not investigated. Behaviors comprised socializing, including eating and drinking or even singing at the pub, engaged in tasks (preparation of food at courtyard or shopping), listening to music, sitting and walking mostly in pairs or small groups. As the research was on architectural features, data were collected from the architectural auditing. That involved classification of spaces according to use, from public to intimate, qualitative analysis of the building features according to criteria the key theories corresponding to design for dementia:

- a) domesticity vs institutional features for normal placemaking qualities
- b) enabling features for salutogenics elements in space.

Finally, spatial analysis (Space Syntax) was performed in the street and common area network, to identify the social logic of the village network. For the syntactic analysis, plans were introduced to Depthmap for the analysis of convex spaces and justified graphs using JASS software. Syntactic analysis can identify areas of higher social integration as opposed to more segregated areas, with potential implication to people's interaction and intuitive wayfinding.

Findings

The dementia village operates under two principles. First, to reduce anxiety and second to increase quality of life by activity and focusing on capabilities rather than disabling effect of the

disease. For Goldwing this is what she calls a prosthetic environment, i.e., an environment that compensates for disability and provides opportunities for “rementia” a state that some capabilities return. (Sixsmith et al 1993, Goldsmith 2015). However, this enhancement of sense of coherence by reducing stress and the focus on the elements of health as opposed to the disease are the two key elements of salutogenesis. This indicates with the most eloquent way that the dementia village follows a salutogenic perspective as opposed to more widely used normalization theory approaches. Yet, healthcare specialists’ elements are present too.

According to one of the founders it aimed to recreate the concept of a village that would enable residents to live as normal life as possible (CNN 2013). Indeed, the village concept could be interpreted as deriving from normalization. Patients are treated primarily as residents in a controlled environment that supports everyday function as well as medical requirements, rather than patients. Thus, they introduced normalization theory principles aiming to improve patients’ quality of life in a homelike environment. Normalisation has been applied to both services and the built environment. For example, staff does not wear uniforms or residents can “shop” in the market and plan their meals. The master plan of the village has many references to an urban complex, such as the high street (figure 6) and in design details such as furniture.

[Insert Figure 6 here]

The presence of incorporated thematic aesthetics and perception clues through art derive from the salutogenic negative/positive distraction design principles developed by Zeisel (2010). Elements like the automated smart lift and lack of locks for unobstructed movement, outdoor green areas and the pond for contact with nature or the visual permeability between spaces for orientation aim to reduce stress and constitute psychosocial interventions.

Third, more specialist frameworks guarantee other aspects are covered too. The inward development of the complex balances between privacy and anti-ligature and agrees with the objectives of De Hogeweyk: a non-institutional, providing qualities such as privacy, interpretation of a care home, yet safe and secure. Specialised staff around the clock and specialized care as this is a place where patients stay until the end of their lives, suggest that despite the non-clinical look this is still a place of specialized healthcare delivery (Table 1).

[Insert Table 1 here]

Architectural morphology-wise, i.e, from space syntax theory, Hogeweyk characteristics include:

- Single entry point access to control movement; as opposed to networks of entry- exit points, as in villages and urban structures.
- Fixed structure that lacks the organic growth and flexibility of a village.
- Inhabitants are the guests, rather than the hosts. Even though residents remain at the village for the rest of their lifespan, they are located in the most spatially segregated parts and the host (staff members) controls the most integrated parts (Figures 7, 8)
- Zoning is applied according to the background and lifestyle of the residents but also to the degree of segregation required (Figures 7, 8, 9). The seven distinct themes have been preselected by the planning team, rather than a more flexible, user-led approach, together with required degree of segregation. This however, develops parallel and there might occur contradictory requirements.
- A core and cluster model of a centralized multi-functional is utilized for the village to simulate a public core with satellite accommodation clusters, that is a common form of residential architecture typologies.

- the house residents do not share family bonds, in which case the houses would be smaller to accommodate the immediate family only. Instead they follow the norms of strangers' house-sharing, similar to student accommodation.

[Insert Figure 7 here] [Insert Figure 8 here]

[Insert Figure 9 here]

These traits indicate a pre-programmed, rather structured typology. The controlled access, the predetermined form and capacity, and the thematic classification of the accommodation provision are clear demonstrations of this structural approach. The power of the host, who does not stay on the premises 24/h even if the facility is staffed around the clock, over the inhabitant, who does, illustrates that residents have little saying on how they control their everyday reality. Having said that, compared to normative care homes though, the typology of the village enables for a lot of autonomy as the structure is softened by eco-psychosocial features to increase the inhabitants' control and sense of control. For instance, De Hogeweyk demonstrates extensive use of art to ease self-orientation (figure 10). Inclusion of elements of normality such as a high street with commercial and social functions, the use of normal staff clothing –as opposed to uniforms-, without compromising the safety or the clinical outcome provide the illusion of a normal, everyday life. Via architectural traits such as the visual permeability of public spaces and lack of internal physical barriers of movement, it cultivates the sense of free access. This is achieved mainly through the extensive use of glazing and the extensive use of automated doors in both horizontal and vertical communications. This could be related to the evidence that Hogewey are more active and require less medication compared to other care homes (Godwin 2015).

[Insert Figure10 here]

The core and cluster typology bears references to typologies of hospital campuses (MARU 1996), yet medical architecture is not the only area that the core and cluster model applies. The emphasis on the areas that are accessible to residents vs support and staff areas, including offices, differs from most healthcare typologies, where medical or staff offices and support areas play a key role for spatial hierarchies. The staff-only areas in this case are visually obscured, even though they are located close to the entrance and lack direct connectivity to the patient areas. This is to reinforce the normality illusion of the village and transfers the message, in an ecopsychosocial manner, that staff is there to support and patients come first.

This diversification from the medical model and in combination to the use of visual clues, either through the theme houses or the almost theatrical set of the “high street”, bears similarities to a more hedonic type of accommodation, i.e, the holiday resort (Penner et al 2012, Plunkett & Reid 2013) theme park designs such as Disneyland (Younger, 2016). The core and cluster model, of a communal core and satellite accommodation clusters is a typology that fits these models too.

Conclusions

The Hogewey employed salutogenics but not as much normalization as the term village implies. The typology, as the researchers’ auditing shows is nonresidential, contradicting the village and normalization concepts. A hybrid, combining an architectural typology deriving from hospitality to a healthcare accommodation function is observed. Although the village is an experimental concept, it still carries some of the typical problems that similar, less innovative institutions, and especially care homes might present. In short, it is still on a remote location, presenting social segregation and might promote loneliness (figure 11). Two urban planning issues, one architectural planning and service related and one design related that could be described as

institutional remnants. The concept of the village refers to an autonomous concept of dwelling and indeed this does not contradict the planning elements that dominate the village. It was planned on the periphery of larger urban structures, presenting elements of self-governance and autonomous activity. However it depends on the central more complex settlement for resources, and in particular for human resources, and more specialized services, including healthcare provision. The drawback in that case is a reduced degree of integration compared to a more central location, i.e, in the heart of a city, or immediately adjacent the central network of transport. This affect staff commuting to the village, increasing burnout and relatives visiting. This might discourage carers from visiting, increasing the isolation and loneliness of residents or decrease the quality of life of carers, who tend to have a lower quality of life than the average population. The separation of couples, as only the person with dementia can move in, can among others increase the hardship, loneliness, anxiety and anger of the person who remains at home (Taylor 2008, Hunt 2015). On the contrary, keeping couples together even if one of them needs care-home support starts to be recognized as a right (BBC News 2016, Human Rights Act 1998). The location of the facility and access to transportation network might increase that burden, especially since partners might be frail and with mobility or even orientation problems.

[Insert Figure 11 here]

Finally, there is age segregation, connected mainly to service provision and policy but there are spatial dimensions to it as well. Research on people before moving to care homes suggested that they disapproved of the age segregation that is the norm in these places (Croucher 2008). Policy-wise the village aims to be open to the public and in principle encourages people visiting, walking around and using facilities such as the café. Indeed, family members were visiting and one of the days there was a big birthday celebration, with a significant presence of family and

friends in the bar of the village. Yet, all activity was happening immediately next to the main entrance and the rest of the streets and public places still displayed a significant degree of age segregation, as they were occupied almost exclusively by staff and residents.

The use of visual clues and art as an aid for cognition was one of the clear benefits of this village. Yet, this did not continue in the intimate areas as the photograph of the restaurant toilet indicates (figure 12). That particular toilet would pose difficulties not only to an individual with dementia, but to someone having visual difficulties or mild mobility problems. So, visual clues in the village support the sense of place and orientation up but there was space for improvement especially for partially sighted, which is often the case for dementia.

[Insert Figure 12 here]

Future areas to explore in relation to research and stakeholder engagement

Research on silver economy supports that products and services enhancing autonomy is common denominator for successful enterprises, targeting both consumers across the lifespan and younger people who care for them or with physical or mental conditions (Kohlbacher & Herstatt 2016) and a means to support social cohesion (Navarro-Espigares & Hernandez Torres 2010). The argument in that paper was that the built environment itself could be one of these products.

Looking at a facility for people with severe comorbidities such as the dementia village and the effects of a synergistic hybrid of the medical, the normalization and the salutogenic frameworks on their wellbeing state and their chances of dementia paves the ground for these synergies to be researched and applied in more areas involving vulnerable populations, even at non-clinical ones.

Additionally, although there are several lessons to be learned from hospitality into healthcare there could be lessons from healthcare for hospitality through multi-disciplinary collaborations between the interface of service provision and the built environment. The example of the importance of the built environment for health could set the light for the importance of fit for purpose built environment for hospitality. These could involve new types of hospitality services that could cater for vulnerable populations, including people across the lifespan or people at the early stages of dementia (Bournemouth University 2013). However, this approach is mostly service oriented and the built environment has not been an area of focus yet (Blanas et al 2017, Page et al 2013, Innes et al 2016, Hartwell et al 2016, Visit England 2016). Evidence based design or salutogenic design could be introduced in hospitality design together with service provision. This could create enabling hospitality environments to those that need them. The spatial arrangement of dementia village due to its architectural typology that is reminiscent of a resort could be explored as a model to be explored and adapted for.

Demographic evidence and analysis of tourism trends imply a future increase in the number of people with health problems who travel (Eichhorn et al 2008). Also, the role of senior citizens in the tourism industry is expected to be higher than the overall expected increase (Grimm et al 2009). Evidence from the field of social tourism identifies benefits regarding the subjective wellbeing, the social engagement and the self-esteem of people across the lifespan when travelling (Morgan et al 2015). As the field of health and accessible tourism grows, hotels and hospitality facilities are motivated to accommodate guests with special needs (Darcy & Pegg 2011, Buhalis & Michopoulou 2013). Healthcare design and service provision may support hospitality organisations to serve the patient-carer spectrum of guests. Typologies without

clinical references such as the dementia village could provide initial grounds for research and entrepreneurial actions as areas of impact.

Specifically for dementia, even though there might be some guidance for travelling and ageing, this primarily concentrates on the transportation rather than accommodation. Guidelines on hotel choices involve very generic mentions (Alzheimer's Society 2016) but this is limited compared to what the built environment could offer. Additionally, design solutions for ageing or accessibility do not suffice when cognitive deterioration is involved and that special design and technological considerations need to be employed (Hoof et al 2013).

European Commission set up a target of adding two more healthy life years by 2020 (Lagiewka 2012). The Commission created a joined framework, the European Innovation Partnership on Active and Healthy Ageing known as EIPonAHA (EIPonAHA 2016). It aims to improve quality of life for people across the lifespan, including people with dementia by addressing barriers that prevent this target from being reached (European Commission 2016). The framework promotes bottom up synergies, across sectors and disciplines right from the conceptualization to inform policy following the example of Japan, the country leading in ageing (Okada et al 2013). In line with the synergetic spirit of EIPonAHA, this paper emerged from the issues identified through the collaborative, multidisciplinary activities generated by an approved Commitment running from 26/09/2016 until 01/08/2019 (EIPonAHA 2015, Chrysikou et al 2016).

The analysis of the case study provides valuable lessons from architectural hybrids for improving living across the lifespan and especially dementia. Although there is a significant difference in

the dependency of the population between the village and normal housing for people with dementia, yet research on environments for dementia can enhance the understanding of ageing as well. Given the prolonged living and the need to design spaces for all aspects of architecture, including specialist forms such as medical and hospitality architecture, as well as, urban planning and design need to integrate concepts to designs to improve wellbeing. Hitherto, the relative lack of cross-disciplinary fluidity in aesthetics, morphology and typology has prevented the development of multi-purpose spaces that facilitate interaction and integration of communities. Instead of progressing in parallel, synergies and cross fertilization of concepts can facilitate design and benefit all stakeholders. This trend is still at early stages, yet there is already visible in research by design products at concept level such as the dementia friendly supermarket till (Lab4 Living 2015) or materialized innovation, such as the case of De Hogeweyk.

One of the limitations of the study has been that user groups, i.e., residents, staff or family members were not involved in the study. A larger scale and resources projects actively including residents, staff and carers to explore their sense of wellbeing, space and services satisfaction as well as burnout is needed. This will enable to ask for their opinions on spatial and service provision requirements and needs. This would enhance the state of the art in the design and space provision for dementia under the theoretical framework of TSR not only for its association to wellbeing but also to its bottom up approach (Rosenbaum 2015). Also, the semi-private, private and intimate areas have been excluded from the study. These however, might be the areas where patients find it harder to cope.

Areas for further research that rose from the study:

- Study the village in relation to the transport networks and the connections for all user groups including staff, visitors and carers. The social integration could also be a theme to explore and how space and services could affect that.
- Study the socio-spatial implication from the separation of due to lack of provision
- Study in detail the materiality and its relation to cognitive support to individual tasks provided by design, art and visual clues such as colour and patterns. This would be even more important in tasks performed in intimate places where the person might be unescorted, such as the toilets, increasing independence and dignity.

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Figures:

- Figure 1: A gallery space at Leids Universitair Medisch in the Netherlands
- Figure 2: A public piano in Charing Cross Hospital in London, UK
- Figure 3: Methodology
- Figure 4: A general bird's-eye view of Hogewey village
- Figure 5: The restaurant of the village
- Figure 6: The high street of the village
- Figure 7: Convex spaces of the ground floor of the village. The warmest colours indicate areas where human presence is more expected. Indeed, the central corridor and the café/pub with the sheltered outdoors area right next to it seemed the most popular with lots of socializing taking place there. In the upper floor the yellow area where were people were seen during the visit. The pictures indicate that not all houses are the same in terms of social connectivity. Some dark blue ones even if closer to the social areas might be more segregated (dark blue) than others.
- Figure 8: Convex spaces of 1st floor of the village
- Figure 9: The dots in the justified graph indicate choice of destination, indicating possibilities for social interaction. The higher the step depth the most segregated the area is. There is a considerable difference between the social areas and the private areas which is not typical for institutions (as they tend to be inverse as buildings). This graph demonstrates a relatively normal development (with private spaces placed deeper in the structure of the village).
- Figure 10: Visual clue for better self-orientation of the users
- Figure 11: The Hogewey is at the edge between the town of Weesp and the countryside

- Figure 12: Restaurant toilet at Hogewey

Tables:

- Table 1: Village Traits and models. Here we need to acknowledge that for some the distinction was not always black and white. For example, the presence of the occupational room is a building feature, yet the provision of the therapy is a service feature

Convex spaces of the ground floor of the village. The space syntax convex analysis indicated that areas such as (2,7,12,40) are areas where human presence is more expected. Indeed, the central corridor (40) and the café/pub (13) with the sheltered outdoors area right next to it (7) seemed the most popular with lots of socializing taking place there. In the upper floor people were seen during the visit at space (57). The pictures indicate that not all houses are the same in terms of social connectivity. Some dark blue ones even if closer to the social areas, such as spaces (35,38) might be more segregated than others.