Designing "little worlds" in Walnut Park: How architects adopted an ethnographic case study on living with dementia

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Abstract: Understanding future users is recognised to be essential in design, yet also challenging. Often architects have no direct access to the experiences of others, like people with dementia. Case studies have been suggested as an adequate format to inform designers. This paper investigates the role of an ethnographic case study about a person living with dementia, as provided to an architectural firm designing a residential care facility. Interviews with the architects and an analysis of design materials reveal how they incorporated the case study in their ongoing design. Results indicate that the case study offered insight into users' daily life and facilitated architects' concept development. Architects' resulting concept proved valuable to frame design decisions, while its visualisation played a significant role in internal and external communication. The study contributes to untangling important aspects in informing architects about future users and raises questions regarding researchers' and designers' roles in transferring knowledge.

Keywords: architectural design; dementia; ethnographic case study; knowledge

1. Introduction

Understanding future users is recognised to be essential in design (Dorst 2006). Yet, it can be difficult to design for others with considerably different spatial experiences, due to differences in age, gender, ability, ethnicity, profession, situation, etc. (Imrie 2003). This paper concerns people with dementia, who can experience severe disorientation in space, time and identity due to memory loss (Jonker, Slaets and Verhey 2009). The built environment has the potential to support orientation and add to people's wellbeing (Calkins, Sanford and Proffitt 2001; Day, Carreon and Stump 2000; Sternberg 2009). Nevertheless, designing a residential care facility for people with dementia can be challenging, as

architects often have no direct access to people with dementia's daily life, experiences, aspirations and needs. Involving people with dementia is often unfeasible for architects, given the amount of time and effort required and architects' unfamiliarity with user involvement (Sanders 2009).

Architects typically need to turn to sources other than their own experience (or direct user involvement) to inform their design for people with dementia, but this is where they encounter difficulties (Van Steenwinkel, Van Audenhove and Heylighen 2012). Traditional research outcomes are difficult to apply, due to, e.g., the lack of spatial aspects in the content and the designer-unfriendly format (Van Steenwinkel 2015).

Information formats should take into account architects' "designerly ways of knowing" (Cross 2006). As outlined below, case studies have been suggested an adequate format to inform decision making (based on, e.g., Flyvbjerg 2001). Taking a closer look at the factors that might have contributed to adopting such a case study can improve our understanding of how to inform architects about experiences of future users that are difficult to access.

This paper analyses the adoption of an ethnographic case study about Mary, a woman with early-onset dementia living at home with her husband (Van Steenwinkel, Van Audenhove and Heylighen 2014). The case study was conducted by the second author, prior to and apart from this study, to offer architects insight into the life of a person with dementia. This paper investigates how an architecture firm adopted the results of this ethnographic case study in their ongoing design of a residential care facility. To this end, interviews with the architects and an analysis of their design materials were conducted.

The results reported below are organised in three sections reflecting the contributions of the ethnographic case study: how it helped to contextualise the issue of dementia, how its main concept was incorporated in the design, and how this concept was expressed. The discussion section untangles important aspects in informing architects about future users whose experiences are difficult to access. This yields insight into the possibilities to inform architectural design through a more prominent position of user perspectives. It also raises questions about the potential roles of both researchers and designers in transferring knowledge from research into design practice.

2. Background

Although numerous scientific studies have been conducted about design for people with dementia, their uptake in design practice is limited. This may relate to the fact that most studies focus on *what* (spatial) aspects are in play in the context of dementia, but leave designers in the dark about *how* and *why* people with dementia use space (Chalfont and Rodiek 2005, p.342). Traditional research outcomes do not fit design practice, neither content- nor format-wise (Diaz Moore and Geboy 2010; Kirkeby 2009; McGinley and Dong 2011; Rashid 2013). A typical list of prescriptive, decontextualized facts with little direct

relevance to designing space is hard to work with. Architects designing for people with dementia would rather benefit from information with particular characteristics, namely:

> "being open-ended and descriptive, including information about living with dementia, including information about the physical environment and preferably addressing architects' core business (form and spatial organization), and being time-efficient." (Van Steenwinkel 2015, p.30)

To inform architects adequately about future users, like people with dementia, these requirements should be taken into account. As the requirements relate to architects' "designerly ways of knowing" (Cross 2006), the specific character of the activity of designing (in general) is worth a closer look (Lawson 2010). Design is not a linear process where facts serve as input and a (building) design is produced as output. Given that design deals with ill-structured, wicked problems (Rittel 1971), gaining an understanding of the problem parallel to testing solutions is an essential design activity (Dorst and Cross 2001). This understanding entails a kind of knowledge different from the facts produced by the dominant clinical studies (Diaz Moore and Geboy 2010). For example in the case of architectural design:

> "Understanding is seen as important for the architect, because the production of architecture demands an ability to imagine how others may use and experience a building. To imagine how it is to be in a certain space involves empathy and a personal understanding from the architect." (Kirkeby 2009, p.308)

Understanding a design problem is essentially (inter)subjective and value-bound, as in every iteration architects have to rely on their own judgement (Darke 1979; Lawson 1994), to evaluate a potential solution in relation to the problem at hand. This reflection-in-action can be observed in different professions, from designers over managers to clinicians, who all seem to know more than they can put into words when assessing ad-hoc complex problems (Schön 1983). Aristotle's concept of "phronesis" explains the kind of knowledge in play when making such judgements (Flyvbjerg 2001). "Phronesis" can build on scientific facts and personal experience, but it has an extra dimension of morality. That is, architects need to make 'good' design decisions, based on preconceived values for future users and in line with the project aim and architects' self-imposed ambitions.

Case studies have been suggested as an adequate format to inform such 'good' decision making (Flyvbjerg 2001, in the context of policy, planning, management). Case studies are particularly valuable because they are episodic sources, i.e., "*particular*, experienced-linked sources which are at the *same abstraction level* as the target problem" (Visser 1995, p.173, emphasis in original). If well-documented, a case study allows understanding the particularities of its context and transferring knowledge from one situation to another. This makes it more useful for 'good' decision making than general, context-independent knowledge (Flyvbjerg 2001).

This suggestion to inform 'good' decision making equally applies to architects' design process and was already observed in their use of architectural references, i.e., in transferring elements of other projects to the design problem at hand (Goldschmidt 1998; Heylighen and

Neuckermans 2002). Yet, the use of references must be well-considered, and "to be valuable, a reference must carry meaning and a designer must therefore have sufficient intimacy with it" (Goldschmidt 1998, p.266). In this paper, we investigate the potential of an ethnographic case study, providing insight into the spatial experience of a person with dementia, as a format to inform architects' design process.

3. Methods

The empirical data were collected as part of a larger qualitative ethnographic study, which aims to gain insight into architects' "designerly ways of knowing" about users. The first author conducted six weeks of ethnographic fieldwork in the architecture firm named studio:ratio,[1] where she followed various design projects.

Studio:ratio is an acclaimed Brussels-based architecture firm consisting of nine architects (including two partners and two interns). The firm mainly works on public projects (granted through competitions) like schools and collective housing. One of the partners gained experience in designing residential care facilities in his previous firm.

This paper focuses on an ongoing design project called Walnut Park, a Belgian residential care facility with a local service and day centre for people with dementia. The Walnut Park organisation aims to transform and extend its existing complex of historical buildings in a park setting. The project was launched through an open tender organised by the Flemish Government Architect's Team for innovating care projects. At the time of the study, studio:ratio, in collaboration with a British firm, had won the competition and completed the preliminary design.

The data for this paper originate from qualitative interviews and document analysis. Two semi-structured, in-depth interviews of one hour each were conducted with the two studio:ratio architects who were mainly working on the project, namely, one of the partners, Philip, and a younger project architect, Lucas. These interviews were audio-recorded and transcribed verbatim. An informal introduction about the project by David, the other partner at studio:ratio who was also involved, was documented in field notes. In addition, design materials (e.g., client's vision statement, project definition, architects' declaration of intent, competition entry, preliminary design report, …) were collected.

The thematic analysis was guided by the research question "how do architects know about users?". This paper specifically focuses on findings relating to the earlier mentioned results of the ethnographic case study about a person with early-onset dementia, which the architects adopted in their design. This focus allows analysing the potential of an ethnographic case study to inform architectural design. Insights are constructed by triangulating findings from the various data collection methods. All quotes below have been translated by the authors.

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[1] For reasons of confidentiality, the names of the firm, project and architects are all pseudonyms.

4. Results

4.1 Contextualisation

> "*(almost whispering)* We actually don't know what a residential care facility should be like. If you're very honest, we just don't know. And we don't know what it's like to grow old, and we can't imagine either." (Philip)

This sincere statement by Philip, the partner at studio:ratio in charge of the Walnut Park project, illustrates architects' current situation: architects (even those with experience in designing residential care facilities) acknowledge not having access to the experiences of people with dementia. Nevertheless, numerous scientific studies have been conducted about dementia. Although these resulted in various recommendations, the architects could not find integral guidance relevant to their domain, i.e., organising space. Low applicability and high specialisation of information easily puts architects off:

> "I decided for myself rather quickly that I wasn't that interested, because I presumed or noticed that [recommendations are] always about very small [details]. *(reciting)* People with early-onset dementia have exit-seeking behaviour, which means that banisters shouldn't be one meter high but that you'd better make them a bit higher. Older people, people with dementia, have a different perception of colours, which means that you shouldn't make a black and white chequered floor. . . . A *real* effect on the architecture and the organisation of the plan [these recommendations] didn't have." (Philip)

Alternatively, the architects drew upon sources closer to their domain. Current architectural discourses set out by the Flemish Government Architect's Team provided a frame to take on the design. For instance, the architects picked out the themes of "small scale" and/versus "large scale", which were linked to their personal approach (see below).

The architects' design was also largely informed by their own experience and architectural capital. This includes the skill to explore spatial experiences in physical models, personal collections of architectural references, and the development of personal themes in their repertoire. To illustrate the latter: in a previous design, Philip had started working on the spatial concept of circuits or networks to introduce hominess (cf. small scale) into a large scale residential care facility. Yet, with dementia, central to the Walnut Park design brief, the studio:ratio architects did not have any personal experience.

As is characteristic to the competition format, the selected architectural firms were expected to develop a design proposal with hardly any dialogue with the client during the competition stage. Architects were provided with a short vision statement by the client and an extensive design brief developed by an external consultancy firm. This brief did not really respond to studio:ratio's expectations. For instance, the architects found it difficult to work with abstract concepts such as "hominess", which can have different meanings to different people. They would have liked to see more concrete requirements and an explanation of the client's way of working. Moreover, they criticised the way the brief proposed particular

architectural solutions, which felt imperative and putting them out of the job as architects. As a result, they had difficulties in finding their own approach.

At this point in the design process, they had contact with an architectural research group about some ethnographic case studies on living with dementia this group conducted.[2] In the interviews, this contact and one of the scientific articles were identified by the architects as a turning point:

> "But what made a great shift was a conversation with [a researcher]… and a number of articles she sent us about people with dementia. There was one article . . . about a lady with early-onset dementia who described . . . how she started looking for places in her reduced world and how she experienced the world and the home environment. And it was very much about a scale-down, about very small elements, such as . . . *my* chair, with *my* table beside, with *my* pictures of *my* children that are always in that place, and *my* books and *my* lamp, [which] become very important. Or *that* spot in the kitchen since I'm always sitting there because *that*'s where the sun enters in the morning . . . Suddenly spatial experience is no longer related to what we call architecture but to very intuitive things, memories, or… simple things such as feeling the sun on your face. And that made us believe that our network idea could work." (Philip)

This ethnographic case study offered the architects insight into the daily life of a person with early-onset dementia living at home with her husband. This concrete contextualisation of living with dementia was able to change (to a certain degree) their preceding "we don't know what it's like"-situation. It enabled them to acquire a certain understanding of a domestic context that was transferable to the residential care facility context. This had been impossible through the usual sources that informed their design.

4.2 Incorporation

More than just generating an understanding of living with dementia, the ethnographic case study also facilitated architects' concept development in their design of Walnut Park residential care facility. The study and accompanying article about Mary, a person living with early-onset dementia, proposed the concept of "little worlds". This concept describes Mary's tactic to claim and control certain places in her living environment as a reaction to her experience of disorientation. The architects on their part were, based on their intuition and experience, working on a spatial concept to introduce homeness into the larger scale (as mentioned before). From their particular point of view, they were able to interpret the article's central concept of "little worlds" and couple it to their architectural campus/network concept. In this way they could consolidate their concept:

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[2] The contact persons were the last and second author of this paper. The contact was in the context of studio:ratio's competition design for Walnut Park, and studio:ratio requested background information on dementia. The researchers first sent them the article about the ethnographic case study of Mary (Van Steenwinkel, Van Audenhove and Heylighen 2014), without further guidance. After studio:ratio won the competition, they also had a meeting on designing for people with dementia, and the researchers provided them with additional scientific articles. At that time, the study reported in this paper had not been initiated.

> "The Care Campus offers a third way that combines the best of both worlds [i.e., of small scale and large scale]. This concept has the aim to maximise the living environment of the resident with a care need. The [resident's] spatial experience and feeling of 'home' are not necessarily based on the classic image of a defined house but rather on the identity of the place, objects, activities and people. Rather it is a person's ability to choose his favourite place, to define it and model it to his wishes, which generates a sense of home. This model of perception corresponds very closely to the idea that one can feel fine in several places and that the [resident's] personal experiential world rather consists of a network of little worlds than of the need to isolate oneself in a separate house." (studio:ratio's competition entry)

The particular strength of the ethnographic case study is its potential to be related to and strengthen the architects' "gut feeling" (Philip), on which they rely throughout the design process. They seamlessly integrated the architectural and research concepts into one new concept of "a network of little worlds".

Whereas the design suggestions from the design brief had narrowed down architects' solution space to a point with little room for manoeuvre, the "little worlds" concept allowed opening up possibilities again. The concept's generativity made it particular useful to architects, as it allowed framing and evaluating design issues on different levels. On the level of the private room, e.g., attention was paid to opportunities for the residents to furnish and personalise their own room in order to support identification. On the level of the collective living unit, circulation areas consist of living rooms instead of corridors – in line with the typology of a mansion rather than an institution. Also on the level of the campus, the local service centre and park garden offer a protective environment as well as a connection to the neighbourhood. The architects aimed to enable residents to appropriate "little worlds" at each of these levels in the campus network, so that "those different places together mentally start becoming your house" (Philip).

The perspective generated by the "little worlds" concept also provided a frame for studio:ratio to study and evaluate (elements of) other architects' design projects. As observed, it is common practice for architects to critically use these as references to inform their own design. The example below illustrates how the concept orientated architects' perspective:

> "In the context of a team excursion, we visited all kinds of residential care facilities. It was very fascinating [to think about] how architecture . . . relates to its residents, and how that spreads a kind of atmosphere. And [to analyse] how small gestures can offer some kind of small scenes or benchmarks. For example, in the [private] rooms [of one of the facilities we visited, you would have a typical] entrance area and a small bathroom and a closet. But there was a sink incorporated in that closet, so that every resident, in his own room, is able to take some water from a kitchen tap and make some tea. And so, I *never* thought about it, but it was *such* a nice feeling, like, "this is also a bit of an apartment, your room". And that related very closely to our idea of "little worlds", of different scales. Namely that everyone has their own apartment but that apartment is contained within a larger apartment, and that larger apartment is contained within a larger building. So the idea of such a small sink can make that idea stronger." (Lucas)

4.3 Expression

The previous section showed how the main concept of "little worlds" from the ethnographic case study lend itself to a spatial translation by the architects because of its link with (their core business of organising) space. The case study also enhanced adoption by offering a clear selection and identification of a concrete concept – namely, "little worlds". Studio:ratio adopted the name "little worlds" in their own narrative. This identifiable, solidified concept could be easily picked up by other parties. Thus, although the case study was interpreted by the architects and translated to a new design situation, the name expressing the concept was still borrowed from the original scientific source.

The "little worlds" concept was also suitable to be expressed visually. Figure 1 shows the drawing David made to explain their concept for the Walnut Park project to the client and other jury members. The accompanying text in the competition entry states:

> "The 'mental map' . . . shows a potential image of the world of a resident at the care facility. Small things become more important than big ones. The drawing shows a network of 'little worlds', a fascinating and rich care campus." (studio:ratio's competition entry)
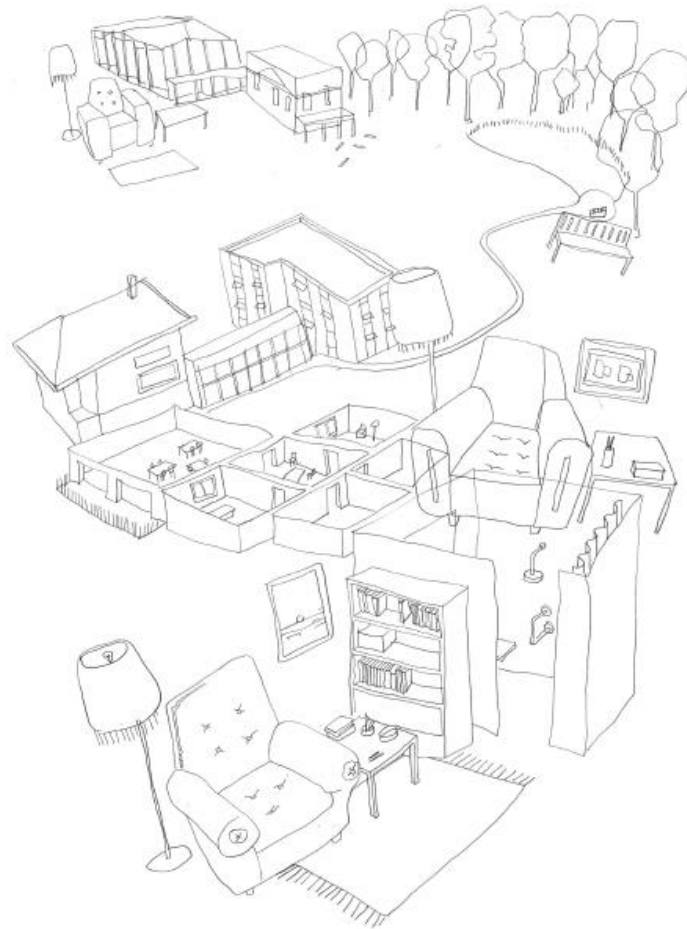
Figure 1   This drawing expresses studio:ratio's concept of "a network of little worlds". It became a visual reference to the Walnut Park project. © the architects

The foreground shows a scene with a chair, lamp and side table with personal objects, which is consistent with one of Mary's "little worlds" described in the scientific article. Adjacently, a sanitary unit indicates that the scene is situated in someone's private room in a residential care facility. The drawing then unwinds in a chain of "little worlds", where similar chairs appear in different settings on the Walnut Park care campus, and even a bench in the park. Although not accurate in a geographical sense, the drawing identifies buildings and spaces on the campus. By shifting the perception of the site, the drawing alludes to people with dementia's difficulties in orientation. The architects' concept of focussing on places with a meaningful identity is as such visually presented as a design strategy.

Although the drawing's primary purpose was to enable communication with the client, it also played an important role in studio:ratio's internal communication. For instance, the drawing also formed the basis for the partners to inform Lucas on the concept that was going to steer the project's further development. So although the drawing (like the concept) was not collaboratively constructed by all architects working on the Walnut Park project, it did have a shared function in the design process.

The drawing that expresses the "little worlds" concept even acquired an own identity. It became a visual reference that symbolises the Walnut Park project, more or less like a main conceptual scheme or an iconic photograph would do:

> "This is really a drawing we didn't just use for the competition but that's afterwards still being referred to as "that little worlds drawing", that's what this project is."
> (Lucas)

5. Discussion

A limitation of our study is that the design for Walnut Park has not been realised yet. Within the scope of this study, we therefore cannot make any claims about whether adopting the results of the ethnographic case study on living with dementia resulted in an environment that contributes to people with dementia's wellbeing. Furthermore, the results in this paper are largely based on retrospective interviews with architects, which have the risk of presenting the design process in a diverted way (Lawson 1994, p.2). This risk was minimised by triangulating the interviews with an analysis of design materials and with observations in the architecture firm, which provided an understanding of how the architects work.

The architects' adoption of the results of an ethnographic case study in the particular format of an academic article was not obvious. Given that design practice is characterised by an intuitive approach and high time pressure, designers are found to absorb information in an opportunistic way, cherry-picking from all kinds of sources and fields, but to be reluctant to read long academic texts (Kornberger, Kreiner and Clegg 2011; McGinley and Dong 2011). Of course we cannot generalise from this case that (in contrast to what other researchers found) a scientific ethnographic article works for architects in any case. Maybe it was the accidental cherry that was picked. Maybe it was a matter of perfect timing. Maybe it was the

additional personal contact with the research team (cf. Kirkeby, et al 2015). Nevertheless, the format must have contained crucial elements for knowledge transfer.

To return to our research question, we certainly can learn from analysing architects' adoption of the ethnographic case study in their design. We can state that the case study's main concept of "little worlds":

- served as a breakthrough when architects were stuck in defining the design problem, by providing insight into living with dementia transferable to this problem;
- then served as a vehicle to design a consistent project, by facilitating the development of a concept that allowed framing design decisions at different levels of the design;
- and lend itself to a convincing expression, both verbally and visually, in both internal and external communication.

These contributions span the three activities of "delimiting the solution space, defining an organizing theme, and choosing a communication strategy" that typically structure architects' work when preparing a competition entry (Kreiner 2013, p.226). This thorough implementation indicates an effective knowledge transfer from research into design practice.

In terms of the first contribution – providing insight into the problem – the suitability of case studies, which offer contextual, transferable knowledge, has been well-argued (Flyvbjerg 2001; Kirkeby 2009). What makes the ethnographic case study different from, say, a documentary (which can also provide insight into the daily life of people living with dementia) is its presentation of a clear concept with spatial relevance.

This concept is abstracted to a certain level but still refers to a person with dementia's personal experiences and concrete situations. This allowed the architects to crystallise their thoughts on their network concept-in-development. Thus, the ethnographic case study's second contribution consists of facilitating the development of a manageable concept to tackle the design problem. The importance of a generative concept for the design has been well-documented and conceptualised (cf. Darke's (1979) "primary generator", Rowe's (1987) "organising principle" or Lawson's (1994) "concept"). Architects are found to devote much effort to the quest for such a generative concept, which provides a rationale for their design decisions:

> "This central organizing principle, this grand narrative, this Archimedean point from which everything can be derived and to which everything can be referred is important in two ways. It fosters *consistent design* and it facilitates *convincing communication* of the design proposal to even the lay members of the jury." (Kreiner 2013, p.231)

In particular, the "little worlds" concept in this study provided architects with a spatial element around which insights about living with dementia can be grouped. Such explanatory concepts have proved valuable building blocks in design. For example, Lynch (1960)

identified five elements – path, edge, district, node, and landmark – as clues to urban design. Coming back to the information characteristics identified in the background section (Van Steenwinkel 2015), we can indeed observe how exactly the *open-ended-* and *descriptiveness* of a *condensed* concept, offering insights into the *daily life of a person with dementia* as well as being *relevant to designing space*, turned the "little worlds" into a building block for architects in their design of a residential care facility for people with dementia.

The architects indicated that they would probably have developed a similar design based on their own intuition, since they were already working on a network model as a spatial concept. Some might see this as weakening our argument, but we argue that this potential integration with an intuitive, spatial approach might be the very success factor of the ethnographic case study. By adding to the creative problem framing – essential in the co-evolution problem and solution (Dorst and Cross 2001) – the resulting concept was well-informed and reinforced. Architects worked with the concept more or less like they naturally use metaphors in design. Metaphors do not just refer to visual characteristics but also to abstract or symbolic ones, providing ambiguous knowledge that "informs all the stages of thinking a building as well as the language to discuss it" (Caballero 2013, p.3).

The architects' appropriation of the concept deserves some more attention. If we focus on expression (the third area of contribution we discussed), this is also where architects' own input is crucial. Visualising the concept was architects' merit. Note that drawings play an active role in the design process (in general). On the one hand, the act of drawing is a way to produce knowledge in architectural practice, by discovering relations (Kornberger, et al 2011) and analysing the drawings' "back-talk" (Schön 1983). On the other hand, drawings function as "boundary objects" (Bucciarelli 2002) in external communication (Ewenstein and Whyte 2009), for example with the client or jury.

We thus observe not only a contribution of the ethnographic case study to architects' design, but a real trade-off between academic research findings and professional architects' skills. If architects' active participation in analysis and translation turns out to be essential in their effective uptake of research findings, as this study suggests, this should be taken into account in addressing the issue of transferring knowledge from research into practice. It implies that effective transfer not only depends on the characteristics of the information (e.g., including visuals). We might need to rethink the strict division between researchers and designers, for example through formats that allow leveraging the potential of architects, such as their communicative skills (cf. Dankl 2015; Kasalı and Nersessian 2015).

6. Conclusion

This study started from the observation that difficulties in transferring scientific knowledge into architectural practice should be tackled in order to support architects in designing inclusive environments that promote wellbeing. In this paper we investigated the potential of an ethnographic case study to inform architects' design process through offering a more prominent position of user perspectives.

An ethnographic case study might be regarded an atypical approach to introduce users' perspectives into design, compared to direct user participation. Yet, based on our findings, we argue that it can be a valuable way to mediate knowledge between two worlds (i.e., people with dementia and architectural practice) with boundaries that are difficult to cross. The architects' conceptual drawing, e.g., illustrates the transformative character of the knowledge embedded in the case study, from the person with dementia's involvement in the research to the architects' active adoption.

More precisely, our results indicate that an ethnographic case study can offer architects insight into the daily life of a person with dementia that are transferable to a new design situation. Moreover it can facilitate architects' concept development. The architects' resulting concept proved valuable to frame design decisions and develop a consistent design, while its visualisation played a significant role in internal and external communication.

Our study contributes to untangling important aspects in informing architects about future users that are difficult to access. The ethnographic case study offered the architects concrete and contextual information, rooted in empirical research, as well as relevant to designing space. Moreover, it provided a clear concept that could tie in with architects' intuitive approach. The architects appropriated the concept in their design. By engaging their own skills, they generated design knowledge, translated, operationalised and visualised the concept successfully.

This trade-off raises questions regarding researchers' and designers' roles in transferring knowledge. The ethnographic case study in this paper is a format that lead to effective knowledge transfer by being receptive for architects' contributions. Yet, more research is needed on how architects in action work with different information formats. Insight in this way of working is expected to support the development of design-oriented formats to inform architects about people's spatial experience.

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