

# DESIGNING FOR SUBJECTIVE WELL-BEING IN INTERIOR ARCHITECTURE: A DESIGN ROADMAP

Interpreting design results in the field of SWB

Ruth Stevens  
Ann Petermans  
Jan Vanrie

## Abstract

Today's public discourse on the design of care centers for the elderly population is increasingly emphasizing the importance of subjective well-being (SWB) and the value that architecture and interior architecture can have in this respect. This paper elaborates on a design exercise for 10 groups of 4 master students in interior architecture in which they had to rethink the design of the communal space system of an existing residential care center (RCC) with the goal of augmenting the living experience and SWB of the residents and add potential value for the neighbourhood. This design exercise was developed from the dual perspective of (i) developing spatial solutions for improving the positive experience and perceived housing quality of elderly in residential care, and (ii) designing architectural spaces based on ethnographic research performed by the student-designers themselves. The purpose of this research is to develop a design roadmap from the data of the design exercise by analyzing the sequential stages that students ran through and the design strategies that they adopted. The proposed design roadmap is a first step in developing a tool that can ultimately assist designers in creating generous and stimulating architectural environments that have a positive effect on SWB.

## Introduction

Our environment influences our mood and feeling of well-being, but we are not always aware of this. For example, we tend to feel liberated and free in a vast natural setting, such as the great plains, or we feel enclosed in rooms with no daylight and very low ceilings. Some spaces are even specifically designed to have a preconceived influence on our mood and behaviour, and in this way impact on our all-round sense of well-being. For example, prison cells are small-scale, stark places usually equipped with a small window located high above eye-sight. Residents are deprived of any link with the outside world, whether a view on the outdoors or visual and auditory contact with others in a neighboring room or the hallway. This configuration of space evokes negative feelings, often formulated as being enforced to feel tiny and modest. Other spaces have in common that they are designed in order to meet certain human needs, wants or wishes, which in turn have an outcome on our feeling of well-being. In the authors' viewpoint, a good example are the controlled multisensory environments (MSEs) designed for people with autism or specific mental disabilities. The different materials, colours and lighting effects applied, deliver stimuli to the various senses with the purpose of calming the user and stimulate a sense of balance (Barnes, 2002).

Given the significance of the concept of subjective well-being (SWB) in academic research and society today, we look for and interpret links between the built environment and our feeling of SWB, and explore how our built environment, or in other words, our architectural peel, influences our feeling of subjective well-being. The emphasis on the human body is an interesting angle to research architecture, since it disengages the value judgment of an architectural space from the supposed supremacy of visual interpretation. Indeed, we believe a more multisensory architectural realization can contribute to the feeling of SWB, which has already been addressed by several architect-critics like for example the Finnish architect Juhani Pallasmaa (Pallasmaa, 2005).

In this paper, we study the link between SWB and the built environment specifically applied to elderly people residing in residential care. Both public opinion and current academic research start to acknowledge the importance of the spatial and built environment and its effect on aging well of elderly persons (e.g. Knudstrup, 2011, Wahl & Oswald, 2010, Wahl et al, 2012). Our research finds itself in this exact spot, analyzing a design-for-SWB exercise given to master students in interior architecture. In this exercise, students had to rethink the communal space system of a RCC, starting from ethnographic research data, with the purpose of firstly, increasing residents' SWB and secondly, adding potential value to the entire neighbourhood. The design process and outcome of the design exercise will be analyzed methodologically. In other words, we will unravel the design process into sequential stages in order to draw a fixed design pattern to convert a SWB-problem into a spatial

solution and thus create ways to augment SWB architecturally. Our purpose is to propose a design roadmap that can ultimately assist (interior) architects in designing a generous and stimulating environment for SWB. Throughout the paper, we will illustrate the design roadmap with the results of one specific case from the design exercise. We give insight in architectural approaches that handle specifically determined RCC residents' SWB-problems and translate the concept of SWB into spatial terms. To finish, limitations and recommendations for future research will be discussed.

## **Body, space and SWB: designing a generous environment**

In this first section, we will elaborate on how we unite the concepts of 'body', 'space' and 'SWB'. In our viewpoint the space must (be designed to) empower the body of the people who inhabit the concerned space, no matter the duration of this particular stay. This means designers must create spaces that are generous to their habitants in order to have a positive influence on habitants' SWB. But how can a generous environment be described in a designerly vocabulary, and how do users experience it?

At the end of the 19<sup>th</sup> century, Swiss art historian Heinrich Wölfflin stated that architectural shapes and volumes can only be fully understood when experienced by the entire body and the senses (Böhme 2013). Only through corporal interaction with and movement through an architectural space, a person is able to create a complete puzzle of the space in his mind (Havik et al, 2013). This puzzle enables us to be(come) physically and mentally present in the space. This phenomenological approach claims that space must impress all our senses and be encountered in that way. In the late 20<sup>th</sup> century, Finnish architect-critic Juhani Pallasmaa stated that a building is approached, confronted, and always related to one's body (Pallasmaa 2005). Pallasmaa puts the emphasis on the constant dialogue and interaction a person has with his or her environment in a way the two are irreversibly connected to one another. But how can we experience an overall sensuous bodily interaction with the architectural environment? How can a building be that generous to its users? This needs to be addressed in the early design phases, and is therefore the responsibility of the designer. Pallasmaa (2005) subscribes this statement by declaring that a designer must "become one" with the future user of the future building, since it is impossible to design for a person as 'the other' (Pallasmaa in Oase p 41). "*The only proper way to deal with the everyday practice of architecture is that the architect becomes the client him- or herself.*" (Pallasmaa in Oase 91, p41) Therefore a designer must get to know the future users of the building and arouse empathy for them. In the authors' viewpoint, this could be a key to designing for SWB.

Also, our body is a stimuli-sensitive shell that is in continuous contact with the environment, thus the built environment can act on us through our body. In a positive scenario, built environments can strengthen the experiencing individual (Böhme in Oase p31), more specifically by their designed sensory characteristics added with the activities/functions that these environments harbor. A generous building must support the strengths and skills, the inner resources of its users and introduce new experiences and abilities. This is our focus in design for SWB research. Therefore, designing for SWB also implies designing an architectural space that supports users by acting on their abilities and skills. A person can learn and "charge" himself and his inner resources by experiencing, interpreting and reflecting about stimuli. That person is both physically and mindfully present in the space surrounding him, or as Gaines claimed "architecture must underscore what it means to be mindfully present in the space" (Böhme in Oase 91, p31). In that way, architecture subsequently influences SWB by acting on or introducing specific human abilities in users that contribute to their well-being through bodily interaction with this built environment. In an ideal scenario, that process sets a person on his way to a flourishing state. According to the framework of Positive Design (Desmet and Pohlmeier, 2013) a person can only flourish when he experiences pleasure, meaning and virtue at once. Consequently, "charging" oneself should imply experiencing pleasure, meaning and virtue at once, embedded in a product or a specific experience. Translated into (interior) architectural terms, the built environment thus has an important empowering role, since this experience-process will take place when humans are moving through and interacting with the 'space', the built environment. The architectural quality lies in the level of equipment of the environment, the activities and experiences it harbors, or in other words, the generosity of the environment.

Summarized, we believe the answer to a generous environment from a designer's outlook, lies in getting to know the target group you are designing for, and generating stimulating experiences through the architecture. Hence, to getting to know the target users of the building, in the authors' viewpoint design for experience is a key concept in this respect. This also learns us that a designer's focus in

the design process should not only be on the spatial dimensions, by rather shift back and forth between the person that will occupy the building and the spatial characteristics of the space, or in other words between the body and the space.

In the next sections of this paper we will elaborate on designing architecture for SWB by looking at the set-up and the results of a specific design-for-SWB exercise in interior architecture. This exercise was developed to find spatial solutions for SWB-problems in the built environment of residential care centers (RCCs, the permanent and collective stay of elderly persons in need for care). We focus on the importance of SWB and the value that architecture and interior architecture can have in this context. In these RCC-settings, the interior architecture of the residence is highly important, since residents rarely leave this setting and spend a great deal of their times indoors. In academic literature, some SWB-aspects related to the look and feel of the spatial setting of residential care are suggested, and will be addressed later on as SWB-focus points, that were given to students as a guidance. Also, we have applied literature on elderly housing in the set up of the exercise in order to correspond with the existing care needs and living demands of the elderly people (Myncke and Vandekerckhove, 2007; De Klerk, 2004; McCarthy and Stone, 2012).

## **A design-for-SWB exercise in interior architecture disassembled and structured into a design roadmap**

In the next sections, we will analyze the set-up and disassemble the outcomes of the design-for-SWB exercise in sequential steps. This will lead to the configuration of a design roadmap that is a first step in developing a tool that can ultimately assist designers in creating generous and stimulating architectural environments that have a positive effect on the experience of SWB. In the authors' viewpoints, such environments will eventually allow people to flourish in that specific environment. The descriptive design roadmap will provide us with useful information that we eventually hope to generalize into a design model to function as a design guide for design-for-SWB challenges and assists designers in converting a SWB human related experiential problem into a spatial, physical solution. Or in other words, to transform a 'body'-related problem into a 'space'-related solution. This juxtaposition and interaction of the body and the space is essential in our SWB-research linked to the built environment. These two central aspects are intertwined throughout the design process and the focus is shifting back and forth between the body and the space depending on the stage the design process is in. The fact that these two concepts are constantly alternating, results in a human centered architectural design approach. This will also be visualized later on in this paper.

### **Set-up of a design-for-SWB (interior) architectural process**

We developed a short (2-weeks) intense design workshop for 40 master students in interior architecture in which they had to rethink the communal space system of an existing RCC with the purpose of firstly increasing the residents' SWB and secondly, adding potential value to the entire neighbourhood. We gave guidance to students by structuring the design workshop, and therefore we set various sequential goals which they had to meet in order to keep their focus on the main objective, namely design for SWB. This exercise took place outside students' comfort zone, since they usually start from a very functional design task and have to work towards a concrete spatial goal, for example: refurbish a vacant building into a residential care center that can inhabit 60 residents. The objective is clear: design 60 private bedrooms in the vacant building, supplemented with the necessary communal spaces according to regulations in the RCC industry. In our exercise, students were asked to increase the feeling of SWB of residents and were allowed to design an interior architectural intervention in the communal spaces. This design objective has a human-centered character, while in the first example, the design objective has a more spatial, functional character. The design objective of our exercise asks students a specific question without providing them with specific tools to work out the answer with. The designed end result also has a different character than the problem statement. The road from the SWB-problem statement to the actual spatial solution consists of sequential steps that need to be ran through. In the example of the traditional design exercise in which students have to refurbish a vacant building into a RCC for 60 residents, the objective is clear: the problem has a spatial character, and so has the solution. The relatively new approach students had to take during this exercise, requested an adaptation of their design process and more guidance during the execution of the exercise. Therefore, we developed a design roadmap, which is built up from the alternating attention between body and space in this design process, see Figure 1.

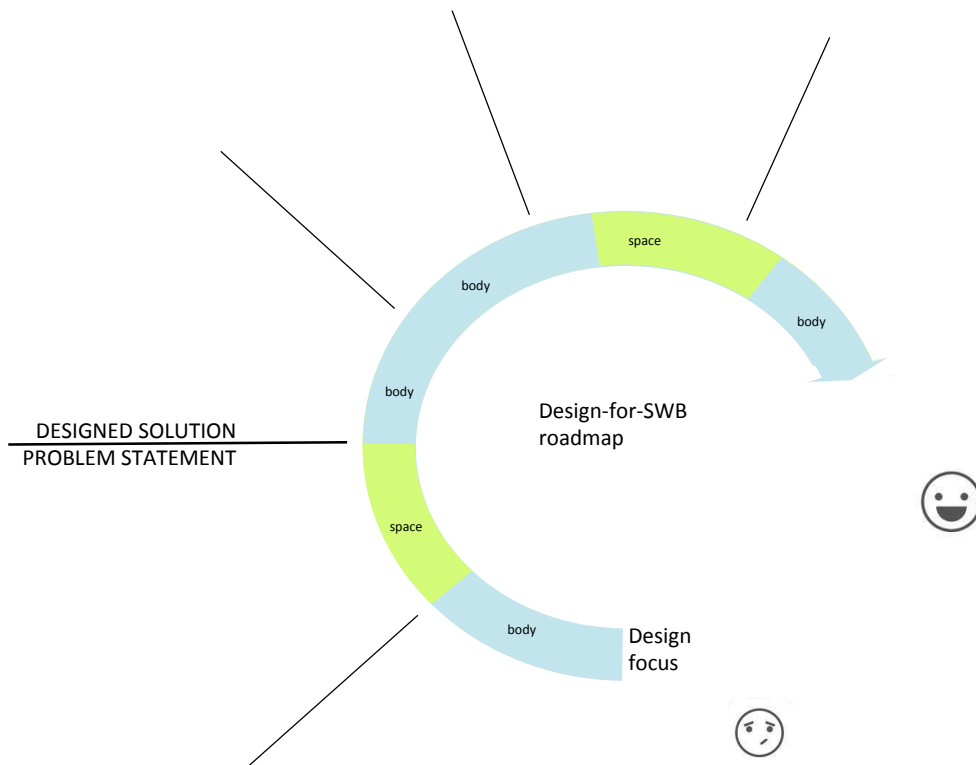


Figure 1: The assembly of a design roadmap: The body/space focus

In the next paragraphs, the set-up of the design exercise is visualized. In what follows, we dive deeper in each of the respective phases, see Figure 2.

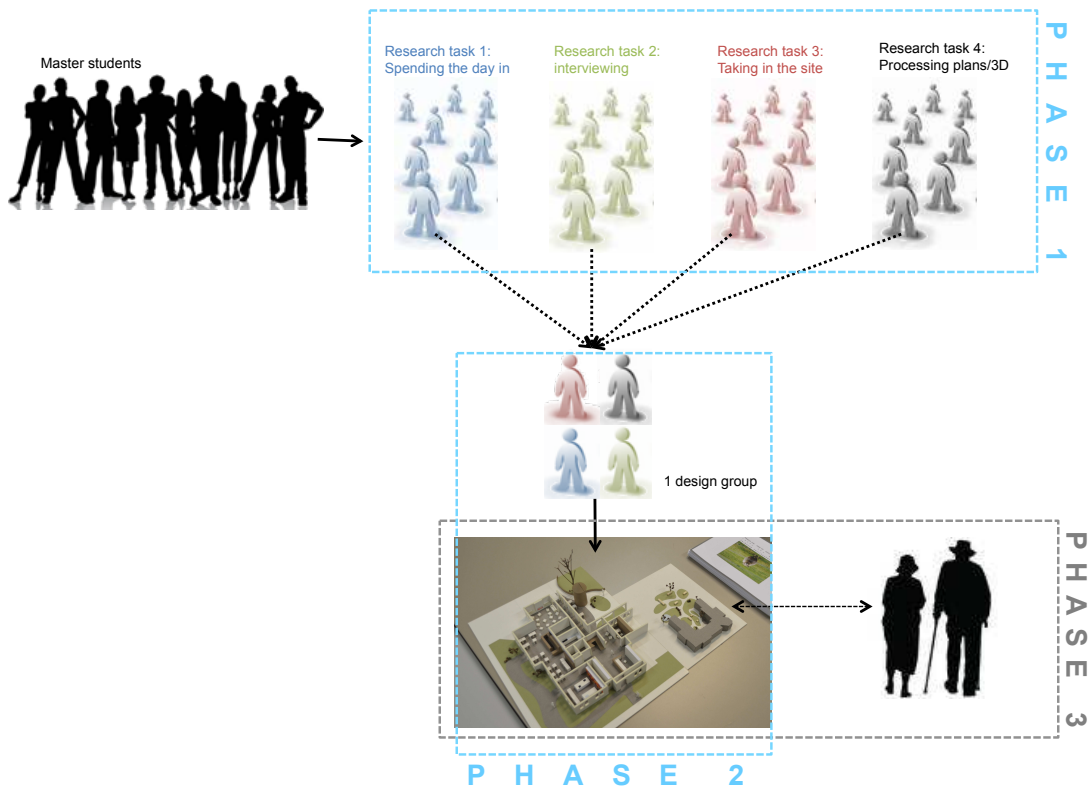


Figure 2: Scheme of the phased set-up of the design-for-SWB exercise

## Getting to know the user - Phase 1: preliminary research

To tackle a SWB-problem in a design challenge, we asked students to perform ethnographic research in the RCC facility prior to the design workshop. As we have argued before, getting to know the target group or users of the building is a key element in being able to design for SWB. During phase 1 (see figure 2), prior to the actual two week design workshop, the entire group of 40 students was divided into four groups of ten students and each student-designer had to perform ethnographic research in the RCC, to 'experience' and learn to grasp the environment in all its facets. Per group, students were assigned to a specific task, which they had to carry out individually. The first two groups of students were given tasks with a primarily social, empathic character, and were asked to gather information on how people currently experience and how they wish to experience the RCC through several ethnographic and qualitative research methods. They had to physically and psychologically immerse themselves in the RCC, empathize and speak with residents, staff and visitors and 'experience' the environment for themselves. Students from the first group escorted and assisted personnel in their daily tasks in the RCC, talking to and helping residents, and students from the second group conducted interviews with staff, residents, visitors, friends and family. The other two groups of students were assigned tasks with a predominantly spatial character. The students of the third group had to individually take in the architectural site of the RCC and the social network of the neighbourhood through observing, sketching, photographing, etcetera, and look for spatial opportunities for (interior) architectural interventions. The students from the fourth group were asked to draw the architectural plans of the buildings and prepare a 3d-model of the site.

## Designing process for SWB - Phase 2: actual design workshop

In phase 2, an intense two-week fulltime design workshop, students started designing. To start with, they were regrouped (see figure 2). Ten design groups of four members were formed out of the 40 students by composing four students that had performed different research tasks during phase 1. As said before, students had to follow a design process that was setup partially in advance and partially during phase 2 of the design workshop. This design process is visualized in figure 3, in the grey arc or circle, together with the matching focus on body of space per step in the design process. In what follows, each step in the design process will be illustrated with a specific design case from the exercise.

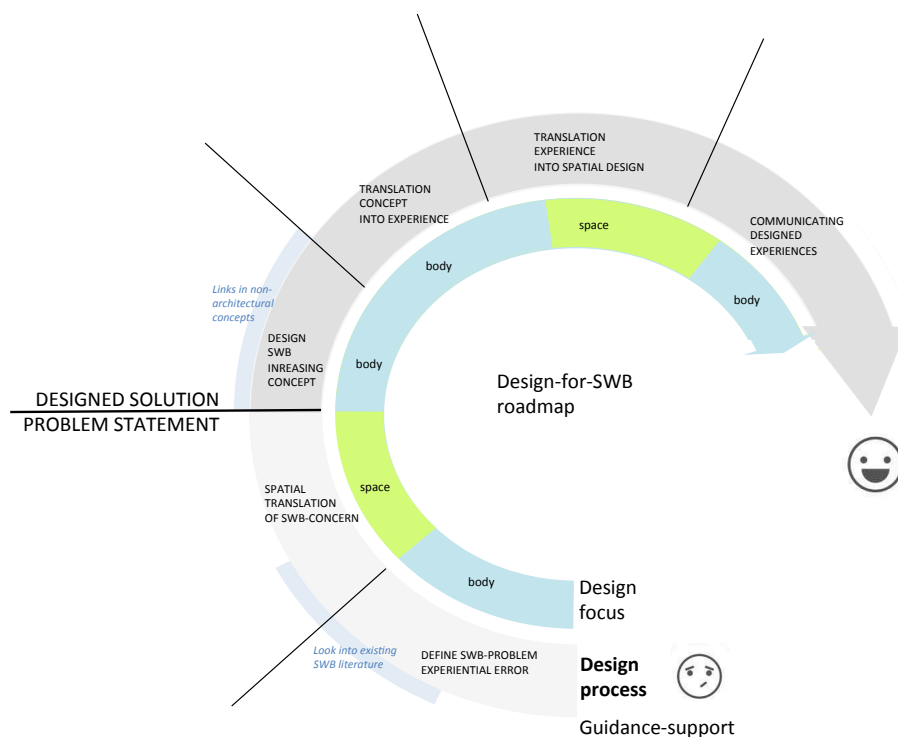


Figure 3: The assembly of a design roadmap: Fixed design set-up, design process students had to follow and the body/space focus

Looking at figure 3, the design process (central grey arc of circle) consists of two major phases, the problem statement and the designed solution. In the 'problem statement' stage, we can identify two steps: (1) defining the SWB-problem, in which a SWB focus point given to each design group functioned as a guidance tool and (2) translating the problem into a spatial dimension. A design-for-SWB task always starts from a human-centered problem statement. We have said earlier that getting to know the target group and the architectural situation is essential to be able to define a SWB-threat and in a later stadium design an architectural intervention that has a positive influence on SWB of the target group. During the first week of the design workshop, the research data from phase 1 were used as the starting-point for the interior architectural interventions that were designed during the workshop. Students had to derive and formulate a notable SWB-problem statement based on their own experiences. We asked each design group to start with critically combining, comparing and analyzing their research data derived in phase 1. Each design group could rely on proper 'living' experiences from a student that performed research task 1, insights from residents and other people involved in the RCC that were gathered by student 2, and spatial expertise from student 3. Student 4 delivered the necessary architectural footage of the site. We also provided each design group with a SWB-focus point. We distilled five architectural tips that frequently rise in academic literature concerning SWB and literature concerning designing elderly housing: natural green, socially interactive, titlating, protective and low treshhold. The link with architecture was placed in the backdrop, as shown in the green/blue arc of circle (see figure 3). Blending research data from phase 1 (experiential information) and brainstorming on the SWB-focus point, directed students to the distillation of a notable problem relating to subjective well-being and living experience in the RCC. In that way, the qualitative data gathered in phase 1 were the starting- point of the design process. The only restriction given to the defining process of the SWB problem, was that it had to be linked to or be dealt with in the communal space system of the RCC, not in the spatial environment of the private bedrooms. Some design groups based their problem statement on one particular quote of a resident which they found they could work with architecturally; other groups came up with an extended conclusion combining all their data, that lead to an elaborate problem statement.

*Design Case. The design group felt this specific RCC, located in a refurbished monastery from the 1980s, had a very enclosed character due to the typical inward architecture of the monastery building. Also the mental threshold for outsiders (neighbours, passers-by) to enter the RCC seemed to be very high, which was according to the students partially caused by a large green hedge blocking views from the street into the RCC and vice versa. This implies that no spontaneous social interaction could take place between residents and passers-by. Once inside the RCC, the communal spaces missed an inviting appeal that makes visitors want to stay there for a longer period of time. No interesting activities or actions took place in there and the interior gave the students a quite dull and humdrum look. Therefore, this design group defined the SWB-threat 'high threshold for passers-by'.*



Image 1: the RCC with its greenery

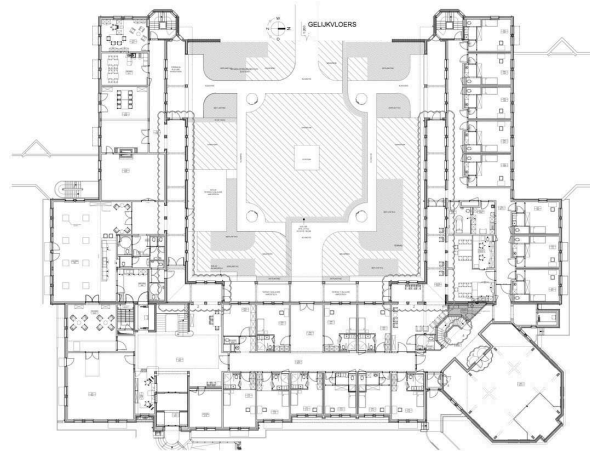


Image 2: the U-shaped plan of the RCC

Once the SWB problem was defined, the link with architecture became a bit more tangible, since we asked each group to clearly define the best fitted space in and around the RCC to design an interior architectural intervention that could 'tackle' their defined experiential error. This step places the emphasis back on the 'space'. The designer must look for the best fitted location that has the potential to be transformed into a spatial solution for the earlier defined SWB problem. The scale of the location and the range of spatial options differed depending on the specific SWB problem that was formulated

*Design Case. The design group labeled the entrance area as the primary spatial problem area, since it is currently hidden behind a large hedge. It does not draw the attention from passers-by and does not have the charisma and inviting character of the 'main entrance' of a large semi-public building. Also the transition between the entrance area and the communal spaces (e.g. the cafeteria) was defined harsh and unattractive by the students.*



Image 3: the existing entrance of the RCC



Image 4: the cafeteria of the RCC

As figure 3 demonstrates, the second phase of the design process is the 'designed solution' phase, in which four steps succeed one another. At first, the designer must develop a SWB increasing concept that will function as a foundation for the future architectural intervention. Conceptualizing is a praxis commonly used by designers. Students were asked to start thinking and brainstorming on how they could make their SWB-problem disappear by introducing a concept of positive experiences and activities for residents. We did not ask them to start designing the interior architectural intervention directly, but to first start with "designing" the aimed effect their future (interior) architectural intervention should trigger on the residents and visitors, passers-by. The focus is placed on the 'body' and the result must be a general concept with a spatial background. In case of this exercise, reconceptualization of the typical 'communal spaces' that can be found in RCCs nowadays was implied in the design process. It is also common practice that designers seek for inspiration in other design branches or adopt concepts that are lend from other fields of knowledge, for instance philosophical insights. This can be an aid to designers when seeking for inspiration. The light blue arcs of circle in figure 3 indicate when an extra design aid can be applied in a specific stadium of the design process and what this design aid can be.

*Design Case. The design group came up with the SWB-increasing concept of introducing a 'backdoor' for the RCC. This is an analogy of the private housing situation in rural Flanders, where family and close friends do not ring the bell at the front door when visiting someone, but walk on the terrain and take the backdoor entrance at the back of the house, because they know they are welcome. Students thought this conception also fitted the RCC, since visitors are most of the time close relatives of the residents, and should therefore be allowed to use the 'backdoor' if there were one. Also, by giving the RCC a backdoor, visitors are no longer obliged to pass the formal reception area, which was experienced as an unhomelike environment and did not welcome them. The concept of the backdoor was not only targeted to give visitors a more pleasant entrance in the RCC, but the concept should also carry benefits for passers-by, and the neighbourhood.*

In a second step, this concept needs to be filled up, rephrased or rewritten into activities, experiences, functions, in other words a plan of actions, a storyboard. In case of our SWB-focus, these experiences should have a positive influence on the level of well-being and happiness of the 'users' of the RCC (being residents, visitors, neighbours, etc.). This step requests the focus still placed on the body.

*Design Case.* The design group wrote that their spatial intervention should harbor communal activities and experiences that were designed to let visitors want to stay for a longer period of time in the RCC, and also attract passers-by to take a look at what is going on in the RCC and spend time with residents unknowingly. Students 'designed' activities around the central theme of 'gardening', and used their 'backdoor' concept to immediately attract visitors inward into the gardening activities and direct them towards other (added and existing) communal spaces by building upon these gardening functions. In that way, the concept of the backdoor triggers social skills in residents. For example, herbs from a gardening box in the new entrance zone (the architectural realization of the 'backdoor') could be used in the existing cafeteria to make a cocktail or a small bite to eat. Visitors could participate in this harvesting- and preparing process. The gardening activities also support residents in exploring and training skills and strengthening or introducing spontaneous contact with visitors. The earlier formulated SWB-threats are therefore tackled by designing for social skills (chatting with fellow residents, visitors and others), exploring and training skills (gardening, fine motor skills), and caring for (the herbs and plants, other people).



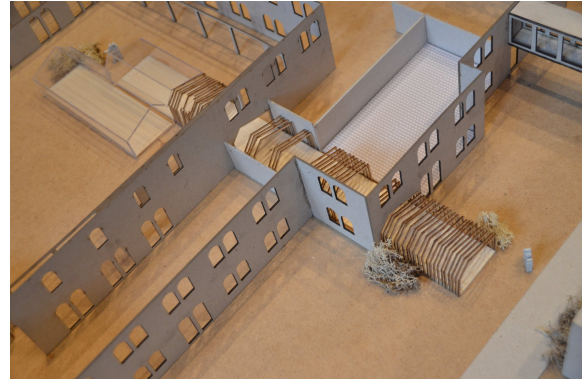
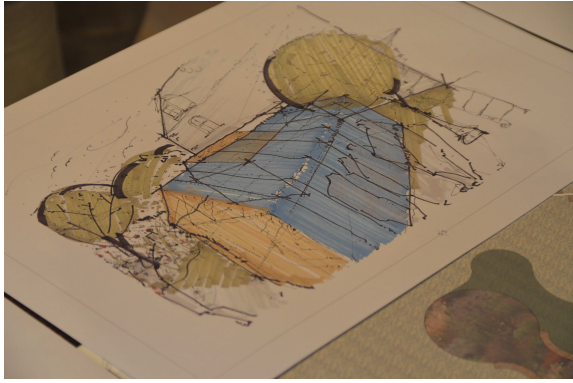
Images 5 and 6: renderings of gardening functions in the added volume and the cafeteria

In a third step, the focus is placed entirely on the architectural space, and the conceptual intervention is to be transformed into an actual spatial design. This is the natural domain of the (interior) architect. The designer has built the capacity and content to finally design and shape the spatial solution to the earlier formulated SWB-problem. The designer must however abide to the concept, and stay focused in designing and detailing (interior) architectural interventions.

*Design Case.* The design group positioned an added spatial volume to the existing cafeteria that became the new and attractive informal entrance of the RCC, the so called backdoor. This new volume carries a range of small gardening functions as herb boxes, small vegetable boxes, etc. The spatial intervention can be labeled as an extension to the existing RCC.

The actual architectural lay out of the concept resulted in a wooden greenery-module that pierced the existing fabric. The greenery module is visible to people on the street, and stretches throughout the existing cafeteria all the way into the enclosed inner garden of the RCC building (that is located in a refurbished monastery). This way, a line of motion was designed to draw people in by the proposed backdoor, keep and entertain them in the module for a while, by letting them participate in the gardening activities, and guide them in the adjacent cafeteria. Eventually the greenery module guides people into the enclosed garden of the RCC, where they can relax and enjoy the existing landscaped garden, which is currently underused and undervalued. This motion process of visitors and outsiders contributes to the social atmosphere in the RCC and supports residents in undertaking activities and train certain skills. The main purpose is to activate visitors in participating and allowing residents to maintain social skills, train fine motorics and practice the hobby of gardening, thereby also contributing to keeping a garden and taking care of something.





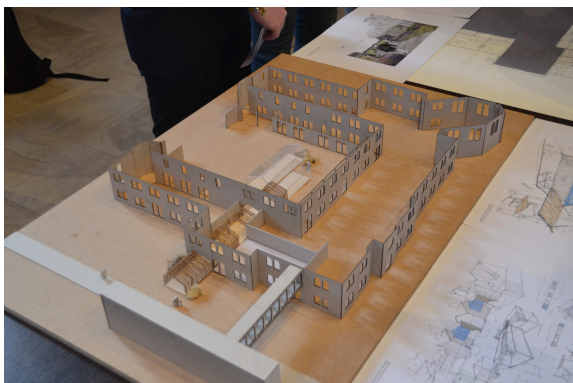
*Images 7 and 8: sketch and scale model of greenery-volume that pierced the existing building*



*Images 9 and 10: architectural plan and render of the intervention*

As a fourth step, attention was also be given to finding suitable ways of communicating the designed experiences and atmospheres. The representation and communication of the design intervention and created experiences were emphasized. Since atmosphere is an intangible aspect of architecture, it is not easy to transmit to the audience or clients the designer is working for. In order to be able to discuss every item in the design, the designer must search for means of communication. We believe in a visual, expressive approach. This phase was the final transition in body-space-focus, placing the focus back on the body, on interpreting the space. This is also an important dexterity that (interior) architects have to learn, since in the case of designing for SWB, the designed and created lively atmospheres, experiences, perceptions are 'larger' than the size of the actual spatial intervention.

*Design Case. The design group chose to present detailed sketches and a scale model in addition to the architectural plan. During the presentation of the design to the jury, the scale model made visible the line of motion that was designed to draw visitors into the RCC, and spontaneously incites them to mingle with residents in the added greenery volume, the 'backdoor'. The sketches on the other hand, gave whiffs of the sensuous atmosphere that was created, by the colours used and the details drawn of the gardening boxes.*



*Images 11 and 12: photos taken at jury presentation: scale model, plan, sketches and renderings.*

As a conclusion, Figure 4 visualizes the design process ran through by one of the design groups.

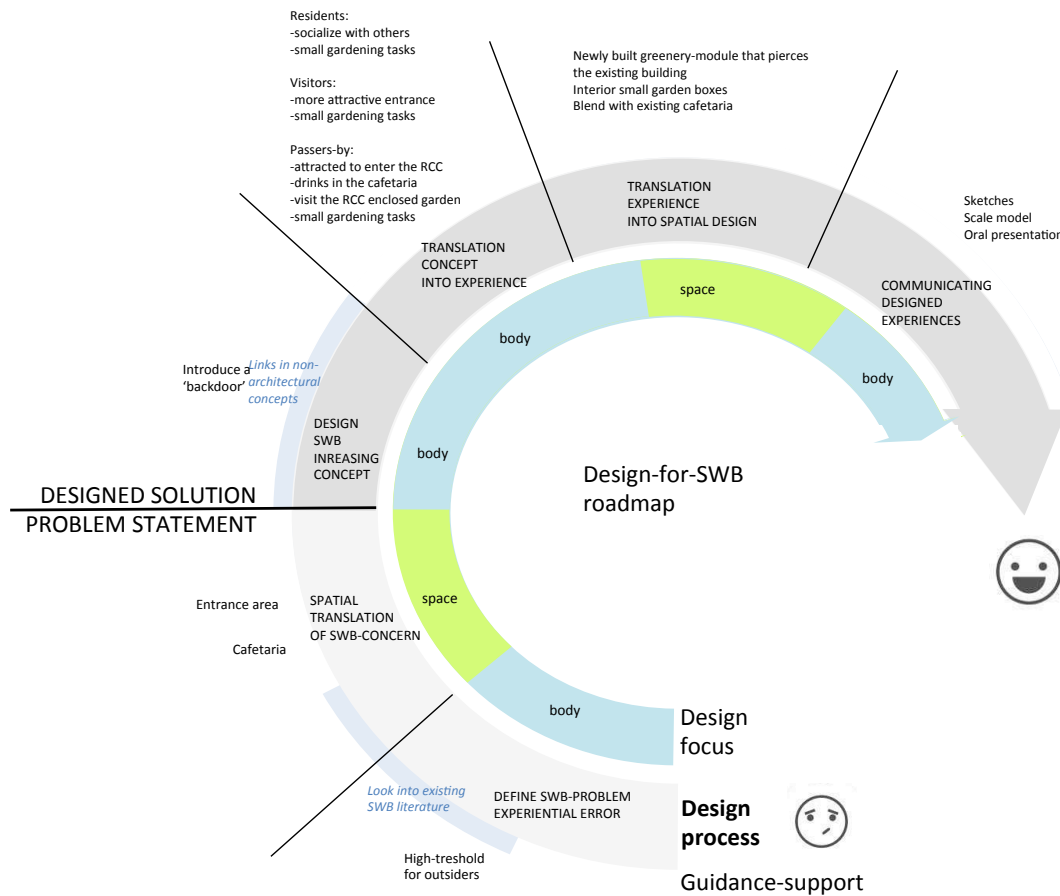


Figure 4: The assembly of a design roadmap: the design process of one design group.

## A design roadmap for designing for SWB

As the illustration of the design process of the design group from the example (Figure 4) illustrates, the model must be elaborated with an outer arc of circle that gives more detailed information on the different strategies and activities to effectively handle the different sequential design steps (visible in the grey arc of circle). These methods were partially written out in advance, but extended with 'activities' and methods that students adopted during the workshop. After collecting the actual presented architectural designs (architectural plans, scale models, renderings, storyboards, design diaries, etc.) and overlooking the design set-up of the exercise, we were able to see which methods were adopted by students in addition to the ones that we proposed at the start of the exercise. We combined these methods into the purple arc of circle, to complete our descriptive design model.

Figure 5 visualizes the entire design roadmap. In the purple arc of circle, methods to work on the different design steps are summed up and explained below.



such as thinking in scenarios, finding analogies in daily life, etc. In the second step, the abstract concept needs to be concretized in experiences, activities by developing a usage scenario. In this step of the process, the designer is producing data that are characterized by tacit knowledge, personal choices, etc. This mode of approach has the focus still on the body (see Figure 5).

When the usage scenario has been written, the attention is put on the actual architectural environment, and a spatial design must be realized. This is actual design practice, and the key business of the (interior) architect. In this process, the designer appeals to his creative and analytical skills. Many boundary conditions come to mind when discussing the actual architectural design step in the design process (financial situation, constructive issues, etc.). Elaborating on these issues is food for thought for future research.

A fourth and final step is the representation of the design and the communication with stakeholders. This is also an important dexterity that (interior) architects have to learn, since in the case of designing for SWB the designed and created lively atmospheres, experiences, perceptions etcetra are more comprehensive than the measurements and facts of the actual spatial intervention, however they are less easy to capture and present on paper or in scale models. In our exercise, we have urged students to use sensory communication, by presenting hand-made sketches and models, added with a range of samples of applied materials, that have a certain texture and scent to it, in order for people to be able to build a complete sensuous image of the architectural design and the created atmospheres and experiences. We know that presenting SWB-focused (interior) architectural designs demand a different approach of communication than a traditional functional design (which is usually illustrated by architectural plans and 3D-models). In this exercise, students also used video-images and sound files concerning their designs to communicate the atmospheres and activities to their audience. Other interesting methods students came up with were a comic book of their SWB-design, a caricatured film of the experiences generated by their design, before-and-after 3D-renderings, etc.

## Conclusion and discussion

We can state that the built environment holds capacities to function as a satisfier in SWB-needs, only if it has a generous character, meets the SWB-needs of the users and provides them with stimulating experiences. A designer must understand what SWB means for a person in the environment in order to be able to respond to it from an (interior) architectural perspective. We have already described that in our viewpoint, it is valuable to gain insight in SWB-needs and possible SWB-threats through ethnographic research in the early design phases since a design-for-SWB task always starts from a human-centered problem statement.

Also, generous environments are characterized by the type of users, and therefore our research can contribute in exploring what experiences the built environment of elderly housing should generate in order for residents to be at their best, or 'to flourish', in the terminology of Desmet & Pohlmeier's framework for positive design (2013).

In this paper we linked SWB to (interior) architecture. Our ultimate goal is to increase people's SWB and let them experience positive feelings when spending time in a specific environment. The pursuit of a strong connection between the actual mood and state of mind of a person in a certain place, and the particular designed surroundings can be the *'trump card'* in the hands of (interior) architects. Since there is no uniform code for designers to solve a SWB quest and obtain a positive, strengthening interrelation between a person and the built environment, we believe that a design roadmap could be a welcoming instrument that can inspire fellow interior architects.

For now, the design roadmap proposed in this paper has a merely descriptive character, since it is the result of a preconceived design process that students had to follow, supplemented with methods that were developed and applied instinctively during the design workshop. However, we believe this roadmap can be explored further by deepening out the purple arc of circle, that contains the methods applied during each step of the design process, and look into detail into each set of methods proposed.

We also believe the proposed design roadmap can function as a guidance for different kinds of SWB-design challenges, however this needs to be tested and elaborated on. It can be applied on designing buildings in the healthcare industry, for example revalidation centers. Moreover, we believe this roadmap has potential as a guidance in designing other public buildings that benefit from a SWB design approach, for example school buildings, in which it is important that people feel well in order to

perform well. Also, this design exercise provided us with a number of SWB-threats that can be generalized for the RCC-industry, and a number of key concepts that are possible SWB-solutions. Since the workshop was followed by ten design groups, a lot more output could have been generated if we would have had a larger group of students to work with. Here lies a challenge for future research.

Our design-for-SWB roadmap gives insights in what way an interior architectural design process can be built up. In further research, it can be interesting to bring our roadmap in close contact with existing SWB design models, for example the Positive Design Framework of Desmet and Pohlmeier (2013).

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