

Building Storey/ies

A scenario card game to architecturally design for human flourishing

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An Applied Approach

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and Rebecca Cain**

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10 Building Storey/ies

A scenario card game to architecturally design for human flourishing

Ruth Stevens and Pieter M.A. Desmet

Introduction

This chapter presents the development of a scenario-based game that supports architectural designers in their efforts to design for human flourishing. In positive psychology, human flourishing is generally defined as fulfilling one's psychological needs in a way that one can become the best person one can be (Ryan & Deci, 2001; Keyes, 2005; Ryff & Singer, 2008). Design for human flourishing (DfHF) has been operationalised as design that supports people in engaging in meaningful activities, that is, activities that fulfil their psychological needs and stimulate them to use and cultivate their personal talents (Desmet & Pohlmeier, 2013). Correspondingly, in the domain of architecture, DfHF involves the design of spatial environments that support the end-users in undertaking meaningful activities. Stevens (2018) developed a systematic approach to architectural DfHF; see Figure 10.1. The fundamental of this approach is a so-called *enriched programme* that explicates what kind of meaningful activities are leading in the design process. This enriched programme is based on an understanding of the target group's psychological needs and gives direction to the development of the physical, material reality of architectural elements. An enriched programme is developed with 'programmatically writing' and activity that creatively designs social stories in a spatial environment.

In the application of this systematic approach, we found that designers who aim to use an enriched programme face three main challenges. The first is that most architects are not yet acquainted with the state-of-the-art knowledge about DfHF. As a consequence, many architects do not know *how* to systematically create an enriched programme. The second is the challenge of operationalising the enriched programme in the programme-phase of the architectural process.¹ Currently, architects' relation with the programme-phase can be seen as twisted (Stevens, 2018), as the programme is a multi-layered aspect and architects often start working based on incomplete information received from clients, which results in a rather narrow interpretation (Yu et al., 2010). Moreover, architects spend a relatively short amount of time on programming compared with the entire design process (e.g., Chapin, 2006). The third challenge is related to process-relevant communication. Successful DfHF also relies on an effective integration of expert knowledge of relevant stakeholders in the design process, since, often, architects themselves have little knowledge about the psychological needs of their user clients (Van der Linden et al., 2016; Cardoso et al., 2005; Eisma et al., 2003). Even though these psychological needs are universal, their manifestations in actual activities are strongly influenced by contextual factors, such as situation and social context. In a series of case studies, Stevens (2018) found that while constructive collaborations between designers and commissioners can take place,

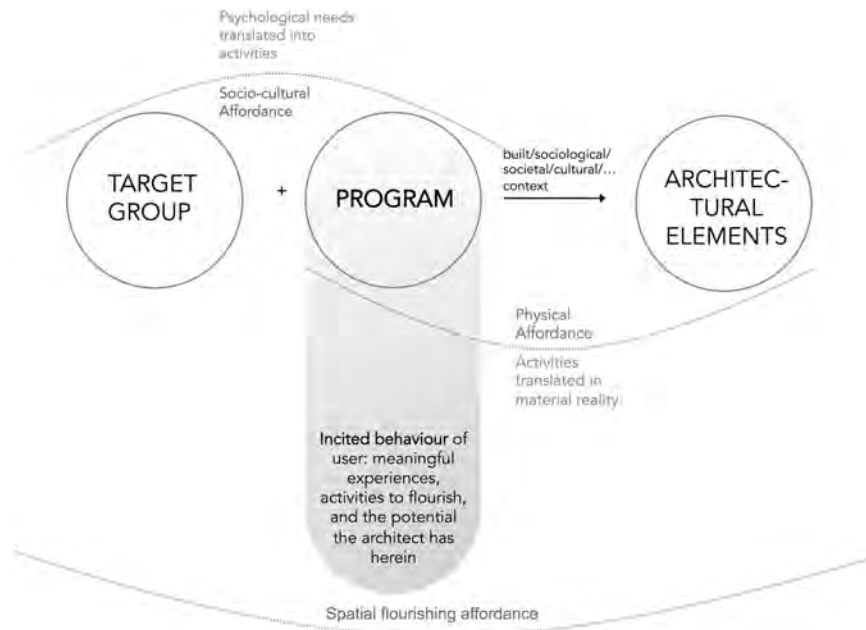


Figure 10.1 A theoretical trajectory to design for human flourishing in architecture.

discussing psychological information is often challenging and time-consuming, partly due to a lack of common language about the subjective phenomenon of human flourishing (HF). Moreover, because the architect is required to filter flourishing-relevant insights from the stream of communication, he or she may fail to notice or may misinterpret essential information.

Building Storey/ies was developed to support architects in overcoming these three challenges. Architectural designers can use the scenario-based card game together with the relevant stakeholders in their design process. In line with the key challenges, the tool has the threefold purpose of (i) transferring knowledge about what HF means and what its ingredients are in an architectural context, (ii) supporting designers in operationalising this knowledge in their design processes and (iii) facilitating the required communication between the designer and relevant stakeholders. First, we report the game's development. Some key considerations are discussed that motivated the choice for a scenario-type game. Next, we introduce the game components and scenario, illustrate the test phase and reflect on the degree to which the game fulfils the intended purposes. Finally, a general discussion reflects on the tool's value for DfHF practice.

A suitable format

Today, information that needs to be implemented in architectural design processes is typically communicated with descriptive checklists (e.g., for accessibility) or normative measurements (e.g., for ventilation or insulation). While such checklists have advantages (i.e., they are instructive, objective and measurable), they also have important disadvantages.

First, due to the complex character of an architectural design project, architects are often already overloaded with regulations and guidelines. Second, the enriched programme in DfHF includes holistic scenarios that cannot adequately be captured with straightforward checklists. And third, checklists are typically not developed to stimulate creativity – and they can even inhibit a designer’s creativity or endanger the creative collaboration. Sleswijk Visser (2009) stressed the importance of using *inspiring* forms of communication to support effective design processes. Finally, a tool format is required that incites collaborative design creativity, that is malleable to the designer’s professional approach, and does not limit or frustrate the designer but instead widens their perspective.

Card sets

To find a suitable format, inspiration was found in the card sets that have been developed to transfer knowledge in ‘positive design’ research (e.g., Yoon et al., 2016; Casais et al., 2016). The card-set format has several advantages (see e.g., Lucero & Arrasvuori, 2013; Bekker & Antle, 2011; Friedman & Hendry, 2012; Yoon, Desmet & Pohlmeier, 2013). First, cards are effective in communicating insights with multiple modes of information in a compact and concise physical format. A card can, for example, provide a visual context, a design theme and some explanatory words to inspire the designer. Second, cards have the ability to break down complex topics and provide particles of information in an accessible and visible way. And third, they can be interpreted more creatively and support the designer’s freedom of usage.

Inspired by these successes, a card format was used in an initial attempt to develop a DfHF tool. Tests with student designers were promising, but also revealed limitations. First, the cards were effectively communicating insights about the phenomenon of HF but they were not well equipped to support the designer in connecting these insights to the design briefs’ contextual parameters. Second, the cards did not stimulate creative discussions, but rather encouraged the designers to copy or integrate what was displayed on the cards. Given these findings, we decided to explore possibilities to combine the card-set format with a more dynamic and proactive format: a design game.

Design games

The choice for a game-based format in architecture is not totally new, and the relation between architecture and games has recently been explored by a number of scholars, for example Walz et al. (2005), Bories et al. (2007) and Sofronie (2014). Walz (2010, p. 15) has pointed at the possibility of viewing games as ‘dynamic, innovative, and challenging architectural outlets that can be design results or components of the design process’. From these sources, four promising qualities of game-based knowledge transfer can be distilled: (1) motivation, (2) interaction, (3) tangibility and (4) narration.

(1) Motivation

Schell (2008, n.p.) defined games as: ‘a problem-solving activity, approached with a playful attitude’. The entertaining qualities of games provide intrinsic motivation, which can help architects to maintain their enthusiasm for DfHF during their design process. The playful nature of the game format matches the need for a creative form of knowledge transfer that inspires and entuses rather than induces architects to work with specific information.

(2) Interaction

Flanagan and Nissenbaum (2007) and McGonigal (2010) found that gameplay can neutralise collaboration difficulties caused by social and cultural interpersonal differences. In her research on participatory urban planning games, Sofronie (2014) experienced that games can give people from different backgrounds a platform to decide on the planning of their environment. While playfulness lowers the threshold for communication and participation, the interactive character of a game allows *everyone* to be a player, encouraging the inclusion of stakeholders in the DfHF process, such as ‘sponsor clients’, managers and staff, as well as possible ‘user clients’, who carry useful information and who can participate or simply contemplate and reflect on design ideas ‘built’ in the game.

(3) Tangibility

The architectural design process involves a wide variety of iterative creative and communicative actions, such as drawing lines, writing keywords, sketching, discussing with colleagues and stakeholders and group brainstorming. The physical and tangible format of games is compatible with this way of working. Gameplay can allow players to visually ‘build’ reasoning and argumentation in a ‘coded’ way, instead of only visualising (intermediate) results via sketches. That way, the iterative character of a design process is facilitated. It then also becomes easier to safeguard the HF mindset and stay put regarding important decisions made throughout the design process.

(4) Narration

Games enable the incorporation of storytelling, which is particularly relevant for the current knowledge transfer objective. Heylighen (2005) indicated that stories provide a dense, compact way to deal with and communicate complex information in a short time. In the words of Arendt (1968, p. 105), ‘storytelling reveals meaning without committing the error of defining it’. Storytelling helps when conveying the holistic DfHF knowledge in a manner that enables architectural designers to adopt relevant insights and adapt them to fit their design process.

Building Storey/ies

Building Storey/ies is a scenario-based card game for architectural designers and stakeholders that supports the practice of DfHF. The game helps designers to create an enriched programme by creatively exploring and combining the necessary ingredients, such as psychological needs of the target group, social and spatial opportunities in the context, other users, interesting themes for activities and actions related to these themes (see Stevens, 2018).

The sociologist Caillois (1961) placed forms of play on a continuum from *ludus*, structured activities with explicit rules that lead to winners and losers (games), to *paidia*, unstructured, enjoyable and spontaneous activities that do not lead to a ‘winning versus losing scenario’ (playfulness). Games with a *paidia* set-up have the goal of letting players explore, with no regulations or specific end-goal, while games from a *ludus* set-up motivate players to win in a competitive structure with rules and end-goals. Building Storey/ies was based on a hybrid between a *paidia* and *ludus* game design: an overall *paidia* structure is

used to give the phenomenon of HF the central stage and to stimulate players to creatively explore the phenomenon. *Ludus* elements are added to enable players to progress towards the aim of developing an enriched programme, including some rules and boundaries within the design process that prevent the designer from wandering off and getting stuck in the conceptual phase. The heart of the game is based on the act of *storytelling* in the form of narration and scenario writing that combines to the overall programmatic writing (see Introduction). The game consists of the following contents:

1. an inspiration poster;
2. a deck of 12 information cards;
3. a stack of 79 hexagon-shaped ingredient tiles;
4. 3 methods fans containing 29 techniques.

The game progresses in two phases and results in an enriched programme. The first phase is called ‘get in the mood’, which familiarises the designer with the game and with the general topic of DfHF. The second phase is playing the game, in *single-player* mode or in *multi-player* mode with stakeholders.

First phase: Get in the mood

The first phase, ‘getting in the mood’, provides an introduction to DfHF with three ingredients: stimulating a fitting mindset, inspiring designers and making them acquainted with the content in the game and the possible avenues in designing. This first phase was included because DfHF requires one to embrace a different way of thinking and designing. Hence, ‘getting in the mood’ aims to provide some mental groundwork. Evidently, this will start taking less time when the designer gains experience and becomes more seasoned in DfHF.

An appropriate mindset is stimulated with the mindset card (see Figure 10.2, left), which is ideally kept within sight during the game. The front provides three ‘state-of-mind’ tips, and the back provides three ‘to strive for’ tips. Together, these six tips aim to help the designers keep their focus on the overarching design goal of supporting the HF of user clients. The front tips stress the need for empathy and a willingness to fully immerse in the topic of HF and the life atmosphere of the user clients. In addition, they remind the designer that enriching everyday activities offers a wider range of possibilities than adding exceptional once-in-a-lifetime-experiences. The back addresses the relevance of the surrounding environmental fabric, stimulating designers to socially and spatially root their design in this fabric. Moreover it stimulates to strive for continuity on the site, and to focus on the realm of everyday life.

To inspire the designer, the first phase also includes an inspiration poster (21 by 29.7 cm; see Figure 10.2, right) that gives an example of what is meant by the concept of an enriched programme. The infographic visualises a designed scenario as a full-page comic book story.² The story is divided over twelve frames but also represents one coherently designed environment. Each frame depicts (at least) one unique designed (social or individual) meaningful activity and explains how this activity contributes to the potential flourishing of the users. The decision to combine a full-page visual with separate frames was motivated by the aim to communicate both the architectural coherence of the designed physical environment and the multiple action possibilities it offers. Ideally, the frames inspire designers with a wide variety of meaningful activities, and, at the same time, the overall visualisation communicates the importance of designing a coherent spatial

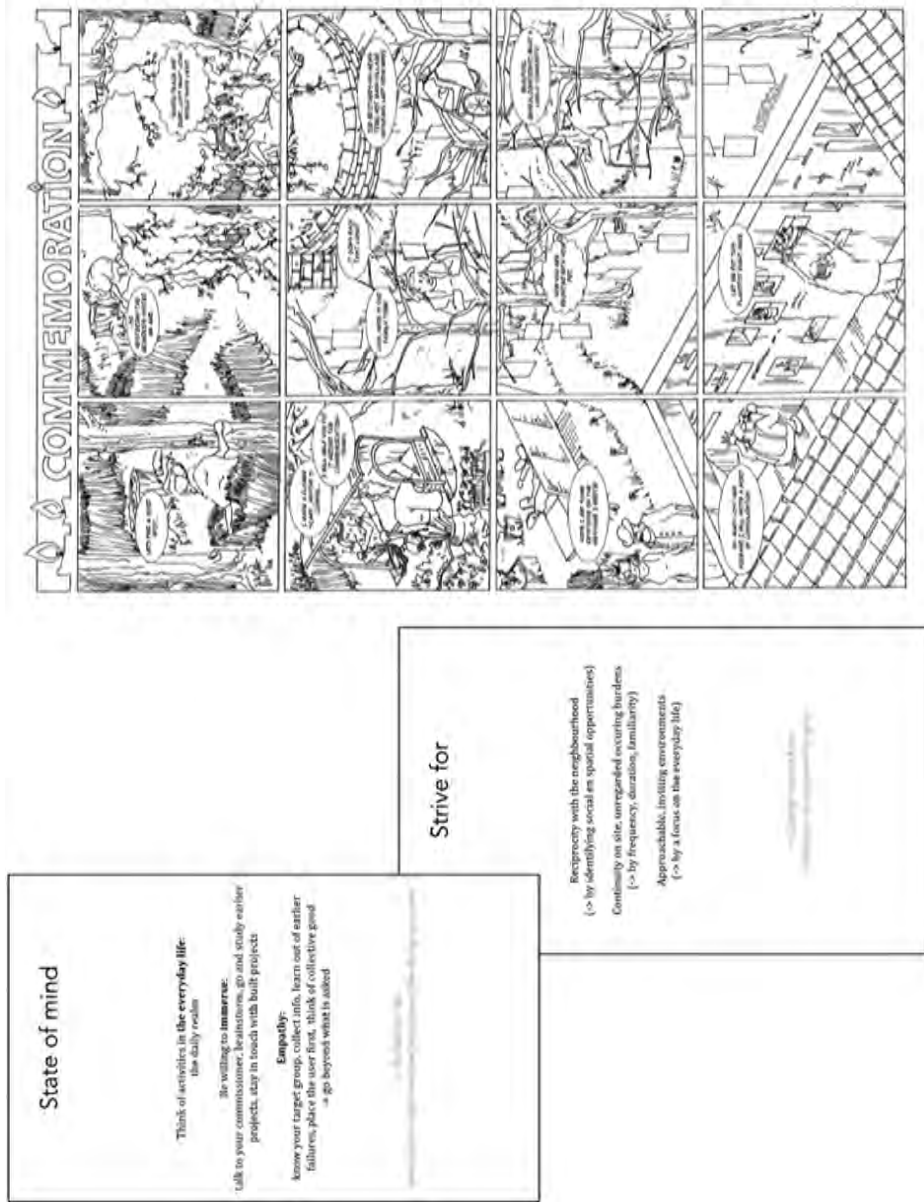


Figure 10.2 Mindset card (left) and an inspiration poster with the theme 'commemoration' (right) – not to scale.

environment. For a novice DfHF designer, the poster is informative, and for more experienced designers, the poster can serve as a mnemonic.

In addition to the mindset card and poster, the ‘get in the mood’ phase uses seven introduction cards that provide gameplay instructions. Four cards (Figure 10.3) explain the theory behind DfHF (Card no. 1), the build-up of the game (Card no. 2), the use of the ingredient tiles (Card no. 3) and the methods fans (Card no. 4). The remaining three introduction cards (Figure 10.4) provide a ‘guided walk’ through the flow of the game (Card no. 5), tips about how to get started that are especially useful for *newcomers* (Card no. 6), and tips for advanced playing for more seasoned players (Card no. 7).

Second phase: Play

Once the designers are *in the mood* for DfHF, it is time to play the scenario game with three main stages: To *immerse*, to *build and intensify*, and to *communicate*. Players are guided through these stages with the pink lines on introduction Cards 5, 6 and 7. On the back of Card no. 5, this pink line is described in more detail.

Immerse

To start, the game stimulates designers to immerse in both their target group, and in the context of their design challenge, socially as well as spatially (see Card no. 5). To stimulate designers to empathise with the target group, they fill out four persona cards. These four cards showcase four ‘types’ of target group persons, who differ in the degree to which they are attracted to stimuli that are either more socially versus more personally oriented: *the busy bee*, *the quiet life enjoyer*, *the socialite* and *the focused one* (see Figure 10.5). Completing the persona cards is an act of empathising, since a more ‘humane’ and personal image is created, thus the designer can bond with the personas while proceeding with the game and taking design decisions. Moreover, by varying private- versus social-focus, the personas prevent fixation on one end of the spectrum.

Next, the game requests the designers to analyse the context of the design challenge through an HF-lens, supporting them in anchoring the end-users in their environmental context. Concretely, designers are challenged to identify social opportunities, such as the presence of a kindergarten or a churchyard, together with spatial opportunities, such as a steep slope or an old ruin present at the site. Indeed, while searching for opportunities, even controversial aspects in the surroundings that are typically perceived as ‘negative’, such as a churchyard, or aspects that are mostly labelled as a ‘difficulty on site’, such as a steep slope, are to be included. Since DfHF is characterised by a positive starting vision, these aspects are looked at in a different light, opening up new and interesting opportunities. These opportunities are subsequently mapped on the green context ingredient tiles (a particular type of ingredient tile, see Figure 10.3). Regarding these ingredient tiles, next to some predefined suggestions, the game contains a large number of blank cards, since it is the task of designers to identify these within the context, or to come up with more ideas through their previous experiences.

Build and intensify

This stage represents the essence of the scenario card game. Building is done by linking and combining the hexagon-shaped ingredient tiles (displayed on Card 3, Figure 10.3), with the help of the techniques in the methods fans (displayed on Card 4, Figure 10.3).

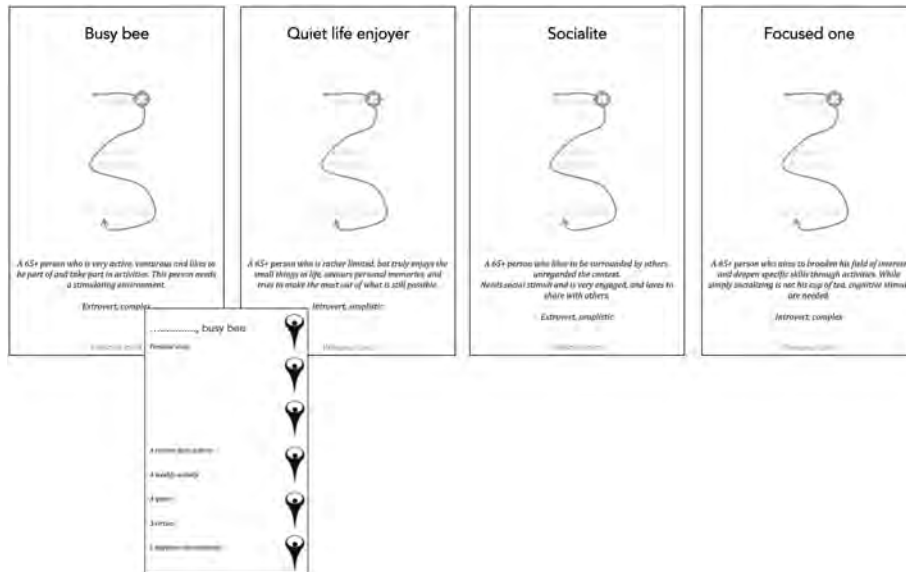


Figure 10.5 The four persona cards.

To support the *paidia*-type play, the main idea is to explore the different ingredient tiles and to creatively build associations. There are no rules about the order in which ingredient tiles are to be placed to form a play-field. It is however necessary to insert all the different types of ingredient tiles, in order to build a complete enriched programme.

To help novice players, the tips displayed on Card 6 (Figure 10.4) hint at starting with the ‘flourishing friend’ ingredient tile, the protagonist of the scenario card game, representing the target group of the future building and standing for one or all four of the personas that were created in the ‘get in the mood’ phase of the game. Then, the other ingredient tiles can be placed adjacent to the flourishing friend, to create a story, and thus to start designing meaningful activities that will be enabled in the future building. Activities are created by combining ingredients and making associations in a narrative way with tiles of five different colours: blue *building block tiles*, representing psychological needs; green *context tiles*, capturing the social and spatial opportunities; light red *theme tiles*, giving an overview of general themes and topics around which activities can be shaped; dark red *action tiles* per theme, capturing concrete actions and activities that one has come up with; and light yellow *secondary figure tiles*, representing other persons present at the site, or people that can be attracted to join in the designed activities.

An overview of 29 unique techniques is available throughout the game that can stimulate creativity in combining and associating the tiles and developing scenarios. These techniques, which were derived from a qualitative case-based study and design exercises on the topic of DfHF (see Stevens, 2018), are arranged into three ‘fans’: ‘design action fan > scenario development’, ‘design action fan > intensification’ and ‘reflection fan’. Respectively, the first fan contains techniques that are best applied when a meaningful activity idea is shaped and is to be elaborated into different scenarios. The second helps to combine the scenarios and transform them into a coherent enriched programme. The latter provides techniques to reflect on the designed enriched programme in all its facets, to validate the HF-potential,

During one of the workshops, a designer first combined the yellow flourishing friend tile with two triggering opportunities he had identified in the environment: 'cemetery' (predefined tile) and 'forest' (written on a blank context tile). He then selected the building block tile 'mindfulness and spirituality', due to its affinity with 'cemetery'. This primary play-field sparked 'genealogy' as a conceptual idea with the designer.

He then added the red theme tile 'outdoors', nudged by the technique *'polarise – dare to think in extremes'* (in 'design action fan < scenario development') to take a more extreme course, as he felt people would expect so-called genealogy family trees to be a written or digital document. In true designer-fashion, he opted for a physical 3D-version, and aimed to transform the existing forest into a *genealogy wood*, envisioning trees to serve as a literal 'family tree' for each family to place the names of their relatives on, and to care for.

To further this line of thinking, the designer used the technique *'subcategorize your idea into verbs'* (in 'design action fan > scenario development') to add the action tile of 'mourning', an activity he felt could be uplifted to a more positive experience via the natural atmosphere of the forest, and via shaping an appropriate physical space around the *family trees*. That way, the trees could also become a place for 'reminiscence' (blue building block tile).

Driven by the hope that the genealogy wood could not only strengthen family ties but also fortify relations between villagers, the designer added the red theme tile 'relations', as an additional avenue for flourishing design interventions. Concretely, he felt the genealogy wood could help villagers to 'build and invest in (intergenerational) network' (blue building block tile), by claiming trees to dedicate to members of a hobby club. Placing names or pictures on the tree, literally brings different people together. Furthermore, prompted by the technique *'integrate a(nother) social opportunity from the context'* (in 'design action fan > intensification'), the designer mapped and added the opportunity tile 'school' to the play-field. To build a flourishing scenario, the designer used the technique *'create a win-win for different users'* (in 'design action fan > scenario development'), that led to a situation in which older villagers can educate pupils on the village history, via trees that cover and honour village war veterans or carry pictures of former majors. This also benefits pupils, since they can learn in the outdoors, instead of in a typical classroom.

All in all, the genealogy wood tells personal tales of family ancestry, hints at the village social life and informs on the local history, in a way that contributes to the flourishing of different villagers by affording them opportunities to reminisce, build social contacts, exercise control, learn, etc.

This example shows how quickly *design ideas* can spark during instinctive and reflective mapping with the use of the techniques, combined with the player's design-based creativity. It also illustrates that next to elaborating on existing activity ideas and building scenarios around these, fresh avenues for new scenarios are easily found and started.

A short description of the testing phase of the scenario card game

To date, a testing phase with three exploratory workshops has been conducted to evaluate and refine the card game. These workshops were organised to explore: (i) if the participants were able to get acquainted with the novel principle of DfHF (and thus if the game could transfer information regarding DfHF); and (ii) how the format was welcomed and handled in the design practice of architectural designers (thus how participants adopted the game in their practice and could reach a result). These objectives correspond to the first two key challenges presented in the introduction.³



Figure 10.7 Two instinctive play approaches of two design groups in the workshops.

The workshops consisted of an informative introduction followed by presenting a fictional design challenge handled by playing the scenario card game. Each time, designers were asked to present their enriched programme design result at the end of the 2-hour sessions using the play-field they had created via the game, and to deliver sketches as hints of spatial translations of the enriched programme design. The workshops were recorded, observed and captured via field notes on design approaches, discussions and design/play processes. Also, feedback on the players' experiences was collected via questionnaires.

Figure 10.6 shows an impression of the workshops through time lapses, resulting in a *patchwork-like* (above) and a *concentric* (below) play-field, of which the design results appeared equally complex, incorporating a large variety of all the different ingredient tiles. More detailed information on the set-up, results and insights gained via the workshops can be read in Stevens (2018). (See Figures 10.7a and 10.7b.)

General discussion

The main goal of this chapter was to introduce a design tool, based on the knowledge developed regarding DfHF, which can assist architectural designers to design an enriched programme as a way to DfHF. To do so, the tool had to (i) transfer knowledge on what (Df)HF is, (ii) operationalise this knowledge in the architectural design process and (iii) facilitate the communication between designers reciprocally, and between designers and stakeholders in the design process. After screening benefits and difficulties in existing tool formats, a game-based format was used, and the scenario card game 'Building Storey/ies' is the end result. Concretely, the scenario card game helps designers to create an enriched

programme by exploring and combining necessary ‘ingredients’ in a creative matter using techniques provided by the game, such as, psychological needs of their target group, the social and spatial opportunities in context, other users, interesting themes for activities and actions related to these themes. Via this approach, architectural designers can be assisted to create a dynamic coexistence of activities on site in a way that it helps a specific target group to flourish.

Exploratory tests in which the scenario card game was used to design a HF intervention in a fictional setting for older persons showed promising results in both leading to a designed environmental intervention that – theoretically – supports the flourishing of users.

To date, the scenario card game has only been tested a limited number of times with a limited number of participants, all architectural students and designer/researchers. This indicates that the game has not yet been used in a realistic setting, namely a design office handling a concrete design challenge for which stakeholders can be invited to participate in the playing. There is also a considerable difference between novice and student designers and experienced designers. According to Christiaans (1992), a designer’s creative space increases with his increased design experiences. Thus, at this moment, the applications we currently foresee for the scenario card game, are directed at design students. Using the game in design education can make students aware of what DfHF is, and teach them how they can take a specific human-centred design approach by integrating HF as an important affordance of the designed environment. Integrating the scenario card game in design education is a crucial step in the dissemination strategy of the game.

To further widen the game’s applicability, some strategies can be mentioned. First, more research needs to be performed to be able to broaden the width and depth of the use of the scenario card game in a professional setting. Part of the dissemination strategy can be to research how novice and experienced designers approach the game in order to tailor the game’s functioning. Moreover, it can also be worthwhile to research if the game can be played *without* designers for screening purposes, for instance in situations when a design project of a public building (such as a library) is proposed by a local government, and a first task is exploring opportunities with neighbourhood residents for revealing other activities. A designer could moderate workshops such as these, and potentially interesting results could be inserted in the scenario card game, as a fixed first map. Then, the fixed map together with the scenario card game could be given to the architect who is appointed to design the building, as a new type of more ‘human-centred’ design brief.

Second, the game is currently directed at designing environments that support older people in flourishing, however, by replacing the Building Block tiles (the dark blue ones) – that contain the psychological needs linked to a specific target group – by a different set, the range of application can be expanded substantially. In that context, on a more general level, the aspect of expandability and updateability is crucial as well in the application and dissemination strategy of the scenario card game.

On a more general level, a specific limitation with regard to the impact of the scenario card game should be mentioned. The scenario card game in itself is developed in a way that psychological knowledge of the target group is already included and ready-to-use (via the BB-ingredient tiles), and additional empathic information on the target group is to be entered by the players via the persona cards. As DfHF theory stresses, it remains important for architects to empathise and receive information directly from their clients.

AU: please validate the amended text.

Notes

- 1 The programme-phase in an architectural process, is a phase in the design process in which the architect develops all the functions the future design has and the activities that can take place in the future building or other type of architectural design.
- 2 The one-page image format was inspired by the painting *De Kinderspelen* of Bruegel de Oude and the innovative all-over background page design of Frank King's *Gasoline Alley*, a comic strip dating from the early 1900s. Bruegel aimed to inform viewers on the specific topic of 'entertaining and playing of children' by portraying the many different (playful) activities that children could possibly undertake to entertain themselves, in an almost exhaustive way, albeit displayed against an *incorrectly* represented spatial background. *Gasoline Alley*, on the other hand, seems to view the meticulously portrayed architectural surroundings as the visual glue in the main story. The comic book showcases clearly what can be done or undertaken in that one spatial environment, however the activities do not necessarily serve a particular purpose or lead to something 'bigger', such as the goal of 'flourishing' of the actors. What is done is not always linked to what people in the comic book 'say', or 'think', therefore the portrayed activities seem rather freestanding.
- 3 The third key challenge (i.e., communication with stakeholders) has not yet been explored, since no commissioners took part so far, but will be the focus of future research.

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