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# How to design child-friendly hospital architecture? Young patients speaking

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*Abstract*

*For children a hospital stay can be a poignant experience. To understand how hospital environments could be designed that make hospitalization more pleasant for them, we investigated what child-friendly hospital architecture means from young patients' perspective. We conducted observations on a children's oncology ward, and interviews with young patients their parents, and professional caregivers. This uncovers highly personal experiences which add detail to insights available from literature . Findings indicate that for young patients, a child-friendly hospital environment supports continuing daily life, socially and spatially. The hospital environment can support this continuation by looking less sterile and making the hospital feeling present less explicitly; allowing to undertake 'normal' activities like at home, which differ across different age groups; allowing to make choices and having a feeling of control and privacy to preserve self-dependence; and offering a view on life outside the hospital in order to partake in it indirectly. This suggests that designing child-friendly hospital architecture is a matter, not so much of preferences for specific colours or themes, but of more complex design principles like flexibility and customizability.*

Keywords: children, hospital design



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# Introduction

For children, being admitted to a hospital is often a poignant experience. Besides being confronted with illness or an accident, they are taken out of their familiar environment to fit into the structured system of the hospital.

Most hospitals in Belgium date from the 1960s (De Wilde & Muylle, 2012), when hospital construction focused on functionality with little attention for patients' experience (Wagenaar, 2006). Whether patients were adults or children hardly seemed to matter. Today, by contrast, patients' perspective is increasingly the starting point for hospital construction or conversion. During design, however, it often has to lay thumbs against aspects that are easier to 'prove' or calculate (Annemans *et al*, 2014).

For this reason, our study aimed to investigate how children experience a hospital stay, and how architecture may contribute to improving this experience. Although children's hospitals are used by many people - patients, visitors, medical and nursing staff, et cetera - children can be considered its most important user group (Silav Utkan, 2012): they are the ones who have to spend day and night and recover there. If architects are to design child-friendly hospitals, putting the child's perspective centre stage is thus important.

In focusing on children's experience of hospitals, our study attempts to look through the eyes of young patients to understand the hospital environment from their perspective. Central research questions are: what does child-friendly hospital architecture mean to them? And what does this imply for hospital design? Ultimately our study aims to bring the child as patient into view in the design of hospital buildings.

# Background

The idea that hospital architecture contributes to patients' well-being dates back to the 18th century, and influenced health care facility design ever since (Wagenaar, 2006). In the past decades, it attracted renewed attention from researchers studying concepts like 'healing environment' or – its hard-core variant (Wagenaar & Mens, 2009) – 'evidence-based design' (EBD). The first EBD study showed that patients who underwent surgery, recovered better when their hospital room offered a view on green (Ulrich, 1984). Of the many studies that would follow, relatively few focus explicitly on young patients.

Young patients are found to suffer from considerable concerns and fears during hospitalisation: fear for being separated from family and friends; for having to stay in an unknown and unpleasant environment; for undergoing examinations and treatments; and for losing their self-determination (Coyne, 2006). Hospital designers can take these into account by paying attention to shortened stays or preferably ambulatory treatment; room for playing; parents' well-being; and support for



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staff to cope with patients' and parents' varying needs (Eriksen, 2001). However, children also develop their own coping strategies. When taken out of their familiar environment, they adopt certain strategies to try and deal with losing control over their own situation: they do things to relax (taking a walk, watching television), make drawings to channel their emotions, or surround themselves with personal and recognisable things to feel more at home (Bischop, 2008). Also here the environment plays a role: the more versatile the environment, the more opportunities children have to deal with their situation. It is this role that our study tried to gain a more articulate understanding of.

# Research methods

To investigate what child-friendly hospital architecture means to young patients, we combined multiple methods, focussing on the – until now under-researched – perspective of young patients. By way of preparation, the first author – henceforth referred to as 'the researcher' – volunteered during two weeks in a children's hospital, to become acquainted with the hospital and its organisation, and to gain a first impression of how children experience a hospital stay.

The actual study was conducted in a university hospital. Since its children's wards are highly outdated – its first phase dates from the 1970s – the management was eager to gain insight into the topic to inform the construction of a new children's hospital. Given the study's limited time frame, we chose to focus on the children's oncology ward where patients have to stay frequently and for longer periods (Fig. 1).

Figure 1: Hospital building accommodating the children's oncology ward

The researcher conducted observations on this ward, and interviewed people who could offer different perspectives on patients' experience. The key perspective was that of the young patients themselves. Interviews were conducted not only with them, but also with one of their parents,



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because we expected parents to have a good view on how their child feels during a hospital stay. Approval was obtained from the Medical Ethics Committee of the hospital. To inform the interviewees about the study's aim, a separate informed consent form was made for children younger than 12, children older than 12, and parents. The ward's chair and child psychologist provided contact information of children and parents who were willing to participate: Amy (12 years old, 8 months treatment) and her mother, Rose (14 years, 10 months treatment) and her father, Eric (16 years, 8 months treatment) and his mother, and Sue (9 years, 5 months treatment) and her mother. (pseudonyms are used for reasons of anonymity.) The interviews were semi-structured face-to-face conversations based on open questions. Questions were adjusted to patients' age and health at the time of the interview.

An additional perspective was provided by the hospital staff, who work with young patients on a daily basis. They were consulted through a focus group interview, which allows to gain an overview of different, or similar, opinions within a reasonable time frame. Participants were identified once again with the help of the chair and the children psychologist, who recruited two children psychologists, a pedagogical staff member, a head nurse, and the chair/oncologist herself. The interview was moderated by the last author and observed by the researcher. Also this interview unfolded in a semi-structured way based on open questions.

All interviews were audio-recorded. Immediately after the interview, the researcher made a descriptive report. Subsequently, the audio-recordings were transcribed. In light of the research questions transcripts were assigned codes, categories and themes on varying levels, using concepts from literature and aspects arising from the data themselves.

# Findings

Our findings suggest that for young patients, a child-friendly hospital environment is an environment that supports continuing daily life. Several spatial aspects may contribute to this support.

## More like home

All patients interviewed stressed that hospital spaces should radiate a homelike feeling, be it some more explicitly than others. Amy talked literally about 'feeling at home':

> "I think that the rooms could use more of a homelike feeling (…) A nice colour on the wall, nice curtains, with a nice pattern. Something with checks and colours, for instance. Just something colourful. Perhaps add a nice lamp and a nice little table, or little shelves, where you can put things from home to decorate it yourself (…) Just the atmosphere of home, because in the hospital […] I really don't feel at ease […]".


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Other patients mentioned this less explicitly, but their comments suggest that they too look for a homelike environment. Sue talked about the patient room as follows:

> "It's also a pity, I think, that there's not really [a variety of rooms]. It's as if it's only a sleeping room, where you also eat. And then also a bathroom. So in fact not so many rooms."

She seemed to like the idea of a kind of living room in the hospital, an idea brought up by her mother:

> "Perhaps it's nice to have somewhere something living room-like […] with little seats (…) that there's perhaps a TV. That you thus create a cinema-like feeling for the children."

Rose referred to the notion of home indirectly: in the course of the interview, the researcher learned that she always brings her own pillow, a few books or a game, and usually also a laptop or tablet. Similarly, Eric referred repeatedly underlined the importance of his laptop, good internet facilities, a PlayStation or Xbox. In the hospital he would like the same facilities as at home. Eric's mother talked about creating a real sleeping room for children and youngsters instead of a hospital room, with nice furniture that looks more like at home. The staff too referred to the importance of a homelike atmosphere, be it rather indirectly:

> "Not too hospital-clean (…), a bit of a living room atmosphere";

> "Cosy rooms, seats, a little rocking horse they can sit on. But also again for our adolescents, again something different […] A computer corner or a game console (…)";

> "Making a room as homelike as possible will actually be very important [in the new hospital], […] now most of them lie down in the bed because nothing else is possible."

## Personalisation

In order to make their patient room more 'like home', patients often bring things from home. Asked how they make their hospital room more personal, most patients referred to hanging up cards they receive, and bringing teddy bears and books. Interestingly, Rose seems to consider herself as not personalising her room, perhaps because she does not want to settle in the hospital. She told the researcher that she never brings things from home. Yet, as mentioned, unconsciously she does bring things that make her hospital stay more like it is at home.

Personalisation was considered important by the staff. Enthusiastically they exchanged ideas about how personalisation could be made possible in the patient rooms:

> "A wall for cards",

> "Or a cord with cards, pictures",



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> "In our new isolation rooms we now also have a strip painted in magnetic paint, and there they can [hang up things] with magnets, that's fun".

The psychologist had just learned about a nice idea in another hospital:

> "That they have certain signs: boy, girl has a different sign, and age categories. And then you know when you walk around, only for who's familiar with it, it's called a tag (…) Then they see: there's someone of my age, and then they keep an eye on when someone leaves that room."

In this way children could personalise their room door so that it is clear for other patients who is in there. The tag system could be extended by indicating how children feel, when they are resting, or what they need.

## A view on life outside the hospital

When children are very ill, they cannot leave the ward, making direct contact with the outdoor environment impossible. Yet, interaction with the outdoor environment could be supported also less directly. Two facets seem to be important in this respect: the presence of natural elements in the environment, and (traces of) human activity (the city, traffic, people).

Rose's father noted that it would be nice if natural daylight could enter also in the corridors on the wards. He very much regrets that this is currently not the case in the children oncology ward. In the patient rooms, however, sufficient light does enter, which Rose and her father experience as very pleasant. Besides natural daylight, patients and parents would like a view on green. When asked what she would prefer to see through the windows of the hospital, Amy replied confirmedly:

> "A sea or a woodland. Well, just nature."

According to the staff, children should be able to see people, buses, movement. Several patients indeed seemed to attach special importance to the connection with human activity outside the hospital walls. A case in point is Eric:

> "(…) the entire city. Especially a wide view (…) Be it cars that are driving, then you see something happening […]. If only you have a wider view."

Rose likes watching the buses that stop at the hospital, and being able to see the city. What she would appreciate, is some more trees. Also parents underscored the importance of being able to continue partaking in daily life, be it only by a view on it. Rose's father attributes this mainly to the fact that being ill comes with a kind of isolation: "Because your world very quickly becomes very small." Patients are therefore looking for a way to break that isolation. Neither they nor their


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parents seem to have high expectations, if only there is some activity they can observe, ideally combined with green in the environment.

Figure 2: View from the smaller (left) and bigger (right) patient's room

# Discussion and Conclusion

What does a child-friendly hospital mean from young patients' perspective, and how can architecture contribute to it? Our study suggests that young patients want an environment in which they can continue daily life in order to break the isolation of 'being ill', and that this continuation should be supported not socially but also spatially. The hospital environment can support this continuation by not looking too sterile so that the hospital feeling is present less explicitly; allowing to undertake activities like at home: playing, relaxing, meeting peers, et cetera; allowing to make choices and have a feeling of control and privacy to preserve their self-dependence; and offering a view on life outside the hospital – both nature and human activity – in order to partake in it indirectly.

Together, these findings suggest that designing child-friendly hospital architecture is a matter, not so much of preferences for specific colours or themes (Figure 3), but of more complex design principles like flexibility and customizability. Young patients prefer to reside in a homelike atmosphere; yet what is considered homelike, can be very personal. While public buildings like hospitals cannot be tuned to every individual, they can offer patients opportunities to appropriate and personalise one's own spot (the patient room). Even though some patients said they did not personalise their room, we could observe that most of them did, so it is interesting to foresee room for it. Also on the children's ward, our study suggests, it is important to create a 'living room feeling' with cosy corners and seats.



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Our findings complement insights available in literature. On the one hand, the refine findings reported elsewhere. Ulrich's (1984) study concluded that it is important for patients' rooms to have a view on green. The patients who participated in our study seemed to appreciate this too, and attached special importance to a view on 'movement' and 'life'. On the other hand, giving voice to young patients themselves adds detail to the themes advanced in literature, such as being able to play and relax (Vollmer, 2012) and go outside (Wagenaar, 2006).

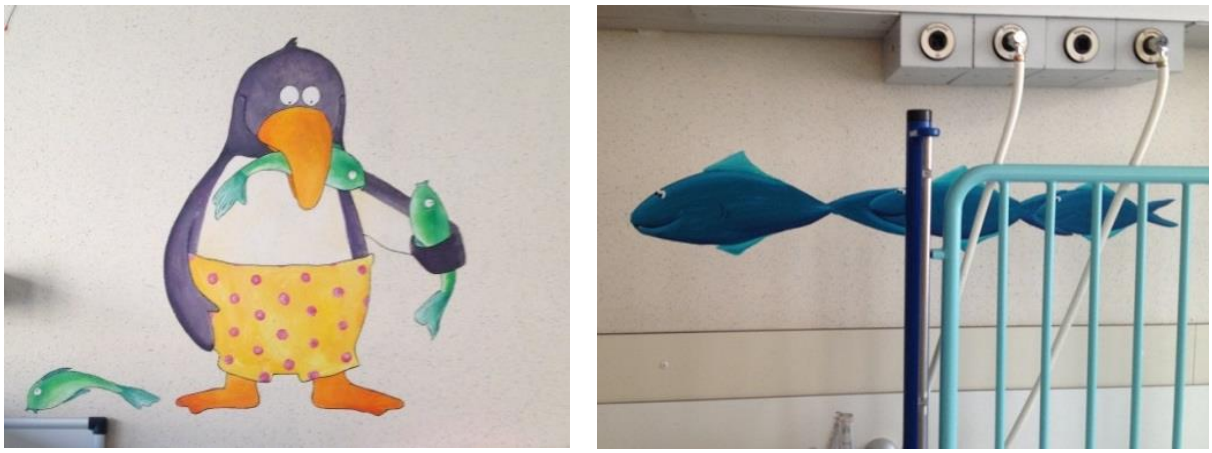

Figure 3: Themes in the children's oncology ward

A limitation of our study is that the role of the hospital staff remains underexposed. Especially the nursing staff can ensure that children feel more at home. While architecture cannot control this, a pleasant, well-thought and carefully designed hospital environment might have a positive effect on the staff as well. Moreover, also the care organisation may play a role in how a hospital is experienced, and can be either supported or hampered by the hospital architecture. The building design is thus not the only factor which determines whether young patients experience a hospital as child-friendly, but it does play an important role. Further research is needed to understand its potential to steer other determining factors in the right direction.

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