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Article

Experiencing Temporary Home Design for Young Urban Dwellers: "We Can't Put Anything on the Wall"

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Abstract: A significant number of young people live in temporary homes, which are designed to fulfil basic needs and provide space for normal activities. However, it is unclear what those basic activities are. Moreover, the indoor environmental quality is often left out of the meaning of home, although activities and objects can affect its experienced quality. We therefore verbally and visually explored how young temporary dwellers appropriate and experience their homes, including the indoor environmental quality. Fourteen young adults took part in semi-structured interviews and photographed their most used as well as their favourite place. The interviews were transcribed and analysed following an interpretative phenomenological analysis. The experiences of appropriation in the home were connected to the physical environment through an analysis of the photos and floor plans (sketched by the researcher) using an architectural analysis from the user perspective. The outcome showed that the young adults appropriated their home in three ways: by familiarising the place with objects and "normal" activities, organising where things are and when they happen, and managing the indoor environmental quality through activities and objects. It is concluded that qualitative and visual analyses can assist with making recommendations to improve the design of temporary housing.

Keywords: indoor environmental quality; home; activities; appropriation; temporary housing

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1. Introduction

People aged under 35 in the Netherlands move, on average, within five years, while people aged 45 and over stay in a home for more than 15 years [1]. The intention to move within two years is also stronger for younger people, with more than one-third of people aged younger than 35 having the intention of moving compared with less than one-fifth of people aged 35 and over [2]. The likelihood of moving increases when the move is part of where someone expects to be at a certain point in life [2]. Thus, for people aged under 35, living somewhere for less than five years seems to be the norm. At the same time, the majority of this age group, when living as a couple, is looking for a family house to buy [3]. Unfortunately, it is difficult to find appropriate and affordable housing due to supply and policy issues [4]. Another difficulty is that this shortage of supply leads to waiting lists for social housing, and some people do not have the time to advance on the waiting list but are in direct need of housing. These could be, for example, new students, starters on the housing market, and refugees who have received a permit to stay. Consequently, traumatised and tired refugees are housed in temporary tents so that they do not need to sleep on chairs [5].

It is unclear to what extent this temporary housing can provide permanence and appropriation, which are two of the most often found meanings of home [6–10].

From the perspective of post-disaster programmes, temporary housing, compared to temporary shelter, should "allow the return to normal activities, i.e., work, school, cooking

at home, shopping, etc." and provide this for up to a few years [11]. The problem is, however, that many temporary housing solutions are designed without knowing what "normal activities" are or how residents want to appropriate their temporary homes [12]. Moreover, theories on home and its meanings do not address how these meanings interact with the physical aspects of a dwelling, despite the emphasis that these contribute to the appropriation of the home environment. The indoor quality of a home depends on multiple factors, one of them being the indoor environmental quality (IEQ): the thermal, acoustical, air, and lighting quality inside the home. Together, these factors affect residents' comfort and health. Unfortunately, research looking at the relationships between IEQ and home meanings simultaneously is uncommon, as it becomes either too complex to measure all contributing factors and how they respond to each other, or the factors cannot be measured properly (for example, the spatial layout of a building, private/public connections, and building occupancy) [13]. Therefore, models of IEQ lack data and research approaches to include more abstract concepts, such as residents' interactions with their dwellings [14].

Bluyssen [15] proposed the environment model (Figure 1), which includes a direct relationship with occupant behaviour to better match occupants with buildings. An example of the actions of school teachers is given to improve IEQ in classrooms through questionnaires [16], which is the start of understanding the complex relationship between meanings and IEQ.

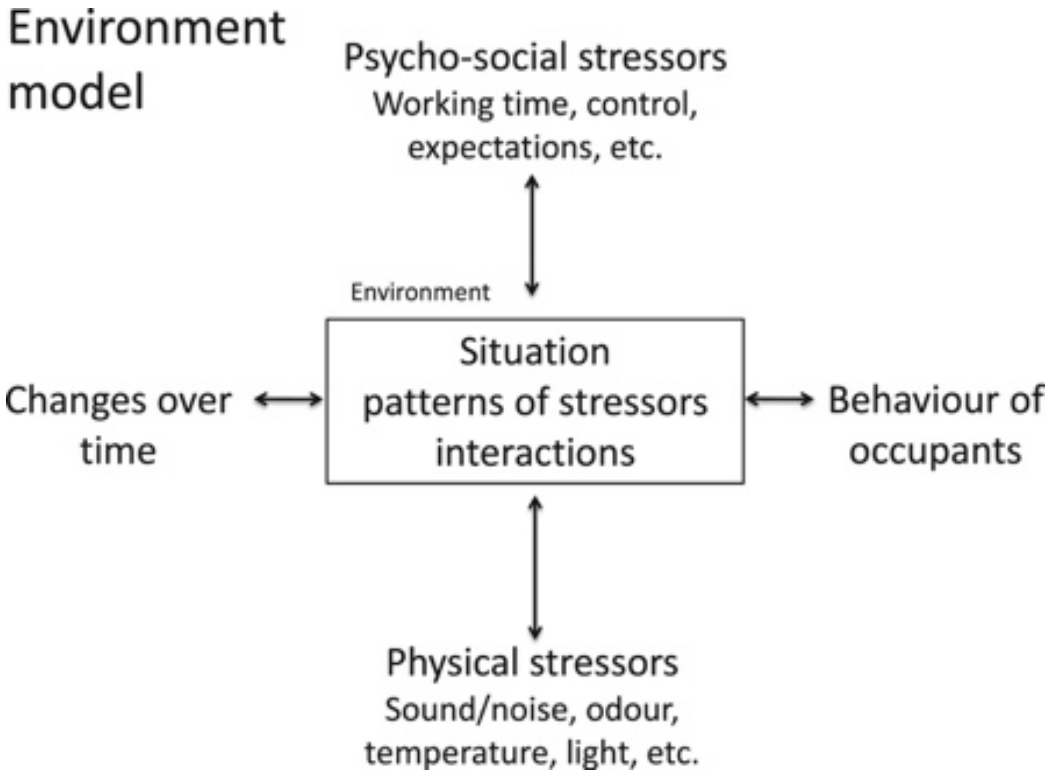

Figure 1. The environment model (From Bluyssen [15]).

Theories of home as well as the indoor environmental quality could benefit from including interactions with the dwelling to improve the design of temporary dwellings. Considering that many people are on the move due to war, climate change, or other uncertainties, without enough affordable and permanent housing available, it is important that housing has a positive effect on physical and mental health.

In this paper, we use qualitative and visual analysis to explore how young dwellers in the Netherlands interact with their temporary dwellings and how this relates to their meaning of home. For this paper, we focus on the indoor environmental quality and semi-fixed and flexible features in the dwelling as part of the interaction with the physical home.

As such, we make a first step in linking the indoor environmental quality and meanings of home, contributing to our current understanding of both concepts.

We briefly describe what research exists on (temporary) home and indoor environmental quality before moving on to the method, where we outline how and why we used a combination of qualitative and visual analyses. In the results and discussion, we provide excerpts from the interviews outlining contributions to the existing theories and discuss how the results from this research could inform dwelling design.

1.1. Appropriating the (Temporary) Home

Appropriation is the act of changing the home which, in turn, has an effect on the person who changes it [17]. This occurs, for example, through control, displaying objects, regulating use by others, and caring for the place [18]. Frequent moving as a result of temporary living is described as "temporary stabilisation" in qualitative research on young people in temporary homes [19]. The interviewees went through two steps after they moved in: personalising (adding personal items to make the room more like themselves) and organising (finding places, moments, and participants for daily practices). If their "new" identity could not be accommodated, they would find a new home. Sometimes the intention to move was a response to differences in preferences between residents in terms of how the home was organised, for example, setting up and following cleaning schedules with flatmates, and sometimes it was a feeling that the home did not fit with their own perceived identity [19]. The process of home-making is described as attachment and detachment happening at the same time [20].

The temporary home is part of a "journey to the next destination for adventure and something new" [20]. Even though the home is temporary, its meaning is important for daily practices and shaping one's identity. Marcus [21] describes the home as a mirror of the self, whereby the home reflects someone's identity. The home can be changed by adding and removing objects and by rearranging already owned objects. This would not change how someone perceives him or herself to be, but it would afford newness and a shifted focus without financial costs [22]. The meaning of home is not the same for everyone [23], but there are common denominators. These are based on the ideal notion of home, but nonetheless are worth mentioning [6,24]: security, permanence, identity, and control (in these or different wordings) [7,9,21]. Consequently, being able to appropriate the home, as an indicator of identity, is an integral part of its meaning [18,25–27].

1.2. IEQ and Appropriation Behaviour in the Home

Adjusting the indoor environmental quality (sound, light, air, and temperature) is not part of the definition of appropriation. This is remarkable, because many objects have an effect on it, for example, curtains and lights. Indoor environmental quality preferences may vary for different people and situations [15], and to what extent preferences can be realised depends on the physical characteristics of the home environment. In a study conducted in Korea, it was found that residents moved big furniture against walls to reduce sounds from neighbouring apartments and that curtains were used more often to control heat than privacy [28]. Another result was that residents were less satisfied with their apartment if they experienced less control over the indoor environmental quality [28]. Factors such as the type of building unit and ethnicity [29] and personal control [30] contribute to the reported overall comfort in homes, indicating that the design of a housing unit and how residents interact with it is worth looking at. There is limited research available that looks at how residents interact with their home to adjust the IEQ. User behaviour is sometimes a rather minimised concept; for example, it is defined as smoking or not, number of occupants, CO_2 generation and the ventilation rate [31], what actions residents take to control a ventilation system and what windows and doors they open [32], and what actions residents take to regulate the indoor temperature [33]. When only actions are investigated, the reasons for doing so are missed. The Theory of Planned Behaviour (because the actions in this case are planned) includes attitudes, subjective norms, and perceived behavioural control [34]. This

information might be very valuable to allow the design of better homes and could explain differences in residents' behaviours that would otherwise not be found.

In summary, the research questions are the following:

- How do young temporary dwellers experience their temporary home?
- How do they interact with the physical qualities of the home?

1.3. Linking IEQ and Meanings of Home Methodologically

The perception of indoor environmental quality is usually measured with objective comfort parameters. However, if we want to know about the experience, we should look at the conscious processing of what is perceived, and objective parameters will not suffice. Therefore, we used the Interpretative Phenomenological Analysis (IPA) to understand how the home, including the indoor environment, is experienced and shaped by starters on the housing market, students, and refugees with a permit to stay. The IPA investigates how something is experienced by someone and focuses on process and meaning, usually by means of semi-structured interviews. The interviews are analysed one-by-one, following these steps: reading and re-reading, initial noting, developing emergent themes, and searching for connections between themes, before moving to the next interview. Lastly, themes between interviews are compared [35,36].

Schweiker et al. [14] recommended that spatial data should be visually represented, which requires a new methodological approach. We investigated the experience of the IEQ and then made a first attempt to qualitatively and visually document the home environment and how residents interact with it. For architects, it can be difficult to identify with users and translate user experiences into design solutions [37], as they typically analyse floorplans to understand how designs are used [38]. Thus, to increase the usefulness of the research for designers, photos and floor plans were analysed to connect experiences and appropriation with the design of the dwellings.

2. Materials and Methods

2.1. Participant Recruitment

This study was part of a PhD project investigating how temporary homes for urgent home seekers can be improved. The participants were recruited after participating in the first part of the project, which was a questionnaire on the IEQ, home activities, meanings of home, and preferences. They were contacted via email for an interview date if they had indicated an interest at the end of the questionnaire. Sixteen (out of 266) participants were interested, but two of them did not reply to the email for an interview date, leading to a total of 14 participants. Saturation was reached after three or four interviews in each group (students, starters, and refugees with a permit to stay), and therefore, we did not contact more people. IPA does not require a large sample, but rather, involves a more detailed analysis, which is why we deemed the total of 14 participants to be sufficient for our investigation. The interviewees were told beforehand that the goal was to gather information on how they use their home and what it looks like.

All participants received a voucher of 10 Euros to compensate them for their effort and time. The refugees with a permit to stay were told beforehand that they would receive one as a thank you; for the starters and students, this was unexpected.

2.2. Study Participants

At the time of the interviews, the students, Peter, Mark, Noelle, and John, were second-year BSc architecture students at Delft University of Technology; Frida had unenrolled before the interview took place. None of them had lived in Delft previous to their studies, but Mark and Noelle had lived in student housing before. Frida and Mark lived in a studio apartment. Peter, Noelle, and John lived in student housing, sharing the kitchen, bathroom, and sometimes the living room.

Tim was a MSc student at the University of Utrecht and had worked between completing his BSc and starting his MSc. He had lived in different types of student housing.

He was planning to move out of his current student housing the following year and find somewhere more "grown-up" to live with his partner. The other starters were enrolled in a MSc in architecture in Groningen, working four days and studying one day a week, for four years. Richard and Marie had bought their first house, and Adam and Fabio lived in private rental housing. Marie, Richard, and Adam were living with a partner at the time of the interview, and Fabio was planning to move in with his partner in the near future.

The refugees with a permit to stay were all enrolled at a language school in Delft or The Hague. They had different nationalities (Syria, Afghanistan, Palestine, and Iran). Yashar, Ali, and Zaid lived in social housing with a sibling. Tannaz lived with her partner, in housing provided by her partner's employer. The interview with Zaid was in English; the others were in Dutch.

2.3. Data Collection

The interviews were held in the interviewees' living spaces and recorded with a voice recorder (Delft, The Hague, Utrecht, Schiedam, and Groningen) from October 2018 to February 2019. The photos were taken with a digital photo camera. Afterwards, floorplans were sketched on paper to get an overview of the space. Participants were visited only once, and apart from one interview where the voice recorder stopped recording, they were not contacted afterwards. The interview time was 35 to 50 min, with an average of 45 min. The total visit time was between 45 min and 1.5 h.

Interview Procedure

After entry, both the participant and the researcher sat down in the living area. The researcher explained what would happen during the interview, including the use of the voice recorder and photo camera.

The interview was semi-structured with questions on how the home was appropriated, what activities were done, and how the indoor environmental quality was experienced. The interviews started with an easy question ("how long have you been living here?") and ended with "what makes this house a home for you", before advancing to the photos. Depending on the content and the conversation, questions were rephrased, skipped, added, or changed in order. Not everyone automatically talked about what their home meant for them. Therefore, this specific question was added to the interview schedule. Some wanted to give a tour of the house, while others only showed the common/living room.

After answering all of the questions, the interviewees took two photos (one of the place most used and one of something he or she was most proud of). If necessary, the researcher took an overview photo. Originally, the "overview" photos were not planned, but after the first interviews, it became clear that the photos did not always provide an overview. Lastly, a short checklist on the building type was filled in. Only the researcher and the participant were present, not counting the occasional visit of a partner or flatmate.

2.4. Analysis

The semi-structured interviews were manually transcribed and analysed following the IPA. The floor plans were sketched on paper using the photos and from memory.

2.4.1. Interviews

The interviews were analysed following the IPA approach, which focusses on the experience of the individual [35]. Consequently, each transcript was fully analysed before the next, and each had its own themes. When all transcripts had been analysed, overarching themes that recurred were explored. The transcripts and themes were subsequently used to analyse the photos and floor plans. The transcripts of the interviews with the starters on the housing market were analysed first, followed by those of the students, and lastly, those of the refugees with a permit to stay.

The analysis was done as follows: Comments and remarks that stood out to the researcher were written down next to that part of the transcript, using mostly the intervie-

wee's words. These could be, for example, reasons for doing something, moods, opinions, or recurring words. Once the entire transcript had been analysed, the researcher went over it again to relate notes to each other and write down questions that arose. When all interviews had been analysed, the notes were entered in an Excel sheet, which was printed, and the information from each interviewee was cut into cards with one note on each card. The cards were sorted into common themes, which were then summarised on new cards (see Figure 2 left). For example, people, phase, proximity, agreements, noise, adjustments, ignored, and clothes (John). For each transcript a schema with relations between themes was made (see Figure 2 right), which were compared conceptually within and between the groups. The original line numbers from the interview transcripts that formed the basis for the remarks were included up to the cards to allow the steps to be retraced if necessary.

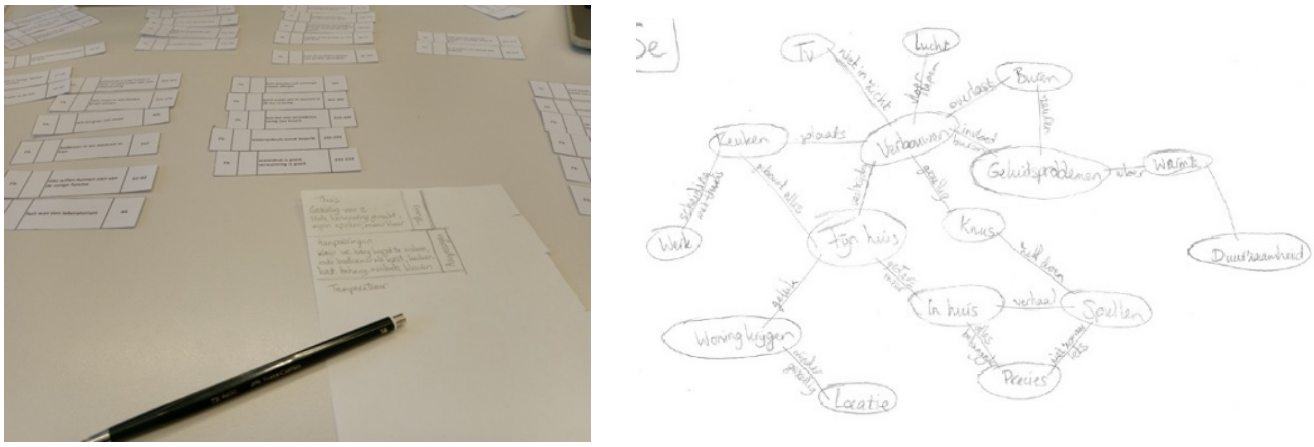

Figure 2. On the left are the cards with notes are sorted for an interview, creating the themes. On the right is a schema with the relationships between the themes is shown.

The themes (summarised at this stage as home, social, cleanliness, indoor environment, personalisation, layout, and other) emerged during the analysis, although the researcher was familiar with the topic and may have unconsciously drawn from previous knowledge. A second coder, who did not have previous knowledge of the topic but was familiar with analysing interviews, checked the analysis. A few note cards were added, and some themes from the interviews were related in different ways. Overall, however, there was consensus.

2.4.2. Drawings

When the analysis of the transcripts was finished, the photos and floorplans were analysed. The themes from the interviews that were used were places to sit or put things down, objects added to the room (books, clothes, decoration, etc.), indoor environmental management, the direction of view when sitting, and conceptual zones in the home. For each set of photos and floorplan, the same drawings were made. The photo(s) that gave the best overview of the space was traced by hand on transparent sketch paper, after which the topics were coloured with a marker on separate drawings. Copying the photos by hand made the drawings more similar, making it easier to compare the interiors between the interviewees. This is a method often used in architecture to analyse the design of buildings and environments from an architect's perspective [39]. The analysis drawings can highlight different aspects that increase the conceptual understanding of a building and provide a way to compare buildings (if analysed in a similar way). Here, it was used to analyse the user perspective. When all drawings were finished, the things that stood out were documented in an Excel sheet (see the Supplementary Materials for the photos, drawings, floorplans, and comments).

3. Results

The results are described following the overarching themes that were found: familiarising (home, sharing activities, personalisation, owned objects), organising (filled space, plants, favourite activities, dinner table), and managing (cleanliness, indoor environment, comfort).

3.1. Familiarising

3.1.1. Home

The living space is adjusted in a way that was compatible with how one perceives themselves:

> *In a way it is part of student life of course, that you live somewhere with flat mates, and do fun things with them.*
>
> (Noelle)

If the living space is not compatible with ideas about where one should live, adjusting it is pointless and creates a feeling of powerlessness and being outside of society (see also Figure 3):

Figure 3. Yashar's photo of where he is the most shows a small, impersonal living room. He was unable to take a photo of something in the house he was proud of.

> *When you are not happy, you will, you will do not anything. Because you are not happy.*
>
> (Yashar)

Sometimes the living space is both compatible and incompatible when the space conforms with ideas on where one should live but the participant does not consider themselves to be that person yet (See also Figures 4 and 5):

> *Well, I must admit that I find it easier to invite friends here than family, because with family I sort of feel that it should all be a bit neater, or homelier, and here it is, well, it still feels a bit student-like.*
>
> (Richard)
>
> *That is, well, then I think that this house really is a house for adults.*
>
> (Marie)

Another factor associated with compatibility was the idea that each move should be incremental in some way, always seeking an improvement from the current situation:

> *Back then the reference was just a student room, and then this is an improvement in many ways, and after, so now I live here, when I move to a new house, then this is my reference point, and I can try to improve on this.*

(Richard)

Figure 4. Richard replaced the kitchen, painted the walls, and brought all his furniture. When his girlfriend moved in, they rearranged the furniture and added more shelves. He explained that looking back, he should have thought about an overall design scheme for the room.

Figure 5. Marie and her husband renovated the apartment completely and had a clear idea beforehand of what it should be like and how it should function.

3.1.2. Sharing Activities

In addition to being a place of how one perceives themselves, the home is also very much a social place, which can be controlled:

> *I don't need to run into other people, and also what I like about my own apartment, is that I can do what I want, and I can decorate it myself, and, yeah, it gives a sense of freedom in my mind.*

(Frida)

For most students, it is a place where "normal" social activities take place, where every social activity does not need to be planned in detail, but things happen spontaneously (see also Figure 6):

Figure 6. Peter's shared living room where people sit, play games, work, eat, and chat.

> *Yeah, that you do a lot of things together. And ehm, because of that I felt more at ease. Because it is nice to have people around that you can be with and do things with, just sit, play games, and those types of things.*
>
> (Peter)

The older interviewees emphasised the social function less, possibly because they lived with a partner or planned to do so in the near future. Living with a partner might provide certainty that there will always be someone to share daily life with, which is not guaranteed for people living without a partner. A large part of the social place the home can be is not about receiving guests, but about being with familiar others who have equal access to the home place. Nonetheless, being able to receive guests is valued. Not having enough space or space for furniture to facilitate this can lead to feelings of being limited or lonely and can play a part in how much a place feels like home:

> *This [not having a dinner table] is not an issue for us, but when we have guests over, it is a bit of an issue, because there is not enough space.*
>
> (Tannaz)

3.1.3. Personalisation

For some interviewees, home seemed to be incompatible with traces from earlier, nonrelated residents. These traces could be removed by painting the walls, adding wall decorations, lights, curtains, or furniture. Home is created, and continues to be created, with every adjustment:

> *The moment that you will clean and paint a new apartment, or house, or any place, then it becomes your own place. It is very strange. But then you really get the feeling of 'this is my layer, that I put over it, so now it is mine'.*
>
> (Fabio)

How long someone expects to live somewhere has an impact on how much effort is put into personalising the dwelling and how structural the changes were (also considering ownership):

> *It feels a bit like a waste to do that [paint a mural] in a student room that you will leave behind.*
>
> (Richard)

> *I doubted for a long time to paint the walls or not and, . . . it just didn't happen. It is not my personality.*
>
> (Tim)

Noelle explained that if she had a place to stay for a longer period, it would make more sense to move her things:

> *And then maybe also move more things from my room in my parents' house to Delft, because there are a lot of things there, but they weren't useful to bring because I did not know how long I would stay here, because I know now that I would be here for only two months, it feels a bit like a waste.*
>
> (Noelle)

John describes that the outlook of moving to another room made him decide not to change the carpet in the room:

> *At first, I already thought I would not have this room for long, because they [other flatmates] were saying that people would move on to other rooms, but they enjoyed their time, so they stayed a bit longer. Ehm, but yes, I could have done something about it, but I didn't.*
>
> (John)

3.1.4. Owned Objects

When an interviewee moves into a new living space, he or she brings objects he or she already owns, which can be functional, decorative, or difficult to further specify. These objects afford the owner recognisability, without necessarily having a conscious emotional connection with them:

> *And ehm, as long as it is good, there is the possibility that next time it is also taken along. So yeah, it is mostly about you have, and that, I find it a waste to get rid of it, because, well, it could be different. That would be a big step.*
>
> (Adam)

> *That used to be my wardrobe. We all received an antique cupboard, and well, yeah, I have always had it. Now it is not a wardrobe anymore, but I would have never bought it myself, I just always took it along or something.*
>
> (Marie)

3.2. Organising

3.2.1. Meaningful Objects

Objects which are important emotionally are also displayed consciously (See also Figure 7).

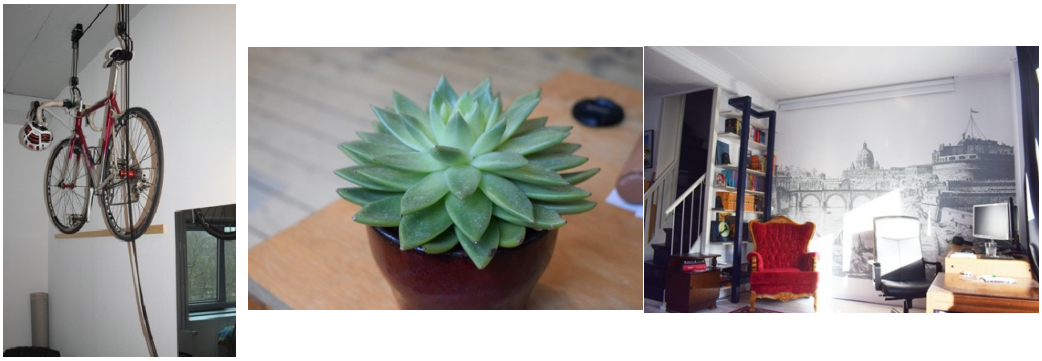

Figure 7. Photos of what Mark, Noelle, and Richard are proud of.

> *That bike is part of that, and eh, yes, from around when I was fourteen, I have been busy with my sports, so that bike actually means quite a lot.*
>
> (Mark)

Plants were often mentioned as being an essential part of the home interior. Only Yashar and Tim, who seemed less invested in their homes, did not have any plants on display:

> *It is also really the case that when I would invite someone, that I would say, look at my cool plant, or something.*
>
> (Noelle)
>
> *At the moment it is mostly the plants that make it cosier. Without plants this is space is very empty, not a place that is lived in.*
>
> (Adam)

3.2.2. Filled Space

In addition to bringing already owned furniture and objects to a new living space, other furniture and objects are bought to fill it in a way deemed suitable, especially when the new space is larger than the previous one (See also Figure 8):

Figure 8. The living rooms of Adam (**left**) and Marie (**right**).

> *Our previous house was very small, so we really had to, ehm, it was about a third of this place, so we had to buy really different furniture. And still people say, oh, your house is quite empty.*
>
> (Marie)

Zaid, Ali, Tannaz, and Yashar were unable to bring any objects and acquired everything. Instead of bringing the exact objects or furniture to remind them of their previous living places, they made the space more recognisable in terms of how the home is used, where possible:

Yes, I think it is, ehm, the space of the living rooms. It is a difference actually. When I live alone it is enough, but it is ehm, in my culture I take care of my family, so your living space needs to be a bit bigger than one person.

(Ali) (See also Figure 9)

Ehm, actually, yes, that floor covering, the carpet, we had thought of that before, that we would put down carpet, because that is normal for Afghan people, they just want something soft . . .

(Zaid) (See also Figure 10)

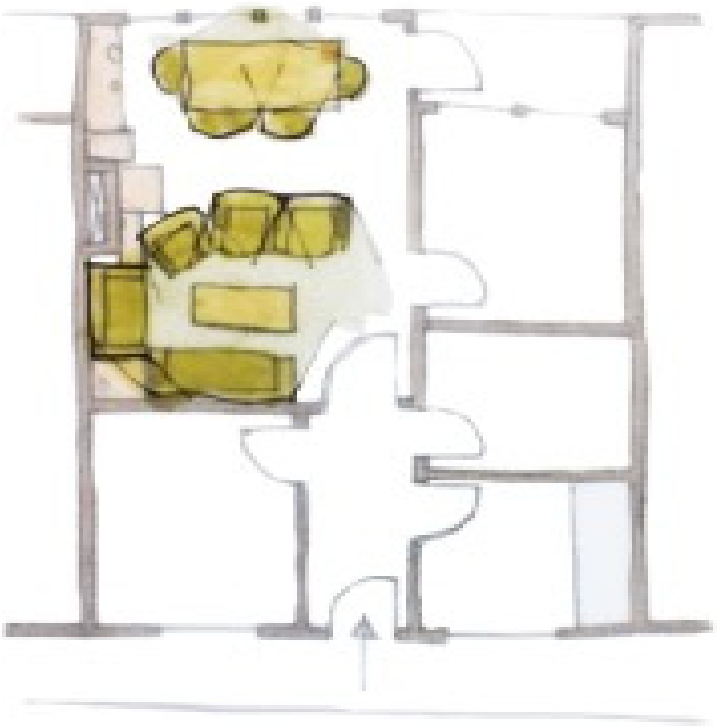

Figure 9. Ali's living room shows the need to have enough space to sit and chat.

Figure 10. Zaid's living room with carpet on the floor.

3.2.3. Favourite Activities

The spaces the interviewees lived in were often conceptually divided into zones of where activities happen, even when the space consisted of just one room (See also Figure 11):

Figure 11. Marie's apartment, where the kitchen (on the right) is the central space of the home.

> *When people are a bit tired, but actually only rarely, and also a bit the rest of the house. We are actually always sitting in the kitchen. Also because of the way of sitting, it is a bit more active.*
>
> (Marie)

Sometimes, an interviewee stated that they could not do a desired activity because the space is unsuitable, which leads to the feeling of being limited and unable to solve the problem. These limitations are expected to play a role when looking for the next living space:

> *I play the violin, but I actually stopped doing that since I have been living here because every time I feel, well, a bit bad when I do that.*
>
> (Marie)

> *It's a small place, they can't sleep here. If they sleep here, maybe one or two of them will sleep here and eh the rest will go back to their house, of course it is so small, and eh, yeah, my friends, yeah, something like that. And I live with my brother, I can't do, I can't do all that.*
>
> (Yashar)

The bed is perceived as a private place, and by some, it is also used as a place to relax, while awake. For the interviewees who lived in a studio or had one private room, it was desirable to have some sort of separation between the bed and the rest of the room (See also Figures 12 and 13):

Figure 12. Mark's studio, where a higher bed could provide more living space.

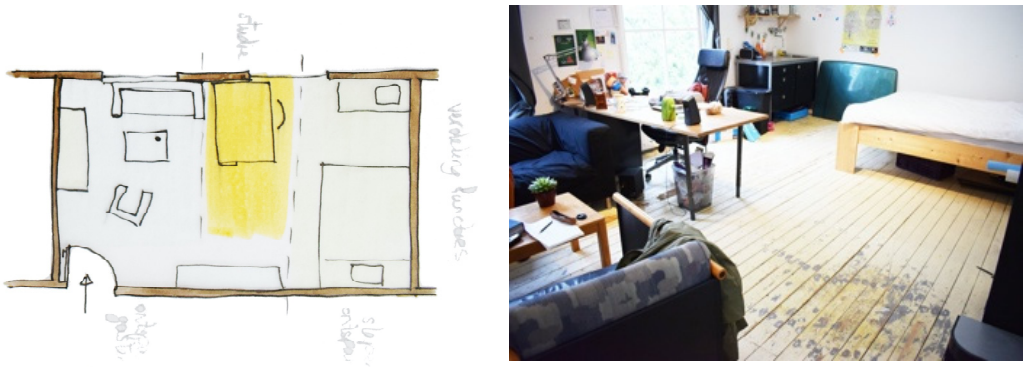

Figure 13. Noelle's room, which shows separation between the sleeping and living area because of the distance.

> *It is just a thing meant for sleeping in.*
>
> (Mark)
>
> *Because your bed is not only a place to sleep, but also watch series, and relax.*
>
> (Tim)
>
> *That when I am here with my friends, then that sort of stays the sleeping area. That is really nice.*
>
> (Noelle)

3.2.4. The Dinner Table

The dinner table is one of the most versatile objects, as it facilitates eating, working or studying, and receiving guests. Not having space for a dinner table seems to limit the feeling of functionality of the living space (See also Figure 14).

> *At this dinner table we are sitting not very often. Is has sort of become more of a work table sometimes. But at least you have the freedom to invite people over and have the option to eat normally from a table.*
>
> (Richard)

Figure 14. Tannaz's apartment, which does not have space for a dinner table.

3.3. Managing

3.3.1. Cleanliness

Cleanliness was mentioned in the interviews with students, either as agreements that were made or as dissatisfying and a reason to find another place to live (See also Figure 15). Living in a place with people who have different ideas about cleanliness makes a place feel unhomely:

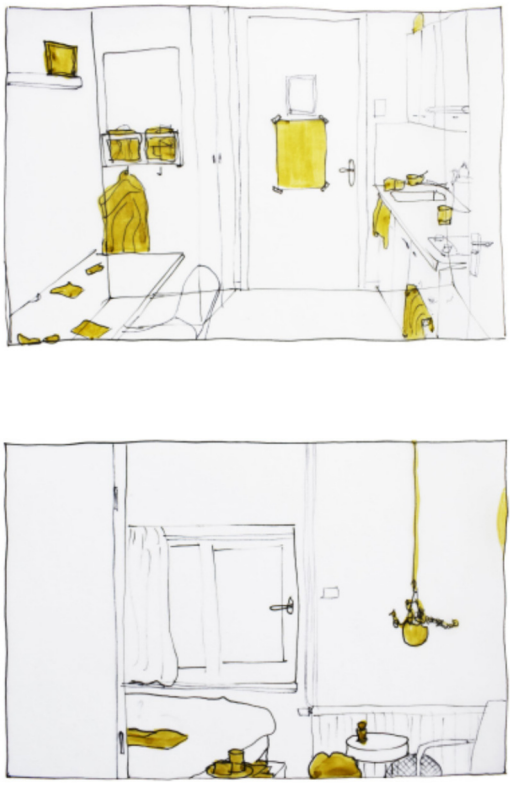

Figure 15. Mark's studio shows relatively few items lying around on surfaces (the objects on the table were mostly from the interviewer).

I wanted to have space, for example in the kitchen, and that I can clean it myself, because the bathroom was always very dirty, and for a short time that is okay, but only sometimes and not too long.

(Frida)

I didn't really like being there then, so that was difficult for me, purely because of things not being clean.

(Mark)

3.3.2. Indoor Environment

The indoor environmental quality is in itself not a determining factor in whether a house feels like a home:

At some point you learn to live with that. And I don't know if ehm, look if it really, if it really hinders you, then it becomes a hostile environment to put it bluntly and of course that goes against your 'home'-feeling. But then it has to be really bad before it reaches that point.

(Fabio)

All interviewees mentioned problems with the indoor environmental quality, arrangement of spaces, building quality, or differences in preferences. They mentioned quick and simple solutions to improve a situation (blanket, draw curtains for warmth or against sunlight, open or close windows or doors, go to a different space) (See also Figure 16). If there is no such solution, the situation is often endured:

Figure 16. Tim's favourite spot—sitting on the windowsill, looking outside into the street. This window is, at the same time, a problem and solution to the indoor environmental quality.

You quickly forget it. But then you would just put on a sweater and you would have blankets lying everywhere but a gas heater also has something cosy. I always like gas heaters, so that helps. And then a small carpet in front, that's nice.

(Fabio)

When the window is open it is nice. Then it is okay.

(Tim)

Not knowing whether neighbours are bothered by noise from some activities causes worry for most of the interviewees:

Because I do not know if I am too . . . , if my music is too loud or not, so then I am too careful, and then I feel like I am walking on my toes, afraid that people in my apartment would be talking too loudly.

(Frida)

Then you are in each other's way with just about everything. So ehm, a bit more space is, well, then he doesn't sleep between the building models and I can at the same time do what I need to do. And that helps with that. That is why we moved here.

(Adam) (See also Figure 17)

Figure 17. Adam's living room, where despite having more space than in the previous place, model making tools and materials are still lying on the table but can be easily put to the side.

Standard lighting, if present, is perceived as unhomely, and if possible, had been replaced by the interviewees. Appropriate lighting then adds to the experience of home:

Because of smell, and. The right light, I can really make it mine. Yes.

(Frida)

The first thing we did here, or what I just did, is say, no, go away with those lights, we buy other lights. I never turn on the ceiling lights. And that also creates a homely feel.

(Fabio) (See also Figure 18)

Figure 18. The chair that Fabio is most proud of, with added lighting.

Smells from cooking can be a problem when the space is also used for other activities and can lead to discomfort and conflict over what should be prioritised—food or smell:

> *You shouldn't cook things with a strong smell, no.*
>
> (Fabio)

> *Well, I do have a hood, but I do open my windows often when I cook, to get some fresh air in.*
>
> (Frida)

3.3.3. Comfort

Energy use seems to be secondary to the function of home, though trade-offs are made. The interviewees did acknowledge that warmth costs energy. When heating behaviours seem to get "out of hand", rules are set up to decrease energy use. Additionally, energy use for heating is often part of a negotiation with flatmates between comfort, costs, and what is deemed a "normal" setting:

> *We have a deal now that you are allowed to keep the radiation on 1 when you leave for the TU, when you go away for the weekend you turn it off, and otherwise you need to pay 5 euro when someone finds out. And there is someone who actually checks that, who also checks if your lights are turned off, and other things like that. He keeps track of that with a list.*
>
> (John)

To what extent it is possible to live sustainably is often linked with how the house environment is designed or organised:

> *I also don't know how energy-efficient this building is, and since the building is quite old, which are usually quite, eh, bad.*
>
> (Noelle)

> *It's actually quite stupid, because I always thought in the beginning, I can't really do much, but actually we can do quite a lot, we just have to, eh, talk with the VvE* (owners' association).
>
> (Marie)

3.4. Overarching Themes

For the interviewees, the home is a place that both reflects one's identity and should improve through time. It is a place where one can do "normal" activities (watching TV, eating, cleaning up, etc.) with familiar others without the need to make an appointment. Additionally, the experience of home includes what it literally feels like to be inside: the light, the smells, the temperature, and how these can be managed. Curtains, lights, and blankets are not only objects to look at but can also change the indoor environmental quality and what the space feels like. Making a home is done in several ways, which can be roughly divided in familiarising, organising, and managing the space.

Familiarisation with the space occurs when residents remove unwanted traces from previous residents and add their own layer. The colours and materials of walls and floors should be compatible with one's identity, which can be more difficult if traces of previous residents are visible. This identification layer consists of new wall and/or floor coverings, lighting, cleaning, and/or owned furniture and other objects. Home is also a place that actively and passively changes throughout one's life to support one's goals. The development of home can be marked by a life stage, for example, going to university or living with a partner. Development can also be marked by a discovery about oneself, for example, how much time alone or cleanliness is valued. With changes in identity, the home environment and its perception changes. Objects are taken along, not because they are emotionally significant, but because they are part of one's history; not taking them would

require a conscious decision that they are no longer part of that identity. Consequently, the home is constantly changing, similar to one's identity.

Organising the space entails the assignment of spaces for everyday and favourite activities, placing a dinner table, and filling the space with objects such as furniture and plants. The objects in the home are organised to create space for activities. For some, this means cooking while entertaining guests, while for others, it means cooking in a separate space to reduce smells. The interviewees wanted a dinner table to receive guests, eat, work, and do other activities. When there is no space for a dinner table, residents sometimes find it more difficult to organise their activities. If favourite activities require space that is not available, the participants perceive this as being held back. For example, when sound insulation is not sufficient to play an instrument without neighbours complaining or when an activity is deemed too dirty (for example, bike repairs). Objects help to organise and assign activities to a space. Therefore, a space that feels empty can make it harder to feel like home.

Managing the space entails making the environment suitable for the activities one wants to do through keeping the space clean and making it comfortable (including temperature, light, sounds, smells, and touch). Rearranging furniture is also part of controlling the indoor environmental quality. For example, the temperature is managed by changing the thermostat on radiators but also with clothes, cooking, opening or closing windows and curtains, and sitting under a blanket away from windows. Changing one of these affects the others too. Therefore, the decision on how to reach an acceptable temperature depends on multiple factors. One can choose to sit on the sofa with a blanket in the evening because it feels cosy, while in the morning, one takes a hot shower. Both increase the body temperature but feel very different psychologically. Being able to choose how to manage the indoor environment adds to the feeling of home.

The refugees with a permit to stay placed more emphasis on the temporariness of the house and how it is a place to start, but not live, their "new" lives. Additionally, they focussed more on finishing their education and getting their family life in order so that they can move on to the next chapter. This might be because they could not choose where to live but had to accept whatever was available at that time. Focussing on their studies could have been a way to manage the opportunities for the home they might choose later.

4. Discussion

4.1. Contributions to the Understanding of Home

One of the recurring meanings in research on home is permanence [9,18,26]. Exploring temporary residents' experiences suggests that permanence can also be transferred to homes via owned objects. These objects can be ordinary and become relevant only because they are familiar. This is in line with research from Swan et al. [40], where clutter and its organisation was found to be part of home. Other research on housing with multiple occupations similarly described the abundance of use objects, rather than display objects, where the researchers, maybe falsely, concluded that this was due to the lack of storage space and the nature of the housing setup [41]. Especially for refugees with a permit to stay, space for use objects may be important, because it is all that they have.

The lighting behaviour of residents has already been linked to individual characteristics and preferences, the social situation, activities performed, the physical setting, and time [42]. Our research suggests this might also be the case for behaviours related to sound, temperature, and smell in the home. If the home is to be a mirror of the self [21], "home" should be understood not as static but as constantly changing, because home needs to adjust to the current moment.

Research on home and how it is used can sometimes be supported with photos [41] or floor plans [38]. It might be beneficial to use both (if time permits), because the photos taken by the residents and the floor plans made by the researcher provided a better understanding of what home is and how it is appropriated. Additionally, analysis drawings were used to compare living spaces and identify design features that facilitate appropriation and

certain home activities, which might be useful for translating research results into design recommendations.

Regarding research methods for the IEQ, qualitative approaches can help with understanding residents' motivations for controlling the indoor environment and how satisfied they might be with their homes. The interviews helped to explain the context of perceived quality, which would be lost with qualitative methods. For example, the previous home and expectations of the future home play important roles in how satisfied the interviewees are with their current homes. This understanding would have been lost had the focus been on the typical IEQ parameters.

4.2. Limitations

Three different groups were part of the research (students (5), starters (5), and refugees with a permit to stay (4)). The number of interviews conducted per group could have been larger, but time constraints made this difficult, and for IPA, the depth of analysis can make up for smaller numbers [35].

Eight of the students and starters were students of architecture, which may have made them more aware of the design of their home environment. One Master's student described how he would have done things differently had he looked at it professionally. The refugees with a permit to stay did not have the possibility of including things they already owned, since they had to leave everything behind. Talking about home can be difficult, especially if it is not in your first language. For the refugees with a permit to stay, it may have been especially difficult to express nuances in their feelings and experiences. Additionally, houses in the Netherlands are different from where they came from, which may have required more adjusting behaviours to make the living space fit with their identities.

The interviews and photos were taken of the space where the interview took place. It is possible that the interviewees tidied up their home before the visit, so the photos may not be fully representative of everyday life. Sometimes this was a (shared) living room; other times, it was a bedroom or studio apartment. The interviewees' shared spaces were appropriated less than the nonshared spaces. Not having seen the whole apartment may have affected the findings. Similarly, not having visited all the spaces in a home had an impact on the completeness of the floor plans. For example, it was impossible to analyse the photos and floor plans for John because of the lack of appropriation and not having seen other parts of the house (he lived in a house owned by a student society).

4.3. Future Directions

This research found that living spaces are made into a home when there is an opportunity to familiarise, organise, and manage the indoor environment. These three aspects can be used to inform designers. For example, the need to provide spaces for already owned objects and pastime activities and options to manage the indoor environment could make it easier for a place to be made into a home. Future research on (temporary) homes and how they are used should therefore include everyday objects and adjustments to the indoor environment. When analysis drawings of photos and floorplans are used in research on homes, this could help with translating the research results into a more useful format for designers. Which specific analysis topics are most useful may depend on the design question and this requires more research, particularly on how the results could be translated into generalised design recommendations. Using a method of analysis that is understood by design professionals might make the results more accessible for them, and hence, the research findings may be more frequently used.

5. Conclusions

This paper explored how temporary homes are experienced by students, starters on the housing market, and refugees with a permit to stay, with a focus on appropriation and the indoor environmental quality. The research elaborated on the meaning of home and IEQ by specifically including the appropriation of the indoor environment.

We found that objects, decorations, and the people with whom the home is shared are used to familiarise, organise, and manage the home as part of one's changing identity. When this is not possible, the living space feels less like a home. Moreover, objects and activities interact with indoor environmental quality and thus seem to be part of the concept of home. Most objects in the home are there because they simply are, not because they have a salient emotional meaning.

Analysis drawings of photos and floor plans can support interviews. Including such images could make it easier to translate experiences of home to the physical environment and make the research more accessible for building design professionals. However, this research was just a first step, and more research is necessary to generalise the outcome.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/buildings13051318/s1, Booklet S1: Floor plans, Photos & Analysis drawings.

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