

'Design Your Home Pack'

Co-designing Tools to Design *Homes* and *Houses*

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ABSTRACT

Clients commission architects to design their dream 'homes', ones that reflect both their needs and desires. Conversely, architects aim to design 'houses' that demonstrate their excellent skills. This paper discusses an on-going study in Japan that aims to improve the communication between clients and designers and develop solutions that will narrow the gap between the spatial configurations that clients desire and those that are designed for them. The focus of this paper is the design process involved in the planning of two workshops for both designers and clients as part of an action research project that aims to demonstrate good practice of participatory housing design. The workshop was based on the 3P process: *preferring, planning* and *processing*. Different design games of the 'Design Your Home Pack' are explained in this paper and the results are shown with further discussion of how to improve the designer-user relationship in order to develop desirable and designable housing projects.

Keywords

House design, design games, co-design workshop

1. INTRODUCTION

'Building a desirable house' is a common dream for everyone and particularly for Japanese who save money for the design and construction for a major part of their lives. However, communication issues can arise between clients and the design team that may lead to beautiful houses which do not fit the needs of the clients and a greater outlay than anticipated on modification and adaptation.

For clients who wish to commission perfect and comfortable homes, it is important for them to understand their own needs or requirements of a 'home', and to have some idea of how the design processes involved in building construction work. Indeed, it is even more essential for

clients who are the future users of such projects to learn effective communication skills in order to transfer their needs or requirements to the design teams.

On the other side of the communication experience, designers have far more knowledge of how to conceptualise houses using abstract design languages, and on the other hand users tend to care about the details of 'houses' based on their own usability experiences. For example, if users are asked, *'what kind of house do you want to live in'*, they might answer in descriptive words, such as *'a bright house'* or *'a spacious house'*, or pick on specific details, such as *'an island kitchen'* or *'a grab handle in the toilet'*. This kind of answer might not be enough for design teams to design a building, which reflects the 'real' needs. Issues also arise because design teams do not have the skills to ask the appropriate questions and sometimes overlook users' expressions replacing them with their own design concepts.

2. BACKGROUND

The fundamental issue is the different perspective between 'house' and 'home', which relates to the discourse between designing *place* and *space*. "*Space is the opportunity; place is the understood reality*" [5], which indicates that space can be created but place needs an investment of understanding of behavioural appropriateness and the cultural expectations of the client.

Based on this discourse, the research team, with members with combined architectural design training and a user research background, initiated an action research project through the organisation of a series of design workshops to bring architects and clients together in order to develop a common language of communication. The research questions are mutual for designers and clients: *how can users transfer their own needs and desires to architects? How can designers involve users in order to get useful information for designing sustainable 'homes'?* These questions echoed the three conditions that Ehn [3] mentioned of how to use the meeting of language-games as a productive way of enabling participatory design:

1. *'Designers have to understand the language games of the use activity;*
2. *Users have to understand the language game of design;*

3. Users must be able to give complete explicit descriptions of their demands.'

Even though educating designers is an important element in promoting participation in design, we agree with Ehn's statement that equipped users might be more essential. This also aligns with the aims of the 3P procedure [6,7]. Instead of designers designing in their expert world after receiving the design brief from their clients, it suggested that the new roles of designers should begin by reinterpreting design processes and embedding design knowledge in *three* new steps in order to encourage clients' to be creatively involved in design:

1. Preference (P1) –find out more about what the clients want and also guide them to understand their needs and develop the exact brief together.
2. Planning (P2) - invite clients to take part in the planning design stage as a design partner.
3. Process (P3) - let clients experience a simplified construction process through mode building.

2.1 Preparation – Referring

The user recruitment process was started by sending over two thousands postcards through the university network to ask landowners who are planning to assign design teams to design their dream house in the coming two years. The selection criterion was based on their diverse background in order to set up a representative sample. After interviews with a few potential applicants, two families were chosen: a three-generation family - a middle-aged couple living with a grandmother and three children with 100m² land in the urban area; and a farmer with his wife and his mother who has 800m² land in a rural area. At the same time, four architectural practices were invited to participate in this research. As with the clients, the incentive for the design teams was to be part of the development of best practice in house design.

3. FIRST WORKSHOP – ENABLING USERS

Based on this framework, the first workshop was executed on a Sunday with a newly designed and stylised bilingual game pack. Although Brandt [1] warned that *'using stylised game materials seem to elucidate the participant's intentions and interests, as they are not implicit in the materials provided,'* it was decided by the research team that it was important to have well-presented game materials (fig.1), which were more suitable to Japanese general



Fig.1. Special designed pack for Japanese culture



Fig.2. Images of likes and dislikes

culture.

The workshop started with a seminar to explain the logic and concept of the development of the 'Design your home' pack to both architects (four teams in total) and users (two families).

Then, all design teams were given a task to discuss with the two users groups about their usual design practices. Thus, the research team members became facilitators for the two groups (one architectural design team with one users group) and begun the 3P procedure.

In the *preferring* phase, users were asked to choose three images of 'like' and three images of 'dislike' from a selection of latest Japanese architectural design magazines. After choosing the images, users were asked to explain to the architects why they chose the images. The facilitators of the workshop encouraged architects to ask users for detailed reasons (fig.2). In the *planning* phase, users were asked to think about their existing home and listed the ten most important objects by choosing pre-designed icons (fig.3) or draw new ones themselves or asked the architects to do it for them. Then, architects and users were asked to arrange the icons and made 'rooms' and developed a preliminary spatial layout. The third phase was *processing*, where architects and users were asked to translate the two-dimensional floor plans into three-dimensional study models with some 1:25 scaled toilets and graph paper (Fig.4). One more phase was added to the 3P procedure, the *presentation* phase. Each group was invited to share their experience (fig.5).

3.1. Results and Discussions

The three phases were 'played' twice, i.e. there was a shift of groups between the two architects and user groups. There

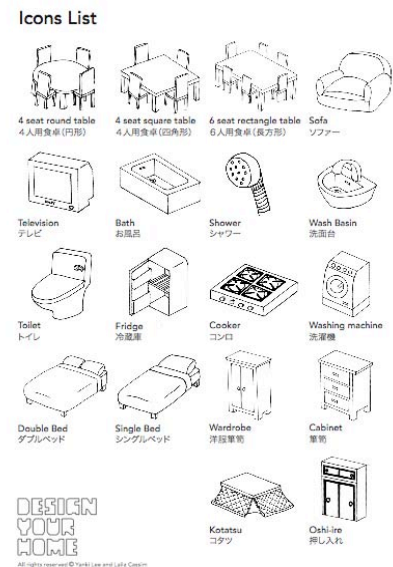


Fig.3. Pre-made icons

were lessons learned from different phases.

In the *preferring* phase, we found that it took longer than we expected for users to explain clearly and precisely to architects about their choices. For example, the wife of one family chose an image with a staircase because she does not like to see through the other side of the wall. After a long discussion, she further elaborated that the image reminded her of instability which she does not want to have in her new house. This proved that more work needed to be done to unblock users' preferences and meanings attached to their answers.

In the second phase, everyone enjoyed the first part where users were required to list ten important items of their current house. Then participants were instructed to develop a spatial plan by starting from the usability and relationship to everyday life objects. However, there was some confusion in the transformation stage. Participants could not understand how to start to think spatially from everyday life objects. For example, one of the architects tried to draw the floor plan based on interviews with users in the previous phase and refused to invite users to manipulate the objects/icons defined from the beginning of this phase. Users felt frustrated and gradually accepted the architects' leading role in the design of the preliminary floor plan.

In the final phase, we told architects to construct a study model with users. However, one of the architects attempted to build a precise model without user participation and the other one could not finish it since they explained that there was not enough information to build a model. Finally, during the presentation, we realised that the purpose of the workshop and each activity was not explained properly to participating architects. The reality of the land and clients also led architects to show off their specialty to users in order to bid for the commission. As a result, they took the initiative away from users, which was against our intention of promoting co-design. As a result, changes were made for the second day programme.

4. SECOND WORKSHOP – EMANCIPATING USERS TO INSPIRE DESIGNERS

In the second workshop on another Sunday, the same two groups of users met two different architects' groups. With the same users' profiles, we developed different tools based on our reflection from the first workshop but still followed the same procedure.

We decided to do the *preferring* phase, in the same way as the first day. During this time, the users only described their own choices from the last workshop to the new architects groups.

In the *planning* phase, more detailed



Fig.6. Manipulating grouped icons



Fig.4. Tools (scale toilets and graph papers) for P3 (Process)

Fig.5. Clients presented and share their 'designs'

and structured activities were developed. The first one was to choose ten or more items that they would like to bring to their new home. We did not use pre-designed icons as in the last workshop, instead, users depicted the items and the architects drew icons. In doing so, we intended to facilitate users transferring their ideas more prolifically and clearly to architects.

For the second step, we prepared special tools to find the relationship of each zone without drawing. In the first workshop, we found architect-led behaviours for two reasons: the prepared sheets which users and architects defined rooms in the *planning* phase were close to reality, so architects drew or tried to draw lines by themselves, and it seemed difficult for architects to fulfil two roles, designer and facilitator.

To solve this problem, new tools were introduced. Considering the costs of media, such as speech and drawing, as Clark et al. mentioned [2], it might be difficult for users to draw line in order to find the relationship of each zone. So our special tools consisted of detachable small sheets for icons and semi-transparent sheets for manipulating grouped icons. By using these open-ended tools, users tried to find the relationship of each zone. We intended to facilitate the users to lead communication between themselves and the architects. While this was happening, the researchers acted as facilitators to ensure that the role of architects was only as observers of what the users were doing and to gain information from them. Then, the users grouped the icons based on their own criteria, and they manipulated the grouped icons in order to create zones for their future home (fig.6). After that, users worked with architects to name specific areas for each zone, such as 'café', 'hospitality', or 'shop.'

Until the end, users were asked to tell architects about their design preferences for their dream homes such as shape, material, or atmosphere. The final step was when the architects reported back about their understanding of users' needs or requirements for their homes, and users commented and confirmed on them.

4.1 Results and Discussion

More user-lead behaviours were found in the second workshop. For example, the users manipulated grouped icons by themselves, and users discussed about their own

home among themselves without asking architects and then explained this to them.

After the workshop, we interviewed the architects and the users. One of the architects said that it was very difficult for him to observe user behaviour without intervening in their conversation or operations. However, he also said that he learned more about the users and their functional desires to their home than through his usual way of communicating. One user said that drawing the floor plan and making a 3D model evoked more real images of their future home, so they preferred the first workshop. On the other hand, another user said that they preferred the second workshop. For them, architects were specialists who drew the floor plan, so as users, their role in the architect-user communication was transferring their information as much as possible to the architect. We supposed that the second set of users found the second workshop was more effective to transfer their thoughts.

As Brandt [1] explained, the participatory design process should be work with three aspects of designing-*staging*, *evoking* and *enacting*. The revised procedure showed that participatory design process needs time to develop. Therefore, we prefer to have an in-depth interaction that focuses on preferring and we left the step of two-dimensional plans and three-dimensional models for the second workshop. The other reflection underlined the importance of the co-design of design artefacts [ibid]. In doing so, we made sure that the users understood what they wanted, and architects were expected to understand users' lives through 'drawing' users' description of their likes or dislikes, everyday activity, etc. These co-designed icons became common tools to use in the next step collectively.

5. CONCLUSIONS-SUGGESTIONS

The lessons from organising these workshops were focused on three areas: enabling users to understand design languages in order to participate; inspiring designers to transform design processes in order to allow such participation to happen and finally investigation of effective mechanisms to bring users and designers together for mutual relationships.

To empower users was the starting point of the 3P procedure [6] and also for the workshops described in this paper. Although the creativity of 'users' has already been recognised - von Hippel [11] called it 'Democratizing Innovation', there is still a lot of misunderstanding of design practices and the power of design is not fully explored. In this case, the users' goal is to build a suitable 'home' that reflects their needs and desires. To transfer the information of their needs and desires, users need to understand design languages, or at least, they need to speak their preferences and thoughts more precisely. Based on the users' needs and desires, architects add their expert knowledge of 'houses,' and that leads to a dream 'home.'

Public awareness of design and the transparency of design processes are key elements for participation in design. The latter one is closely related to the education of architects and designers. There are already humanitarian architects who have adapted participatory design approaches in their practices [4,9,10] but some of these approaches were criticised for not including users [1] or for forms of tokenistic community involvement [7]. Attitudinal change from authority to partnership is a priority in educating designers to work with users.

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REFERENCES

1. Brandt, E. (2006) Designing Exploratory Design Games: A Framework for Participation in Participatory Design? in: *Proceedings of Participatory Design Conference (PDC), Trento, Italy, 57-66.*
2. Clark, H.H. and Brennan, S.E. (1991) *Grounding in communication.* In: Resnick, L.B., Levine, J.M. and Teasley, S.D. (Eds.), *Perspectives on socially shared cognition*, 127-149, Washington, DC: APA Books.
3. Ehn, P. (1998), *Work-oriented Design of Computer Artefacts.* Stockholm, Almqvist & Wiksell International
4. Habraken, N. J. (1998) *The structure of the ordinary: form and control in the built environment*, Cambridge, Mass: MIT Press
5. Harrison, S and Dourish P (2006), *Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems,* in: *Proceedings of CSCW'96 (pub. ACM).*
6. Lee, Y., (2007), *Design participation tactics: involving people in the design of their built environment.* Doctoral thesis, Hong Kong Polytechnic University.
7. Lee Y. (2008), 'Design participation tactics: the challenges and new roles for designers in the co-design process', in: *CoDesign (International Journal of CoCreation in Design and the Arts)*, 4:1, 31-50
8. Mattelmäki T. (2006), *Design Probes*, University of Art and Design Helsinki, Finland
9. Sanoff, H. (1978) *Designing with community participation*, New York, USA: McGraw-Hill.
10. Sanoff, H. (2000) *Community participation methods in design and planning*, New York, USA: Wiley
11. Von Hippel, E. (2005) *Democratizing Innovation*, (MIT Press, London