



0061

## Designing a Physical Environment for Co-experience and Assessing Participant Use

Marlene Ivey<sup>1</sup>, E. B.-N Sanders<sup>2</sup>

<sup>1</sup>University of Dundee, Scotland, United Kingdom, <sup>2</sup>MakeTools, LLC, Columbus, Ohio, United States  
liz@maketools.com

### Introduction

Engaging users as a way of developing product vision has been a distinctive characteristic of what has been described as the postdesign era. Since the early 1990s designers have been learning to develop infrastructures or scaffolds that allow users to integrate their life experience with the design process (Sanders 1999).

In the commercial domain this activity is valued because it is a way of engaging users to inspire new product vision. For example, Philips Design's involvement in the HiCs Project (Highly Customized Solutions) has led them to develop a new research methodology –the contexts-of-use co-creation methodology – that ‘involves researchers, designers and users working together to arrive at a deeper and more accurate understanding of needs and desires’ (Philips Design 2003:18).

Philips Design is perhaps a recent example in an established lineage of methodological discourse in designing for experience - most notably Participatory Experience (Sanders 1980s through 1990s), Design Experience Model (Rhea 1992) Applied Exploration (Ireland and Johnson 1995), Experience Based Design (E-Lab 1998), a (x4): a user centered method for designing experience (Rothstein 2000), Experience Modelling (Sapient/E-Lab 2001), Contexts-of-use Co-Creation (Philips Design 2002), Co-experience (Battarbee 2003) and MakeTools (Sanders 2005), – and the mushrooming development of tools for supporting stakeholder involvement and for probing (Gaver et al. 1999) the experiences of everyday people.

One might reflect on the decade as the preliminary phase of an infrastructure to support evolutionary development in design; a period within which the design process itself was being reconfigured to engage with users as a way of generating visions of the future from a design perspective.



The historical starting point for this democratisation of design is the dialogue on user participation that began in Scandinavia some thirty years previous, which aimed to increase the value of industrial production by engaging workers in system development. This resulted in the Collective Resources Approach (Norway, Sweden and Denmark) in the 1970s.

‘When certain social objectives are sought in design, the Collective Resources Approach aims to pool the various forms of specialized and situated expertise to increase the collective understanding of a given situation’ (<http://www.cpsr.org/conferences/pdc98/history.html>)

Essentially concerned with the design of computer systems in industrial contexts the Collective Resources Approach identified trade union labourers as ‘situated expertise’ in their co-operation projects with ‘specialist expertise’ coming from informatics and socio-technical systems design research.

The Collective Resources Approach experiments continued into the 1980s and concluded that whilst strong unions worked to increase labour's influence on technological developments within industry, that influencing factor was alone not enough to meet the corporate aim of sustaining or increasing market share. The corporation also needed new product or system alternatives to remain competitive. (<http://www.cpsr.org/conferences/pdc98/history.html>).

The working principle of the Collective Resources Approach – the pooling of various forms of specialised and situated expertise to increase collective understanding- is acknowledged, historically, as the theoretical foundation for the evolution of participatory design processes. From the 1980s onwards the experiments in reconfiguring the design process became the challenge for design.

‘Design firms began experimenting with the social sciences in the early 80s. The experiment was design driven, with social scientists being brought in to serve the design process...By the 1990s...the search was on for new tools and methods of generative, as opposed to evaluative, inquiry.’ (Sanders 1999: p.1, 2)

Generative approaches to enquiry- the essence of design- offered more appropriate address of the corporate need for new product, systems and services. The search for new tools and methods of generative approaches led to a focus on experience-orientated design. Forlizzi (2004: 2) described the experience domain as two layered - user-product interactions and experience, identifying three levels of experience.

‘The purist form of experience is experience, the constant stream that happens while we are conscious. Another way to talk about experience is to describe an experience, which has a beginning and an end, and changes the user and the



context of use as a result. Finally a third way to talk about experience is to describe co-experience. Co-experience is about user experiences in social interaction. It happens when experiences are created together, or shared with others.'

According to Battarbee a framework of co-experience needs to be further developed through practical work including “studying co-experience for design, developing the process and tools to do so, and applying and communicating the findings” (2003:2). To date, research using co-experience scenarios has focused on the experiences that users create for themselves using existing products (Battarbee 2003), notably there are few references to designing environments specifically for co-experiencing. Kristensen (2004:7) refers to the limited address of the physical context of creativity. One might argue that there is limited scope for developing knowledge in this field if we fail to attend to or question the design of the environments within which we exercise our creativity – individually or together.

This research is about creating an experience prototype - a physical environment designed specifically for co-experience (Ivey 2005). It is concerned with the physical/spatial and social aspects of experience (Buchenau & Fulton 2000). Eight individuals were recruited to inspire the design and invited to experience the environment and engage in co-experience.

The purpose of this paper is to communicate the methods used to

- a) create a co-experience environment
- b) prompt co-experience
- c) assess participant use of the co-experience environment

### **Methodology & Methods**

The research engaged with a participant group and was conducted using action research methodology because the research wished to address the three conditions required by this research strategy – the subject matter was situated in a social practice subject to change, the project would proceed through a spiral of cycles of planning, acting, observing and reflecting in a systematic and documented study, and it was intended that the research evolve as a participatory activity of equitable collaboration (Swann 2002:55). The four ‘major moments’ of action research were used as a framework for the research design.

According to Swann, in employing action research methodology, there is often a shortfall in addressing the third condition. Participant involvement is conventionally imbedded in the research as data, analysis or findings and participant contribution is anonymously acknowledged. However, the co-experience environment research strategy was configured intentionally for a small group of participants with shared expertise (Schmitt 1999) and to allow the research to evolve as an activity of equitable collaboration.



A set of criteria was established for recruiting participants and a simple probe<sup>1</sup> pack was designed for the initial phase of the research, using the criteria established by the Luotain Project (2002) as a guide. The number of participants suggested by the Luotain group (20-30 people) was reduced to a smaller number to more ably explore the requirement of the equitable condition required for this research methodology. The consequences of equitable collaboration have been quite positive. At the time of writing this paper, participant involvement has shifted to a research commitment. This recursive action (as noted by one of the participants) has meant that as a consequence of their continued interest in experimenting with the co-experience environment research, all of the participants have agreed to reflect on their engagement with the research from their multidisciplinary perspectives and to collaborate in the writing of a research paper scheduled for completion in September 2006.

The guiding principles for the design of the co-experience environment were the four phases of creative thinking – the analytical preparation phase (convergent thinking), an incubation phase (divergent thinking), the illumination phase (divergent thinking) and the evaluation phase (convergent thinking) (Schmitt 1999:146). According to Csikszentmihalyi (Schmitt 1999:147) the convergent phases require familiar, comfortable surroundings with the divergent phases better suited to novel, beautiful surroundings. Schmitt agrees generally but argues that, depending on profession and problem, environments may have to be ‘exciting, intense, almost overwhelming’ in order to set the stage for creative thinking.

### **The Participant Group**

Prior to developing the design concept for the co-experience environment it was essential to recruit a group of participants because the intention was to use existing user experience to inspire the design of the environment as well as involving them in using the environment for co-experiencing. Pre-knowledge, gender and age were the three main criteria for selecting participants.

It was crucial that members of the group held expertise in a particular area. Shared knowledge introduced a degree of familiarity for the participant group who emerged from diverse sectors - accounting and finance, applied computing, architecture, fine art, law, and town and regional planning. Additionally the shared knowledge, albeit from differing perspectives, established a subject domain of environmental sustainability for co-experience.

Gender differentials offer different ways of thinking and represent real world scenarios. The gender balance of the participant group initially reflected the gender balance of the group from which the participants were recruited<sup>2</sup>.

---

<sup>1</sup> The probe approach (Gaver et al 1999) is a method for engaging in a visual based distance- dialogue with users to provide insight for design creativity

<sup>2</sup> The University of Dundee’s Sustainability Forum chaired by Professor Malcolm Horner. This group has a predominantly male membership.



According to Schmitt (1999) the age we are determines what we expect, what we are willing to accept and how we respond to experience. Consequently, it was necessary to determine whether the group would be generation focused or multigenerational; however, the response to the call for participants resolved this issue.

Ultimately the group was comprised of three female and three male participants and spanned two of Peter Levine's age classifications (Schmitt 1999:228), the Us (34-52) and I Generations (24-33) with all group members holding expertise in the field of environmental sustainability.

### **Co-thinking and Designing**

Without revealing the guiding principles or the participant cohort, a simple probe package was sent to each participant to establish individual perspectives on their thinking/working environments. The probes<sup>3</sup> were returned across a four week period.

Where did the participants think/work and what characteristics of their environments were evident in their probe returns? An initial look through these returns generated a sense of privilege in being given access to private reflection. The returns 'spoke' from this dimension, enlightening/reminding with regard to the poetic nature of human beings, their generosity and their need.

Essentially a record of individual experience, the probe returns were analysed for similarity and difference and collated to construct an overview. The findings revealed a high degree of similarity, identifying six main themes in the participant's private thinking environments. Characterised (in descending order) as nature, activity/motion, visual characteristics, social interaction, time/privacy, and sound present or absent in their surroundings, these characteristics were interpreted and proved elemental in developing the design concept for the co-experience environment – a design concept that was now guided by an empathic connection to the participants. But what were the design decisions for the co-experience environment based upon?

All of the design decisions for the co-experience environment were rooted in the participant probe returns and though it is not possible within the scope of this paper to be explicit with regard to each design decision, it is possible to give one example.

The design concept responded firstly to the need for time/privacy, which was a major consideration in developing the co-experience environment. The core business of academic institutions is knowledge. Knowledge is a product of thinking yet the majority of probe returns, from an essentially academic cohort, recorded problems related to time/privacy for generating thought (5/8). These problems appeared to emerge from a combination of factors related to balancing aspects of professional life - the

---

<sup>3</sup> The probes were delivered to the participants on 27<sup>th</sup> September with a planned return date of 5<sup>th</sup> October. The actual return of the probes from the participants was much later.



teaching and research conundrum - and family life. This did not appear to be associated with gender but from the participant group it appeared that experience might be the delineating factor. Senior academic participants appeared to have developed skill in dealing with and managing competing demands. In response to need, the design of the co-experience environment sought to create individual as well as group thinking/working spaces and the co-experience activity was configured to include private as well as group working time.

A number of the participants referred to thinking in bed, awakening early to create privacy or time to think alone in their office or home environments- or sometimes to meet later in the day with a group of people in a 'well designed' restaurant or bar as a place for sharing thinking/working. These comments prompted many ideas and sketches. Ultimately, the Scottish box bed, sometimes the only place an individual might find privacy in traditional Scottish domestic dwellings, led to the design of three private spaces within the co-experience environment – a box bed(Fig 1), a box office(Fig 2) and a box pub(Fig 3).

The design concept for the box spaces aimed to maintain the physical character of a prototype and to keep the square footage of the box spaces equal. However, the orientation of space was varied with two of the boxes configured as latitudinal space (box bed and box pub) and the third, longitudinal (box office/study). The latter was designed to reflect the limitations of space created by 'office clutter'. Throughout the co-experience activity, none of the participants chose to work in the more enclosed space of the box office/study. The feeling inside this space was one of distance from the rest of the co-experience space/activity and perhaps for the participants it represented an environment of separated discomfort.

The interiors of the boxes were finished and furnished in response to the inspiration gained from the prototype returns. For example, many of the returns referred to the light of the sun, and some to using the colour yellow to reflect a feeling of sun in the domestic or office environment. Consequently the interiors of all of the box spaces were painted using a warm, light reflecting yellow colour. Furnishing the box spaces was guided by information from the probe returns, i.e. 'subliminal reminders of quality', and paintings and pictures were selected to visually communicate empathy with comments and observations gleaned from the returns. The quality and form of lighting inside the boxes was used to create a feeling of calm and to suggest the kinds of lights one might encounter in a bedroom, office/study or a restaurant/bar environment.

The same method was used to inform the design decisions of the rest of the 'familiar comfortable zone' (Fig 4) but a more abstract interpretation of the probe returns was employed in designing the 'novel, beautiful zone' (Fig 5).

Perhaps unsurprisingly for a participant group with expertise in environmental sustainability, nature was a determining factor in their thinking environments (7/8) as revealed in probe returns, *'the stars created an*



*elemental backdrop and was quite inspiring*'. And in some cases this was associated with activity/motion that led to gaining time/privacy for thought.

*'I collect autumnal leaves which signify walking along an autumnal avenue in beautiful sunshine beneath a perfect blue sky, thinking in the birdsong.'*

Comments related to driving, walking, hiking, public transport, gardening, sport (6/8) revealed that, *'sometime motion becomes essential to the thought process'*.

Concern for visual characteristics of environment were significant in the probe returns (6/8). For example, light and colour, *'The colour, light and space help one feel unencumbered and able to tackle what I need to.'* Spaciousness, *'I think best in open spaces, on hilltops and beaches.'* The design quality of things, *'The furniture sends out signals and creates moods and atmospheres.'* And places,

*'Then my home office - almost as cluttered but a more personal territory where I can spend all hours of the day and night thinking about my research and glance out of the window to watch the house martins or the weather change over the 'riggin o'Fife'.'*

And systems and services,

*'The venue is after all very much a collaborative experience, the coming together of the architect, interior designers, chefs, good waiters/waitresses and the right type of music.'*

All contributed to the feeling of quality, warmth, comfort and conviviality. The design concept for the co-experience environment sought to achieve this overall feeling.

The time-scale for executing the design of the co-experience environment was challenging, a two-week period from 21 November through to 5 December 2005. Inspiration from the probe returns was aligned to the guiding principles; a 1:30 scale model (Fig 6) was constructed to understand and design the space with one zone configured as a 'familiar, comfortable' and another as 'novel, beautiful'. These zones were created to give the participants the opportunity to select different kinds of environments for different phases of thinking. It was housed in an exhibit area in the Visual Research Centre at Dundee Contemporary Arts



### **The Co-experience Activity**

On the 6 December 2005 six<sup>4</sup> participants used the co-experience environment for a three-hour period throughout which a professional film company was employed to capture the data.

The participants were greeted in much the same way as one would greet guests to one's home and were introduced to each other as they arrived. The aim was to treat the participants firstly as individuals in place of the convention of forced group introductions. The participants spent approximately twenty minutes independently exploring the co-experience environment, engaging spontaneously in conversation and looking over a display of the probe returns and their analysis as well as early design concepts of the co-experience environment. They were then called together as a group.

The preparation phase of the co-experience was configured as a bespoke game (Fig 7) The game was designed to distance co-experience activity from the cliché of facilitation and to accommodate an element of play (Ivey 2001) as well as to create common understanding and structure activity (Brandt & Messeter 2005).

Participants took turns throwing a dice (Fig 8), which randomly prompted them to select a series of instructional cards, tell a story, or take another turn. The participants could have easily been given a set of instructions in the conventional manner but there would have been no play in this, no sense of discovery in receiving instruction and no opportunity to become acquainted with each other through storytelling.

It quickly became evident that through the storytelling, the participants revealed quite a lot about themselves personally, setting the stage for positive shared experiences. At first they did not want to get the “tell a story” side of the dice. But as the time went on the stories became longer and more personal. Video footage clearly demonstrates that the participants enjoyed this aspect of the game.

At the end of game play the participants held six game cards to be used throughout to provoke co-experience activity. The game cards contained pieces of information that the participants were to use, either individually or in pairs, to explore future opportunities in their field of environmental sustainability. These cards were designed to align activity with phase model guidelines 'for how a creative process may consist of different phases....preparation, incubation, illumination and elaboration and evaluation' (Kristensen 2004: 8).

Aided minimally through timekeeping and gentle prompting, the participants interpreted their card instructions, selected places in the co-experience environment and worked individually and together as guided. The schedule of events was as follows.

---

<sup>4</sup> Three of the eight participants planned for the experiment declined forty-eight hours before the experiment began. The experiment could progress without difficulty with six participants but not five. A recent Master of Design graduate met the criteria for participant selection. He/she was recruited as the sixth participant, remaining highly professional throughout. The integrity of the experiment was maintained



1. introduction -10 min
2. independent exploration (preparation) – 20 min
3. game playing together (preparation) - 40 min.
4. thinking alone (incubation) - 30 min.
5. thinking in pairs (illumination) - 20 min
6. presenting outcomes & reflecting on the outcomes together (elaboration and evaluation) - 50 min.
7. debriefing – 10 min

### Assessing Participant Use of the Co-experience Environment

Observing the participant use of the co-experience environment during the initial period of independent exploration revealed that a number of the participants (4/6) spent a good proportion of their time viewing poster excerpts from their probe returns. They appeared interested to see what had been made of the returned material and on occasion pointed to particular elements, engaging in conversation and identifying with the images/text in a playful manner.

Did they focus on the posters and the analysis because they felt more comfortable exploring information than they felt in exploring environment? Most of the participants chose to explore the environment passively, by looking, reading and talking. They did not use their bodies to explore how the environment felt. Would a non-academic group have explored more actively? Perhaps this is evidence to support the need to imbue the physical co-experience environment with more sensorial opportunity. Schmitt may be right to argue that, in certain instances, environments may have to be 'exciting, intense, almost overwhelming'.

Or perhaps it is evidence that the design process (the participatory activity of equitable collaboration) was more interesting to them than the design product (the co-experience environment)?

A brief questionnaire circulated to the participants approximately one month<sup>5</sup> after the co-experience activity asked where they had spent most of their time on arrival. The responses supported our observation regarding the amount of time spent in 'reading' the data from the probe returns. But why?

*" I wanted to see what other people had sent and to try to understand how you had used this information to create spaces in the room"*

*" I was interested in the responses and analysis process that had given rise to the environment created...and I thought that we would be experiencing the environment in due course so I used the time to try to understand the context of where it had come from."*

*"having set aside the time/space to explore this appeared to be the most information-rich, interesting"*

---

<sup>5</sup> The co-experience experiment was configured, deliberately, so that evaluation would not take place fully on the day. Further meetings were agreed to give participants time to reflect and to respond to a take away card that prompted the participants to make a model reflecting on one aspect of co-experiencing as an experience.



*“the area I first came into, and full of information...”*

*“it is interesting to see other people’s work”*

Faced with an unfamiliar environment, and with their sensorial response perhaps insufficiently challenged, the participants were interested to explore information rather than the environment as a way of understanding the co-experience environment. A number of the probe returns recorded walking as an activity for thinking - walking in the urban environment, beach walking, hill walking. Well accustomed to way finding through signage or maps, perhaps these participants responded to the signage/mapping of the probe returns as a way of developing an understanding of the environment they encountered/expected to encounter. It might also be true that, as academics, they understood that the explicit nature of the information might provide insight into the implicit communication embodied in their surroundings.

One of the participants' probe returns was a novel and eloquent exploration of space. The participant was observed during this initial period as constantly in motion - rapidly travelling through and re-through the environment, systematically gaining experience of each place - a sensorial approach to understanding the environment. It is worth noting that this individual, unlike the other participants, comes from a visual discipline that is well versed in sensorial response.

Did the participants perceive the co-experience environment as a place for thinking and sharing thought? Yes, they did perceive the environment as a place for thinking. There were common themes about place/environment/activity in their co-experience workbooks and the returned questionnaires supported this observation. They attributed good thinking to these places/environments/activities. And they recognised the connection between the places they think now (as revealed in the probe returns) and the places they were offered in the co-experience environment.

Two of the participants returned to the co-experience environment the following day with colleagues for a meeting. They were asked to record their thoughts in a journal that was left in the environment for that purpose. Their journal entry records ‘space, quiet, spur to thinking about thinking, privacy for sprawling...all beneficial’.

An impromptu email was received from one of the participants on 9 December saying that they found the spaces thought provoking and prompted them to rethink how they organise their office and time for thinking.

Did they choose co-experience places to specifically enable their thinking? Some did. Others did not always change their location. Initial findings do not offer scope for a full consideration of this observation. A more robust analysis of the video/audio record from the December 2005 co-experience activity and further meetings scheduled with the participants will seek to address this question.



Did the environment give them individual experience as well as a co-experience? Did the co-experience environment/activity give the participants time to think? Have the participants thought since the co-experience activity about their thinking/working environments and time to think? Participant feedback from the brief questionnaire (12 January 2006) indicates, for the most part<sup>6</sup>, positive response to all of these questions, with two of the participants commenting as follows.

*'I've thought about this lots and thought about how to create more space. The co-experience activity made me realise that I need to create mental space to think. Physical space is good to have, but the most important thing is to feel as though I have time to think and be relaxed while thinking. The right physical environment improves that (so I need to tidy my office!) but is not essential. I am also in the process of looking for a new house and this experience has really helped me to think about what I want/need my house to be like. It has in sum, been incredibly helpful to me to think about how I like to work and where I work best.'*

*'I am not sure I was terribly consciously aware of environment as conducive to my thinking/working and so the experience has helped bring such an awareness to the front of my mind. I had a meeting in the environment after our group experience and that too was interesting for helping to unpack issues of what I (and others) need from my (their) space...'*

### **Preliminary Findings**

In designing a physical environment for co-experiencing, participants may need to reconfigure their received notions of place and space. The venue for the co-experience environment exploration was the Visual Research Centre at Dundee Contemporary Arts – a place that has a history of and is perceived as a conventional exhibition space. It is essential that familiar environments that are used for design research experiments do not conflict with participants received ideas of place and space. In the re-design of existing physical environments for co-experiencing, the researcher needs to build a bridge for the participants to allow them to quickly comprehend changes in the context of use.

The co-experience environment was designed to engage all of the senses and the intellect. However, the majority of the participant group appeared to exercise a limited sensorial range, developing their initial reading of the co-experience environment by relying on methods of 'reading' associated with their life/work experience. Designing for co-experience environments may have to consider the different

---

<sup>6</sup> One participant felt a little pressured to think within a fixed timescale and one other answered no to the question, "have you thought since the co-experience activity about your thinking/working places and time to think?"



approaches that participants use for reading environments and guide the participant to use the full range of their sensorial reading ability. A coherent environmental narrative - similar to product narrative - should be imbedded in the design of the co-experience environment so that participants can fully experience a physical co-experience environment.

The participants private thinking environments were characterised by nature, activity/motion, visual characteristics, social interaction, time/privacy, and sound present or absent in their surrounding. While the design of the co-experience environment was able to interpret and satisfy most of these characteristics, natural world characteristics were communicated mostly through metaphor and limited by space and place, as was activity/motion. Ideally, the design of a co-experience environment for a participant group with this profile could be designed to more comprehensively include exposure to nature and activity/motion.

The participants did not use the longitudinal space of the office/study box, designed as a limited space. This may offer a clue for designing private thinking spaces within the co-experience environment. While spaciousness is clearly preferred, it might be also that there is a threshold of privacy beyond which the participants will not go without experiencing disconnection or feelings of separateness.

Both the co-experience environment and the game designed to facilitate the co-experience activity were bespoke – using design methods, i.e. probing to develop the design concept. The timescale for executing the co-experience environment was challenging, a two-week period from 21 November to 5 December 2005. This demonstrates that a short timescale is possible, although from experience not ideal. The game is presently being configured to be downloaded from a website (under construction) in a manner that will allow the purchaser to configure the game to meet their specific needs. Further research will explore the potential for the processes associated with designing a co-experience environment to be disseminated in this way, reconfiguring the design as system and service.

With regard to the game design, by including an element of storytelling, we discovered an opportunity for individuals unknown to each other to share and to entertain each other with accounts from their personal experience as a way of becoming familiar. The game itself is perhaps over-simplistic but it is an effective method of prompting social interaction by generating acquaintance through storytelling.

Characteristics of the participants' private thinking/working environments were interpreted and proved elemental in developing the design concept for the co-experience environment and the co-experience activity – a design concept that was guided by an empathic connection to the participants. It might be that if empathic connection is apparent to participants through the design of co-experience scenarios, the co-experience environment might prove instrumental in laying a foundation for equitable collaboration.



## **Conclusion**

The co-experience environment was created and its use explored for the purpose of contributing new knowledge in design. Observations of and feedback from the participants did, in fact, provide inspiration for the design of future co-experience environments (ones that would better address the need for nature and activity/motion for example) as well as opportunities for exploring the quality and value of designing bespoke co-experience environments.

But the designer of the co-experience environment was not the only one to learn from and be inspired by the exploration. The participants were also inspired to the extent that they began to reassess the importance of space/environment to their thinking. Some returned to the co-experience environment with colleagues to share it with them. They began to re-evaluate their work/thinking spaces to take advantage of this inspiration. Explorations with and within the co-experience environment have produced inspiration for both the 'maker' and the 'user', resulting in collective creativity. The research has transformed spontaneously into a participatory activity of equitable collaboration and it continues to evolve.

## **Acknowledgements**

We wish to acknowledge the valued contribution and ongoing commitment of the participant group, the Arts & Humanities Research Council [www.ahrc.ac.uk](http://www.ahrc.ac.uk) and the School of Design, Duncan of Jordanstone College of Art & Design, University of Dundee for funding the research.





## Illustrations and Captions



**Fig 1: Familiar & Comfortable Zone: Box Bed**

The Scottish box bed, sometimes the only place an individual might find privacy in traditional Scottish domestic dwellings, led to the design of three private spaces within the co-experience environment – a box bed, a box office and a box pub.



**Fig 2: Familiar & Comfortable Zone: Box Office**

The orientation of space was varied with two of the boxes configured as latitudinal space (box bed and box pub) and the third, longitudinal (box office/study) -the latter designed to reflect limitations of space created by 'office clutter'. Throughout the co-experience activity, none of the participants chose to work in the more enclosed space of the box office.

The feeling inside this space was one of distance from the rest of the co-experience space/activity and perhaps for the participants this created a degree of separated discomfort.



**Fig 3:** Familiar & Comfortable Zone: Box Pub

The interiors of all of the box spaces were painted using a warm, light reflecting yellow colour. Furnishing the box spaces was done in a manner to interpret probe comments, i.e. 'subliminal reminders of quality', and paintings and pictures were selected to visually communicate empathy with comments and observations gleaned from the probe returns. The quality and form of lighting inside the boxes was used to create a feeling of calm and to suggest the kinds of lights one might encounter in a bedroom, office/study or a restaurant or bar environment.



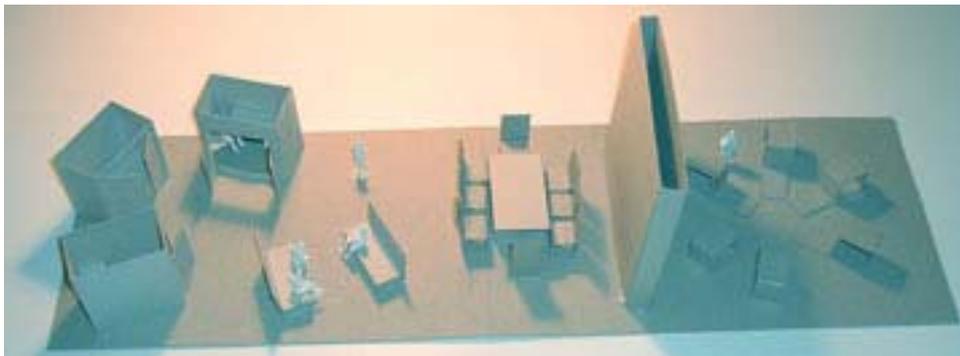
**Fig 4:** Co-experience Environment: Familiar & Comfortable Zone

Overview of the familiar and comfortable zone showing the box spaces in context, along with a detail view showing the wall designed for viewing the probe returns, analysis and early design concepts for the co-experience environment. The wall functioned also to separate the comfortable/familiar zone from the novel/beautiful zone.



**Fig 5:** Co-experience Environment: Novel & Beautiful Zone

The methods used to inform the design decisions of the box spaces and the 'familiar, comfortable zone' were also employed in designing the 'novel, beautiful zone'. However, here the design decision was to create an abstract interpretation of the probe returns



**Fig 6:** Co-experience Environment: Working 1:30 Model

Inspiration from the probe returns was aligned to the guiding principles; a 1:30 scale model (Fig 6) was constructed to understand and design the space with one zone configured as a 'familiar, comfortable' and another as 'novel, beautiful'.



**Fig 7:** Co-experience Activity - Bespoke Co-experience Game

The preparation phase of the co-experience was configured as a bespoke game. At the end of game play the participants held six game cards to be used throughout to provoke co-experience activity.

The game cards contained pieces of information that the participants were to use, either individually or in pairs, to explore future opportunities in their field of environmental sustainability. These cards were designed to align activity with phase model guidelines 'for how a creative process may consist of different phases....preparation, incubation, illumination and elaboration and evaluation' (Kristensen 2004: 8).



**Fig 8:** Co-experience Activity - Playing the Game

Participants took turns throwing a dice, which randomly prompted them to select a series of instructional cards, tell a story, or take another turn. It quickly became evident that through the storytelling, the participants revealed quite a lot about themselves personally, setting the stage for positive shared experiences.

## References

- Battarbee, K (2003) Defining Co-experience, Available: <http://smart.uiah.fi/home/katjansiwu/katja.html> Accessed: 10.09.04
- Battarbee, K (2003) Co-experience: The Social User Experience Available: <http://smart.uiah.fi/home/katjansiwu/katja.html> Accessed: 10.09.04
- Bodker, S and Buur, J (2002) The Design Collaboratorium – a Place for Usability Design. *ACM Transactions on Computer-Human Interaction*, Vol.9, No 2, June 2002, pp 152-169
- Brandt, E and Messeter J. (2004) Facilitating Collaboration through Design Games in Proceedings Participatory Design Conference 2004 Available: <http://trout.cpsr.org/conferences/pd2004/proceedings> Accessed 8.02.05
- Buchenuau, M and Fulton Suri, J (2000) Experiencing Prototyping in Designing Interactive Systems: Proceedings of DIS 2000, p 424-433 ACM Press, New York
- Burr, J, Binder, T and Brandt, E (2000) Taking Video beyond 'Hard Data' in User Centered Design in Designing Digital Environments: Bringing in More Voices Proceedings 2000 Participatory Design Conference, pp 121 – 131 New York
- Cain, J. (1998) Experience-based design: toward a science of artful business innovation. *Design Management Journal* Vol Fall 1998, pp 10-16
- Fischer, G (2004) Social Creativity: turning Barriers into Opportunities for Collaborative Design in Proceedings Participatory Design Conference 2004, Toronto, Canada pp 152 – 161 Available <http://trout.cpsr.org/conferences/pd2004/proceedings> Accessed 08.02.05
- Forlizzi, J Towards a Framework of Interaction and Experience As It Relates to Product Design, available <http://goodgestreet.com/experience/theory.html> (accessed 06.09.04)
- Gaver, B, Dunn, T and Pacenti (1999) Cultural Probes. *Interactions* January and February 1999: pp 21-29
- Ireland, C. and Johnston, B (1995) Exploring the Future in the Present. *Design Management Journal* Vol. Spring, pp 57-64
- Ivey, M (2005) *The Scheme of Research: Forming to Function/Functioning to Form*, in 4DED Proceedings of the Fourth Conference Doctoral Education in Design (2005) Girard J. and Pijawka, D (eds) Shipley, T (asst ed), Arizona State University pp 267-282
- Ivey, M (2001) *Exploring the Interface: Facilitating a Concept of Enquiry* in Exploring the Interface Between Education and the Creative Industries, pp 42-45, Marlene Ivey (ed), The Lighthouse, Glasgow, Scotland
- Koskinen, I et al (2002) Criteria for Probes – Methodological; Available <http://smart.uiah.fi/luotain/pdf/probesseminar/draft%20methodological%20criteria.pdf> Accessed 17.01.05
- Kristensen, T (2004) The Physical Context of Creativity. *Designjournalen* 1/04 pp 7-16
- Philips Design (2003) New research for new business. *New Value News* Vol 15 January 2003
- Rhea, D. K. (1992) A new perspective on design: focusing on customer experience. *Design Management Journal* Vol Fall, pp 40-48
- Rothstein, P. *a(x 4): a user-centered method for designing experience*. Available [www.idsa.org/whatsnew/01ed\\_proceed/papers.htm](http://www.idsa.org/whatsnew/01ed_proceed/papers.htm) Accessed 21.02.02
- Sanders, E.B.-N. (1999) *Postdesign and Participatory Culture* in Useful and Critical: The Position of Research in Design Conference, September 1999, UIAH, Finland
- Sapient Corporation (2002) Available <http://www.sapientcanada.com> (accessed 06.05.02)
- Schmitt, B.H. (1999) *Experiential Marketing: How to Get Customers to Sense, Feel, Think, Act, Relate to your Company and Brands* Free Press: New York
- Swann, C (2002) Action research and the practice of design. *Design Issues* Vol 18, Number 1 Winter, 49-61