PLACE AND PLACELESSNESS IN 3D ONLINE VIRTUAL WORLD

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Abstract. This paper examines the issue of place-making in 3D virtual world from the design point of view. It aims to find out what are the elements to create a sense of place. As Second Life currently has the largest users among 3D virtual worlds, it is selected as a study case. The methodology consists of theoretical studies and ethnographic observation. Firstly, literature review of theories regarding place-making in the physical world and the virtual world were done. From that a framework was formulated as a common basis for ethnographic observations and interviews at three real world public spaces and four locations in Second Life. This paper presents findings from the latter. The focus areas are physical settings, activities and experience of users. The observations are discussed and criteria for place-making in multiuser 3D online virtual environments are proposed. This paper will contribute to the understanding of how to design a place rather than space in 3D online virtual world.

Keywords. 3D virtual world; Second Life; place-making; multiuser online virtual environment.

1. Introduction

With Internet bandwidth becoming better and more affordable, coupled with rapid advancement in web technology, multiuser online 3D virtual environments have become a reality and are proliferating. Activeworlds (started in
Second Life (launched in 2003), and more recently Twinity (launched in 2008) are some of them. These worlds are different from online sites such as World of Warcraft in that they are not for gaming. In Second Life users known as “residents” socialise, participate in individual and group activities, create and trade virtual property and services with one another, or travel together in a 3D virtual world. They socialise in public spaces just as in the real world. Successful public spaces are those that have a sense of place. A place is different from a space – a place is a space with experiences based on its physical setting and type of activities carried out (Relph, 1986). Much has been written about place-making in the physical world. However, little has been written about what makes a sense of place in virtual environment such as Second Life. Currently, many 3D virtual spaces do not offer a sense of belonging to its users. They are merely spaces stripped of any cultural context. As architects, we know how to design good public places in the real world but how do we do that in the virtual world? Are all the design principles for the real world applicable? What attracts frequent visitors to one virtual location than another?

To answer these questions, the method of study is as follows. We reviewed literature in place-making for real worlds and virtual worlds (Jacobs 1961; Canter, 1977; Relph, 1986, 2007; Kalay and Marx, 2001, 2003; Champion and Dave, 2002) and came up with an observation framework to be used at three locations in real-world public space and four locations of public space in Second Life. Much inspired by the seminal study of urban space by Whyte (1980), time-lapse photography was used to record activities in the real world spaces. During virtual world observations, screen shots were captured, notes were taken, and text log saved. In-world avatars were also interviewed. This paper presents only the virtual world studies due to space constraint. The four virtual locations were analysed using the cyber-placemaking criteria proposed by Kalay and Marx. The analysis highlights new criteria relevant to virtual worlds and presented in section 5.

2. Place-making

In their paper, “Re-place-ing space: the roles of place and space in collaborative systems,” Harrison and Dourish (1996) stated that “Space is the opportunity; place is the understood reality.” They explained how a space is a three-dimensional room that guides and moulds our actions and interactions while a place is understood as the concept behind the actions of the people in a space, guided by the cultural understanding of society, which altogether gives meaning to a space.
2.1. PLACE-MAKING IN PHYSICAL WORLD

The physical world such as a city, compared to the virtual world is better endowed in terms of structure and spatial organisation as urban planners have already laid down the basic guidelines for architects and developers to follow. Most of the studies linked to the issue of place-making, are centred on real life observations and as such do not provide incisive details on how to create place in the virtual world. Edward Relph (1986) and David Canter (1977) both worked on the concept of place-making in the physical world (figure 1). Though their methodologies differ slightly from each other, they have similar theories regarding three interrelated components in the physical world. They are physical settings, activities and experiences.

2.2. PLACE-MAKING IN VIRTUAL WORLD

Kalay and Marx (2001, 2003) discussed place-making in the virtual world by providing criteria necessary to create a place in cyberspace. In their paper “Designing places in cyberspace” (2001) they proposed eight criteria for cyber-placemaking. They are: (i) events, (ii) presence, (iii) relative locations, (iv) authenticity, (v) adaptability, (vi) variety of experiences, (vii) transitions, and (viii) memorable.

The eight criteria form a useful guideline in creating virtual places. However, they are adapted from physical place-making in urban planning and architecture and postulated to work in virtual environments. Champion and Dave (2002) commented that while helpful, they do not point to what features are most important, necessary or desired for virtual environments. Moreover, it was proposed before the birth of 3D multiuser virtual worlds such as SL and before features made possible by advanced game engines. In this paper, we want to verify if the criteria are relevant for SL environments.

3. Observation framework

Based on the literature reviews of place-making in physical world, table 1 was formulated to guide ethnographic observations in each case study. It is an expansion of the three components of physical settings, activities and cultural experience. Theme is similar to Relph’s description of place settings where he mentioned that physical layout of the site is crucial when discussing physi-

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Physical settings</td>
</tr>
<tr>
<td>Function</td>
<td>Set of activities</td>
</tr>
<tr>
<td>Concept</td>
<td>Cultural values</td>
</tr>
</tbody>
</table>

Figure 1. The three components necessary for place-making defined by Relph and Canter.
cal settings, activities and cultural meanings. *Elements* describe any physical and visual activities or objects present. The items in the table vary depending on the location that is observed. A description of the avatars’ *activities* is recorded, as it might have an influence on their behaviours and attitudes. It is broken into two parts: (i) *Fun and play* (promoting interaction through physical contacts with objects) and (ii) *interaction* (emergence of interaction through activities). *Adaptability* refers to the flexibility of the physical objects or of the activities to the site. Additional information such as time, scale, experience and social patterns were also recorded.

Table 1. An example of observational table for ethnographic studies.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Element</th>
<th>Activities</th>
<th>Adaptability</th>
<th>Observation of activities by hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Objects</td>
<td>Low walls, Benches, Fountain etc.</td>
<td>Interactive, Interactive Fun and Play</td>
<td>No, Yes, No</td>
<td>10–11am</td>
</tr>
</tbody>
</table>

4. Second Life (SL) case studies

SL has 18 million accounts as of January 2010, and for the first quarter of 2009, there were 88,200 peak concurrent users (Second Life Economy). As it has the most users among similar 3D virtual worlds, it was selected for research. The criteria for the selection of case studies in SL were based on (i) the popularity of the places, (ii) the events and activities present and (iii) the spatial layout of the virtual locations. Since the real world public spaces studied were in Singapore, for consistency in terms of context and culture when comparing real world and virtual public space, three locations in SL used by Singapore residents were chosen. The final SL locations selected are: (i) Moonwater Isle, Kaki Island (77, 30, 35) (ii) Watersoul Lounge, Kaki Island (iii) Bear Dream Lodge Infohub (27, 128, 111) and (iv) Shiki Centre (100, 97, 38). The case studies are discussed below under the three components of (a) *physical settings*, (b) *activities*, (c) *experience*.

4.1. MOONWATER ISLE

Moonwater Isle provided an understanding of the relationship between space, objects and avatars. It is one of the popular destinations in SL for avatars who are Singapore residents. Its simple physical layout provided a minimal setting for small gatherings, with mainly seats and a few interactive objects. Moonwater constantly changes its design layout. The swift reconfiguration of
objects and spaces in the virtual world can arouse the curiosity and interest of avatars. These changes are important in maintaining a longer lifespan for the virtual places via a constant participation level. Through daily participation among the avatars, we observed how they responded and reacted with the objects and context. The outdoor space was designed to encourage interactions around two major spots:

- **The tree** is an interactive feature, which allows a maximum of eight avatars to sit on it.
- **Central sitting area** that accommodates 15 avatars. Its proximity to the tree makes it a focal point during discussions.

Most, if not all the discussions took place around and on the tree. The layout was revamped once during the period of observation (figure 2). The tree was relocated to the centre next to the central sitting area, and several interactive objects were introduced for the participants to interact with. The avatars now gathered at the centre but some avatars used the seats next to the water edge due to the introduction of a new feature in the pavilion, i.e., three interactive jellyfish. Interactive objects provide amusement and entertainment but also help to establish contact among avatars; they act as the catalyst for socializing in SL.

![Figure 2. New layout of Moonwater Isle in August 2008 with tree in the centre. Plan on the right (source: Second Life).](image)

Throughout the conversations and meetings with regular users of the space, we observed that some of their behaviour mirrored real life gestures. One significant event was the reaction of a female avatar to the sudden rain downpour on the island. Her first reaction was to remove her umbrella to protect herself and she complained about the weather soaking her clothes. This shows how avatars immerse themselves in the virtual environment and unconsciously react using real life gestures and behaviours. Another observation is the lack of direct “eye contact” between avatars. Avatars seldom “gaze” at each other during discussions as everything is done through typing text. Rapid texts can be frustrating at times and it becomes an obstacle to follow conversations without knowing who is talking to whom.
4.2. WATERSOUL LOUNGE

The indoor lounge was designed as a more formal meeting and entertainment area for businessmen willing to invest on advertising options on the island. The spatial layout is organised in a concentric geometry with numerous pose balls (blue and pink spherical objects embedded with scripts that make an avatar perform several movements) located at the centre, mainly on the dance stages with seats and sofas surrounding them. The pose balls generate Linden dollars, the currency used in Second Life.

The attractive space however does not attract as many avatars as it should. The middle portion of the space is reserved for dancers who are “camping,” i.e., doing repetitive action at the same spot to earn money. The few avatars visiting the place are there solely to earn Linden dollars. Camping in SL is a new and strong culture. It provides a platform for avatars to interact but in this particular case study, little interaction is observed due to the lack of participants, which might be due to the location of the lounge, shallow and dark environment, enclosed area and poor promotions of the place. Moneymaking business is a major attraction for avatars in this case study thus it is not surprising to see avatars “working” in isolation rather than interacting, creating a sub-culture in SL.

4.3. BEAR DREAM LODGE

Bear Dream Lodge has a very specific function compared to the rest of the case studies. It creates opportunities for avatars to interact through the exchange of objects, mainly clothes and accessories. In comparison to Kaki Island, Bear Dream Lodge is a more open location, attracting many international avatars and not restricting itself to a specific context. The physical setting of the location is interesting in that very few features are provided – only two benches. Avatars tend to spend more time in the centre because it is spacious. Exchanging objects require a rather large area for them to deposit their ‘boxes’ and they need sufficient space to roam around. Interactive objects in the environment were hardly used by the visitors. This location is a favourite starting point among avatars once they logged on to SL. The main essence of this location is the sharing of ideas and objects and the success as a place is attributed to the people and activity rather than built form. The spatial layout constrains the activities of the avatars. Avatars are restricted to interact in the centre through simple discussions, which lowers the chance of creating new activities.

4.4. SHIKI CENTRE

The Shiki centre opened on 9 August 2008 at 9 pm SL time. For the occa-
sion, posters were placed in several SL locations, including Moonwater Isle, to create awareness among the SL community. The mall is owned by a group of avatars and it offers a wide range of objects, from clothes to simple tattoos. Just as in the real world, to mark the occasion, various activities including a treasure hunt, dating competitions and music concerts were organized to entertain and amuse the avatars before the official opening. The lounge design was relatively simple – a rectangular layout with a few sofas for the guests to relax and shelves that displayed numerous colourful boxes, accompanied by greeting texts and vocals from the host. Outside is a stage built for the upcoming events, including a SL rock band.

An interesting observation was the behaviour of the avatars during the opening ceremony at the lounge. Several avatars constantly clicked on colourful boxes that were meant for decorative purposes only, hoping to see something happen. This shows a high degree of interest for interactive objects in the virtual world and simultaneously the importance to familiarise with one’s surroundings. Another interesting observation was that a group of avatars started discussing the possibility of a photo shoot for their online blog. The group then stood in position, with some changing their appearances (clothes and hairstyles) before the photo was taken. This shows that the avatars behave like in the real world. They care about the physical appearance of their virtual character when interacting with other avatars, just as they care about appearances in the real world.

5. Criteria for place-making in interactive virtual world

For the real world and SL case studies, we evaluated if each of the criteria proposed by Kalay and Marx’s for “cyber-placemaking” is present or is relevant (table 2). ‘o’ indicates that it is absent from the case studies or not relevant. We have also expanded on Kalay and Marx’s work and offer sub-criteria. Criteria 1 to 8 are from Kalay and Marx. From our observations of the SL case studies, we identified four additional criteria: context, gestures, improvisation and graphic representation.

5.1. EVENT AND MONETARY REWARDS

The most popular locations in SL are those that provide free stuff and free money through “camping.” Camping in SL means an avatar doing an activity repeatedly such as sitting, dancing or standing at a location. They are paid Linden dollars by the owner of the location to create a buzz and “bodies” at the location in order to attract other visitors. This is a phenomenon unique to the virtual environment. In real world public space, it happens only occasion-
ally such as a product promotion with freebies given out at a public plaza. Boellstorff (2008) mentioned “Camping could serve as a social venue where participants can chat with each other, hence creating opportunities for interaction.” Despite camping as a commercial and somewhat inappropriate activity, it plays a role in creating place in the virtual world.

**TABLE 2.** Criteria for evaluating real world and virtual world cases. Criteria 1 to 8 are from Kalay and Marx. Criteria 9 to 12 and sub-criteria are our additions.

<table>
<thead>
<tr>
<th>No</th>
<th>Criteria</th>
<th>Sub-criteria*</th>
<th>Real world Case studies</th>
<th>Second Life Case Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Event</td>
<td>People</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shopping</td>
<td>√</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leisure</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monetary rewards</td>
<td>o</td>
<td>√</td>
</tr>
<tr>
<td>2</td>
<td>Presence</td>
<td>Participatory level</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Human / avatar</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>3</td>
<td>Location</td>
<td></td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>4</td>
<td>Authentic</td>
<td></td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>5</td>
<td>Memorable</td>
<td>Social</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cultural</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>6</td>
<td>Experience</td>
<td>Space</td>
<td>√</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Objects</td>
<td>√</td>
<td>o</td>
</tr>
<tr>
<td>7</td>
<td>Transition</td>
<td>Language</td>
<td>√</td>
<td>o</td>
</tr>
<tr>
<td>8</td>
<td>Adaptability</td>
<td>Social</td>
<td>√</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*Context</td>
<td>Language</td>
<td>√</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Social</td>
<td>√</td>
<td>o</td>
</tr>
<tr>
<td>10</td>
<td>*Greetings</td>
<td>Human / avatar</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>11</td>
<td>*Improvisation</td>
<td>Human / avatar</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>12</td>
<td>*Graphical representation</td>
<td>Visual delight</td>
<td>o</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scale</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

5.2. TRANSITION

In the real world, e.g., in some Italian towns, there is a transition of spaces as one walks from a narrow alley before emerging into a public square. From our interviews in SL, 90% of interviewees do not explore places through walking even though they could do so in SL. They teleport or fly from location to location. There are no transition spaces designed between buildings / locations. We contend that the way to design transitions in virtual environments has to be different from in the real world. Designing forms in the sky and underwater in response to flying and swimming is a way to create a different experience from the real world that adds to sense of place.
5.3. ADAPTABILITY (SPACE AND OBJECTS)

Being able to shape and personalize a space is important in place-making. However, it is restrictive in the case studies seen. An avatar could not change her / his virtual space or modify a seat to make it longer or move it to a particular location in the public space. In the virtual world it is possible to allow personal modifications of worlds to improve sense of place. We also observed that 3D interactive objects are essential in the virtual environment to enrich the experience. It enhances interaction among the avatars (e.g. the jellyfish and tree described in 4.1). The 3D objects should change regularly to avoid loss of interest by visitors. However, a location with just an interactive object and one avatar is meaningless. It needs presence of other avatars (or people) to make it meaningful.

5.4. CONTEXT

By context we mean the cultural background of the group of users gathered at a location and the language of communication. The degree of participation as mentioned by Kalay and Marx is fundamental to create a sense of place. Participation is dependent on a common language and common interest in topics discussed. In Moonwater Isle, the group of users, mainly Singapore residents, gather there everyday to discuss local and SL issues. The fact that they understand “Singlish,” a mixture of English and Chinese language makes it easier for them to interact with each other. In contrast, a location such as Bear Dream Lodge open to international visitors has few visitors and interactions happen only among avatars who “speak” the same language. In virtual world, it is possible to bridge language barriers if automatic language (voice or text) translations can be provided. A virtual place could be a place where there is no language barrier, e.g., a German-speaking avatar can be conversing seamlessly with a Chinese-speaking avatar.

5.5. GESTURES

Body language and appearances are associated with a person’s identity. Ability to control body gestures and to change appearance of avatars is an important criterion in place-making. In the opening ceremony at Shiki Center (see section 4.4), several avatars congregated to take a group photo and were seen to change their physical appearance, clothes and take on some model-like poses before the photo shoot. It is interesting to note that the avatars still mirror real world behaviour when they have the freedom to do anything in the virtual world. There is a need to improve and provide a wide range of gestures and body language in the virtual environment.
5.6. IMPROVISATION

In real life, if someone needs a seat we are able to move a chair to let him / her sit. If we want to sit in a circle for discussion, we can move the chairs and form a ring. At one of the real world public spaces, we observed a group of teenagers practising their dance in front of a reflective granite wall using it as a mirror. They also use pillars as a prop to execute their stunts. Such improvisation boosts a sense of ownership of the place. In the virtual world, to build a sense of ownership of the space, designers can provide elements and scripting that will allow improvisation by the avatars.

6. Conclusion

Our expanded criteria build on the work by Kalay and Marx. They are not exhaustive or intended as a definitive formula to design virtual places. With advanced features offered by new technology, the sense of place can be enhanced through some of the items of the sub-criteria in future. This set of criteria is meant for multiuser online virtual environments (MUVEs) and may not be all relevant for massively multiplayer online games (MMOGs) environment. There is no doubt that more social, cultural and economic activities will happen in the 3D virtual world as advanced technology and faster bandwidth become affordable. This raises necessity to understand and design virtual worlds that are socially and culturally appropriate.

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References