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Building Managers’ Perception in Regards to Accessibility and Universal Design Implementation in Public Buildings: Putrajaya case studies

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Abstract

This paper discusses the interview part of data collection, of an in-progress research on universal design implementation in public buildings, in Putrajaya. Main issues include public awareness of PWD rights and the true concepts of universal design. Main purposes were to investigate the level of awareness and perception of building managers regarding current and future plan of building’s accessibility, and to study their knowledge on universal design theory. Semi-structured interview was carried out with building managers from three public buildings in Putrajaya. The findings show that the precise knowledge of universal design needs to be enhanced among the building managers.

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1. Introduction

Numerous disability studies have found that among the social factors that hinder people with disabilities (PWD) from participating in every day’s mainstream are inaccessible built environment (Wiman and Sandhu, 2004), ignorance in the policy making system (Bickenbach, Chatterji, Badley & Ustun, 1999; Metts, 2004), lack of employment opportunity (Jenaro, Mank, Bottomley, Doose, & Tuckerman, 2002), and public ignorance of PWD rights and their capabilities (Antonak and Livneh, 2000; Meyers, Anderson, Miller, Shipp and Hoening, 2002; Putnam et al, 2003; Wiman and Sandhu, 2004). Many of precedent studies focus on the inaccessible architecture and PWD level of satisfaction, but little has concentrated on public awareness on accessibility and universal design implementation in built environment. Therefore, this study aims to learn about the level of awareness among building managers from several public buildings in Putrajaya regarding the building’s current and future plan to provide better accessibility to visitors, as well as their knowledge about universal design. This study may complement precedent studies and contribute to an improved public awareness of user-friendly environment in Malaysia.

2. Literature Review

2.1. Public awareness on PWD rights

From the social model’s point of view, disability is caused by the complex interactions between human and the surrounding environment, which consists of various elements like society, culture, politic, climate, topography, technology and built environment (Meyers et al., 2002). Society, one of the key elements in this complex relation, plays a significant role in influencing the life of PWD. Positive supports encourage them to prove their capabilities, while public stereotype and prejudice towards PWD may diminish their self-esteem and confidence to participate in the social and economic mainstream. Other than negative support from the society, Imrie and Hall (2001) establish that policies, values, and practices of people who are responsible in creating the built environment also contribute to PWD exclusion from the mainstream. Similarly, the people who manage a public space or public building can also be seen as an important agent in providing a good barrier-free environment to the visitors.

Various acts and legislation have been created for PWD rights in developed nations as well as developing countries. Although there is a lack of enforcement in certain countries, the establishment of such standards rules and legislation signify a strong ethical value and positive support from the government to ensure equal rights and treatment for all citizens. In Malaysia, other than continuous revision of Malaysian Standards for accessibility, the government has also established the first right-based legislation for PWD. Abdul Rahim (2008) lists the main objectives of People with Disabilities Act 2002 as “to ensure that persons with disabilities in Malaysia have the same rights to equality before the law as the rest of the community in the country; to eliminate, as far as possible, discrimination against persons on the ground of disability in various areas of life; and to promote recognition and acceptance within the community of the principle that persons with disabilities be afforded equal opportunities and full participation to enable them to live as a rightful citizen of the country.”

The legislation serves as a recommendation and guides for professionals to practice ethical value in their profession, however, many professionals neglect the moral responsibility to provide adequate facilities in order to cut cost or get faster profit. They lack awareness that a user-friendly environment can generate higher profit than an inaccessible environment. In his book, Shaftoe (2008) emphasizes the idea of convivial place that can attract more visitors to come and spend more money in the place. Other than
good business profit due to the user-friendly environment, providing an accessible building at the early stage of construction may avoid future alteration that causes extra expenditure to the company.

2.2. The Concept of Universal Design

Although there is a positive development in terms of public awareness on accessibility in Malaysia, accurate understanding of universal design theory is still low among Malaysian society. Based on personal experience and daily conversation with friends and strangers, it seems that quite a number of people have poor knowledge about universal design, while many who claim to know its definition have misinterpreted the term as a disability product. Genuinely, universal design can be defined as the design of products and environment which is usable by everyone, to the greatest extent possible, without specialized design for a certain group of people (College of Design, North Carolina University, 1997). Among the key terms of Universal Design are universality and flexibility, which promote a design that does not discriminate people based on different abilities and other aspects. The seven principles of universal design are described as follow:

Table 1. The Key Principles of Universal Design

<table>
<thead>
<tr>
<th>PRINCIPLE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equitable Use</td>
<td>The design is useful and marketable to people with diverse abilities.</td>
</tr>
<tr>
<td>Flexibility in Use</td>
<td>The design accommodates a wide range of individual preferences and abilities.</td>
</tr>
<tr>
<td>Simple and Intuitive Use</td>
<td>Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.</td>
</tr>
<tr>
<td>Perceptible Information</td>
<td>The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.</td>
</tr>
<tr>
<td>Tolerance for Error</td>
<td>The design minimizes hazards and the adverse consequences of accident or unintended actions.</td>
</tr>
<tr>
<td>Low Physical Effort</td>
<td>The design can be used efficiently and comfortably and with a minimum of fatigue.</td>
</tr>
<tr>
<td>Size and Space for Approach and Use</td>
<td>Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user’s body size, posture, or mobility.</td>
</tr>
</tbody>
</table>

(Source: College of Design, North Carolina University)

Some people have misunderstood universal design as disability design that merely caters the need of PWD’s accessibility in architecture and surrounding environment. What have not been emphasized among the public is that other than accessibility in architecture, universal design also covers various areas including retail product, information technology, website design and transportation (NARIC, 2008). The term “Universal Design” was founded in the United States of America, while “Design for all” is commonly used in Europe, and “Inclusive Design” is popular in the Great Britain. These terms are based on the same fundamental idea as Bringolf (2008) neatly put it as “designing for the whole of the population bell curve by creating the maximum utility for the maximum number of people regardless of age, culture, and education or ability level.”

Universal design cultivates creativity, marketability, attractiveness, reduction of stigmatization, and affordability of products designed for all range of users (NARIC, 2008). Applying its principles in the design phase may challenges designers’ creative mind to see beyond artistic value and limited range of potential users. According to Imrie and Hall (2001), among the objectives of universal design are to hide people’s impairment, avoid such attention to their impairments, and minimize public tendency to ‘social
ostracism’. Bringolf (2008) clarifies that “universal design automatically includes people with a
disability, but the semantic difference is that it is not specifically for people with a disability thereby
suggesting the exclusion of others.”

3. Methodology

This paper discusses the interview part of data collection, of an in-progress research on universal
design implementation in public buildings located in Putrajaya. It is a multiple-case study that
incorporates semi-structured interview with building managers from three different public buildings in
Putrajaya. Unlike other methods such as site observation and questionnaire survey, the qualitative method
of semi-structured interview allows the study to focus more on the interviewee’s point of view (Bryman,
2008).

Through purposive sampling, the chosen participants are building managers from several significant
public buildings in Putrajaya. Purposive sampling allows researcher intentionally choose participants
who are relevant to the research questions. Earlier in this study, building managers from four different
public building in Putrajaya were contacted for an interview. Three participants were willing to cooperate
in the study, however, one declined due to heavy workload during the period of this interview study was
conducted. The three interviewees are from Perdana Leadership Foundation (PLF), Putrajaya
International Convention Centre (PICC), and Tuanku Mizan Mosque.

The one-to-one interviews were performed in an open-ended manner and were recorded using digital
voice recorder upon permission from the participants. Two interviewees allowed their interview to be
recorded while the other one interviewee prefers not to be recorded. Notes were also taken throughout the
course of the interview as for additional documentation. Question were divided to two segments of topics;
accessibility of the building and universal design theory. The interviews intend to answer two research
questions as follow:

- What are the current and future plan of building managements in improving the building accessibility?
- How does the building manager perceive the building accessibility in relation to universal design
  theory?

The recordings and notes were then transcribed for data analysis. Answers from interviewees were
compared to previous studies’ findings, and the condition and function of the building were also taken
into consideration during the qualitative analysis.

Because of the small sample size, results of this study may not be generalized. Further research and
more interviews in the topic area should be considered. However, such findings in case study interview
are valid because the interviewees in qualitative research are not meant to represent a population
(Bryman, 2008). Bryman (2008) claims that, “the findings of qualitative research are to generalize to
theory rather than to populations. In other words, it is the quality of the theoretical inferences that are
made out of qualitative data that are crucial to the assessment of generalization.” Therefore, this study
intends to see if there are theories in regards to accessibility or findings from precedent studies which can
relate to this study’s findings.

4. Case Studies

Putrajaya is chosen as the site study due to its identity as the centre of government administration and
tourist attraction. It locates many public buildings that serve various kinds of people in a daily basis.
Public building can be defined as a building that is “opened to all or could be used by any member of the
community” (Useh, Moyo and Munyonga, 2001). Building is an important element in Putrajaya because
architecture has been seen as the strongest symbol of this modern city. A survey study on residents’
perception of Putrajaya identity found that most respondents pointed buildings as the distinctive identity to Putrajaya (Ismail, Shamsuddin and Sulaiman, 2008). Since architecture is the main attraction to the city tourists and its residents, it is significant to ensure positive support from public and building managers in providing better accessibility in the city. The three public buildings being assessed in this interview study were chosen according to their significances to public, and the regularity of public visiting in a daily basis. These buildings are listed as below:

Table 2. The three public buildings in Putrajaya and their significances.

<table>
<thead>
<tr>
<th>BUILDING</th>
<th>YEAR BUILT</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perdana Leadership Foundation</td>
<td>2003</td>
<td>Educational foundation</td>
</tr>
<tr>
<td>Putrajaya International Convention Centre</td>
<td>2002</td>
<td>International conference or event centre</td>
</tr>
<tr>
<td>Tuanku Mizan Zainal Abidin Mosque</td>
<td>2009</td>
<td>Worshipping place</td>
</tr>
</tbody>
</table>

5. Findings and Discussions

The main topics discussed in the interviews are the current plans for accessibility; future plan to improve the building’s accessibility; understanding of universal design theory; and the building’s coherence to universal design theory. The interview findings can be summarized and highlighted as follow:

Table 3. Interviewee 1 (Perdana Leadership Foundation)

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>INTERVIEWEE’S PERCEPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current plans for accessibility</td>
<td>Signage which direct to Perdana Leadership Foundation (PLF) building is provided from the main road. The building only has two levels, so it is easy to access.</td>
</tr>
<tr>
<td>Future plan to improve accessibility</td>
<td>PLF function as an educational institution for those who are interested with previous Prime Ministers’ documents and information. Thus, storage to keep collection such as gift, momentous, books and picture frame is an important aspect in this institution. So PLF plans to have an extra storage room in the future. Other future plan: 1) New commercial and residential buildings will be built along the way to PLF, so the area will become more lively and accessible to the public. 2) Need more roof-top parking lot. 3) Closest monorail station (in progress of construction) is suggested to be named after the PLF building, thus more publicity and easy transportation to PLF.</td>
</tr>
<tr>
<td>Understanding about universal design</td>
<td>Universal means broad and open to anyone. Just like Universal Studio which allocates all types of different film/series shooting sets for visitors to experience, universal design is open to everybody; easy to access; and easy to be used by everyone including children and elderly.</td>
</tr>
<tr>
<td>Building coherence to universal design theory</td>
<td>This building is relevant to UD theory. Examples of its implementation in the building include: 1) The automatic entrance door allows any people come in and out of the building without the need to open the door by themselves. 2) The parking space is user-friendly. PWD parking has extra space for wheelchair and it is provided with a vertical signboard of accessible parking. 3) Path to main entrance is accessible, and neatly built without showing that it is actually a wide ramp.</td>
</tr>
<tr>
<td>Other remarks</td>
<td>PLF also provides access to the document via library system and collection via storage system for public. The private collections, even though are kept in storage, they can be borrowed for the purpose of temporary display upon official permission from PLF management.</td>
</tr>
</tbody>
</table>
Table 4. Interviewee 2 (Tuanku Mizan Mosque)

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>INTERVIEWEE’S PERCEPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current plans for accessibility</td>
<td>The building was built according to specifications provided. So far there are no complaints from visitors in regards to the building accessibility. Some facilities which were in the specifications were built later such as the railings for ramp which were just built two months ago.</td>
</tr>
<tr>
<td>Future plan to improve accessibility</td>
<td>To shorten travelling distance from the entrance to main praying hall; to make way finding easier.</td>
</tr>
<tr>
<td>Understanding about universal design</td>
<td>Universal design is accessibility to place, which must be equally convenient to all users, regardless of different abilities, ages, background and culture.</td>
</tr>
<tr>
<td>Building coherence to universal design theory</td>
<td>Yes, the building complied to UD theory. Since there are no complaints from visitors yet, the building management assumes that the building is accessible. Any relevant complaints from visitors will be discussed and furthered to the main administrator.</td>
</tr>
<tr>
<td>Other remarks</td>
<td>The future plan has to be put aside for the mean time. Building management needs to focus on other priority, such as the need to fix leaking pool around praying area.</td>
</tr>
</tbody>
</table>

Table 5. Interviewee 3 (Putrajaya International Convention Centre)

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>INTERVIEWEE’S PERCEPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current plans for accessibility</td>
<td>Facilities provided include an adequate number of PWD bathrooms in the public as well as private meeting area, and elevators with sufficient space for people on wheelchair are also provided on each level.</td>
</tr>
<tr>
<td>Future plan to improve accessibility</td>
<td>Need a team of professionals who can perform sign language for ease of people with a hearing problem. Other than that, PICC plans to add more wheelchairs.</td>
</tr>
<tr>
<td>Understanding about universal design</td>
<td>It is the design that can be used by everyone, all range of users whether they are disabled people or people without impairments.</td>
</tr>
<tr>
<td>Building coherence to universal design theory</td>
<td>The building is pertinent to UD theory. The design of the building has considered accessibility, as well as safety. The facilities provided include ramps and audible messaging in elevators. Other than that, PICC provides messaging system via plasma monitor and billboard outside event hall/room, so that visitors may be informed what event are being held in room.</td>
</tr>
<tr>
<td>Other remarks</td>
<td>PICC also has a Fire Rescue Team that also serves as PWD rescue team during fire incident or emergency situation.</td>
</tr>
</tbody>
</table>

In terms of the building’s accessibility, all interviewees perceive their building as accessible to visitors. This is parallel to the findings from previous data collection through site observation of five public buildings in Putrajaya which was done prior to the interview data collection. Both Perdana Leadership Foundation and Tuanku Mizan Mosque score 80% of their facilities compliant to the design requirements from Malaysian Standards and universal design principles, while Putrajaya International Convention Centre recorded highest score of 81.33% among the five public buildings being assessed in the study (Abdul Kadir & Jamaludin, 2011). The current plans for accessibility mentioned by the interviewees match the list of facilities with good accessibility in the previous study findings.

Future plan to improve the building’s accessibility are one of the important elements in the interview questions because “plans for refurbishment or alterations should be taken into account as they may affect access or may present an opportunity to make access improvements” (Sawyer and Keith, 2004 cited in Abdul Rahim, 2008). Each building’s future plan differs from each other due to different condition, design and function of the building. For example, PICC, as an international event and convention place,
sees that it is important for them to provide sign language during events especially the ones with speech presentation.

In regards to awareness of universal design theory, Interviewee 1 and Interviewee 3 seems to understand the fundamental concepts of universal design, but Interviewee 2 mentions “accessibility to place” as the meaning of UD. Both Interviewee 1 and Interviewee 3 use the key terms of ‘design that is useable by everyone’ in explaining their understanding of universal design, while Interviewee 2 slightly misunderstood the concept as design only for accessibility in built environment. However, his further explanation of “equally convenient to all users, regardless of different abilities, ages, background and culture” shows that the interviewee does grasp a huge part of universal design principles. The interviewees also give appropriate examples of the buildings’ application of universal design.

6. Conclusion and Recommendations

All interviewees perceive their building as accessible to building’s visitors; however, their understanding of universal design in terms of the application in areas other than built environment can be enriched more. This is parallel to the issues of lack of awareness among the community about the importance of barrier-free environment. One of the ways to enrich public awareness on universal design is through fundamental education particularly in the design school, so that future designers will be able to incorporate UD in their creations. Bringolf (2008) asserts that education and re-branding of universal design may help in correcting the misinterpretation of universal design as a disability product. On top of that, society also needs to be educated about the importance of barrier-free environment and PWD rights and capabilities. Although, simply having adequate education or information about disability and accessibility issues may not change the negative attitude towards PWD (Dequin et al, 1988 cited in Abd Shukor & Othman, 2010). Thus, one of effective ways to encourage positive support among the community is by getting everybody involved in the PWD experience through campaigns and interactive activities with the disabled people.

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