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THE APPLICATION OF UNIVERSAL DESIGN LEGISLATION AND STANDARDS IN MALAYSIA AND AUSTRALIA

Liyana Mohamed Yusof [1] and David Jones [2]

ABSTRACT

Legislation and standards are alleged to be one of the key solutions for improving accessibility and Universal Design implementation in Malaysia including its implementation in housing design. In response to this concern, the government of Malaysia has taken considerable steps in articulating professional practice obligations as demonstrated in continual improvements in relevant new laws and standards (Malaysian Standard (MS)). The findings from a preliminary study have however evidenced a clear gap between having laws and standards and ensuring their implementation in the construction industry. This paper reviews the issues faced by the existing Malaysian enforcement and practices to Universal Design. The findings emphasise awareness, understanding and practice implications for the legislation and its standards in Malaysia, and problems and assumptions perceived. Findings indicate that there is lack of understanding and awareness of the current legislation and standards in the construction industry, in addition to the insufficiency of comprehensive guidelines to regulate Universal Design in Malaysia.

Keywords: Universal Design, Legislation and Standards, Housing, Malaysia

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INTRODUCTION

We are living in a world of diversity. Every person of any ability or any form of capability, from children to elderly people, all have equal human and fundamental rights as embodied in the international and national charters and constitutions. Even persons with disabilities (PwDs) have the equivalent rights to those without disabilities. These fundamental rights include the right to live contentedly in one’s own home. As a consequence, it is important that our built environment in general and housing specifically are designed in a way that will not just respond to these rights but also embrace the diversity of humanity especially since the way we define and see disability needs to address the internationally accepted World Health Organization (WHO) definition. WHO shifted the definition of disability, as expressed through the International Classifications of Functioning, Disability and Health (ICF), from a medical model, which views disability as a feature of the person to a social model that perceives disability as a feature of the person and disability as outcome from the interaction of people with the built environment (Ostroff, 2011).

Consequently, Universal Design is claimed as a concept that is responding positively to these rights and our cultural diversity as well as to the ICF classifications. The concept seeks to design not just for people with disabilities and elderly people but also to ensure equity of access for all ages and abilities. Universal design is defined by Mace(1998) the founder of the concept, as "design of products, environments, programmes and services to be useable by all people to the greatest extent possible without requiring adaptation or specialized design."

The emergence of Universal Design however, evolved from a long history. According to Erkiliç (2011) the concept of Universal Design originated from discourses on disability. The underlying concept for Universal Design is called 'Towards Barrier Free Design' which is a concept that uses design to eliminate physical barriers (Ostroff, 2011). However, people with disabilities are dissatisfied with being treated as special as they want to move around the same way as others (Kose, 1998) which Barrier Free Design prevents. This gives rise to the idea behind the concept of Universal Design. Claimed as a concept that seeks to design not just for people with disabilities and elderly people but also to ensure equity of access for all ages and abilities, Universal Design is a key obligation in the architectural professional practice as well as in other professionals involved in the construction industry including engineers, surveyors, planners and contractors. In response, the government of Malaysia has taken considerable steps
to articulate practice obligations and standards in enhancing accessibility and usability. These initiatives can be seen in continual improvements in new legislation and standards, including the Persons with Disabilities Act 2008 and the Malaysian Standards (MS).

However, the effectiveness of these legislation and standards has been increasingly questioned especially by people with disabilities in Malaysia as being unsatisfactory or ineffectual in their implementation and the design outcomes achieved. Studies by Kamarudin et al. (2012) and Soltani et al. (2012) highlight similar issues. This indicates that there is a potential gap between having legislation and standards and ensuring their implementation pointing to questions about perceptions, knowledge and the understanding of professionals in the construction industry on these legislation and standards and the role these legislation and standards have in influencing these professionals to incorporate Universal Design in their design.

Notwithstanding the important contributions of other professionals in the construction industry in Malaysia, this paper discusses the results from a preliminary study from face-to-face interviews with 30 Malaysian architects from several states in which the architects in this study refer to those who are practicing architecture in Malaysia regardless of their level of architectural education. The study suggests that there is lack of awareness among the architects interviewed and they question the effectiveness of the implementation and enforcement of the Malaysian legislation and standards in practice all across Malaysia.

LEGISLATION AND STANDARDS FOR PEOPLE WITH DISABILITIES (PwDs) IN MALAYSIA

Ostroff (2011) believes that legislation is one of the most important threads that have influenced the emergence Universal Design. In Malaysia, when designing concerning on accessibility in the built environment, the key legislation are the Persons with Disabilities Act 2008 and the Building By-Laws (Amendment) 1991 (UBBL) and the standards are the Malaysian Standard Code of Practice on Access for Disabled (MS) which is applied at the national level. To be precise, these legislation and standards are purposely drafted to cater, protect and enhance the needs and rights of people with disabilities (PwDs) in Malaysia. As there is no specific legislation on standards on Universal Design in Malaysia, and as the needs and rights of PwDs is one of the principal groups that the concept of Universal Design aims to accommodate, it is considered that
information and solutions to incorporate Universal Design can be sourced from legislation and standards oriented on PwDs.

The development and revision of these legislation and standards are one of the government of Malaysia’s initiatives towards supporting the rights of PwDs in Malaysia. Other efforts that can also been seen are its signatory role in the Proclamation on the Full Participation and Equality of People with Disabilities in the Asian-Pacific Regions in 1994, the Proclamation of Asia & Pacific Decade of Disabled Person 1993-2002 and the United Nations Convention on the Rights of Persons with Disabilities in 2008 that were ratified by Malaysia in 2010 (Ministry of Housing and Local Government, 1999; Hussein and Yaacob, 2012; United Nations, 2012). The evolution of the legislation and standards with the government’s efforts in incorporating Universal Design in the Malaysian built environment can be seen in Figure 1.

**Figure 1:** The evolution of the legislation and standards with the government’s efforts in incorporating Universal Design in the Malaysian built environment

<table>
<thead>
<tr>
<th>Year</th>
<th>Legislation Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>Building By-Laws (Amendment) 1991 (UBBL)</td>
</tr>
<tr>
<td>1994</td>
<td>Proclamation on the Full Participation and Equality of People with Disabilities in the Asian-Pacific Regions in 1994</td>
</tr>
<tr>
<td>2000</td>
<td>MS 1184:2002 - Code of Practice on Access for Disabled Persons to Public Buildings (First Revision)</td>
</tr>
<tr>
<td>2008</td>
<td>Persons with Disabilities Act 2008</td>
</tr>
<tr>
<td>2011</td>
<td>Planning Guidelines for Universal Design circular dated 08 July 2011 to all local authorities</td>
</tr>
</tbody>
</table>
Notwithstanding the importance of other documents contributions in this evolution, this paper focused on the Persons with Disabilities Act 2008 and Building By-Laws (Amendment) 1991 (UBBL) and the Malaysian Standard Code of Practice on Access for Disabled (MS) as well as housing and Universal Design-orientated documents.

**Persons with Disabilities Act 2008**

The Persons with Disabilities Act 2008 is the first rights-based legislation for PwDs (Hussein and Yaacob, 2012) and is claimed to be comprehensive in regards to the welfare of the PwDs in Malaysia (Kamarudin et al., 2012). The Act was enacted by the Parliament of Malaysia on the 24th of December 2007 with enforcement on the 7th July 2008. The Act provides but is not limited to: recognizing disability in accordance the ICF notion, recognizing the importance of accessibility of the PwDs to the built environment and; and, recognizing the importance of the co-operation between the government and the private sector and non-governmental organization in order to ensure the fullest participant of the PwDs in the society can be archived. This a positive keystone for the concept of Universal Design being incorporated into the construction industry as a way to better improve the accessibility of the PwDs in the built environment.

The Persons with Disabilities Act 2008 established a body known as the National Council which consists of representatives from several government bodies and ten members, from the public that have appropriate knowledge and experience in problems and issues related to PwDs, who meet at least three times annually to value the performance of the Act. The purposes of the Council cover a wide range of aspects regarding PwDs issues as well as considering the implementation of the Act. The functions of the Council that captured the interest of the research include :to coordinate and supervise the implementation of the national policy and national plan relating to PwDs both with government agencies or private sector; to make recommendations to the Government on all aspect of PwDs including the need to change to the existing law as well as to propose a new law that can ensure fullest participation of the PwDs in the society including to facilitate accessibility and; to develop programmes and strategies that can educate and raise awareness and encourage positive perception on the rights and dignity of PwDs among the society (Persons with Disabilities Act 2008).

The accessibility in the built environment aspects are covered in the Part IV: Promotion/Development of Quality of Life of the Act under Chapter 1: Accessibility, Section 26 which enhance the rights of the
PwDs to access and use of the public building and facilities on equal basis with people without disabilities and enhance that the government or providers shall give appropriate consideration in order to allow it. While for Universal Design, it is stated in the Act that the Universal Design should be included in the process (Persons with Disabilities Act 2008). Universal Design in the Act is interpreted as ‘The design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaption or specialized design and shall include assistive devices for particular groups of persons with disabilities where this is needed’.

**Building By-Laws (Amendment) 1991 (UBBL)**

Building By-Laws (Amendment) 1991 (UBBL) under the Street, Drainage and Building Act 1974 is one of the most important pieces of legislation under the Malaysia Ministry of Housing and Local Government (MHLG). The Building By-Laws (Amendment) 1991 (UBBL) is amended from the principal Building By-Laws 1984 that resulted in the insertion of clause 34A. 34A makes it compulsory to provide access that can enable the PwDs to get into, out of and within the building as well as providing facilities for used by the PwDs; demanding for the requirements of the By-Laws to be considered and to be satisfied by the compliance with Malaysian Standards MS1183 and MS1184; and, make it obligatory for buildings that have been constructed, under construction or have not been constructed but plans have been submitted and approved before the date of the gazette to compliant with the requirements within the duration of three years. Residential building other than single family private dwelling house is part of the buildings that the By-laws should be applied to.

According to Kamarudin et al. (2012), the By-Laws position the owner as first defendant and the local authority as the second defendant both of whom can be fined if they do not comply with it. However requirements can be exempted upon appeal to the local authorities. Table 1 shows the state gazette notification on amendment to Building By-Laws 1984 on the Building Requirements for Disabled Person in which if referring to the date of the gazette for each state, by right all the public buildings in Malaysia should have already compliance with the Malaysian Standards MS1183 and MS1184.
Table 1: State Gazette Notification on Amendment to Building By-Laws 1984 on the Building Requirements for Disabled Person

<table>
<thead>
<tr>
<th>State</th>
<th>Gazette Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negeri Sembilan</td>
<td>31 January 1991</td>
</tr>
<tr>
<td>Johor</td>
<td>7 May 1992</td>
</tr>
<tr>
<td>Kelantan</td>
<td>3 July 1992</td>
</tr>
<tr>
<td>Kedah</td>
<td>30 November 1992</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>15 August 1993</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>11 November 1993</td>
</tr>
<tr>
<td>Terengganu</td>
<td>15 December 1993</td>
</tr>
<tr>
<td>Selangor</td>
<td>20 January 1994</td>
</tr>
<tr>
<td>Perlis</td>
<td>3 Mac 1994</td>
</tr>
<tr>
<td>Perak</td>
<td>13 May 1994</td>
</tr>
<tr>
<td>mPahang</td>
<td>28 Mac 1996</td>
</tr>
<tr>
<td>Melaka</td>
<td>22 May 1996</td>
</tr>
</tbody>
</table>

Source: Ministry of Housing and Local Government 1999

Malaysian Standard Code of Practice on Access for Disabled Persons (MS)

The Malaysian Standard in general is administrated by the Standards of Malaysia Act 1996 (Act 549) and the consideration to use the Standards is voluntary unless they are made mandatory by regulatory authorities through regulations or local by-laws (Department of Standards Malaysia).

The research was interested in the Standards that are specific to accessibility in the built environment. The director of Standards Malaysia, Fadilah Baharin, states that the development of the standards on accessibility in the built environment, which is acknowledged as Malaysian Standard Code of Practice on Access for Disabled Persons (MS), evolved since the gazettal of the amendment to the building By-Law 1984, which is now known as Building By-Laws (Amendment) 1991 wherein the new law makes it a legal requirement to provide access for PwDs in the built environment (Kamarudin et al., 2012; Kadir and Jamaludin, 2012).

These Standards were formulated by the Technical Committees on the Accessibility for Disabled Person under the Building and Civil Engineering Industry Standards Committee Development authorisation and carried out by the Construction Industry Development Board Malaysia (CIBD). The current Standards on accessibility in the built environment in Malaysia are:

- **MS 1184:2002-Code of Practice on Access for Disabled Persons to Public Buildings (First Revision)**
- **MS 1331:2003-Code of Practice for Access of Disabled Persons Outside Buildings**
MS 1184:2002 supersedes MS 1184:1991—Code of Practice for the Accessibility for Disabled Persons in Public Buildings. The formulation of this Standard referred to the AS 1428.1:1988 which is now known as the Australian Standard Design for Access and Mobility, Part 1: General Requirements for Access—Buildings and BS 5810:1979 which is now known as the British Standard Code of Practice for Access for the Disabled to Buildings (Malaysian Standard 2002). The MS 1184:2002 states that the revised version covers the essential provisions that need to be incorporated in the buildings in order to make the buildings accessible and usable by the PwDs and as result of only providing essential provision; it claims not to be comprehensive. MS 1184:2002 further states that its provisions are applicable to all the buildings that persons with disabilities can use as members of general public, visitors or for purpose of employment. However residential buildings are not covered in MS 1184:2002.

Conversely, MS 1131:2003 supersedes MS 1331:1993—Code of Practice for Access for Disabled Persons Outside Buildings (Malaysian Standard 2003). The MS 1131:2003 states that the revised version covers the provisions that need to be incorporated into the design which specifies the basic requirements on access for PwDs outside the buildings in order to ensure their accessibility. Table 2 summarises the Malaysian Standard Code of Practice on Access for Disabled Persons (MS).

<table>
<thead>
<tr>
<th>Current MS</th>
<th>Superseded</th>
<th>Formulation</th>
<th>Description</th>
</tr>
</thead>
</table>
| MS 1331:2003 | MS 1331:1993 | Formulated by the Technical Committees on the Accessibility for Disabled Person | Covers the provisions that need to be incorporated into the design which specifies the
LEGISLATION AND STANDARDS FOR PEOPLE WITH DISABILITIES (PwDs) IN AUSTRALIA

In Australia, there is no specific legislation and standards on Universal Design. The legislation and standards concerning on accessibility in the built environment are the Disability Discrimination Act 1992 which is equivalent to the Persons with Disabilities Act 2008 with an addition of eight state-based individual Anti-Discrimination Acts, the Building Code of Australia (BCA) which is equivalent to the UBBL, and the Australian Standard (AS) which is equivalent to the MS.

The Disability Discrimination Act 1992 aims to eliminate as far as possible discrimination against persons on the ground of disability; to ensure as far as practicable, that persons with disabilities have the same rights to equality before the laws as the rest of the community and; and to promote recognition and acceptance within the community of the principle that persons with disabilities have the same fundamental rights as the rest of the community (Disability Discrimination Act 1992). The section in the Act that enhances the access to the built environment is under Part 2, Division 2, and Section 23 which is Access to Premises and the section that against discrimination concerning on housing is Part 2, Division 2, Section 25: Accommodation (Disability Discrimination Act 1992).

The Building Code of Australia (BCA) was formulated by the Australian Building Codes Board (ABCB), a collaboration of Australian governments and the building industry that is responsible in managing a standardised national approach of building technical and regulatory affairs (Department of Families, Housing Community Services and Indigenous Affairs 2008). The Code specifies minimum access arrangements to premises under Standards formulated under the Disability Discrimination Act 1992 (Ward et al., 2011). Underpinned by the Department of Families, Housing Community Services and Indigenous Affairs (2008), the access requirements in this Code are obligatory. The Australian Standard, AS 1428 Design for Access and Mobility is the main standard concerning accessibility which consists of four parts:

- AS 1428.2(1992) - Enhance and Additional Requirements - Buildings and Facilities
THE APPLICATION OF UNIVERSAL DESIGN LEGISLATION AND STANDARDS IN MALAYSIA AND AUSTRALIA

- AS 1428.3(1992) - Requirements for Children and Adolescent with Physical Disabilities
- AS1428.4(2009)-Amendment 2010 - Tactile Ground Surface Indicators For the orientation of people with vision impairment

These standards were prepared by Standards Australia Committee on Access for People with Disabilities to provide information and minimum design requirements to designers and users as a way of ensuring access for people with disabilities. The Standards are consistent with the requirements under the Disability Discrimination Act 1992 (Department of Families, Housing Community Services and Indigenous Affairs 2008). AS 1428.1 however only provides for design requirements to new building work concerning on accessibility for people with disabilities and excludes work to private residences (Domiciliary Care SA, 2011).

ACCESSIBILITY AND THE ADOPTION OF THE PRINCIPLES OF UNIVERSAL DESIGN IN HOUSING

On the aspect of availability of the legislation and standards for PwDs, Malaysia and Australia have certain similarities. However, despite these similarities, Australia is more advanced in adopting the principle of Universal Design in their standards and in incorporating the concept in housing. The principles of Universal Design are described in the Australian Standard, AS 4299: Adaptable Housing (Australian Standard, 1995). AS 4299’s development was based on various instruments of international countries including:

- *Fair Housing Amendments Act 1998* – The United States
- The concept of ‘mobility housing and further up to ‘Factor X housing’ which incorporate ‘visitability by Goldsmith- The United Kingdoms
- Building Adaptable Housing experiment- The Netherlands
- Norway’s Lifespan Dwelling- Scandinavian Countries
- ‘Special’ house design and facilities for pensioner housing- New Zealand

Responding to the AS 4299, several voluntary guidelines based on Universal Design principles were developed in Australia such as the Queensland Government’s *Sustainable Homes Design Objectives*, New South Wales’ *LandCom Universal Design Guidelines*, the Victorian Building Commission’s *Build for Life* website and the *Livable Housing Design Guidelines* (Ward et al., 2011). The *Livable Housing Design Guidelines* resulted from a partnership between community and consumer groups, government and industry with the aim to assist, promote and deliver Universal Designed homes and provide technical advice and guidance (Australian Department of Families...
Housing Community Services and Indigenous Affairs, 2009). It is one of these guidelines that adopted the AS 4299(1995). However, Ward et al. (2011) suggest that these guidelines are not working effectively in providing adequate accessible housing in Australia resulting from them being voluntary guidelines and Ward et al believe that a regulatory approach might be a better alternative. A study in United States of America by Nishita et.al (2007) however has suggested the opposite. The study concluded that the regulatory approach received consistent resistance from the industry. This argument raises the question of which approach suits Malaysia better? The voluntary approach or the legislative approach?

The pilot study suggests that a certain level of enforcement should be applied in order to drive the professions in the construction industry to incorporate Universal Design in the built environment especially in housing as the study also indicated that the housing realm received more negative feedback from the architects interviewed when compared to other realms when concerning accessibility issues. The importance and needs to provide better access in housing were continuously doubted and challenged by these architects.

However, if the legislative approach is believed to be better, then there is another question that seeks to be answered. Has Malaysia incorporated the Universal Design principle adequately in to their housing standards as a way to ensure better access for PwDs? To date, it can be alleged that Malaysia has not yet incorporated Universal Design into their housing standards. However, the literature suggests that the notion of Universal Design is increasingly been incorporated in its legislation such as the term of Universal Design which has been incorporated in the Persons with Disabilities Act 2008.

Another positive direction is the Circular by the Ministry of Housing and Local Government dated 8th July 2011 to all the state authorities and all 149 local authorities in Malaysia stating that the Ministry has agreed with the implementation of Garis Panduan Perancangan Reka Bentuk Sejagat (Planning Guidelines for Universal Design) to supersede the Garis Panduan dan Piawaian Perancangan Kemudahan Golongan Kurang Upaya (Planning Guidelines and Standards for People with Disabilities). Notwithstanding the positive effects this Circular might have upon the notion, the level of awareness and how well it is accepted by professionals in the construction industry in Malaysia towards this notion is questioned by the research.
THE APPLICATION OF UNIVERSAL DESIGN LEGISLATION AND STANDARDS IN MALAYSIA AND AUSTRALIA

METHODOLOGY

This paper used interviews through a preliminary study of ongoing research based upon qualitative analysis. The study aims to investigate the perceptions of Malaysian architects towards Universal Design with an emphasis upon housing as a means to identify the barriers of its implementation as well as to analyse the effectiveness of Malaysian legislation and standards relating to Universal Design in practices across Malaysia and the role these legislations and standards have in influencing architects to incorporate Universal Design in their practice.

The preliminary study consisted of face-to-face semi-structured interviews with 30 Malaysian and 20 Australian architects who are currently practicing in private architectural firms. The 30 Malaysian architects interviewed comprised five architects each from Terengganu, Pahang, Melaka, Negeri Sembilan, Kuala Lumpur and Selangor while the 20 Australian architects interviewed were five architects each from Victoria, Tasmania, New South Wales and South Australia. This paper however only discusses the Malaysian architects interviewed and where necessary includes comparisons and discussions of the Australian architects interviewed.

The architects were recruited through the Pertubuhan Akitek Malaysia (PAM) existing contact lists and were not screened. The interview questions explored and investigated the participant’s understanding of the terminology, language and concept related to Universal Design, the participant’s awareness and practice of the legislation and standards related to Universal Design, the initiatives of governments and professional institutes and actions in promoting Universal Design or in promoting the rights of people with disabilities and elderly people, and lastly the issues, facilitators and barriers associated with Universal Design.

The section of questions discussed in this paper reports upon the participant’s awareness and practice of the legislation and standards related to Universal Design. The questions formulated under this section were intended to investigate whether architects are aware of the existence of the Persons with Disabilities Act 2008, the Building By-Laws (Amendment) 1991 (UBBL) and the Malaysian Standard Code of Practice on Access for Disabled (MS); whether or not they practice and understand these legislation and standards and: the consistency and effectiveness of these legislation and standards in the design practice across Malaysia.
The interviews conducted were recorded using a digital voice recorder. 26 of the participants permitted the interviews to be recorded while the remaining six preferred not to. Notes were also taken during the interviews with all participants. The data from the recording and notes taken were then processed and analysed in NVivo, a qualitative data analysis (QDA) computer software.

RESULTS

The study found a lack of awareness amongst architects interviewed on the availability of the legislation and standards concerning PwDs and the concept of Universal Design in Malaysia in both the general aspects of accessibility and in housing particularly.

In terms of awareness of the existence and the availability of the legislation and standards, out of the 30 architects interviewed only two were aware of the Persons with Disabilities Act 2008; six were aware of the Building By-Laws (Amendment) 1991 (UBBL) and two were aware of Standard Code of Practice on Access for Disabled (MS). To make it worse, given the critical low responses about awareness, these legislations and standards were not referred to in their practice except for a small numbers who referred to the UBBL. In contrast the study found that amongst 20 Australian architects, 15 were aware of the Disability Discrimination Act 1992, all were aware of the Building Code of Australia (BCA) and 17 were aware of Australian Standard (AS) indicating a big difference in how the Malaysian and Australian architects respond and practice in regard to these legislation and standards respectively.

Accordingly, because of the low awareness and practice execution, the question of the understanding of Malaysian architects of these legislation and standards were difficult to investigate. Hence, their perceptions and understandings explored were based more on the UBBL, local authorities’ roles and enforcement aspects. These perceptions are discussed accordingly in Table 3.

Table 3: Architects Perception and Understanding on the UBBL, Guidelines by the Local Authorities and Enforcement in Malaysia.

<table>
<thead>
<tr>
<th>Legislation and Guidelines</th>
<th>Architects Perception and Understanding</th>
</tr>
</thead>
</table>
| Building By-Laws (Amendment) 1991 (UBBL) | • Some parts are difficult to understand and may lead to misinterpretation;  
 • The requirement that providing for PwDs can be exempted depending on considerations by local authorities leading to a dilution of its strength and foundation; |
| Guidelines by the Local Authorities | • No or lack of comprehensive guidelines are provided ahead of the checklist |
### The Application of Universal Design Legislation and Standards in Malaysia and Australia

<table>
<thead>
<tr>
<th>Enforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>The current guidelines on accessibility are only for public buildings;</td>
</tr>
<tr>
<td>The current guidelines on accessibility merely emphasise ramps, parking, toilets and lifts;</td>
</tr>
<tr>
<td>Guidelines should be illustrate and contain technical material rather than being just textual to avoid confusion that eventually leads to a variety of interpretations;</td>
</tr>
<tr>
<td>Specifications of MS are not stated clearly in the requirements.</td>
</tr>
<tr>
<td>Requiring a better enforcement on accessibility in Malaysia as the current enforcement is lacking;</td>
</tr>
<tr>
<td>Enforcement is believed to be the key solution to improve accessibility in Malaysia;</td>
</tr>
<tr>
<td>Enforcement is believed to be the key to implement Universal Design in any realm in Malaysia especially housing and;</td>
</tr>
<tr>
<td>Suggesting the local authorities to appoint knowledgeable experts whom can provide consultancy services if required which should comprise of wide range of construction industrial professionals.</td>
</tr>
</tbody>
</table>

The level of awareness and the results of their understanding and perceptions question the effectiveness of these legislation and standards in practice all across Malaysia. There are a few underlying issues on the legislation and standards that can be considered as contributing to this circumstance. These issues are discussed accordingly to Persons with Disabilities Act 2008, the Building By-Laws (Amendment) 1991 (UBBL) and the Standard Code of Practice on Access for Disabled (MS).

Although the importance of Persons with Disabilities Act 2008 is unquestionable, the effectiveness of its functions shows oppositely. Hussein and Yaacob (2012) sense the Act as just being an administrative and enabling Act rather than serving as a discrimination Act that allows penalties. In term of housing, there is no specific section that addresses discrimination in housing in terms of accessibility. Even though Chapter 2: Habitation and Rehabilitation discusses In-Home and Residential elements, the discussion is vague and may lead to many interpretations. In contrast, in the Australian Government’s Disability Discrimination Act 1992, the housing realm is enhanced articulated. The Act prohibits discrimination against people with disabilities or their associates in a range of areas including transportation, education, employment, accommodation and premises used by the public.

In terms of the Building By-Laws (Amendment) 1991 (UBBL) and the Standard Code of Practice on Access for Disabled (MS), even though they are now a requirement for all building plans submitted to local authorities in each state in Malaysia, the level of inaccessible
buildings Malaysia is still considerately high. Hashim et al. (2012) conclude that a lack of enforcement on policies and guidelines may be a key reason that contributes to this poor accessibility. This points to the role and accountability of local authorities because guidelines should address state legislation and standards depending upon the nature of the local authority. In term of housing, this research has concluded that the requirements to provide for PwDs are only complied within public buildings in order to obtain building approvals from the local authority, and in contrast those specifically tackling housing are not stated.

CONCLUSION AND RECOMMENDATIONS

As a conclusion, the study found that the level of awareness, practice and understanding of the legislation and standards related to accessibility and Universal Design among Malaysian architects is critically low. Consequently, what can we do to improve this awareness, including the implementation and understanding of Malaysian architects towards these legislation and standards on accessibility? What can we learn from the other countries?

In regard to the perceptions of Malaysian architects, in order to better improve their awareness, and ensure the implementation and awareness of these legislations and standards among not just Malaysian architects but also to the entire professional in the construction industry, the study recommends that there be better promotion carried out by means of intensive and continuous efforts and promotion both from government and professional institutes especially in terms of promoting the availability of the legislation and standards and providing comprehensive guidelines that go beyond than just emphasising ramps, parking, toilets and lifts.

In addition, the guidelines should not only focus on public buildings solely but should cover a wider range of accessibility topics that should include but should not be limited to housing. To ensure comprehensiveness and standardisation, all guidelines formulated by local authorities should adopt and adapt these national legislation and standards. However, as learnt from a study in Australia, if the guidelines are left as voluntary, the level of successfulness of their implementation can be uncertain. Thus, in parallel it is important that the policy be enforced as well.

However, as it is believed that enforcement in Malaysia is considerably lacking there is a need for a better enforcement on accessibility. Once again, local authorities should play their role. As the local authorities are those responsible and have the authority to
approve or disapprove any building plan submitted, the compliance of the legislation and standards by professionals should be monitored and enforced by them. Local authorities should also pay extra attention and carry out comprehensive assessments of buildings that apply for exemptions to providing the accessibility as allowed under the Building By-Laws (Amendment) 1991 (UBBL) in order to ensure that the Act does not lose its strength in ensuring accessibility in building in Malaysia. As accessibility aspects can be a complicated matter, it is suggested that local authorities should appoint knowledgeable experts whom can provide consultancy services if required and these experts should include a range of processional experts from the construction industry.

Upon awareness and enforcement, an understanding of the existing legislation and standards are significantly crucial. As perceived by the interviewed architects, the documents are difficult to understand and may lead to misinterpretation and guidelines should be illustrated and contain technical material rather than being just textual; these issues are not to be overlooked in the formulation of the guidelines. In Australia, as a solution to improve the understanding of construction industry professionals, new documents were designed to be used in conjunction with and assist in translating the requirements of AS 1428.1-2009 called ‘A new practical guide to help with building design requirements for access and mobility’. This idea should be adopted by the Malaysian Standard as a way to better educate and clarify the MS to the Malaysian construction industrial professionals.

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