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A STUDY ON THE ACCESSIBILITY IN SHOPPING MALLS FOR PEOPLE WITH DISABILITIES (PWDs) IN MALAYSIA

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ABSTRACT

The objective of the paper: firstly, to evaluate accessibility and usability in the facilities that used by people with disabilities (PWDs) in shopping malls. Secondly, to identify whether the facilities provided in according with the latest Malaysian standards (MS 1184:2014) Universal Design and Accessibility in the Built Environment-Code of Practice. The paper will discuss disability and accessibility issues, current accessibility system in Malaysia, Malaysian Standards and universal design implementation in built environment and the importance of shopping malls in accessibility for Malaysia. It is a part of on-going research on universal design implementation in shopping malls. Accessibility in the shopping mall for people with disabilities PwDs is vital in order to provide and promote security and independence. Thus, in the planning of shopping malls well as in the design process, special considerations should be applied to accommodate the needs of the PwDs. Both qualitative and quantitative methods will be applied, by using descriptive analysis, observation, questionnaire, access audit simulation, checklist and interview. Photographic documentation is also taken for further analysis of the current facilities condition. Three case studies have been selected to evaluate accessibility of the shopping malls for People with Disabilities PwDs which are IKEA in Damansara, Suria Kuala Lumpur convention Centre (KLCC) in Kuala Lumpur and Alamanda in Putrajaya. The expected findings to identify whether the facilities provided match the needs of the people with disabilities, this is further supported by using the Malaysian standard (MS 1184:2014) Universal Design and Accessibility in the Built Environment-Code of Practice that fits and matches the facilities provided for various types of People with Disabilities PwDs.

Keywords: Universal design, Accessibility, Accessible built environment, Malaysian standards, Shopping mall, People with disabilities (PWDs), Physical barriers.

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Contribution/ Originality

This study is one of very few studies which have evaluated accessibility and usability in the facilities that used by people with disabilities PWDs in shopping malls. The paper's primary contribution is to provide recommendations to the field of built environment, some extension

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could be done with this research by detailing the design characteristics and focuses more in every inaccessible public facilities that has the potential to be planned or redeveloped for new shopping mall or existing one to enhance the life quality for PwDs and provide user friendly accessibility within and outside shopping malls.

1. INTRODUCTION

Universal design, seeks to provide improved accessibility and safety for all groups in the community. It seeks to extend the ideals of accessible design to previously underserved groups like people of short stature, elderly, pregnant women, parents with children in strollers; wheelchair bound people, people with visual impairment and people with hearing impairment. It recognizes that improved accessibility enhances the value of buildings, and its built environment. Thus, it creates cities that facilitate its people to have better life quality and opportunity to participate in all aspects of life. More studies, which highlight PwDs' satisfaction and perception on accessibility in built environment, need to be conducted in order to assess the buildings from the perspective of PwDs. Shopping malls are essential public buildings for all people which provide various services. [Grosbois \[1\]](#) Stated that the word public comes from the Latin word populous, which means that it has something to do with people, with the state, and with the public realm. It can be translated for public use or it can be used by all. A public building is therefore, by definition, a building that should accommodate everybody, at whatever age in life. Hence, in removing the architectural barriers and obstacles we will provide for better solution to make the built environment friendlier toward People with Disabilities PwDs in terms of mobility, reachability and connectivity to public spaces and to the facilities in the built environment.

2. CURRENT SITUATION

Throughout history, community attitudes and physical barriers in the built environment have prevented people with disabilities from fully participating in society. Access to education, employment, housing, recreation, cultural events and transportation has been denied many people. Nowadays, along with the growth in the PwDs population, the quest for independence and equal rights has grown. Lately, major changes in design requirements, both market-driven and legally mandated, are creating a new life system for People with Disabilities PwDs and a new path for designers. Changing demographics, status, and attitudes are fuelling the demand for more sophisticated products, housing, and business environments that are accessible for people of all ages, sizes and abilities [\[2\]](#). Malaysia has also shown some developments in this catering the needs of persons with disabilities PwDs. Nevertheless, as appealed by Kamal Malhotra, the United Nations Resident Coordinator, In the National Conference on “Accessibility and Universal Design: implications for Public Transport and the Built Environment”, yet, there are the needs efficiently implement universal design in Malaysia, the needs for more professionals or researches in this area, and the need to revisit the current standards codes [\[3\]](#). Thus, this study is called to enhance and complement the precedent studies that have been done on Malaysia's accessibility issues and universal design implementation in public buildings. The number of existing public

buildings that have done modifications as approved by the standards codes is very few. In addition, some of the modifications are not correctly built according to the codes; therefore they are risky to the users. While in 2014, by launching the new Malaysian standards (MS 1184:2014) Universal Design and Accessibility in the Built Environment-Code of Practice, various access audits have been done and measures the current level of universal access and usability. In addition, the audit report provides recommendations for improving the building accessibility.

Table-1. The Development of Universal Design in Malaysia

Year	Development
1957	Malaysia has just regained its independency, and is still underdeveloped. the development was on education, agriculture, economy, infrastructure and basic facilities. Buildings erected in this period are mostly not accessible for the disabled.
1960s and 1970s,	the government was still focusing on developing the country in various fields in urban and rural areas
late 1980s	The development of Malaysian Standards and code of practices were initiated, and 3 Standards was published in 1990s, which are MS 1183:1990, MS1184:1991 and MS 1331:1993. Malaysia has started to address the needs of People with Disabilities (PWD) in the built environment.
2000	International Islamic University Malaysia (IIUM) was invited to conduct barrier free workshop at Pan Pacific Hotel, Kuala Lumpur to train for their technical staff. The second workshop was held in KLCH headquarters, which later was followed by a series of other workshops.
2002	Malaysia, as a member of the United Nation Economic and Social Commission of Asia pacific (UNESCAP).
2002-2003	MS 1184 and MS 1331 were published. At the same time, the author was given again to chair four standards on public toilet to be developed, which are MS 2015: 2006 Part 1, Part 2, Part 3 and Part 4.
2008	KAED Universal Design (KUDU), IIUM conducted access audits in various building typologies in Malaysia such as transportation hubs, waterfront facilities, shopping complexes, markets, heritage buildings, housing and jetties to identify the level of accessibility in these public buildings and spaces. it was found that only 25% of buildings in Malaysia were considered good in terms of accessibility.
2011	Joining a smart partnership with the Department of Standards Malaysia was taken by KAED Universal Design, to promote Malaysian Standards related to universal design and accessibility in the built environment to local authorities, professionals, academicians and mass public through access audit workshops, international conferences and national universal design product competition.
2014	The latest Malaysian Standards (MS 1184:2014) are developed through consensus by committees. MS1184 is made mandatory by regulatory authorities. This document was prepared to include with the latest standards, data and information to accommodate persons with disabilities (PWDs), the aged and children in various building typology such as heritage, parks and other public spaces.

(Source: Abdul Rahim [4])

Kose [5] Mentioned that Suggested considerations for design can be found in MS 1184-2014: Universal design and accessibility in the built environment - Code of practice (Second revision). It is particularly important to take into consideration that almost all abilities deteriorate at the same time as people grow older. Coping strategies that will work for people with disabilities might not be effective.

Annexes of MS 1184-2014 are notable in the sense that they were intended to give additional explanations for the benefit of users, from the ISO 21542-2011: Accessibility and Usability of the Built Environment.

ISO is intended to be applied globally. MS has added local flavor.

3. REVIEW OF RELATED LITERATURE

Universal design addresses the scope of accessibility and suggests making all elements and spaces accessible and usable by all people to the greatest extent possible. Universal design requires an understanding and consideration of the broad range of human abilities throughout the lifespan. Creative application of that knowledge results in products, buildings and facilities that are usable by most people regardless of their age, agility, or physical or sensory abilities [6]. Many definitions have been developed, but a comprehensive definition presented by National Disability Authority holds that “UD means the design of products, environments, programs and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.” This definition centers on the goal of providing the convenient environment for all people including people with disability.

Table-2. Universal Design Index

Connectivity	The degree to which the development is designed in a holistic manner
Accessibility	The availability and Convenience of Provisions
Usability	The provision of signage and way finding cues at main circulation spaces & leading to public transport nodes and facilities
Safety	The degree to which walking surfaces are made safe and secure with attention to details
Integrated Design	The demonstration of total design approach for targeted user groups.
Operations And Maintenance	The degree which the organization is committed to creating and maintaining an inclusive built environment through the establishment of corporate policy.

(Source: Abdul Rahim [7])

On March 30, 2007, the United Nations gathered 82 signatories on the opening day of the first comprehensive human rights treaty of the twenty-first century. This was the highest number of opening day signing countries in the history of UN conventions. By the end of 2009, three quarters of the world’s countries had signed. Even though there is a lack of enforcement in Malaysia, the establishment of revised standards rules and the enactment of legislations signify a strong ethical value and positive support from government to ensure equal rights and treatment for all citizens including the disabled community [8].

Table-3. Brief History of Universal Design

Time/ Period	Situation
Past	Attitudes to disability: Institutional, Patronizing, and medical model.
Recent	Attitudes to disability: designs for special needs and not inclusive.
Last	Universal Design: inclusive, “design for all” and “everyone/anywhere”

(Source: Harrison [9])

Table-4. Analysis of trends in UD

From	To
politics / regulation	Innovation
accessibility	Inclusion
barriers	Sustainability

(Source: Froyen [10])

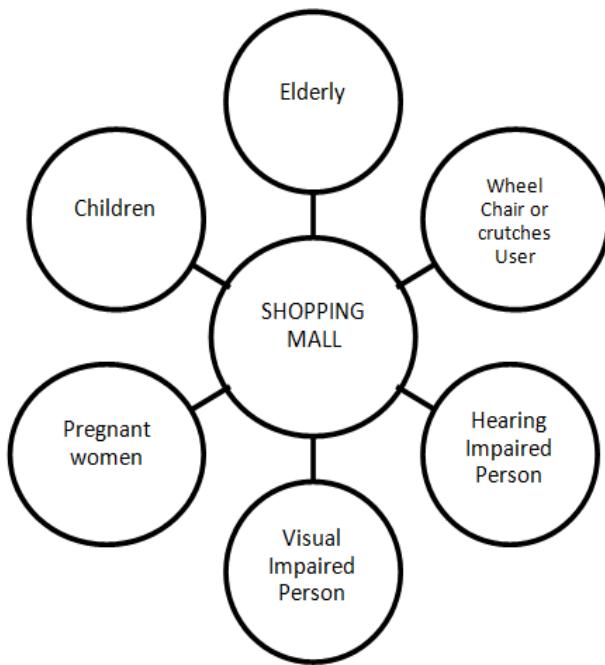


Figure-1. Various categories of Shopping Mall users
(Source: Bashiti and Abdul Rahim [11])

4. ISSUES AND PROBLEMS

The research problem lies at two issues. The first issue is the aging population as most countries around the world including Malaysia have experienced improved life expectancy. While as the ages population in Malaysia is 1.73 million (6.6%) and will be increased to 3.8 million (11.3%) in the year 2020 [5, 6]. On the other hand, numerous concerns on Arab region have been conducted to increase the attention of this serious issue that have been missed for years. Whereas the latest statistics shows that elderly people at age 65 was about 5.2 %, with tend to increase rapidly [12]. However, an increase in the life expectancy does need a high quality life for elderly and people with disability.

The second issue is people with disabilities (PWDs). Accessibility in the built environment is increasingly relevant to Malaysia, not only to prepare for the ageing population, PWDs but also the whole population at large. By year 2050, the ageing population in over 65 years in Malaysia would be 15%.

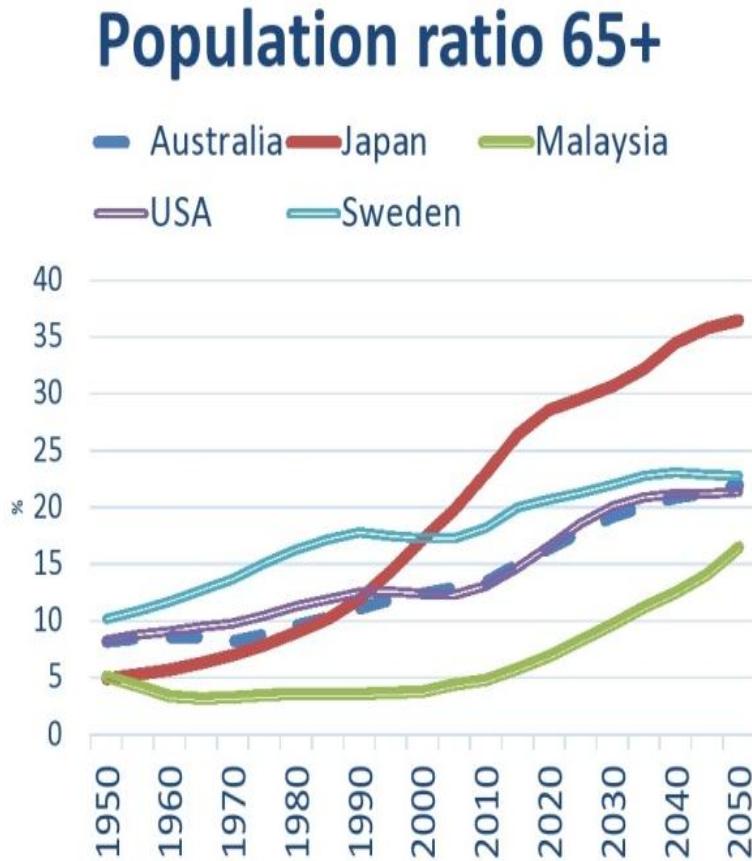


Figure-2. The population ration
(Source: The Centre for Universal Design [6])

5. METHODS

Both qualitative and quantitative methods will be applied, by using descriptive analysis. Data collection was made via direct observation using access audit checklist. The access audit checklist was created to be based on the Malaysian standards to assess the fit between the building users and the built environment. Focus group will be interviewed includes people with mobility impairments, wheel chair or crutches users, visual and hearing impairment. Interviews will also be carried out with people with disabilities. In addition, a questionnaire is undertaken to evaluate the accessibility through the case study, identifying all barriers and issues to be resolved. Besides, this paper will present the data gathered from the part of access audit and observations from three different case studies of shopping malls two in Kuala Lumpur and the other one in Putrajaya.

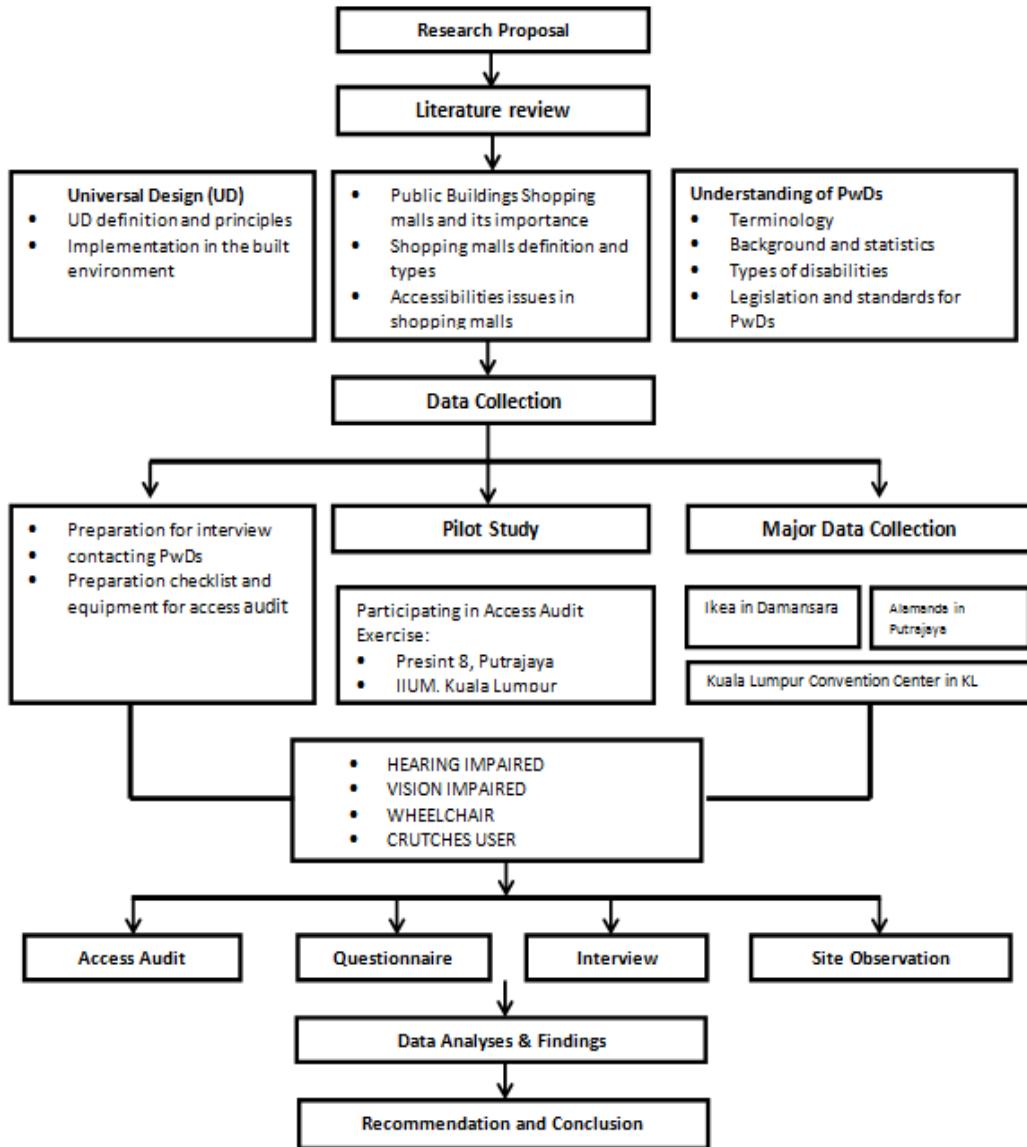


Figure-3. Illustrates the research process to accomplish its aim and objectives.

6. CASE STUDIES

The three case study buildings are located in Malaysia, two case studies in Kuala Lumpur and the other one in Putrajaya. To provide better accessibility in the city, buildings in Putrajaya were built in accordance to Malaysian Standards for accessibility; MS 1184:1991 Code of Practice on Access for Disabled People to Public Buildings, and MS 1331:1993 Code of Practice on Access for Disabled People Outside Buildings. Nonetheless, the buildings' accessibility needs to be revisited due to some revisions which have been made to those standards since the construction of Putrajaya commenced in 1996 [18]. The shopping malls which were approached for this study, have given permission for researcher to conduct access audit in their buildings. The three public

buildings being assessed in this 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-5. Shopping malls' information

Building	Year Built	Type
Suria KLCC	1998	Super regional centre
Alamanda	2004	Regional shopping centre
IKEA	2000	Community centre

6.1. First Case Study



Figure-4. Suria KLCC

The largest retail asset In Malaysia. Suria KLCC is Malaysia's premier shopping Centre, located at the base of the Petronas Twin Towers in the Kuala Lumpur City Centre. It has over 400 stores, with anchor tenants Isetan, Parkson Grand, Cold Storage supermarket, its Opening date May 1998 and total retail floor area 1,500,00 square feet (140,000 m²) with six floors.

6.2. Second Case Study

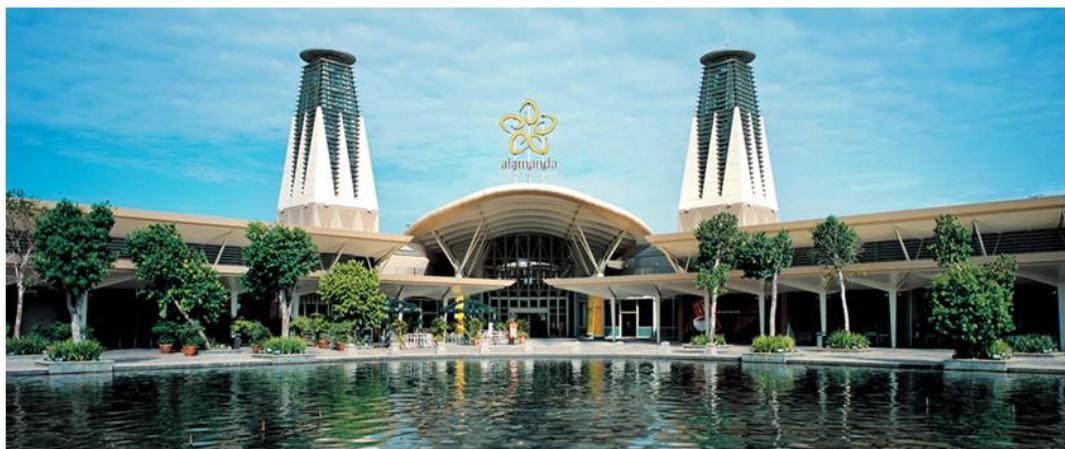


Figure-5. Alamanda Putrajaya

The first shopping Centre (regional shopping center) built in Putrajaya, Malaysia. Is named after "Allamanda Obesum"; a local five-petal, yellow colored flower and Alam anda is also the Malay inflection for one's place or environment. It opened at the end of August 2004. Alamanda Shopping Centre has retail spaces of 700,000 sq ft (65,000 m²). The mall covers a gross area of approximately 1.2 million square feet and is spread over a 27-acre site. The design is a modern assembly of lightweight roof structures offset by a typically solid body and base as is associated with this building type. The two and a-half storey mall with a 'Y' plan configuration is equally divided into 3 major destination nodes anchored by selected major tenants. 4 beacons, resembling traditional minarets, tower over the spanning retail podium promoting a strong sense of hierarchy and presence among the surrounding developments. Retail, Dining and Entertainment are seamlessly threaded throughout, both internal & external, by means of physical and visual ties.

6.3. Third Case Study



Figure-6. IKEA Damansara

IKEA stores are usually very large blue buildings with yellow accents (also Sweden's national colors). They are often designed in a one-way layout, leading customers counter clockwise along what IKEA calls "the long natural way" designed to encourage the customer to see the store in its entirety (as opposed to a traditional retail store, which allows a customer to go directly to the section where the goods and services needed are displayed). However, there are often shortcuts to other parts of the showroom. The sequence first involves going through furniture showrooms making note of selected items. The customer then collects a shopping cart and proceeds to an open-shelf "Market Hall". Finally, customers pay for their products at a cash register.

7. ANALYSIS AND FINDINGS

From the site observation and access audit, the level of accessibility of the three buildings can be summarized as in Table 7. Each facility; bus and taxi stop, parking space, pedestrian walkways, ramps, guiding blocks, curb cuts, main entrance, doors and doorways, corridor and interior pathways, information counter, stairways, elevators, praying room and ablution area, signage, accessible restroom and overall building's; was given a score between 1 to 5 based on their level of compliance to design requirements from Malaysian Standards for accessibility. The overall level of accessibility was indicated in the percentages of full facilities score. From the table, it is shown that Suria KLCC is more accessible than the other two buildings, while Alamanda is the least accessible among the three buildings. Suria KLCC, which was opened in 1998, recorded 78.82% of accessibility. Ikea, which was built in 2000, recorded 75.29% of accessibility and the newest building, Alamanda, which was built around 2004, recorded only 71.76% of accessibility in this audit access. Among these three buildings, facility with the best compliance to MS codes is the accessible parking, while the facility with the least accessibility is the Guiding blocks.

Table-6. Findings the Level of Accessibility in Klcc, Alamanda and Ikea of direct observation using access audit checklist

Buildings	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	Score Out of (85)
SURIA KLCC	5	4	3	1	4	4	4	5	5	4	5	4	4	4	4	3	4	67 (78.82)
ALAMANDA	4	4	3	1	4	3	4	4	5	1	4	4	4	5	4	3	4	61 (71.76)
IKEA	5	4	5	2	3	4	2	4	5	4	4	5	4	4	2	3	4	64 (75.29)

Legends for score:

Score	Description
1	Poor /All requirements are not met / facility is not provided even though it is necessary
2	Satisfactory /25% of the requirements met
3	Fair/50% of the requirements met
4	Good /75% of the requirements met
5	Excellent /All requirements met / facility is not provided, but it is not necessary

Legends for environments

External Environment	Internal Environment
a) Accessible Parking b) Pathways/Pedestrian c) Bus and Taxi stop d) Guiding blocks e) Curb cuts f) Building's Signage	g) Main entrance h) Doors i) Corridors and Interior Pathways j) Reception & Information Counters k) Stairs l) Ramps m) handrail n) Elevators/Lifts o) Musolla / Prayer Room and Ablution Area p) Ablution room q) Toilets

8. CONCLUSION AND RECOMMENDATION

In a conclusion, the findings show that general access and accessibility to the selected case studies of shopping malls are at satisfaction level. The three assessed buildings represent one of the best examples in Malaysia in term of accessibility, and with minor changes of the physical barriers that identified throughout the study could be minimized if not totally omitted to serve PwDs a better quality of live in line with the concept of a caring society that Malaysian are nurturing. The level of satisfaction and perception of participants on accessibility for the three case studies selected vary based on types of disabilities of the PwDs; it showed that the building become accessible when building owners take good initiative to provide a more inclusive environment that cater the needs of a broader range of users including PwDs. From site observation proves that extra attention in providing good accessibility and connectivity within buildings and outside areas are reflected in the policies and guidelines thus the design for the wheelchair users, and other PwDs are considered. However it is recommended that more concern related to facilities to sensory disabled people, children and the aged to be considered. It is recommended that more seats should be provided for the aged at the three shopping malls.

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