



UNIVERSITI
TEKNOLOGI
MARA

F|S|P|U
FACULTY OF ARCHITECTURE,
PLANNING AND SURVEYING

FULL PAPER
PROCEEDING



3RD UNDERGRADUATE
S E M I N A R
BUILT ENVIRONMENT & TECHNOLOGY

SEPTEMBER
2018

ISBN 978-967-5741-67-8

FACULTY OF ARCHITECTURE, PLANNING & SURVEYING
UNIVERSITI TEKNOLOGI MARA PERAK BRANCH
SERI ISKANDAR CAMPUS

UiTM PERAK @ *Seri Iskandar*

APPRAISAL OF ABLUTION STATION AT MOSQUE FOR PEOPLE WITH DISABILITIES: LEARNING FROM THE PAST, DESIGNING FOR THE FUTURE

Nur Aqilah Azahar¹ and Md Azree Othuman Mydin²

^{1,2} Cluster of Technology, School of Housing, Building and Planning, Universiti Sains Malaysia, 11800, Pulau Pinang, Malaysia

Email: aqilahazahar95@gmail.com¹, azree@usm.my²

Abstract:

A mosque is not only something that will normally use by Muslims but it will be visited by various kind of person including handicapped people. Therefore, a mosque must be universally designed to cater all kinds of users, including People with Disabilities (PWDs), the elderly and not to forget children. In this case, facilities is a must thing that should be considered while designing the mosque especially ablution. For followers of Islam, ablution is a state that is prerequisite for praying. This research is aiming to identify the present of design of feasible and user-friendly ablution station at the Mosques in state of Penang for People with Disabilities (PWDs). There are two methodologies will be used in this research to collect all related data. The first one is Access Audit. This method will be used in order to know the current condition and facilities that are being provided in the ablution station at the mosque. The next is semi-structured interview which in purpose to collect all the data related to the mosque from persons or committee that responsible for it. Results from the case studies had shown that there are many important element that need to be provided in the ablution area for PWDs especially seats, water taps, finishing materials such as accessories like handrails, signs for PWDs as well as barrier provisions.

Keywords: Ablution station, Accessibility, Design, Disabled person, Mosque

1.0 INTRODUCTION

Almost every country in the world has a minority that follows Islam. As a relatively high percentage of Muslims regularly practice their religious duties, including prayers, there are always need to be design, build, and maintain mosque in various parts of the world (Dawal, 2016). Many designers, who may or may not be Muslims, are assigned the task of designing either a mosque or –as in many Islamic countries – a praying facility that is part of shopping mall, an exhibition hall, an airport or other public building (Ramli, 2017). As they did for other building types, those designers use common reference books and some specialized books to acquire the needed design data. (Mokhtar, 2005). A mosque must be universally designed to cater all kinds of users, including People with Disabilities (PWDs), the elderly and children. (Asiah, 2014). To be in such a state, a person need to perform certain actions in certain sequence. This is referred to as the ablution process (Afridi, 2011). However, certain actions terminate such a state. Therefore, there will always be a portion of the praying area users who need to perform ablution before praying. (Mokhtar, 2003).

2.0 LITERATURE REVIEW

Disability is a condition that is considered to reduce one's function or capability when compared to the ordinary size of society. This term is usually used to refer to individual functions such as physical, sensory, cognitive, intellectual or mental health disadvantages (Kamaruddin, 2012). This use is associated with a medical disability model, and not a social or human rights abuses model. These attempts may occur from birth or later. Those who suffer from this condition are called People with Disabilities (Niya, 2015). Some people use the term special people. (Al-Mansoor, 2016). Disabled person refers to person with a physical, hearing or sight impairment or any combination thereof, which affect their mobility to

their use of buildings and related amenities (Asiah, 2016). PWDs can also be classified into four categories which is visual disabilities, physical disabilities and mental disabilities (Afridi, 2011). Most of the existing praying facilities design guideline developed by some countries focus solely on the appearance of the praying facilities while ignoring proper design of supporting spaces such as toilet and ablution area (Bashiti and Asiah 2015).

3.0 METHODOLOGY

For this research, there are two methodologies for this research that will be apply which is site assessment and access audit also semi-structured interview. This research has been carried out at several mosques around the area Gelugor, Georgetown and Bayan Baru, Pulau Pinang to make observations on accessibility in mosques. Next, through semi-structured interviews among the respondents were members of the mosque committee chairman and chief mosque and people with disabilities (PWDs) who are in the area. The research location is at the Penang island area only. There were total of 196 mosque in total Penang state of five main region which is Barat Daya District, Timur Laut District, Seberang Prai Utara, Seberang Prai Tengah and Seberang Prai Selatan.




Generally, this research focused on mosques in state of Penang Island only which contains the region of Barat Daya District have 62 mosque and Timur Laut District have 35 mosque with the total of mosque is 97 and be rounded almost to 100 unit of mosque. By means of non-probability sampling, 10% of the total mosque in Penang Island had been chosen to be assessed. Then 10% from almost 100 mosques in the island resulting in 10 mosques had been used for this study. This audit collected all the details information about assess on how well the ablution station will work for disabled people. All the dimension of facilities provided and entire supporting facilities provision had been taken into consideration to be measured and recorded in the Ablution Area Evaluation Form.








The interview within committee contained some background question which included history of the mosque, general facilities provision, specific facilities provision for PWDs, activities that can be done by the PWDs, any event or emergency involved PWDs at ablution station before this, awareness of the needs of PWDs at ablution station and any of them has attended any awareness program regarding the needs of PWDs. The interview also been conducted towards PWDs and elderly to gather the information about level of satisfaction of facilities provided at ablution station in the mosque. This research focused only for 10 mosques located in Penang Island. The age of the mosques not been considered as this research is more concentrated on ablution stations

4.0 DATA COLLECTION

Table 1 consist of brief information of selected mosque around the Penang Island.

Table 1: Brief information of selected mosque

No.	Mosque	Picture
1	MASJID KAPITAN KELING, GEORGETOWN Located at the corner of Buckingham Street and Pitt Street, Georgetown. It was built in 19th century by India Muslim traders. It was not rebuilt but only enlarged which doubling the height of the central prayer hall.	
2	MASJID MAQBUL, SUNGAI PINANG Also called Masjid Lama Sungai Pinang, is an old Malay mosque at Sungai Pinang, Jelutong. a small 'surau', and was rebuilt in bricks in 1850	
3	MASJID ALIMSAH WALEY, LEBUH CHULIA Located along Chulia Street. Founded by Indian Muslims. In 1803, the Muslim community under the leadership of Hadjee Abdul Cader Alim bought a piece of land on Chulia Street which at that time was called Malabah Street.	

4	MASJID HASHIM YAHAYA, JALAN PERAK Located at Jalan Perak. Owner of the mosque is Hashim Meena Merican bin Yahaya Merican. Built in 1876 and has been renovated for three times and the last one during 1979.	
5	MASJID SUNGAI PINANG, JELUTONG This mosque is newly constructed building along Jelutong Road. It was officiated by the Yang di-Pertuan Negeri, Tuan Yang Terutama Tuan Dato' Seri Utama (Dr.) Haji Abdul Rahman bin Haji Abbas, on 25 July 2008	
6	MASJID SUNGAI GELUGOR, GELUGOR It is the village mosque of the Malay settlement of Sungai Gelugor. On 15 April 2013, this mosque was undergoing construction to replace the old building.	
7	MASJID AL-HUDA, SUNGAI ARA The mosque was completed in 1954. In the 1980s, a new mosque was built beside the original mosque to accommodate the growing number of pilgrims. The idea originally came from the Yang Berhormat Dato 'Ismail Hashim.	
8	MASJID SUNGAI NIBONG BESAR, SUNGAI NIBONG In 1960s, the original building of the mosque was demolished to build a new mosque on the same site. This building was built on the then Prime Minister's contribution, Tun Abdul Razak bin Hussien who used the provisions of the Department of Social Welfare.	
9	MASJID BANDAR BAYAN BARU, BAYAN BARU In 1990s at Bayan Baru district, several surau committee members headed by Cikgu Razali Jamal decided to build a mosque. Some refurbishment work were carried out aimed for enlarging the mosque space.	
10	MASJID AL-MALIK KHALID, USM Located inside Universiti Sains Malaysia's campus. The mosque was originally an Islamic Center known as the Balai Islam and managed under the Student Affairs Division (HEP).	

4.1 Ablution Unit Requirement

Table 2 explain about ablution unit requirement for facilities provided in ablution station at each of the mosque.

Table 2: Ablution Unit Requirement

Factors/ Mosque	Kapitan Keling	Maqbul Sungai Pinang	Alimsah Waley	Hashim Yahaya	Sungai Pinang	Al- Huda, Sg Ara	Al- Malik Khalid	Sungai Gelugor	Bandar Bayan Baru	Sungai Nibong Besar
Seat provision	√	x	x	x	x	√	√	√	√	x
Drain provision	√	√	x	√	√	√	√	√	√	√
Water tap provision	√	√	√	√	√	√	√	√	√	√
Handrail provision	x	x	x	x	x	x	√	x	x	x
Splash barrier provision	x	x	x	x	x	x	x	x	x	x
Non-slippery floor	√	√	√	√	√	√	√	√	√	√
Rams at door for wheelchair	x	x	x	x	x	x	x	x	x	x
Pathway for wheelchair	x	x	x	x	x	x	x	x	x	x
Signs for PWD's	x	x	x	x	x	x	x	x	x	x

4.2 Ablution Unit Dimension

Table 3 elucidates regarding the dimension of facilities provided in ablution station at each of the mosque.

Table 3: Ablution Unit Dimension

Dimension of Mosque	Kapitan Keling	Maqbul Sungai Pinang	Alimsah Waley	Hashim Yahaya	Sungai Pinang	Al-Huda, Sg Ara	Al-Malik Khalid	Sungai Gelugor	Bandar Bayan Baru	Sungai Nibong Besar
Seat provision	30	-	-	-	-	45	42	30	44	-
Drain provision	70	87	60	97	80	98	80	90	89	77
Water tap provision	48	52	60	65	65	85	50	75	78	80
Handrail provision	-	-	-	-	-	-	90	-	-	-
Splash barrier provision	60	60	60	67	65	85	60	77	92	80
Non-slippery floor	40	24	-	22	12	15	22	40	22	30
Rams at door for wheelchair	-	-	-	-	-	-	-	-	-	-
Pathway for wheelchair	-	-	-	-	-	-	-	-	-	-
Signs for PWD's										

4.3 Semi-structured Interview

This interview was conducted to gather relevant information about the ablution station and the selected mosque. The first stage of interview was conducted against mosque committee members to get information such as the background and history of the mosque, activities related to the PWDs at ablution station and also the level of awareness for them. Each question and related answers have been described as follows:-

- Info related to the history of the mosque has been described in the case study section with more details including the location and picture of the mosque.
- Ablution Area Evaluation Form for each mosque explains about facilities provided.
- Most of committee claim they also want to provide maximum safety and accessibility to PWDs who want to use the ablution station.
- The mosque committee also stated that there are no emergency cases have been occurred at the ablution station before this.
- Some mosques like Kapitan Keling and Sungai Gelugor have been conducting activities related to the needs of PWDs such as the banquet in Ramadan for blind people and free meals for PWD once or twice in a month.
- Second stage of semi-structured interview was conducted on the PWDs. This interview was to find out their level of satisfaction with the ablution station provided at the mosque. Some simple questions related to the main facilities such as provision of handrail and seat, visual recognition, splash barrier, water tap provided and their level of satisfaction with the facilities have being asked.

5.0 RESULTS & DISCUSSION

5.1 Users (PWDs) Satisfactory Interview

The second stage of interview which 20 respondents (from the PWDs category) were randomly selected to answer some questions related to facilities provided at the ablution station inside the mosque. The

question will be focuses on some of the main facilities only which includes the provision of seat, handrail provision, water tap and also visual recognition in ablution space. Respondent behaviour such as their frequency comes to the mosque and their level of satisfaction of total facilities will also be asked. Out of the total number of these 20 respondents, 10 of them were physical impairment users where they need to use supporting tools (sticks) to move, 4 of them were wheelchair users, one hearing impairment and the rest are elderly. Most of them actually comes to the mosque almost every day due to different reason. When they been asked about the level of satisfaction of total facilities provided in the ablution station, only some of them answered that they were satisfied while the rest are not satisfied due to many design become a total barrier for them to use.

5.2 Quality Classification Data

Based on data collection, analysis and some feedback from the users, there are many important element that need to be provided in the ablution area for PWDs especially seat, water tap, finishing materials including accessories such as handrails, signs for PWDs and barrier provision. Table 4 shows some of basic qualification for each of facilities that should be provided for PWDs to use.

Table 4: Quality Classification Data

FACTORS	QUALITIES	DESCRIPTION
Access and Doors	Ramps and pathways for wheelchair users	Ablution should be easily accessible, especially for physical challenged users. Ramps should be provided at a slope of 1:12. Approaches to entrance should enable easy maneuvering for wheelchair users.
Accessories	Seat provision Seat height Handrail provision Handrail height Handrail to-seat-distance	To support physical condition of elderly/disable Suitable to be seated and used with water tap and handrail To support physical condition of elderly/disable Suitable for various body height and size
Water Tap	Water tap height Water tap distance-to-user	Suitable for various body height and size. Easy to be reach from the seat. It is better to use water tap that can save more water.
Sink/Lavatory	Sink provision Sink height Sink distance-to-user	To ease the movement while taking the ablution action Suitable for various type of PWDs/elderly to use Easy to be reach by all kind of body size and height
Splash Barrier	Barrier provision Barrier height Barrier width	Prevent water to splash towards users Protect user from getting wet
Finishing Material	Non-slippery floor	Avoiding instability during users pass through it. Due to the existence of water and wet condition, slipping may occur which using rough material is the best to use but must follow consideration stated. Material must be easy to clean and maintain and resistance to any bacteria
Signs	Sign's for PWDs	Suggested to inform the users of ablution location. The size of signs depend on maximum distance user expected to see. Recommended dimension for small sign is 150mm x 150mm.

6.0 DESIGN PROPOSAL

By taking into consideration result from data collection and analysis, a new ablution station design with proper dimension will be proposed. This design have being improvised into ergonomic ablution station to cater all kind of disabilities and elderly and also to provide comfort for them while using it. Figure 1, 2 and 3 show the design proposal of ergonomic and feasible ablution station for PWDs together with its specification for wheelchair users (Figure 1), for visual impairment and elderly (Figure 2) and for combination of both (Figure 3).

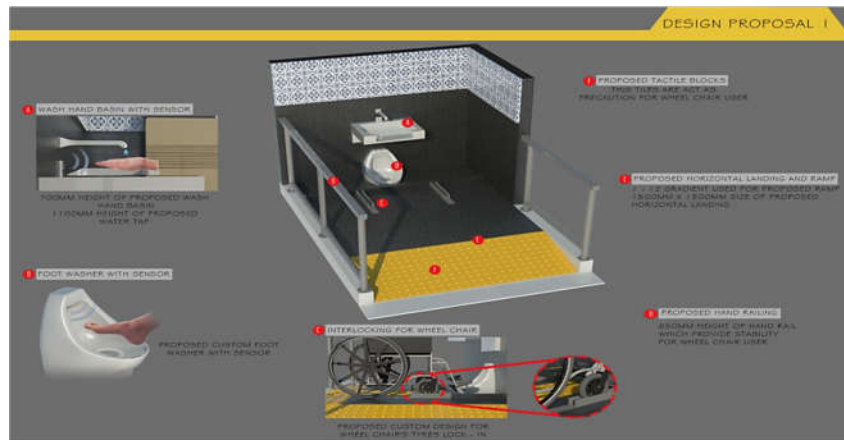


Figure 1: Design Proposal for wheelchair users

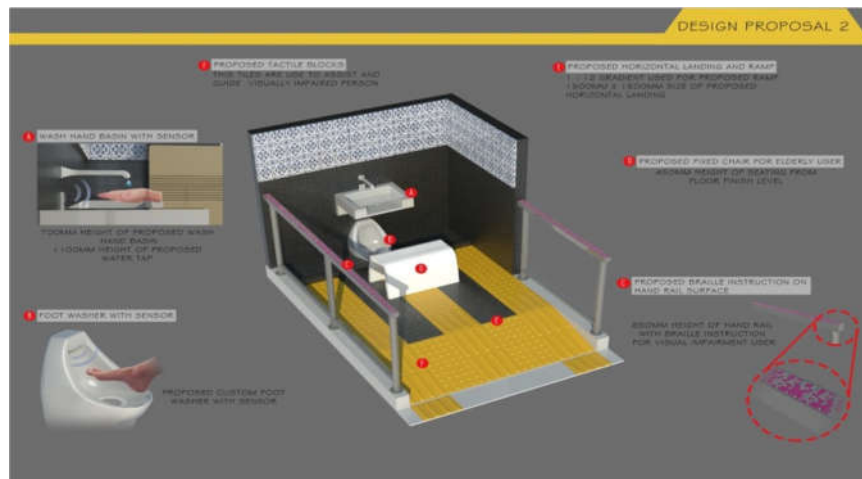


Figure 2: Design Proposal for visual impairment and elderly

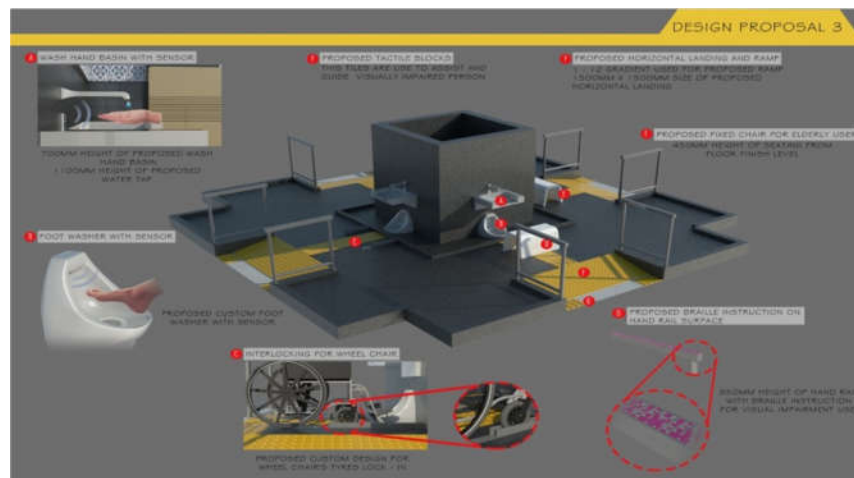


Figure 3: Design Proposal for combination of both

7.0 CONCLUSION

This research aims to identify the design of an ergonomic, comfortable as well as practical ablution station to be used by the PWDs. This research also explore an idea on how to produce a solution for the

problems experienced by previous PWDs when they wanted to use the ablution station at the mosque. With some improvements to existing designs, we are able to produce ablution stations that capable of accommodating every type of disabilities. Overall, the selected mosque shows that there are still many deficiencies that need to be improved in generating universal designs that can only be used by ordinary people but also for PWDs and elderly.

REFERENCES

- Bashiti A. & Asiah A.R, (2015). A study on the Accessibility in Shopping Malls for People with Disabilities (PWDs) in Malaysia. *International Journal of Natural Science Research*, Volume 3, Issue 1, pp. 9-20, 1-12
- Mokhtar A., (2003). Challenges of Designing Ablution Spaces in Mosque. *Journal of Architectural Engineering*, Volume9, Issue 2, pp. 55-61
- Mokhtar A., (2005). Design Guidelines for Ablution Spaces in Mosque and Islamic Praying Facilities. *Journal of Architectural Engineering*. pp. 1-16
- Dawal S.Z, (2016). Wudu' Workstation Design for Elderly and Disabled People in Malaysia's Mosque. *Iran J Public Health*, Volume45, Issue 1, pp. 114-124, 1-11
- Niya M.D., (2015). Significance of the Application of Universal Design in Mosque Buildings in Malaysia. *Applied Mechanics and Materials*, Volume 747, pp. 72-75
- Asiah A.R, (2015). Universal Design, Accessibility and Social Responsibility in the Built Environment. *Seminar Hari Tandas Sedunia*, pp. 22-55
- Asiah A.R, (2014). Providing Accessibility for Person with Disabilities (PwDs) In Malaysian Existing Mosques. pp. 5-8
- Asiah A.R, (2016). MS1184:2014 Universal Design and Accessibility in the Built Environment. Code of Practice (Second Revision), Access audit in the Built Environment, pp. 9-51
- Al-Mansoor N.F., (2016). Universal Mosque/Masjid Design. *Universal Design 2016: Learning from the Past, Designing for the Future*, pp. 277-281
- Afridi M.A, (2011). Contribution of Mosque Towards Building Malays Society: A Case Study on Masjid Wilayah Persekutuan, Kuala Lumpur. Paper presented at the International Conference on Islamic Civilization and Malay Identity Kuala Lumpur, pp. 7-11
- Kamaruddin H., (2012). The Implementation of the Malaysian Standard Code of Practice on Access for Disabled Person by Local Authority. *Procedia-Social and Behavioural Sciences*, pp. 50, 442-451
- Ramli R., (2017). Accessibility of Facilities Provision for Person With Disabilities in Mosque. e-Proceeding National Innovation and Invention Competition Through Exhibition, pp. 1-10