

Availability and Accessibility of Physical Facilities Provision that Support PWDs

Ng Wee Fern, Rozilah Kasim, Mohd Idrus Mohd Masirin

Abstract: This document describes well the data analysis and document review results in order to guarantee that the structures comply with the building regulations. In addition, measurement and photography observations were done to determine the availability and accessibility of people with disabilities (PWDs) using facilities in Universiti Tun Hussein Onn Malaysia (UTHM). Besides introducing the process and function of the study, it also stating clearly the first research objective to be analysing. Furthermore, this paper presents the research framework highlight on research objective 1 that is to determine the physical facilities provision that support availability and accessibility for PWDs at UTHM.

Keywords: availability, accessibility, PWDs

I. INTRODUCTION

The method or instruments used in this study are the by-products of quantitative and qualitative research. Creswell and Clark (2011) describe this method as a design, which involves at least one quantitative method (design to collect numbers) and one qualitative method (design to collect words). The research used qualitative method with observation, measurement, photography and document review are which is qualitative in nature used in this result to find out the availability and accessibility physical facilities for PWDs, explore with the enacted regulation and existing standards. A positive safety culture cannot be bought; it is not a manual, a program, a video or a canned presentation (Simon & Frazee, 2005). Observation via checklist, measurement with charted architect, photography on physical facilities for PWDs toward ninety-nine (99) buildings has been conducted along the research period. There are number of facilities PWDs provided in UTHM but inaccessible and mostly the specifications are not according to enacted regulation and standard such as Malaysia Standard and Universal Design.

II. METHODOLOGY

There are two primary types of research design, namely qualitative and quantitative. However, according to Yin (2011), qualitative method can be used to complete a research based on the nature of research.

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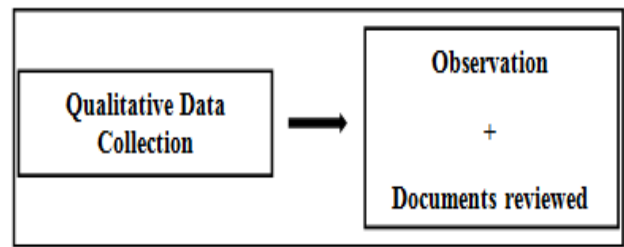


Fig. 1 Qualitative Data Collection Structure to evaluate the facilities provisions for PWDs at UTHM

There are two types of observations namely participating observation and non-participating observation, for which the latter type is commonly applied in qualitative research. For non-participant observations, the observer is not directly involved in any observed situation. In this study, observation via checklist, measurement with charted architect, photography on physical facilities for PWDs toward ninety-nine (99) buildings has been conducted along the research period. Attachment charted architect in three (3) months shown in Table 1. The details of checklist observation such as Table 2.

Table. 1 Details of observation (Field study, 2017)

No.	Particular	Details
1.	Date of observation	a. May and September of 2017, b. June of 2017 c. July of 2017
2.	Duration of observation	Each observation taking three hours to complete

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Table. 2 Results for disabled facilities at main building and infrastructure

NO	Description	Yes / No
1.	Car park	
A.	Is the surface levelled with anti-resistance?	No
B.	Are the car park lots painted with contrast colours or sign to differentiate with others?	Yes
C.	Is there provided sufficient area for accessibility?	No
D.	Are the pedestrian lanes provided?	No
E.	Are the car park lots located at accessible area?	Yes
F.	Is the car park lots located at well ventilated and clear light area?	No
G.	Is the picking up and dropping off area provided?	No
2.	Pathways	
A.	Is there sufficient space for wheelchair users to manoeuvre?	No
B.	Are the pathways well connected?	No
3.	Ramp and kerb ramp	
A.	Is the surface levelled with anti- slip?	No
B.	Is the ramp width enabling for wheelchair users to access?	No
C.	Is the gradient of ramp proper provided?	Too steep
D.	Are the handrails provided?	Yes
4.	Guiding block	
A.	Are the guiding blocks provided?	Yes
B.	Are the guiding blocks placed at proper places?	Yes
5.	Handrail	
A.	Is the handrail presented in firm and comfortable grip texture?	No
B.	Is the plate Braille available at beginning and end of handrail?	No
C.	Is the handrail painted with contrast colours with surrounding area?	No
D.	Is the handrail provided at proper height?	No
6.	Staircase	
A.	Is the staircase painted with sharp colours?	No
B.	Are the nosing illuminated or protruded?	No
C.	Are the handrails provided?	Yes
7.	Lift	Yes / No
A.	Is there sufficient space for wheelchair users to manoeuvre?	Yes
B.	Is the lift located at accessible places?	Yes
C.	Is the doorway width enabling for wheelchair users to access?	Yes
D.	Is the lift door indicated in bright colours with surrounding wall?	Yes
E.	Are the Braille types label buttons presented?	Yes
F.	Is the lower internal operating panel presented?	Yes
G.	Is the handrail installed?	No
H.	Are the visual and voice indicators installed?	No
I.	Is the lift floor covered with non-slip material?	No
8.	Doorways	
A.	Is the doorway width enabling for wheelchair users to access?	Yes
B.	Is the threshold levelled with kerb ramp?	No
C.	Is the mechanism door provided at entrance?	No
9.	Signage	
A.	Are the directions clear indicated?	Yes
B.	Are the signage lit at night?	Yes
C.	Are the signage used contrast colours to differentiate the figure from background?	Yes
D.	Are the signage placed at proper places?	Yes
10.	Toilet	
A.	Is the doorway width enabling for wheelchair users to access?	Yes
B.	Is there sufficient space for wheelchair users to manoeuvre?	No

C.	Are the handrails provided?	No
D.	Are the emergency fittings provided?	No

Analysis on Specifications of PWDs facilities provision at UTHM

Threshold ramps

Lecture Hall A, ramp length is 1400 mm and landing surface is 3900 mm Lecture Hall, the ramp length is 5300 mm and landing surface is 4700 mm All ramps in UTHM. It is too long and will cause wheelchair users to collapse.

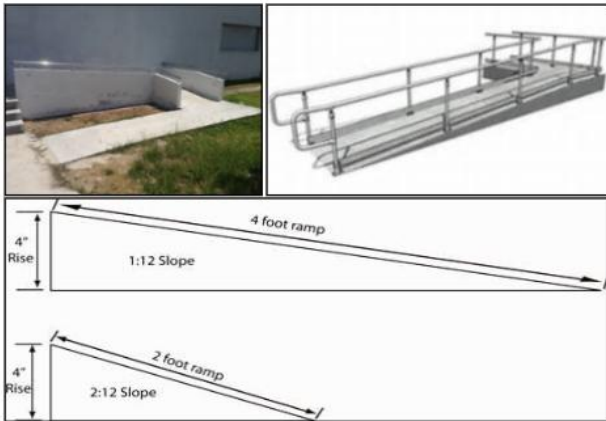


Fig. 2 Steep and Gradient Ramp

Accessible Entrances

Inaccessible for entrance door, toilet door and lecture hall. Entrance doors are not easily open as it requires more force to open. Experiment had been done by using ergonomic test kit; the door had to push by using 90 N to 100N. At the leading edge, the highest strength for an individual to manually handle a self-sealing door cannot be larger than 20 N. However, this condition disputes to the fire safety standard BS EN 1154 Table 1. This means that door sealers of size three –EN 3- & above should be used on fire doors, needing a closing power of 20N, equal to an opening power of 36.35 N (Figure 3).



Fig. 3 Door & Entrance

Passing and Turning spaces

The corridor at the entrance is also narrow and angular. It will cause them an inconvenience every time they enter and exit the lecture hall and Administration buildings (125cm x 150 cm) shown as Figure 4.

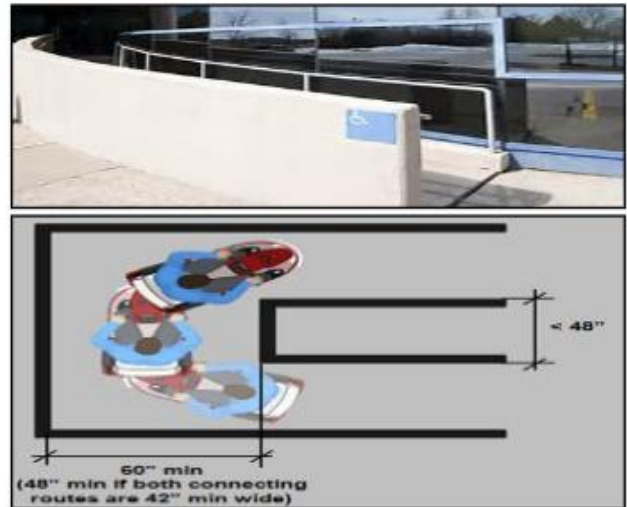


Fig. 4 Passing and Turning Space

Car parking

The measurement parking lot in UTHM fulfilled the standard but there were no kerb ramp install outside access aisle.



Fig. 5 Side dox Flooring

Wheelchair seating spaces in auditorium

As referred to in the Malaysian Standard, wheelchair user spaces should be given in ratio 1 space to each 200 seats, or publicly available, with a minimum of 2 spaces for wheelchair users. However, there are no lecture hall in UTHM were provided with the special space for wheelchair user. As Figure 6, there is just a small space at front of the lecture hall, near to lecturer table which possible for wheelchair students to access the lecture.



Fig. 6 Wheelchair seating spaces in auditorium

Lifts

Significant additional prescription has been included on the uses (and usage limitations) of various lifting devices. To detect passengers and control the gate, a photo-electric sensor must be installed. (Figure 7)

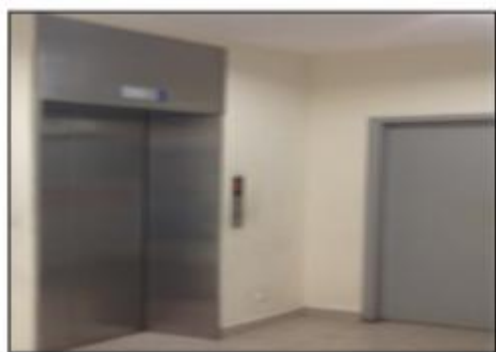


Fig. 7 Photo- electric sensor

Sanitary

The measurement of water closets from Block E and near Lecture Hall A were taken. As referring to Malaysian Standard, the water closets, handrail and grab bar are not fulfilling the MS. Figure 8 were shown the different between the measurements. Figure 8 shown different between the standard and provided by UTHM.



Fig. 8 Water Set

Accessible links between buildings.

From the observation, links between buildings are in good condition. There is roofed pathway between block B, cafeteria and Block E that fulfill the standard as shown in Figure 9, but the floor is not really suitable especially rainy day.



Fig. 9 Flooring

III. RESULTS AND DISCUSSION

The findings shown the implementation enacted legislation toward the availability facilities PWDs in UTHM is not fully implied and it also shown sixty-two (62) buildings totally without any physical facilities provided, only nine (9) buildings complete with physical facilities PWDs, five (5) buildings with 3 point scored and fifteen (15) buildings with 1-point score. There are four (4) indicators of physical facilities PWDs, Toilet, Parking, Ramp and lift (another 5 indicators never provided in UTHM) which carry 1 point each. The full point is 4. For the observation and checklist investigation resulted only 9.09 % buildings UTHM fully provided the facilities, 21.21% partly provided facilities PWDs and 62.63 totally did not provided physical facilities to PWDs in UTHM.

IV. CONCLUSIONS

Upon basis of all analytical results and extensive discussion conclude that all research questions and objectives achieved in this chapter. For first research question and objective: To determine the physical facilities provision in UTHM focusing on availability, accessibility, specification identified existing facilities and layout of person with disabilities in UTHM were categorised into overall nine (9) specification physical facilities according to



Malaysia Standard and Universal Design, namely as:

- i) Threshold ramps
- ii) Accessible Entries
- iii) Passing and Turning spaces
- iv) Car parking
- v) Wheelchair seating spaces in lecture hall
- vi) Glazing Special safety arrangements
- vii) Lifts Significant added prescription on the uses (and limits to use of) various lifting devices has been included.
- viii) Sanitary facilities for people with ambulant disabilities for each sex are proposed to be necessary at each toilets bank where two or more toilets are provided. Including grab bar, suits, alert bell etc.
- ix) Accessible links between buildings.

This answered the first research question and objective: Do the provisions of physical facilities in UTHM support PWDs? To determine the physical facilities provision that supports availability and accessibility for PWDs in the area of case research. At the end of the chapter, the first objective was satisfied, along with finding answers for the first research question as well.

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