Inclusive Campus Design in Islamic Institution

Arif Budi Sholihah[1]

[1] Department of Architecture, Universitas Islam Indonesia, Yogyakarta

Abstract

Designing an inclusive campus is an evolving process. Each educational institution has varying levels of awareness of the importance of inclusive campus design. As the highest public educational institution that follow Islamic values, Islamic University has a strategic function to serve as a benchmark for providing more inclusive facilities. This study will explore the process and challenges to implement inclusive design in its buildings in Universitas Islam Indonesia (UII) Yogyakarta. To understand how inclusive design has been implemented in the UII Main Campus facilities, qualitative methodologies were employed, including field observations, access audits, and interviews with key stakeholders. The results indicate that awareness of the implementation of inclusive design at the UII Main Campus develops gradually alongside the availability of universal technical accessibility and design standards and the growth of an understanding of their significance. The finding shows that the younger the generation of buildings, the more inclusive the designs.

Keywords: *inclusive design; Islamic values; Islamic institution*

Introduction

One of the visions of Higher Education institutions is to implement an inclusive campus to everyone without differentiating their physical ability and background. Campus design is an essential factor in supporting campus inclusivity. Heylighen et al. (2017) underline the importance of inclusive design in environment building that needs a more holistic approach. The embodiment of inclusive campus design needed to be emphasized not only to comply with the design standard (Scott et al., 2018).

Research regarding inclusive design in campus buildings has not been carried out comprehensively, but it seems rather partial, for example Kurniawan et al., (2014) regarding the

accessibility of campus libraries, Ulman Idris (2023) regarding pedestrian campus areas, and Indriani & Marlina (2020) regarding learning spaces. Awareness of the importance of inclusive campus design varies in Indonesia. The initial observation shows only a few campuses have implemented inclusive design in their buildings. There are still many campuses that are completely unaware and accept students, especially those with disabilities, at their institutions.

In the Indonesian context, PUPR Ministerial Regulation No. 14 of 2017 concerning the accessibility of campus buildings is the juridical basis for creating a more inclusive campus environment. The concept of inclusivity is essential in Islam. Many people have the opinion that Islam is more exclusive, but actually, Islamic teachings emphasize the fair and just treatment of all individuals, irrespective of their backgrounds or abilities (Qodir et al., 2017). This aligns with the fundamental concept of inclusive design, which

Correspondence: Arif Budi Sholihah
Department of Architecture, Universitas Islam Indonesia, Yogyakarta
E-mail: arif.sholihah@uii.ac.id

aims to create environments that are accessible and usable by all without discrimination.

Thus, it is very important to carry out research on the extent to which inclusive design on Islamic campuses has been implemented. Higher education institutions as educational facilities at the highest level should not be ivory towers that cannot be approached, accessed and used by all users. Moreover, in the Islamic context, higher education institutions should be symbols to emphasize the fairness and justice of all individuals regardless of physical ability and background.

This research will examine the process and challenges of implementing inclusive design on the UII main campus and to address the design recommendation on inclusive design among similar types of building function. This research is also endeavoring to contributes to address the role of Islamic institution that has the responsibility to be more inclusive, especially in the context of architecture and built environment. From these findings, we can learn about what aspects and how to implement inclusive design in higher education institutions, both those that apply Islamic values and those in general.

Literature Review

Inclusive Design in Higher Education

The implementation of an inclusive environment on campus is a long journey that involves alignment, policy, planning, design, and construction (Black et al., 2014; Moriña, 2017). The concept of inclusive design is in line with the ideas of universal design and accessible design, which aim to create an environment that can be used by more users who have different needs and abilities (Persson et al., 2015). Even though universal design and inclusive design each have their own emphasis, in principle the two concepts have something in common, namely to create a design that can be used by more users regardless of their physical abilities or background.

Inclusive design in the campus environment provides benefits to all academics, not only disabled people but also all campus users. The level of walkability in the campus environment is greatly influenced by the level of accessibility, security, and comfort (Ulman Idris, 2023). Most students agree with the development of learning materials for disabled students and adequate facilities and infrastructure for disabled students (Indriani & Marlina, 2020). Moreover, the well-being of disabled students is greatly influenced by policy factors and an inclusive campus environment (Wahyuni et al., 2023).

Research on the implementation of inclusive design in higher education institutions has been carried out, for example, regarding classroom facilities (Fink & Hummel, 2015; Morningstar et al., 2015), pedestrian paths (Ulman Idris, 2023), and sports and recreational facilities (Shapiro et al., 2020). However, the campus as a complex facility needs to be studied more about facilities towards the implementation of inclusive design.

Islamic Values and Inclusive Design

In the Islamic context, the theological basis for the implementation of inclusive design is found in the Al Qur'an, Surah Abasa, verses 1-16, which expresses the story of Prophet Muhammad PBUH, who had a sour face and turned away when one of his friends, namely Abdullah bin Umi Maktum, who was blind, raised his hand to ask the Prophet. Even though at the same time, the Prophet was in the middle of a meeting with the Quraish officials who were expected to convert to Islam. Allah SWT immediately rebuked the Prophet's attitude by sending down the Surah Abasa, namely: "He (Muhammad) turned sour and turned away because a blind man had come to him. Do you know that he wants to cleanse himself (from sin) or he (wants) to receive teaching so that the teaching benefits him? As for the person who feels that he is sufficient, then you serve him. Even though there is no (excuse) against you if he does not cleanse himself (belief). And as for those who come to you hastily (to

receive instruction). While he fears (Allah), then you ignore him. Never do (that)! Indeed, God's teachings are a warning, so whoever wishes, he will certainly pay attention to them, in the books which are glorified, exalted, and purified, in the hands of the authors (angels), who are noble and devoted.

The story of Prophet Muhammad PBUH and Abdullah bin Ummi Maktum provides a direct lesson that we must treat all groups in society fairly, regardless of physical ability or background. Islamic teachings highly uphold the principles of justice and mercy towards everyone (Qodir et al., 2017).

In the context of design, Islamic architecture is a vast and rich domain with various understandings of design elements. The relationship between Islamic architecture and inclusive design is a topic that is increasingly developing and essential to study. This can be seen, for example, in the context of mosque design. Mosque design plays a vital role in encouraging inclusiveness in Islamic societies. One example is the embodiment of inclusive design in the large mosque in Aswan City, Egypt, which emphasizes creating inclusive and accessible spaces in its prayer rooms (Ahmed, 2022).

**Inclusive Design Standard in Indonesia**

The journey to implement an inclusive environment in Indonesia began in the late 1990s. Starting from the city of Yogyakarta, which promoted inclusive design in public spaces, known as the Malioboro Pilot Project (Ikaputra; Sholihah, 2001). After that, like a snowball process, a movement occurred for awareness of the importance of inclusive design. Currently, inclusive schools have been created, especially at the primary and secondary education levels, in accordance with the mandate of the Republic of Indonesia Minister of National Education Regulation No. 7 of 2009 concerning Inclusive Education. The movement on the implementation of inclusive villages was also launched by the Ministry of Villages, which is explicitly contained in Law No. 2014 concerning Villages. The aim is to provide more comprehensive awareness to society of the importance of an inclusive environment.

Several legal products regarding the inclusive environment begin with the Minister of Public Works and Public Housing Regulation No. 30/PRT/M/2006 concerning Technical Guidelines for Facilities and Accessibility in Buildings and the Environment. This regulation was then refined by the Minister of Public Works and Public Housing Regulation No. 14/PRT/M/2017. In this 2017 regulation, Indonesia explicitly uses the principles of Universal Design as a reference for compiling design guidelines for inclusive physical facilities and infrastructure.

Minister of Public Works and Public Housing Regulation No. 14/PRT/M/2017 has explicitly stated in Article 55, paragraph 9 that campuses are one of the social and cultural facilities that are mandatory to implement inclusive design. Standard design is formulated in accordance with Universal Design principles, namely 1) equitable use, 2) flexibility in use, 3) simple and intuitive use, 4) perceptible information, 5) tolerance for error, 6) low physical effort, and 7) size and space for approach and use as seen in Figure 1.

Figure 1. The Principles of Universal Design
Source: Centre for Universal Design, 2024
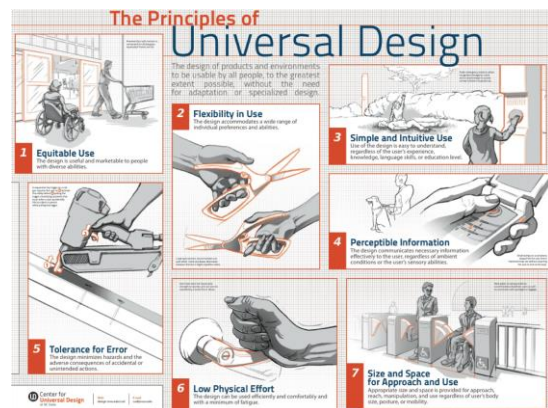
In detail, it regulates the design elements that need to be considered in implementing inclusive design, namely the need for space for building users and visitors, equipment dimensions, and circulation, as seen in Figure 2.

Figure 2. The need for movement space as a basis for arranging space in a building
Source: Minister of Public Works and Public Housing No 14/PRT/M/2017
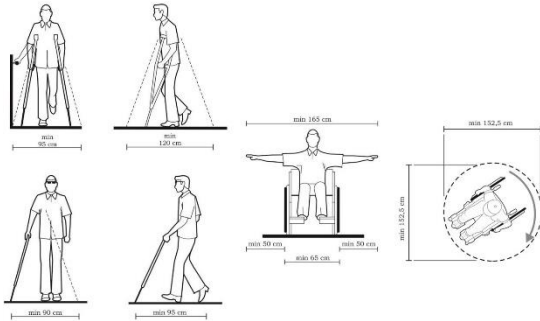
Methodology

The method used in this research is a qualitative method with a case study approach. The selected case study is the oldest and one of the most prominent Islamic education institutions in Indonesia, namely the Universitas Islam Indonesia (UII). Highlighting the UII case study will provide an overview of the journey in implementing an inclusive higher education institution, especially in terms of providing physical facilities and infrastructure, architecture, and the built environment.

Data collection uses visual observation techniques on physical facilities in the UII environment, and then access audits are carried out on buildings on the UII main campus using standards from the Minister of Public Works and Public Housing Regulation No. 14/PRT/M/2017.

In general, research variables are determined by building elements contained in the standards from the Ministry of Public Works and Public Housing Regulation No. 14/PRT/M/2017. Then the researchers narrowed it down according to the specifics of the campus buildings and facilities within, as follows:

Table 1. Research Variables

Building Element	Availability	Quality
Pedestrian		
Entrance		
Tactile Map		
Ramp to Building		
Signage		
Parking Space		
Accessible Door		
Accessible information desk		
Elevator/Ramp to Upper Floor		
Stair Railing		
Accessible Classroom		
Accessible Laboratory		
Accessible Lecture Hall		
Accessible Meeting room		
Accessible Library		
Accessible Toilet		
Accessible Offices		
Accessible Prayer Room		

Source: Adapted from Kemen PUPR No 14/2017 and author

Sampling for access audit in this research was carried out purposively with the consideration that the buildings selected were the most complex buildings and had complete facilities on campus buildings for each generation of buildings on the UII main campus. Access audits were carried out on four samples with two measurement aspects, namely facility availability and facility design quality. Measurement assessments are carried out on a scale of 0-1 for facility availability. Meanwhile, for quality assessment, a scale of 1-4 is used with the following details:

Table 2. Measurement method

Availability	0= not available
	1=available
Quality	1= bad condition
	2= non standardized
	3=standard
	4= standard, excellent quality

Source: author, 2024

Data analysis begins by reducing the data obtained, focusing on important things, summarizing, formulating emerging themes and patterns. The next stage is drawing conclusions and verification. If the conclusions put forward at the initial stage are supported by valid and consistent evidence when the researcher returns to the field to collect data, then the conclusions put forward are credible conclusions.

Result and Discussion

Universitas Islam Indonesia Main Campus

Figure 3. Map of UII Main Campus
Source: Masterplan UII, Photos by author, 2024

Universitas Islam Indonesia was founded in 1945, the same year of the Indonesian independence. In its development, the UII campus has several campuses spread across several areas in Yogyakarta. In 1993, academic activities at UII began to be carried out on the Main Campus located at Jalan Kaliurang Km 14.5 Sleman Yogyakarta, occupying an area of 38 hectares.

Figure 4. Phase of Development of Buildings in UII Main Campus
Sources: adapted by the author from (Ambraini et al., 2020)

| 1990	2000
1. Faculty of Engineering 2. Administrative Building	1. Faculty of Medicine 2. (New) Faculty of Civil Engineering and Planning 3. Faculty of Industrial Technology 4. Faculty of Islamic Studies
2010	2018
1. Mosque and Auditorium 2. Faculty of Psychology and Social Sciences 3. Faculty of Science 4. (New) Administrative Building	1. Main Library and Museum 2. Faculty of Law 3. (New) Faculty of Islamic Studies

| 5. Dormitories
6. Sport Centre
7. Other supporting facilities (canteen, minimarket, bookstore, Alumni Building) | |

The development phases at the UII Main Campus can be grouped into four generations, namely Generation One in 1990, Generation Two in 2000, Generation Three in 2010, and Generation Four in 2018. The implementation of the master plan and development is carried out in stages according to the needs of the community academics. Generation One was the era of arranging and creating plotting for each faculty as well as circulation routes throughout the building complex. In the first generation in the 1990s, development began with the Faculty of Civil Engineering and Planning (old building) and the Faculty of Industrial Technology. The second generation in the 2000s focused on building the Faculty of Medicine (occupying the Faculty of Civil Engineering and Planning building), the New Faculty of Civil Engineering and Planning, the Faculty of Industrial Technology, and the Faculty of Islamic Studies. The third generation in 2010 became more massive, starting with the construction of a Mosque and Auditorium, Faculty of Psychology and Social Sciences, Faculty of Science, (New) Administrative Building, Dormitories, Sports Center, as well as other supporting facilities (canteen, minimarket, bookstore, Alumni Building).

The results of observations of buildings in the four generations on the UII main campus show the following results:

1. Pedestrian and Corridors

Figure 5. Pedestrian along the UII Main Campus and Corridor in the interior of the Faculty of Law.
Source: Author, 2024
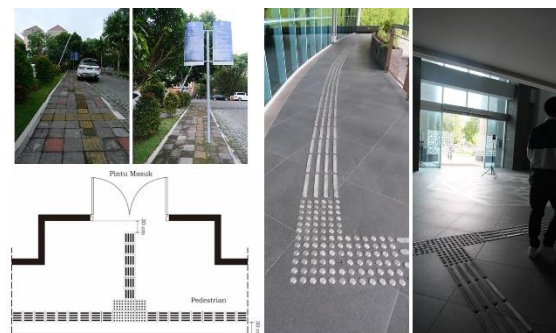
Basically, the pedestrian paths in the UII main campus complex are equipped with yellow guide paths for blind people (guiding blocks and warning

blocks). The principle of equitable use and low physical effort is well implemented. However, in its execution, there are signage poles or illegal parking that interfere with movement, thereby possibly causing danger. Apart from that, poor maintenance causes mossy paths, which can also potentially cause accidents for wheelchair users, blind people, and users in general.

In the Faculty of Law Building, the corridors within the building are also equipped with guide paths. The design and appearance are aesthetic, in addition to its function, which is aimed at creating a more inclusive environment. Guiding paths in the interior of the building are constructive for directing blind people or visually impaired users. Until now, maintenance still looks quite good, and no possible danger to users has been found.

2. Building Entrance

Figure 6. Building Entrance, a,b,c) Gen 2, d) phase 3, e) phase 4, f) Ramp standard
Source: Author, 2024
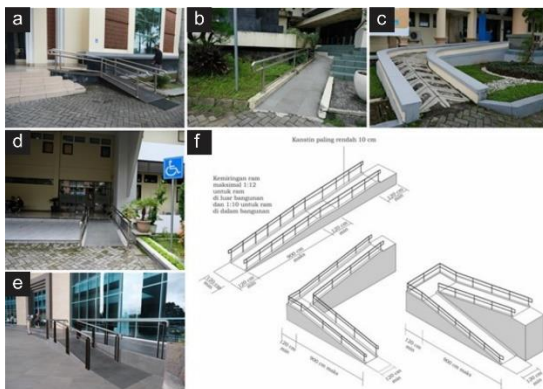
The building entrance plays an important role in implementing an inclusive building. Accessible entrances for more users have been executed in almost all buildings in the UII main campus complex. However, there are variations in design quality. In generation two buildings, the ramp at the entrance is an added element, as if not included in the design blueprint. This can be seen in semi-permanent building materials and additional designs in locations that are not aesthetically harmonious. Meanwhile, in generation three and four buildings, the ramp at the building entrance appears more integrated with the building design

and architecturally well-designed, both in terms of size and space for approach and use as well as low physical effort.

3. Accessible Door

Figure 7. Accessible Door, a) Gen 2, b) Gen 4, c) Gen 4, d) Gen 2, e) Accessible Door standard
Source: Author, 2024

In the design standards listed in the Ministry of Public Works and Public Housing No. 14/PRT/M/2017 Regulation, accessible doors are required in terms of size and space to be accessible to wheelchair users who, in terms of spatial dimensions, require the most significant area. However, in practice, these requirements are still inadequate because even though the space is sufficient, it still requires high physical effort.

In general, doors in buildings on the UII main campus have a size that can be approached by wheelchair users. However, in the execution, the type of door is dominated by push-in doors, which require a high physical effort. In some cases, there are staircases in front of the entrance door, which makes a room no longer inclusive. Eventually, the main door and toilets have implemented a type of sliding door in the law faculty building that minimizes physical effort. Sensory sliding doors are a suggested solution during the pandemic era, which will reduce the spread of viruses through physical touch. Sensory sliding doors are also an exemplary implementation of inequitable use as well as simple and intuitive in use.

4. Signage

Figure 8. Signage in Gen 2 and Gen 4 buildings and standard signage
Source: Author, 2024

Signage is an essential facility for users of a building and the built environment. A design is expected to be able to communicate the required information effectively to building users, regardless of their visual and sensory capabilities. In buildings on the UII main campus, signage is generally available, although with some notes. Firstly, the dimensions of the signage do not comply with standards. Apart from that, the font size is often too small, so at a certain distance, it isn't easy to read. Second, signage is only available evenly in some corners of the building. Sometimes, new visitors have to find a security guard to find the room they are going to. Third, signage is not available on a tactile map that can be touched by the blind and visually impaired. Talking signs that provide auditory information are not available as well.

5. Classroom and Library

Figure 9. Classroom and Library
Source: Author, 2024

A classroom in an educational institution is the heart of learning facilities. The state of a classroom that can be approached, accessed, and used by students is an essential aspect to be highlighted. At UII's main campus, classrooms are generally accessible to enter by users with a physical disability, including wheelchair users. The use of doors that are larger than the size of the wheelchair has been adhered to. However, some classroom interior and corridor widths need to meet the standard.

In the library room, the accessibility and usability of the interior need to be improved, especially when dealing with the height of the bookshelves. Conventionally, the standard library bookshelf is the same as a human height or even higher (an average of 2 meters). This certainly makes things difficult for wheelchair users. Moreover, the space between bookshelves is too narrow to be accessed by the wheelchair.

Unfortunately, previous research on inclusive libraries Kurniawan et al., (2014) did not address much about how the space between bookshelves should be designed. Moreover, the provision standards for classrooms and libraries in the Minister of Public Works and Public Housing

Regulation No. 14/PRT/M/2017 have yet to be provided. This offers an opportunity for further study regarding design standards for teaching and learning spaces, including classrooms, lecture halls, laboratories, design studios, and libraries.

6. Accessible Toilet

Figure 10. Accessible Toilet, a,b) Gen 2, c) Gen 4, d) Toilet standard
Source: Author, 2024

Figure 10 shows the accessible toilets located in Generation Two and Four buildings. In the second generation, accessible toilets are new spaces as a result of building renovations. One of the triggers is to be able to follow the standards set by international accreditation institutions. Meanwhile, in generation four buildings, accessible toilets are an integral part of the design blueprint. It shows the increasing awareness of institutions and the academic community to fight for the implementation of a more inclusive environment, even though it starts with triggers from external bodies.

7. Supporting facility: Ablution Area for Prayer Room

Figure 11. Accessible Ablution Area for Prayer Room
Source: Author, 2024
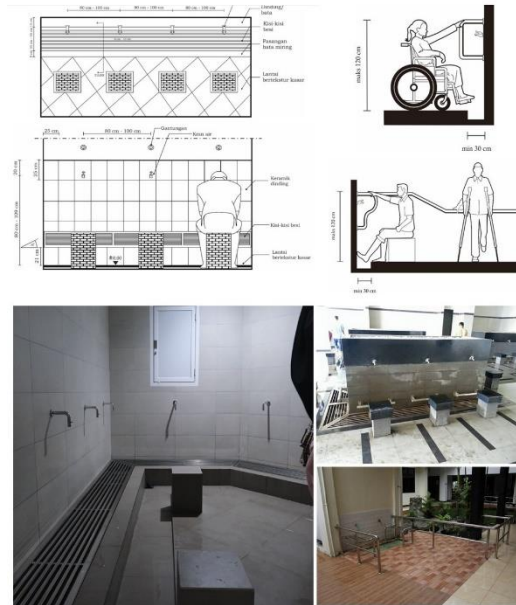
As a religious-based educational institution, the UII main campus is provided with prayer room facilities in every building. The observation results show that, in general, the ablution in the prayer room has complied with the required design standards. However, there are some challenges, such as the security aspect. Ablution areas are usually wet, so it is crucial to pay attention to non-slip floor materials. Moreover, the boundaries of the sacred space in the prayer room and ablution area also need to be considered because of the unclean aspect of Islamic jurisprudence. Previous studies on accessible ablution places recommend several elements that will influence the inclusiveness of ablution rooms, including the availability of ramps, textured floors, handrails, ablution chairs, flexible faucets, footrests, and grills (Yumadhika & Sholihah, 2019).

Table 3. Access Audit to Buildings in UII Main Campus

No	Building Elements	Generation of Building							
		Gen 1		Gen 2		Gen 3		Gen 4	
		A	Q	A	Q	A	Q	A	Q
1.	Pedestrian	0	0	1	2	1	4	1	4
2.	Entrance	0	0	1	2	1	4	1	4
3.	Tactile Map	0	0	0	0	0	0	0	0
4.	Ramp to Building	0	0	1	2	1	3	1	4
5.	Signage	0	0	1	3	1	4	1	4
6.	Parking Space	1	2	1	4	1	4	1	4
7.	Accessible Door	0	0	0	0	1	3	1	4
8.	Accessible information desk	0	0	0	0	0	0	1	2
9.	Elevator/Ramp to Upper Floor	0	0	1	3	1	4	1	4
10.	Stair Railing	1	4	1	4	1	4	1	4
11.	Accessible Classroom	0	0	0	0	1	3	1	4
12.	Accessible Laboratory	0	0	0	0	1	3	0	0
13.	Accessible Lecture Hall	0	0	0	0	0	0	1	4
14.	Accessible Meeting room	0	0	0	0	0	0	1	4
15.	Accessible Library	0	0	1	2	1	3	1	4
16.	Accessible Toilet	0	0	1	4	1	3	1	4
17.	Accessible Offices	0	0	0	0	0	0	1	4
18.	Accessible Prayer Room	0	0	1	3	1	4	1	4
	Total	**2**	**6**	**10**	**29**	**13**	**46**	**16**	**62**

A = availability (0-1), Q = Quality (1-4)

Generation 1 Sample: Faculty of Medicine (ex. Faculty of Engineering)
Generation 2 Sample: Faculty of Civil Engineering and Planning
Generation 3 Sample: Faculty of Science
Generation 4 Sample: Faculty of Law

Table 3 shows the results of the access audit for several buildings representing each generation of the development. The results demonstrate that significantly, the later the generation, the higher the availability of building elements that can be used more inclusively. These results can also be seen in the design quality of the building elements assessed. In the building of Generation One, the provision of inclusive building facilities is still very minimal. This is possible because, in this era, there is not much awareness of the importance of inclusive design in Indonesia. Likewise, the government's public building design standards still need to include this aspect.

In generations two and three, the buildings on the UII main campus saw good improvement but needed to be more optimal. It can be noticed that inclusive building elements are not evenly distributed, and some elements are additional elements or were not included in the design blueprint from the start. In fact, the results of interviews show that, for example, in a Generation Two building, accessible toilets will only be provided when there is an assessment from another party, namely international accreditation.

Considering that the accreditation institution requires inclusive building facilities.

The peak of the application of inclusive design was in the Law Faculty building, which shows that inclusive design is not an additional element to meet public building standards, but it can be seen that since the planning of this building, inclusivity has been taken into account. This can be seen from the inclusive design elements that appear integrated with the design, quite different from generations two and three, where several elements were additional elements. This might lead to the fact that the regulation from the ministry is clear to implement, and there is high awareness from the academic community of law faculties in implementing inclusive buildings as part of upholding law and human rights.

The implementation of inclusive design in the Faculty of Law is also in line with Islamic values, which uphold the values of justice and inclusiveness as ordered in the Al Qur'an Surah Abasa verses 1-16. The wisdom from this theological foundation should become a mandate for Islamic educational institutions to be fair to

everyone and provide opportunities for anyone to receive teachings regardless of physical abilities or other backgrounds, such as minorities, women, and children. It is also quite interesting to see that the UII law faculty is the only faculty that also provides a lactation room for mothers.

Conclusion

This research will examine the process and challenges of implementing inclusive design on the UII main campus and to address the design recommendation on inclusive design among similar types of building function. This research is also endeavoring to contributes to address the role of Islamic institution that has the responsibility to be more inclusive, especially in the context of architecture and built environment. From these findings, we can learn about what aspects and how to implement inclusive design in higher education institutions, both those that apply Islamic values and those in general.

Research findings from the observation and access audit show that the process of implementing inclusive design at the UII main campus building is as follows: the generation of development on the UII main campus is divided into four phases, which have differences in the process of implementing inclusive design. In buildings in the first generation, inclusive design has not been implemented for several possible reasons, namely the lack of awareness and the absence of inclusive standards for public building design from the government. In the second and third generations, the implementation of inclusive design began to be applied to pedestrian areas and building entrances and was limited to the ground floor. In this generation, improvements have been made through the renovation of building elements, starting with external triggers. In the fourth generation, the building blueprint has implemented inclusive design more thoroughly so that in terms of facilities and infrastructure, the building can be said to be an inclusive building, even though there is no tactile map or talking sign.

In the process of implementing inclusive design in buildings at UII's main campus, there are challenges, including awareness from the academic community about the inclusive environment. Dissemination needs to continue to be carried out to increase awareness so that the problem of mal-usage for inclusive spaces, for example, parking spaces that are not used by disabled people or guideways used for parking or marker posts, no longer occurs. Another challenge is that, in reality, the number of disabled UII students is small, so it seems that an inclusive environment is not something that is urgent to implement.

This research recommends that campus buildings should be inclusive in terms of building access, namely sidewalks, parking spaces and building entrances to ensure that everyone can reach the building comfortably. The next stage is that everyone can use the building through ramp to building facilities, signage, accessible door, accessible information desk, elevator/ramp to upper floor, accessible classroom, accessible lecture hall, accessible laboratory, accessible meeting room, accessible library, and accessible toilets. In the context of Islamic education institutions, the availability of accessible prayer rooms also needs to be recommended.

In the context of the UII main campus, the building elements whose inclusiveness value must be increased are learning spaces such as classrooms, auditoriums, libraries and laboratories. Research on inclusive laboratories can be the future possible research to be conducted.

This research has provided a description of how an Islamic institution implements inclusive design in its campus buildings. It is hoped that the example from the UII main campus can be a lesson for other educational institutions in Indonesia about the process and challenges in implementing inclusive design.

In the future, there needs to be a breakthrough in university policy to accept more students from various groups, including those with disabilities, so that this implementation is also a mandate of Islamic values and the application of Islam as a blessing to the universe (*Rahmatan lil alamin*).

References

Ahmed, M. (2022). The Significance of Applying Universal Design Approach in Mosques. The Great Mosque at Aswan City, Egypt as a Case Study. *International Design Journal*, *12*(4), 253–261. https://doi.org/10.21608/idj.2022.245903

Ambraini, F., Swasto, D. F., & Rahmi, D. H. (2020). Pengaruh perkembangan kampus terpadu UII terhadap permukiman di sekitarnya. *Region : Jurnal Pembangunan Wilayah Dan Perencanaan Partisipatif*, *15*(1), 81. https://doi.org/10.20961/region.v15i1.27002

Black, R. D., Weinberg, L. A., & Brodwin, M. G. (2014). Universal design for instruction and learning: A pilot study of faculty instructional methods and attitudes related to students with disabilities in higher education. *Exceptionality Education International*, *24*(1), 48–64. https://doi.org/10.5206/eei.v24i1.7710

Fink, J. E., & Hummel, M. L. (2015). With Educational Benefits for All: Campus Inclusion Through Learning Communities Designed for Underserved Student Populations. *New Directions for Student Services*, *2015*(149), 29–40. https://doi.org/10.1002/ss.20115

Heylighen, A., Van der Linden, V., & Van Steenwinkel, I. (2017). Ten questions concerning inclusive design of the built environment. *Building and Environment*, *114*, 507–517. https://doi.org/10.1016/j.buildenv.2016.12.008

Ikaputra; Sholihah, A. B. (2001). Mobility for All: Towards Barrier-free Environment in Yogyakarta, Indonesia. *IATSS Research*, *25*(1), 23–31.

Indriani, S., & Marlina, M. (2020). Persepsi Mahasiswa Reguler dan Disabilitas terhadap Layanan Aksesibilitas bagi Penyandang Disabilitas. *Jurnal Basicedu*, *4*(4), 1438–1445. https://doi.org/10.31004/basicedu.v4i4.581

Kurniawan, H., Arsitektur, J. T., Perencanaan, D., Ugm, F. T., Proyek, A., & Ugm, P. (2014). Indonesian Journal of Disability Studies Implementasi Aksesibilitas Pada Gedung Baru Perpustakaan UGM. *IJDS: Indonesian Journal of Disability Studies*, *1*(1), 44–51. http://ijds.ub.ac.id

Moriña, A. (2017). Inclusive education in higher education: challenges and opportunities. *European Journal of Special Needs Education*, *32*(1), 3–17. https://doi.org/10.1080/08856257.2016.1254964

Morningstar, M. E., Shogren, K. A., Lee, H., & Born, K. (2015). Preliminary Lessons about Supporting Participation and Learning in Inclusive Classrooms. *Research and Practice for Persons with Severe Disabilities*, *40*(3), 192–210. https://doi.org/10.1177/1540796915594158

Persson, H., Åhman, H., Yngling, A. A., & Gulliksen, J. (2015). Universal design, inclusive design, accessible design, design for all: different concepts—one goal? On the concept of accessibility—historical, methodological and philosophical aspects. *Universal Access in the Information Society*, *14*(4), 505–526. https://doi.org/10.1007/s10209-014-0358-z

Qodir, A., Dakir, D., & Umiarso, U. (2017). The Concept of Human Unity and Islamic Inclusive Education: A Study of KH. Imam Zarkasyi's Thought in Social Change. *Journal of Islamic Studies and Culture*, *5*(2), 229–242. https://doi.org/10.15640/jisc.v5n2a6

Scott, I., Mclachlan, F., & Brookfield, K. (2018). Inclusive design and pedagogy: An outline of three innovations. *Built Environment*, *44*(1), 9–22. https://doi.org/10.2148/benv.44.1.9

Shapiro, D., Pate, J. R., & Cottingham, M. (2020). A Multi-Institutional Review of College Campus Adapted Intramural Sports Programming for College Students With and Without a Disability. *Recreational Sports Journal*, *44*(2), 109–125. https://doi.org/10.1177/1558866120952093

Ulman Idris, M. I. (2023). Alat Evaluasi Pengukuran Tingkat Walkability pada

Kampus dan Area Sekitar Studi Kasus: 4 Universitas Negeri di Indonesia. *Jurnal Teknik Indonesia*, *2*(4), 129–137. https://doi.org/10.58860/jti.v2i4.134

Wahyuni, S., Eryanti, R. W., & Hudha, A. M. (2023). Subjective Well Being Mahasiswa Penyandang Disabilitas. *Jurnal Pendidikan Tambusai*, *7*(2), 11655–11665. https://www.jptam.org/index.php/jptam/article/view/8153

Yumadhika, R., & Sholihah, A. B. (2019). Design of Mosque Ablution Areas for Disabled: Evaluation of Ministerial Regulation of Public Works and Public Housing No. 14/2017. *Journal of Architectural Research and Design Studies*, *3*(1). https://doi.org/10.20885/jars.vol3.iss1.art2