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Reimagining the Sahn: Open Spaces and Universal Design Principles for Generation Z Inclusive Mosques

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Abstract

Open spaces have been a key feature of mosques since the first Nabawiy Mosque was built during the time of the Prophet Muhammad. Fourteen centuries have passed, and mosques have evolved in accordance with their surroundings, with open spaces not always being a key feature of mosques. The issue of mosque designs that tend to be exclusive is an important reason for reviving the inclusive nature of mosques as in the time of the Prophet (peace be upon him). This paper aims to review the role of open spaces in mosques in meeting the needs of the wider community, including various age groups and socioeconomic strata, and even non-Muslims. This paper also puts forward an idea for integrating open spaces into mosque design for Generation Z. This generation, with its unique characteristics, is expected to play an increasingly important role in revitalizing mosques. This study adopts a mixed-methods research-by-design (RBD) framework, combining a qualitative historical and literature synthesis, exploratory precedent case studies, and a quantitative user preference survey involving 100 Muslim Generation Z respondents (N = 100) in Medan, Indonesia. The findings from these methods were integrated to formulate design ideas for inclusive mosque open spaces that respond to the needs and preferences of Generation Z. This study shows that open spaces are an important key feature for inclusive mosques that are in line with the needs of Generation Z, who are open-minded towards advances in information and developments in thought, art, science, and technology. The concept of inclusive mosque design for Generation Z offers open spaces that are integrated with urban spaces and directly connected to mosques structurally, functionally, and visually, where social activities become a showcase for mosque activities.

INTRODUCTION

Rapid urbanization and increasing land scarcity have become major challenges in many developing countries, including Indonesia, as accelerating urban population growth and urban expansion continue to intensify pressure on limited land resources (United Nations, 2022). Growing population density, rising land values, and increasing demand for residential, commercial, and public infrastructure have encouraged the maximization of built-up areas, often at the expense of urban green spaces and other public open spaces (Artmann et al., 2019). Rapid urban growth and subsequent land-use shifts have severely constrained the availability of public open spaces (Artmann et al., 2019). This spatial reduction poses a dual threat: ecologically, it undermines green infrastructure and critical ecosystem services required for climate resilience (IPCC, 2023); socially, it restricts community engagement, recreational activities, and overall urban inclusivity (Jennings & Bamkole, 2019). In response to these pressures, embedding open spaces into public architecture particularly places of worship presents a viable pathway toward balancing environmental goals with social well-being.

Historically integral to spatial design, open spaces serve as more than mere structural buffers. They regulate microclimates, support natural hydrology, host biodiversity, and improve indoor environments through daylighting and airflow, alongside fostering mental health and social cohesion. Existing literature confirms that strategic integration of open spaces within built environments elevates ecological performance, visual openness, and user safety (Al Ramahi et al., 2023; Asojo & Hazazi, 2025; Nguyen et al., 2021; Jiang, 2019; Johnson et al., 2024). However, current development trends frequently prioritize physical building expansion over spatial preservation. This compromise is notably visible in religious facilities. Mosques, which historically combined sacred architecture with outdoor civic spaces, are primary examples. Serving both spiritual and community needs from education to local governance mosques remain vital urban nodes, with global numbers reaching roughly 3.6 million (TRT World), including over 600,000 in Indonesia (Ministry of Religious Affairs, 2024). As density increases across developing nations, retaining these open grounds becomes crucial for sustaining urban resilience and social fabric. Yet, site renovations and new constructions increasingly favor enclosed structures, gradually diminishing the open areas that once sustained environmental balance and public life.

Open spaces have been a key feature of mosques since they were first established in the city of Medina by the Prophet Muhammad, both at the Quba Mosque and the Nabawiy Mosque. At that time, mosques were not merely places for ritual worship between humans and their God, but also places for community development, where deliberations were held, matters were resolved, education and training took place, and even served as a place of residence for the suffah, or poor companions who had no place to live (Alnajjar and Erdill, 2024). Over time, the open space in mosques has not only become an element of the inner courtyard/shan, but also connects to the outside space, as part of residential areas and cities. Fourteen centuries have passed since the reign of the Prophet Muhammad, and the typology of mosque spaces has varied greatly, both with and without open spaces. Unfortunately, in many places, the function of mosques has tended to become increasingly narrow, limited only to ritual worship and religious studies. Mosques have become increasingly exclusive and limited, moving away from their original nature during the time of the Prophet and the Khulafaur Rasyidin. In many cases, mosques are filled only with elderly people, with minimal youth attendance (Radwan, 2021, Thoha et al, 2021; Khikmawati, 2020). Yet the younger generation is the successor to human glory, who should make the mosque their primary place of self-development.

Today's young generation is known as Generation Z, or Gen Z for short. In the digital age, Gen Z has experienced a shift in spiritual and social values that has had a direct impact on how they perceive places of worship in urban areas. As a generation that has grown up in a dynamic technological and cultural landscape, they demand spaces that are open, inclusive, and supportive of participatory social-spiritual engagement (Padakari & Korwa, 2025). Unfortunately, most mosques in Indonesia still maintain conventional spatial configurations that tend to be unresponsive to the behavior of the younger generation (Saputra & Syarifah, 2021). If this is not addressed through the right architectural approach, mosques risk losing their relevance as spiritual public spaces for future generations.

Although the preservation of urban open spaces has become a central concern in sustainable urban development, relatively little attention has been paid to how the loss of open spaces affects the inclusiveness of religious buildings, particularly mosques in rapidly urbanizing developing countries. While scholarly discourse traditionally bifurcates mosque architecture into religious studies and urban open spaces into environmental frameworks, the intersection where these spaces simultaneously foster ecological resilience, social inclusion, and youth participation remains largely under-researched. Current literature often treats religious architecture as fixed sites reserved strictly for ritual practice, neglecting their broader potential for cross-generational community life. Consequently, practical design strategies for configuring mosque grounds to meet the spatial and social demands of diverse demographics most notably Generation Z are still insufficiently addressed in urban planning research. Therefore, this study is situated within an architectural-humanistic epistemological framework that views space as a medium of meaning, identity, and social interaction (Wardani, 2010). While discussions on inclusive and empathetic architecture have developed in educational and cultural contexts (K. Hadi & Doddy Yuono, 2023), places of worship especially in developing countries remain underexplored in terms of their spatial responses to generational transformation. To the best of the author's knowledge, studies examining the role of mosque open spaces in creating inclusive environments for Generation Z are still limited.

Accordingly, this study aims to investigate the role of mosque open spaces in fostering inclusive social interaction and inter-generational engagement while responding to the spatial preferences and behavioral characteristics of Generation Z. Furthermore, the study seeks to explore how architectural-humanistic principles may inform the design of mosque open spaces that accommodate broader community inclusivity, including different age groups, socioeconomic backgrounds, and even non-Muslim communities. To address these critical voids, this investigation centers on three main research directions:

1. How do the open spaces of a mosque help foster social interaction across the board and engage people of all generations?
2. How can the open spaces of a mosque be designed to accommodate the characteristics and expectations of Generation Z?

3. How can humanistic design principles be applied to transform mosque grounds into accessible spaces for varied demographic groups?

Linking these inquiries to a tri-partite empirical framework comprising academic literature analysis, site-level observation, and conceptual design testing the study anchors subsequent analytical and applied discussions on inclusive religious spatial design.

LITERATURE REVIEW

History of the Development of Mosque Open Spaces

The open space, in the history of the Quba Mosque, which was the first mosque ever built in the world, was the main space of the mosque, as an inner court surrounded by simple brick walls made of stone or clay, several wooden pillars to support the roof, and simple rooms on the west and south sides. When the Prophet Muhammad built the Nabawiy Mosque, as the first official mosque of the Islamic Government in Medina, this typology was continued. The inner court of the mosque became the main space for prayer. Surrounding it were three sides of a porch with pillars made of palm trunks and a simple low roof. The south side was used as a place for Ahlus Suffah, a group of poor companions, including Abu Hurairah, one of the companions who narrated the most hadiths of the Prophet. The house of the Prophet Muhammad was located on the eastern side of the mosque (Sahih Bukhari and Muslim; Cresswell, 1968; Grabar, 1987; Hillenbrand, 1994; Bloom and Blair, 2009).

Open space elements within mosques have been preserved to this day, with an increase in the variety of expressions in the surrounding areas in accordance with the existing cultural influences absorbed by Islam. During the Umayyad Caliphate (661-750 AD), mosques still had inner courtyards, but they were paved, and there were arcades around the mosque and wudu pools. The Great Mosque of Damascus in the ancient city of Damascus, Syria, has a shan measuring 122 x 50 m on the north side (Flood, 2001). Unlike the mosque during the time of the Prophet in Medina, which had a makeshift roof, the mosque now had covered pedestrian walkways called riwaq on three sides (Frishman & Khan, 2002). Inside the courtyard are the Dome of the Treasury (bait al mal) and the Dome of the Clock, with an octagonal structure (Creswell, 1989). The sahn, which dominates the mosque's composition, is a place where religious activities take place, as well as public activities, a large meeting area for the community, and a place where the Umayyad state administration took place (Frishman & Khan, 2002). This mosque was built on top of a Roman temenos, which became the outer boundary of the mosque, integrating the mosque with the landscape of ancient Damascus. Thus, the open space of the mosque has extended beyond the mosque, becoming part of the urban space, and still accommodates social functions where people interact between prayer times.

During the Abbasid Caliphate (750-1258 AD), the typology of mosques remained the same as during the Umayyad period. The Great Mosque of Baghdad in the city of Baghdad had a sahn/courtyard as the main open space inside the mosque, and there was already a closed prayer room on the side of the qibla. During this period, mosques continued to function as places of worship, as well as venues for social, community, educational, and local administrative activities. (Lubis, Siregar, Wahyuni, Yamin, & Irham, 2025; El-Farani, 2016).

The relationship between mosques and urban spaces began to emerge during the Umayyad and Abbasid caliphates (7th–10th centuries CE) when the outer courtyard, rather than just the inner courtyard (inner courtyard/sahn), began to be used for public functions. During the Seljuk and Mamluk periods (11th–15th centuries), the social and institutional functions of mosques became cathedralized with the addition of madrasas, markets, and hamams, creating increasingly organized transitional spaces in the courtyards (Abdul Salam, 2024; Mubarak, 2021). During the Ottoman and Mughal periods, the feature of open spaces in mosques as part of formal urban spaces became increasingly apparent. This can be seen in the emergence of forecourts, monumental entrance plazas, and formal connections to streets/jami' squares (Necipoğlu, 2005; Abdul Salam, 2024). When Islamic countries later became colonial territories, formal urban planning developed further, encouraging mosques to be placed within formal urban spaces, connected to town squares, highways, and city parks. Mosque designs often placed the outer courtyard as a public plaza to accommodate public functions, provide more open access to the community, and for reasons of symbolism. In the planning and design of contemporary mosques, external open spaces are an integral part of the mosque where social, educational, market, and celebration activities take place. In addition, mosque open spaces are also designed to fulfill ecological functions, integration with pedestrians, circulation flow, and inclusivity (Utaberta, Niya & Sabil, 2017).

The Development of Mosque Inclusivity

The development of mosque inclusivity shows dynamics that involve physical, social, gender, and governance aspects. In the early stages, many studies found limitations in physical accessibility in both large and local mosques,

such as a lack of ramps, doors, and wudhu and toilet facilities for people with disabilities (Utaberta, Dabbagh Niya, & Sabil, 2017; Rangga et al., 2020). Even in iconic mosques, such as the Sheikh Zayed Grand Mosque, there are access gaps that require intervention in the form of retrofitting and congregation flow management (Suhardi, Iftadi, & Nurazizi, 2024). Over time, these initiatives have shifted toward a more holistic framework, advancing a socio-spatial model centered on spatial flexibility, participatory governance, and community-driven programming to achieve genuine inclusion (Gün, 2025).

The conceptual scope of inclusivity has likewise broadened. For instance, empirical work on the An-Nuur Mosque in Batu established a comprehensive framework addressing physical accessibility, gender representation, age-friendly facilities, and participatory management (Hanun & Siregar, 2023). Regarding gender dynamics specifically, investigations into the Al-Irsyad Mosque suggest that open-plan layouts can foster social interaction among women, though such spatial configurations must carefully balance visual openness with privacy (Aryanti et al., 2024). This nuanced requirement aligns with Australian research emphasizing how acoustic planning, sightlines, and targeted spatial modifications enhance female engagement (Ghafournia, 2020), as well as historical analyses from the UK advocating a restorative narrative that honors women's active involvement in early Islamic centers (Cheruvallil-Contractor, 2020).

Parallel to physical and spatial design, institutional governance and organizational culture play a pivotal role in fostering inclusivity. Insights from the Inclusive Mosque Initiative (IMI) in the United Kingdom indicate that non-discriminatory policies, shared leadership, and social initiatives are just as fundamental as architectural layout (Rahman, 2025). This holistic perspective reinforces the concept of mosques as multifunctional hubs—a model historically embodied by the Baiturrahman Mosque in Aceh, which seamlessly merged worship with social, educational, and recreational life (Nichols, 2019). Modern trajectories in mosque development therefore extend well beyond physical access, weaving together social equity, gender sensitivity, and inclusive governance to position religious sites as open civic assets for diverse populations.

The Role of Open Space in Inclusive Mosque Design

Historically, the sahn (courtyard) has served as an architectural mainstay since the era of Prophet Muhammad SAW, functioning as a fluid spatial node for ablution (wudu), communal assemblies, and civic discourse. Architectural history demonstrates that this inherent multifunctionality enables mosque grounds to naturally foster inclusion, accommodating diverse demographics such as women, children, older adults, travelers, and individuals with disabilities across both ritual and non-ritual spheres, including education and public governance (Nichols, 2019; "Historical Evolution of Sahn", 2025).

Modern empirical evidence suggests that when mosque courtyards and entry plazas incorporate flexible spatial planning and seamless accessibility, they effectively evolve into vibrant civic hubs capable of hosting public markets, community kitchens, educational programs, youth initiatives, and recreational activities. Achieving this adaptability, however, relies heavily on specific physical features, such as visual openness, reconfigurable furniture, adequate drainage, proper lighting, and universal design elements like step-free access, inclusive ablution units, and accessible signage. Existing evaluation literature highlights that many contemporary mosques fall short in these physical provisions, underscoring an urgent need for universal design retrofits (Rangga et al., 2020; Suhardi et al., 2024). In response, socio-spatial research advocates a "Mosque for All" framework an approach that pairs flexible spatial zoning (distinguishing sacred core areas from multi-use open zones) with inclusive governance models that actively involve women, youth, and persons with disabilities. Ethnography of inclusive initiatives in Western countries shows that policy and cultural changes (program schedules, inclusive leadership) are as important as physical interventions. (Gün, 2025; Rahman, 2025).

Studies on spatial well-being and biophilic design add that natural elements in open spaces (trees, water, shading) enhance spiritual comfort and community engagement, which in turn encourages the use of space by vulnerable and non-ritual groups. Safety aspects such as anti-slip surfaces, lighting, and emergency circulation are also often cited as prerequisites for 24/7 inclusive use. (Durukan, 2025; Kim et al., 2024).

Finally, urban surveys and field studies in contemporary Islamic cities (Kuala Lumpur, Bandung, Aceh, and cities in the Middle East) show that the integration of mosque plazas into the urban network (pedestrian access, public transportation, and connections to surrounding public spaces) expands the social functions of mosques and facilitates broader community participation, an essential requirement for mosques that are truly inclusive in terms of age, gender, social class, and physical ability. (Nizarudin, 2016; Nichols, 2019; Al-Baldawi, 2023). Based on the literature review and contemporary case studies, the main design aspects that support inclusive mosque open spaces are summarized in Table 1.

Table 1. Design Aspects of Open Spaces for Inclusive Mosques

No	Design Aspect	Design Indicators	Empirical Evidence
1	Universal Accessibility	- Step-free entrance, width ≥ 1.2–1.5 m for wheelchairs. - Ramp with slope n ≤ 1:12, handrails, non-slip surface. - Drop-off area near the main gate.	Hanun et al. (2023); Rangga et al. (2020); Suhardi et al. (2024)
2	Safe Surfaces & Circulation	- Flat surface, non-slip, both in wet and dry conditions. - Effective drainage to prevent water pooling. - Clear and unobstructed emergency evacuation access.	Kim (2024); Saputra & Sarwadi (2019)
3	Functional Flexibility & Modular Zoning	- Furniture that is easy to move (benches, folding tables). - Open spaces can be converted into areas for social activities, education, and light exercise. - Visual/horizontal zoning that separates areas of worship from non-ritual activities so that they do not clash.	Radwan (2021); Gün (2025); Jamail et al. (2023)
4	Connectivity & Skylights / Visual Links	- Direct visual connection between outdoor and indoor spaces; helps women, people with disabilities, and the elderly feel a sense of togetherness without compromising privacy. - Skylights or open ceilings that provide natural lighting—biophilic design—also enhance spiritual comfort.	Radwan (2021); Aryanti et al. (2024)
5	Non-Worship Support Facilities	- Pantry/small kitchen & food distribution room (for social activities/iftar). - Coffee area/creative space (like at At-Tin Mosque). - Media studio or media kiosk for da'wah and educational content.	Radwan (2021); Rahman (2025)
6	Accessible Sanitation & Ablution Facilities	- The restroom/ablution area follows universal design principles: wide doors, wheelchair maneuvering space, grab bars, and a baby/child changing area. - Located in a strategic location off the courtyard.	Hanun et al. (2023); Kim (2024)
7	Shelter & Biophilic Vegetation	- Shady trees or shading structures (canopies, pergolas) for visual and thermal comfort. - Plants or small gardens provide therapeutic effects and a sense of nature.	Durukan (2025); Saputra & Sarwadi (2019)
8	24/7 Lighting & Security	- Bright but soft outdoor lighting at night, with emergency lighting activated. - CCTV integrated with pedestrian flow patterns and main doors.	Kim (2024); Saputra & Sarwadi (2019)
9	Public Access & City Integration	- The plaza leads directly to pedestrian paths, bus stops, or bicycle parking. - Visually and functionally connected to the surrounding public spaces.	Radwan (2021); Saputra & Sarwadi (2019)
10	Collaborative Programs & Management	- Regular schedules for various users: the general public, children, youth, seniors, people with disabilities. - Inclusive governance: youth, women, and disabled communities are involved in activity planning and management structures.	Rahman (2025); Gün (2025)
11	Policy & Spatial Narrative	- Open usage rules: anyone (of any age, gender, or social background) is welcome. - Historical/legal narrative of the mosque as an inclusive public space (incorporating the context of the Prophet's era).	Radwan (2021); Abdul Salam (2024)

No	Design Aspect	Design Indicators	Empirical Evidence
12	Location & Time Flexibility	- Accessibility and facilities are available for non-ritual use (such as evening classes, morning sports activities, evening events). - Policies regarding the use of spaces for activities other than worship, such as schedules, rentals, and a simple reservation process	Radwan (2021); Rahman (2025)

Synthesis of Inclusivity in Mosque Open Spaces

Historically, mosque open spaces have served dual functions as sacred domains and civic arenas, gradually evolving into essential components of urban public life (Sahih Bukhari; Flood, 2001; Necipoğlu, 2005). Despite this long-standing tradition of multi-functionality, contemporary evaluations reveal lingering exclusivity in many modern facilities, particularly regarding physical accessibility, gender-sensitive environments, and provisions for marginalized populations (Utaberta et al., 2017; Rangga et al., 2020; Aryanti et al., 2024). While recent design frameworks advocate for spatial adaptability, broad community engagement, and Universal Design to foster inclusive environments (Gün, 2025; Rahman, 2025), current scholarship pays insufficient attention to the spatial expectations of Generation Z a cohort seeking interactive, socially relevant, and technologically integrated settings (Padakari & Korwa, 2025). Addressing this critical void, the present study synthesizes historical precedents and modern spatial strategies to propose an adaptive, inclusive open-space framework tailored to Gen Z and the broader public.

METHODS

To investigate how mosque open spaces can be configured to cultivate inclusive environments for Generation Z, this study adopts a qualitative exploratory design integrated within a research-informed architectural framework. Data collection relied on a multi-pronged strategy encompassing a comprehensive literature synthesis, exploratory precedent analyses, and a targeted questionnaire survey. The literature review synthesized academic work on mosque spatiality, spatial inclusion, Gen Z behavioral patterns, and humanistic architectural principles. Concurrently, comparative precedent studies of select inclusive mosques were evaluated to pinpoint spatial configurations that successfully support accessibility, social interaction, spatial adaptability, and cross-generational cohesion.

To complement these insights with primary data, an online questionnaire via Google Forms was distributed to a purposively selected sample of 100 Muslim Generation Z respondents in Medan, Indonesia. Eligible participants met four explicit criteria: self-identifying as Muslim, falling within the 15–24 age bracket, actively residing or studying in Medan, and possessing firsthand experience with mosque environments. Submissions that were incomplete, duplicate, or out-of-range were systematically screened out. The survey instrument combined structured closed-ended items (multiple choice and rating scales) with open-ended prompts to capture qualitative nuances regarding spatial expectations and preferences. Quantitative metrics were processed using descriptive statistics (frequencies and percentages), whereas qualitative feedback underwent thematic analysis to uncover recurring design priorities. Ultimately, findings across all three data streams were synthesized to inform contextual design guidelines for inclusive mosque grounds.

CONTEXT AND ANALYSIS

Digital Generation Z and the Evolving Role of Mosques in Contemporary Society

Historically, mosques extended far beyond their function as places of ritual worship, serving as the heartbeat of civic and spiritual life in Muslim communities. During the era of Prophet Muhammad SAW, the Prophet's Mosque operated as a multi-purpose spatial hub for communal governance, educational exchange, medical care, and social deliberation (Kurahman, 2017). This multifaceted role aligns with Quraish Shihab's exegetical perspective, which traces the etymological root of masjid to sajada (to submit or obey), implying that any constructive activity reflecting devotion to God naturally falls within the mosque's scope (Darmawan, 2018).

In the modern era, however, this expansive socio-spatial function has noticeably contracted. Contemporary mosques increasingly operate as single-purpose ritual sites, while their broader social, educational, and cultural dimensions have been largely sidelined (Darodjat & Wahyudhiana, 2014). This institutional narrowing has contributed to declining engagement among younger generations a trend further exacerbated by alienating organizational management, a lack of inclusive youth programming, and physical designs that fail to support casual social interaction (Muzdalipah et al., 2025; Zulmaron et al., 2017; Rizal, 2022).

Generation Z (those born between 1997 and 2012) experience a different reality from previous generations. With a digital cultural background and values of openness, they are more critical of religious authority and tend to seek forms of religiosity that are relevant to their daily lives (Nabilah & Haryanto, 2025; Bamualim et al., 2018). However, this digitalization also poses new challenges: decreased physical social interaction, increased individualism, and mosques that are unable to meet their need for expressive and collaborative spaces (Malik, 2021). These issues indicate the need to better understand how Generation Z currently perceives mosque environments, which is further explored through the questionnaire survey presented in Section 4.

Inclusive Mosque Architecture for Gen Z

The term inclusive design is now increasingly used in the world of architecture, and has the same background as other terms such as universal design, design for all, accessible design, and design for diversity (Steinfeld and Maisel 2012). Inclusive architecture itself is an approach that places human diversity as the basis for designing an adaptive and equitable environment for all individuals (Salsabila & Rizqiyah, 2021). This approach aims to create spaces that are not only accessible to all groups, but also provide a sense of comfort and acceptance regardless of age, gender, social background, or physical abilities (Steinfeld and Maisel 2012).

Understanding the concept of universal design requires a shift in perspective from one that previously focused on disability to one that encompasses the diversity of users as a whole. This means that design is not only directed at specific needs, but more broadly, responds to the various spectrums of human needs. There are seven main principles of universal design that are used as a reference in the inclusive architecture approach, namely: (1) equality in use, (2) flexibility in use, (3) simple and intuitive use, (4) clear communication of information, (5) tolerance for error, (6) minimal physical effort, and (7) adequate size and space for access and use.These principles were developed by the Center for Universal Design at North Carolina State University and are widely used to assess the extent to which a design is effective for various types of users.

When it comes to younger generations, particularly Generation Z, inclusive architecture is becoming increasingly important. This generation has grown up in a digital world and tends to view spaces in a more flexible, social, and interactive way. They use mosques not only as places of worship but also as spaces for discussion, learning, and community activities. Therefore, mosques need to be designed with facilities that support their habits, such as spaces that can serve multiple functions, areas for casual discussions, internet access, digital screens, and a good sound system. These principles provide a theoretical foundation for designing mosque environments that align with Generation Z's expectations and vision for these spaces. Practical applications of these principles can be seen in several modern mosque projects, which will be discussed in the next section.

A Comparative Analysis of Mosque Architecture: Examples of Global and Regional Perspectives

Mosque architecture is experiencing a profound paradigm shift driven by the evolving spatial expectations of Generation Z, who increasingly demand sacred environments that are inclusive, adaptable, and multifunctional. A comparative study of ten mosques from various countries, both domestic and international, reveals design patterns that consciously respond to the social, emotional, and spiritual needs of this generation. To establish a comprehensive comparative framework, this study analyzes a curated selection of mosque precedents spanning diverse geographical and socio-cultural settings across Indonesia, Europe, North America, and Australia. The selected case studies represent benchmark institutions recognized for their inclusive spatial configurations, active community involvement, youth-centered programming, and innovative architectural strategies, as detailed in Table 2.

In general, these mosques adopt three main approaches in creating inclusive spaces:

1. Facilities supporting social and educational activities: such as multipurpose rooms, cafes, libraries, and community gardens, can be found in mosques such as Cambridge Central Mosque (UK), ISBCC Boston, and Salman Mosque ITB.
2. Active youth involvement: through coaching programs, education, and creative activities such as scientific discussions and thematic studies, as implemented at Jogokariyan Mosque, Toronto Islamic Center, and Cut Meutia Mosque.
3. Universal design and accessibility: the application of universal design principles in the form of wheelchair access, disability-friendly toilets, and flexible space arrangements is dominant in mosques in Western countries, but is also beginning to be adopted in several mosques in Indonesia.

Based on the results of a comparative study, it can be identified that mosques, both internationally and locally, have developed a variety of inclusive facilities that specifically support Generation Z (Gen-Z) programs. At the international level, Cambridge Central Mosque in the United Kingdom, for example, provides a café, exhibition space,

Islamic garden, disability-friendly access, and a community green park that is open to the public. These facilities are complemented by programs for Gen-Z, such as youth centers, health centers, and special activities in the form of religious lectures and community discussions. Just like the Australian Islamic Center Mosque in Australia, this mosque provides green open spaces for the community as well as activities specifically designed for the younger generation, consisting of various programs such as social and educational initiatives to create an interactive space for that generation.

Table 2. Selected Mosque Precedents Included in the Comparative Analysis

No	Name of the Mosque	Location	Source
1	Cut Muetia Mosque	Menteng District, Central Jakarta	beritajakarta.id (2024), WordPress.com(2024), skoa,id(2024), masjidcutmeutia.com(2024).
2	Salman Mosque, ITB	ITB Campus, Bandung	WordPress.com (2024）, Kemendikdasmen (2024).
3	An-Nur Mosque	Minneapolis Utara, United States	Kompas.tv(2024), masjid_An-Nur webpage (2024).
4	Toronto Islamic Centre	Toronto, Kanada	LaunchGood.com, Youtube (2024).
5	Sejuta Pemuda Mosque	Sukabumi, Jawa Barat	GenMuslim.com (2024), Inslagram (2024).
6	Jogokariyan Mosque	Jogokariyan Street,Yogyakarta	IDN Times(2024), Tribunnews.com(2024), Tempa.com, Pinterst (2024).
7	Camridge Central Mosque	Cambridge, Inggris	Pinterst, amazonaws.com, marksbarfield.com, ArchDaily, https://cambridgecentralmosque.org/
8	Australian Islamic Centre	Newport, Australia	ResearchGate, ArchDaily
9	Istiqlal Mosque	Jakarta, Indonesia	Tribunnews, Scribd,
10	Baitul Futuh Mosque, London	Morden, London	Arkitera, Pinterst, ThePlan.con
11	Islamic Society of Boston Cultural Center	Boston, Massachusetts	Archnet.com

The An-Nur Mosque in the United States and the Islamic Society of Boston Cultural Center have clearly demonstrated their commitment to today's younger generations by providing essential facilities such as a community kitchen, a café, a library, classrooms, and a multipurpose room. These facilities support educational programs, mosque maintenance services, youth volunteer engagement, social and environmental justice advocacy, food distribution, health clinics, and assistance for refugees. Meanwhile, the Toronto Islamic Center in Canada has a multipurpose room that is used for education, interfaith activities, social programs, and creative activities such as arts and crafts.

At the local level, a number of mosques in Indonesia are also showing similar innovations. The Sejuta Pemuda Mosque, for example, provides a coworking space, an open creative space, and a multifunctional worship area to support Gen-Z programs such as mentoring, boot camps, and interactive thematic studies. The Ash-Shiddiiqi Mosque and Salman Mosque also facilitate spacious terraces for congregational interaction with educational programs, consultation services, youth guidance, scientific discussions, and social activities. Jogokariyan Mosque stands out through community initiatives such as the independent congregation movement, rice ATMs, Ramadan Village, mosque census, and da'wah map, which are enriched with public kitchen facilities, clinic rooms, libraries, and hotel-equivalent accommodations. Meanwhile, Cut Meutia Mosque provides a special youth space (RICMA) that supports literacy activities, charity, and regular and collaborative youth programs.

This confirms that mosques, both in a global and local context, not only function as places of worship but also as inclusive centers capable of responding to the needs of the younger generation by integrating physical facilities and community-based programs.

A study of ten inclusive mosques, both domestic and international, shows that mosques capable of attracting the active involvement of Generation Z are those that have repositioned themselves as open, adaptive, and socially and

spiritually relevant community spaces. These mosques not only provide sacred spaces for worship, but also offer educational, recreational, and socio-economic facilities integrated into a flexible spatial system. Another characteristic that involves the current generation in the design process from the initial planning stage through to spatial implementation is the effort to address social challenges and provide comfortable, open transitional spaces for various groups. Moreover, mosques that successfully manage both digital and physical spaces in a mutually supportive manner have the potential to gain greater recognition. Therefore, mosques today must function as vibrant spaces that meet the needs of the current generation beyond simply serving as places of worship because today's Generation Z is highly enthusiastic.

Medan Gen Z and Mosques: A Questionnaire Survey

To evaluate user perceptions and spatial expectations regarding mosque open grounds, a survey was administered to 100 Muslim Generation Z residents in Medan. The empirical data reveal a split in visitation frequency: 29.4% of participants visit mosques on a daily basis, and 33.3% attend two to three times weekly. Conversely, an identical proportion (33.3%) reported infrequent visits, with a small minority (4%) attending solely for Friday congregational prayers (Figure 1). These metrics demonstrate that while a core segment of Gen Z maintains routine contact with mosque environments, a substantial subset remains disengaged. This dichotomy underscores a fluctuating spatial attachment among younger demographics, reinforcing the need for adaptive, inclusive open spaces tailored to contemporary youth lifestyles.

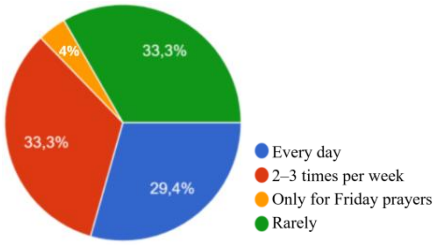

Fig. 1. Frequency of Mosque Attendance Among Generation Z Respondents in Medan

Survey data regarding daily routines show that nearly half of the respondents (47.1%) possess 3–5 hours of leisure time per day, with another 35.3% reporting 1–3 hours. A smaller cohort (13.7%) enjoys over 5 hours of free time daily, whereas those with under an hour represent a minor 3.9% (Figure 2). In terms of how this time is spent, digital engagement and gaming dominate at 64.7%, followed by peer socialization (49%), religious practices and worship (37.3%), sports activities (33%), and reading or academic study (27.5%). Community involvement accounts for a lesser 13.7%, while novel reading and rest each represent 2% of responses (Figure 3). Collectively, these trends underscore Gen Z's preference for digitally mediated interaction, social connectivity, and flexible recreation key features of contemporary youth lifestyles.

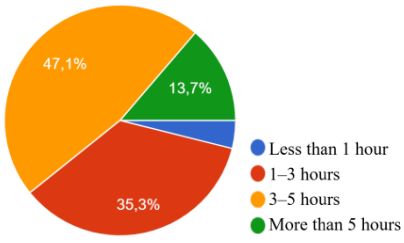

Fig. 2. Daily Leisure Time Duration of Generation Z Respondents

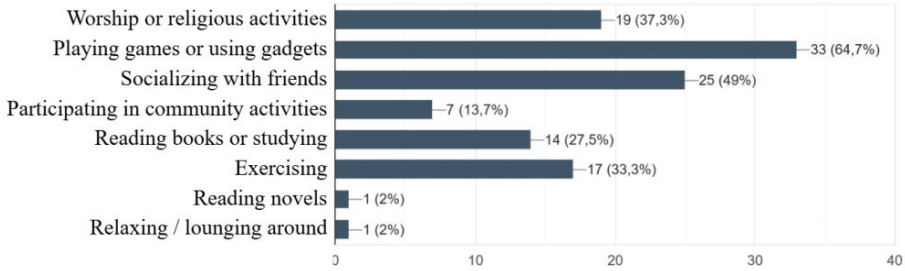

Fig. 3. Leisure Time Activities Preferred by Generation Z Respondents

When evaluating spatial preferences for leisure, an overwhelming majority of respondents (84.3%) selected the home environment as their primary setting. Secondary choices included public parks and open green areas (25.5%), cafes (23.5%), mosques (21.6%), commercial centers or malls (17.6%), sports facilities (13.7%), and miscellaneous venues (6%) (Figure 4). While mosques currently rank behind domestic and secular public settings for youth leisure, these metrics demonstrate a viable opportunity for religious spaces to re-position themselves as vibrant, youth-centric community hubs.

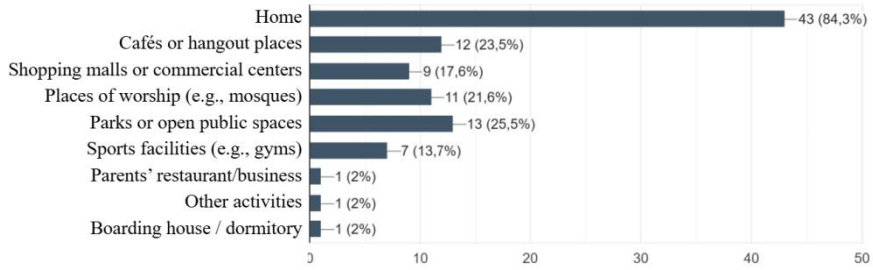

Fig. 4. Places in Medan Where Generation Z Likes to Spend Their Free Time

Qualitative feedback from the open-ended survey section highlights several key barriers to youth participation in mosque environments. Prominent among these are a scarcity of interactive programming (49%), overly rigid physical atmospheres (47.1%), limited spatial zones for informal socializing alongside poor activity dissemination (33.3%), deficient youth-tailored infrastructure (35.3%), sub-optimal cleanliness (27.5%), and unwelcoming attitudes from older congregants toward younger visitors (29.4%) (Figure 5). Conversely, respondents exhibited strong interest in mosque-hosted initiatives focused on creative dialogue and discussion (56.9%), social outreach (56.9%), artistic endeavors (51%), vocational skill development (45.1%), athletic activities (23.5%), and other miscellaneous programs (2%) (Figure 6). In alignment with these interests, priority spatial requirements identified by participants include dedicated discussion areas (70.6%), zones for deepening religious knowledge (68.6%), skill-training facilities (58.8%), spaces for spiritual and psychological counseling (56.9%), as well as sports and Islamic entertainment venues (27.5%) (Figure 7). Collectively, these findings signal a paradigm shift in Gen Z's expectations: they envision the mosque not merely as a devotional sanctuary, but as an adaptable, inclusive civic hub integrating educational, social, creative, and recreational dimensions.

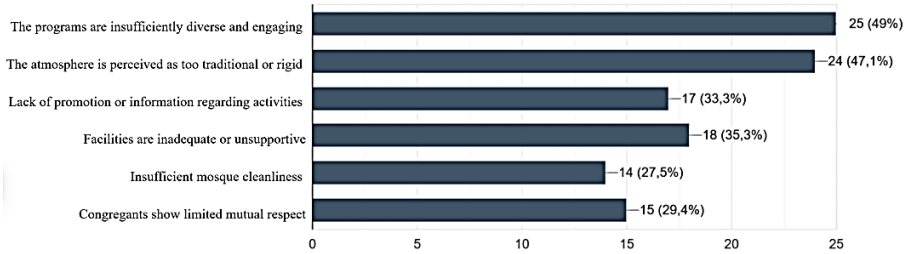

Fig. 5. Factors Contributing to the Low Interest of Generation Z in Mosques

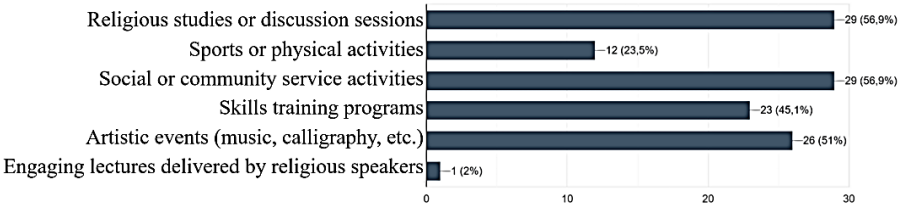

Fig. 6. Preferred Activities Desired by Generation Z in Mosque Environments

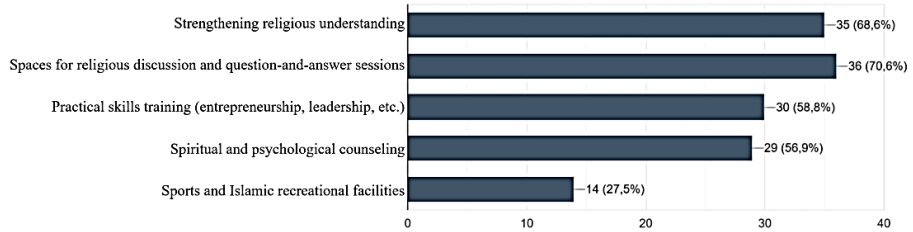

Fig. 7. Space needs and preferences of Generation Z in Medan within the mosque environment

This study indicates that Generation Z expects mosques to serve not only as places of worship but also as open, interactive, and multifunctional community spaces that can meet young people's social, educational, creative, and recreational needs. The declining interest among some young people in mosques is influenced by a rigid atmosphere, a lack of interactive programs, and a shortage of facilities suitable for young people. Therefore, developing more flexible and adaptive open spaces within mosques in line with Generation Z's preferences could be a crucial step toward increasing youth participation and fostering closer ties between the younger generation and mosques.

More importantly, the quantitative results shown in Figure 5 directly answer the first research question by identifying the physical barriers that make Generation Z reluctant to interact with mosques. The preference data shown in Figures 6 and 7 also answer the second research question by identifying the physical qualities and facilities that Generation Z desires in future mosque environments. These quantitative results provide a measurable baseline for future designs. Specifically, the perception of a restrictive spatial atmosphere (47.1%) serves as the basis for developing an open and accessible spatial layout; the lack of space for social interaction (33.3%) drives the introduction of open, social, and multifunctional spaces; while inadequate facilities for young people (35.3%) form the basis for proposing modular and adaptive spaces that support a variety of activities. Consequently, the design explorations presented in the following section translate these empirical findings into evidence-based architectural strategies.

Synthesis of Contextual Findings

A combination of literature review, comparative analysis, and questionnaire-based research provides an empirical basis for the proposed design. At the same time, these sources indicate that Generation Z requires a mosque environment that is open, flexible, multifunctional, and encourages participation. The results of the questionnaire survey provide measurable design parameters by identifying the main challenges that hinder youth engagement, while the comparative analysis highlights effective and adaptable architectural responses that can be incorporated into the proposed design.

By combining these findings, five key design points were identified: (1) openness and ease of access, (2) community spaces that can serve multiple purposes, (3) flexible and adaptable spatial arrangements, (4) open spaces that foster social interaction, and (5) participatory management to enhance a sense of ownership among young people. These points form the conceptual basis of the design proposal to be presented in the following section.

CONCEPTUAL DESIGN PROPOSAL: REIMAGINING THE SAHN FOR A GENERATION Z INCLUSIVE MOSQUE

Rather than proposing a new type of mosque, this study reinterprets one of the oldest spatial concepts in Islamic architecture the ṣaḥn as a key factor in designing mosques that are accessible to Generation Z. Historically, the ṣaḥn has served not only as an environmental element that enhances natural air circulation, natural lighting, and thermal comfort, but also as a versatile public space that supports worship, learning, social interaction, and community activities. Since the time of the Prophet Muhammad, the ṣaḥn has been an integral part of the mosque as a center for religious, educational, and social activities. However, in many mosques in modern cities, the traditional function of the ṣaḥn has gradually shifted as mosques have adapted to population density, land constraints, and changing functional needs. As a result, an increased focus on enclosed functional spaces may reduce opportunities for casual interaction, youth participation, and more flexible community activities. These changes highlight the need to reinterpret the traditional courtyard so that it remains relevant to the environmental, social, and spiritual demands of life in modern cities.

In response to today's challenges, this study introduces "Reimagining the Sahn" as a comprehensive conceptual framework to guide the design of the proposed mosque. In this study, "Reimagining the Sahn" refers to redefining the traditional mosque courtyard as a central space for environmental, social, and spiritual organization that supports the needs and expectations of Generation Z in the modern era, while preserving the mosque's functions as a place of worship, education, and social life. Rather than merely replicating the historic courtyard in its original form, this proposed framework revitalizes the traditional ṣaḥn into a welcoming, flexible, and multifunctional open area that meets the environmental, social, and spiritual needs of today's users. The Ṣaḥn does not merely serve as an additional outdoor area but is repositioned as the primary organizer of the mosque's space, regulating the environmental performance while fostering social interaction, learning, recreation, and inclusive religious activities. In this way, this framework reconnects the mosque's historical mission as a center for worship, education, and community development with the hopes and lifestyles of today's Generation Z.

This proposed framework was developed by combining three mutually supportive sources of evidence: (1) an extensive literature review, (2) an analysis of comparative case studies on modern mosques, and (3) a questionnaire

survey involving Generation Z. Rather than simply offering easily understood architectural solutions, each design choice is derived directly from the findings obtained through these three research phases and is further reinforced by the principles of Inclusive Architecture and Universal Design (Steinfeld & Maisel, 2012). In this way, the "Reimagining the Sahn" framework demonstrates how empirical evidence can be clearly translated into architectural strategies that are environmentally sensitive, socially inclusive, and spiritually meaningful. This resulting conceptual framework serves as the basis for translating these principles into a variety of interconnected architectural design strategies, as outlined in the following Design Framework.

Design Framework

Within the framework of this design proposal, the concept of "Reimagining the Sahn" is applied, resulting in five interconnected architectural strategies. Each strategy directly addresses the needs and preferences of Generation Z. The mosque's vital role in spirituality, education, and social life is also preserved. The following five strategies form a conceptual framework that is essential for the mosque, as shown in Table 3 below.

Table 3. Design Framework: Translating Research Findings into Architectural Responses

No	Research Findings	Design Response
1	Need for openness and accessibility	Open Centric Architecture
2	Need for multifunctional activities	Socially Activated Open Spaces
3	Need for flexible spaces	Modular and Adaptive Spaces
4	Need for comfortable transitions	Open Spaces as Transitional Boundaries
5	Need for youth participation	Generation Z Spatial Ownership

Project Description

This study proposes an inclusive mosque design tailored to the characteristics of Generation Z. The mosque will be located on Abdul Hakim Street, in the Tanjung Sari neighborhood, Medan Selayang subdistrict, Medan City. The current physical condition of the site is shown in the satellite image in Figure 8, while Figure 9 illustrates its precise location in the heart of the city. This location is easily accessible; it is situated in the western part of Medan, close to the University of North Sumatra (USU), and features a vibrant student community and essential public facilities.

The results of interviews and questionnaires conducted with Generation Z Muslims in the vicinity of the site indicate that most of them desire a mosque that is more open, comfortable, and relevant to their daily activities. For them, the ideal mosque is not just a place of worship, but also a space for learning, collaboration, and socializing. They want a mosque atmosphere that fosters inclusion without judgment, and that provides a space for creativity, discussion, and active participation by young people—not just as visitors, but also as program and space managers.

This project has great potential to meet these needs. Its easily accessible location, vibrant social environment, and proximity to educational institutions and youth communities make it an excellent community hub. Geographically, the site borders an educational district and green open spaces to the north, rice fields to the south, vacant land to the east, and dining establishments and informal activities to the west. The level of social safety in this area is quite high thanks to nighttime economic activity and the presence of college students living in dorms, who constitute a large group in the area.

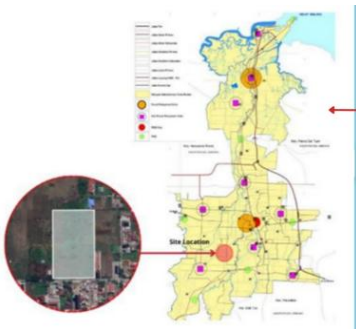

Fig. 8. Satellite view
(Source: author)

Fig. 9. Site location map
(Source: author)

This mosque was designed as a community hub that addresses the spiritual, social, and educational needs of the younger generation of Muslims. While it continues to serve as a place of worship, it has been equipped with various

additional spaces, such as a multipurpose area, a coworking space, a creative da'wah gallery, community rooms, a relaxed discussion zone, and an open area for various social and creative activities. The design adopts an architectural approach that is open to everyone, taking into account accessibility for all, thermal comfort, safety, and spatial flexibility. In this way, the mosque is expected to serve a dual purpose as a place of worship and as a space for the modern, open, and sustainable lives of the younger generation.

Open Space Integration Design Exploration

This mosque design incorporates architecture that is Generation Z-friendly as a design approach that combines spirituality, social interaction, and community activities while adapting the facilities to meet the spatial needs and characteristics of Generation Z. This mosque design serves not only as a place of spirituality but also as a venue for educational, social, and recreational activities. All aspects of this design approach encompass not only physical accessibility but also psychological, social, and cultural dimensions to enhance psychospatial comfort, foster an inclusive environment, and cultivate users' sustained connection to the space. The structure is designed to foster closeness among users and encourage them to strengthen social interactions within the mosque environment. The design exploration, which integrates various spaces, is guided by five key elements that create a Generation Z-friendly space tailored to their needs. These five key elements are:

Open to Centric Spatial Strategy: Fostering Directional and Spatial Parity

In this design concept, it is crucial to create a mosque that is welcoming to Generation Z, particularly given the building's mass, which is centered on a circular site. This circular basic form has been carefully considered and conveys the nature and interconnections of the spaces, with the aim of ensuring equality in direction and movement for every user. Centric architecture allows users to approach and enter the mosque from all directions, without prioritizing a particular path or side as the main access. This configuration provides equivalent access opportunities from multiple directions and minimizes spatial hierarchy among users (Jamail, Samsudin, Rasdi, Sabil & Yola, 2023). The exploration of the central building mass and the integration of open spaces on the site are illustrated in Figure 10. The main element of movement around the mosque is open space. Several types of open spaces become the mosque's 'welcoming area', achieved without barriers, filled with social activities at the front of the mosque, open areas for sports and fitness on the left side, and pedestrian paths through the space on the right and rear sides of the mosque (United Nations, n.d.). The two main masses are also connected by open spaces in an integrated and continuous manner, in the form of spaces between paving and natural shade, as well as pedestrian paths (Jamail, Samsudin, Rasdi, Sabil & Yola, 2023). The open space on the front-right side of the mosque integrates the outside space into the inside, leading visitors to a wide ramp that stretches from the main entrance at the front of the site to the second floor of the mosque. This ramp not only functions as universal access that is friendly to users with special needs, the elderly, or bicycle users, but also becomes an architectural element that provides a gradual spatial transition between outdoor public areas and indoor worship spaces. This designed slope facilitates the transition from the social nature of the outdoor space to the spiritual nature of the indoor space. This maintains an open visual and functional connection between the ground floor and the upper floor. This approach aligns with the principles of Universal Design, specifically regarding equity of use, ease of use, minimal physical effort, and size and space for access and use. These four principles stipulate that these spaces must be accessible, usable, and clearly interpretable to all users, regardless of their physical abilities or social backgrounds (Rahim, 2014; Al-Mansoor, 2018). User circulation and movement patterns within the mosque environment are illustrated in Figure 11.

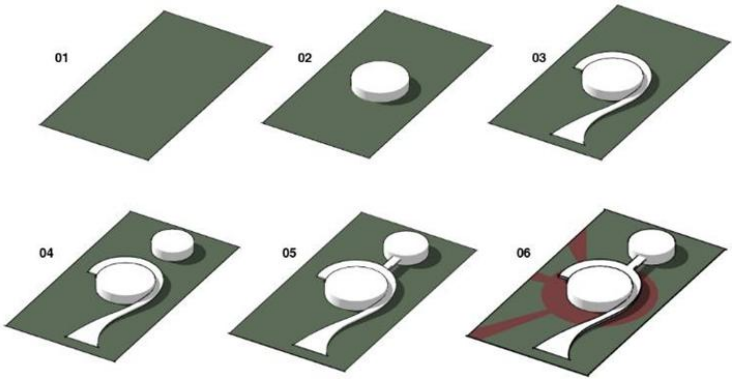

Fig. 10. Exploration of the main building's massing that integrates with open spaces
(Source: author)

The center of this circular layout directly responds to Generation Z's preferences and desires for openness and equal access. The results of this questionnaire show how respondents stated that the formal atmosphere of mosques is restrictive and acts as a barrier to visiting mosques regularly. The layout of the space is designed to harmonize with the open areas, facilitating smooth circulation, visual connectivity, and flexible social interaction throughout the entire site. Principles of universal accessibility also underpin this design, including equity in use, ease of use, and the creation of a welcoming atmosphere that encourages diverse social interactions.

Fig. 11. User movement patterns
(Source: author)

Social Openness: Unlimited Space, Unrestricted Programs

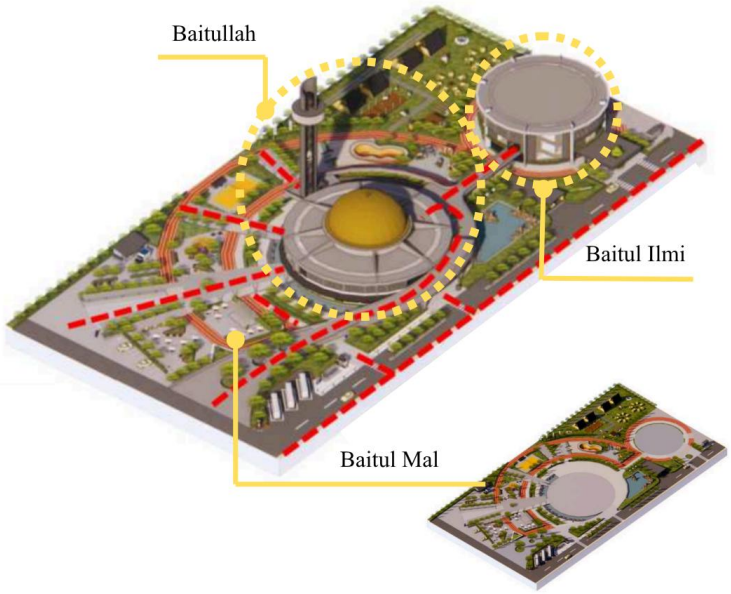

Fig. 12. The fluid zoning into Baitul Mal, Baitul Ilmi, and Baitullah
(Source: author)

Generally, mosques are surrounded by high walls and feature enclosed prayer spaces, but in this design, the mosque is wide open to visitors, creating an open atmosphere that is easily accessible to all users. This feature is concretely manifested in the mosque's integration into the surrounding open space: the absence of fences separating the site from the road and the surrounding environment, as well as in the blending yet structured division of space into zones, namely Baitul Mal (socio-economic), Baitul Ilmi (educational), and Baitullah (spiritual). The three zones are not rigidly separated, but rather merge together in a fluid and natural flow of movement through the open space between buildings. This opens up space for Generation Z to explore, settle, and become actively involved in the mosque according to their interests and needs. The front zone, which functions as Baitul Mal, is not merely a complement, but part of a social fence, a communal space such as MSME outlets that actually serve as "guardians" of openness. At the rear, the absence of fences allows the open space to function as an area for discussion, relaxation, and other interactive activities that blend in with the surrounding landscape. This design is in line with the principles

of Universal Design, particularly Equitable Use, Flexibility in Use, and Perceptible Information. Open access without fences and blended zoning allows every individual, regardless of background or physical ability, to feel accepted and have a space in the mosque. The flexibility between zones, which are not rigidly restricted, gives users the freedom to determine their own spatial experience. Meanwhile, the open and intuitive organization of the space helps users understand the function and direction of the space naturally, strengthening psychosocial acceptance and cross-group interaction (Jamail, Samsudin, Rasdi, Sabil & Yola, 2023). The fluid zoning concept and spatial integration of Baitul Mal, Baitul Ilmi, and Baitullah are illustrated in Figure 12.

The fluid zoning into Baitul Mal, Baitul Ilmi, and Baitullah responds to Gen Z's call for informal, multi-functional spaces where social, economic, and educational activities can flourish alongside worship. This flexible spatial organization supports the development of social networks, which aligns with Project for Public Spaces' emphasis on sociability as key to successful public environments.

Modular and Adaptive Spaces: Flexibility to Respond to the Dynamics of the Times

The design of this mosque adopts the principle of spatial flexibility in response to the dynamic, collaborative, and adaptive nature of Generation Z. The space is designed to be modular and easily adaptable to the needs of the time and activities, rather than permanent and rigid. One manifestation of this is the presence of an open space at the front of the mosque as a rotation area for MSMEs in the Baitul Mal zone, which utilizes a semi-permanent booth system and folding fur niture so that tenants can take turns using the space. The presence of this element not only supports community economic empowerment but also activates the mosque space around the clock with various productive activities. In addition, the backyard area features camping tents that can be set up or taken down. These backyard facilities are designed to support outdoor activities including training sessions, nature studies, and spiritual retreats in a more open and comfortable setting. The folding chairs found in various areas further enhance the mosque's adaptable nature, creating relaxed spaces for communication, learning, or simply resting. These design elements make the mosque's open spaces flexible and suitable for a variety of purposes. This aligns with the principles of Universal Design, particularly ease of use and minimal physical effort, ensuring the space can be used by all users without undue physical strain. These facilities serve not only as spaces for activities but also as a means for the growth of a community that is constantly changing, evolving, and living in harmony with its users (Aziz, Ismail & Siraj, 2022).

Fig. 13. A public open space suitable for various community activities in the front yard, which is connected to the mosque area (Source: author)

Figure 13 shows an open space designed to accommodate all user activities in the front courtyard, which is connected to the mosque area. Semi-permanent kiosks and foldable furniture make it easy to reconfigure the space to suit both MSME tenants and user activities. This illustration demonstrates how the space's flexibility and functionality support both social and economic interactions within the mosque's surroundings. The space's divisible and adaptable nature responds to the desires of Generation Z, as reflected in the survey results. The ease of

reconfiguring this space fosters creative programs and encourages spontaneous user engagement. This embodies the principles of Universal Design regarding ease of use and minimal physical effort.

Open Spaces as Adaptive Connectors and Boundaries: Creating Natural Transitions Between Different Zones

Rather than separating the mosque's areas with large walls or rigid partitions, this design emphasizes landscape elements and open spaces to create soft boundaries and transitions between spaces. The social, educational, and spiritual areas are connected by transitional spaces such as open corridors, fish ponds, gardens, and semi-open wudu areas that surround the main building. These elements not only serve to dampen noise from busier areas but also provide a moment of pause for visitors before entering quieter, more contemplative spaces. For example, the fish pond located inside is not merely an aesthetic feature but also serves as a natural acoustic barrier between the public and spiritual areas. Similarly, the presence of shade trees and the subtle yet distinct differences in flooring materials facilitate transitions between areas without the need for direct visual cues. In this way, visitors are invited to perceive changes in atmosphere and function through their senses. The principles of information in this approach are tangible, and there is a tolerance for deviations from Universal Design, where spatial information is conveyed intuitively and users are invited to interact without feeling restricted. This space is not merely a space for movement but also a place to pause, reflect, or adapt to the spiritual rhythm within it (Saputra & Sarwadi, 2019).

Fig. 14. Transition area created through landscape and open corridors
(Source: author)

Figure 14 highlights the function of the transitional area, which integrates the social, educational, and spiritual spaces within the mosque. Through open corridors, a pond, and landscape elements, this space creates a soft boundary that dampens noise and provides a natural pause before entering a quieter, more contemplative area. Visually, this demonstrates how space is organized not as a rigid divider, but as a gentle transition that maintains continuity between areas. These natural and seamless design transitions not only enhance spatial clarity but also create a psychologically comfortable environment that encourages Generation Z to move freely without restrictive barriers. This reflects the Universal Design focus on Perceptible Information, which contributes to user orientation and acceptance.

Management Plan: "Ownership of Space" by Generation Z: From Merely Visitors to Initiators

More than just providing facilities, this mosque design encourages Generation Z to play an active role in managing the space. The concept of ownership of space is understood and interpreted not only physically, but also

socially and purposefully as a place that is not merely visited but also serves as a venue for various activities brought to life by the community. Areas such as Baitul Mal and Baitul Ilmi are planned as open spaces that accommodate creative activities, training sessions, discussions, and social gatherings initiated by Generation Z. These spaces are not only managed top-down by mosque administrators but are also designed to be reprogrammed by community groups affiliated with the mosque's organizational units. This flexibility fosters a sense of ownership, as Generation Z members are not merely guests but active individuals or groups shaping the identity of a space. This approach not only extends the lifespan of these spaces but also ensures the mosque remains relevant amid ongoing social change. This approach aligns with the principles of equity in use and ease of use, and broadens the concept of openness from mere accessibility to active engagement in shared ownership. It is recommended that management plans encourage the active involvement of the younger generation in planning, organizing, and implementing community programs within the mosque (Jaya, 2023). The emphasis on "ownership of space" empowers Generation Z to transition from being merely passive visitors to becoming active drivers of mosque programs. This participatory approach directly addresses respondents' hopes for a welcoming and engaging environment, thereby fostering a sense of ownership within the community and ensuring the continued functioning of the mosque.

Overall, this mosque's design offers solutions to various challenges faced by Generation Z, including:

1. The main building is centrally located with a circular architectural form, providing equal access and creating an open, participatory spatial experience. This sets this mosque's design apart from existing mosques, which often restrict space and reinforce rigid perceptions of what a mosque should be.
2. The concept of social openness is reflected in adaptive spaces without physical barriers. This fosters a variety of activities desired and enjoyed by Generation Z, ranging from social and educational to economic activities.
3. Adaptable and divisible spaces give users the freedom to reconfigure the space according to their preferences or activities, thereby fostering collaboration and active engagement.
4. Transitions between different areas of the space are designed to feel natural and seamless. This helps users navigate the space comfortably and creates a welcoming and intuitive atmosphere.
5. The spatial planning provides Generation Z with the opportunity to actively manage and organize mosque programs that foster a sense of ownership, thereby encouraging them to ensure the mosque's functions continue to operate smoothly.

This design transforms the mosque not only into a place of worship but also into a comprehensive community hub, in line with the expectations and needs of Generation Z in the digital age. The proposed concept integrates worship, learning, social, and economic activities within a welcoming and adaptable space.

CONCLUSION

This mosque offers a comprehensive architectural response to the changing times. In the face of increasingly difficult challenges, this design offers a fresh perspective on worship spaces no longer formal and rigid, but instead creating an open, adaptive atmosphere in harmony with today's generation. By emphasizing the principle of equality in orientation and movement within the site and building design, this mosque rejects conventional spatial boundaries and provides equal access for all groups. These spaces are designed to be divisible and adaptable to accommodate the dynamic activities of Generation Z. Without fences, the landscape integrates with open areas serving as spaces for rest and reflection, while the interconnected flow of the "baitul mal" (treasury), "baitul ilmi" (house of knowledge), and "baitullah" (house of God) are interconnected in an interactive manner, creating an open worship experience that aligns with the lifestyle of today's generation.

This mosque demonstrates how incorporating open spaces into the design can transform this spiritual building into a spacious, adaptable, and responsive environment that meets the social needs of today's generation. The mosque's design not only serves as a place of worship but also facilitates interaction, education, and collaboration among communities. By combining landscaping, flexible spaces, and a balanced zoning system free of social barriers, this design offers a fresh approach to creating a spiritual space that is connected to the lives of today's generation. This aligns with a design philosophy that is sensitive to humanity and the changing times, as reflected in the mosque's very function.

This study has several limitations. The results are based on a survey of 100 Generation Z respondents in Medan; therefore, the trends identified may reflect local cultural and social characteristics and may differ from those of Generation Z in other parts of Indonesia, particularly outside Sumatra or in rural areas. It is recommended that future research involve a more geographically diverse sample of respondents to strengthen the generalizability of these findings.

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