

**How does the Cambridge Central Mosque interpret
traditional Islamic Architecture in a contemporary way?**

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Abstract

How does the Cambridge Central Mosque interpret traditional Islamic Architecture in a contemporary way?

By Moynul Ali

Swansea School of Architecture, University of Wales Trinity Saint David

The community of Muslims regard 'mosques' as a holy place which is not restricted to prayers only but is used for performing a variety of other educational and social activities also. This means that mosques has a vital importance as a public space catering to the living practices of the population. This research sought to investigate the evolution of mosque design in terms of meeting the needs of the contemporary living practices. The shift from traditional to modern architectural solutions was explored, addressing the spiritual, communal, and practical needs of the Muslim communities of the present era. As the data collection method, three case studies of notable mosques were assessed, namely the Prophet's Mosque, Süleymaniye Mosque, Bait Ur Rouf Mosque, which were compared with the Cambridge Central Mosque. The motive was to deeply discover the consolidation of inclusivity, sustainability, and technological advancements in mosque architecture. The key findings reveal that on one hand, conventional designs of the mosque stays as important as they were in old times, the attention of the contemporary-era mosques is more on the optimisation of space, inclusivity, and environmental sustainability. Moreover, it can be concluded that the traditional values seem to be substantially blended with modern demands by the contemporary architecture of the mosque.

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Chapter 1: Introduction and Methodology

Background

The role of mosques has historically been notably pivotal in Islamic societies, with their function serving not only as places of worship, but also as centres for education, social services, and community gathering (Al-Krenawi, 2016). The evolution of the mosque design reflects transitions in cultural, environmental, and technological areas, since the prime intention of the communities and architects is to strive to meet the needs of the contemporary living. This section will be providing a detailed background on the significance of mosques, their historical development, and the challenges posed by contemporary demands.

Relevance of the Mosque

The mosques own vital importance for Muslim communities, acting as significant spiritual and communal hubs (Okuyucu, 2016). More than the religious significance held by mosques, they nurture educational avenues, social cohesion, and often act as centres for the welfare of the community (Cheema, 2021). In the modern era, the relatability of mosques goes even further, incorporating sustainable design as well as inclusivity. As a result, broader values of the society get reflected.

Form and History in the Development of the Mosque

There has been a notable evolution taken place in the architectural form of mosques since the time of Prophet Muhammad (P.B.U.H). The first prototype, the initial model, the Prophet's Mosque in Medina, laid down essential features like the qibla (prayer direction), mihrab (prayer alcove), and minaret (tower for the call to prayer). Over the ages, regional influences have contributed various styles, such as the magnificence of Ottoman structures like the Süleymaniye Mosque and the detailed geometric patterns of Persian mosques (Esfahani, 2015). These classical designs serve as a basis for modern reinterpretations.

The Contemporary Mosque

Modern mosque architecture faces the challenge of blending traditional features with present-day requirements (Buljubasic, 2023). Elements like sustainable materials, latest technologies, and versatile spaces signify a movement toward eco-consciousness and practicality. Prominent examples, such as the Cambridge Central Mosque, showcase how

contemporary lifestyle demands could be addressed by architectural creativity, while preserving spiritual essence.

Research Problem/Question:

“How does the Cambridge Mosque interpret traditional Islamic Architecture in a contemporary way?”

Aims and Objectives:

Aims:

- Explore different typologies of mosques from first prototypes, traditional and an abstract
- Explore the design of the Cambridge Central Mosque deeply
- To see how design is affected in relationship with the faith

Objectives:

- Historical background of the Mosques
- Compare first prototypes, traditional and the abstract one
- Detailed case study of the Cambridge Mosque
- Influences on Cambridge Central Mosque
- To investigate how architects design contemporary mosques for balancing modernity with tradition
- To uncover the importance of referring to traditional mosque design in contemporary projects
- To examine how contemporary designs respond to the specific orientation and spatial requirements of mosques

Scope and Limitations

The specific emphasis is on the Cambridge Central Mosque. Apart from that, this research primarily concentrates on three case studies, namely the Prophet’s Mosque (as the first prototype of mosque design), the Süleymaniye Mosque (representing traditional Ottoman architecture), and the Bait Ur Rouf Mosque (a minimalist contemporary mosque). But, this serves as a limitation of the study as the research is limited to these examples only, showcasing the environmental and architectural aspects instead of sociopolitical or theological dimensions.

Significance of the Study

Evidence by Harsritanto et al., (2021) indicates that traditional mosques often consume major resources, specially like water and energy. In this scenario, this research's examination of whether a more modern mosque design model is achievable allowed for uncovering valuable insights. The exploration of innovative approaches made it possible for this study to contribute to the wider discourse on the sustainable architecture and its application in religious spaces.

Overview of Structure

This study is divided into following sections:

- Literature review: This section has reviewed the theoretical frameworks, previous studies, and existing work on mosque architecture and sustainability. In addition, it identifies gaps in the knowledge and situates the research within the broader academic context.
- Research methodology: This section entails the research design, data collection methods, and analysis techniques, concentrating on the selected case studies.
- Case studies and design precedents: This chapter provides a detailed analysis of the selected mosques, alongside highlighting lessons learned and insights for contemporary design.
- Results and discussion: In this section, the findings of the research are presented, comparing them with existing literature. In addition, the broader implications are discussed in this section.
- Conclusion: The key findings are summarised in this section of the study, outlining contributions to the field. Moreover, here the directions for future research have also been suggested.

Literature Review

This section aims to review the literature examining the theories, models, and key ideas which form the foundation of the research, expanding on the background research. In addition, this section will be analysing the previous studies, projects, and scholarly contributions that have investigated the evolution of mosques till now in terms of catering contemporary living practices. Moreover, any gaps in the current knowledge will also be identified, alongside setting out the intention of this research to fill that gap. As a consequence, this literature review sets the stage for the research by contextualising the transition of mosque architecture and look for areas for more exploration. The findings collected from the past studies and loopholes in the existing knowledge crafts the need for

this study, reinforcing its significance in progressing the awareness of mosque design in the modern era. Literature reveals that Muslim communities have always been closely tied to the mosque, known as "Masjid" in Arabic. The masjid was not only a place for praying or performing religious rituals, but it was also much more than that (Cheema, 2021). It served as a symbol of belonging and identity for Muslims. Throughout Islamic history, the mosque has been the most important building in any Muslim state or community, no matter where it was established. This means that Mosques have always been at the centre of Muslim life, not only as the house of God and the holiest place to worship Allah (SWT) but also as a space for various activities. As revealed by Esfahani (2015), it is used to host social events like weddings, funerals, and gatherings for condolences, as well as political events, including wars and revolutions.

Theories and Models in Mosque Architecture

The foundation of the mosque design is rooted in Islamic architectural principles which have their attention on the attributes of spirituality, simplicity, and utility of the community. As highlighted by Al-Krenawi (2016), mosques have been historically functioning as spaces owning multifunctional spaces, incorporating educational, religious, and social motives. The classical theories in mosque architecture, like the significance of spatial orientation toward the qibla, coupled by the consolidation of fundamental elements such as the courtyard, minaret, and mihrab have posed an impact on the designs in Muslim states. With the aid of these principles, the baseline for the construction of mosques is formed, assuring spiritual alignment as well as community inclusiveness. Contemporary architectural theories have sought to amalgamate the technological advancements, cultural adaptability, as well as sustainability in mosque design. Prominently, a study by Karawia, (2020) shows that the principles of Islamic architecture are evolving to showcase the alterations with respect to culture, technology, and environment, rather than being static. The relevance of concepts such as passive design, and biomimicry are commonly utilised in mosque architecture in modern-day designs of the mosques (Cheema, 2021; Buljubasic, 2023).

Previous Studies on Mosque Design Evolution

- Historical development of the mosques

The adaptability of design to cultural and regional contexts is illustrated by the transition of mosque architecture from the Prophet's Mosque in Medina to grand structures like the Süleymaniye Mosque (Esfahani, 2015). The primary elements were introduced by the Prophet's Mosque, while subsequent designs, such as the Ottoman styles and Persian

styles have been consolidated by the including the geometric domes, patterns, and expansive courtyards (Azmi and Kandar, 2019). These structures showcase how local materials and aesthetics shape the traditional principles.

- Contemporary designs of mosque

As per the studies, such as Okuyucu (2016), and Alkhaled (2019), there are several notable challenges tied with mixing modernity with tradition. For example, it is exemplified by the Cambridge Central Mosque that how contemporary architecture can establish a balance between Islamic principles with sustainable practices. Gray, (2023) states that an eco-conscious approach is reflected by the utilisation of natural ventilation, timber, and innovative lighting system, all of which play a collective role in maintaining the spiritual essence of a mosque. In the similar vein, evidence by Karawia, (2020) highlight that a minimalist architecture which puts a high priority on natural lightening, air passage, and accessibility of the community are showcased by Bait Ur Rouf Mosque in Bangladesh.

- Sustainability and inclusivity

More likely the sustainability has become a critical aspect of the architecture of mosques, stimulated by global concerns related to the environment. It was noted by the research of Azmi and Kandar, (2019) that eco-friendly characteristics are often lacked by traditional mosques, and it has normally been observed that these mosques consume substantial renewable energy, and water resources. As a consequence, a movement towards designs that amalgamate locally sources materials, water cycling systems, and renewable energy has occurred (Harsritanto et al., 2021). In addition, much of prominence has been gained by inclusivity, with modern mosques having features such as gender-sensitive spaces, access to wheelchair, and multipurpose areas in order to facilitate broad needs of the community (Hoteit, 2015).

Gaps in Literature

Although there is a growing body of evidence available on mosque designs, certain gaps exist in literature. While the iconic historical mosques have been examined by the studies, there remains a scarcity of studies that explore the aspects of modern designs of mosque, especially those that integrate not only sustainable materials but also advanced technologies (Harsritanto et al., 2021). Secondly, the existing research predominantly emphasise on the environmental and architectural aspects, which means that there are not enough studies investigating that how designs of mosques cater to community-particular necessities and inclusivity (Karawia, 2020). The focus of many studies is either on modern innovations or conventional designs, with very few assessing how a

harmonious coexistence can be possible between the two with respect to contemporary projects of the mosque.

Contribution of this Study

This study sought to address the identified gaps by concentrating on the evolution of the design of mosque to care to the modern-day practices of living. It seeks to bridge the gap existent between modernity and tradition, giving information about the suitable strategies of design, and the significance of community engagement. Though focusing on the case study like Cambridge Central Mosque, the current study has attempted to provide a well-rounded cognisance of how contemporary mosques can mirror the principles of Islam without compromising on the requirements of the present world. This research goes beyond just focusing on sustainability. It adds to the discussion on designing mosques by exploring ways to balance environmental care with cultural and religious traditions. With the examination of both historical and modern examples, the study offers useful insights for architects and planners who are working on mosque designs.

Research Methodology

Research methodology, as explained by Sreekumar, (2023) refers to a scientific and structured approach utilised for gathering, analysing, and interpreting qualitative or quantitative information with a motive to answer research questions or test the hypothesis. In other words, it is a plan that is used to carry out research and help to keep the researchers on the right path by means of restricting the research's scope. This section will be discussing the research methodology that was undertaken to explore how the Mosque design has evolved to accommodate contemporary living practice. The present research employed a qualitative secondary research approach, using case study analysis for exploring how mosque design has evolved to accommodate contemporary practices.

- **Research Design**

The study adopts a qualitative framework, focusing on case studies to provide in-depth insights into mosque design. The rationale behind choosing qualitative research is that the researcher thought of this approach as most suitable. This is because Asif et al. (2021) suggest that a qualitative research is helpful in exploring the meanings, experiences, and cultural aspects of how mosques have evolved to meet modern needs. In addition, it permits for an in-depth analysis of community, historical, and architectural perspectives. Therefore, qualitative approach is ideal for understanding the rich, and complex ways within which mosques adapt to contemporary living. The research includes looking at historical and contemporary examples:

- I. The Prophet's Mosque: As the foundational model of mosque architecture.
- II. The Süleymaniye Mosque: Representing traditional design principles.
- III. The Bait Ur Rouf Mosque: Showcasing minimalist and abstract contemporary architecture.
- IV. The Cambridge Central Mosque: Highlighting sustainability and modern functionality.

- Methods of Data Collection

Data collection methods include a strategic approach of case study analysis. Hancock, Algozzine, and Lim, (2021) define case study analysis as a research method where specific examples (case studies) are carefully examined to understand a topic in depth. This approach concentrates on real-life situations, making it easier to explore and analyse tough issues, like the design of mosques, in a practical way. For this research, case study analysis was chosen because it allows to look closely at specific mosque designs to understand how they have evolved over time and adapted to modern needs with the Mosques elements. The three case studies selected – the Prophet's Mosque (the first mosque prototype), the Süleymaniye Mosque (a traditional mosque), the Bait Ur Rouf Mosque (minimalist and abstract contemporary architecture), and the Cambridge Central Mosque (a contemporary mosque) were carefully picked for their historical and architectural significance. The criteria of selecting the case studies was their historical significance, architectural innovation, and regards for sustainability. Each of these mosques represents a unique period in the evolution of mosque design, giving a complete picture of how traditional principles are preserved or reimaged in modern times (Okuyucu, 2016; Buljubasic, 2023). These examples also highlight key elements such as sustainability, accessibility, and orientation, which are central to the research.

If another data collection method, like surveys or experiments, had been used, it would not have provided the same depth or context. Surveys, for instance, might gather opinions but fail to show the physical or historical details of mosque design. Likewise, experiments would not be suitable for studying historical structures or completed projects (Haywood et al., 2016). So, focusing on real-world examples through case studies, this research gains a richer and more detailed understanding of how mosques are designed to balance tradition with modern living practices. Detailed architectural analysis of the selected mosques, focusing on form, function, and sustainability was done. Moreover, mosque layouts, materials, and environmental strategies were also noted by analysing these case studies. In addition to the case studies, attempts were made to interview and engage with architects, service engineers, and community members involved with the Cambridge

Mosque. However, the researcher did not receive any responses. Therefore, the data was solely collected from analysing the mentioned case study mosques.

- **Methods of Data Analysis**

The collected data was systematically analysed using thematic analysis, a qualitative research technique that identifies, organises, and interprets key patterns or themes within the data. Developed by Clarke and Braun (2017), one of the most common type of analysis is done in thematic analysis for qualitative data, marked by spotting, analysing, and interpreting meaning's patterns within qualitative data. This approach was chosen because it allows for a detailed exploration of the underlying concepts related to mosque design and its evolution. Not only this, but thematic analysis also enables a proper understanding of the architectural, cultural, and functional elements that are central to both traditional and contemporary mosque designs. To achieve this, a comparative analysis was conducted to explore the distinctions and overlaps between traditional and modern mosque architecture. In this comprise the examination of the elements such as layout, materials, and aesthetic principles with an objective to comprehend how these have changed over time to adapt to contemporary needs while retaining their spiritual essence. In addition, a focused examination of sustainability features was carried out. This included analysing how mosques integrate environmentally conscious practices, such as energy efficiency, use of eco-friendly materials, and water conservation methods (Harsritanto et al., 2021). The aim was to assess how these sustainable features align with modern architectural practices and Islamic values.

Finally, the data was assessed for its responsiveness to orientation, accessibility, and modern living requirements. This involved exploring how mosque designs accommodate the qibla direction, cater to diverse community needs (e.g., women, children, and people with disabilities), and incorporate facilities like educational spaces, parking, and multipurpose halls. Each of these elements was evaluated to understand their role in bridging traditional values with the demands of contemporary living. This structured and thematic approach allowed for a comprehensive analysis of the collected data, contributing many informative insights into the evolution of mosque design.

- **Ethical Considerations**

Ethical considerations are very important in research, notably when topics like mosque design are being studied, which involve cultural, religious, and community elements. Ethical research builds credibility and guarantees that the work respects all parties involved (Resnik, 2018). First of all, respecting the beliefs and values of the Muslim community is essential to avoid misrepresentation or offense. For example, discussing

traditional mosque designs or contemporary changes should be done with sensitivity to Islamic principles and practices. Additionally, ethical research is all about making efforts to assure that the data collected is used responsibly and fairly (Hasan et al., 2021). This also means avoiding bias or altering findings to fit preconceived ideas. In the current study, confidentiality and anonymity were maintained throughout the study. It is also important to acknowledge the work of other researchers by properly citing their studies to maintain academic honesty. Finally, the research should aim to provide benefits, such as helping architects design better mosques or promoting sustainable practices, rather than causing harm (Okuyucu, 2016). Taking care of and following ethical guidelines, the current study produces trustworthy results that contribute positively to both academic knowledge and the communities involved.

- Limitations of Methodology

The methodology of this research is subjected to several limitations that are risked to be affecting the overall outcomes and depth of the analysis. One major constraint is the limited access to key individuals, such as architects and engineers who were directly involved in the Cambridge Mosque project. Despite multiple attempts to reach out to these professionals for interviews or insights, their lack of availability has restricted the ability to gather firsthand information about the design process, challenges faced, and decisions made during the project. This absence of direct input limits the depth of understanding that could have been achieved through their expert perspectives. Secondly, another limitation lies in the potential bias associated with interpreting qualitative data. As per Asif et al. (2021), qualitative research, which often relies on case studies, interviews, or observations could be influenced by the researcher's own assumptions, perspectives, or interpretations. In this study, the interpretation of architectural elements, sustainability measures, and design features are risked to be carrying a subjective bias, even with efforts to remain neutral and objective. Additionally, the limited sample size of case studies and the reliance on secondary data for certain aspects further constrain the breadth and applicability of the findings, as identified by Boddy, (2016). These limitations highlight the challenges of conducting comprehensive research in architectural studies, particularly when access to key stakeholders is restricted, and the subjective nature of qualitative data interpretation is involved. However, the research attempts to mitigate these constraints by focusing on powerful case studies, thorough literature review, and cross-referencing data to take care of the validity and reliability wherever possible.

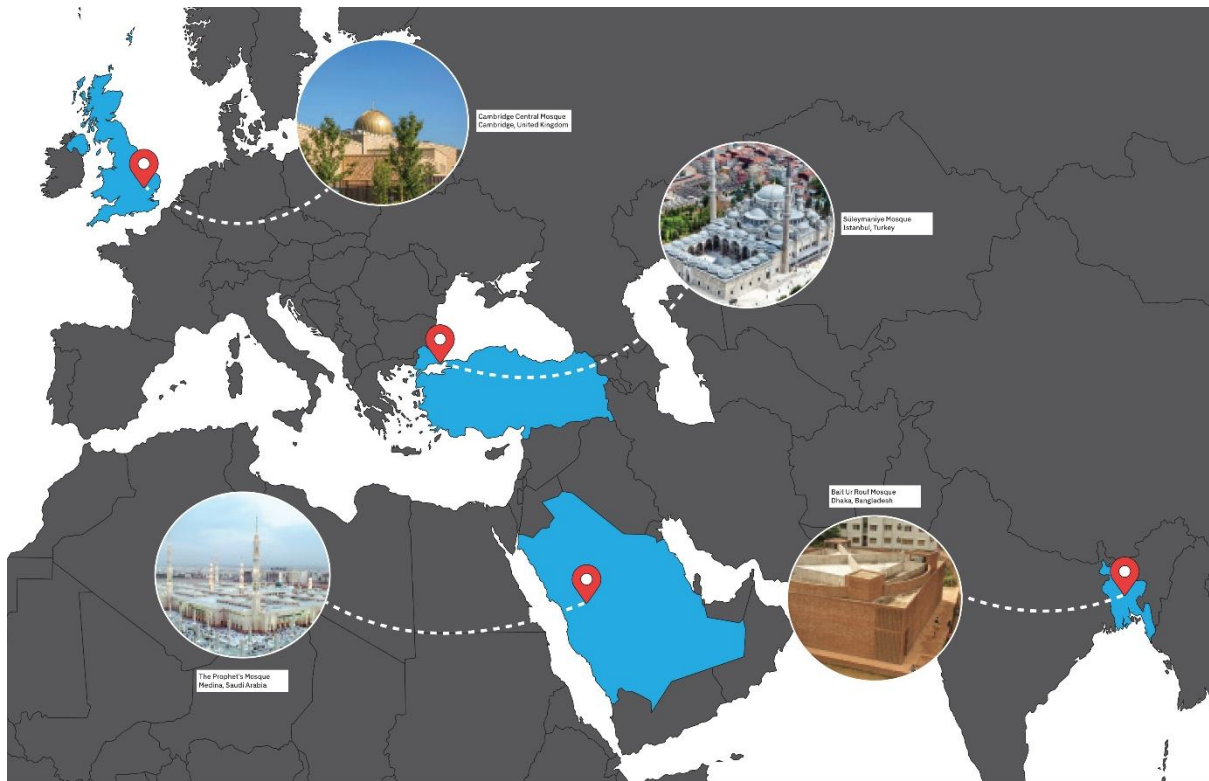


Figure 1: Map of Europe and Asia showing the locations of case study Mosques (Credit: M. Ali)

Chapter 2: Case Studies / Design Precedents

This section intends to do an in-depth study of different mosques with a motive to understand their design and purpose. It explains why these specific mosques were chosen and focuses on how they were built, what they were used for, and how they served their communities. Looking at both old and new examples, the section shows how mosques have always been more than mere places to pray, and extend to also facilitating education, social activities, and even environmental responsibility. Alnajjar and Dinçel, (2024) suggest that each mosque teaches important lessons about equalising modern day needs and challenges with community needs, and even tradition. Consequently, Architects have a vital opportunity to learn to design more beneficial mosques in the future.

Selection criteria of the case studies

The three mosques, namely the Prophet's Mosque, the Süleymaniye Mosque, and the Bait Ur Rouf Mosque have been chosen as case studies because they act as prominent examples that have somehow inspired the design and purpose of the Cambridge Central Mosque. Each of these examples acts as a forerunner by demonstrating essential features that looks to be

in line with the Cambridge Mosque's vision of merging heritage with contemporary requirements (Cetinkaya and Efeoglu, 2024). Ancient mosques like the Prophet's Mosque illustrate the role of a mosque as more than a prayer space, working as a hub for education, community gatherings, and social interactions (Utaberta et al., 2015). Likewise, the Süleymaniye Mosque showcases the harmonious blend of artistry, cultural identity, and practicality within Islamic architecture (Takikawa, 2015). The Bait Ur Rouf Mosque stands out for addressing local environmental and societal issues while staying deeply rooted in Islamic design values, offering essential lessons in balancing spirituality, elegance, and usability. These historic mosques reveal how such spaces can fulfill multiple roles while preserving their sacred purpose (Esfahani, 2015). Examining these examples highlights how the Cambridge Mosque evolves these ideas by incorporating modern elements such as eco-friendly technologies, inclusiveness, and versatility to suit a diverse, multicultural environment. Thus, the researcher opted these case studies for the meaningful insights and parallels they provide, directly relating to the aspirations and innovations of the Cambridge Central Mosque.

Case Study 1: The Prophet's Mosque, Medina

Al-Masjid an-Nabawi, which is also called the Prophet's Mosque is one of the most prominent mosques in the history of Islam. This mosque has been built in the city of Medina by Prophet Muhammad (P.B.U.H) in 622 CE. Historical evidence reveals that the construction of the Prophet's Mosque was originally carried out with a basic structure made of bricks and palm trunks (Utaberta et al., 2015). The importance of this mosque was held by its facilitation of a worshipping place, as well as the central hub for the entire Muslim community. The dual significance of the prophet's mosque as both a religious as well as community center situates it as a key model for the designing of mosques throughout the history. The simple design of this mosque attempted to showcase the values upheld by the religion of Islam, putting a core priority on inclusivity and functionality instead of magnificence (Asif et al., 2021). Talking about the design of the Prophet's mosque with respect to the research question, the open courtyard of the mosque made it somewhat possible to conduct a range of activities there, including more than just prayers. For example, educational sessions as well as community meetings could also be held there. The most praiseworthy aspect of the Prophet's Mosque is its symbolisation of unity, as all individuals, irrespective of their economic background were allowed to gather and take part in communal activities. The multifunctionality of the mosque is one of the notable features of this mosque, owning the significance of continuously influencing the mosque designs of the present world strongly. The role of education is one of the key features of the Prophet's Mosque, with this mosque housing the first Islamic school, where the Prophet (P.B.U.H) gave Islamic lessons to his companions (Utaberta et al., 2015). Due to this, the role of the mosque is exemplified as an educational institution, rather than merely a

spiritual centre. With the passage of time, this practice gradually began to be deployed by the mosques across the Muslim's world, incorporating Islamic schools (madrasas) into their designs (Alkhaled, 2019). In a way, it was the Prophet's Mosque that set the standard for mosques to be more than solely a place of performing prayers. Accompanying the function of education, the Prophet's Mosque also served as a centre for social welfare. It is found that the prophet's mosque served to welcome people who were in need, be it poor individuals, or travellers. They were facilitated with a place to stay and get assistance that they need. Hoteit, (2015) asserts that this sense of community care is a persistent core value in the design and functionality of the mosque. Today, the mosques of the current era are normally found to be having allocated spaces where counselling, charity distribution, and other social services are done, reinforcing the prominent role played by the Prophet's Mosque (Okuyucu, 2016). From architectural point of view, the Prophet's Mosque has witnessed significant evolution as the centuries passed. At present, this mosque is a grand structure which is spacious enough to accommodate millions of worshippers. These huge capacity of worshippers can particularly be accommodated during the season of Hajj. However, the core essence of the mosque remains the same, which is to serve as a place which forms unity among population while performing numerous purposes (Alkhaled, 2019). Research indicates that the capability of the Prophet's Mosque in terms of adapting to the requirements of its time while keeping intact the core functions of spirituality and community offer valuable learning to the planners and architectures of the modern era (Karawia, 2020). The crucial significance of developing inclusive, and multifunctional spaces is strongly emphasised by the lessons learned from the Prophet's Mosque. In addition, it teaches how functionality can be blended with simplicity to cater to the requirements of the Muslim community while side by side maintaining a strong sense of belonging. Having said that, even after 1400 years, these principles hold similar relevance, specially in terms of designing mosques in urban settings where there is normally a limitation of the space and resources (Alkhaled, 2019).

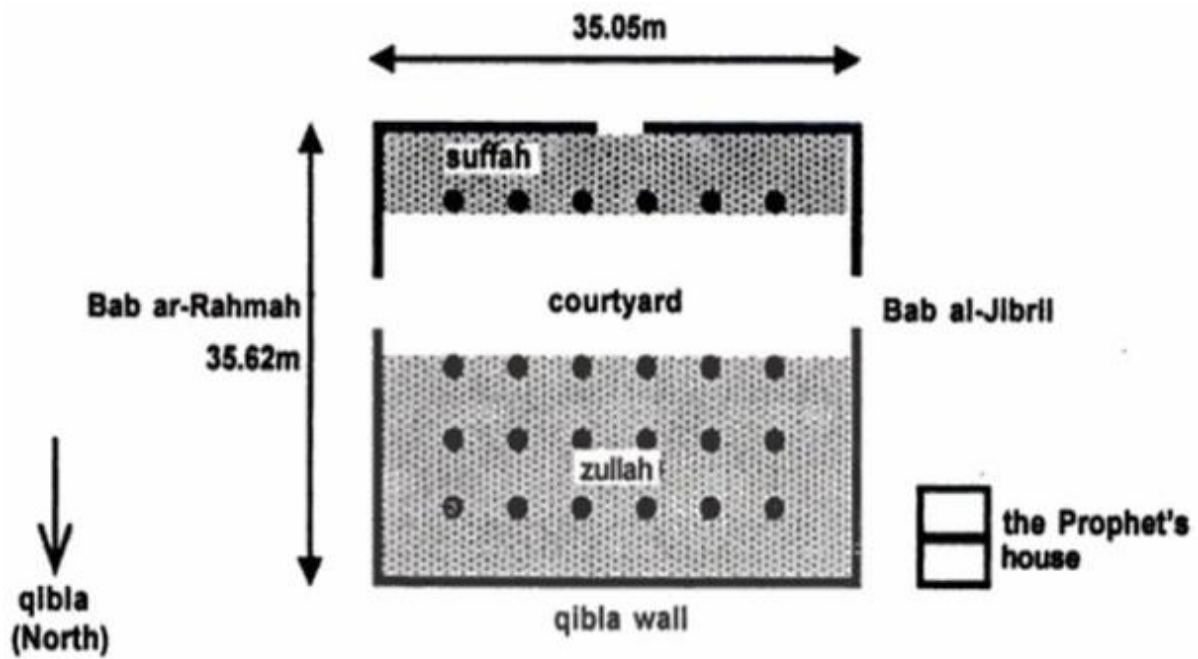


Figure 2: Plan of the Prophet's Mosque before the enlargement by the Prophet (Credit: Hajj &

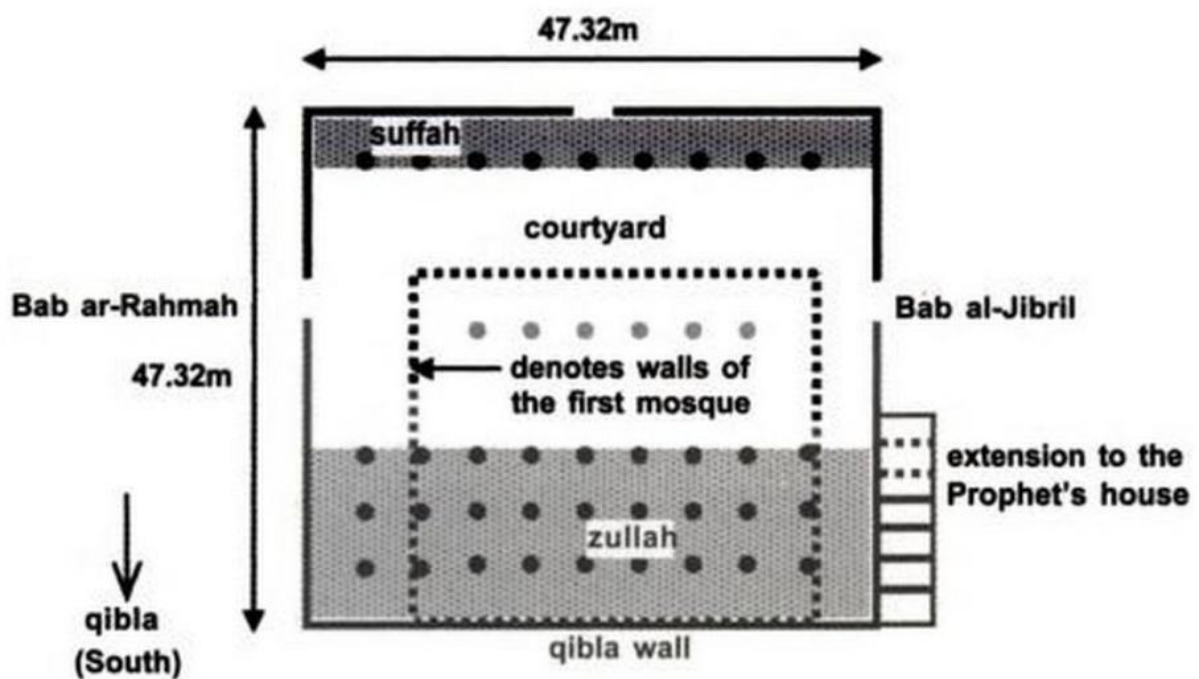


Figure 3: Plan of the enlarged Prophet's Mosque after the Conquest of Khaybar in 628 CE (Credit: Hajj & Umrah Planner)

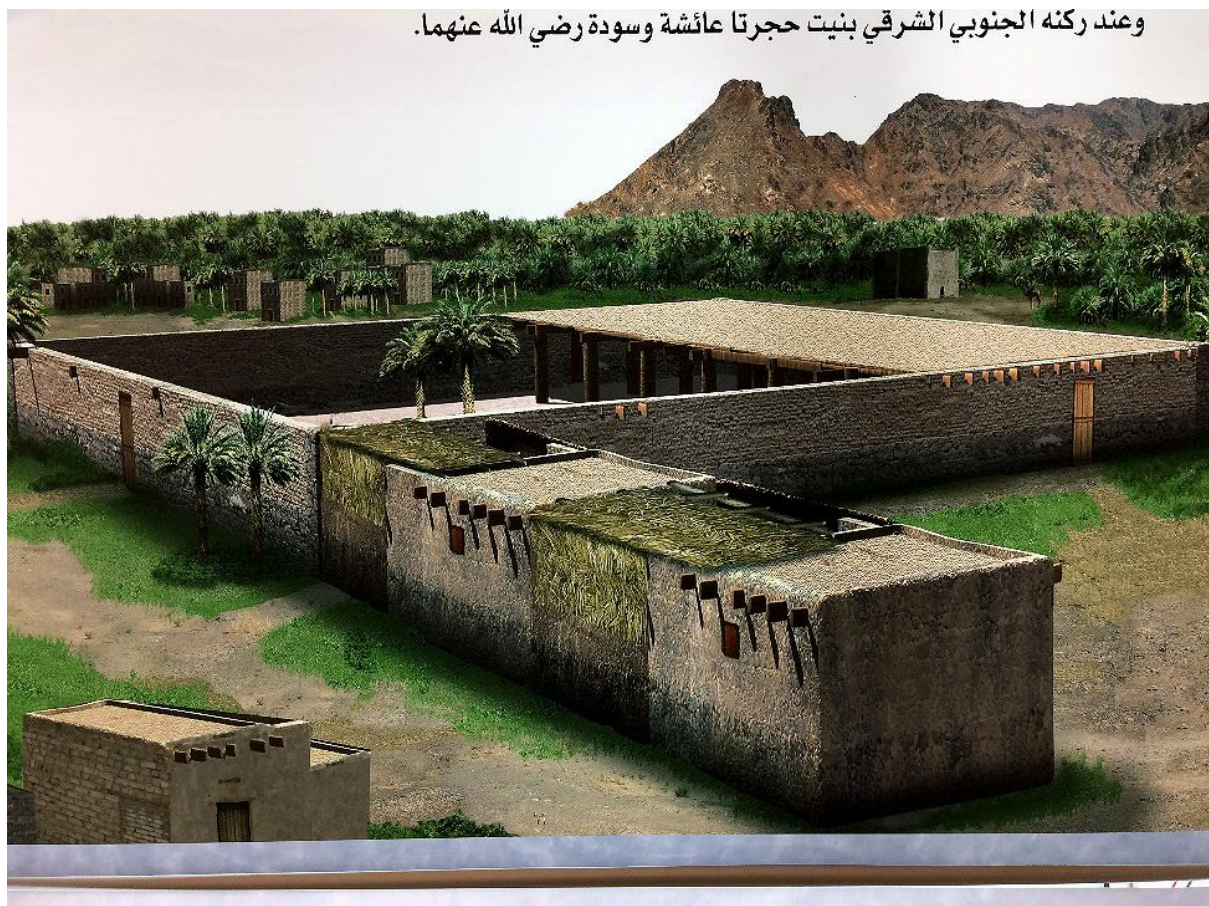


Figure 4: CGI of Prophet Muhammad's Mosque before its first expansion (Credit: Museum of Dar al-Madinah in Madinah)

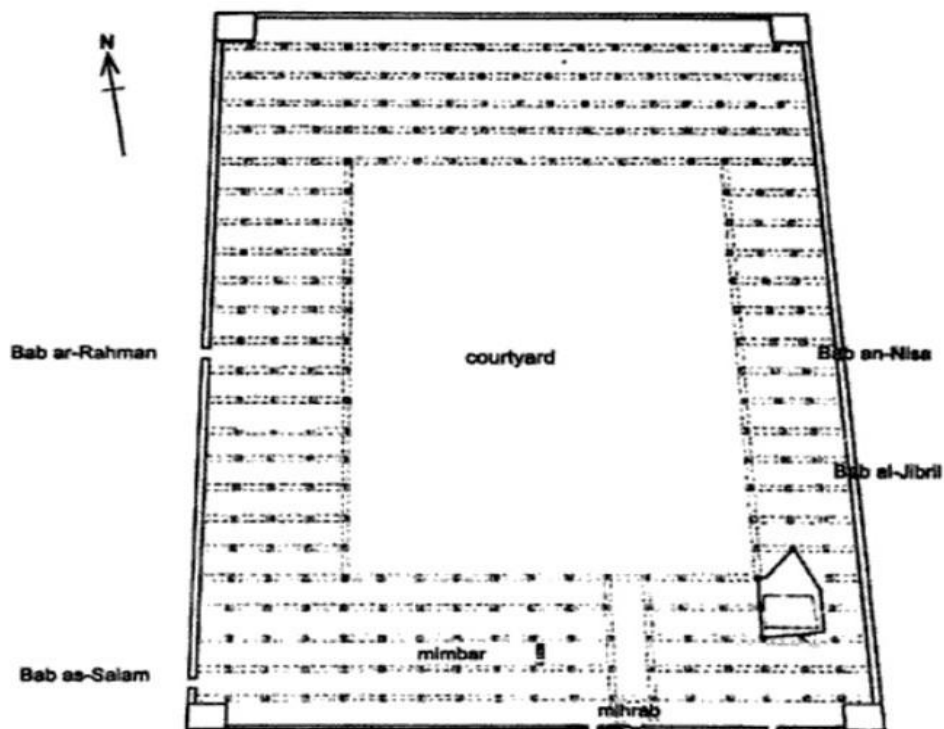


Figure 5: Plan of the Prophet's Mosque after the enlargement by Walid Abd al-Malik (Credit: Hajj & Umrah Planner)

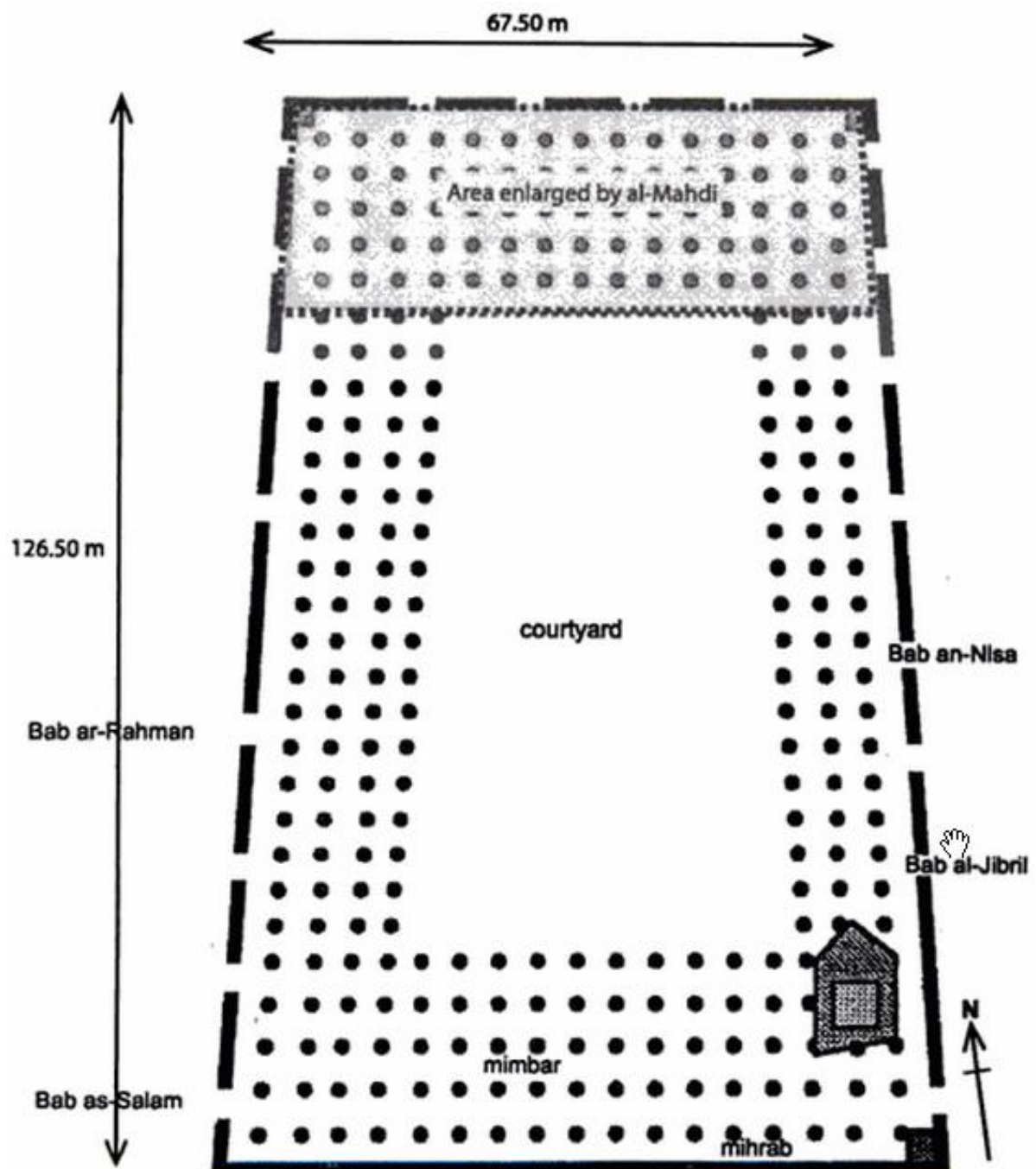


Figure 6: Plan of the Prophet's Mosque after the enlargement by al-Mahdi (Credit: Hajj & Umrah Planner)

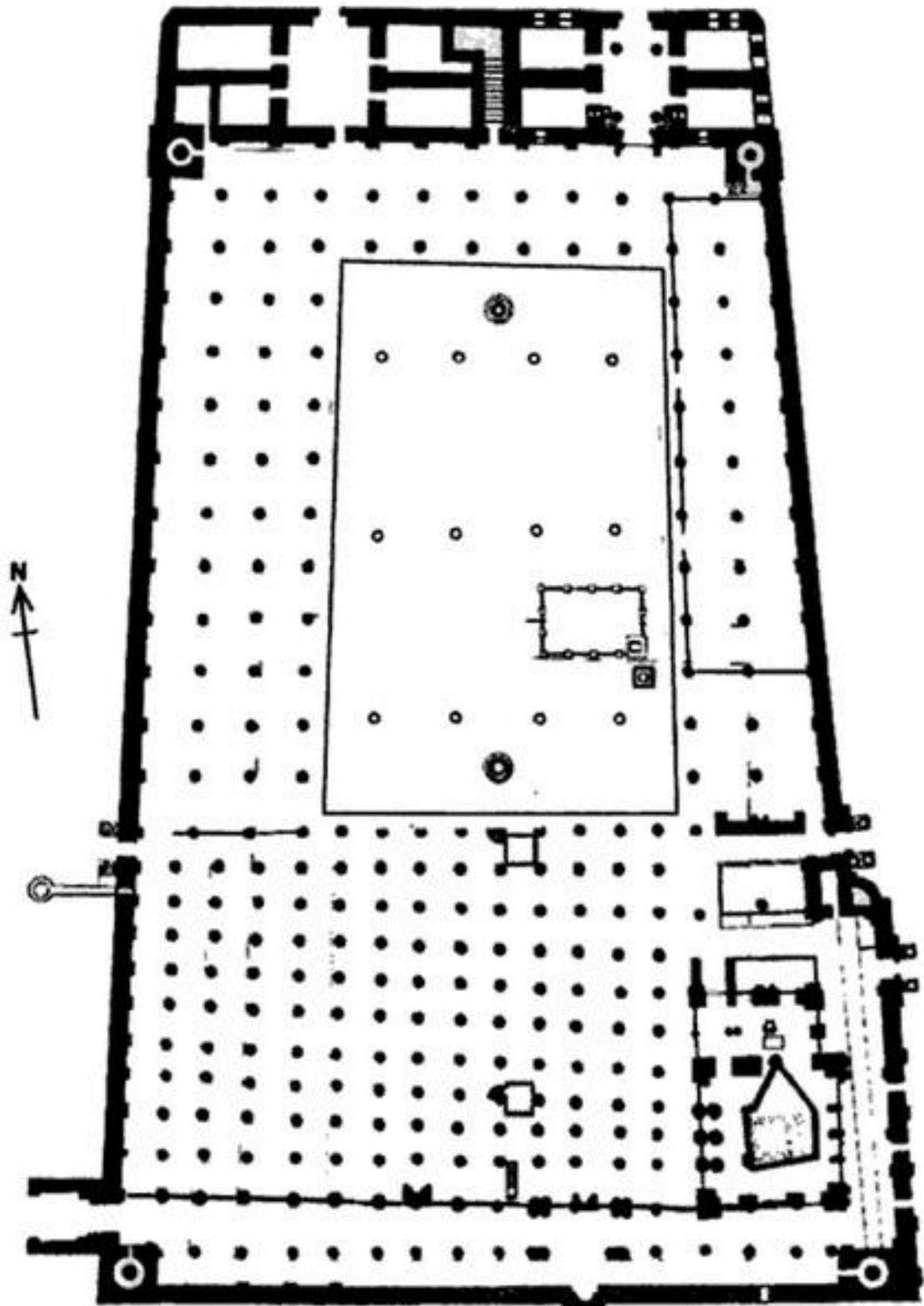


Figure 7: Plan of the Prophet's Mosque after the renovation by Sultan Abdul Majeed (Credit: Hajj & Umrah Planner)

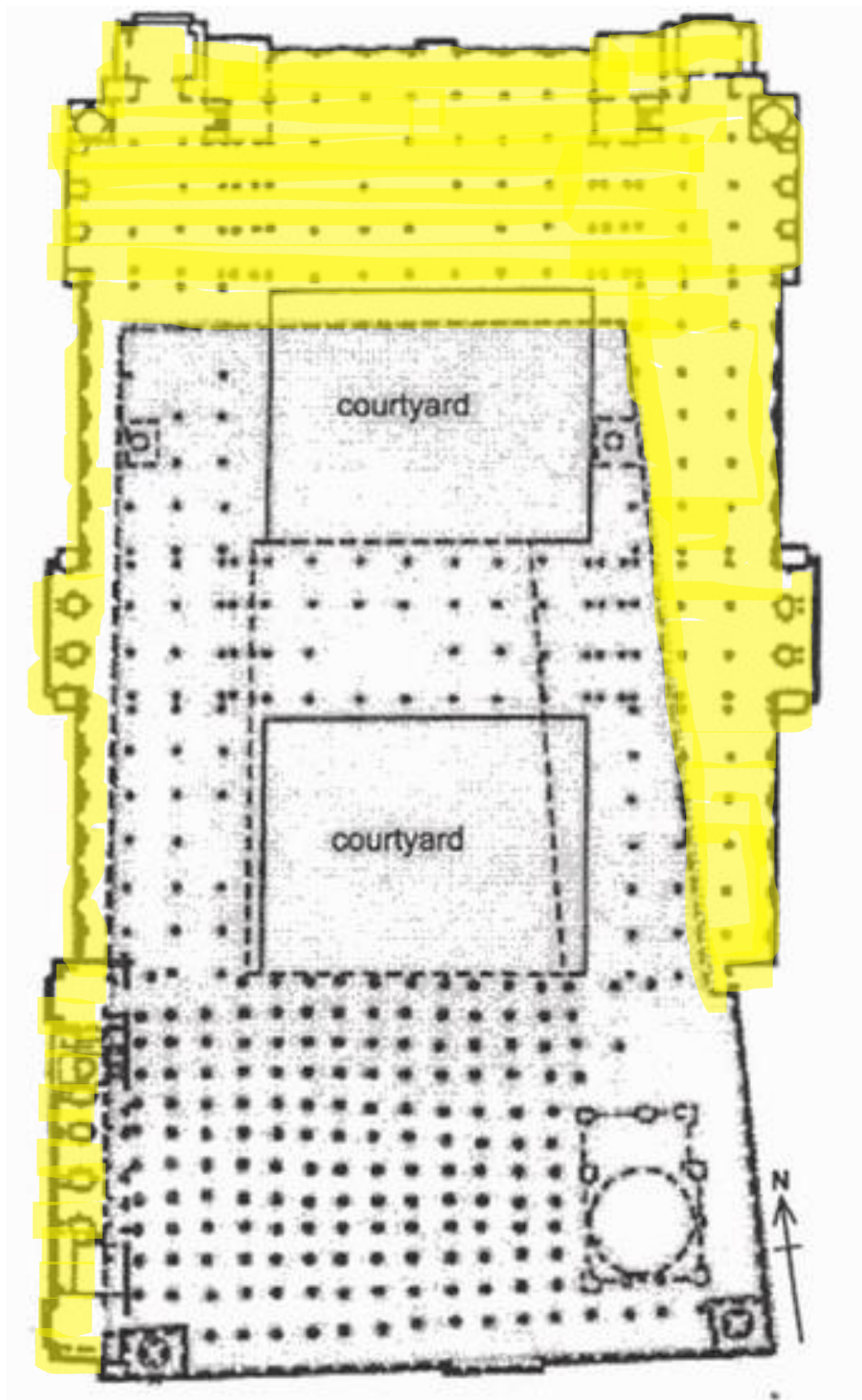


Figure 8: Pla of the Prophet's Mosque after the enlargement and renovation by the Saudi government in 1951. The highlighted area indicates the extends of the Mosque at the time of the Sultan Abdul Majeed (Credit: Hajj & Umrah Planner)



Figure 9: View from above of the Prophet's Mosque (Credit: Konevi)

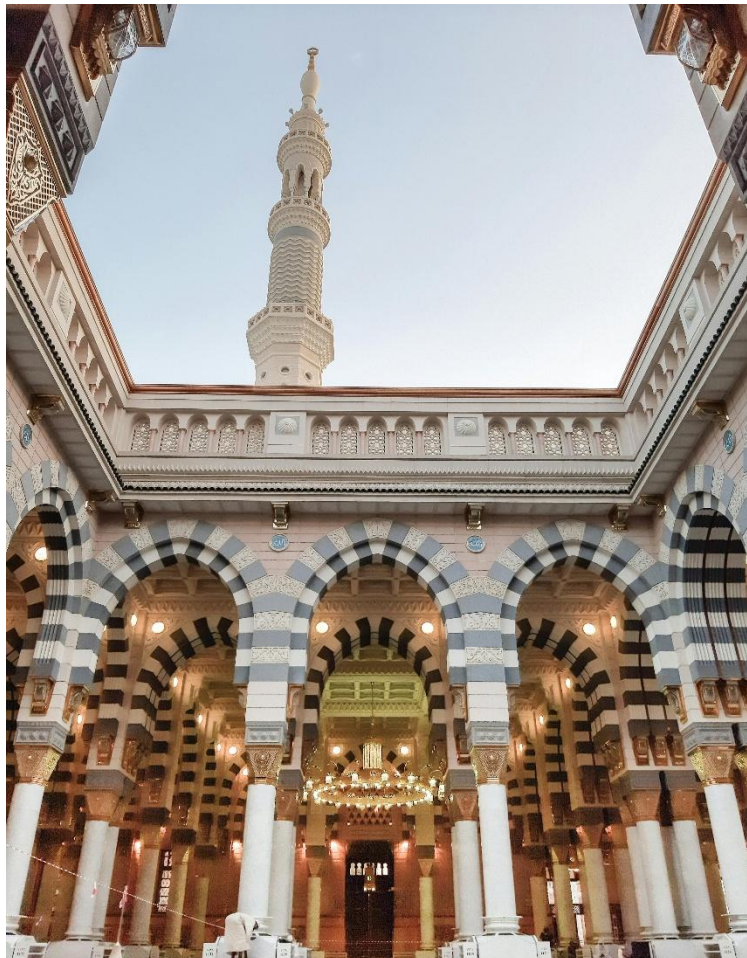


Figure 10: View of the mosque from the courtyard (Credit: Farhan)

Case Study 2: The Süleymaniye Mosque, Istanbul

The Süleymaniye Mosque, an Ottoman Mosque is located in Istanbul, in the Third Hill of Turkey. This mosque is considered as the biggest mosque of the Ottoman-era, representing Ottoman architecture and culture of Islam in the city. Suleiman, the magnificent commissioned the mosque, while the well-known imperial architect Mimar Sinan designed this mosque in the 16th century, creating it as one of the best known locations of Istanbul from where it commands an extensive view of the city around the Golden Horn (Takikawa, 2015). The significance of this Mosque is well-perceived given its sophistication and grandeur of the Ottoman Empire. Evidence regards this mosque as the masterpiece of Ottoman architecture and one of the greatest works of the architecture Mimar Sinan. It is found that the Süleymaniye Mosque is not solely a place where prayers are done, but is rather a complex. Similar to other imperial foundations of the Ottoman, this mosque is component of bigger complex (kulliye), which encompassed a hospital, a public kitchen, and madrasas, among others. There is an enclosed cemetery behind the mosque's qibla wall. This cemetery contains the distinct octagonal tomb of Suleiman the Magnificent, and his wife Hurrem Sultan. The domed structure of the Süleymaniye Mosque is one of its most noticeable features, as highlighted by Mårtelius, (2015). There is a central dome which is supported by arches and semi-domes, and as a result, a sense of splendiddness and openness is created. Secondly, remarkable acoustics are also assured by the design of this mosque, which enables the voice of the Imam to reach to each and every corner of the mosque even in the absence of advance systems of amplification thanks to the thick walls. In the similar vein, a peaceful atmosphere at the Mosque is nurtured because of the use of natural lightning through strategically placed windows (Okuyucu, 2016). The light and air that comes from these windows make it a serene space for praying and reflecting. When it comes to the design of The Süleymaniye Mosque, the design is not only about aesthetics, but the design of this mosque includes the practical elements which make it functional for the community. For example, there is a madrasa (Islamic school) made in the mosque, where all the students are allowed to learn about religion. Additionally, lessons related to the science and arts are also imparted in these madrasas. This shows the role of the the Süleymaniye Mosque as an educational centre, and Utaberta et al. (2015) characterise it as a heritage which dates back to the Prophet's Mosque in Medina. Not only this, the role of mosque as a centre working for welfare of the society gets more reinforced by the availability of the kitchen and hospital in the mosque design. Moreover, evidence highlights that The Süleymaniye Mosque has also served as a notable cultural and political hub. History recognises this mosque as a place where critical announcements were made and where the public used to gather for discussing the issues of political and social nature. This vital aspect of the mosque exacerbated its significance for the community, notably similar to the Prophet's

Mosque. Not only this, the Süleymaniye Mosque also reinforces that mosques can definitely be designed for serving a broad spectrum of roles, holding a higher value than a place of worship (Takikawa, 2015). According to research, the incorporation of functionality and art is one of the key lessons individuals can learn from the Süleymaniye Mosque (Mårtelius, 2015). The well-thought calligraphy, tilework, and geometric patterns are not merely for decorative purposes. They also attempt to facilitate inspiring and uplifting the spirit of the Muslim community. The harmony existent between purpose and beauty is a hallmark of Ottoman architecture, and provide meaningful awareness and inspiration for the contemporary design. Alkhaled, (2019) contends that the aspiring architectures of the present era have a valuable opportunity to learn from this example, and come up with ideas for religious spaces that are both functional yet own aesthetically pleasing appearance. The consolidation of the auxiliary facilities is yet another essential lesson, with the presence of madrasa, kitchen, and hospital facility having a central part of the community. These elements are attention worthy because it is these very elements which meet various need of the society much beyond worshipping (Buljubasic, 2023). This approach is specifically relevant today, given the efficacy of the mosques present in urban locations to act as valuable community centres that are capable of providing education, social support, and healthcare. It would not be wrong to assert that the Süleymaniye Mosque offers the lesson that the design of Mosque can both be grand as well as operational (Takikawa, 2015). It additionally teaches that the needs owned by the communities of the present era can be met by tweaking the traditional principles of architecture, rendering it as a timeless example of mosque design.

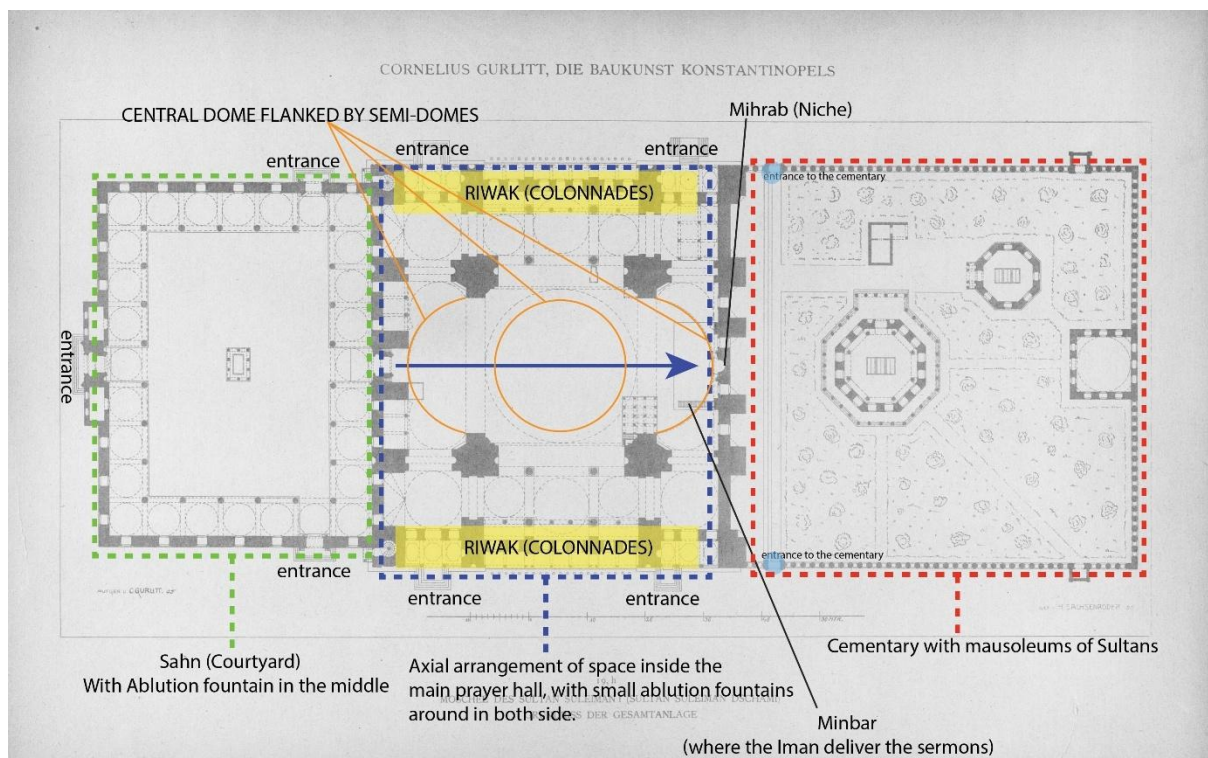


Figure 11: Süleymaniye Mosque Plan Edited from 'Die Baukunst Konstantinopels' book (Photo credit: Cornelius Gurlitt, Edited by M. Ali)

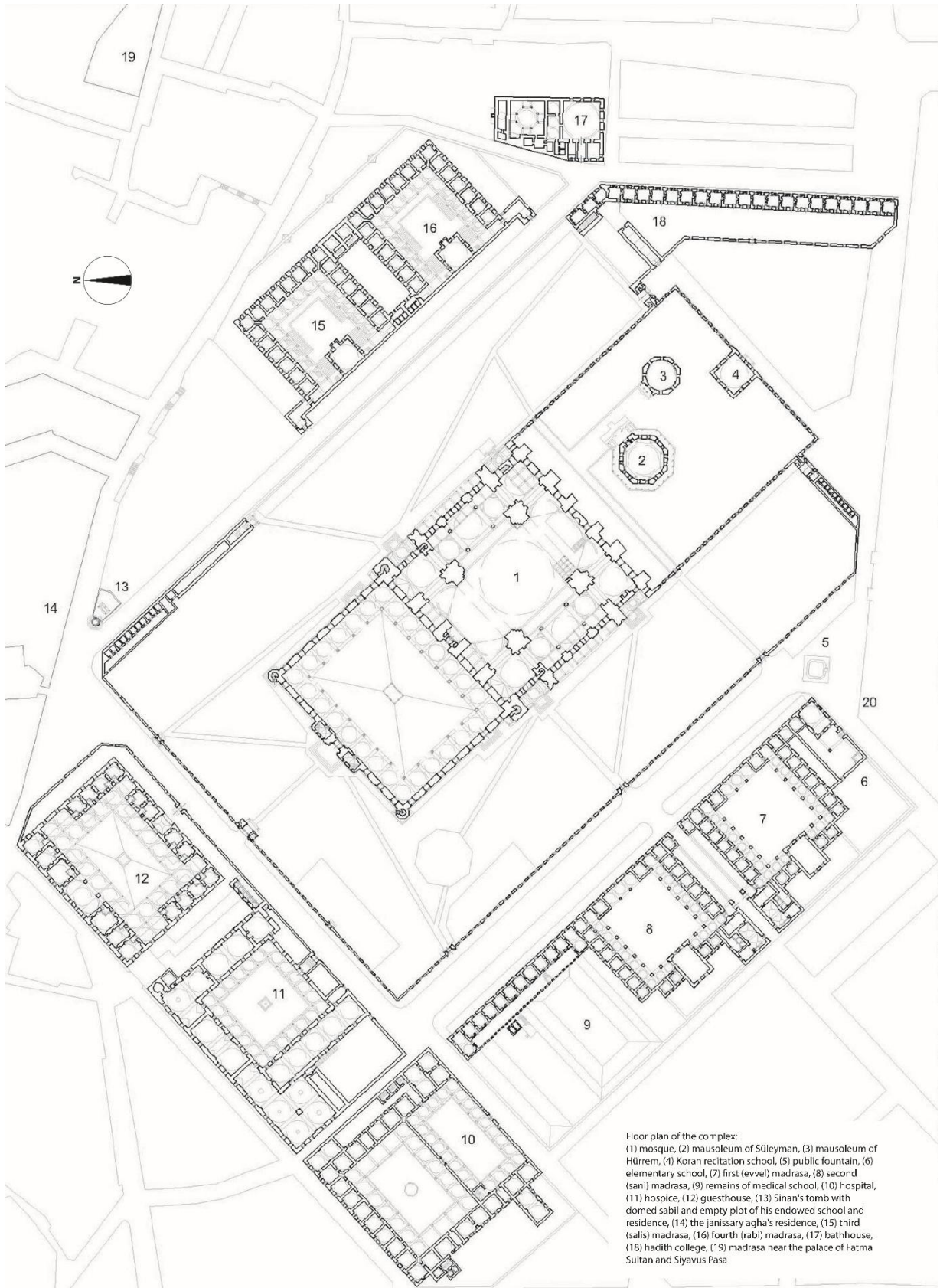


Figure 12: Süleymaniye complex plan from "The Age of Sinan" (Credit: Gülru Necipoğlu)



Figure 13: View from above of the Süleymaniye mosque (Credit: Fahri Tokcan)

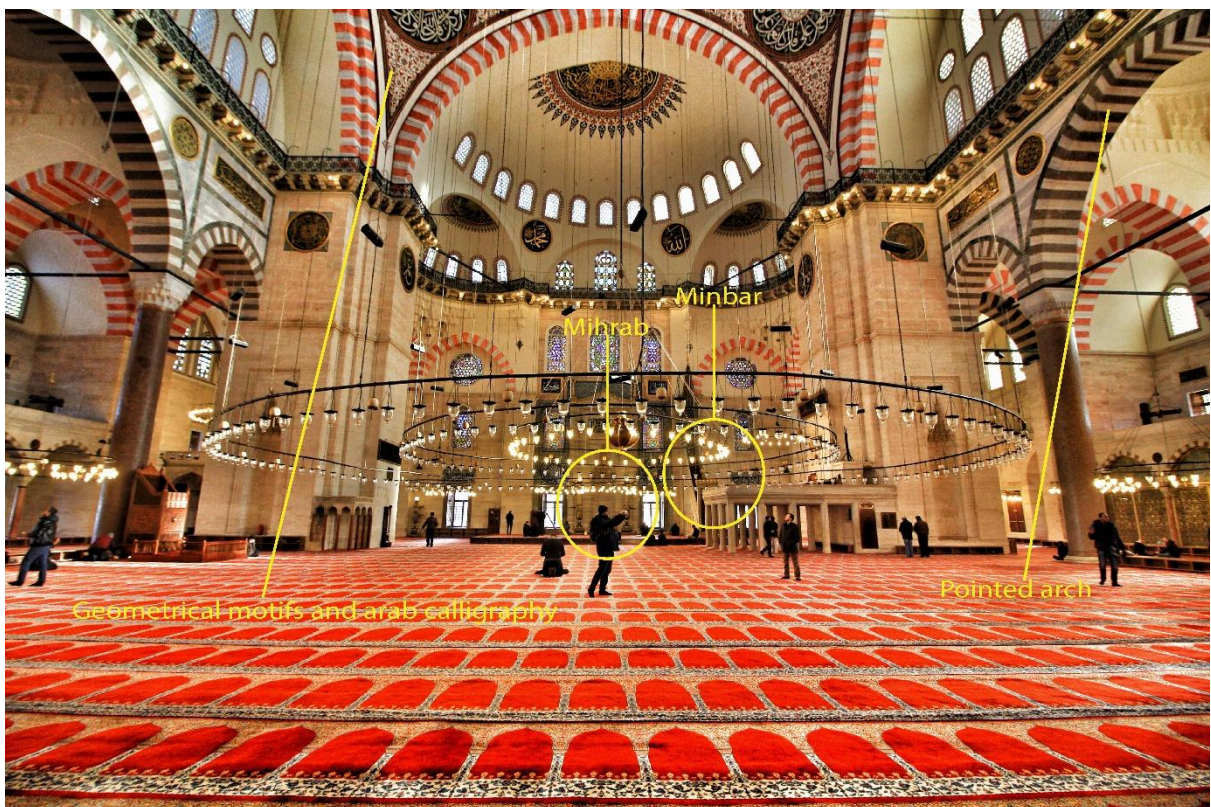


Figure 14: Main prayer hall (Credit: Michele Ferrari - Edited: M. Ali)

Case Study 3: The Bait Ur Rouf Mosque, Dhaka

A unique urban mosque established in Dhaka; Bangladesh is known as the Bait Ur Rouf Mosque. This mosque is recognised as a modern architectural marvel which stands out for its simplicity and sustainability (Mendonça, n.d.). Marina Tabassum, a well-known Bangladeshi architect designed and finished this mosque. This mosque is a prominent example of how the Muslim community's spiritual and functional needs can be met by the contemporary architecture. This mosque is developed in a densely populated urban area, and thus serves as a good example showing how to address the challenge related to restricted resources and space, while stabilising a spiritual sense. The minimalist design of the Bait Ur Rouf Mosque is one of the most shining features of this mosque (Taher, n.d.). The construction of this mosque has been done by using locally sourced bricks, which not only cuts down the expenditure, but also bring a decline in the environmental impact (Taher et al., 2018). Secondly, the necessity for artificial lightning and air conditioning has been eliminated due to the utilisation of natural lightning and ventilation, positioning the Bait Ur Rouf Mosque as one mosque with an extremely eco-friendly structure. As emphasised by Azmi and Kandar (2019), this attentiveness on sustainability is a crucial lesson for modern design for mosque, specifically in a world that is already struggling predominantly by climate change. Evidence reveals that the inclusivity and functionality are of significant priority within the open-plan layout of the mosque (Asif et al., 2021). Distinguishing with traditional mosques which are characterised by their elaborated decorations, the Bait Ur Mosque pays much of its attention on the development of a calming and contemplative space (Mendonça, n.d.). In the mosque design, there are little to no pillars in the place where prayer is done, and this makes it possible for the public to have an unimpeded view of the imam. This also promotes a significant sense of unity among worshippers. According to research by Esfahani (2015), this attribute of the mosque design is specifically relevant for urban mosques, where space limitation is a normal hindrance. Moreover, the design of Bait Ur Mosque also puts a focus on the significance of community. There are open courtyards which play a helpful role in facilitating the gathering of people, permitting them to conduct social or cultural activities and perpetuate higher engagement among the Muslim communities. This showcase a similarity with the Prophet's Mosque in Medina (Utaberta et al., 2015). Due to this adaptable aspect of Bait Ur Mosque, the name of this mosque often gets highlighted as a central part of the community, meeting not only the social but also the spiritual needs. One of the primary lessons from the Bait Ur Mosque is the significance of the sustainability in the designing of this mosque, as noted by Taher et al. (2018). Through the usage of local materials and natural elements, it is demonstrated by this mosque that architecture can be environmentally responsible without compromising on either aesthetics or functionality. This is of specific importance for urban

areas, as mentioned previously, because of their often limited space. Yet another critical lesson obtained from the Bait Ur Mosque is with regards to functionality and simplicity (Asif et al., 2021). The minimalist design of the mosque proves that it is not necessary for religious space to exhibit grandeur in order to furnish a space that looks both spiritual and inspiring (Taher, n.d.). So, this serves as a helpful insight for designers and planners who have projects to work on in challenging scenarios. The Bait Ur Mosque showcase the lesson that mosque design can be embed in customs, despite appearing modern. In addition, it depicts that the community needs can be addressed by contemporary architecture, while staying rooted in the mosque's spiritual essence. Therefore, Bait Ur Mosque also serves as a valuable example for planners and architects who are working on the designs of mosques in the contemporary era.

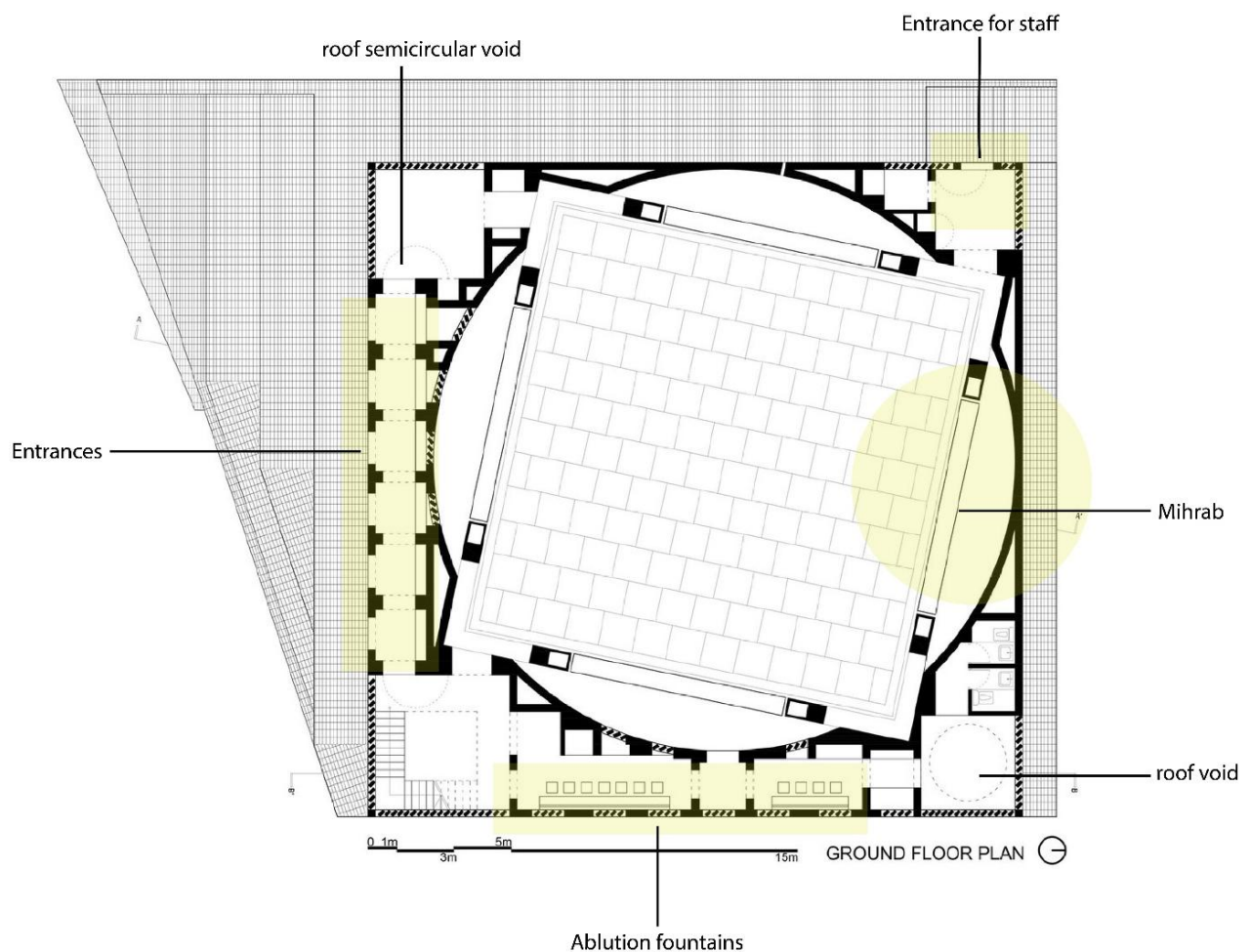


Figure 15: Ground floor plan of Bait Ur Rouf Mosque (Credit: Marina Tabassum Architects - Edited: M. Ali)



Figure 16: Elevations of the Bait Ur Rouf Mosque (Credit: Marina Tabassum - Edited: M. Ali)



Figure 17: View of the mosque from west elevation where the Mihrab is situated (Credit: Marina Tabassum Architects)



Figure 18: Interior of the Bait Ur Rouf Mosque facing the Mihrab with natural light coming from the circular void and semicircular one (Credit: Marina Tabassum Architects)

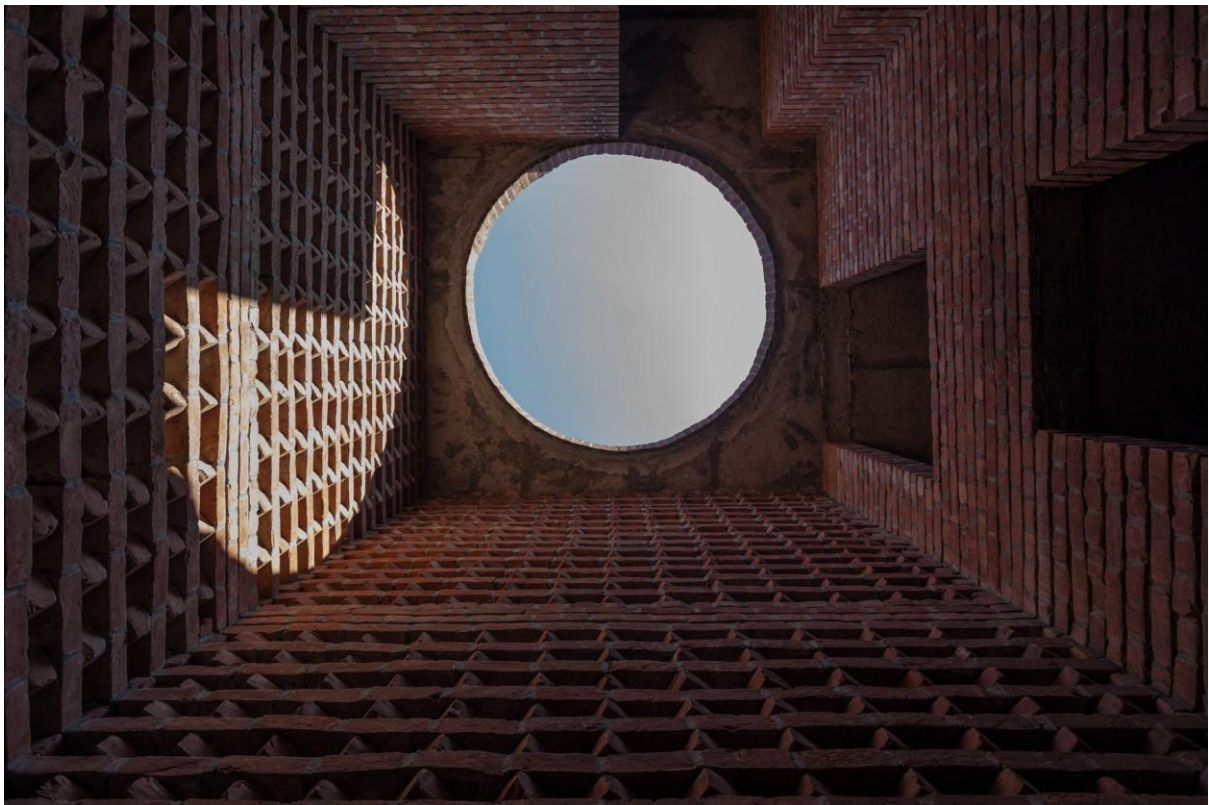


Figure 19: Opened circular void on the corner of the south side of the mosque (Credit: Marina Tabassum Architects)

Comparative Analysis

The Cambridge Central Mosque in the United Kingdom is a notable exemplification of how cultural as well as religious traditions and philosophy can be embodied while making use of the contemporary and sustainable materials (Barfield, 2024). In addition, this mosque is considered very vital when talking about the sustainable and inclusive design of the mosque. Having established in the year 2019, and designed by Barfield Architects, evidence indicate this mosque as the first eco-friendly mosque of the Europe, setting innovative benchmarks for how sustainability and modern-day technologies can be integrated, while keeping the spiritual and cultural essence intact. The biophilic design of the mosque is one of the most noteworthy and captivating features of the mosque. A serene yet natural atmosphere is created by the mosque's tree-like timber columns, building the presence of the mosque as a source of peace. In addition, it nurtures a desire of reflection (Cetinkaya and Efeoglu, 2024). On the other hand, the utilisation of sustainable materials, including timber, and passive systems of energy, such as solar panels, coupled by rainwater harvesting increase the environmental friendliness of the mosque. According to a study by Arslan (2019), this attention on sustainability is a key lesson for modern design of the mosque. The mosque's structure highlights openness and ease of access. The prayer area is vast and accommodates males, females, and children, making sure that everyone feels included. The amenities like a communal hub and landscaped areas are additionally featured in the mosque, making it a pivotal part of the surrounding neighbourhood. It has been hinted in the evidence by Alnajjar and Dinçel, (2024) that this versatile approach draws inspiration from historic mosques like the Prophet's Mosque and the Süleymaniye Mosque. A notable aspect of the Cambridge Central Mosque is its ability to harmonise with its metropolitan surroundings. Situated in a bustling urban area, the mosque is crafted as a serene sanctuary for worshippers while also engaging with the broader community (Cetinkaya and Efeoglu, 2024). The incorporation of contemporary systems, such as heating mechanisms and energy-efficient cooling makes sure that the mosque is not only eco-friendly but also provides comfort for its visitors. Furthermore, it is demonstrated by the Cambridge Central Mosque that heritage could be merged with progress by present-day mosque architecture. It illustrates how environmental responsibility, and inclusivity can get smoothly woven into religious design, making it significant for modern societies (Azmi and Kandar, 2019). Having said that, this makes it a valuable reference for designers and urban planners working on mosque projects in today's world. If compared with traditional models of mosque, there are some prominent differences which point toward the evolution of mosques designs till 21st century. As mentioned earlier, the Cambridge Mosque embodies a contemporary and eco-friendly reinterpretation of Islamic architecture (Barfield, 2024).

Whereas, the traditional mosque design showcases age-old principles that are deeply rooted in cultural and spiritual traditions.

Approach to Environmental Consciousness

A prominent distinction between the two lies in their approach to environmental consciousness. The Cambridge Mosque, often recognised as Europe's pioneering green mosque, incorporates such kind of sustainable innovations which are advanced, for example, a timber-frame structure, systems for collecting rainwater, and solar energy panels. This situates it as a benchmark for environmentally conscious religious spaces (Arslan, 2019). On the other hand, traditional mosques are although naturally eco-friendly because of the use of indigenous materials like clay, wood, or stone. But they lack the integration of modern ecological technologies. Evidence cites the reason of it that the environmental sustainability was not a deliberate focus during the creation of traditional mosques (Alnajjar and Dinçel, 2024).



Figure 20: Shows the "Tree" columns which is made with glulam (Credit: William Wilson)

Difference in Visual Design and Layout

Another significant difference emerges in their visual design. The Cambridge Mosque merges classic Islamic architectural features, including arches, domes, and geometric motifs, with a modern minimalist aesthetic, resulting in a distinctively unique appearance (Barfield, 2024). In contrast, traditional mosques are characterised by detailed embellishments, elaborate calligraphy, and detailed patterns of the tile that reflect the artistic legacy of their regions. Regarding layout, a symmetrical blueprint that features a spacious prayer hall, an open courtyard, and a towering minaret is typically followed in traditional mosques (Okuyucu, 2016). This layout has been designed as a focal point for community gatherings. On the contrary, the Cambridge Mosque, while having a large prayer hall, adopts a more fluid and organic layout that is inspired by natural forms, like tree-like columns. As stated previously, this type of layout develops a serene and introspective atmosphere (Cetinkaya and Efeoglu, 2024).

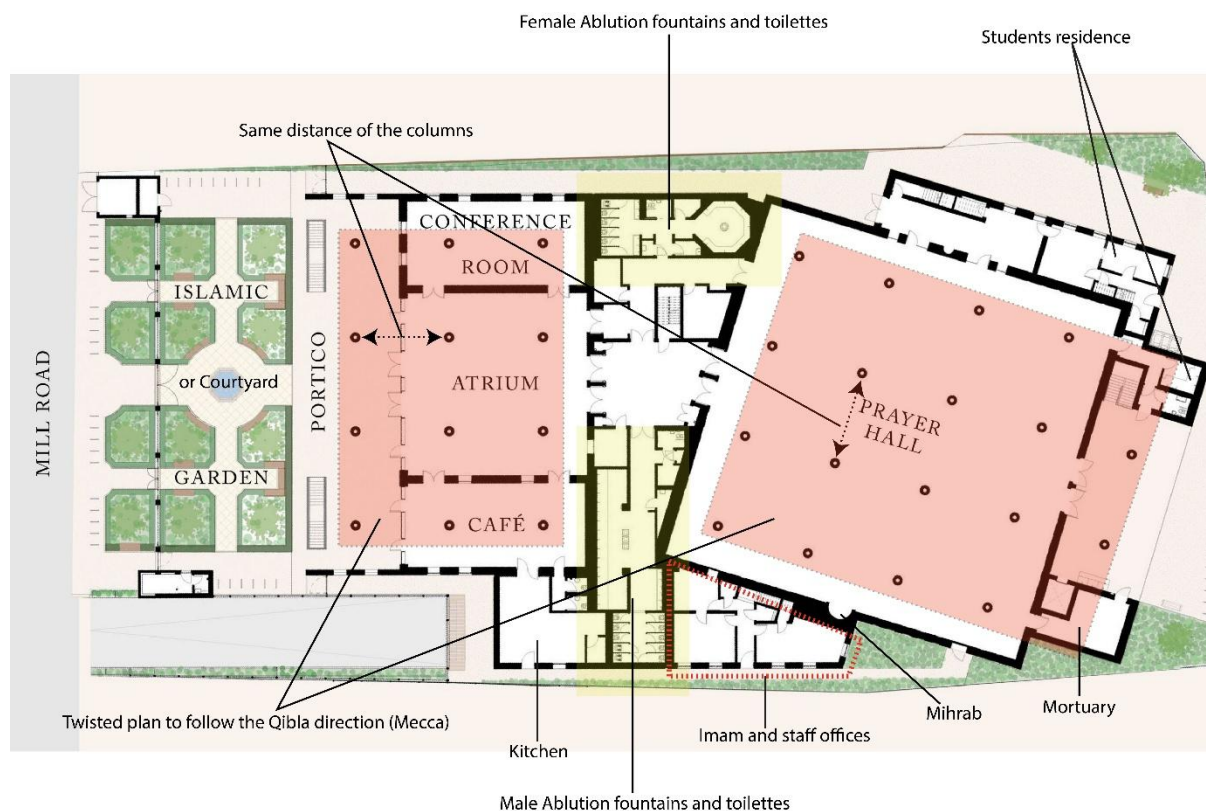


Figure 21: Cambridge Central Mosque floor plan (Credit: Marks Barfield Architects - Edited: M. Ali)

Difference in Functionality

The functionality of the two models also varies notably, as shown by studies. Al-Krenawi, (2016) highlights that traditional mosque served as multipurpose centers for prayer, education, and communal activities. While the Cambridge Mosque continues this legacy, it extends its functionality by including features such as a garden, café, and versatile community spaces

with an intention to address the distinctive necessities of contemporary Muslim communities in a Western setting (Barfield, 2024). Because of this evolution, the inclusiveness of the mosque has undergone an evident evolution, making it more welcoming, specifically with regards to multicultural societies (Cetinkaya and Efeoglu, 2024).

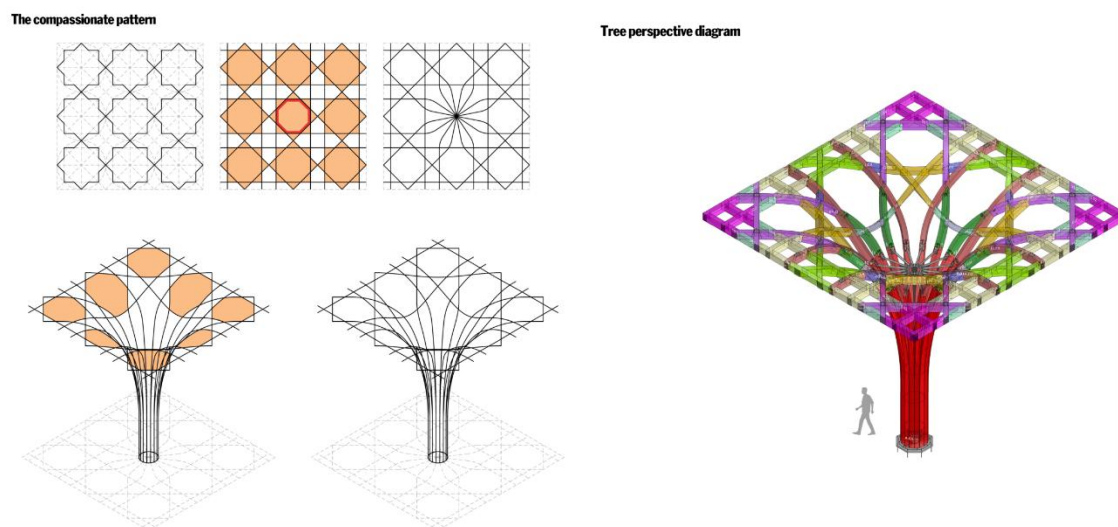


Figure 22: Shows how the structure of the "trees" columns joined and formed the geometric shapes (Credit: Marks Barfield Architects)

Proposing Interfaith Harmony and Community Integration

Additionally, the Cambridge Mosque places significant importance on promoting interfaith cooperation and societal involvement. As a result, a much stronger role is demonstrated in terms of its distinct value within a multicultural and diverse Western environment. Esfahani, (2015) argues that this contrasts with numerous conventional mosques, which mainly served uniform demographics of Muslim and paid less attention on engaging with non-Muslim groups. However, the core objective of offering a sanctified setting for devotion and reflection is retained by both frameworks. The key aspects of Islamic design, encompassing its orientation towards Mecca (qibla) and the focus on illumination and spaciousness is evidently respected and preserved by the Cambridge Mosque. This remains vital to classical architectural styles. Therefore, it would not be wrong to state that the Cambridge Mosque signifies a progression in mosque architecture, merging environmental awareness, inclusivity, and contemporary aesthetics with the foundational principles of Islamic tradition. Its contrasts with traditional mosques reveal how these sacred spaces can alter for accommodating the modern lifestyles without hampering their cultural or spiritual significance (Alnajjar and Dinçel, 2024). Moreover, due to this comparison, the importance of striking a balance between tradition and

aesthetics/innovation to develop meaningful yet functional religious environments for upcoming generations gets very strongly highlighted.

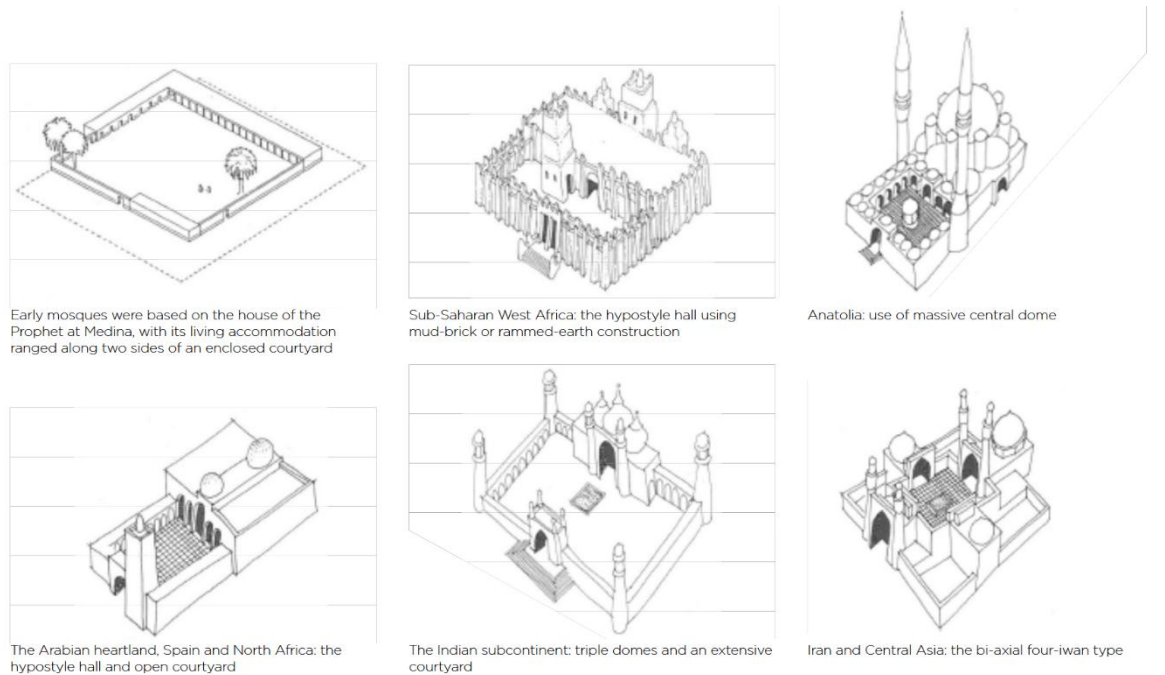


Figure 23: Diagram showing where the ideas come from. Diagrams also shows different typology and styles of mosques design and its elements (Credit: Marks Barfield Architects)



Figure 24: View of the main entrance showing the brick cladding and the "trees" columns (Credit: Amelia Hallsworth)



Figure 25: Interior of the praying hall with having the dome in the middle between the columns. It shows also how small is the Minbar (sermons) is small due to preserving the space (Credit: Laura Connelly)

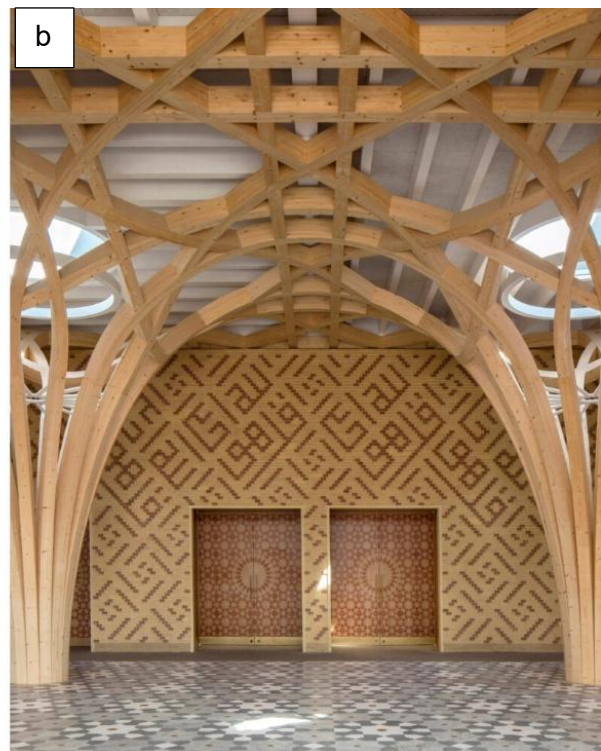


Figure 26: a) Shows the dome and its bronze-coloured aluminium over a castellated parapet. b) Shows the geometrical forms element present on the bricks, floor, and doors (Credit: Morley von Sternberg)

Chapter 3: Results and Discussion

The aim of this section is to present the findings of the research, discussing the outcomes of the research. The findings will be uncovering how sustainable is the Cambridge Mosque, and how well does it incorporate traditional models. In addition to this, the findings will be related to the existing body of evidence, finding their relation to the evolution of the mosque. Moreover, the broader implications of the findings for architecture will also be discussed. The key findings are related with the reviewed literature in the following discussion, contextualising these results within the wider theories of architecture, historical developments, and modern innovations.

Thematic Analysis

Thematic analysis was used to analyse the findings of this study, and several key themes were identified. These themes include traditional values in mosque design, modern demands of space optimisation and inclusivity, environmental sustainability, and an equilibrium between tradition and modernity. The first theme i.e., the traditional values in mosque design highlights the importance of preserving cultural and religious heritage in architectural features. The second theme i.e., modern demands of space optimisation and inclusivity is attentive on the need for mosques to accommodate diverse communities and provide multifunctional spaces that cater to modern needs. On the other hand, the incrementing importance of eco-friendly practices in mosque construction, is emphasised in the theme of environmental sustainability, reflecting the serious obligation to address environmental challenges. Lastly, the theme of striking an equilibrium between tradition and modernity explores how contemporary requirements could harmoniously be consolidated with traditional architectural elements. This section presents the results through these themes and discusses how they match with the goals and challenges of mosque design in today's world.

Traditional Values in The Design of Mosque

In recent decades, the Islamic architecture has undergone notable transformation, given the evolutions in culture, progressions in technology, as well as artistic innovations which have taken place in recent times. Modern architecture has heavily influenced the mosques as symbols of the identity of the community and sanctity of the spirit. Studies have substantially showed that the traditional mosque designs are found to be significantly rooted in the principles of Islamic architecture in the modern-day construction of mosques. As noted by Al-Krenawi (2016), the historical role played by mosques extended beyond religious functions and proceeded to include social and educational purposes. The findings are in line with this

assertion, since the mosques of contemporary era continue to amalgamate key elements of the tradition, such as the orientation of the qibla, mihrabs, minarets, and courtyards. As a result, they are able to assure a spiritual connection and inclusiveness of the community. For example, a foundational model was seen to be portrayed and being served by the design principles that Prophet's Mosque in Medina contained. These design principles were evidenced by inclusivity, multifunctionality, and simplicity, as highlighted by Utaberta et al. (2015). The preservation of the traditional values are showcased by the blending of these attributes within the construction of contemporary mosques, revealing how they are adapted to fit with modern requirements. In the similar vein, the Süleymaniye Mosque in Istanbul possessing a multifunctional and grand complex portrays a historical attention on community services, social welfare, and education (Mårtelius, 2015; Utaberta et al., 2015). A study by Alkhaled, (2019) hints that the maintenance of mosque's cultural and spiritual essence is reliant upon these enduring principles.

Modern Demands of Space Optimization and Inclusivity

A rising emphasis is revealed by the findings on the optimization of space as well as inclusivity in the contemporary designs of mosque. Mosques should be adaptive to layouts for accommodating larger, and more diverse congregations while taking care of accessibility for people with disabilities. This was found to be a particular necessity in urban settings where there is a scarcity of space and resources. Hoteit, (2015) discussed the importance of incorporating features such as halls that are multipurpose, gender-sensitive spaces, and accessibility for individuals who have some kind of disability. The direct and positive benefits of these innovations are that they nurture the transforming needs of societies, while simultaneously bridging the gap that exists between traditional and modern projections. The persistence of the inclusivity in the architecture of mosques is depicted by fusing the multifunctional spaces in mosques, a practice that has been inspired by historical models such as the Süleymaniye Mosque, and the Prophet's Mosque. According to Okuyucu (2016), the modern designs which house facilities for charity work, awareness program, and counselling mirror the role of an educational hub and a community centre, played by the Prophet's Mosque. Subsequently, this evolution showcases the vigor of mosques in promoting the welfare and engagement of communities, a theme which is consistently noticed in the substantial body of literature.

Environmental Sustainability

Sustainability is one pivotal phenomenon which was found to be gaining immense attention with regards to the mosque architecture and its evolution for catering to the contemporary living practices. The findings of the studies like Azmi and Kandar, (2019) and Harsritanto et

al. (2021) supported the adoption of sustainability-informed practices as one of the most major shifts occurred in mosque architecture. Gray, (2023) highlighted that the utilisation of the renewable materials, energy-efficient systems of lighting, and natural ventilation are exemplified by the contemporary mosque designs like the Cambridge Central Mosque. Likewise, a mosque architecture which is although minimalist but puts much priority on natural ventilation, lighting, and environmental balance is showcased by the Bait Ur Rouf Mosque in Bangladesh (Karawia, 2020). One key point to note here is that the criticism of the mosques that consume hefty amounts of energy and resources of water is addressed by these kinds of eco-conscious approaches, as recognised by Azmi and Kandar (2019). The incorporation of sustainable materials and technologies make it possible for the modern mosques to take care of environmental responsibility without compromising on the spiritual and cultural essence. Furthermore, the uniformity between traditional values and modern-day concerns of the environment are reinforced by the studies of Cheema, (2021) and Buljubasic, (2023) who explored the fusion of biomimicry and principles of passive design when it comes to contemporary mosque architecture.

Equilibrium Between Tradition and Modernity

It is discovered by the findings that a coordinated coexistence is present between traditional values and modern demands of mosque architecture, catering to the contemporary living practices. This coexistence is of vital importance for protecting a constant relatability and functionality of mosques in diverse geographical and cultural contexts. Karawia, (2020) contends that mosque architecture is not static but evolves in responses to altering cultural, technological, and environmental factors. For example, a similarity is noted between the multifunctional design of Süleymaniye Mosque's, coupled by its attention on community services, and the foundational principles of Prophet's Mosque's, while also catering to the particular needs of this era. In addition, evidence reveals that the contemporary mosques include not only sustainable practices but also prioritise integrating advanced technologies with an intention to fight with challenges of environmental degradation and urbanization (Harsritanto et al., 2021; Alnajjar and Dinçel, 2024). As a result of this synthesis of modernity and tradition, the evolution of mosque architecture is clearly found to be taken place in an adaptable yet resilient manner, assuring its persistent importance for the living practices in the modern era.

Broader Implications

The necessity for further exploration of how mosque designs can cater to the diverse community needs while consolidating sustainable practices and advanced technologies is highlighted by the findings. The research by Harsritanto et al. (2021) hints toward a gap in the

literature regarding the consolidation of modern innovations with traditional principles of architecture. This suggests that the focus of future research should be on documenting and assessing the contemporary projects of the mosque, that successfully fuse these elements, giving out valuable insights for planners and architects. In addition, the attention on multifunctionality and inclusivity in modern mosques call for an in-depth awareness of how spiritual experiences and community engagement are impacted by these features. If these gaps will be addressed, the future studies would be able to contribute to the formulation of mosque designs which are socially and environmentally sustainable while being architectural innovative.

Conclusion

This study investigated how has the mosque design evolved to accommodate contemporary living practice. Doing this, the study explored the interconnection between traditional values and modern demands in the mosque design. With the help of a detailed case study analysis of the Cambridge Mosque and comparative assessment of historical and contemporary examples, this research had aimed to offer practical insights into how traditional Islamic architecture can alter to meet the necessities of the modern societies while shielding its cultural and spiritual essence. This section of the study will be recapping the key findings of the study. In addition, the contributions of this research to the field of architecture will also be discussed, offering recommendations for future research. Lastly, the concluding remarks will be given reflecting this journey of research. The methodology that was employed in this research was a case study analysis, with a focus on the Cambridge Mosque as a primary example. The preference of the case study approach allowed for a detailed examination of the design principles, architectural features, and community impact of a modern eco-mosque. Contrastive evaluation using historical examples, such as the Prophet's Mosque, the Süleymaniye Mosque, and the Bait Ur Rouf Mosque, furnished a broader framework for comprehending the progression of mosque architecture. While the use of thematic analysis facilitated the extraction of central themes influencing mosque architecture. This interpretative technique enabled shedding light on the obstacles and prospects linked with merging the dimensions of tradition and modernity.

Key Findings of The Study

The findings of this research reveal that a transformation is seen in the mosque design, as represented by the Cambridge Mosques, showcasing a blend of modern aesthetics, sustainability, and inclusivity. The difference of it with traditional model highlights how contemporary practices of living can be adopted by mosques, while keeping intact the spiritual and cultural essence of these holy spaces. The importance of striking a responsible balance

between innovation and tradition gets reinforced by this comparison with an intention to establish meaningful yet functional religious space where the generations of future can come. The key findings show that while the traditional designs of mosque have retained their importance, the attention of contemporary mosque architecture is more on the optimization of space, inclusivity, and environmental sustainability. Four key themes were revealed by the thematic analysis that was conducted in the research, and those themes enclosed the changing discourse of mosque design. These themes were related to traditional values, modern demands, environmental sustainability, and the synthesis of tradition and modernity. Cultural and religious heritage are emphasized to be preserved by the traditional values in mosque design, as seen in elements like the qibla, courtyards, calligraphy, domes, arches, mihrabs, and minarets. The identity of Islamic architecture has historically symbolised by these features, owning substantial spiritual importance. However, the reinterpretation of these traditional elements for fitting with modern practices of the architecture and community necessities are highlighted by the case study of the Cambridge Mosque. A critical theme emerged in the form of innovative demands, including the optimisation of space and inclusivity. Contemporary mosques are increasingly expected to serve as multifunctional spaces which go beyond their primary role as places of worship. For example, the contemporary mosque is equipped with features like garden, café, community spaces, that make it able to cater to the plethora of needs of a multicultural society. The mosque, because of this inclusivity, guarantees to stay both relevant and accessible to all members of the community, irrespective of their background. Moving forward, another emerging theme was related to environmental sustainability, showcasing the rising cognisance of the environmental challenges of the globe. A benchmark for eco-friendly religious spaces is set by Cambridge Mosque's utilization of sustainable technologies by the form of timber-framed structures, rainwater harvesting system, and solar panels. In this way, this approach demonstrates that environmental goals can be supported by the adoption of the Islamic architectural principles like the attention on open space and light. At last, yet another central theme was identified as the blend of tradition and modernity. The way in which traditional Islamic architectural elements can be peacefully blended with principles of contemporary designs is ideally exemplified by the Cambridge Mosque. Resultantly, this balance makes sure that the mosque continue to be a sign of Islamic identity while addressing the practical necessities of the modern life. So, this theme, in short, highlighted the vitality of innovation in saving the relatability of traditional architecture in a rapidly changing world.

Contributions to The Domain of Architecture

This study provides multiple advancements to the discipline of architecture and Islamic structural scholarship. Firstly, it delivers a rigorous examination of how conventional Islamic

architectural frameworks can be reinterpreted to cater to current necessities. Via scrutinizing the Cambridge Mosque, this investigation contributes valuable perspectives on crafting sacred environments that are both culturally anchored yet future-oriented. Secondly, this research accentuates the significance of ecological mindfulness in mosque architecture. The Cambridge Mosque exemplifies how environmentally conscious methodologies can be assimilated into construction initiatives, showcasing the potential of sacred structures to participate in global environmental preservation. This contribution holds particular importance amid growing ecological consciousness and the urgency for sustainable advancement. Thirdly, this study reinforces the relevance of inclusivity and communal participation in mosque development. Mosques can instill a sense of togetherness and solidarity among their constituents by accommodating the heterogeneous demands of contemporary populations. This work highlights the capacity of mosques to operate as unifying environments that encourage social integration. Not only this, the wider dialogue surrounding the transformation of architectural methodologies is also enriched by this study. The results of this investigation emphasise the necessity of balancing out tradition with progress, presenting a template for reimagining classical architectural aspects within modern scenarios. This input is pertinent not solely to mosque construction but also to the safeguarding and adaptation of architectural heritage globally.

Recommendations

Based on the insights derived from this study, certain suggestions are proposed for designers, urban planners, and stakeholders involved in mosque creation, and these recommendations are below:

- I. Firstly, it is vital to prioritize ecological responsibility within mosque initiatives. This objective can be realized through the adoption of renewable technologies, deployment of regionally sourced materials, and the conceptualization of energy-conserving layouts. The Cambridge Mosque serves as an instructive paradigm for effectively executing such approaches.
- II. Secondly, emphasis should be placed on retaining historical architectural components while adapting them for modern applicability. This strategy guarantees that mosques persist as emblems of Islamic heritage while catering to the pragmatic demands of current times. Partnerships among architects, cultural historians, and local stakeholders can support the amalgamation of historical and contemporary elements in mosque projects.

- III. Thirdly, mosque construction should focus on inclusivity and communal interaction. Designers ought to address the varied requirements of the populations they cater to, assuring that mosques serve multipurpose roles for devotion, education, and socializing. Amenities such as community spaces, green areas, and centres can augment the accessibility and societal relevance of mosques in contemporary settings.
- IV. Lastly, ethical principles should steer the conceptualization and execution of mosque projects. This entails taking care of openness in the decision-making stages, honouring the spiritual and cultural essence of mosques, and prioritizing the welfare of the populations they intend to serve.

Directions For Future Research

Although this study offers critical perspectives on mosque design, numerous avenues demand further investigation. Prospective research could examine the influence of mosque architecture on societal interaction and communal harmony. An exploration of how spatial configurations shape social dynamics could yield deeper comprehension of mosques' societal functions. Additionally, upcoming studies might dive into the application of digital advancements in mosque design. Technologies like virtual simulations, three-dimensional modeling, and other interactive tools open up novel possibilities for conceptualizing and representing spiritual spaces. Exploring how these technological innovations contain the potential to refine the design workflow and nurture community collaboration would enrich the discipline. Apart from this, the subsequent research might focus on the conservation of traditional architectural features within modern mosque projects. Regional case studies could offer insights into strategies for balancing cultural heritage preservation with meeting present-day requirements.

It has been both challenging and rewarding to conduct this study on mosque's evolution to accommodate contemporary living practices. Through prioritizing on the areas of sustainability, cultural preservation, and inclusivity, mosques contain the prospect of continuously serving as models of social and spiritual unity in societies of the present era. The lasting relevance of architecture in shaping up a community's social and cultural fabric is demonstrated by the journey of exploring mosque design. It would not be wrong to conclude that this research has represented a step forward in comprehending the nuances of design of sacred places and its role in promoting an equilibrium between modernity and tradition. Having said that, the researcher is confident that the findings of this study have great potential to contribute to the wider discourse on the revolution of the architectural practices, and give valuable lessons for architects, planners, and stakeholders.

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Appendix A: Questionnaire for the Cambridge Central Mosque architect, Marks Barfield Architects

The subsequent questions were sent via email by the author of this thesis to Julia Barfield, the architect of Marks Barfield Architects. The email was sent on the 10th of December 2024.

The questions asked:

Design Philosophy

1. What was the main inspiration behind the architectural design of the Cambridge Central Mosque?
2. How does the mosque's design reflect both Islamic traditions and the local British context?

Sustainability

3. The mosque is celebrated as Europe's first eco-mosque. What specific sustainable technologies or strategies were incorporated into its design?
4. How does the mosque's design address energy efficiency and environmental impact?

Materials and Construction

5. Can you explain the choice of materials, particularly the timber used in the mosque's construction?
6. Were there any challenges in integrating traditional Islamic architectural elements with modern sustainable materials?

Community and Functionality

7. How does the architectural design facilitate the mosque's role as a community centre as well as a place of worship?
8. What design features were included to accommodate diverse users, including families, elderly individuals, and those with disabilities?

Aesthetic and Symbolism

9. How do the architectural elements (e.g., the dome, or prayer hall) embody Islamic art and symbolism while embracing contemporary design principles?
10. The prayer hall is visually striking with its tree-like columns. What was the conceptual or symbolic reasoning behind this design choice?

Regrettably, no response was received from the practice despite multiple calls and requests for a reply.

Appendix B: Questionnaire for the Cambridge Central Mosque to a member of the mosque, Mr Shoaib Shahid

The subsequent questions were sent via email by the author of this thesis to Mr. Shoaib Shahid, the mosque member who envisioned the initiative from the very beginning of the project, Mr Shoaib Shahid. The email was sent on the 21st of December 2024.

The questions asked:

1. How does the design of the mosque impact your spiritual experience?
2. What are your favourite architectural features of the mosque?
3. How does the natural light within the mosque influence the atmosphere during prayer?
4. What do you think of the mosque's use of sustainable materials and energy-efficient design?
5. How do the open spaces and greenery surrounding the mosque enhance your visit?
6. What role do you feel the mosque's design plays in fostering a sense of community?
7. Does the architecture of the mosque reflect Islamic values in a way that resonates with you?
8. How accessible do you find the mosque for all visitors, including families, elders, and those with disabilities?
9. Are there any areas of the mosque you feel could be improved to better serve worshippers?
10. How do you feel the mosque's architecture fits within the local Cambridge environment?

Regretfully, the interview was postponed for various reasons and no response was received from the interviewer.