

# THE MOMENT AND THE PLACE

MOSQUE ARCHITECTURE IN  
THE TWENTY-FIRST CENTURY



Abdullatif AlFozan Award for Mosque Architecture

Third Cycle

Mashary A. Al Naim  
Waleed A. Al Sayyed





وَأَنْ الْمَسَاجِدَ لِلَّهِ فَلَا  
تَدْعُوا مَعَ اللَّهِ أَحَدًا



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AND  
THE PLACE**

**MOSQUE ARCHITECTURE IN  
THE TWENTY-FIRST CENTURY**



# THE MOMENT AND THE PLACE

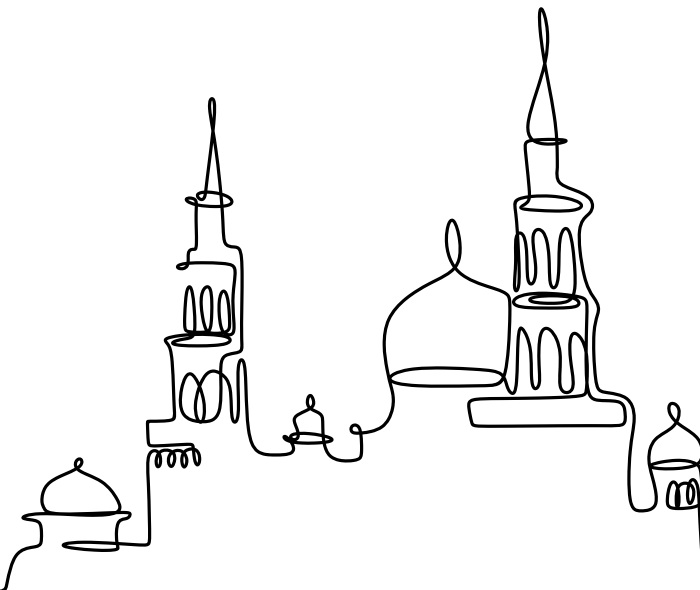
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The moment and the place: Mosque Architecture in twenty first century  
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Among the requirements of the 'place' suitable to pray in Islam are flexibility, openness and clarity. Moreover, the earth as a whole should be suitable to act as a 'mosque' that it should meet all these criteria. Therefore, because it is difficult to conduct prayers within certain specified times and in all circumstances without this multifunctional spatial flexibility, prayers are held around the clock everywhere on earth, and therefore it is possible to understand deeply the **hadith** of the Prophet, may Allah prayers and peace be upon him, **"The entire earth has been made a place of prayer, except for graveyards and washrooms."** Such characteristic is rather practical without which prayer cannot be performed, therefore, it is fundamentally associated with mosque architecture expressing its true philosophy. It seems there exist «constant moment and 'constant' place» in mosque architecture, which is the prayer hall, also there is **«dynamic moment and dynamic place»**, which are the earth and the prayer with its allocated timing. Eventually, we are interested specifically about **«constant place»**, which can be redefined to create new future mosque architecture.

The architecture of the moment and place in philosophical and architectural terms is seen as an association of multi-purpose space, and it seems that mosque throughout history has been multifunctional space, its role not limited to the performance of prayer. Therefore, this functional multiplicity is to make the prayer hall and its surroundings a place not limited to certain function, rather it must be people's meeting place. The Prophet Mohammad Mosque was a place for running the state until the reign of Caliph Ali bin Abi Talib and continued as a place for people to congregate, and a space for dialogue. Even after the division of state administration from the mosque, the two were kept close to one another. **The contemporary concept of multifunction refers to open space that allows the diversification of functions within one spatial organisation.**

This book poses certain important questions. It questions the existence of many people's perceptions about the form of mosque. It also questions reasons behind a reaction towards contemporary mosque architecture concept, which is bound to deviate from a traditional cognitive stereotype. Is it necessary to change such an image and adopt more expressive ideas of time and place? How can 'moment and place' architecture contribute to new ideas for mosque architecture? In fact, the future mosque demands critical answers to such questions, with the need to emphasize that critical dialogue about mosque architecture lies within architectural **'possibility'** that attempts to detect the rise of cognitive mosque image, reasons behind this, or whether it is necessary to change this image.

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# MOSQUE: ARCHITECTURE AND CULTURE

I must emphasize at the beginning of this introduction that our topic is rather special and should not be taken lightly. For mosque architecture has been central to Islamic identity, as this unique and special building type represents pivotal catalyst for the development of architectural and structural concepts, visual arts and social practices. From this perspective, we must understand Abdullatif Al-Fozan Award for Mosque Architecture goal. If it is to search for potential future realm of the mosque, the Award then explores motivations and generators that made the mosque unique spiritual and social building, re-establishing the long historical rich experiences associated with mosque architecture.

This book reviews short listed projects, which comprise 27 mosques across the Islamic world, as this cycle focused on countries with Islamic majority. The challenge that faced the Award team to shortlist mosques was great, since over 119 professionals worldwide participated in the selection process. The long list included 201 mosques spread over 48 countries, all of which built during the new millennium (except for one category selected as community mosques with rich history, active today). This work, and what it entails in is building a global database that documents mosques around the world, with about 3.6 million mosques, means that there is creative institutional work by this leading Award in its field and specialization. The book raises important critical issues stemming

from strict procedures set by the Award in selection, identification and nomination, which points to rigorous scientific and epistemological dimension that contemporary mosque architecture desperately needs.

One of main issues presented in the book is the dialectical relationship between architecture and culture, the influence of technology and cognitive perceptions of Islamic societies with regard to mosque and its contextual relationship to urban and social content. This serious and important dialogue is evident when reviewing mosque architectural transformations that took place during the twentieth century. All traditional frameworks, then, that produced mosque and its patronage have disappeared, societies have turned into modernity based on institutional work rather than individual endeavors, and contemporary global technology has produced repeated forms. All these factors had profound impact upon the mosque in the twentieth century, and had afflicted it with some visual, urban and even technical confusion. The book deals with these issues with some detail as it reviewed 15 mosques built between the second decade of the twentieth century until the end of the century, with generators of transformation that challenged traditional mosque architecture.



Providing best practices in mosque architecture in the twenty-first century clearly reveals that we have a long way to go to bridge the gap that occurred as a result of mosque traditional generators and frameworks stagnation. What Al-Fozan Award is trying to do, at the global level, as the next session will include all world countries is to re-create the link between history and future. Consequently, we should view this book as one of several episodes that will be presented by this Award to redefine «culture of mosque architecture» on global mentality, and by those interested in developing mosque technology often neglected.

«The moment and the place», is the title of this book, express mosque's genius as a component that adheres to man and his lifestyles, no matter how different cultures and societies vary. The 'moment' that indicates the strict timing of the prayer and the 'place' that indicates the Earth which is generally a place of prayer. The strictness of 'moment' and flexibility of 'place', are the genius of the mosque that is rarely present in another religion. The title of the book is a call for simplicity, learning and commitment, as well as a title for flexibility, and this is what our mosques should be in the future.

**Sultan bin Salman bin Abdulaziz Al Saud**  
Riyadh  
January 2020

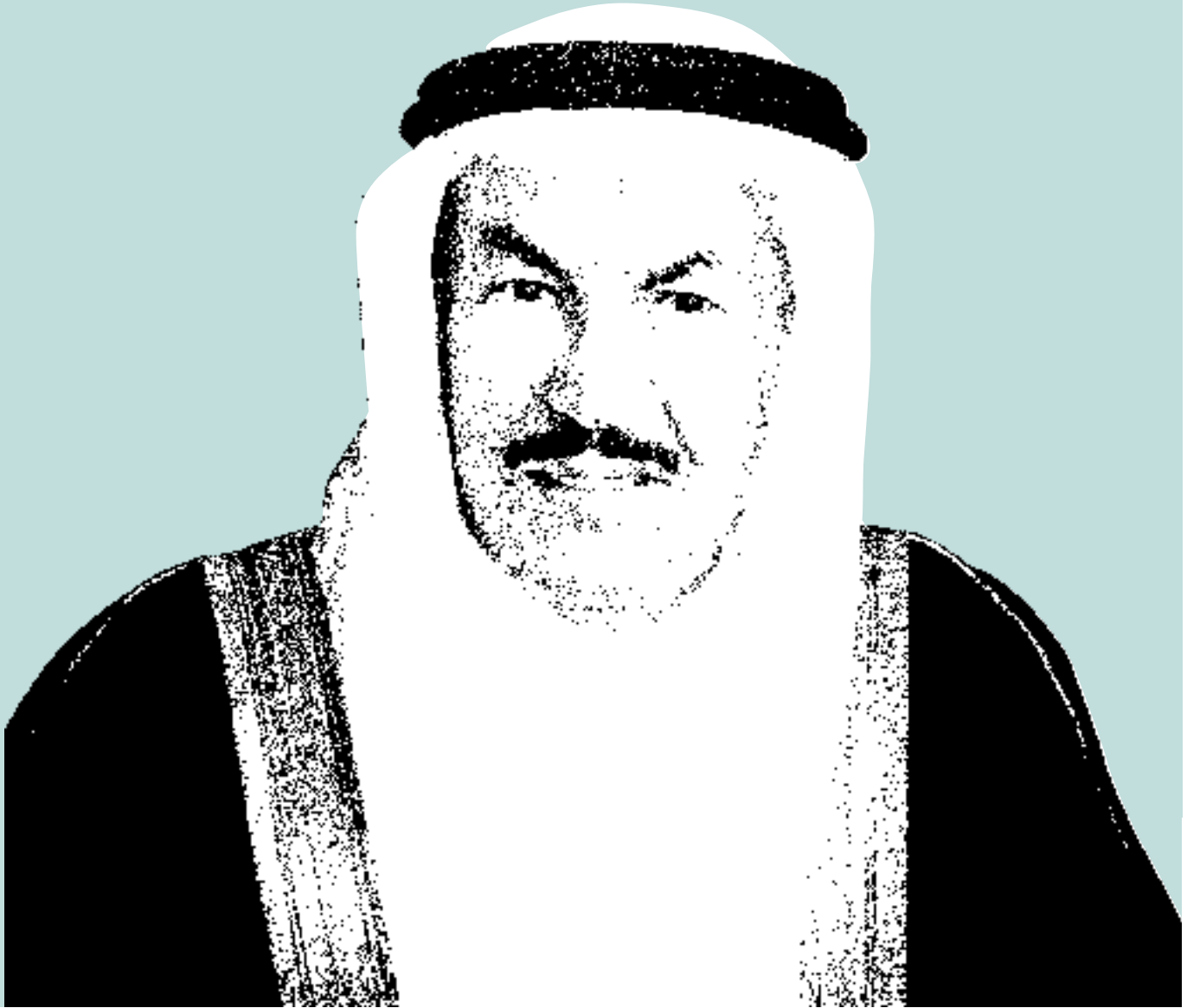
# THE MOMENT, PLACE AND FUTURE MOSQUE

From the very moment this Award was launched in 2011, sincere considerable, and relentless efforts were made to develop mosques around the world, improve functional and technical efficiency, and reduce costs of operation, given global rapid rising mosque numbers. Our sense of responsibility behind the preservation of natural resources, with the special status mosque occupy in Muslims' hearts and minds, and their profound impact upon human culture, all motivated us in this Award to generate creative ideas and cognitive human culture centered around the mosque and its religious, educational, social and cultural role. The 'moment and place', an interesting title of this book, brings to mind the concept of

development, change and transformation associated often with the mosque throughout its rooted interaction with local communities, and its ability to interact, integrate, and transform cultures, within principles of Islam that include all humanity. It is a building that bears the seeds of universal human culture, "And We have not sent you, [O Muhammad], except as a mercy to the worlds" (Al-Anbiyaa: 107).

The concept of 'moment and place' defined and presented in this book, for the third cycle of the Award, refers to fluid dynamic future «time», and multiple «place» that define geography and local specificity. When linked to the mosque, it had a beginning but has no historical end, and the place represents all to which every spot on earth is oriented; dry and wet. This progressive Award has an eye on the future and another on the past, to create an accumulation of knowledge associated with the mosque, its cultural and historical peculiarities without neglecting creativity and innovation. Its ongoing searching for new solutions developing ideas related to 'time' confirms that albeit the mosque expresses the transformation of ages and times, still it retains stability and value within forms and techniques, and within function and civilized human lifestyle that reflects the spirit of society.

The main objectives of the Award are to diagnose mosque technical and architectural, current state, besides granting prizes



for outstanding mosque architecture. We aim to define mosque architecture so that the future becomes a progressive state of the past. The aim, therefore, is to grant awards to minds and ideas, rather than buildings, and to build a bridge that extends to the future, leading to transparent and flexible mosque architecture that reflects its time and expresses the philosophy of «moment» and «place» accurately and clearly.

The book presents shortlisted projects identified by 119 specialists around the world, who helped nominate mosques, mostly between this century, present new ideas and address concepts that the Award aspires to prevail in global mosque architecture. A team of referees from several countries examined these mosques and selected the short list that reached the final competition for the Award. As mentioned, our goal is not to offer prizes as much as to stimulate changing ideas and approaches. The conclusion of this cycle will lead the Award to its fourth edition (2020-2023) to include all countries to confirm that mosque «connects people» as it also «connects cultures» and this concept as such, is what the Award endeavors to offer.

The «moment and place» architecture is the deepest expression that the Award aspires to achieve, because the mosque is the space within which cultures merge, and where people meet. What the

Award is currently working on is building global databases that detect mosque architecture in all languages, and build interested professional community working on innovation and creativity in mosque architecture. These aspirations that have come true on the ground are part of massive institutional work that the Award will lead in the future to build a new thought that restores mosque's cultural domain and enhances its role as a place and laboratory for creative ideas that have characterized past Islamic societies.

**Abdullatif bin Ahmed Al-Fozan**

Founder of the Award

Al khobar

January 2020



# **NOMINATION AND SELECTION OF WINNING MOSQUES: PROCEDURES AND CHALLENGES**





Work in this third Cycle lasted three years (2017-2020). This part of this book explains work details done during this Cycle to select the winning mosques that deserve to receive the Award. The fact that the selection mechanism must be comprehensive and transparent to express neutrality and fairness prior to laborious process of refereeing that usually takes more than a year, it was necessary to put in place a system and procedures that the Award followed to achieve this goal. We must make it clear that the process of selecting mosques in countries with Islamic majority faced great difficulties and opened our eyes to a **logistical** and **methodological** problem that makes selecting the appropriate mosques in these countries a matter of utmost challenge. The absence of institutional architectural work in general in these regions of the world made the **documentation** process problematic by itself and prompted the Award team to search for various mechanisms to obtain information necessary to complete the **long list** which is the basis for the inventory process without which it is not possible to complete the process of selecting the winners.

First we must say that mosque architecture encountered three main problems. First, is the fact that the construction of the mosque is of great cultural and functional importance, and the process of building mosques is ongoing because the mosque is not only a house of worship but rather a building linked to daily life which people visit five times a day, in addition to being a place for many social, cultural and educational activities. The second problem is that mosque architecture did not evolve around the world in contemporary times to reflect this important role that mosque plays in public life, therefore the architectural product of mosques worldwide during the last two centuries does not reflect the great value of the mosque in Islamic societies. The third problem is the dominance of historic image of mosque architecture in the minds of many in countries with an Islamic majority coupled with the reluctance and resistance to accept any change, hence re-producing the historical image with all its pros and cons and all its stereotypes. These three problems represent a state of contradiction, which requires the adoption of professional and intellectual initiatives through which the architecture of mosques around the world should be re-visited and modified. Between the great proliferation of mosques everywhere on this earth and the negligence of how to design and build this widespread building lies a crisis of contemporary mosque architecture.

The third Cycle of Abdullatif Al-Fozan Prize for Mosque Architecture examines these problems in terms of geographical distribution of mosques in countries with an Islamic majority and the quality of the architectural product of mosques in those countries. It also raises a fundamental question about **the shape of the mosque**, is it constant or variable? And what exactly does **the future mosque** mean? First we must emphasize that the long list announced in mid-January 2019 is an attempt to select contemporary best practices in mosque architecture in the countries covered by this Cycle, therefore what this list will provide does not reflect the reality of mosque architecture in these countries



1 Jury committee and the award team in UIA headquarter in Paris, January 2019



as it reflects the best cases that exist at the moment, or that have been reached, which reflect the architecture of mosques in these countries after the year 2000 AD. The Award also defined its goals and intellectual orientations through its focus on **the mosque of the future** and the consequent change in the traditional image of mosque architecture, meaning that the long list was subject to selection criteria for mosques that suit the professional and intellectual orientations the Award advocate. Thus, the dialogue on mosque architecture will continue and will carry multiple dimensions even after selecting the long list.

In principle, the criteria set for selection made it difficult to build the long list, and it made it even more difficult that this Cycle is limited to Islamic countries only, where most of these countries lack professional architectural structure through which to select from built mosques. In the countries of Central and West Africa and in the countries of Central Asia there is no professional infrastructure that documents architecture, which made it difficult to reach examples that fit the criteria of the Award, therefore the first lesson that we learned from this Cycle is to start immediately to build integrated information bases for mosque architecture worldwide so that in the future we can choose projects that truly reflect best practices in mosque architecture. However, we must say that there is a big problem also in the Arab countries such as Egypt, Libya, Algeria, Tunisia, Morocco, Mauritania and African countries (Somalia, Djibouti and Eritrea), as well as Arab countries in Asia, especially Iraq, Syria and Palestine, therefore, the mission of the Award is not easy because access to examples that can express the architecture of future mosque is still absent from societies that are supposed to be more interested in mosque architecture than others, which is part of their living culture.

The long list, in general, represents architectural and technical trends in Islamic countries in the last two decades of the twenty-first century. It also provides a picture of the general professional situation in architecture in these countries. The goal is to set a general perception of how a change in the course of thinking in mosque architecture can be made worldwide by diagnosing problems experienced by professional societies working in mosque architecture.

#### The long list

The President of the Executive Committee of the Award, Abdullah Al-Fozan, announced the long list of mosques, given the diversity and impartiality. Moreover, the Award team collected information on mosques in cooperation with Award assistants from all Muslim-majority countries. 119 carefully selected members (candidates) participated among experts and interested in mosque architecture,

- 1 Abdullah AlFozan, chair of the executive committee
- 2 Secretary General welcoming the jury committee, Paris 2019
- 3 The first meeting for the jury committee to select the short list (UIA headquarter, Paris 2019)
- 4 Discussion among the jurors



who helped in providing information, drawings and contact details of the nominated mosques. However, the Award team worked on drafting the nominated project presentation preparing all documents for the jury meeting held in Paris from 21 to 23 January 2019. The nominated mosques were classified into 4 categories: central, Friday, local, and community to facilitate the selection process and organize procedures for short list selection.

The President of the Executive Committee of the Award, Abdulla Al-Fozan has confirmed that the nomination process has gone through major development in the framework and methodology since the beginning of the third Cycle. The great expansion in the geographical scope from Gulf countries (6 countries) in the second Cycle to include countries with an Islamic majority (50 countries) in the third Cycle is considered a progressive leap in the history of the Award. Therefore, the team has encountered many obstacles facing this large number of countries, cultures and variety of languages. For example there was no information about mosques in West Africa and Central Asia, which made the Award team's mission more challenging. However, more than 30 mosques were nominated from these countries.

The nominated mosques were chosen within total neutral and transparent methodology. 201 mosques from 48 countries were





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nominated from all Muslim-majority countries. 23 Asian countries nominated 136 mosques, 21 African countries nominated 43 mosques, and 4 European countries nominated 22 mosques. Therefore, mosques were divided according to four categories as follows: 64 central mosques, 72 Friday mosques, 42 local mosques, and 23 community mosques.

However, we must point out the work of those who followed up the process of nominating mosques at this current Cycle. They drew attention to the crisis in the architecture of contemporary mosques in different locations of the world, especially in Central African countries that seem to be facing comprehensive crisis in urban development in general, and mosque architecture in particular. The team was unable to find mosques that could be nominated for the Award in a wide sector of African countries, and this means that this Award can be absent from countries inhabited by a Muslim majority because there is no general framework that supports mosque architecture, and this made us rethink the goal. What we want to achieve from this Award? If we cannot overcome this difficult reality, the role of the Award will remain limited. The questions we are asking ourselves are: What should we do and how do we start?

Central African countries and countries of Central Asia to a lesser extent face a professional problem as a result of the deteriorating

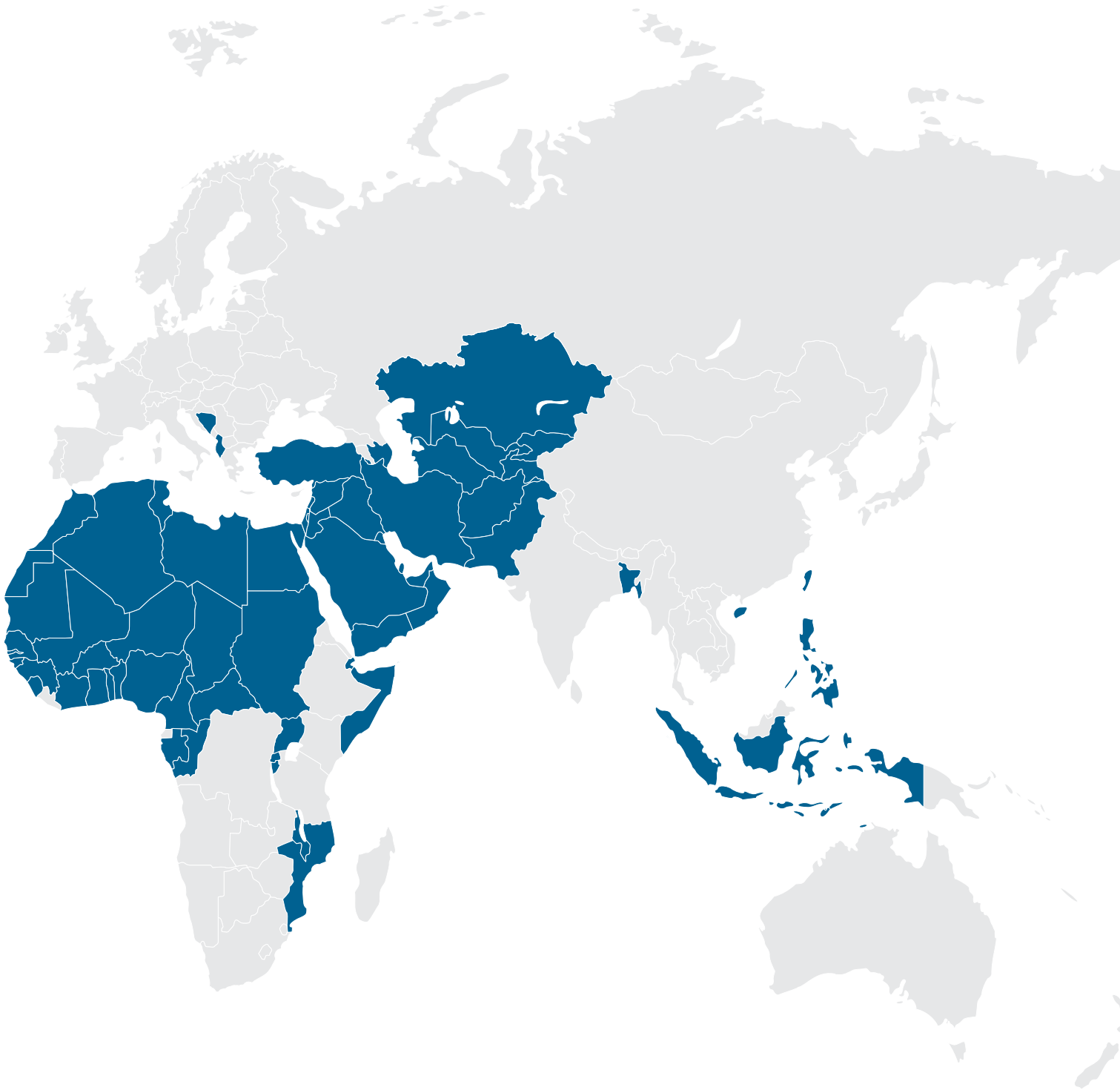
economic reality, and as such, mosque architecture is linked to the economic environment and the professional and artisan community formed in this environment; this architecture advances therefore with its development and retracts by its decline, especially with contradiction in local historical architectural knowledge and techniques. The important observation that we learned from the nomination process is the great transformation that took place in the craft aspect in Central Africa, where local communities began to abandon their traditional knowledge in construction and replace it with modern techniques and materials that the market and economic reality cannot develop, so most of the mosques recently built are inappropriate in form and do not comply with the standards that the award predicts for contemporary mosque architecture, unlike ancient and historical mosques in this region which are unique examples worldwide.

We are facing an architectural professional problem. On the one hand, these countries started to lose their cultural and heritage backbone, where craftsmen and those familiar with traditional building techniques disappear. On the other hand, these countries are not able to import modern technologies and materials, therefore the new product of mosque architecture will be poor and not suitable for new directions for **Mosque of the Future**. With regard to the Award,



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# MOSQUES LONG LIST



**Chechnya Republic - Russia**

Argun Mosque  
Ahmed Kadyrov Mosque

**Egypt**

Ezbit El Nakhl Great Mosque  
Al Fattah Alaleem Mosque  
Al Mina Mosque  
Police Mosque  
Al Rahman Al Rahim  
Al Aemah Al Arabaha  
Basuna Mosque  
Maidom Oasis Mosque

**Afghanistan**

Abdul Rahman Mosque  
Afghan Turk Mosque

**Indonesia**

Al Akbar Mosque  
Great Mosque of Central Java  
Dian Al Mahri Mosque  
Great Mosque of West Sumatra  
Al Asryad Mosque  
Al Azhar Grand Mosque  
Al Safar Mosque  
Baitus Shobur Mosque  
As Shaff Mosque  
Asma'ul Husna Great Mosque  
Darussalam Mosque  
Sari Asih Karawaci Mosque  
Baitus Salaam Mosque  
Bait Alrahman Mosque  
Permata Qolbu Mosque

**Albania**

Great Mosque of Tirana  
Riza Bajrami Mosque

**Ghana**

Al Qouraa Mosque  
Al Tawheed Mosque  
Community Mosque  
Aisha Mosque

**Pakistan**

Bahria Grand Mosque  
Liaquat National Hospital  
Mosque

**Iran**

Imam Reza Complex Mosque  
Vali-E-Asr Mosaue  
Delgosha Mosque  
Wooden Mosque  
Esfahan Cemetery Prayer Room  
Moahmmed Rasul-Allah Mosque  
Takhte Soleyman Mosque  
Tohid Mosque

**Algeria**

Abdel Hamid Ibn Badis Mosque  
The August of 1956 Mosque  
Al Aman Mosque  
Tosyali Oran Mosque

**Kazakhstan**

Hazrat Sultan Mosque  
Mechet' Imeni Zhusupa Mosque  
Nurgasyr Regional Mosque  
Nur-Astana Mosque  
The Flower of God Mosque  
The Pyramidal Mosque

**Saudi Arabia**

Al Walidain Mosque  
KAUST Grand Mosque  
Al Arfaj Mosque  
Esra & Me'raj Mosque  
Al Jawhara Al Babtain Mosque  
Khalid Albaltan Mother's  
Mosque  
Saeed Raddad Mosque  
Mamur Mosque  
KAFD Mosque  
University of Tabok Mosque  
Community Mosques

**Malaysia**

Cyberjaya Mosque  
Al-bukhary Mosque  
Kota Iskandar Mosque  
Tengku Ampuan Jemaah  
Mosque  
Wilayah Persekutuan  
Ulul Albab Mosque  
Cyberjaya 10 Mosque  
University Teknologi Petronas  
Mosque  
Selat Melaka Mosque  
Bandar Diraja Mosque  
As-Salam Mosque  
Puncak Alam Mosque  
Senai International Airport  
Mosque  
Istana Diraja Mosque  
Taman Selatan Mosque  
Surau Nusa Idaman Mosque  
Institute Penilaian Negara  
Mosque  
Surau Ali Bashah Neocyber  
Mosque

**Morocco**

Mohamed V Mosque (Fnideq)  
Mohammed Vi Mosque

**Tunisia**

Al Abidine Mosque

**Uzbekistan**

Minor Mosque

**Togo**

Alrahman Mosque  
Musaab Bin Omair Mosque  
FaelatKhair Mosque

**Azerbaijan**

Hydra Mosque  
Shamakhi Mosque  
Nehram Village Mosque  
Abragunus Mosque  
Haji Javad Mosque  
Zir Cüm mosque

**Oman**

Maizon Bint Ahmed Mosque  
Sultan Qaboos Mosque, Sameel  
Sultan Qaboos Mosque, Nezwa  
Sultan Qaboos Mosque (Muscat)  
Sultan Qaboos Mosque, Sur  
Sultan Qaboos Mosque, Bahlaa  
Sultan Qaboos Mosque, Salalah

**Jordan**

King Hussein Mosque  
Altawheed Mosque  
Naji Hamshari Mosque  
Al Rawda Mosque

**Tanzania**

Kaigoma Mosque  
Bin Haji Mosque

**Yemen**

Alsaleh Mosque

**Bosnia**

Princess Dzevhera Islamic  
Centre

**Turkmenistan**

Dasoguz Mosque  
Türkmenbasy Ruhly Mosque  
Kyrgyzstan  
Imam Sarakhsi Mosque

**United Arab Emirates**

Shaikh Zayed Mosque, Abu  
Dhabi  
Shaikh Zayed Mosque, Fojerah  
Zabeel Mosque  
Alfaroq Omar Mosaue  
Al Aziz Mosque  
Alrashediah Mosque  
Amnah Alghorair Mosque  
Hamoudah Bin Ali Mosque  
Al Aleem Mosque  
Aljaddaf Mosque  
Abdulrahman SadiK Mosque  
Khalifah Altajer Mosque  
NadAlsheba Mosque  
Tamim bin Aws  
City Walk Mosque  
Al Warqa'a Mosque  
Alshandagha Mosque

**Zambia**

Albarka Mosque

**Senegal**

Al ojail Mosque

**Somalia**

Simad University Mosque  
Tatarstan  
White Mosque

**Brunei**

Ash Shaliheen Mosque  
Burkina Faso  
Almailam Mosque

**Qatar**

Aspire Mosque  
Hamad Airport Mosque  
Katara Cultural Village Mosque  
Golden Mosque

**Bangladesh**

Chandgaon Mosque  
BSML Mosque  
Mohor Para Mosque  
The Red Mosque  
Bait Ur Rouf Mosque  
Concrete Mosque  
Adra Mosque  
Teradol Community Mosque

**Turkey**

Bedirye Tiryaki Mencik Mosque  
Çobançesme Mosque  
GOSB Mosque  
Fatih Üniversitesi Mosque  
Alacaatlı Uluyol Mosque  
Marmara University Mosque  
Sakirin Mosque

Sancaklar Mosque  
Refiye Soyak Camii Mosque  
Simav Tabakhane Mosque  
Yesil Vadi Mosque  
Yasamkent Mosque  
Alaçatı Süreyyave Muzaffer  
Mosque  
Malatya İnönü Üniversitesi  
Mosque  
Mogan lake Mosque  
Semazen Mosque  
Dogramacizade Ali Pasa Mosque

**Bahrain**

Dorat Albahrain Mosque  
Issa Bin Salman Mosque  
Suhaib Alromi Mosque  
King Khaled bin Abdulaziz Al  
Saud Mosque  
Sheikha Hessa Mosque

**Libya**

Jamal Abdunnasser Mosque

**Kuwait**

Mohamed Jassim Alsaddah  
Mosque  
Alogoyan Mosque  
Siddiqa Fatima Mosque

**Kenya**

Amatullah Complex Hakimi  
Mosque

**Niger**

Alnajdi Mosque

**Lebanon**

Amir Shakib Arslan Mosque

**Uganda**

Burhani Mosque

**Benin**

Mohammed Alshouabi Mosque  
Oluwa Lowi Mosque

**Sudan**

Prayer and meditation pavilion  
Mosque

**Mauritania**

Turajm Mosque  
Ahmed Mosque  
Omar Bin Alkhatib Mosque  
Comoros  
Alhamd Mosque

**Mali**

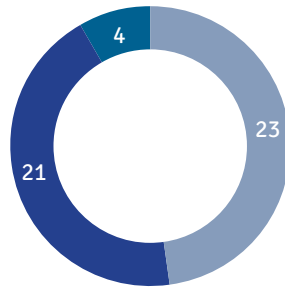
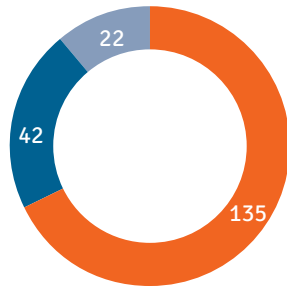
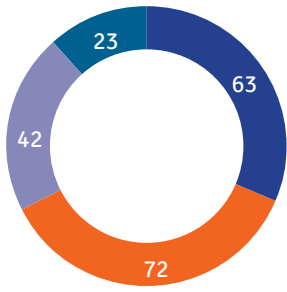
Community mosques

**Guinea**

Noor Aleslam Mosque

**Nigeria**

Almuntada Mosque



- Community
- Local
- Jumaa
- Central

- Africa
- Asia
- Europe

- Europe
- Asia
- Africa





this crisis represents a real challenge to the ability to contribute to make a difference, and perhaps one of the important directions that we think about is developing standards for mosque architecture in Central Africa in cooperation with one of the global institutions that have experience in architecture and local materials on the one hand, and long experience with societies of these countries and their local technologies on the other hand. We believe that the presence of such standards will enhance the quality of mosque architecture, taking into account the economic reality, which requires relying heavily on local capabilities and technologies.

The architectural situation that we want these standards to achieve for this region should combine local and modern technologies, meaning that the goal is to develop contemporary mosque architecture that relies on developing local knowledge and techniques combining these with modern ideas and techniques that increase efficiency of mosques. This approach may require the development of a set of flexible models that can be shaped and adapted by location, with assurance that the standards will take into account the privacy of local materials in vast geographical area by studying historical architectural styles and techniques. This is not wishful thinking and certainly requires the interaction of local communities and institutions and may require the development of a training programme to apply standards and cooperation with few local or regional architects, but it is possible to get results that make a profound shift in the practice of architecture in general and mosque architecture in particular in this part of the world.

We must say that the strict procedures the Award adhere to in the nomination of mosques represent an important exploratory process to draw a realistic picture of mosque architecture around the world, which must help to build a global knowledge that allows changes in the reality of mosque architecture in regions around the world. In general, the Award aims to balance in mosque architecture and take advantage of countries that have gained good experience in developing mosque architecture and employ these experiences and knowledge to contribute to the development of less fortunate regions such as Central Africa. This work requires volunteers and interested people across the world to make this important humanitarian cultural project successful.

### Selection Committee

The Award announced methodology, names and qualifications of members of the international jury for the third Cycle through a statement by Abdullah bin Abdullatif Al-Fozan, Chairman of the award's executive committee, in which he outlined objectives of the Award in developing architectural form of mosques providing scientific information that will help workers in building mosques

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1 The jurors during the discussion of one of the long listed mosques

around the world to provide effective and sustainable architectural solutions. Al-Fawzan stated that Abdullatif Al-Fozan Award for Mosque Architecture expanded its scope during the third Cycle to cover all Muslim-majority countries on four continents. He also emphasized that this geographical expansion was put in place through scientific and systematic framework; he added that the Award executive committee took a decision regarding the international jury to comprise seven members, four of them are international architects, a fifth member an expert in visual arts and a sixth an art critic, and finally the seventh member specializing in social sciences and humanities. Al-Fawzan said that the criteria for selecting the jury required that the nominated member must be experienced in architectural design of public buildings for the architect, and that he must be specialized and familiar with Islamic culture, arts and literature for all members. Abdullah Al-Fozan stressed that geographical, ethnic and cultural diversity has been taken into consideration to ensure transparency and credibility. In another development, the President of the Executive Committee of the Award said that this third Cycle witnessed important development in the methodology of working through the Award's partnership with the International Union of Architects, to assert the architectural aspect of the Award and stated that the Union's presidency has participated in selecting the international jury for the third Cycle, bearing in mind that International Union of Architects hosted the first meeting of International Jury at its headquarters in Paris during the second half of January 2019.

The Chairman of the Executive Committee stated that the paths for nominating mosques for the different categories of the Award went in regular pace, and that the number of mosques that were nominated until the end of the nomination period in January 2019 reached 201, from more than forty eight countries on three continents, so the nomination of mosques came through local candidates from each region or country. He stated that the relevant departments in the Award's general secretariat worked to classify mosques, document them and achieve their information, and also communicated with architects designed these mosques in different countries, and emphasized that the Award's work team has sufficient experiences in analyzing architectural designs of mosques and classifying them according to architectural styles or functions, or location within the urban tissue of cities. He added that the aim of the first meeting of the International selection Committee in Paris was to choose the short list by selecting the best architectural designs independently and transparently, indicating that the General Secretariat did not interfere with the decisions or recommendations of members of the committee affirming that the work of the General Secretariat and the Presidency of the International Union of Architects was limited on administrative and logistical matters. With regard to the international jury, Al-Fozan stated that the Award's executive committee had chosen the committee's members upon a long and complex search process. Thus, the members of the executive committee agreed to choose the following members:



### **HRH Prince Sultan bin Fahad bin Nasser Al Saud**

An artist specialized in visual arts, he has experience and has multiple works in the visual arts related to Islamic culture. He holds a Bachelor's degree in Business Administration from King Saud University and master from San Francisco University.



### **His Excellency Dr. Taleb Al-Rifai**

He worked as Minister of Planning, Minister of Information, and former Minister of Tourism and Antiquities in Jordan, he holds a master's degree in engineering from the Illinois University of Technology in Chicago and a doctorate in engineering and planning from the University of Pennsylvania in Philadelphia, worked as a professor of architecture at the Faculty of Engineering at the University of Jordan, and also held the position and headed the Secretary General of the United Nations World Tourism Organisation.



### **Dr. Dalila Kirdani**

She holds a Bachelor's, Master's and Doctorate degree in Architecture from Cairo University, she works as an assistant professor in the Department of Architecture at Cairo University, was a visiting fellow at the University of California, Berkeley, USA, headed the Heritage Preservation Committee of Port Said Governorate and an active member of the Heritage Areas Committee of the National Organisation for Civilization Coordination. She is also a member of the Architecture Committee of the Supreme Council of Culture. and the head of the Office of Architectural Engineering Consultancy in Cairo, Arab Republic of Egypt.



**Ms. Mona Khazindar**

She holds a Bachelor's degree in Comparative Literature from the American University in Paris, and obtained a Master's degree in Contemporary and Modern History from the Sorbonne University in Paris, she headed the Department of Contemporary Art and Photography at the Museum of the Arab Institute, and Director General of the Arab World Institute in Paris, a permanent member of the Board of Trustees of the Museum of European and Mediterranean Civilizations, a cultural advisor to head of the Saudi Commission for Tourism and Antiquities, and a member of the «Saudi Cultural Authority», and was also nominated as a member of the «ETHRA» advisory board.



**Dr. Efim A. Rezvan**

A researcher and anthropologist and humanist, specializing in Qur'anic studies. He has many books on the miracle of the Holy Qur'an. He is a professor of Islamic anthropology at the Russian Academy of Sciences in Saint Petersburg, Russian Federation. He is a member of the International Consultations and Programmes Committee of the World Conference on Middle East Studies (WOCMES) and the Russian representative in the European Union of Arabs and Islamists (UEAI).



**Dr. Elisa Valero**

A professor of Architecture at the Higher Technical School of Architecture in Granada, visiting Professor at Archiverkor Berlin Technical Institute, Institute of Applied Arts in Rome Tre, United Nations School of Architecture, BTU Architectural School in Cottbus, Royal Academy of Fine Arts in Architecture, Copenhagen, Escola da Cidade, São Paulo, the owner of the «Valero» engineering consulting office in Granada, Spain, and Valero is represented by the International Union of Architects on the International Jury.



**Dr. Nada Al Nafea**

She holds a bachelor's degree from King Faisal University and a PhD in architecture and urban design from London South Bank University in 2006. She worked as a faculty member at King Abdulaziz University and vice rector for quality for the Dar Al Uloom University and Dean of the College of Art and Design at Princess Noura University. An expert in the quality of higher education and participated in the evaluation of many universities in the Kingdom.



**Dr. Alpha Diop**

Architect, faculty member, president of Aicomos in the Republic of Mali, general manager of the Aldi Architectural Workshop, and expert on community mosque architecture in Central Africa



**Dr. Eslam El Ghonaimy**

He holds a bachelor's degree in 1988 from the Department of Architecture / Faculty of Fine Arts, Alexandria University, a master's degree in Environmental Architecture from the Institute of Graduate Studies and Research at Alexandria University in 1995, and a doctorate in Architectural Engineering from the Department of Architecture / Faculty of Engineering Mansoura University in 2000, with scientific participation (academic supervision) in Ohio University in the United States.

### The Short list

The International Jury held its first meeting at the headquarters of the International Union of Architects in Paris during the period from January 21 to 23, 2019, to assess and review the long list of mosques nominated for the Award third Cycle, which includes all countries with a majority of Muslims.

At the start of the meeting, His Excellency Dr. Mashary bin Abdullah Al-Naim, Secretary General of Abdullatif Al-Fozan Award for Mosque Architecture welcomed members of the International Jury, conveying to them the greetings of His Royal Highness Prince Sultan bin Salman, Chairman of the Board of Trustees, and His Excellency Sheikh Abdullatif Al-Fozan, founder of the Award and Chairman of the Executive Committee, Mr. Abdullah Al-Fozan indicating the general directions of the Award in developing the future architecture of mosques and the most important milestones for Award third Cycle. Then, Professor Architect Thomas Vonier, President of the International Union of Architects, spoke about the importance of mosque architecture at the global level, given the association of the mosque in the formulation of thought and urban fabrics for many societies in the world. Professor Vonier also spoke about the strategic partnership between the Award and the International Union of Architects and the implications of this

1 Secretary General of the Award welcoming Thomas Vonier President of the International Union of Architects (UIA)

2 Presenting the long list to the jurors, Paris 2019



partnership on joint venture projects and work. After that, members of the jury unanimously approved the election of his Excellency Dr. Talib Al-Rifai, Chairman of the Jury, who in turn announced the start of the closed meeting to review the long list of projects, numbering 201 mosques.

Over the course of three days of continuous meetings during which jury members discussed all projects in different categories (central mosques, Friday mosques, and local mosques, in addition to community mosques).

At the conclusion of the meetings, Professor Mona Khazindar (member of the jury) read the short listed projects during the reception held by the Award's General Secretariat at the Arab World Institute in Paris in the presence of a number of Arab and foreign ambassadors and some permanent delegates of countries to UNESCO. The short listed projects included 27 mosques (including community mosques that represent programmes comprising more than one mosque) are as follows:

**First: Short-listed mosques according to urban and architectural categories:**

Central Mosques category (9 mosques)

Friday mosques category (8 mosques)

Local mosques category (8 mosques)

Community Mosques category (3 community projects)

**Second: Short-list mosques according to geographical distribution:**

Asia: 18 mosques and one community project

Africa: 3 mosques and 2 community projects

Europe: 3 mosques



# MOSQUES SHORT LIST





**Kazakhstan**  
The Flower of God Mosque

**Uzbekistan**  
Minor Mosque

**Iran**  
Imam Reza Complex Mosque  
Vali-E-Asr Mosque



**Bangladesh**  
Chandgaon Mosque  
The Red Mosque  
Concrete Mosque  
Bait Ur Rouf Mosque  
Mohor Para Mosque

**Indonesia**  
Al Asryad Mosque  
Al Safar Mosque  
Great Mosque of Central Java  
Great Mosque of West Sumatra  
Baitus Shobur Mosque

**Malaysia**  
Surau Nusa Idaman Mosque

The concluding report of the International Jury stated that the committee adopted various criteria during its evaluation of the projects, most important of which was the architectural component (beauty and originality in design, innovative architectural solutions), the planning component (linking the mosque to society and its role with community development), the economic component (compatibility of architectural solutions with cost), the environmental component (The building adherence to green architecture and energy) and the human component (building compatibility with the requirements of society and those with special needs).

The report prepared by the jury asserted the need for the General Secretariat to prepare detailed reports and architectural and technical studies on all shortlisted projects and present these to the committee during the second meeting of the jury, which was held in Kuala Lumpur, Malaysia in November, 2019 during the Second International Conference on Mosque Architecture organized by the Award, hosted by the International Islamic University in Malaysia during the period (25-27 November 2019). Professor Khazindar confirmed that the upcoming meeting in Kuala Lumpur will result in projects winning the Abdullatif Al-Fozan Awards for Mosque Architecture for the third Cycle, which will be officially announced in a celebration in the capital of the Two Holy Mosques Riyadh in March 2020.

### Technical review of the shortlisted mosques

The main step before the jury meeting in Kuala Lumpur to select award-winning mosques was to prepare technical reports for the short listed mosques, so 10 technical reviewers specializing in architecture and field studies were chosen to study short listed mosques and were sent to countries to interview designers and communities and study urban environment in which these mosques are located. The evaluation process includes visiting the mosque, verifying the extent to which each mosque matches the

objectives of the Award and its technical standards, examining its architectural, physical and operational status, as well as studying the building architecturally, completing all information that was not available during the initial documentation of the long list. The technical reviewers visited sites and wrote detailed reports on each mosque, then these reports were presented to Kuala Lumpur jury by the reviewers themselves so that the jury could discuss with the reviewers each mosque.

This professional educational process was fundamental in selecting the winning mosques in this Cycle, a step aimed at building knowledge of mosques that the Award will allow researchers to use in their future studies as well as being a primary source that enabled jury committee to make their clear informed decisions. This step enabled us to understand the role mosque plays in Islamic societies, being reference place that constitutes society identity. This represents one of the goals the Award seeks to achieve and present to the world. It also enabled us to define challenges we will encounter in the future, which we must work on and plan to overcome.

1 HRH Prince Sultan Ben Salman, chair of the board of trustees welcome the jury committee and technical reviewers in kuallambir, November 2019

2 Discussion among the jury members, Kuala Lumpur 2019










**RETHINKING CONTEMPORARY  
MOSQUE ARCHITECTURE:  
CRITICAL REVIEW**



Contemporary mosque architecture faces two main problems, one related to city's layout, location of mosque with regard to transportation within the city, and socio-economic issues, which directly affect city urban milieu and the consequent spatial dislocation and mosque central symbolic value within city's identity. The second problem is related to architecture, its schools, transformations of mosque architectural form, the historical and imposed high-tech contemporary forms of mosque architecture. These two revolve around contemporary environmental issues looking for alternative energy solutions, water conservation and reducing environmental pollution that inevitably impose serious intellectual paradigm that will advance mosque architecture into new levels.

The architecture of moment and place take two intellectual approaches, one related to existential philosophy of mosque, being the place of prayer that should be performed within time (the moment) as Allah Almighty said: "Indeed, prayer has been decreed upon the believers a decree of specified times." (Al Nisaa: 103) This instant act of praying explains the hadith of the Messenger, may Allah bless Him and grant Him peace "earth was made a mosque for me and purification," because the prayer that Muslims must perform five times daily cannot be performed on time (which is the strict condition) unless the whole earth is made purified mosque. The strictness and precision of the moment are part of mosque's universal philosophy that should be brought to attention. The other direction for moment and place is this critical introduction that link the moment and time of mosque architecture with the development of architecture through the place where it is located. It is the introduction to the possibility of excellence that deals with the relationship of mosque architecture with the contexts of critical architectural thought during the twentieth century.

### Contemporary urban transformations

Before we raise the issue of urban transformations that Arab and Islamic cities went through during the twentieth century, we must review the beginnings of this transformation in the second half of

the nineteenth century, especially in the cities of Istanbul and Cairo, where these two cities witnessed major urban transformations, and eventually mosque architecture. The European influence was very clear in Istanbul and Cairo, especially the impact of major urban renewal in Paris caused by "Haussmann". However, in Istanbul the influence occurred throughout the nineteenth century and before Paris phenomenon planning. This influence on mosque architecture can be seen in the Ortakoy Mosque built in 1853 AD during the reign of the Sultan Abdul Majeed (1823-1861) where Baroque elements are clearly visible in this mosque.



These early urban transformations confused the relationship between the mosque and its urban surroundings and caused new relationships not seen in ancient Arab and Islamic cities. As a result of this spatial confusion, new ideas and experiences were supposed to evolve to reintegrate the mosque within its urban and social environment. However, these urban developments worldwide that occurred in the twentieth century accompanied with weak scientific research in the Islamic world did not help to enforce such developments, which contributed to more confusion and created the so-called “contemporary mosque architecture crisis”.

In the first half of the twentieth century the world was about to witness major urban transformations that would change the concept of city. That was evident as “urbanization” globally has become a rapid phenomenon tracking rapid changes in contemporary cities.<sup>1</sup> This unprecedented urban sprawl has put cities under immense pressure to improve welfare standard and keep continuous search for renewable energy sources to ensure that cities keep ahead of ongoing developments. Endless cities have become features and characteristics related to urban fabric and the speed of expansion and change, the availability of infrastructure, basic growth rates, immigration and multiculturalism.<sup>2</sup> The city, since its evolution,<sup>3</sup> has been an “urban” hub for living population. Physical isolation in urban fabric is one of most important problems facing urban transformations in the twentieth century. This isolation extended to ethnic, social isolation, fueled by some economic conditions as well.<sup>4</sup> Polarization imposed by cities, within physical and demographic fabric with negative impact on its urban space - cities that represent the concept of “endless cities”.<sup>5</sup> Notably a variable effect on the urban fabric and rate of changes in composition can be detected among Western countries and third world countries. While global cities tend to be relatively stable in the degree of change in the structure and composition of urban fabric, cities in third world countries have very high speed in urban changes.<sup>6</sup>

Mosque architecture was affected by this unbalanced speed in urban growth in third world cities. The mosque has begun to be detached from its built urban environment, into something like the “urban illness” caused by this detachment. However, it should be noted that this phenomenon has roots during the Ottoman period when mosque building was made independent of the contextual urban fabric. This phenomenon later escalated in the twentieth century in mosque architecture including local neighbourhood mosques.

This has led to multiple problems related to mosque architecture. The relationship between vehicles and the city affected planning and travel distances, city form, semi-self-contained areas where housing should be planned close to work, and eventually walking distances or cycling to promote healthy lifestyle.<sup>7</sup> One of the most prominent contemporary problems in city relationship with surrounding environment is the problems of pollution, the decrease of natural resources, the expansion of city footprint at the expense of agricultural lands, and increase in atmospheric ozone resulting from Carbon dioxide, which has become main factor in climate change (Global Warming). The city has a temperature higher than village and town residential complexes, due to three main factors: The first lies in the fact that cities trap heat and store it through asphalt structures, roads, walls, and concrete roofs, then transmit it back to the atmosphere. Second, cities are centres of energy consumption, the rate per capita energy consumption in developed world is up to 10 kW. Vehicles, light bulbs and electrical appliances raise temperatures around the city, even air conditioners, as they spreads cold air inside buildings and expel hot air. Third, cities release gases and pollutants into the atmosphere, such as carbon dioxide and nitrogen dioxide, produced from fuels, which create gas layers that accumulate in the atmosphere over cities. In the event that some cities fall into natural environments confined to surrounding mountains, industrial dome of heat is formed over cities, which trap, hot air that is difficult to get rid of naturally.

All these issues clearly contributed to the problems of mosque architecture, especially since new plans for Arab and Islamic cities



<sup>1</sup> Ortakoy mosque built in 1853



1

- 1 Influence of European architectural styles on the mosque facade
- 2 We should look at to Ortakoy mosque as an one of the example of the beginning of change in mosque architecture
- 3 The mosque is independent from the surrounding urban tissue
- 4 Ground floor plan of the Ortakoy mosque

during that period did not contribute to developing acceptable solutions for the mosque and its spatial organisation, despite few serious attempts of planners like Greek planner Doxiadis who planned cities of Islamabad and Riyadh. In his plan for Riyadh in 1969 AD, Doxiadis tried to develop what he called “mafrouka” in the residential neighbourhood making the mosque the heart of it, but the implementation of this idea faced many problems. Such planning problems facing the city had direct impact upon the mosque.

**Urban Ecology**

However, crisis of mosque architecture is not limited to urban planning, rather is associated to essential urban issues, for example, the unprecedented expansion of cities of globalized world is the result of ecological balance crisis. Urban areas by their consumption of limited and scarce natural resources and contribution to pollution and environmental destruction, appear to be the culprit. Cities, as victims of uncontrolled growth, are possible solution to global environmental pressures. This is because cities have been the source of creative solutions to historic human problems, providing compatibility between creative and natural environmental balance. Ideas between theoretical world and practical reality provide sustainable means for the city.<sup>8</sup>

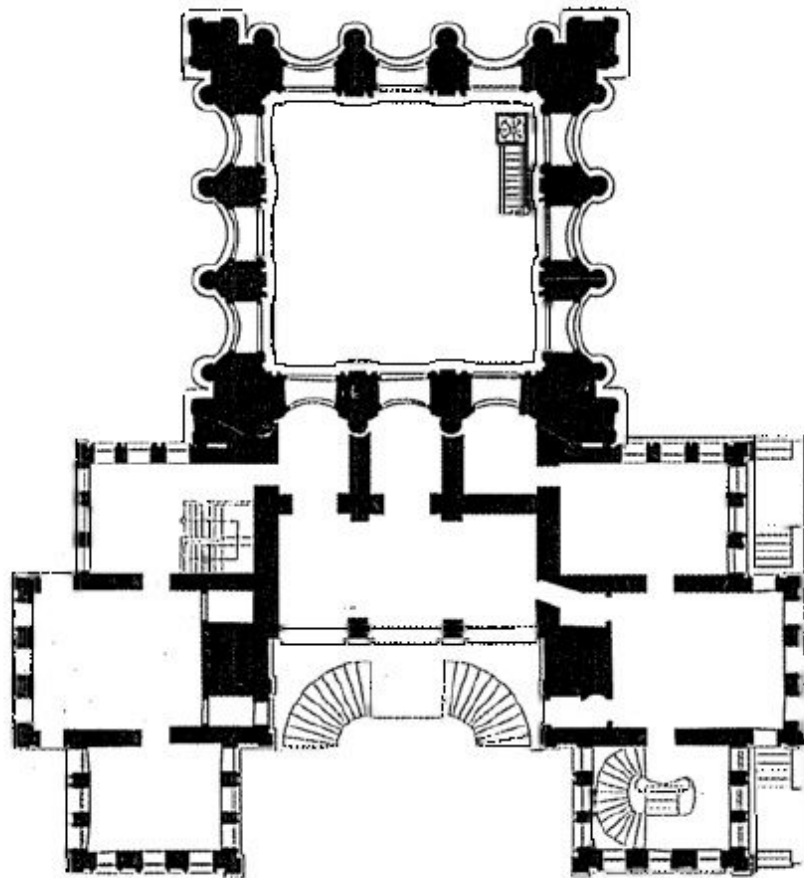
Generally speaking, cities reflect decline and success with regard to mankind and human civilization. Lafpfree believes that city is “a projection of human community on the ground, not restricted to the geographical location, but at moral levels represented by thought, which draws the features of the city and its urban features”. He adds that ‘urban areas where social relations are reflected upon the architectural space are drawn there, and in that the process produces the urban space’.<sup>9</sup> These indications are in the physical composition of the city, through streets, squares, buildings, public facilities, markets, palaces, and houses, texts through which they can be read become the decoding of the social structure and ideological impulses of particular history for the place in the city. Therefore, the indicated environments accurately record

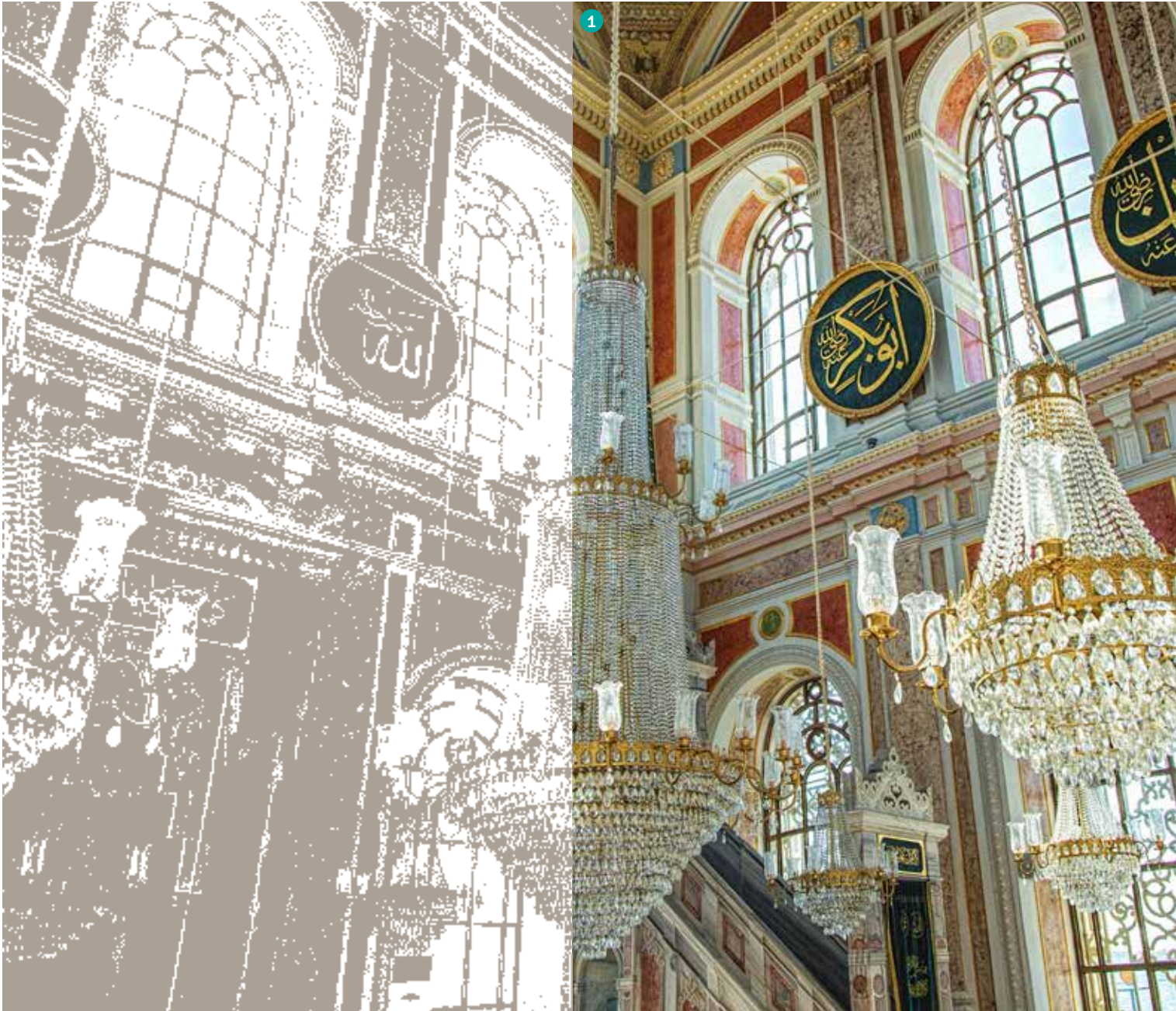
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achievements of humanity, and these recordings indicate more general social meanings as well as problems. Our actions as city makers are based on values and meanings linked to the environment and its relationship, if this is a relationship of respect and care then cities are sustainable.<sup>10</sup>

The problem, notably, in contemporary Arab and Islamic cities, is that these cities have evolved and shaped their urban spaces without placing the mosque as a specific centre that creates urban space in those cities, and therefore, with the passage of time, mosque has become an added element to city urban space, not a generator and core element. This problem requires reconsidering all contemporary planning mechanisms to adopt the mosque as a generator for urban space not as redundant external addition.<sup>11</sup>

Cities can be seen as victims of dampened, unsustainable growth that is being dictated by markets globalization, and by false global ideologies that achieve interests based on power and its conquest and fate. These relations refer to the Western Empire, its policies, its military interventions, and the new colonialism in different regions of contemporary world in what affects the structure of cities, the nature of their growth, and their relationships as networks that are geographically, politically, socially, and economically connected more closely today than ever before. This system based on utility

and pragmatism is not new but its strength and the extent of effective influence on the context with unprecedented speed and depth. This system includes a vision and institutionalized colonial approach characterized by tendency towards subordination of the other. It embodies a globalized basis and promotes itself as an ideology where there is no other alternative. The basis for promoting it is a myth that adopts the free market system, the values of global democracy, and human rights within the international hypocritical view, and the inevitability of independence. Urban spatial representation of this ideology with the values and myths it bears are embodied on the ground in the form of cities and architecture. The principles of environmental and ecological balance are not respected nor their cultural content and privacy. As a result, cities look similar to the degree of congruence. The rich American commercial centre cities and slum neighbourhoods of the landless poor, with incomprehensible gatherings of the middle classes all become one in turning their back on environmental and ecological balance management.<sup>12</sup>

It is believed that contemporary mosque architecture has slipped into this unbalanced practice of space production as a result of its departure from its fundamental values that were based on equality, deep and strict interaction with societal categories. This slipping





- 1 Influence of European styles on the internal details of Ortakoy mosque
- 2 Hybrid interior details, Ottoman and European



is an inevitable consequence of the slipping of the entire city into “inhuman” practice. This may be reminiscent of the new ideas in the new urbanism theory that have arisen in recent decades to repeat some human balance of cities, but unfortunately mosque architecture is absent in these theories.

Contemporary cities are in deep crisis, similar to that of our societies. But cities remain the crucible of innovation and creativity, and it is from this characteristic that ways and means of realization can be researched for better life that sustain ecological and environmental balance and works to develop and adopt a method and a road map to sort out contemporary city crises.

The new urbanization represents the general frameworks for the development of sustainable cities, and a different socio-cultural approach and framework must be developed to build ideal urban settlements. Just as cities contain creative forces that enable us to take new, effective ways of thinking, an intensely and different intellectual framework requires action against dominant value system that controls and drives contemporary cities towards the wrong destination. Therefore, a trend has emerged between theorists in urban science to present theses within utopian thought and its repercussions on urban space.

These issues invoke direct consideration of mosque's architecture in light of city's rapid transformations in the twentieth century, which is linked to problems related to climate, social, and economic environment. This makes the architectural-urban component, especially in cities of the Islamic world, a basic urban issue that requires understanding and research on deep solutions to make the mosque effective on environmental level, and to preserve renewable and non-renewable natural resources, to redraw the features of social utopian thought and contribute to the creation of concepts related to the foundations of the utopia, and its relationship with urban space.

### The city, social utopian ideology and urban commercial space

In this general theoretical introduction, we need to review intellectual frameworks that contributed to the formation of contemporary mosque architecture upon which the short list of Abdullatif Al-Fozan Award was selected in this third Cycle, all of which are basis for distant extensions linked to the idea of the mosque as a "utopian" place that brings people together and connects community members. Utopia is a direction not a destination, therefore it is a way to approach all human beings in the world. It is a journey to reach what has not yet been reached, and it is a commitment to the possible even when the potential appears, or even the impossible, unexpectedly overwhelming. Despite what some utopian self-proclaimed might have been referring to in the twentieth century, the utopia is a journey that can never end. Utopia is not a paradox involving those who live in the "ethnically pure" political organisation, where it is paradise for the proletariat, serves as a 'free market' or city of rationality. Utopia is not an end, it is a permanent and continuous moment for the beginning. The basic approach, after these definitions, asserts circumstances must exist that explain the relationship between utopia and social theory.<sup>13</sup>

The Prophet City "Yathrib" can be considered a utopia based on equality and multi-ethnicity, and the Mosque in Madina exhibited values of virtue that it calls for. In spite of that important beginning of a city marked by virtue, this model has not been repeated in subsequent cities. Indeed, the mosque, which was simple, turned over time into building crowded with political symbolism that has made the values of its virtue facing many internal conflicts.

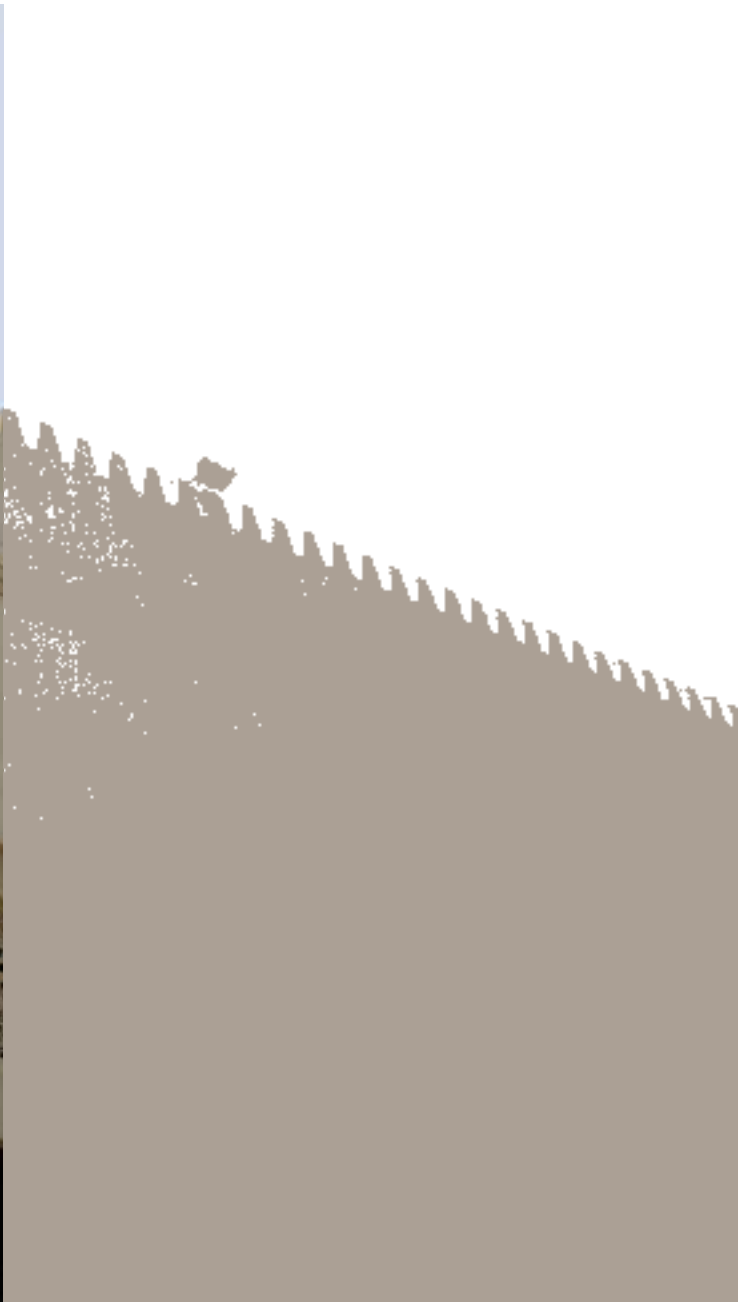
It seems that time for utopian thinking has reappeared, as globalization turned out to be not the panacea for everything, as some had thought, at the same time the free market did not achieve what it claimed would do. Hence the time has come to search for inspiration and the utopia, and to search for a vision that was not by itself for the sake of perfection or in pursuit of it. And if it turns out, politics has little to offer, then what can social theory contribute to in conceiving or formulating the future? Is social theory important at all? And what can social theory do in this project related to reconsidering the future and the issue of formulating and defining its features? Without being linked to any political agenda, some of these questions are discussed within systematic attempt to make social theory relevant and important by researching resources and possibilities for utopian perceptions to provide solutions for different utopians of social theory.<sup>14</sup>

It is often claimed that utopian thought has no place whatsoever in sociological thought, however utopia has remained an integral part of social theory for centuries. But as such, in addition to taking into consideration the role of social theory in visualizing future alternatives and foresight the future, this thought reflects how social theory can contribute to the understanding and appreciation of utopianism and utopia as its subject as a special area of interest, a special topic, or as an analytical research field or subject after a normative analysis in the framework of social thinking, social theory, and societal domains, political, sociology, anthropology and philosophy in addition to its associations with specializations such as architecture and urban investigations.

The foundations on which mosque designs were built in the twentieth century can be brought to attention, especially in the first half and the beginning of the second. These foundations were



1 Employing the traditional motives in the Grand mosque in Dubai



present in the mosque before urban modernity boom that affected cities of the twentieth century and its architecture. For example, the Dubai Grand Mosque was built in 1900 near the Indian temple, but it was completely destroyed and rebuilt in 1960. Design relied on a mixture of ideas that combine independent contemporary space that mosques architecture has embraced with traditional local visual details, which gives the mosque “license” to be accepted mentally and emotionally by local residents. The utopian social view was to restore elements entrenched in mind about mosque and identity, which the designer could not depart from, despite all urban development Dubai has been experiencing during that period.

Within these frameworks and questions it is possible to search for a place for the mosque in contemporary social theory in Muslim, even Western societies inhabited by Muslim communities. A vision can be provided on how mosque architecture could contribute to the promotion of harmonious society where this place is associated with daily life, when people gather five times a day connected with complementary relationships.



### City and urban projections

It is believed that most of planning and architectural attempts to get the mosque out of urban crisis were not sufficiently successful as **resistance to change** represented by architectural form of mosque and its spatial organisation, which is usually fixed in mind made it difficult for mosque architecture to interact with urban theories that appeared in the past century. This has led to a decline in mosque visual and symbolic value after it had declined in spatial and social levels.

The mosque should be explored as a deep visual image that has shaped throughout history the identity of Arab and Islamic place, and to monitor how this image was affected after traditional urban space production ceased. One of the most important problems posed by parallel heritage of mosque architecture is about this spatial crisis. It might be best to think about how the mosque witnessed the beginnings of every new city originated in Islamic civilization, and the role it played in their evolution. These questions are not answered in this introduction, but remain for search in mosque architecture.

Stephen Marchall emphasized that cities comprise mixture of order and diversity, and a system that is more than just random assembly of architecture. It has more diversity than craftsmanship

produced by one individual or developed by one particular entity. The New York Manhattan neighbourhood silhouette can be seen as a classic blend of skyscrapers and a lump of patterns. The different architecture, shapes and construction materials, which reflect the peculiarities of aspirations of architects, designers, and the decisions were taken from these stand-alone locations, as well as market forces and architectural façades of perception and imagination. But this diversity can be framed with a specific type of system, or rather two types: the first is related to urban plans, the horizontal projections of buildings, and the second have a direct relationship to the so-called urban **symbols**.<sup>45</sup> The symbols are part of the **hidden language of place making**. It contains a direct and profound influence on the **familiar structure**, whereby the ordinary and familiar contain insignificant implication. It, however, represents instead the vast majority of urban fabric. Therefore, Marchall sees urban symbols as important because they largely shape the character of urban areas - for better or worse.

The mosque, in essence, represents one of urban symbols influencing the structure of city linking its urban elements. In this context, the mental image of contemporary mosque appears to be greatly confused compared to its historical one emphasizing importance of re-understanding this role in contemporary city planning process. This confusion caused a direct imbalance in the



- 1 Grand mosque in Danai is an attempt to reconnect with mosque traditions in the region
- 2 The minaret is very high because of tremendous change in the surrounding buildings

identity of contemporary Arab and Islamic city in particular, and the presence of symbolic mosque in contemporary urban environment in general. This requires different understanding of mosque architecture in the twenty-first century, and which contributes to the development of urban concepts and theories different from what is prevalent today.

#### Urban planning and culture

Knowledge and scientific research are part of the crisis of Arab and Islamic cities, including mosque architecture, which seems to be developed independently of scientific research, and which were not presented as intellectual issues except recently on a very small scale. In the context of researching developments in planning theories and practices in urban social dimensions, **Urban and Regional Planning** presents historical overview of developments and changes in planning theory and practice, throughout the twentieth century. It introduces and establishes planning for part of public health reforms from late nineteenth century and makes way for introducing characters that affected early planning movement that led to the creation of post-war planning.<sup>16</sup> During the fifties, as a result of basic works of thinkers such as Bernard Chester, Peter Dracker and Simon Herbert, education administration was transformed. First, it evolved into science of decision-making, which borrowed concepts in philosophy and politics, and secondly, from harnessing thinking for a number of sciences, such as sociology, economics, and psychology. This new tradition in institutional planning, which began after around 1960, has influenced direction and content of teaching urban planning.<sup>17</sup>

Within these frameworks, **Urban Development** strives to provide some answers to issues related to unprecedented transformations in urban environments of the world, which include the need to plan sustainable built environments. It adopts a methodology that promotes community building and development, while not ignoring central questions related to energy use, demographic transformations, infrastructure



- 1 Mosques within urban context
- 2 Imam Turki Ben Abdullah Mosque in the centre of Riyadh
- 3 Site plan of Imam Turki Ben Abdullah Mosque

or environmental degradation.<sup>18</sup> It defines a set of principles and foundations on which environmental and energy goals for society are based. It provides exemplary solutions for design, construction and re-equipping of neighbourhoods.

However, it is rare to find mosque's planning studies, its urban role on the environmental and social level, or its primary role in urban interconnection process and building public and private space. This has contributed to the inability of contemporary mosque to shape city identity diminishing its visual dimension turning it into typical one. The Arab city and contemporary Muslim environments seem to be spatially dispersed, with the central role of mosque declining, which used to determine city centre and the heart of residential neighbourhood. It also appears through the disintegration of social bond that characterized the relationship between mosque and its urban surroundings. This leads to a rethinking of contemporary urban fabric, city dynamics, distribution of urban spaces and its relationship to the mosque as influential factor in identity and urban character.

However, one important example that shows how mosque contributed to the revitalization and identification of urban space is Al-Hokm Palace in Riyadh, the urban design of the entire area that lead to the Grand Mosque, Imam Turki bin Abdullah, was developed and designed by Jordanian architect Rasem Badran. The idea was originally taken from the historical formation of Riyadh, restoring the connection between urban fabric and the mosque. It should be made clear that historical principles on which the mosque was built are part of social fabric and, it was therefore not surprising that the chambers of Prophet Mohammad were integral part of His mosque.

### Post-oil cities and climate change

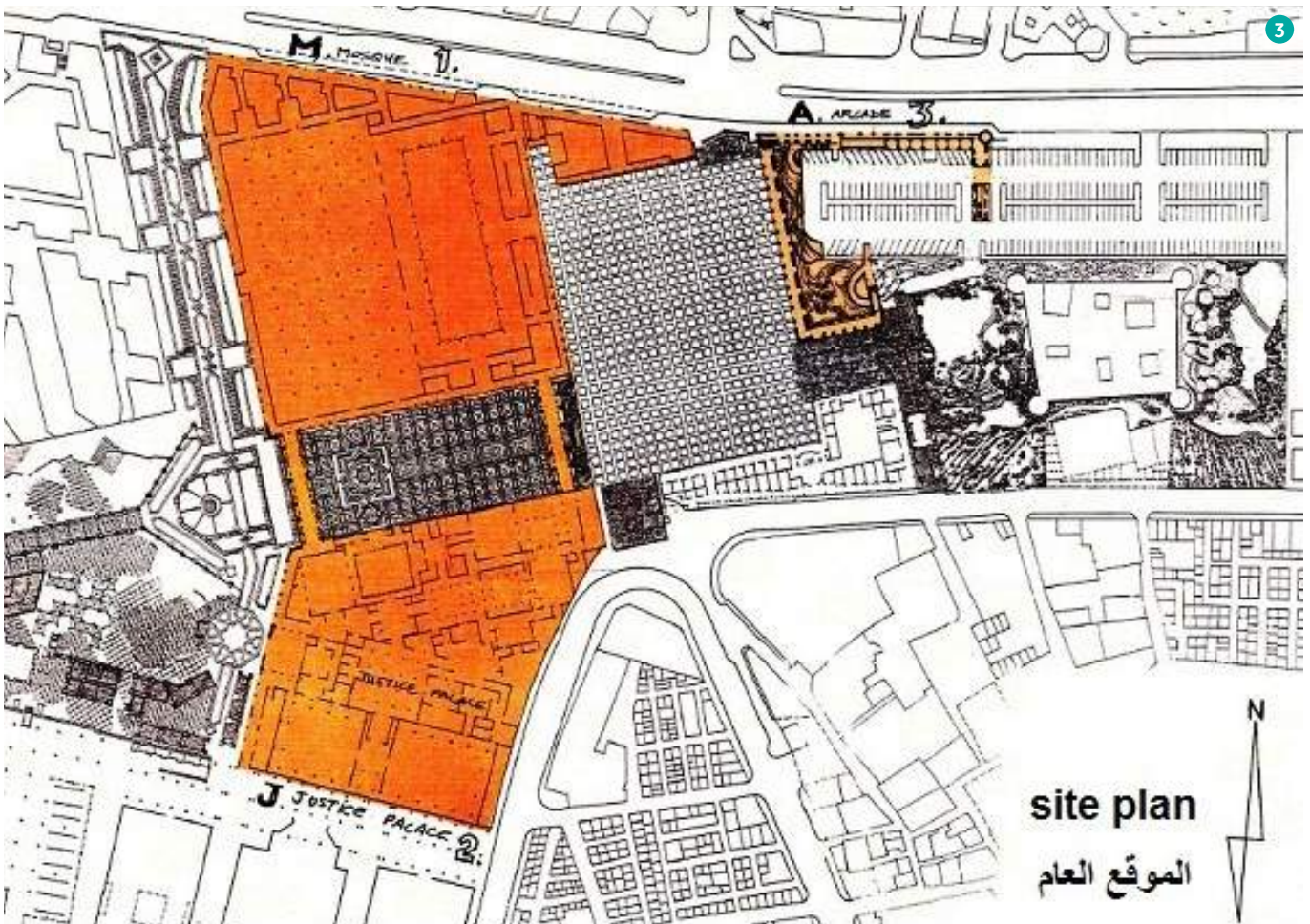
On the other hand, the mosque looks like a place used by more than a billion and a half people five times a day and it is in need for solutions to reduce its negative environmental impact in the field of energy and water, which requires that architectural and planning

thinking to provide solutions to this permanent problem. The theses within this framework focus on challenges that urban areas face in responding to increased carbon emissions, dependence on fossil fuels, and the impact on natural resources. It takes the dual issues of oil peak and climate change as the primary focus and rationale for the need for change. For many reasons, we must adapt cities to reduce our dependence on oil.<sup>19</sup>

The impacts of climate change and cities require less use of fossil fuels, and this is no longer an optional call. In the next twenty years, the urban population will increase to five billion, given the ineffective transportation systems, and poorly designed buildings, many cities will consume massive amounts of fossil fuels and emits high levels of greenhouse gases. But our planet is rapidly running out of carbon fuel that has supplied urban growth for centuries and it seems we are unable to curb greenhouse gas emissions, hence cities around the world seem destined for an inevitable collapse.

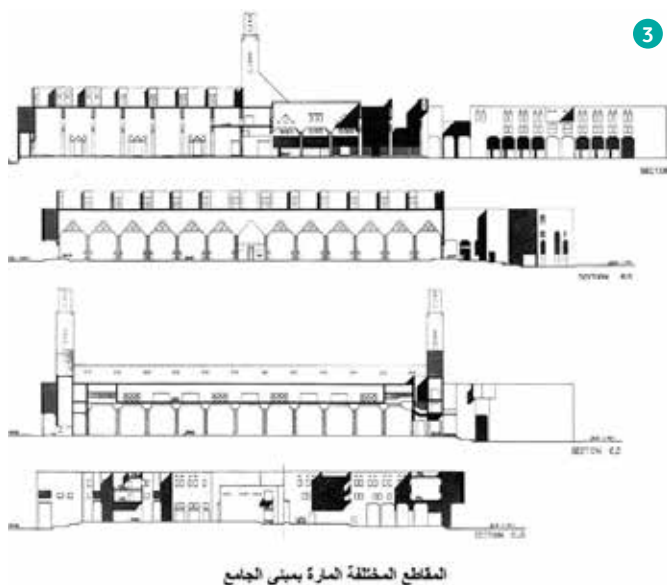
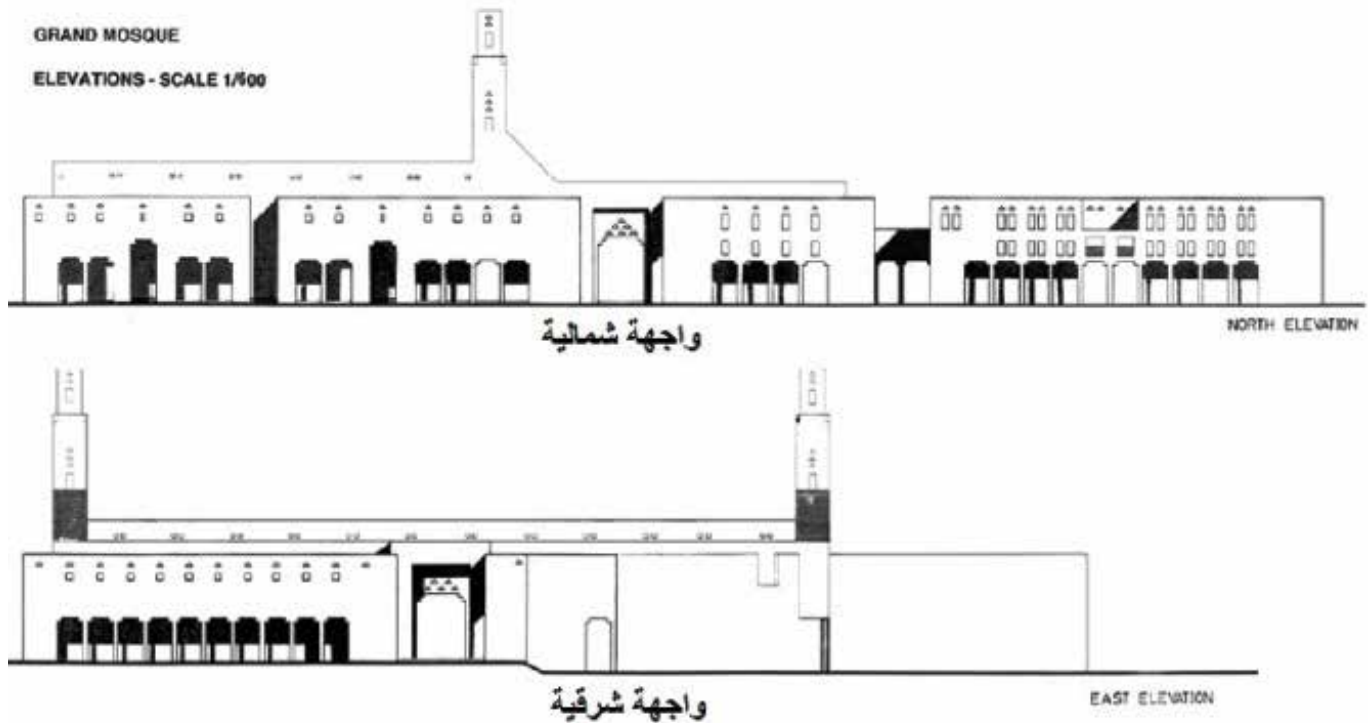
Theorists of this trend do not believe that oblivion is necessarily the fate of urban areas. Instead, they believe smart planning can help cities cope with impending crises, and are looking forward to initiatives in cities around the world, to confront problems, and to describe where we stand today in relation to our oil consumption, our contribution to climate change, and global warming, and discuss possible scenarios in which "sustainable urbanization" replaces today's urban carbon-consuming, and how can modern transportation systems and buildings replace existing low-efficiency systems.

The foregoing requires that mosque architecture should be active and have positive role in creating a future environment mindful of global warming, as one of major challenges facing mosque's future architecture. This issue requires rethinking the mechanism of planning Arab city, Islamic environments, and practical research development related to mosque architecture. It seems that finding parallel heritage for future mosque architecture requires









3

a rethinking of many issues that explore values inherent in the mosque and its spiritual, social and cultural roles as well as architectural functions that require creative and technical solutions.

Against this introduction, it seems necessary to rethink in more detail the architecture of the twentieth century within the scope of architectural theory and its transformations to arrive at clearer picture of contemporary mosque architecture crisis proposing future solutions.

### Reading architectural theory in light of mosque architecture

Architecture books, history and theories are replete with terms related to meanings, styles, or eras: there are terms such as existentialism, urbanism, space, realistic and structural pluralism, and others need to be defined, in relation to mosque architecture. These architectural terms whether in writings or in architectural and urban discourse have become part of understanding architecture and architectural theory.<sup>20</sup> However, mosque architecture was affected by the misuse of terminology especially in the second half of the twentieth century, when the **resistance to change** that characterized mosque's architecture weakened its strength when some architects in different regions tend to present ideas out of historical context, as we will see in the last part of this introduction.

### Architectural theory: from the Renaissance until today

To start with, we must highlight the importance of architectural theory in historical Islamic thought, which received little attention, even names of architects and craftsmen are rarely mentioned. Valuable works involved in construction techniques, aesthetics, or even spatial concepts, are difficult to find except rarely, and these books are often juristic, not architectural or artistic. On the other hand, great care in this aspect in European thought is notable, perhaps Vitruvius' (Ten Books on Architecture) is the oldest architectural treatise in circulation in our hands today, the only one that was found complete since the period before the

1 Analytical Sketches by Rasem Badran for Imam Turkey mosque

2 Elevations in Imam Turkey Mosque

3 Sections in Imam Turkey Mosque

emergence of Christian religion. Vitruvius not only provides us with review of classical architecture period, its rules, and systems, but also he lays the foundations for theories of architecture since the Renaissance. Historians and researchers in the history of architecture relate the **Ten Books in Architecture** for the third or second decade before Christ, when it was dedicated to the Roman Emperor Augustus by an engineer serving in the Roman army known at the time as “Vitruvius.”

Despite the spread of Vitruvius theses in many architectural texts in the medieval period, their influence on architectural and building practice was marginal and less effective. Of course, the classical orders were considered important models to be emulated only when Vitruvius texts were invoked again by scholars and thinkers of classical medieval times during the Renaissance. They were considered exquisite examples of proportion and beauty to imitate and adopt in architecture as classic styles, and when **Leon Battista Alberti** announced that it must be adopted as the dominant styles in architecture at the time, it became definite and binding. Since that time, the book of Vitruvius and his theses advanced to become the most important book and the cornerstone of theories of architecture in later centuries. Compared to this European intellectual movement and the relentless attempts to rediscover the foundations upon which European cities and architecture were built, we find no equivalent movement in Islamic civilization, although it produced genius architecture that was worthy to be studied.

This leads us to question the desire for innovation that characterized European thought, as “Vitruvian” thesis, the trilogy **strength, function and beauty** continued in architecture and prevailed until the nineteenth century. However, since that time Vitruvius’s theses and classical orders declined as architectural reality and theories circulating in the field of practical architecture. Until about the middle of the eighteenth century, buildings were described in terms of architectural theory based on architectural plans, so that parts of a single building were directed and designed to fulfill Vitruvius specifications, theses, and principles, while the general perception was that the building aims to achieve Vitruvius trilogy. As for the literary descriptions and the architectural text of the building, it was intended to serve the process of studying plans, which was accurate and effective in practical field. However, since the year 1750 AD, new methods have been developed and evolved in the field of architecture description and historical analysis, and light was shed after the dissolution of Vitruvius’ theses, on the historical dimension in the study of architecture, debate dominated the study on the **purpose** of architecture, specifically the question of imitation of classical architecture and its purpose. The focus has now shifted to the properties of architectural composition.<sup>21</sup>



1 Rifai mosque in old Cairo which was built beside Sutan Hasan Mosque in the late nineteenth century and completed in the early twentieth century



Architects in Islamic civilization have not addressed theoretical issues concerning clear principles to explain concepts of strength, function and beauty. Some contemporary theorists describe architecture in Islamic civilization as **architecture of place** rather than **building of time**. How then architecture related to space and disconnected from time development? Perhaps this is what made the term **Islamic architecture** acceptable to some because it is a term that abolishes temporal development maintaining the general image of architecture in Islamic civilization that claims to have interacted with spatial localities, yet with same spirit, techniques and tools, without real additions. This brings back the crisis experienced by contemporary mosque architecture to the forefront because this poor research in theory and experimentation is part of the problem of contemporary Arab architecture.

#### **Bauhaus vs. intellectual poverty: mosque architecture in traditional framework**

To trace the origins of contemporary mosque architecture crisis, it is necessary to track the development of contemporary architecture that shaped today's city image, which created the spatial and visual dispersion of contemporary mosque. This review shows that while the West was looking for renewal and departure from classical traditionalism, a state of intellectual crisis over the Islamic world

dominated when no single work addressed the topic of architecture in our cities, written by one of its residents. The intellectual movement is always made by group of interested people who are united by goals and a clear vision. Perhaps the Bauhaus School in Weimar was one of the first and most important schools of design and architecture in Europe in the twentieth century. It was at the same the most important and successful school in arts, as the Bauhaus School was associated internationally with reform movements at the beginning of twentieth century. It has emerged as a multi-product and mixture of Henry Van de Velde School of Art and Soal College of Visual Art in Weimar. In April 1919 architect Walter Gropius was appointed director of the school.<sup>22</sup> Gropius, despite his non-academic beliefs had tried to develop new contemporary programme for the school.

The Bauhaus has set new standards through its functional designs, its new approach to art, and provided experimental teaching methods. Its advanced methodology made it in the forefront, and enabled the Bauhaus to produce distinct elements, in the field of architecture, design, artistic design, or graphics, so that these products become in the ranks of timeless classics. The Bauhaus has had a decisive influence on international modernity, as it is considered one of the most important educational institutions in the twentieth century.

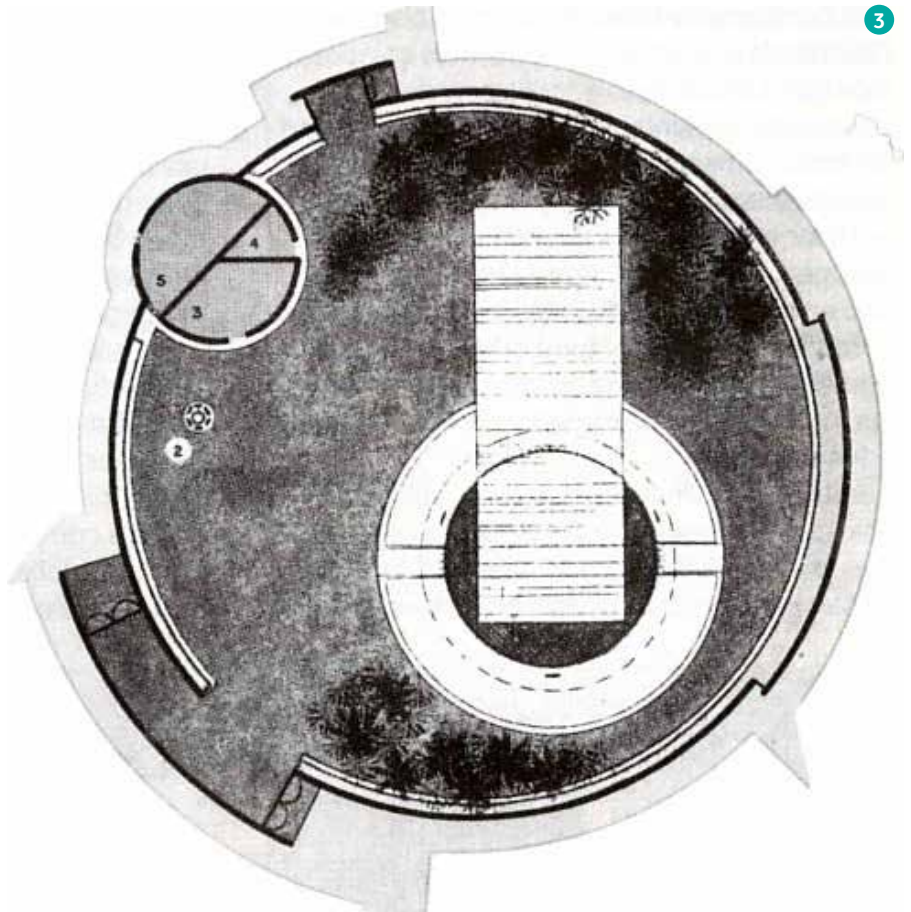
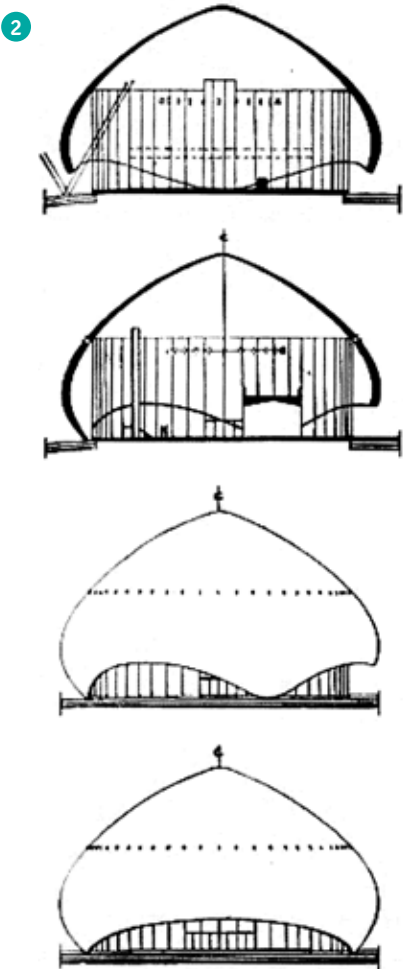
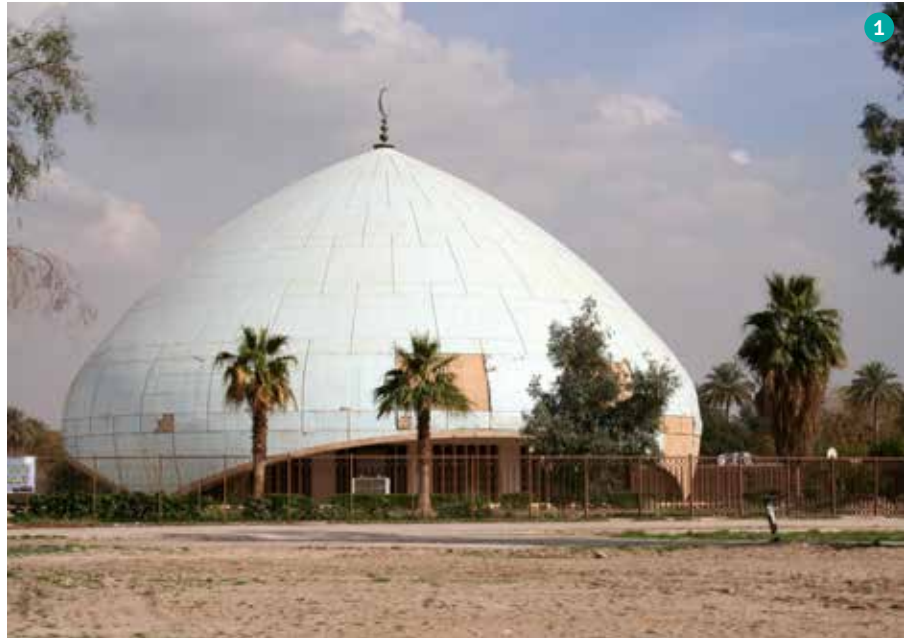
However, what was happening in the West was not happening in the Islamic world. The tendency to search and break tradition was characteristic of the first half of the twentieth century in Europe, but it left only little influence on Arab architecture and culture, which has strengthened the crisis of mosque architecture earlier on. Those transformations in architecture at the turn of the twentieth century were a consolidation of the beginnings that caused confusion in mosque architecture throughout the twentieth century where the values of modernity were represented in an unclear way in the Islamic world and the escalation of cultural resistance





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- 1 The main dome, Baghdad University (Source: Khaled Al-Sultany)
- 2 Sections and elevations of Baghdad University (Source: Khaled Al-Sultany)
- 3 Ground floor plan of Baghdad University (Source: Khaled Al-Sultany)
- 4 View for the mosque of Baghdad University (Source: Khaled Al-Sultany)

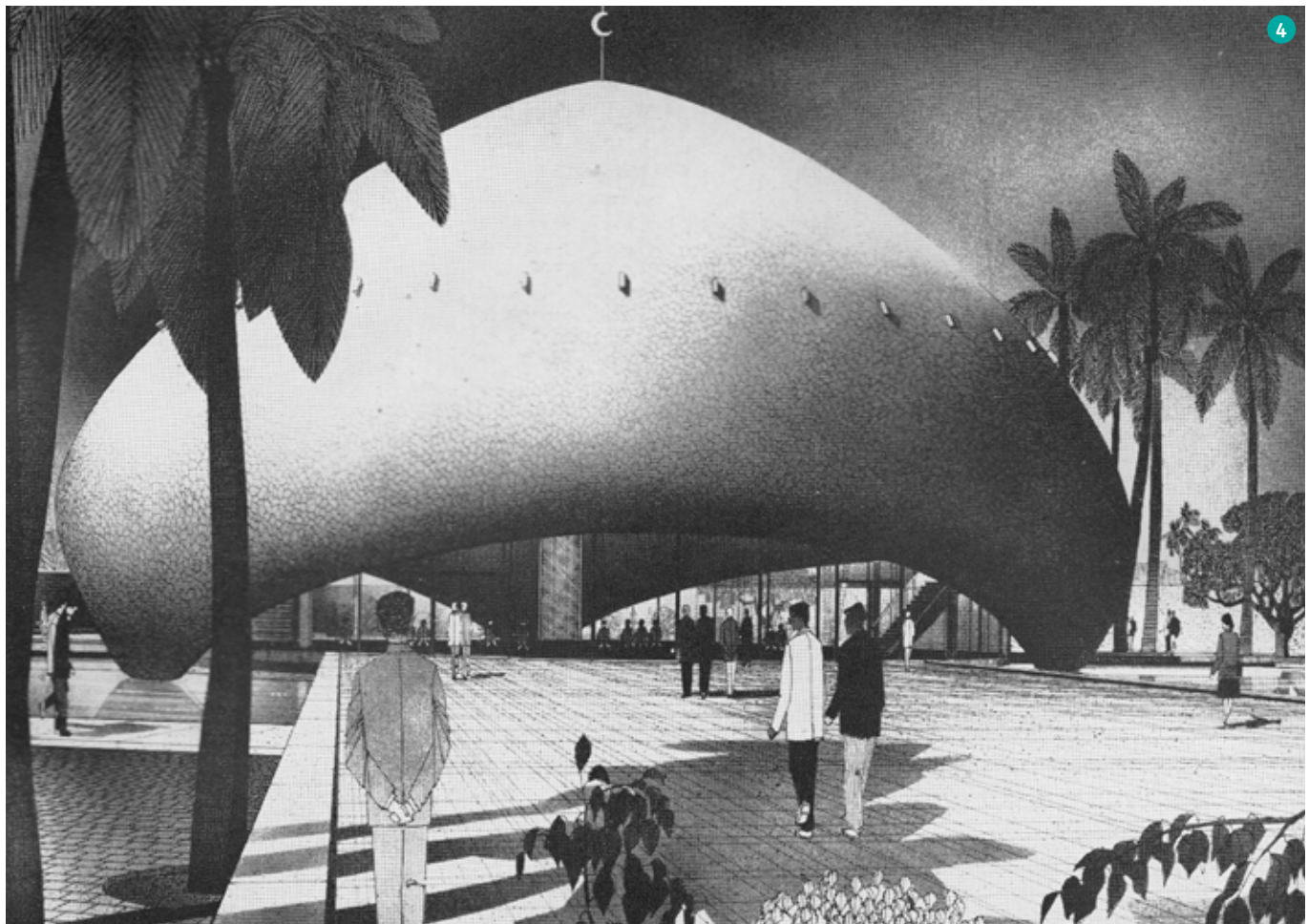


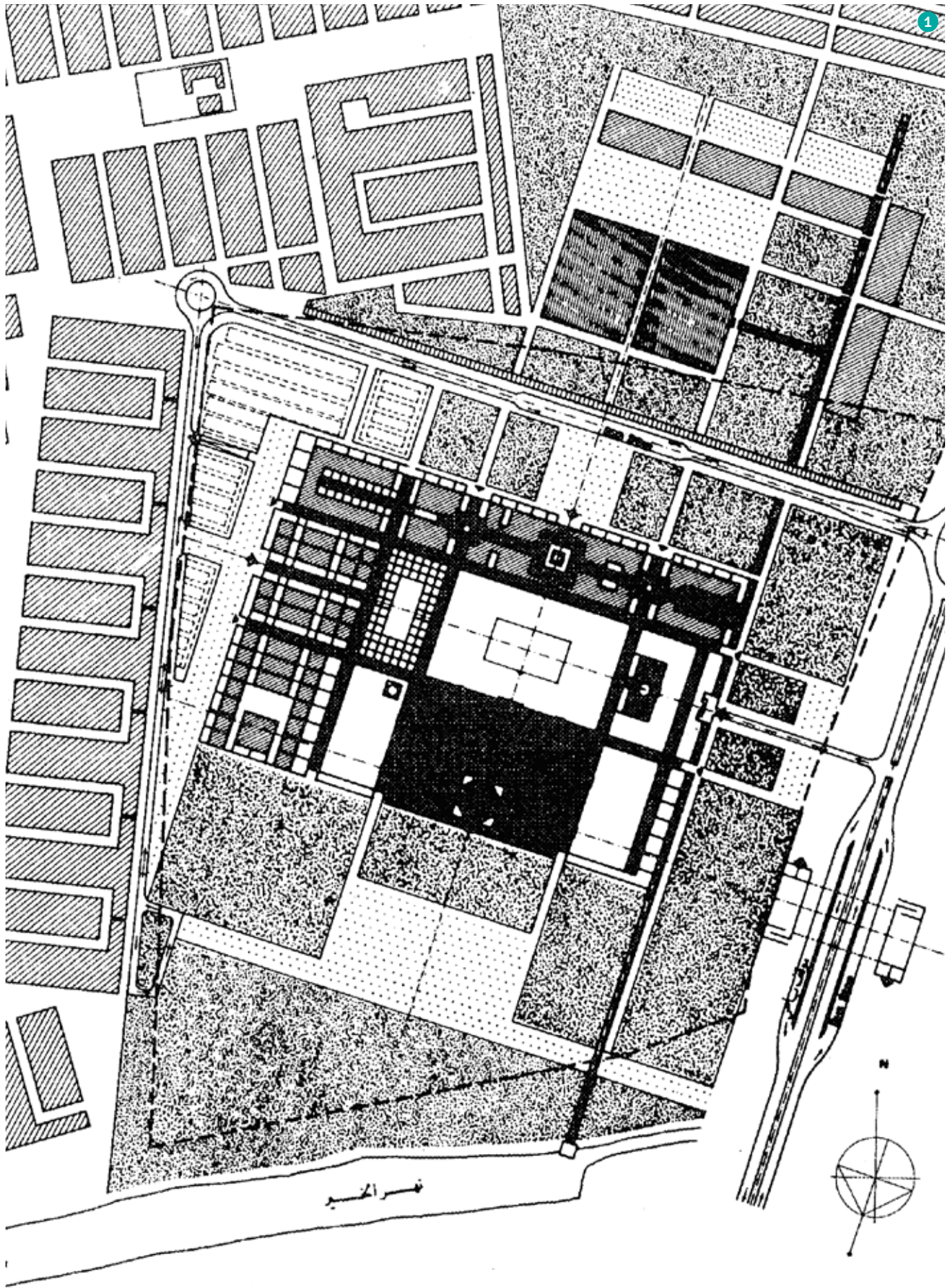
towards it, which caused a kind of hesitation in its acceptance and its reflection on architecture appeared clearly in the mosque. Until the end of the nineteenth century, mosque architecture was within the traditional framework that characterized Islamic civilization. For example, Al-Rifai Mosque, adjacent to the Sultan Hassan Mosque, which was built by Khushiar Hanem, the mother of Khedive Ismail in 1869 AD, is difficult to differentiate from the historical mosques around, even though the one who completed it was the engineer "Herz Pasha" in 1911 AD.

Hesitation that characterized the course of development of Arab and Islamic urban and architecture of cities in the first half of the twentieth century was a result of the absence of intellectual group capable of experimenting and producing in architecture and visual arts, leaving it to Individualism that was unable to achieve consensus of intellectual elite. In addition, attempts were focused into traditional architecture like those of Egyptian architect Hassan Fathy in Qurna, a village in Upper Egypt, in 1946. Traditional thought was dominant as a result of the absence of groups that adopted clear architectural ideas. Consequently, the individual tendencies, most of which have historical contexts, appeared to further confuse mosque architecture.

### History and Theories of Architecture in the Twentieth Century

It is necessary to associate theoretical and practice changes in architecture in the twentieth century to the crisis of mosque architecture to understand the reasons that led to its evolution. Perhaps some important examples by influential architects contribute to clarifying the relationship of mosque architecture to emergent ideas in the last century. Walter Gropius introduced a design in the 1960s to Baghdad University Mosque (1967) that Dr Khaled Al-Sultani argues was interesting design solution that is rarely seen in the context of international architectural practice. The American architect Robert Venturi visited Baghdad in 1981 and was invited to Grand Mosque competition and participated in joint venture with Ali al-Musawi in 1983. Khaled Al-Sultani asserts that this proposal created visual and conceptual **shock** for many as a result of the bizarre solution offered, which was a stark change to mosque historical stereotypical image. He believes that the decision to lower the dome to the ground and make it a single design of the vocabulary of the surrounding courtyard open to the sky was striking. He also notes that this idea (grounding the dome) was previously used by Gropius in the 1960s when he designed the Baghdad University Mosque, yet even Gropius and Venturi could not escape using mosque traditional elements (specifically the dome) and tried to reproduce it differently as one mosque feature.





Site plan of Mosque complex

0 10 50m

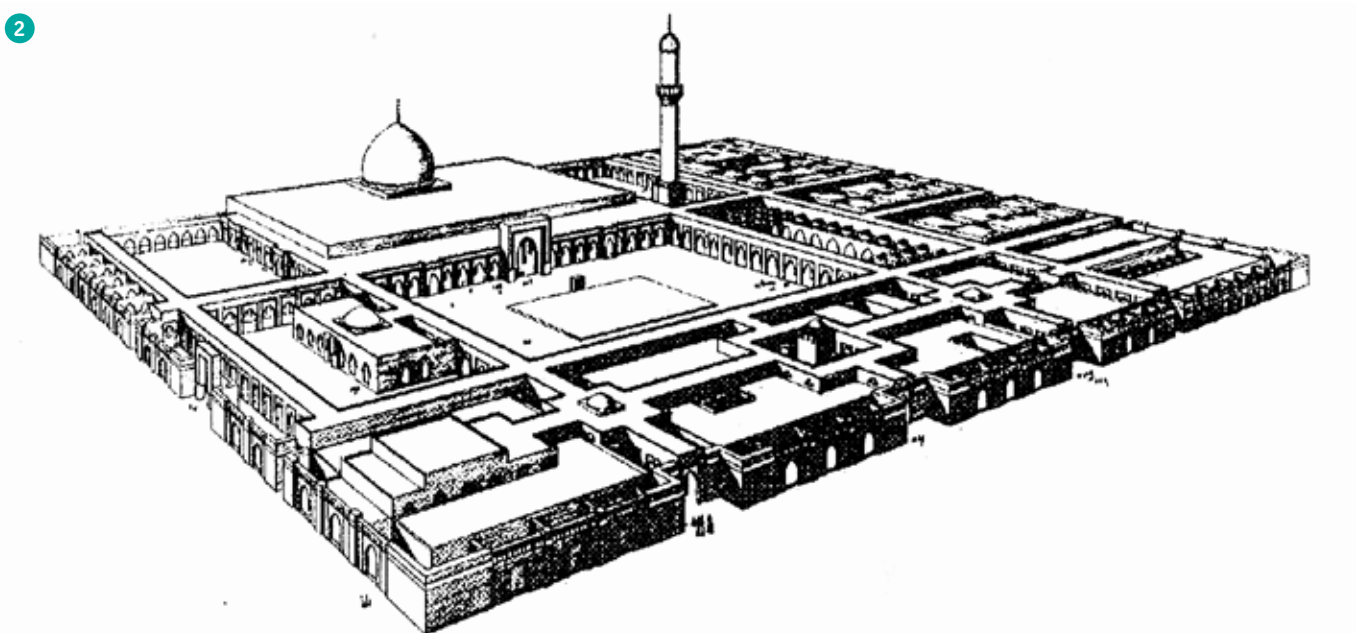


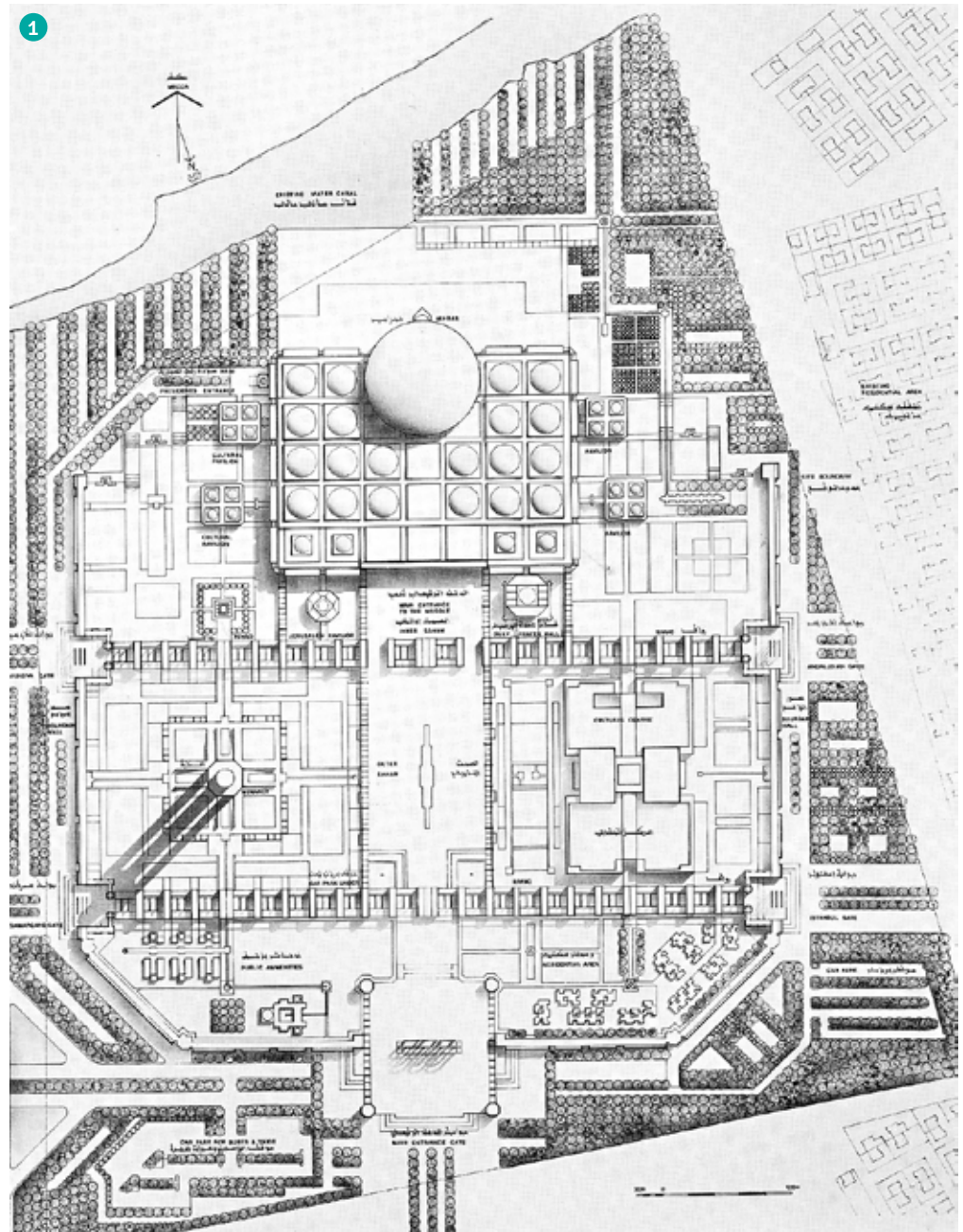
1 Site plan proposal for the grand mosque of Baghdad by Mua'ath Al-Alossi (Source: Khaled Al-Sultany)

2 Perspective for the grand mosque of Baghdad by Mua'ath Al-Alossi (Source: Khaled Al-Sultany)

Two other important examples of the same period can be noted, one is King Fahd University of Petroleum and Minerals Mosque in Dhahran, Saudi Arabia, which was completed in 1974 designed by the American company Caudill Rowlett & Scott. This mosque represents a departure from the ordinary in mosque architecture in the Kingdom at that time. It restores the historical relationship between the mass of mosque and surrounding water features. The configuration is generally simple and provides a trend based on modern construction technology. The designer did not employ the dome as an element that identify the mosque, knowing that dome is not essential part of mosque architecture in Saudi Arabia. Another example is King Faisal Foundation's Mosque, which was designed in 1982 AD by Kenzo Tange, a Japanese architect. In this design, the dome has been replaced by a **crescent** that symbolizes the mosque in a creative manner, employed for the first time in this mosque.

Within the same context, proposals put forward by Muhammad Makkiya and architect Moaz Al-Alusi all adhere to the commitment of mosque's traditional image preserving its historical form. It seems clear that most Arab architects were unable to deviate from the stereotypical image of the mosque and did not try to think outside the strict limitations of the historic image, hence their proposals have not provided new and significant ideas.



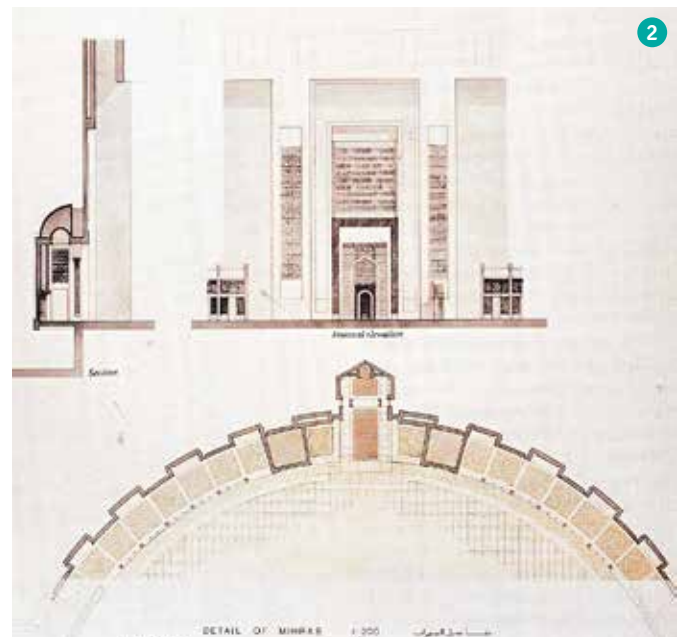


1 Site plan proposal for the grand mosque of Baghdad by Mohammad Makiyah (Source: Khaled Al-Sultany)

2 Detailed study for the grand mosque of Baghdad by Makiyah (Source: Khaled Al-Sultany)

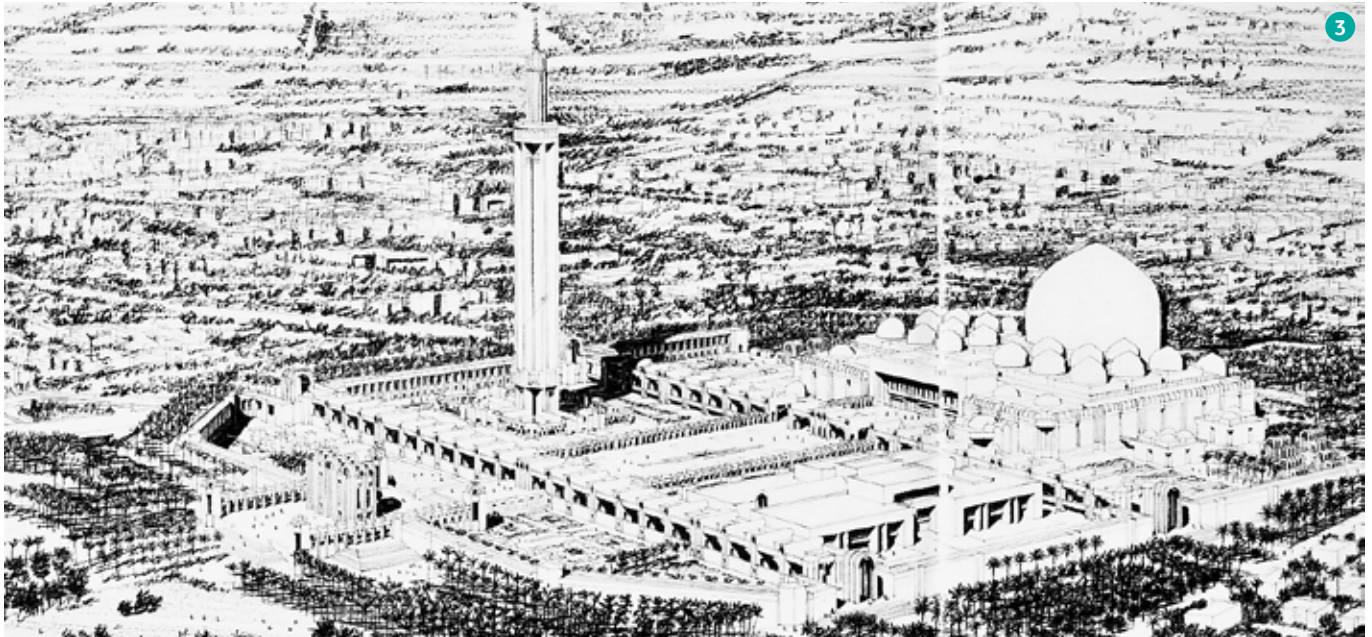
3 Perspective for the grand mosque of Baghdad by Makiyah (Source: Khaled Al-Sultany)

4 Recapturing the traditional elements by Makiyah in the grand mosque of Baghdad



2

DETAIL OF MINARET 1:300

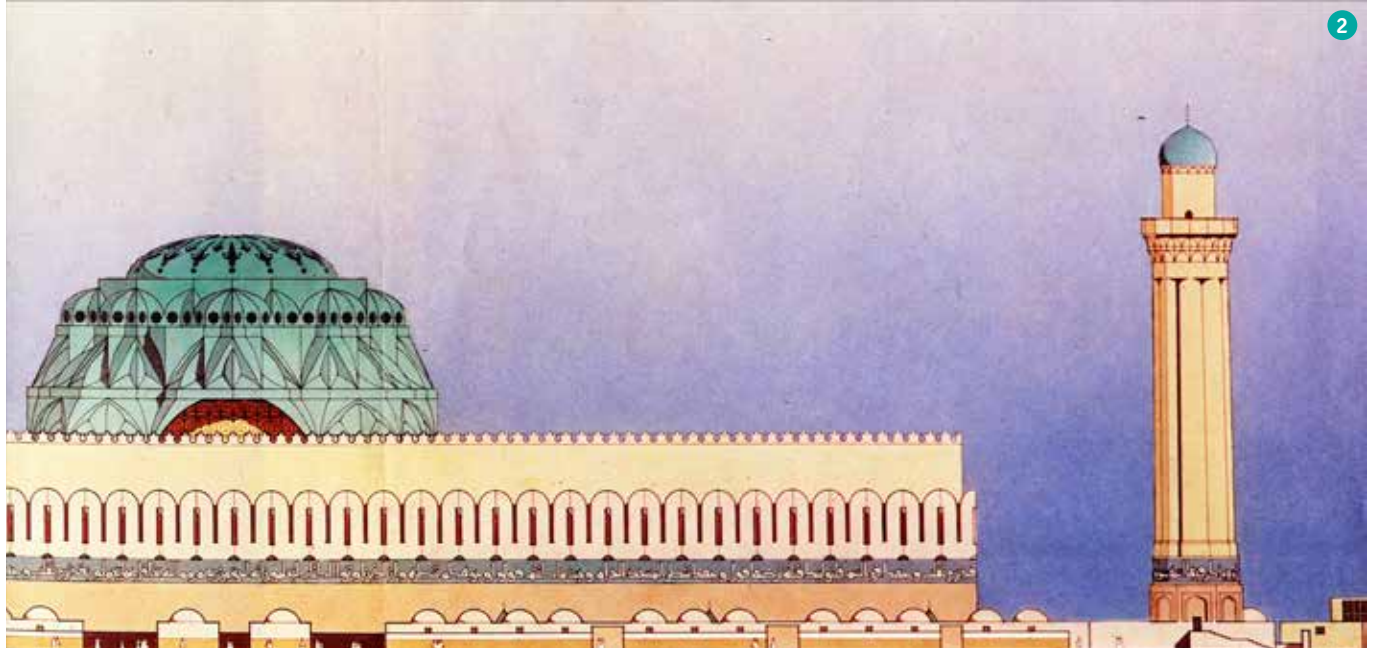


We are here before a real intellectual and cultural problem. What we witness is that Arab architectural mind was a carrier of ideas either from history tied up with no escape, or from Western ideas not originating from the essence of culture. This problem has always represented, until today, the dilemma of architecture in the Arab and Islamic worlds, and it seems that this predicament is difficult to be dismantled in light of the culture of learning in general and architectural education in particular, in addition to fundamental aspects that relate to creative thinking in this region of the world.

Another problem is that Western architects who worked in Arab and Islamic countries did not contribute to the development of theory of architecture in the area, rather they came as traders and businessmen in search of opportunities, and at best some left few marginal intellectual fingerprints that only some elites have read. Even such works were not documented, analyzed, and studied. In fact, Arab architecture hardly was included in the field of theory, which clearly evolved during the twentieth century, as contributions were marginal judgments that have no real value.

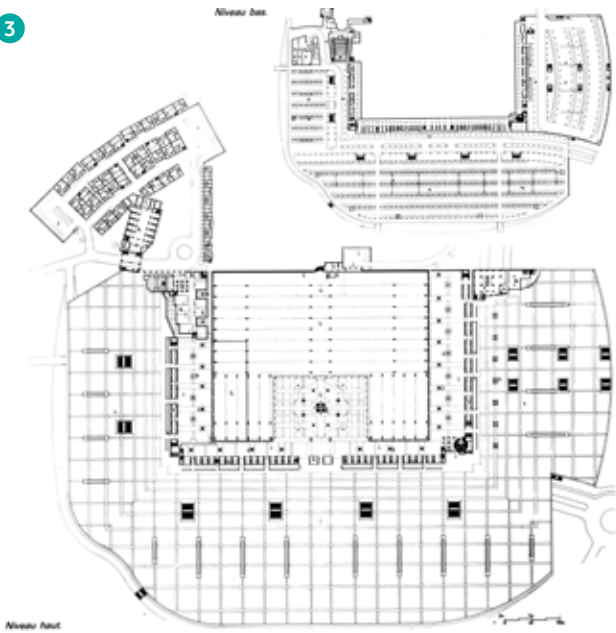
Perhaps many books of architecture have narrated the historical emergence of architecture since ancient times, which still does not provide evidence that can be viewed and recorded from ancient Egyptian architecture as one of the oldest existing civilizations.

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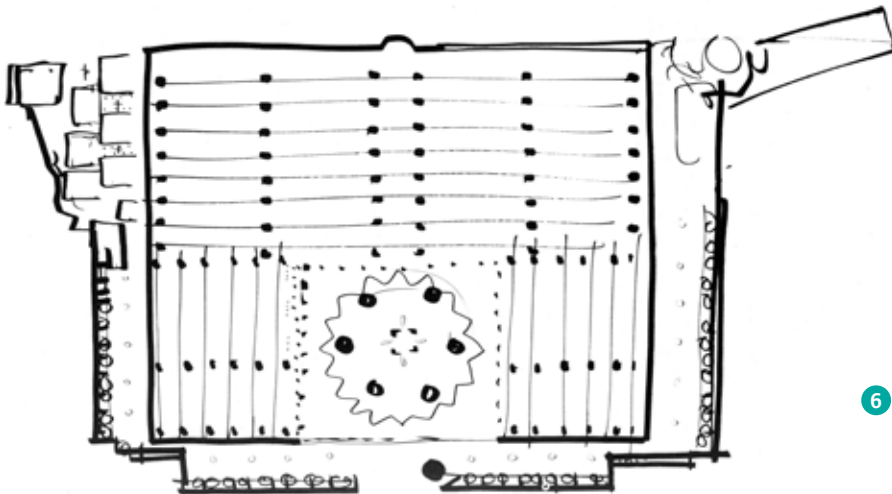
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- 1 Sketch for the elevation of the Grand Mosque of Baghdad by Robert Ventury (Source: Khaled Al-Sultany)
- 2 Elevation of the Grand Mosque of Baghdad by Ventury (Source: Khaled Al-Sultany)
- 3 Ground floor by Ventury (Source: Khaled Al-Sultany)
- 4 Site plan by Ventury (Source: Khaled Al-Sultany)
- 5 Sketch of the section by Ventury (Source: Khaled Al-Sultany)
- 6 Sketch of the floor plan by Ventury (Source: Khaled Al-Sultany)

However, few books stand at certain key turning points to confirm the concept of intersection between history and theory. *Architecture in the Twentieth Century*<sup>23</sup> highlights important key moments, a turning point, and makes contributions especially to understand why and how architecture throughout Europe and the United States gained momentum from art, science, and other contextual factors that shaped the theoretical framework and affected the practice of architecture to the point of no return until today. This book's journey begins with the Industrial Revolution, as a very important historical point in time for controlling preparations for the sake of modernity, which takes the reader through the thought of the Chicago School, the 'iron giants' and 'glass' Pristine. Then it stops remarkably in a modern factory, as it stands in front of the creativity to use the newly introduced reinforced concrete from 1912 - 1941 before highlighting another era that embodied the turmoil and the escalation of modernity with the return of art, volumetric experiments, apartment complexes, concepts of **machines to live in**, and the birth of international style, and **New Deal**. The 1944-1971 era is distinguished when one of the forms of art was at the height of its greatness, with case studies, in addition to reflections on Mies Van Der Rohe stating "less is more" and 'concrete containers'. Critical reading is represented by the

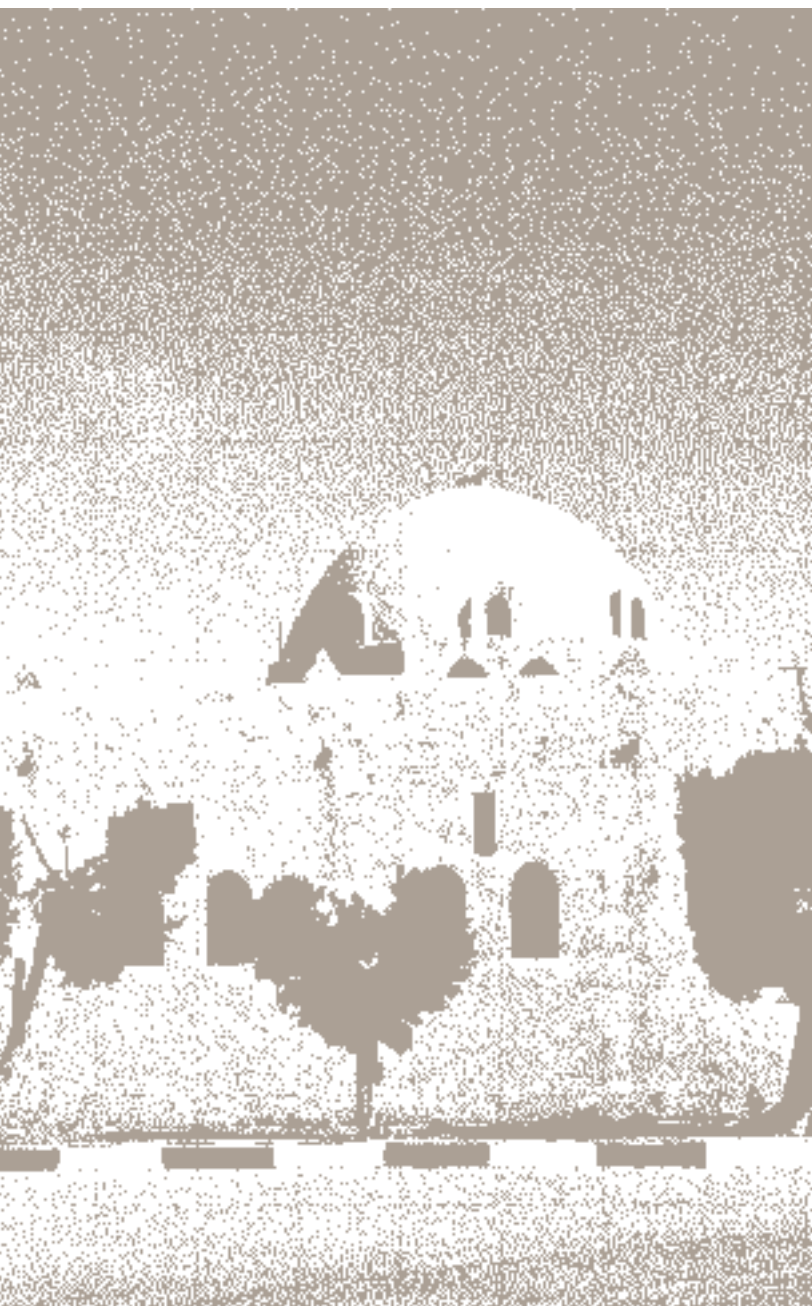
period 1947-2004, and **learning from Las Vegas**, through some works in modernity, open structures, the modern city, **concrete poems**, and **the curvature of space**.<sup>24</sup>

Three important terms can be introduced to understand and study mosque architecture in general. These terms are **history, theory** and **criticism**. Neglecting such studies, during which these three terms intersect, has lost the depth of mosque architecture required. For example, mosque historical development has not yet been critically studied and researched, as reliable and influential theories related to mosque architecture. Such urgent studies are essential to sort out the predicament of contemporary mosque architecture. In essence the idea of parallel heritage is an attempt to devise a theoretical conception that could contribute to restoring the history of mosque architecture on a neutral critical objective basis.

The study of architecture of the twentieth century leads eventually to the need to refer architecture and art to the life and work of elite Pioneers such as Frank Lloyd Wright, Antoni Gaudí and Frank Gehry, Zaha Hadid, among others, to study their interpretations of historical architecture in Islamic civilization, especially mosque architecture and the extent to which it can serve requirements of contemporary time.

1 Mosque in Kurna by  
Hasan Fathy





### Architect knows best

Within distinguished theoretical historical level, the book **architect knows best**<sup>25</sup> presents a critical vision within a historical framework and some things that changed in architecture and planning in the second half of the twentieth century. More specifically, it is about one thing that has not changed, the idea that the right type of building that can change our lives for a happier, healthier style, and for people to be better. This, however, has two goals. First, trace the history of things that have changed in architecture and planning over the past half century by looking at some works of the most important designers, writers, buildings and architectural movements. Secondly, and most importantly, it touched upon points of view regarding critical aspects that remained the same, with the belief that architecture and planning are capable of transforming the world and all of population, benefiting from its environmental effects built for better and for the best. Perhaps this is required to understand contemporary mosque architecture. The role of the social mosque is integrated with its architectural context.<sup>26</sup>

Within this framework, it is necessary to focus on theories and theses in which vital issues are discussed in more depth, where the results of such discussions will have an impact on the built environment. The main theses and points include, the role of architecture in revitalizing society, civil responsibility and the public domain, the role of architecture in reconnecting people with the past, in both fields general history and special memory, spiritual characteristics associated with space, physical space and natural landscape, as well as the importance of respecting the human being, senses and emotions, the role of architecture as a language to support meanings and concepts of projects with its underlying nature, which has taught us to think in a more satisfying way, and the relationship between architecture and life-disturbing experiences, as well as contemporary saturated media and associated lifestyles.

Remarkably, this proposition offers the idea that urban architects and planners still tell people how to live, and this is linked to a multitude of ideas about the nature of man and about the soul, society and spiritual values, physical development, mind and memory, and many other things along with these pivotal and intellectual frameworks. Thus, the framework in its essence explores the ideas that intersect architecture and life.

John Evelyn argues that buildings and our cities are formed by four different types of architects, operating in parallel and in a sequence, but often in conflict: the builder, the designer, the sponsor the employer and the writer. With that in mind, this proposition not only considers influential architects and planners, but also the interventions of journalists, sociologists and philosophers.

There seems to exist the gap between theory and practice in the Arab and Islamic world behind mosque architecture crisis, while architecture in the West was developing in a consistent manner, it combines theory and practice, and is led by architects and great theorists, on the other hand architecture in the Arab and Islamic worlds was dominated by imitation, whether following historical architecture or contemporary architecture produced in the West. This gap has contributed greatly to the emergence of immature experiences of mosque architecture that exacerbated contemporary crisis.

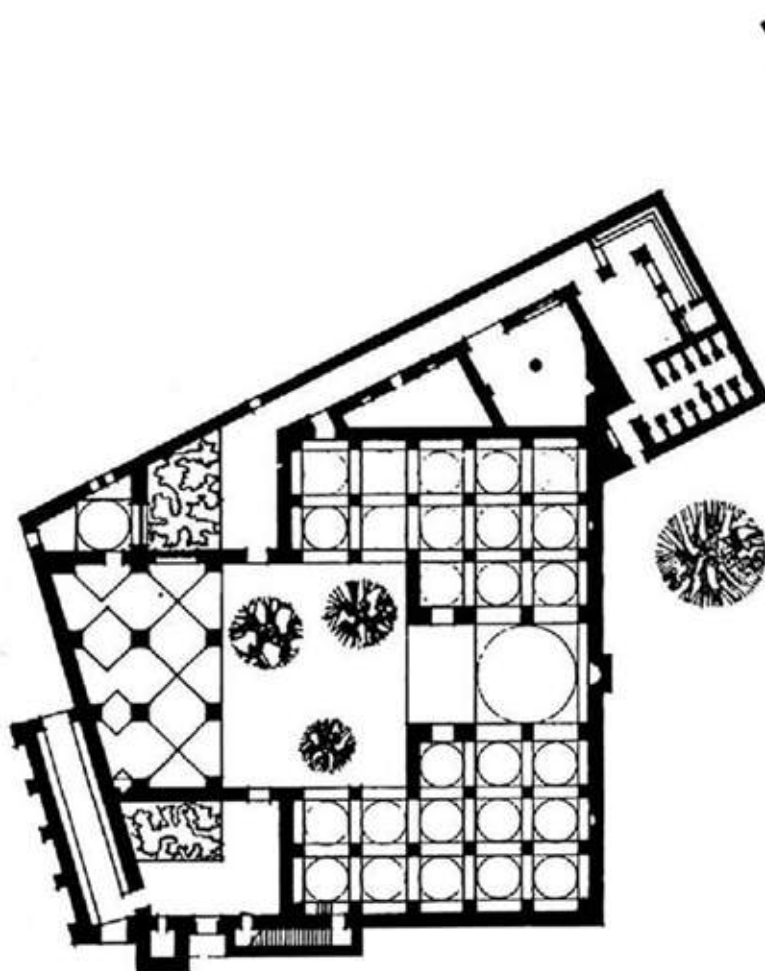
This raises the dilemma of architectural thought in third world countries, especially in Arab and Islamic worlds. Prominent architects, Hassan Fathi, Abdel-Wahed EL-Wakil, Rasem Badran, Rafaat Chaderji, Muhammad Makiya, Ali Al Shuaibi, and others, did not manage to formulate rigorous theoretical framework that could make a difference to architecture, because these pioneers were not accompanied by theorists and writers in architecture and local architecture schools did not respond to their contributions. Consequently, this theoretical vacuum did not contribute to the emergence of successive generations representing **revisionist** path of mosque architecture from its traditional path since the beginning of the twentieth century. Rather, the gap between thought and theory and mosques formed fundamental phenomenon that made

mosque architecture experimental in the absence of interest in major environmental and social issues.

### Architectural Trends in the Twentieth Century: Deconstruction and Heritage

The dilemma of mosque architecture has deepened by the end of the twentieth century and the emergence of schools of thought that challenge the regional school. In the 1980s, in what became known as the controversial term “Islamic architecture”, when some critics tend to use the term architecture in Islamic civilization. In spite of this late rise of architectural thought that dates back to historic era, it was short-lived ascendancy, with the return of **new modernity** of “deconstruction” at the end of the twentieth century. Mosques designed by Abdel-Wahed El-Wakil in Saudi Arabia (Medina and Jeddah) like Quba Mosque and Qiblatain in Madinah, Al-Jazeera, and King Saud in Jeddah (all mosques built in the eighties) established what became known as regional architecture, but it did not constitute an intellectual line, it continued after that, but declined and did not create complete intellectual experience.

This modernist trend in architecture, which is almost forty years old, appeared at the beginning of the seventies, called **deconstruction**, because it calls for the demolition of the foundations of Euclid’s geometry, by dismantling the building into overlapping parts. Deconstruction building design defies gravity, with emphasis on the flow of high abstract forms, ending with sort of fantasy. It was no accident that this architectural trend originated in the technologically advanced West. The West is pluralistic culture, and it represents a hub for experiences in all fields, from fashion to art and architecture, where there is enough room for experimentation, without paying attention to the issue of place, identity and culture. **Deconstruction**, in contrast to heritage, does ignore place, or the propositions of identity, and does not pay attention to them as buildings imposes its rhythm upon the surroundings, regardless of its importance or specificity, or history.







Function, and content as well, appear to **follow** form in this movement, unlike the architectural movement that Louis Sullivan launched at the end of nineteenth century that (form follows function), where the focus is on form and formations, as (top-bottom) model, i.e. creating architectural form then function and work content and try to search for an explanation of the content - or search for legitimacy to justify the relationship with traditional content. This sharp disparity in Arab built environments and Muslim societies in adopting theses of Western architecture has made them a hub for contradictions, and the mosque lost its historical place as active planning, visual and urban element in relation to its surroundings.

This new school affected mosque architecture in the twenty-first century, perhaps this book reviews some examples of this effect. Many contemporary architects have been influenced by deconstruction in their designs for contemporary mosques and this has turned into a kind of controversial experimentation, which could have transported mosque architecture into a new horizon.

#### **Preserving heritage in the age of consensus**

However, mosque future architecture must take into account the preservation of mosque historical record, as it embed deep

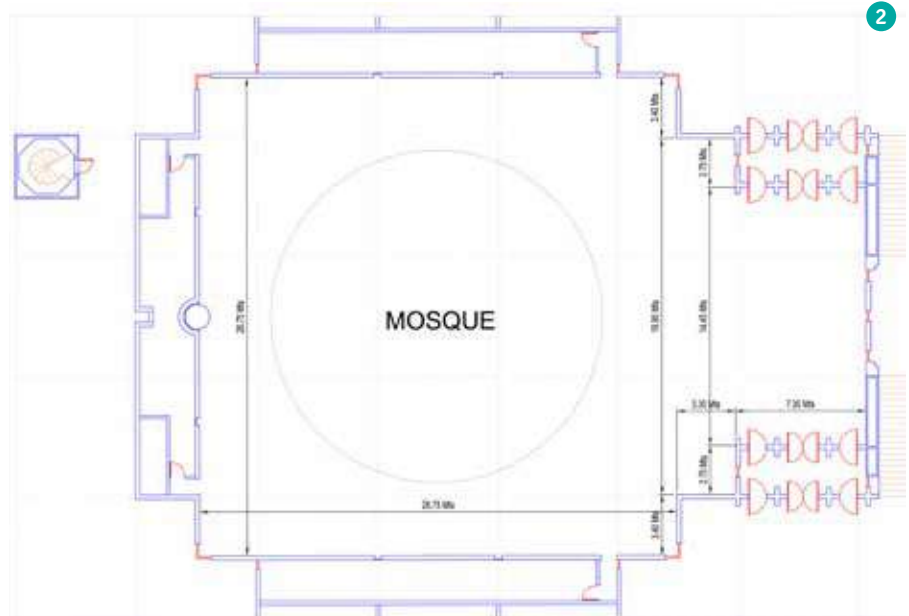
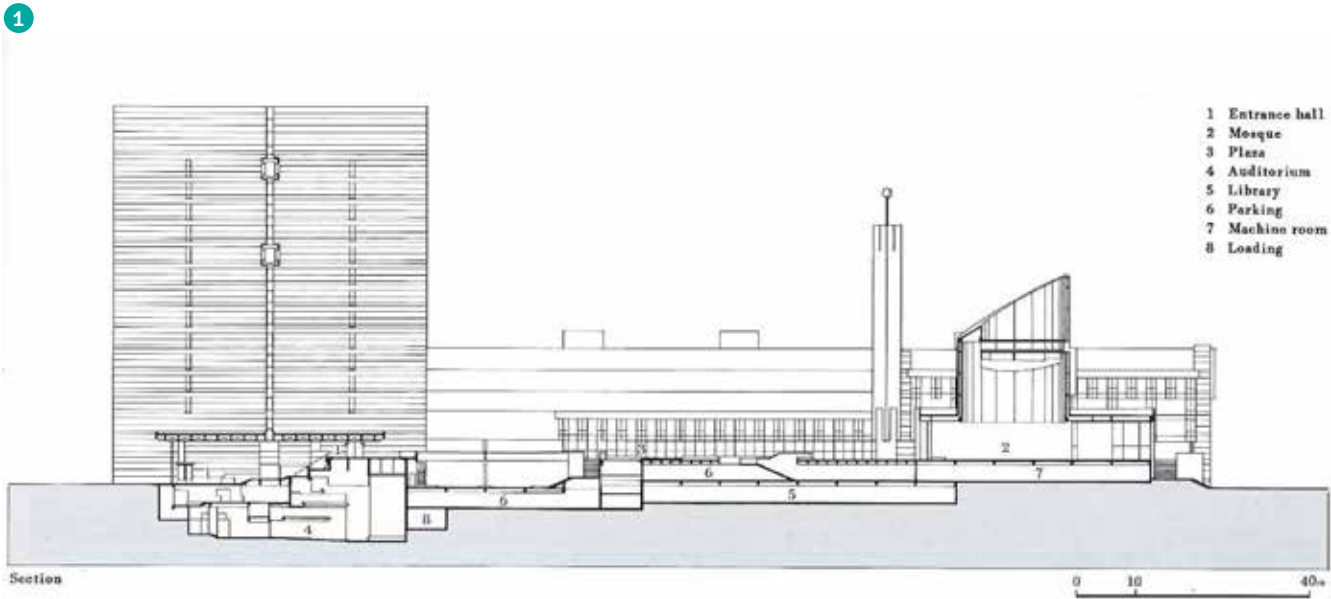
- 1 Simple details in Kurna
- 2 Ground floor plan of the Kurna mosque
- 3 Qiblatain mosque by Abdul-washed Elwakil
- 4 Quba Mosque by Abdel-Wahed El-Wakil

planning, architectural and technical experiences. Conservative practice is a modernist practice, based on valuable protection of **intrinsic** cultural buildings and places. The development of the relationship between conservation and state intervention in the planning system for the modernist period from the 1940s to the 1960s can be monitored, during what can be termed as the age of consensus that arrived in the eighties.<sup>27</sup>

Preserving the historical environment as important policy objective over the past thirty years has become a consensus and challenge. This combines understanding and empathy with modern conservation practice and critical insights about the nature of heritage and the need for development socially.<sup>28</sup> Preserving the historical environment should be an important, consistent and unanimous goal in public policy. The challenges that arise for this basic premise are extraordinary and must be considered revolutionary. These opinions evolved during the conflict-torn development of the 1960s and 1980s, which was infused with heritage new political stage where the terms “new” and “retrofit” have been emphasized.<sup>29</sup> John Pendlebury explores what is beyond this consensus, and looks at how conservation role has evolved in the planning system, and how values associated with heritage have changed in this process. He deals with a number of major

issues, the ways in which heritage has been preserved, which have become **enthralled**, and how it unanimously extended to the broader segments of society, and heritage globally through site media global heritage. Pendlebury explains the variable values associated with the preservation and heritage, especially in terms of instrumental purposes by which it placed heritage and benefits reaped from its protection. Therefore, conservation has become the goal of policies and is of central importance within the planning system in a way that was difficult to distinguish in previous periods. The legislative definitions of listed buildings and conservation areas remain unchanged, since 1944 and 1967. The basic standards of existing buildings, with an emphasis on architectural interest, have gained historical significance, and historical affiliation with the value of the group. There is much continuity in the basic principles that strengthened the orientation of preserving historical environment in late 1960s, within the course of preserving its importance.<sup>30</sup>

In this book, Al-Fozan Award is concerned with allocating a prize to community mosques, based on preserving historical mosques, provided they are part of society linked to its development, and its daily uses. This step raises a critical problem about the general concept of future mosque, as the Award aims to link heritage to the present and the future by presenting intellectual theses on what



- 1 Section of Alfaysaliyyah mosque by Kenzo Tange
- 2 Ground floor plan by Kenzo Tange
- 3 External view of the mosque, Kenzo Tange



heritage means. In fact, the issue lies in defining what heritage is and how it should remain in this context, without turning into frozen heritage to define what we can learn from heritage and the general concept of future mosque.

### Parallel heritage and future architecture

An idea about historical heritage and heritage of the future can be introduced. The last two centuries have witnessed a continuous dialogue along Arab and Islamic worlds, about heritage and its role in contemporary life, the idea of parallel heritage can be raised as a concept that it returns to original sources from which historical heritage was drawn and developed. This is meant to form new heritage for the future with contemporary tools different from those that have been employed in historical heritage.<sup>31</sup>

The importance of this concept lies in the fact that it leads the way for developing new architecture and mosque architecture in particular away from historical heritage, which confines it in forms and images that lose creativity and innovation. The idea is based on building new critical tools that address modern needs and adopt an architectural approach different from the historical context. These tools do not disavow origins and sources rather rest on and draw lessons from. Therefore, one of the solutions to the crisis of mosque architecture lies in presenting these critical ideas for development and transformation into experimental laboratories that contribute to the production of original futuristic architecture.

A question arises that explores the tools to build new parallel heritage: Where are the limits of average person's interests in architecture, and where does his/her or the former perception intersect with the complex levels of architecture and design? How does the average individual understand architecture and interact with it, and does his/her understanding differ from the understanding of the architect? Perhaps the most important paradigm that can be discussed is the primary related to architectural design process itself in relation to form and function.

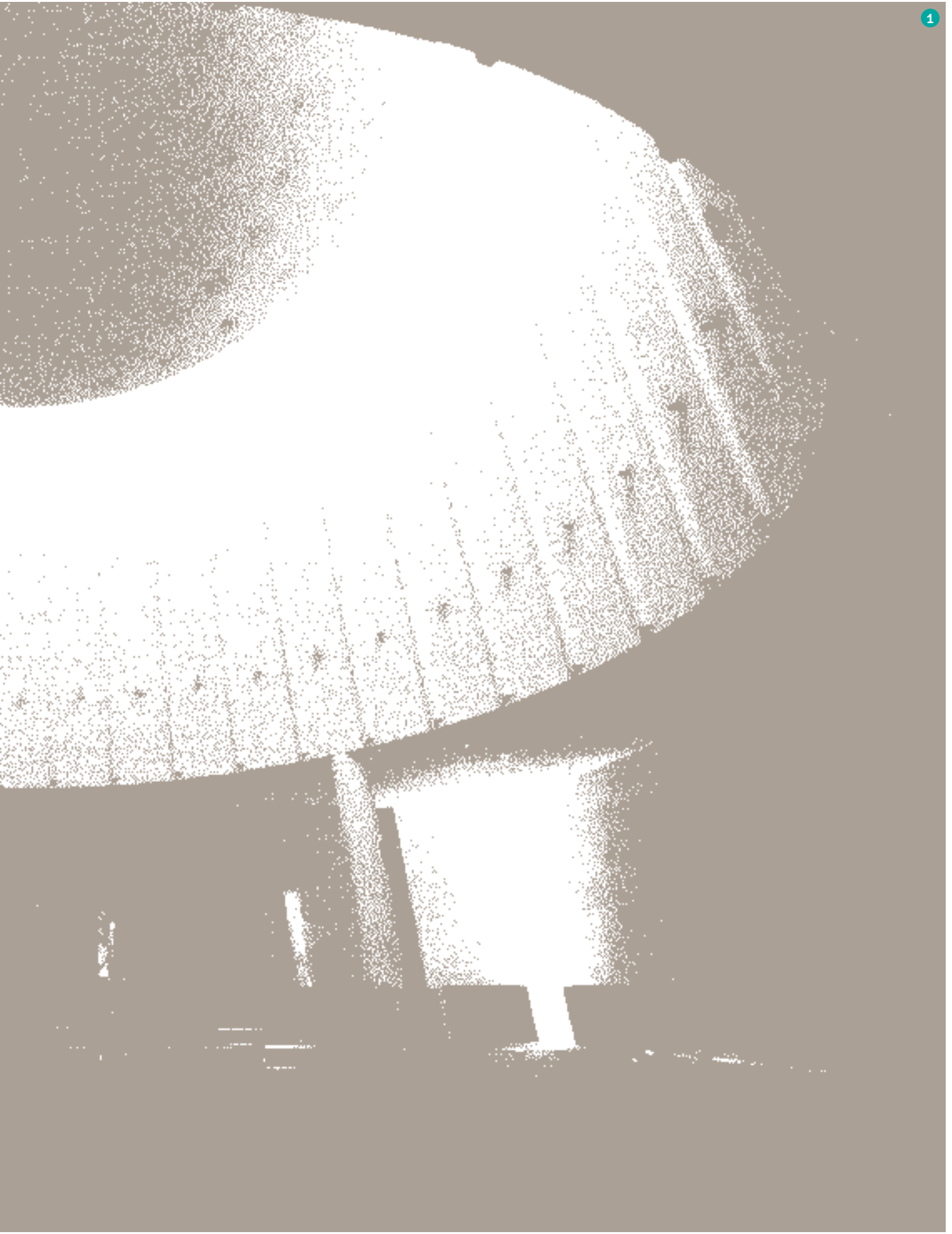
### Architectural design - form versus function

In order to link parallel heritage with the contexts of architecture production mechanism, a set of ideas dealing with production methods can touch upon architectural form. There are two methodologies that form the focus of contemporary architectural design, namely **bottom-up** and **top-down**. Both are related to understanding the relationship between form and function. Their design success depends on the ability to start from a strong and balanced background in understanding the relationship between form and function. This highlights the importance of such relationship between form and function and their reflection in contemporary architectural design.<sup>32</sup>

The question of function and form formed the focus of modern architectural theories in the twentieth century, as it arose from the dialectics associated with groups of theories that tend to prevail at one end of the equation. The dialectic of form and function in architecture includes the relationship that links architectural formations to the architectural programme and the function of the building. The problem arises in this relationship from the idea that architecture belongs to applied art, while sciences nourish its functional part. Therefore, architectural works seek to balance the relationship between form and function. The relationship between form and function, not only discussed by theorists in the field of architecture, but included professionals. The victims of poor relationship between form and function in buildings are the users who live these products if they do not meet basic needs of architecture in its good sense of achieving the characteristics of benefit, function and beauty mentioned by **Vitruvius** in his definition of architecture.<sup>33</sup> Some theorists in this field, such as Bill Hillier, add that the relationship between form and function is difficult to grasp, given the nature of architecture itself, which differs from other disciplines such as lighting, construction, or acoustics. These largely are subject to laws of scientific theories that exclusively feature large technical component, unlike architecture, which places it within art.<sup>34</sup>



1 The done in the prayer hall of Alfaiysalyah Mosque





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- 1 Mosque at KFUPM, Dhahran, Saudi Arabia
- 2 Prayer hall of the KFUPM mosque
- 3 Ground floor plan of KFUPM mosque

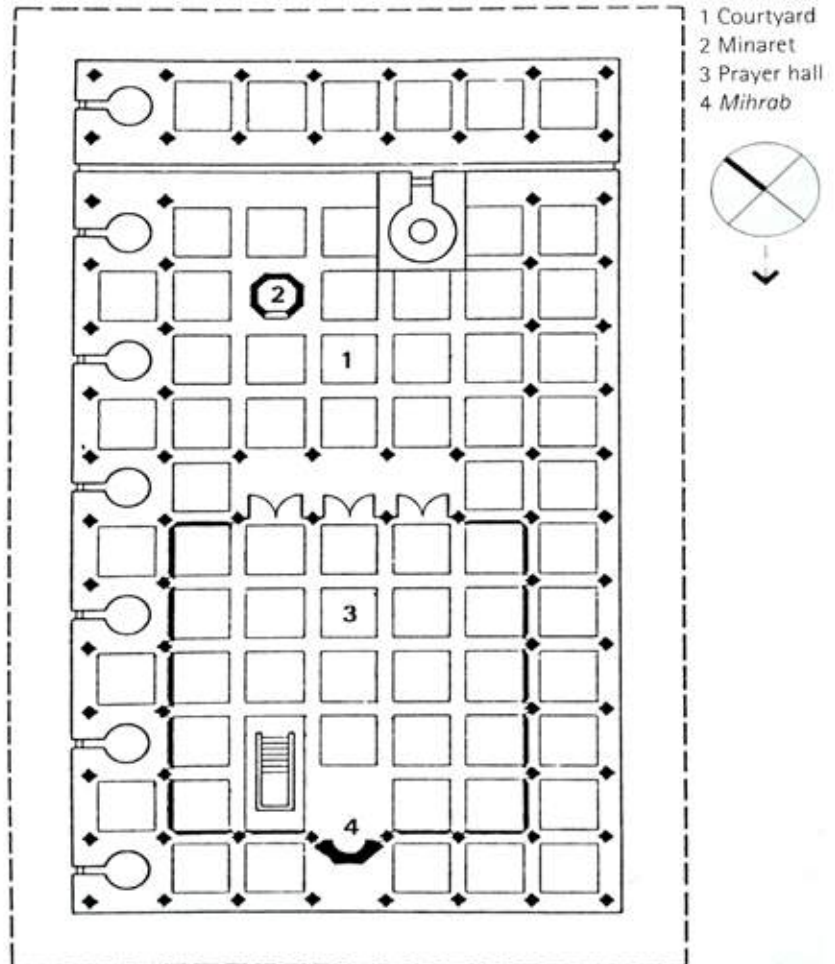


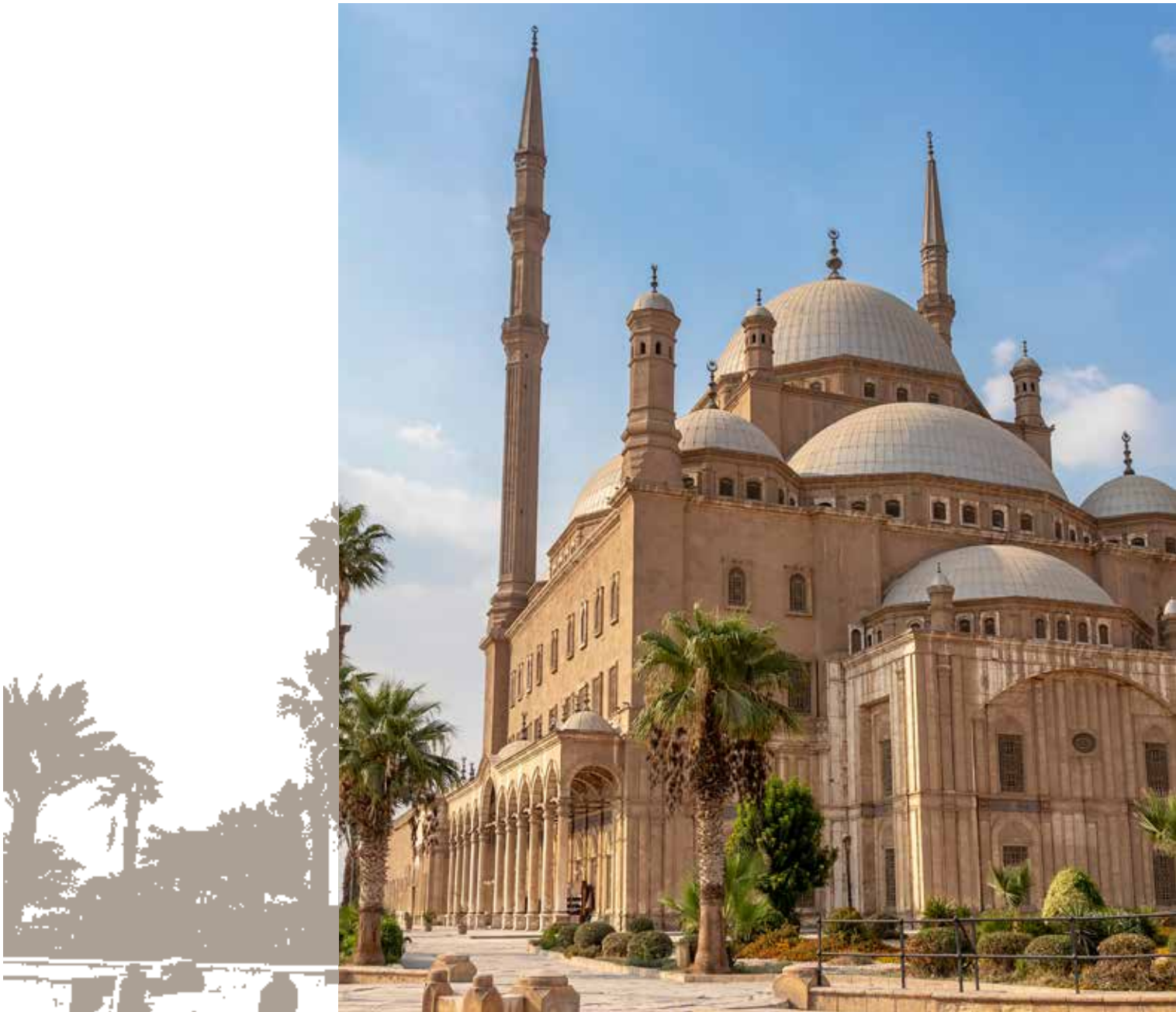
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The function is concerned with addressing and solving basic problems, it is the purpose of the design process, which is synonymous with the design concept, while form is synonymous with style and external outlook. Therefore, design and style - or function and form are heterogeneous in content, the former is concerned with reason, science and logic while the latter is about art and aesthetics. The first is concerned with the whole, the essence and with the realization of the mind in finding solutions to problems in innovative, creative way, while style or form is concerned with the appearance and the external and often accompanies the design as a complementary process. In mechanical design, for example, there is less focus on form and style than in architectural design, as the functional aspect is important than form and aesthetic aspects. In architecture, the dialectic relation between function and form emerged where one may dominate over the other. Two schools emerged, one states that **form follows function** and the other asserts that **function follows form**.

The definitions of **Le Corbusier** versus Mies Van Der Rohe show the relationship between form and function with both on two extreme definitions. **Le Corbusier** defines architecture emphasizing form, while Mies Van Der Rohe views it in terms of function. **Le Corbusier** defined architecture as **a masterly, correct and magnificent play of masses brought together in light**. Our eyes are made to see forms in light: light and shade reveal these forms; cubes, cones, spheres, cylinders or pyramids are the great primary forms which light reveals to advantage; the image of these is distinct and tangible within us and without ambiguity. It is for that reason that these are beautiful forms, the most beautiful forms<sup>35</sup> In contrast to this famous definition of "Le Corbusier", Mies van der Rohe defines architecture as 'the will of the epoch translated into space; living, changing, new. We refuse to recognise problems of form, but only problems of building. Form is not the aim of our work, but only the

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result. Form, by itself, does not exist. Form as an aim is formalism, and that we reject'<sup>36</sup> Other writers contributed with more definition and ideas, for example Christian Norberg-Schulz in his 'Intentions in Architecture' questions the idea of assigning certain forms to particular functions, he argues that this assignment in architectural history as well as in the theory of architecture is central; that is it is not intended when we study history that it should lead to copying certain forms from the past. Instead, he argues that information given by history should illustrate the relations between problems and solution, and thus furnish an empirical basis for further work.

Others like Charles Jencks relate forms to meanings rather than functions, he says 'the minute a new form is invented it will require, inevitably, a meaning'.<sup>37</sup> Oswald Mathias Ungers views the process of design in architecture as a continuous transformation of forms. However, he tends to liberate architecture as a continuous process of correlations from the reduction to purely functional thought by adopting what he calls 'the morphological transformation' as an instrument of design. By this he states his inclination to believe that form is an expression of spiritual content, and therefore calls to a move away from functionalism for its own sake.

Parallel heritage seems to balance two methodologies, Allah Almighty says: "As for the foam, it vanishes, [being] cast off;

but as for that which benefits the people, it remains on the earth." [Thunder: 17]. It is an approach that enhances the value of function related to the benefit of people without neglecting the value of form. Allah Almighty says: "Have you not considered your Lord - how He extends the shadow, and if He willed, He could have made it stationary? Then We made the sun for it an indication." [Al-Furqan: 45] This Quranic verse clearly indicates the relationship of function to beauty throughout changing shadow movement associated with functional and visual architectural formation. Parallel heritage orientation in this sense tends to balance the creation of function without exaggerating the unnecessary formation. Thus it is possible to see the most prominent modern theories that provided different explanation advanced by Bill Hillier. Some architects may try to understand the form of the building and then try to 'fill' function within its structure and derive concepts and themes intended. Such a method of understanding function as a 'fill' within the form comprises problems in understanding the relation between the two, as Hillier puts it: 'in architecture [some may think] that an architectural space is a geometrical shape, and function is what occurs in that shape'. He therefore warns that, if the relation between form and function is set up this way, it is hard to see why there should be any relation between the two.<sup>38</sup>





Hillier supports his argument by stating that the vocabulary used in design has not a unique value in itself, but its importance derives from its relationship with its neighbourhood and being part of total content that the designer seeks. In other words, it is important because it belongs to an entire configuration - or a whole system of spatial relationships and functions.<sup>39</sup>

The important question is: What is the specificity of the relationship between form and function in contemporary Arab architectural discourse, how is it interpreted? And how urban heritage and urban fabric can be read in Arab environments and cities under the concept of parallel heritage?

These questions can be discussed by criticizing contemporary mosque architecture where form dominated function. However, the desire to use form over function has overshadowed mosque's architecture since the construction of the Umayyad mosque, and this tradition lasted until today. The problem of function and form in mosque architecture is ongoing and will continue in the future, so it should be on top of attempts to rethink contemporary mosque architecture in general.

These questions are raised in light of parallel heritage in search of answers that clarify the paths of future architecture. Determining what is required for in-depth understanding of current civilization, rather than clinging to traditional historical heritage that has evolved in conditions different from contemporary times. The search should start for tools that deal with the past without breaking with the sources and origins of culture's generators. At the same time, an effort must be made to preserve and learn from historical heritage. In general, it is not possible to provide answers without researching various levels of architecture.

#### **Learning from the urban fabric**

However, parallel heritage of mosque architecture raises concerns about the cultural heritage spanning over fourteen centuries, which may cause the loss of direction completely. Contemporary Arab and Islamic societies need new generators that stimulate creativity and knowledge curiosity, as exiting philosophical formula that links the future to the sources and overrides the jurisprudence that occurred during the past period is worth experimenting and trying. Indeed, contemporary architecture in Arab Islamic countries faces major dilemma on several levels.

Attilio Petruccioli writes: "looking at contemporary Islamic cities, it seems that people do not know how to build available cities with minimum human and urban value. They have lost memory, and I can imagine that I could help them recover lost memory

given the traditional cities and architecture in the past, where the foundations, concepts, customs and information were buried.<sup>40</sup>

The author notes that there are two types of architects: first is gifted one who has the ability to craft architectural and urban space, and the second who believed that art of design can be learned and taught in isolation from natural talent. Architecture is a beautiful art and a game that has its rules and scientific systems, but it must play within methodologies, without which architecture transforms into abstract art.<sup>41</sup> The conversion of parallel architectural heritage into a laboratory and the production of future architecture needs the first type who have the sense to understand sources of culture that shaped Islamic civilization for fourteen centuries.<sup>42</sup>

Today, architects tend towards affluence and fame, unlike in the past, and at a contemporary time, architects have lost control on the city. There are those who strive to try to achieve a goal to maintain harmony and compatibility of buildings within city urban environment. There is a group that seeks in an unrealistic, logical or even legitimate way to achieve basic system of architecture to solve architecture problems permanently. This approach can go far to suggest a global guide that explains and solve problems that affect poor communication between different cultures. This discipline presented by Petruccioli does not fall within these patterns and previous theses proposing a language or strict method to reading architecture or city, it is simply an attempt to suggest a path that leads to an existing and preserved architectural language in the built environment. It proposes a methodology to deeply explain the urban fabric and city.

Perhaps what Petruccioli brought up gives important example of contemporary mosque architecture that seems not to have been learned a lot from the surrounding urban fabric and did not try to restore the memory of place, not from the historical side, rather from the value of “memory generation” through the ability of the mosque as a reference place capable of making identity. Mosque architecture has been satisfied with the symbolic domain of the mosque, and it has not tried to make a space that interacts with the proposed urban and architectural ideas and theories hence became isolated.

### Identity in architecture and architectural discourse<sup>43</sup>

It is necessary to assert that mosque is an **entire place** in the sense that it is a place where its authority and role is consented in determining identity in relation to residents. As such, mosque becomes crucial reference to determine tangible and intangible identity. It expresses people identity living in the vicinity.

Within the context of identity, it is useful to shed some light on certain themes in this regard. Many terms and dichotomies are commonly used in architectural discourse. Some of these express interaction with perceptions and feelings. We experience architecture, by five senses, and use a sixth one to expresses the extent to which we accept or reject it. Depending on this **unconscious** sense, or the **impression** generated from the five senses, with our **cognitive** senses, degrees of acceptance of architectural and urban value vary in relation to culture, and inversely with local or global situational variables. The ability for objective judgment, therefore, is clouded with **mental** state, along with time variations, which, arguably, may confuse the ability for objective reasoning.

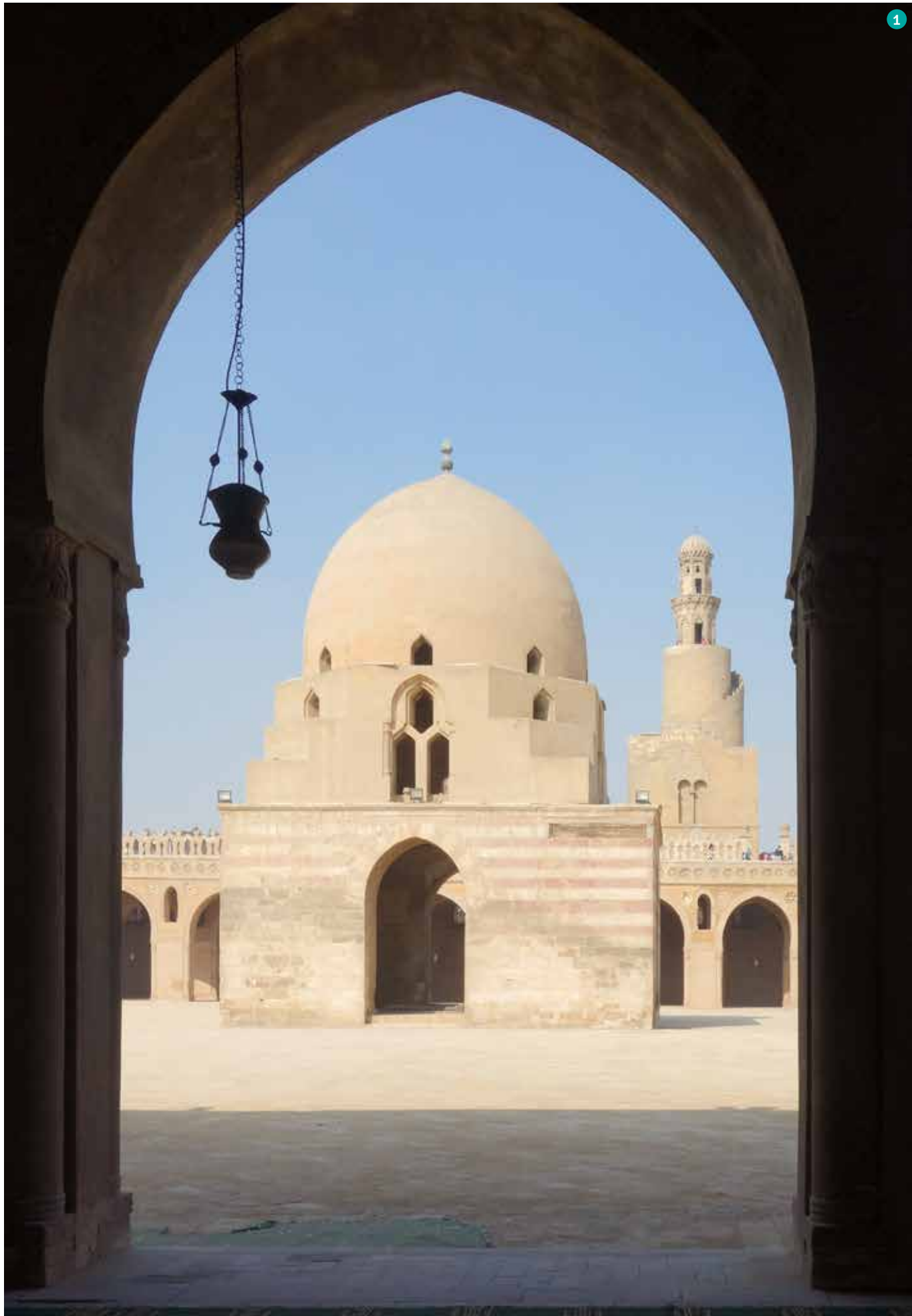
However, judgment is generated within two frameworks: the collective framework, and, or, the individual one. It is pivotal to point out that the substantive governance levels start from the public to the private. In other words, it is very common and possible for populist, and sometimes elitist, public taste to control private acceptance – not vice versa, except in cases of **forced imposition** from top to bottom, and this is almost rare and confined within the special political framework and milieu. Examples are present in degrees of our judgment on **beauty, magnificence** and of architectural or urban product, which are characteristics often associated with the aesthetic side of architecture.

The use of terms in architectural discourse is associated with more sophisticated level, beyond physical explicit framework, to implicit structural. This means more intricate relationships that fall within the **non-discursive** side of architecture, which transcends five sense perceptions. The five and the sixth **mysterious** sense leads us, upon cognitive recognition of five senses, to accept or reject products of art or architecture. This advanced level of recognition and perhaps mutual and collective consent is **conscious** and is closely linked to culture. This sense qualifies us, within the objective framework, to understand implicit and underlying concepts in architecture, including **time, and style, and identity** in architecture.

Identity is a **sign** denoting something, or an attribute to a structural construct, not phenotypic, but genetic organisation within the structure linked to culture to an end product with significant associations with historical or collective memory. **Identity** is expressed either through a group or some physical connotations, which bind us mentally to something, or morally, through media translated through our perception and interaction with subconscious mind. Identity can be represented by a **symbol**, which is a medium that connects the physical form with imperceptible thoughts, memory, tangible or intangible, real or imagined. Identity can be **symbolized** through colour connotations, elements with symbolic indications and signs, or natural or human configurations.

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1 Ibn Tolon Mosque in Cairo, influence of historical elements



It can be **expressed**, for example, through formations, assemblies and designs through graphic arts or engineering design or natural landscaping. Identity can be symbolized by the flag, its colours, expressing a national historical memory, for example, historic or **iconic** industry, or historical product with symbolic significance. Identity can also be expressed as a social practice that generated a set of **symbols** and attributes that formed cultural domain to express the past of society and nation and becomes inherent and indicative of its genetic social structure. Hence, **the factory** of nation's identity in social context is the **social practices** taking place momentarily within circles of culture and creativity. These, in turn, produce clusters of symbols that evolve chronologically across levels of legitimate acceptance by the nation and society to become associated with its social and cultural identity.

How can parallel architectural heritage reflect and express identity, which means new symbols will need collective acceptance in order to become part of community's sense and sentiment. If we reflect on the concept of identity as a daily practice in circles of culture, this requires that parallel heritage be merged in these practices and turns into a way of thinking for practicing architects. Indeed, in purely practical terms, it is necessary that the practice of culture evolve in order to transform such idea into an experimental reality that evolves and matures over time.

The question of identity in architecture leads us to research many cultural issues in contemporary architectural discourse and architecture of the twentieth century. The most prominent of these concepts relate to the so-called **Islamic architecture**,<sup>46</sup> especially the connection with monumental architecture in historical mosques that led to the crisis of mosque architecture. Books of architecture that describe architecture of the Arab world in the past often come across this term. Travelers and orientalists used the term to describe architecture in the Middle East. Some orientalists instead used the term **Muhammadan architecture** in relation to the Prophet Muhammad (Peace be upon him). The term **Islamic architecture** has led to a mistaken idea that 'architecture reflects Islam, its essence or teachings', which could mislead to an ideal architecture, despite the fact that certain examples of monumental architecture in Islam can hardly reflect the spirit and teachings of Islam.

It is remarkable the role of orientalism in leading to confusion and misunderstanding of certain concepts, associated with identity with regard to architectural discourse since the nineteenth to late twentieth century. This has left changes on Arab architecture in the twentieth century, as well mosque architecture. This concept has negative implications on architectural thought and discourse in the twentieth century on Arab culture, therefore orientalist encyclopedias have to be re-visited. Hence, parallel architectural



1 Mosque architecture strongly influenced by the language of historical elements



heritage is an attempt to break out of this orientalist term **Islamic architecture**<sup>45</sup> to re-build new concept that does embrace the principles that Islam promoted, and adopts the principle that Islam is a religion (Qur'an and Sunnah) are valid for all time and place and are capable of interpreting facts of contemporary life and build new identities more expressive about the spirit of time and place.<sup>46</sup>

Against this review of urbanism, architecture and architectural theory in the twentieth century, we will present mosque architecture and its most prominent historical developments focusing on temporal and spatial transformations.

### Mosque architecture crisis

Mosque architecture has undergone remarkable developments that spanned several successive Islamic eras, since the establishment of the first mosque in Islam. These urban developments have cultural, political, economic and social backgrounds, that have developed in the context of the development of thought and religious diligence, which constitutes what may be called **history of mosque architecture**. To review and read this history, it is necessary to define the foundations of the critical review, especially that this prolonged and successive historical development should include reading the genesis of many vocabularies, with different patterns and within historical contexts and transitional space and time. It should also include motivations and circumstances of its production, cultural and social contexts that led to the production of **mosque architecture** across the Islamic world, with features and elements that became architectural **patterns** that embodied public versus the private, religion versus the state within the framework of identity, and between civilization privacy and cultural alienation, within a broader framework that defined heritage versus modernity. The most problematic issue has featured as cultural identity and intellectual crises and the relationship with the other in Dar Al-Islam or Al-Hijrah, which dictates Muslim relations with others. This has recently become a **globalized** dimension embodied in the relations of suspicion of ethnicities in Europe, making it imperative to review foundations of mosque architecture and how to deal with it in a skeptical global world reluctant to accept religious pluralism, specifically Islam.

The point of review stems from defining the dialectical relationship and the increasing split between the religious and secular, or secular and divine, including what was inevitably reflected in basic vision and understanding formulated in early Islam that led to the evolution of **mosque**. These constitute general frameworks for a critical review of the problem of what can be defined as the **crisis of mosque architecture**. We are concerned with detecting basic points to read **historical urban event**, in the context of a historical review on the role of mosque and transformations in mosque architecture that established the foundations of the crisis, in the context of identity challenges and challenges of a globalized changing world in terms of politics and religion understanding and application upon the first decade of the twentieth century.

The Prophet's early mosque in Islam has urban, social and political connotations to do with the **place** and urban space; evident through its rectangular form and surroundings. The Prophet's Mosque layout shows simple spatial composition and construction material. It comprises spacious courtyard surrounded by palm-tree colonnades, with a cluster of rooms line up on one side, with no additional features such as the minaret, or dome, which became **stereotypical** elements that became symbols of mosque architecture in Islam over succeeding eras. The minaret was not developed until Umayyad architecture later in Damascus. The minbar in the Prophet mosque in Madina was no more than two steps. Thus, the elements of the mosque, as developed later, had **basis** in the Prophet's Mosque, but were characterized by simple functions and form, without any style or character.

This is such a historical urbanism determined by the actions and sayings of Prophet Mohammad, in the form of mosque architecture that enshrines the text of hadith that **the entire earth has been made a mosque**, not implicit rather explicit in a way that transforms mosque architecture into a **spatial entity** of natural architecture. This poses question about the extent mosque architecture has derailed later from the one at the dawn of Islam, which was an imperative necessity or reflection of simple Islamic society, in terms of form rather than function which remains the same, when later development of mosque architecture was of all sort of forms, ornamentation, and vocabulary simply blatant departure from the original. Another question arises whether later developments are compatible with the essence and purpose of mosque architecture or natural development and historical urban requirements that respond to natural space-time, political, economic and social needs.

The latter questions may seem natural from an architectural point of view as architecture has always been seen as natural development in the aforementioned fields, so that it is impossible to look at mosque architecture within limited framework in simple perception of Prophet's Mosque architecture, and this makes the blockade of urbanism in that narrow environmental and heritage circle a kind of reflection on the past. The other issue involves a dialectical relationship between form and context, not just in mosque architecture, but includes situational, temporal and spatial content, which will affect mosque architecture forever. It is one of the prophetic miracles that allows a profound reading of mosque architecture in Islam, which is beginning to emerge after more than a thousand four hundred and forty years, as **the crisis of mosque architecture** today, not **as a crisis** related only to architecture and construction, but a crisis related to the relationship of exterior with interior, the relationship of form to function, and most importantly the relationship of the mosque with its surroundings, in Muslim and western countries. Therefore, part of the enquiry seems to call for invoking concepts of mosque architecture in the West, in which appears most prominent manifestations of departing from the original historical text in Muslim societies.

### Historical transformations and implications in mosque architecture

The political significance of mosque in Islam has emerged since its establishment in Medina. It was government headquarters and parliament of ummah where all matters are discussed by political leadership and people. The institutionalization of the mosque have later been separated and divided into **several independent institutions** with urban formations that constituted historical transformations away from the first establishment for mosque's goal. Muslims were not limited to using the word mosque for places of worship, rather performed several other functions, including cultural aspects as a school where seminars and preaching were carried out in addition to civil and religious matters such as conflict resolution. It also contained Bayt Al-Mal, a role that later emerged in the Umayyad Mosque and the Mosque of Amr ibn al-Aas.

In the Umayyad period and its aftermath, the mosque began to turn into political **symbol** to assert state power through architectural expression of an **icon** in favor of the ruler - which is the most prominent of fundamental transformations of mosque objective from **a headquarters to serve the nation** to headquarters to control nation and influence politics over religion. The mosque was therefore more associated with the ruling authority than with the idea of weekly meeting to discuss nation affairs. Given this transformed objective, role and architecture of the mosque and its evolution throughout Islamic history has diminished across different countries. The mosque has become a political symbol belonging to the state in cases, and subordinate to ideological groups in others. In the first case, one of the tasks of the administrative governor in Amsar and the provinces was to establish a mosque that represents the official State.

Muslims have continued the construction of mosques, similar to the Prophet's Mosque in Medina. This appeared in Basra mosque in the 14th AH and the Kufa Mosque in the 17th AH. They continued to build the mosque in simple and modest way in the Amr Ibn Al-Aas



1 Prophet mosque at Madina



mosque in Fustat the year 21 Hijri, with an area of 50 by 30 cubits, with walls of brick and columns of palm trunks. Mosques of Basra, Kufa, and Egypt were erected with no hollow niches, minbars, and minarets. It is reported that Amr bin Al-Aas wanted to make a platform for him in his mosque, so Omar bin Al Khattab wrote to him orders him to break it, saying: "Is it not enough for you to stand up and Muslims sit under your heels?" Then he broke it.

In the Umayyad and early Abbasid eras, features of the mosque changed and began to appear in various architectural styles until the fourth Hijri century as open courtyard surrounded by galleries on three sides, or on two sides, the largest of which is Iwan al-Qibla. The mosque contained mihrab, minbar, minaret, and ablution. The planning of mosques began to differ between the provinces, and it was dominated by the square in Iraq and Iran, and the rectangle in Egypt and the Levant and North Africa. In the Ottoman era, the design of mosques differed in that the mosque no longer resembled the traditional mosque nor the madrasa, the motive was political to associate its affiliate states with a stereotype to assert political subordination. The Ottomans adopted the Seljuk chapels in the fifth century AH as the basis of their architecture.<sup>47</sup> The Ottoman layout depended on the large dome of stone surrounded by iwans mounted on bearing walls topped with small domes, exemplified by Sinan

Mosque and Muhammad Ali Mosque in the Citadel, which is a copy of Sultan Ahmed Mosque in Istanbul. There are religious buildings that appeared in the Ottoman era other than mosques, hospices and mausoleums were introduced with the same function, for private ends of those who are dedicated themselves for worship only.

#### **Mosque architecture crisis escalated**

Mosque architecture throughout Islamic history across vast Islamic world have become almost typically **monumental** across time, its architecture comprise constant vocabulary, elements, and formations. In modern era, this has emerged as inevitable urban heritage, and has steadily evolved, reflecting the desire to exaggerate formation and monumentality to give State control and governance. It is important to note the distinction between requirements of proportion composition as opposed to building capacity and deliberate scale exaggeration to present the mosque as edifice at the expense of horizontal dimension. This invokes historical reference from old Egyptian architecture seen in Karnak Temple, which is meant to assert priests authority to superimpose political power, later notable in cathedrals and churches, and Roman and Greek temples. It appears that mosque architecture followed suit, example can be seen in Sultan Hassan Mosque in Cairo.





Thus, mosque architecture became political means for political ends so that architecture became handy mighty tool throughout successive Islamic ages. Architects became rulers' leverage to achieve political goals, as much in planning as in architecture, and mosque architecture.

### **Contemporary predicament of mosque architecture at the age of cultural-intellectual pluralism and globalization**

Mosque institution, or architecture, was never in more trouble than it is nowadays, given global transformations and Islamophobia in the aftermath of 2001. The repercussions of transformation are casting a shadow over the relationship between mosque and surrounding environments, culturally, socially, politically and economically.

In today's globalized world, demographic, political developments, and modern secular non-religious life, has had direct impact upon mosque role, and it is built in isolation from its context, physically and in terms of planning. This dramatic situation is notable in the Islamic world as well as in the Diaspora. The mosque has become transit station or for passersby. In globalized and fast cities, mosque has become more of a **symbol**, or globalized **icon** with traditional features that have been inherited over time. In the Diaspora, and the West that believed in intellectual pluralism, tension and less tolerance may be on rise which has put the mosque under scrutiny, its symbols, identity, and cultural association.

Against this, many calls have forewarned **short-sighted** religious and Islamic communities in the West from presenting the mosque as monumental edifice isolated from its physical and cultural context. Politicians have been quick to build major mosques in Western capitals to establish Islamic identity in a non-Muslim milieu, which has touched some nerves and intolerance and dissatisfaction from some western communities. Fairly recently, Muslim communities in the West, sparked widespread controversy, announcing intention to establish unprecedented gigantic mosque costing more than one billion pounds, which opened door wide for writings under the title **Why build major mosques in Europe?**

The solution for mosque architecture dilemma is to integrate the mosque, its socio-cultural context and its institution with environmental and urban content. It has to be reviewed and revisited to rid of the image as monumental architecture full of **symbols** and vocabulary brought back from the middle ages, portrayed as holy **icons**. This calls for presenting modern **ideas** for mosque architecture that merge with surrounding environment, and requires a new outlook that takes into consideration changing times, concepts and lifestyles, within Islamic settlements and the Diaspora alike. Parallel architectural heritage could provide proposals because it is based on pure sources from which Islamic civilization originated.

### **Mosque transformations in the architecture of the twenty-first century**

Without doubt, the historical formal stereotypes that dominated mosque architecture throughout its development along Islamic history had witnessed unprecedented developments, whether in architectural composition or design concepts that fueled and provided basic spatial structure without affecting basic functionality or contradicting legal issues in mosque architecture. Therefore, the typical stereotypes that depended on the existence of architectural vocabulary, which have been historically taken for granted in mosque architecture has been overlooked presenting distinguished theses that foresees mosque architecture in the twentieth century and beyond. There are many examples of this evolutionary development in mosque architecture, which we review examples of.

We categorized stages of the evolution of mosque architecture in the twentieth century into three stages based on a preliminary study and field survey of models of mosques built in this century in places around the world. This study can be considered as a first reading of mosque architecture in the twentieth century and political, economic and social conditions that accompanied the construction of selected mosques. Although there exist vast gap between constructed mosques and design ideas versus

construction process, there is still an opportunity to develop future theoretical and practical thinking of mosque architecture based on parallel heritage.

### **The first half of the twentieth century and dominant traditional thinking**

Architecturally, what was happening in the west cannot be compared to the intellectual state or situation in the Arab and Islamic worlds. It appears architecture during that period was an extension of prevailing historical culture at the level of the architectural product or even the level of concept development. In general, architecture as thought, criticism, and documentation, was not part of Islamic civilization, and this seems to have continued until the turn of the twentieth century without any change in that prevailing culture. Therefore, mosque architecture during this period is a direct extension of historical traditions that was subjected to little developments with rare exceptions.

Al-Mihdhar Mosque,<sup>48</sup> for example, was built in early twentieth century. Therefore, it is no different from the historical context of mosque architecture in that period and was not influenced by new architectural ideas and theories that emerged in Arab cities. The mosque provides a model for urban identity that emerges from the surrounding social, cultural and climatic environment that draws inspiration from all physical, architectural and visual elements to produce creative composition that relies to some extent on its abstraction.

This mosque is one of the Yemeni mosques in Hadramout Governorate, Tarim city, built in 1914, and considered one of most important landmarks in the city. Its construction is attributed to Omar Al-Mihdhar bin Abdul Rahman Al-Saqqaf. Its architecture is distinguished by its beautiful art. Its layout consists of open courtyard surrounded by four galleries, the deepest of which is the Qibla corridor, decorated with three mihrabs. Exquisite stucco is decorated with geometric, floral and written motifs, and in the

middle of the side opposite the Qibla corridor, its tall beacon is about 53 meters high. It is square in shape with a stairway inside to climb to the top, and was built around 1333 AH / 1914 CE. It is built of mud (it is the tallest minaret built with mud), its seven floors are roofed with palm trunks, designed by the poet Abu Bakr bin Shihab, died in 1341 AH, it was built at his expense and supervision, and the construction was carried out by Awad bin Suleiman Afif, died in 1345 AH.

This mosque shows historical contexts in which it was built and decisions taken to determine its shape. It also reveals the close association between the mosque and its urban surroundings, although it points to some developments in Hadrami Yemeni community at that time. More importantly, it clearly indicates that large areas of clay architecture were not exploited. It was possible to develop contemporary clay architecture bearing high experimental and renewed value, especially in the form of an unprecedented minaret. The question this mosque poses is why no one important architect has been able to develop widespread architectural ideas derived from clay architecture, although this example clearly shows the ability of this architecture for creative development.

However, mosque architecture was never the same, since the second decade of the twentieth century it began to show great transformations as a result of the transformation of Arab and Muslim societies and cities. These transformations were within the scope of **traditional framework**, although were about to make a point of departure. The problem was absence of critical and architectural knowledge that can contribute to the development of mosque architecture in that period. If we compare this mosque with the White Mosque in Russian Tomsk city, which was built around the same period (1913 AD), we see great similarities in terms of borrowing from heritage and trying to preserve the visual image of the mosque. However, the White Mosque is characterized by employing new elements merging some vocabulary of Russian architecture within local architectural context.

In 1922 the Great Mosque was built in Paris. This event in particular has had a profound impact on the architecture of the mosque in that period, although its orientation reflects borrowing elements of dominant urban heritage in the Arab and Islamic heritage and trying to emulate and reproduce it in different environment. Within this perspective, the mosque is transformed as content of urban heritage and tool to re-establish concepts within high symbolism and function of cultural identity in Diaspora societies. Thus, it constitutes a shift in time and space within the frameworks of borrowing traditional vocabulary and its highly symbolic connotations. The mosque is an important symbol for Muslims in France, in addition to being popular destination. It includes Islamic library, prayer room, conference room and area of 3500 meters square of eastern garden.

The Great Mosque of Paris is inspired by Spanish-Moorish styles of architecture. It was actually modeled on an existing Mosque in Fez (the el-Qaraouiyyin Mosque). Its architecture is unique in Paris. It also reminds of the Alcazar in Seville, similarly grand with intricate paneling and mosaics. For all intricate and decorative features, experienced and specialised artisans from North Africa were commissioned to work with traditional materials, to achieve the desired effect.

Mosque's minaret measures 33 metres tall. It was inspired by the Zitouna Mosque in Tunisia. Marshall Lyautey inaugurated its construction in 1922, claiming that the minaret would soar into the sky of Île-de-France as one more prayer alongside all the other Catholic towers, such as Notre Dame.<sup>49</sup> It was designed by the architect Maurice Tranchant de Lunel.<sup>50</sup>

This mosque can be considered as an early and important attempt to borrow traditional forms. It was during this period, there were no bold examples of departure from historical mosque architecture. However, attempts to break from traditional stereotypes continued in the thirties, forties and fifties throughout building many mosques in Western countries, such as Al Rashid Mosque in the city of Bani in Edmonton, Alberta, Canada In 1938 AD. Architectural

experimentation during that period was not accompanied by a theoretical development of mosque architecture, it depended entirely on mosque heritage architecture, merging it with local elements in places where these mosques were erected. This can be seen in Al-Mursi Abu Al-Abbas Mosque built in Alexandria in 1943. It reveals an attempt to restore the visual type of Mamluk mosques in Cairo as exemplar in mosque architecture.

It is notable that European **neoclassical** school had a clear impact on the continued historical mosque architecture in that period, especially since European designers built many mosques at the end of the nineteenth century and the first half of the twentieth century when neoclassicism was prevalent in architectural practice in Europe. Theoretical and intellectual premises were not original or appropriate for mosque architecture, but were consistent with the prevailing mental image desirable to be repeated in mosque architecture, therefore such practices did not encounter significant objections.

It is interesting to note that some Arab and Islamic cities such as Cairo and Istanbul have been undergoing major modernization process since the end of the nineteenth century and during the first half of the twentieth century. They were never far from what was happening in the West and Europe experimentation with modern architectural ideas. Many of the buildings built in these two cities were influenced by the emergence of international style in the 1930s and adopted modern school principles, as many Egyptian and Turkish architects have adopted this style. However, this was in isolation from mosque architecture, as it appears that mosque has remained a historical image that should remain unchanged or even developed.

#### **Transformation and experimentation: mosque architecture between 1950 to 1980**

Perhaps mosque architecture needs more attention in the twentieth century, specifically the beginning of the second half of the century. It seems that global stability after the end of World War II and the establishment of the United Nations and the escalation of independence movements against colonialism, was accompanied by tendency to build national mosques that symbolized identity and independence, and it was necessary to express the concept of the modern State associated with the new world after independence.

One of the important examples that express this experimental approach is the National Mosque (Bayt Al-Makram) in Dhaka, Bangladesh, which was a response to political need, in particular. Construction began in 1959 and done in 1968, and was designed by Indian architect Abdul Mohsen Thariani. This mosque reflects **era of transformation** in mosque architecture, which seem to represent the end of tradition in recent centuries. The period between 1950 and 1980 was important period in which many examples emerged that caused controversy about mosque architecture to this day.

In 1963, the Malaysian architect Haruddin designed the National Mosque in Kuala Lumpur. This mosque represents an evolutionary dimension in the architecture of mosques, as the architectural design deviates from the stereotypes inherited in traditional mosque architecture, whether at the level of architectural formation or at the level of employment of unprecedented building materials. It also devotes symbolism and functionalism in architectural design in an integrated manner without departing from the concepts of architecture in the twentieth century.

Masjid Negara is a national legacy, which built between 1963 and 1965. The idea to build a national mosque to memorialize Malaysia's independence was suggested by the Federal Executive Council a month before independence ceremony. The Chief Ministers of all eleven states in the-then Federation of Malaya brought up a proposal to name the mosque after the country's first Prime Minister, Tunku Abdul Rahman Putra Al-Haj in March 1958 to recognize his contribution to the country's independence. However, Tunku had declined this honour and suggested that the mosque be named Masjid Negara instead, to symbolize the country's unity and multi-cultural harmony, as well as a way to give thanks to Allah for the country's peaceful Independence.

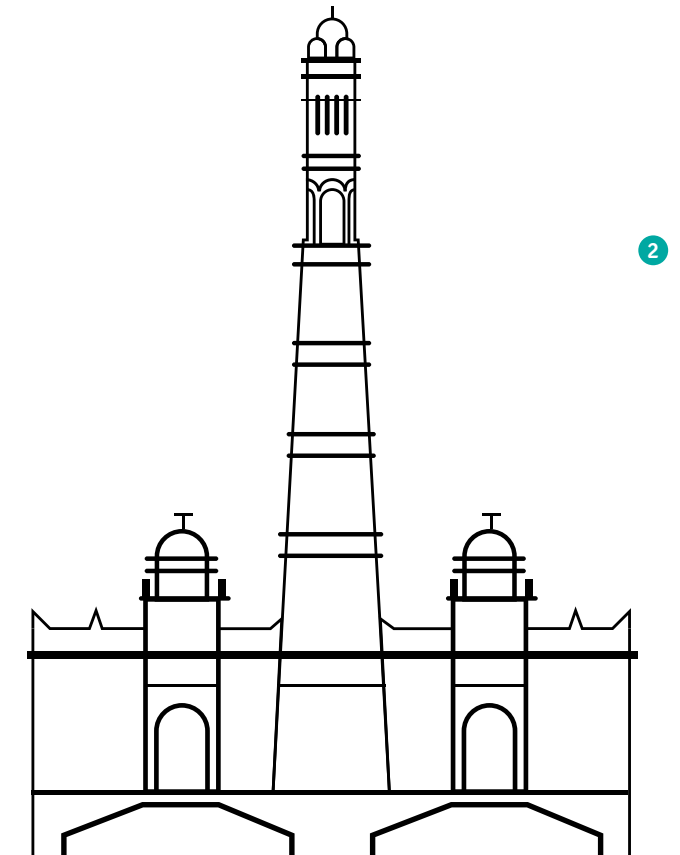
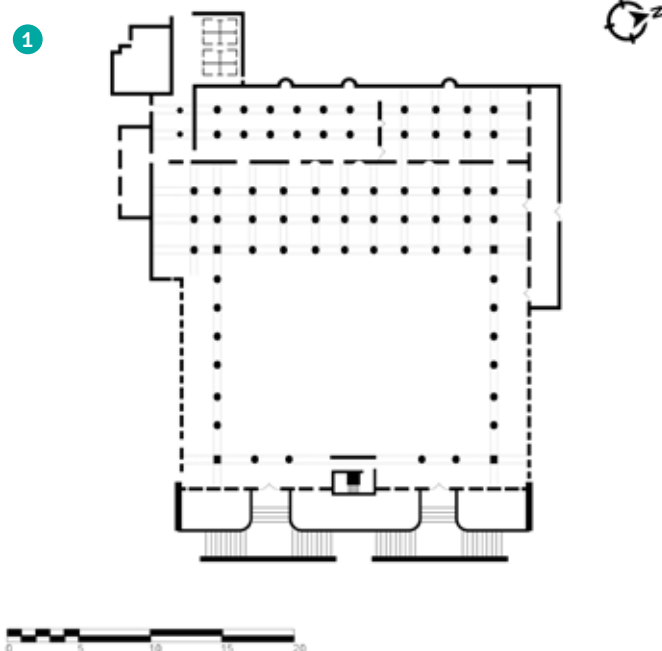
The Mosque took about three years for designing, taking inspiration from the mosque in India, Pakistan, Iran, Turkey, Saudi Arabia, the UAE and Spain. Its most significant features are its 73-metre high minaret, which resembles a folded umbrella, and its 16-point concrete roof's unique design gives one the impression of standing beneath a gigantic open umbrella. In the middle of the roof are engravings of Quranic verses on aluminium, inspired by Istanbul's Blue Mosque. The mosque had undergone major renovations in 1987, replacing the colour of the concrete dome from pink to a more striking green-and-blue.

It is one of the largest mosque in Southeast Asia which can accommodate up to 15,000 people. National Mosque was designed by a group of three architects. The 18-pointed star dome represent the 13 states of Malaysia and five pillars of Islam. The main dome was once pink concrete, underwent a major renovation is now clad with blue and green tiles. There is only one 75 feet minaret that sound the call to prayer. National Mosque is located at the heart of the Kuala Lumpur city.

The design of this mosque represents a turning point in contemporary mosque architecture, as it is characterized by boldness through employment of Modernist ideas mixed with reinterpretation of elements of Malay architecture, where columns

1 Ground floor plan, Al-Mihdhar mosque

2 Elevation, Al-Mihdhar mosque





of the mosque represent the stems of coconut palms. The mosque was raised from the ground in reference to traditional Southeast Asian architecture that avoids streams of water raising its buildings.

It appears that the sixties was a period of experimentation in mosque architecture and was characterized by boldness and development, as Tooba Mosque, built in 1969, was part of the structural experiment that distinguished world architecture in that period showcasing building complex structural buildings.

Tooba Mosque is located in Karachi, Pakistan, designed by the architect Dr. Babar Hameed in 1969, with area 4657 square meters, it accommodates 5,000 worshippers. Construction began in September 1966 and was completed in November 1969. The built up area is 4,657 square meters. The dome has diameter of 64 square meters and the minarets height 36 m. Tooba Mosque, known regionally as “Gol Masjid”, is a distinctive and beautiful design located in the Defensive Housing Authority in Karachi. The Tooba Mosque is mostly claimed to be the greatest single dome in all around the globe. It is also considered to be largest tourist attraction in Pakistan.

This mosque is entirely developed with white marble. The diameter of dome is almost 65m and its level on low encircling wall with no middle pillars. The Tooba Mosque is composed of only one minaret standing 37m in altitude. The Masjid-e-Tooba primary prayer hall has a potential of covering 5000 people. It was established keeping audibility in mind. An individual talking inside one side of the dome can be listened at the other side. There is a lush green lawn outside to make some space so that visitors can walk around and praise its beauty by saying Subhan’Allah frequent times. It is an embellished impressive masjid and significant symbol of Islamic Culture.<sup>51</sup>

Another mosque in Pakistan that represents changes in mosque architecture in the twentieth century is the King Faisal Mosque in Islamabad, was designed by the Turkish architect and invited Ali Dalukai after he won an international course for the mosque was organized in 1969 and was completed in 1987 and has an area of about 54,000 square meters. So it expresses the bold 1960s architecture full of new ideas and an attempt to break out of the traditionalism that once dominated the rest of mosque architecture in the world.

King Faisal Mosque is one of the largest mosques in the world. Its location was chosen by the President of Pakistan, Marshal Ayub Khan. The purpose of choosing this site was to design a modern city distinct from the past. It is located at the north of the city’s main approach Shahrah-e-Islamabad against the backdrop and at the foot of the picturesque Margalla hill. Therefore, it created a focal point of the capital, to command the entire panorama of the city and to ensure visibility during day and night. The mosque was designed when King Faisal bin Abdul Aziz visited Pakistan in 1966 and it was built at his majesty’s expenses as a gift to the people of Pakistan.

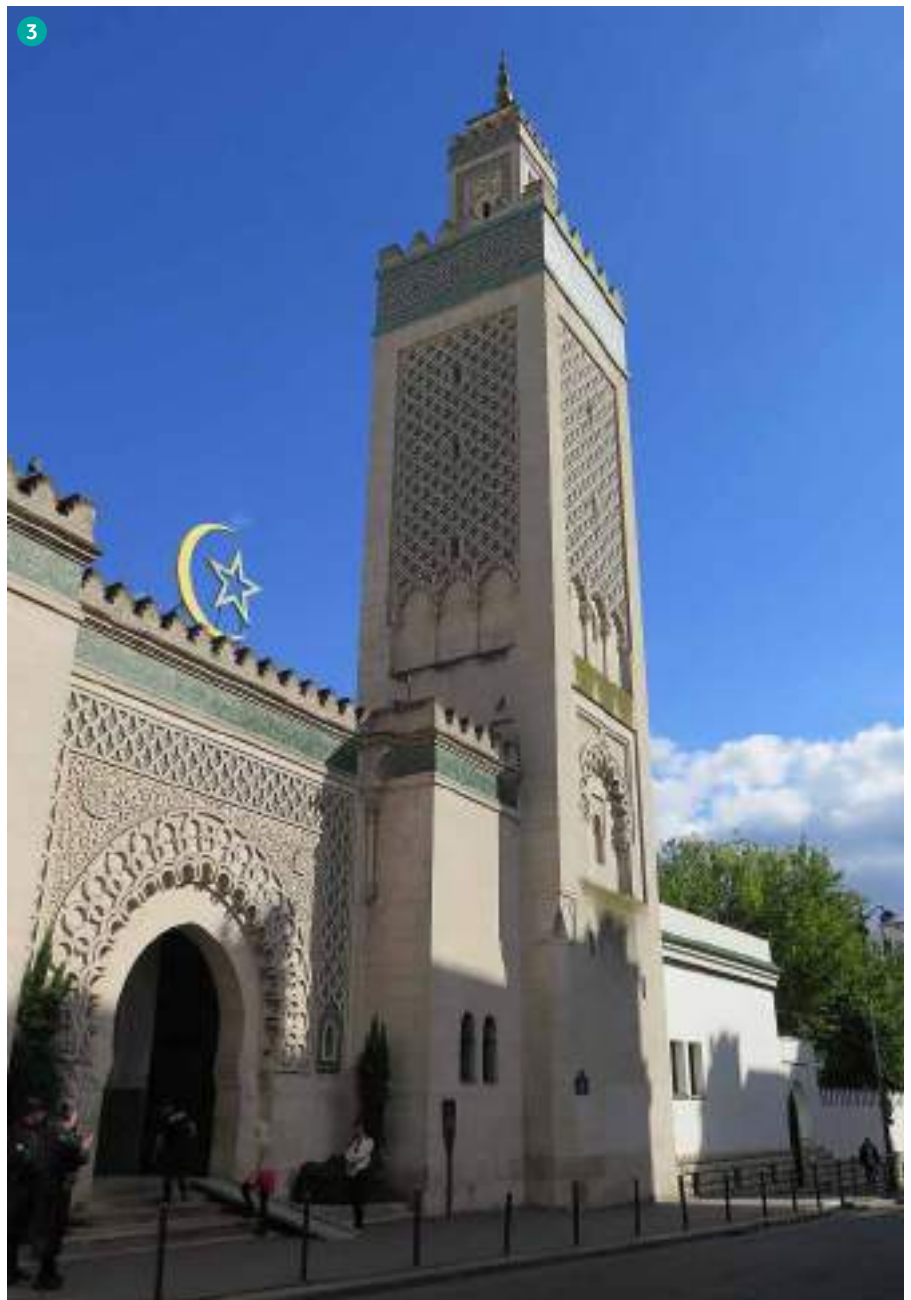
The master plan is developed on a grid system with an apex towards Margalla Hills. The main concept that Dalokay achieved in King Faisal mosque was to present the mosque as a crown for the modern capital, Islamabad. Where he developed his concept based on Quranic guidelines. The context, modernity, monumentality and a valuable heritage from resent generation to the coming ones all are the main design consideration that help Dalokay to achieve in the King Faisal mosque. Moreover, the mosque is not close with a boundary walls as any other mosques, but instead it’s an open to land. The dome in his design was unusual, where he used an Arabic design instead of having a dome to resemble and to be an extension of the Margalla Hills. The geometric concept was taken from the Kaa’ba. As Dalokay said “The main theme in the design of Shah Faisal mosque is the joy of living”

The designer started the layout strategy taking in consideration the main two axial to the city, where the main building of the mosque is organized symmetrically. Also, a large fountain raised on a platform leads to the entrance in the east preceded by main courtyard.<sup>52</sup> It is important to emphasize that the group of mosques built during this

1 Minaret and facade details , Al-Mihdhar mosque

2 Grand mosque of Paris

3 Strong influence of Moorish architecture on the facade of the grand mosque of Paris

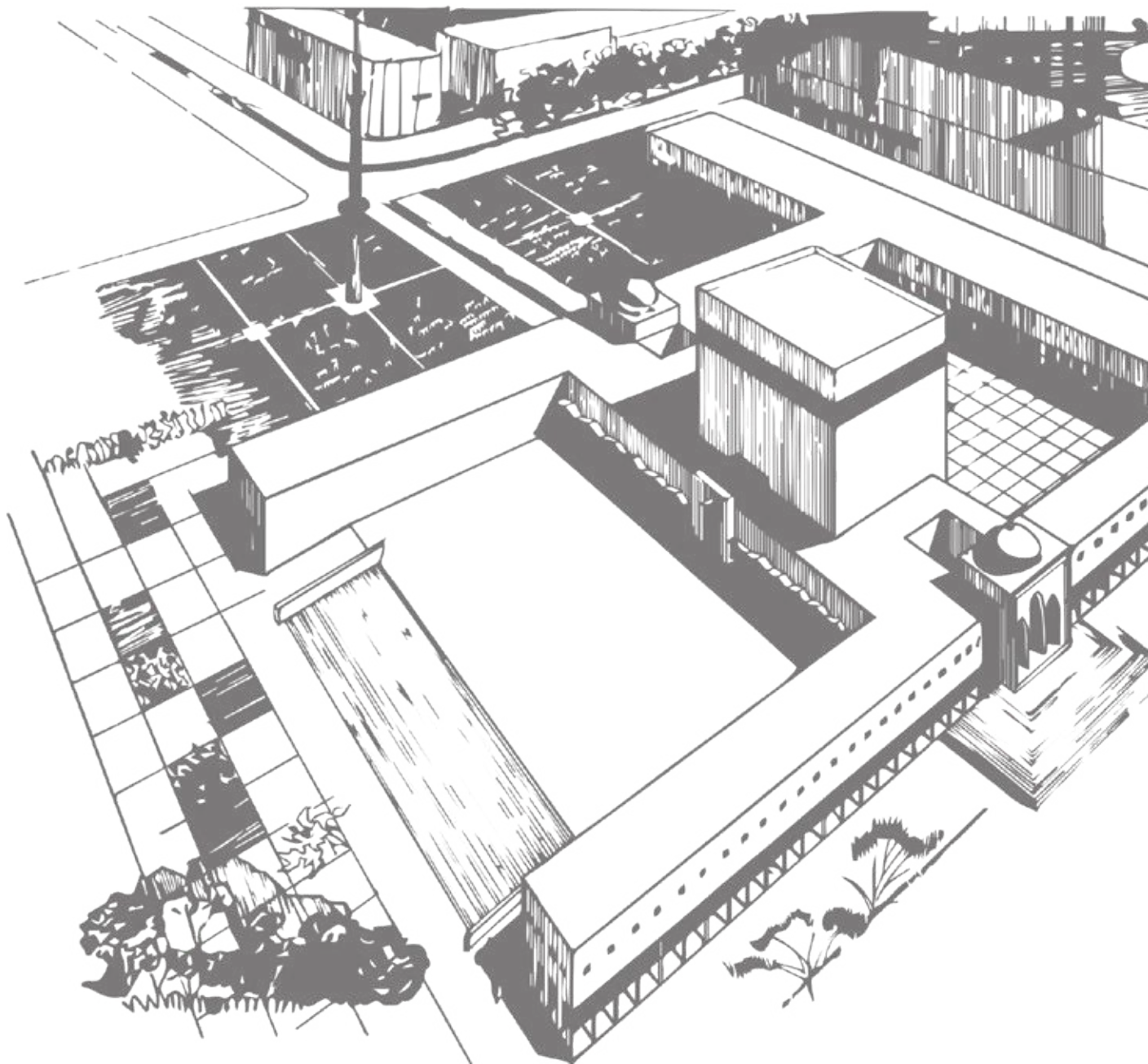


period attempted to bring about a change in intellectual paradigm that was revolving in historical mosque architecture, and has had a clear success in changing many ideas that locked up the mosque in a specific continuous way. However, this limited success has not changed the state that characterizes mosque architecture to date.

Another example is the evolution of mosque architecture in the second half of the twentieth century, it represents a departure from tradition. The historical design of the mosque is embodied by Nilin Mosque in Sudan. This model represents a different proposition, whether in terms of spatial formation or building materials used.

It was built in the seventies during the era of Nimeiri, and is one of distinguished religious architectural places. It was opened on Friday 24 September 1984 AD.

It is located on the confluence of the two rivers, the Blue Nile and the White Nile at the entrance of Omdurman. The location of Al-Nilin Mosque is the closest location to the Nile and is therefore considered the largest mosque on the Nile from its source to its mouth in the Mediterranean. It is also distinguished for being next to the National Council, and embraces the Faculty of the Holy Quran, the pearl of the U of HQUIS's faculties. The location of the mosque overlaps through its view of the three cities with the meeting points of the sides of the triangular city. The mosque design was proposed by a student in the Department of Architecture at the University of Khartoum, and selected for construction by the President of Sudan. The design is characterized by a circular structure mounted by a lightweight aluminum space-frame in the form of a hemispherical dome. This design is unusual in mosque architecture historically, as it provides a creative model in dealing with the mosque. However, it is a single volumetric mass containing various functions, depending on the construction idea, by borrowing half of the dome in a way it contains superimposed projections that act as a recurring and superimposed structural unit that forms from the same ground openings.

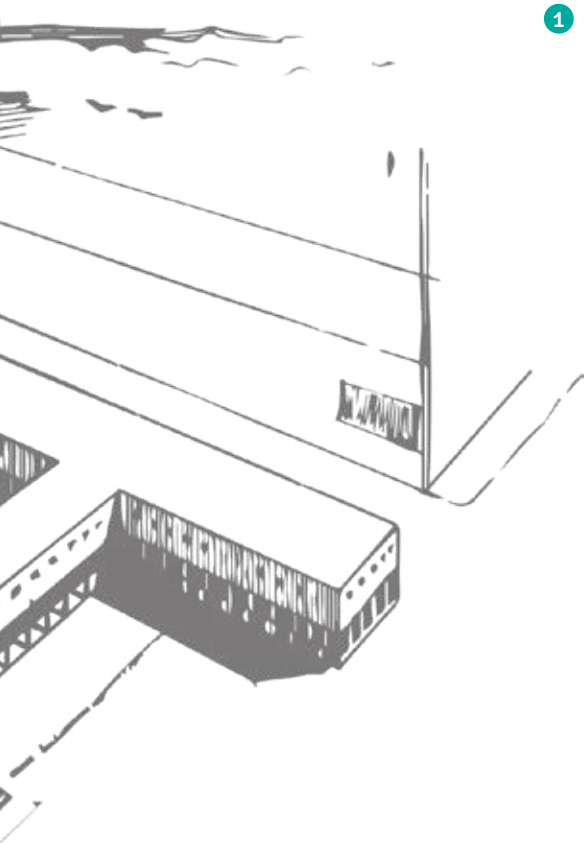


The mosque interior is lavishly decorated with geometrically patterned timber ceilings and plasterwork. Adjacent to the prayer space are twelve octagonal pavilions that house a school, library, and exhibition space.

The Nilin Mosque and its annexes are designed to reflect the integration between the beauties of the gradation of its height and the artificial mound it was built on. This harmonizes with the glory of its significance, the service of faith and the supreme purposes of religion. The most important is the geometric patterns of the domes and their direction towards the Qibla on which the architectural design of the mosque and its annexes was based.

That period could be concluded with the Islamic Society Mosque in North America, which is modified mosque architecture that uses geometric spaces to produce a design that supports functional integration between more than one element to express community spirit of mosque.

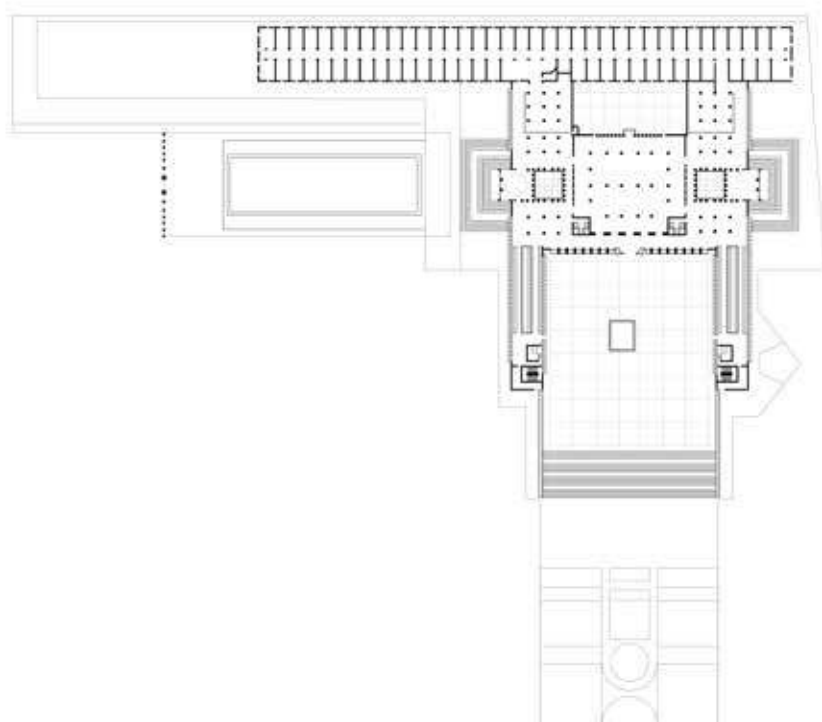
Located in Plainfield, Indiana, USA. In 1979, the Islamic Society of North America (ISNA), an off-shot of the Muslim Student Association founded in 1963, invited the architect Gulzar Haider to design a headquarters mosque for the society in Plainfield. The mosque was completed by 1981 and has been in use since 1982, and includes prayer space, a library, and administrative offices.



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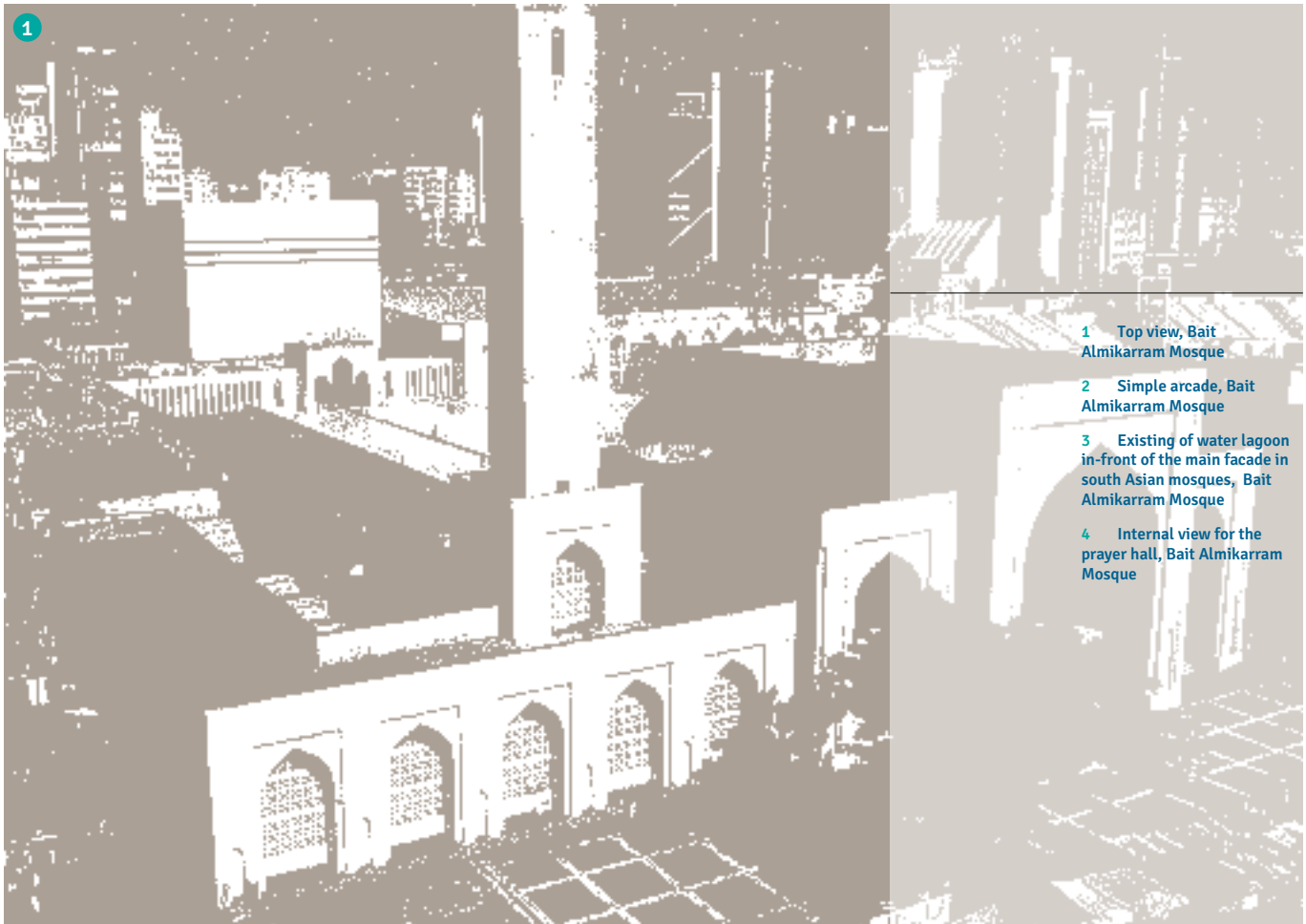
1 Sketch for Bait Almikarram Mosque

2 Ground floor plan of Bait Almikarram Mosque



2





The mosque is situated among cornfields and approached by a long driveway. The plan is based on the square and its subdivisions, and the exterior elevation consists of a central cube surrounded rectangular volumes of various heights. The brick exterior is largely unadorned and is broken up by rows of standard rectangular windows and keyhole-shaped windows, as well as four large round second-story windows. A courtyard paved with rectangles of concrete and brick, with a fountain, runs along the northwest face of the mosque. Externally, there are no traditional elements of Islamic architecture, and the mosque is an example of what Omar Khalidi calls an **innovative design** in American mosque architecture. There is no minaret, or visible external dome, though three internal domes are present.

The plan of the prayer hall is of two squares imposed on each other, forming an eight-pointed star. A dome on a two-story drum is centered over the prayer hall. Like the exterior, the interior is plain and lacking in ornament. The large round windows with geometric motifs let light into the interior space and casts shadows of the geometric shapes.

This period was characterized by three main features, first it is a period of independence for many Islamic countries, thus it was necessary that mosques, which have long been employed politically, to move on to the realm of modern world. Second is the emergence



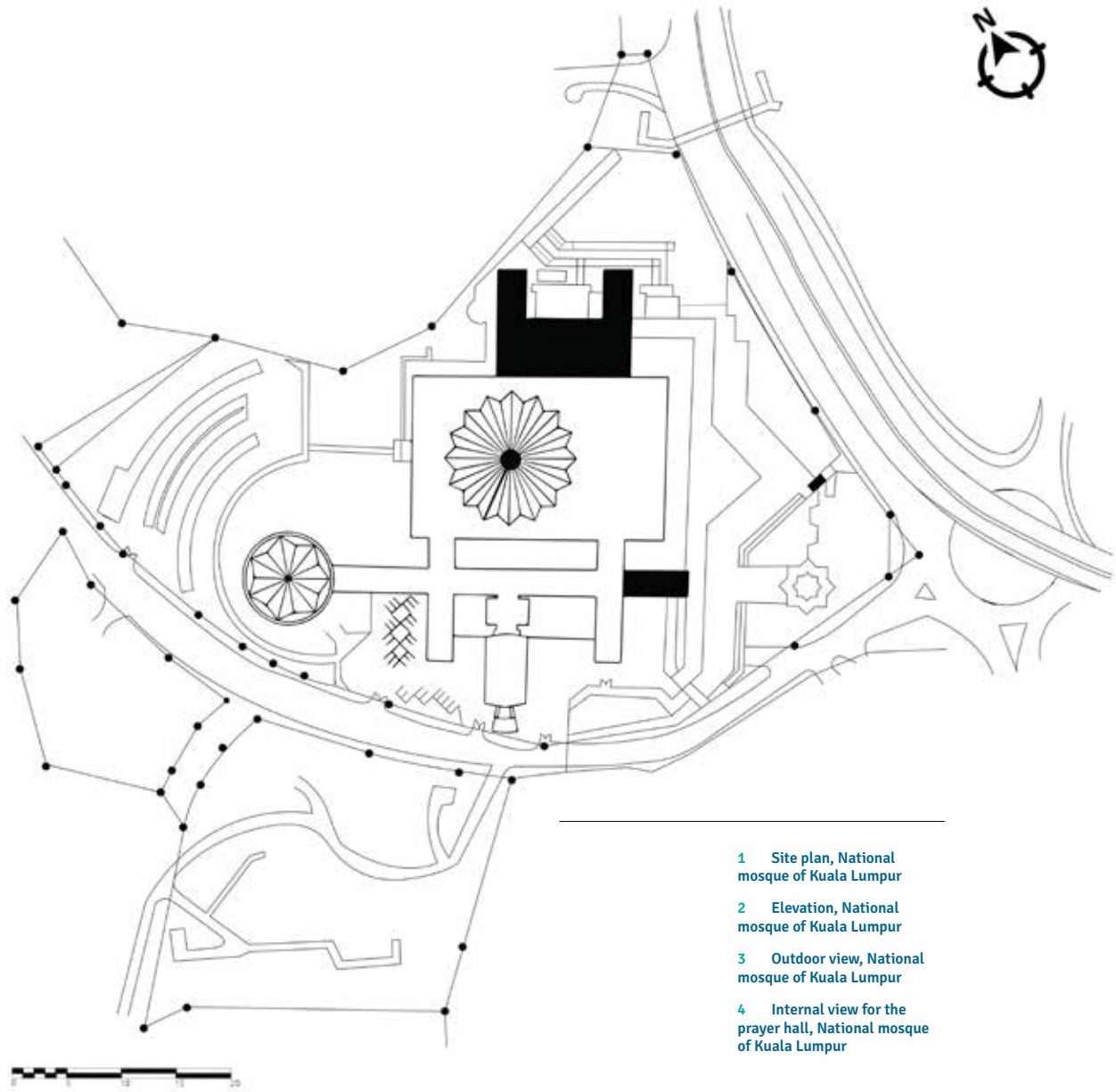


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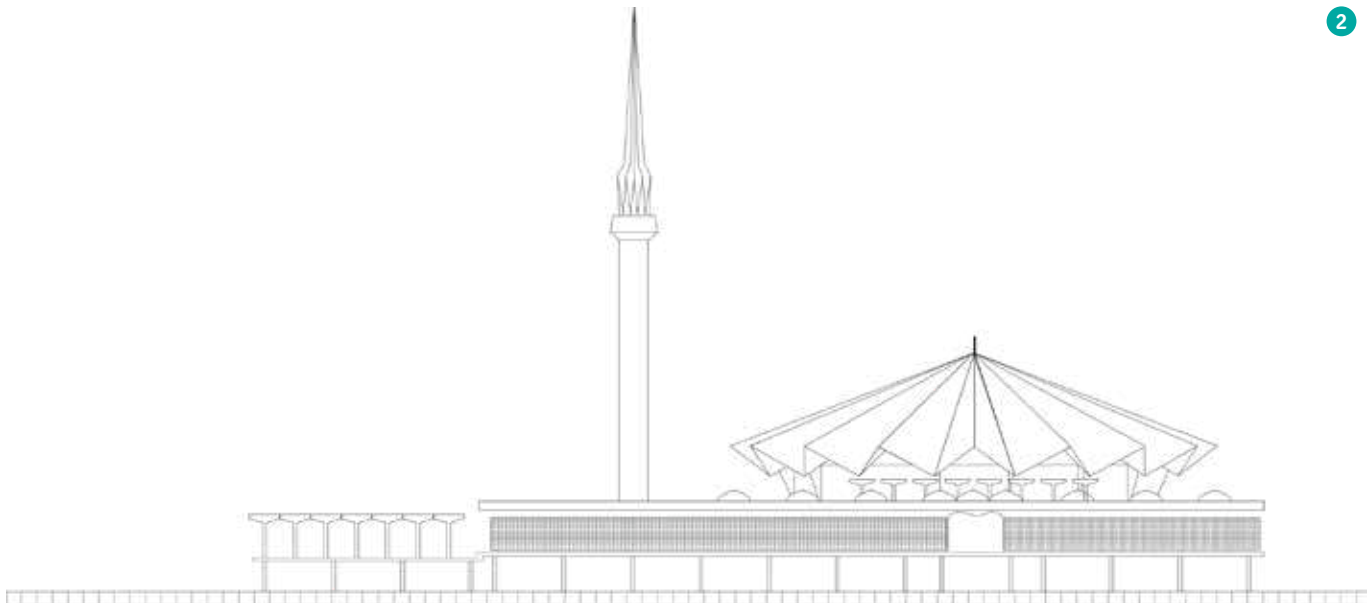
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- 1 Site plan, National mosque of Kuala Lumpur
- 2 Elevation, National mosque of Kuala Lumpur
- 3 Outdoor view, National mosque of Kuala Lumpur
- 4 Internal view for the prayer hall, National mosque of Kuala Lumpur

2







1

of highly qualified local architects who believed in the principles of modernity and led architecture of that period. Third is that mosque architecture was affected by period of structural experimentation that characterized architecture of the sixties, some mosques emerged as structural, geometric experiments, handled ably.

In general, this **revolutionary** period in mosque architecture resisted the historical trend and formed the true turning point for current questions about future mosque architecture because it strongly suggested the relationship between form and content and emphasized that mosque can go out of its historical style as long as it maintains its functional and deep spiritual content. That era can be viewed as revolutionary that tend to create parallel new heritage, though it was short and soon declined ending up with mosque architecture within deep state of instability and hesitation.

#### **Instability and the return to traditionalism: Mosque architecture between 1980 and 2000**

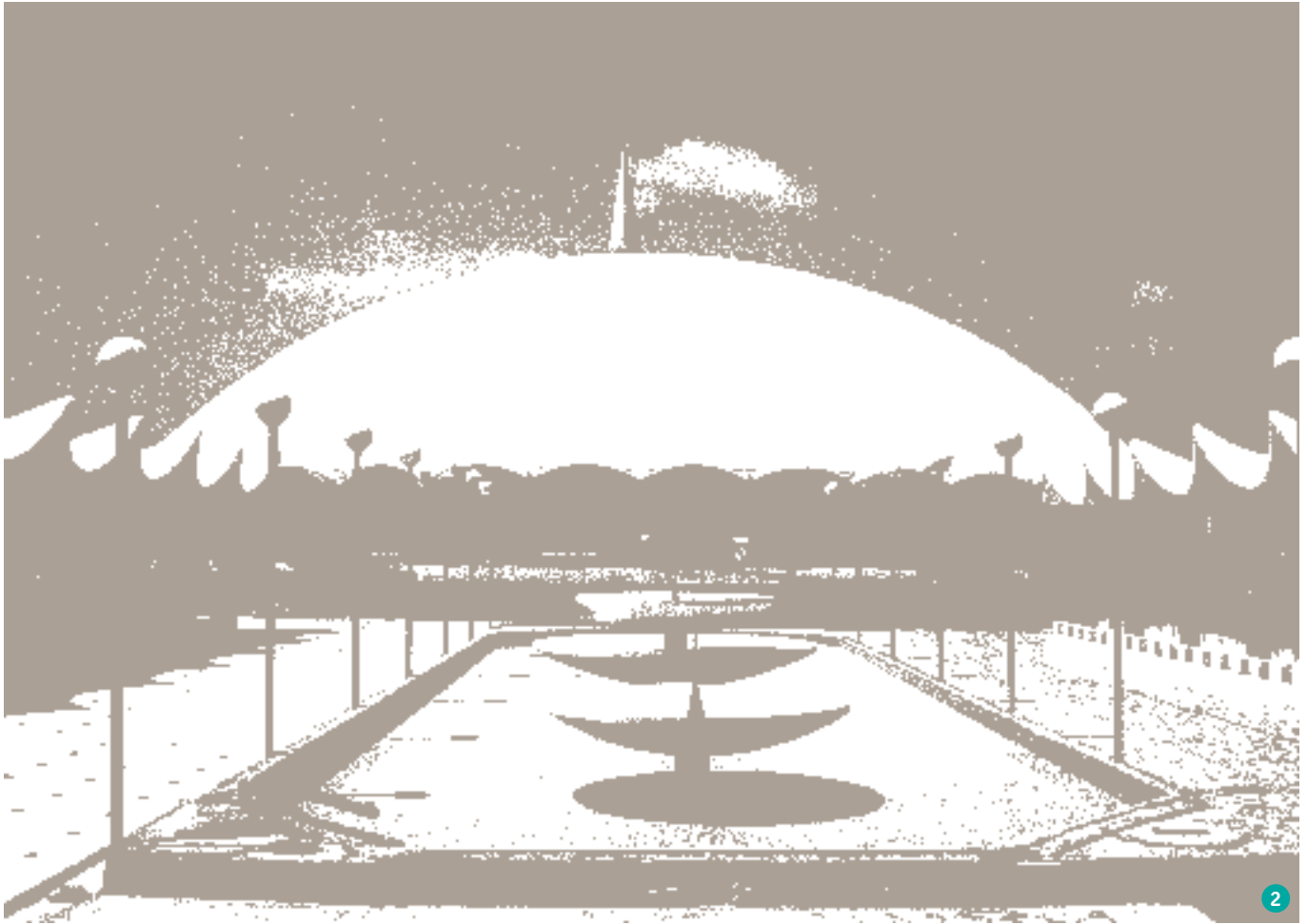
If we try to link mosque architecture to the architectural intellectual context in the last two decades of the twentieth century, we note the influence of postmodern architecture and the return to local and regional architecture. This return created a kind of hesitation already existed, which caused mosque architecture not to depart from the historical mental image. Mosque architecture in the last two decades of the twentieth century cannot be compared to the preceding period in terms of audacity, innovation and creativity.

Sharaf al-Din Mosque (the White Mosque) built in 1980 restores mosque architecture to its human level. It relies on simplicity in formation in terms of functional and sensory, but it works to prevail over the concepts of community participation, the ability to shape architectural spaces and link their formative structures to both social and religious activities and behaviours. This mosque can be considered a continuation of the previous period through its boldness and innovation of new forms.

1 Internal view for the prayer hall of Tooba Mosque in Pakistan

2 The huge dome Tooba Mosque in Pakistan

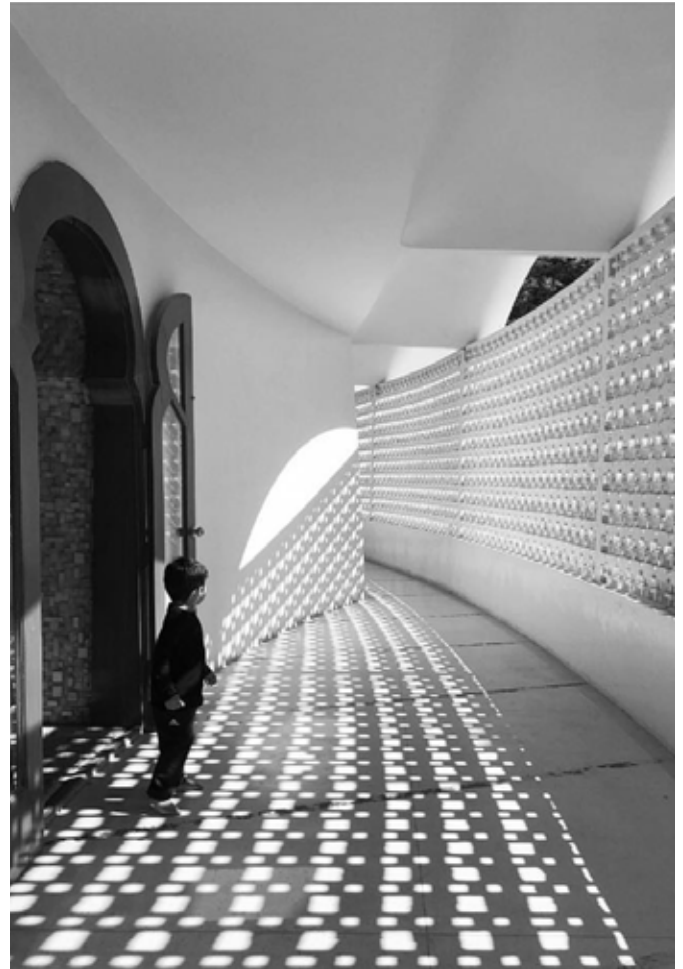
3 Internal details of Tooba Mosque in Pakistan



2



3



The mosque includes five functional areas. The central space of the mosque is designed both for praying and other religious activities such as lectures and discussions. The indoor area for praying is an annex building. The annex consists of a small auditorium and an office. Traditionally, in Bosnian mosques, graveyards act as a buffer between mosque and other buildings, but in this case the graveyard is isolated. Architect Zlatko Ugljen used the traditional layout of Bosnian mosques which consist of a courtyard leading to a square praying area, over which rises a cupola. The difference is in an unusual arrangement of this concept, where large glass panels make this mosque even better integrated with the rest of the building. The five roof windows symbolize five core principles of Islam, but also shafts light on key areas of the interior. The southeast facade of the cupola is faced toward the Ka'ba. Fountains, pulpit and other decorative elements are simple, just like the calligraphy in the interior which is simple and readable.

Both the interior and exterior of the mosque are painted white, while the beige colour was used for the floor, and green for a few metallic elements, like frames and tubes. Plaster Building materials were plastered concrete for walls and cupola, white mortar for the inner walls, a combination of pine wood and white mortar for surfaces of many interior elements, local travertine tiles for exterior paths and

- 1 Prayer hall at King Faisal Mosque, Pakistan
- 2 Structural and decorative elements in the prayer hall, King Faisal Mosque, Pakistan
- 3 Elevation, King Faisal Mosque, Pakistan



courtyard paving, and iron tubes for minarets, while the floors inside the mosque are covered with green carpet.

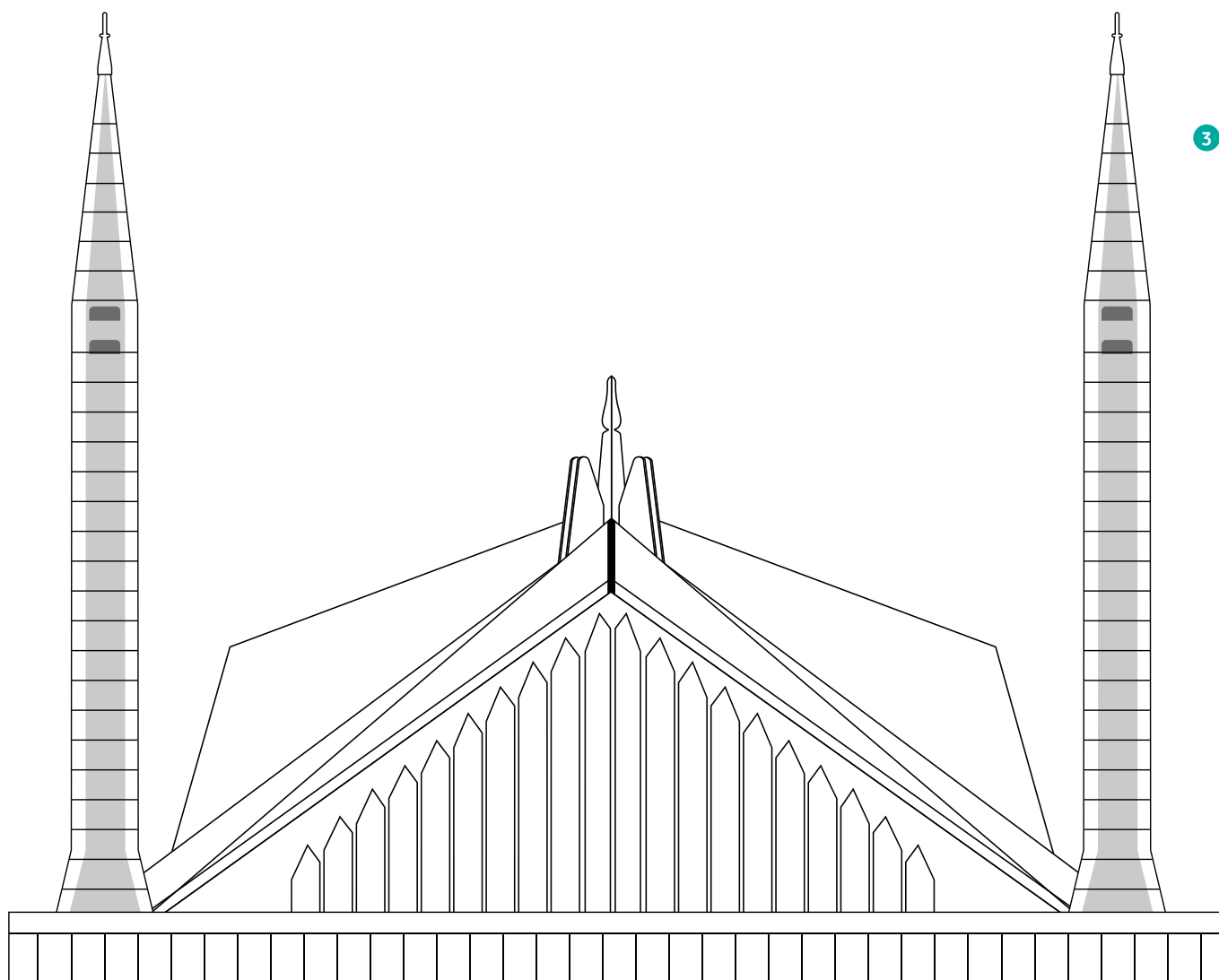
Designed by architect Zlatko Oglin, with dr. Malkin, the craftsman Ismet Imamovich, and the contractor Zvijda. The Aga Khan Development Network Award listed this mosque as one of the most valuable modern mosques built in Bosnia and Herzegovina. The mosque serves as a religious and intellectual centre for its community. Its geometrically simple plan encloses a complex, slope-ceilinged, skylit volume, pure, abstract, sparsely ornamented and painted white. The archetypal Bosnian mosque has a simple

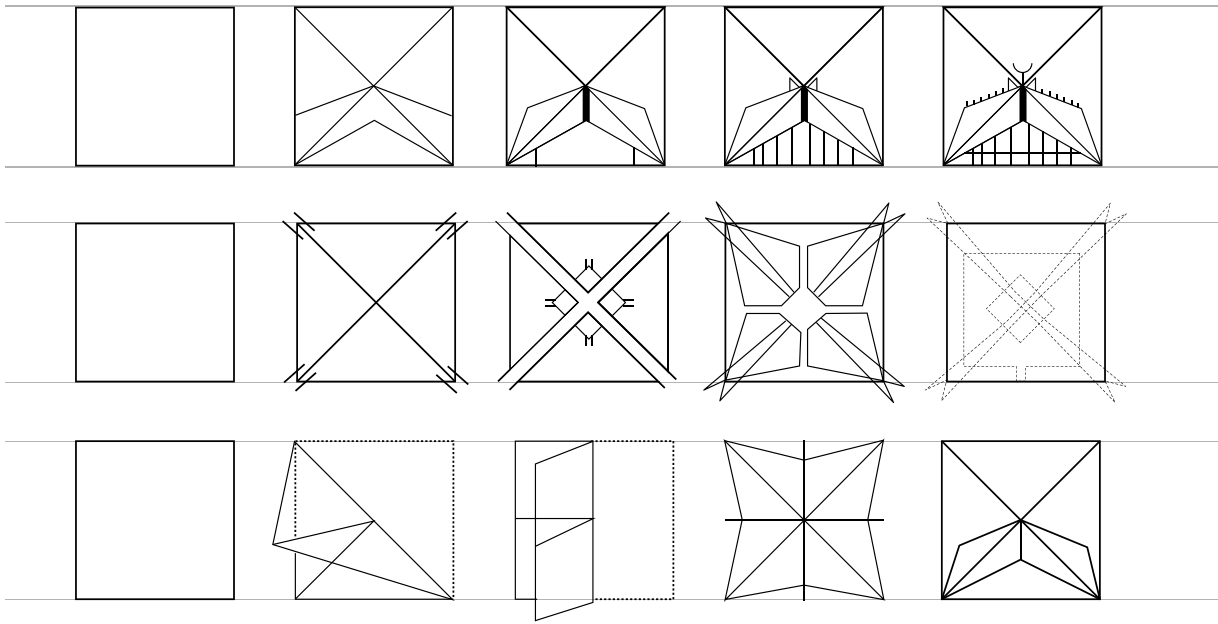


square plan crowned by a cupola and entered by means of a small porch. The White Mosque's plan conforms to the archetype, but its roof is a freely deformed quarter of a cupola, pierced by five skylights, themselves composed of segments of quarter cupolas. The effect is one of confrontation between the elementary plan and the sophisticated hierarchy of roof cones. The principal symbolic elements, mihrab, minbar, minaret and fountains, have a fresh folk art character subtly enhanced by the avant-garde geometries of their setting.<sup>53</sup>

Mosque architecture continued in the state of indecision in that period, as it was between two directions: the first associated with historical mental image of mosque architecture and the second tries to get out of that image and present new related experiences in the contexts of global architecture. The Kerman University mosque in Iran represents this case. This mosque is uncommon in the sense it resembles symbols in Islam, such as the Holy Kaaba. It is an attempt to literally imitate with a tendency to abstraction and to simplify functional aspects and highlight symbolism through visual urban formations.

The example of Kerman University in southeastern Iran is a particularly local and unusual experience. This University started life as a private institution in 1972, but after the Iranian Revolution





- 1 Analytical sketches for the geometry, King Faisal Mosque, Pakistan
- 2 External view, King Faisal Mosque, Pakistan
- 3 Site plan, Nilin Mosque, Susan





it was taken over by the Ministry of Culture and Higher Education when construction work started in its second phase, which included the mosque, in 1985. The university mosque, with a capacity of about 150 worshippers, was completed in 1989. The building is given a visible position through its location on the edge of the campus, at the entrance to the main vehicles.

One of the unusual aspects of design in the history of building mosques anywhere in the Muslim world is to appear that the Kaaba cube in Mecca was a model, the type of brick on a large scale seems to have become fashionable in mosque architecture in Iran since 1980.

The isolated, elevated cube on a hill contains a memorial or tomb more than a mosque. The hill is traversed by two ways of entering that lead to the covered ablution area and a courtyard on the ground floor surrounded by a granite wall. The ablution area receives light from the yard. The cubic prayer hall, which measures 14 by 14 meters, can be reached with two similar flights of stairs from the ablution area. The hall is largely illuminated by sunlight flowing from the top, and the domed ceiling suspended on spread the light on three walls. At night the same effect is produced by artificial lighting. The walls on the outside are decorated with a set of inscriptions in calligraphy executed in square kufic script. The

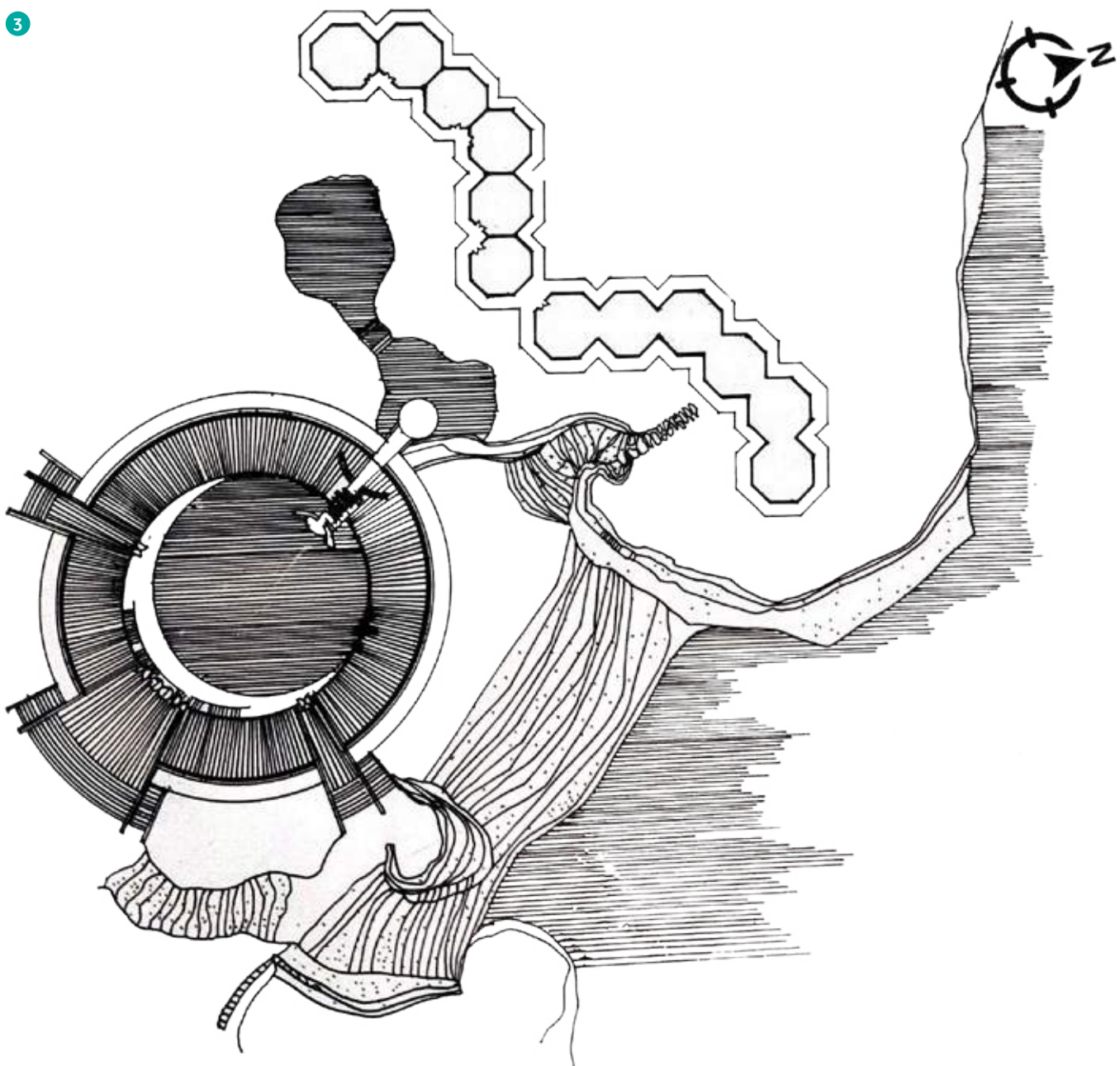
Qibla wall features a narrow vertical crevice filled with a translucent marble plank. The continuous luminous part, on which the word of God is inserted, forms a contemporary and creative expression of the mihrab.

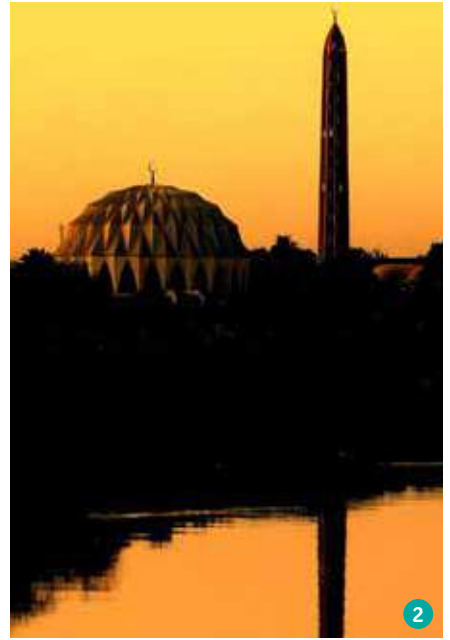
As for the example of the Sultan Salahuddin Abdul Aziz Shah Mosque, it reflects in its architectural formations the period of the mosque's historical development to express the official character of the state that prevailed in successive periods outside the Arabian Peninsula. The architectural elements borrowed in the mosque express this historical evolutionary dimension, through major large dome dominates the entire urban formation.

in 14 February 1974 Shah Alam was declared the new capital for Selangor state. 1 October 1983 Commencement of construction work. 15 August 1987 Construction completed. 11 March 1988 Launching ceremony of Blue Mosque was held by His Royal Highness Sultan Salahuddin Abdul Aziz Shah. August 1993 The mosque was listed in the Guinness Records as having the tallest minaret in the world before being surpassed by the Hassan II Mosque.

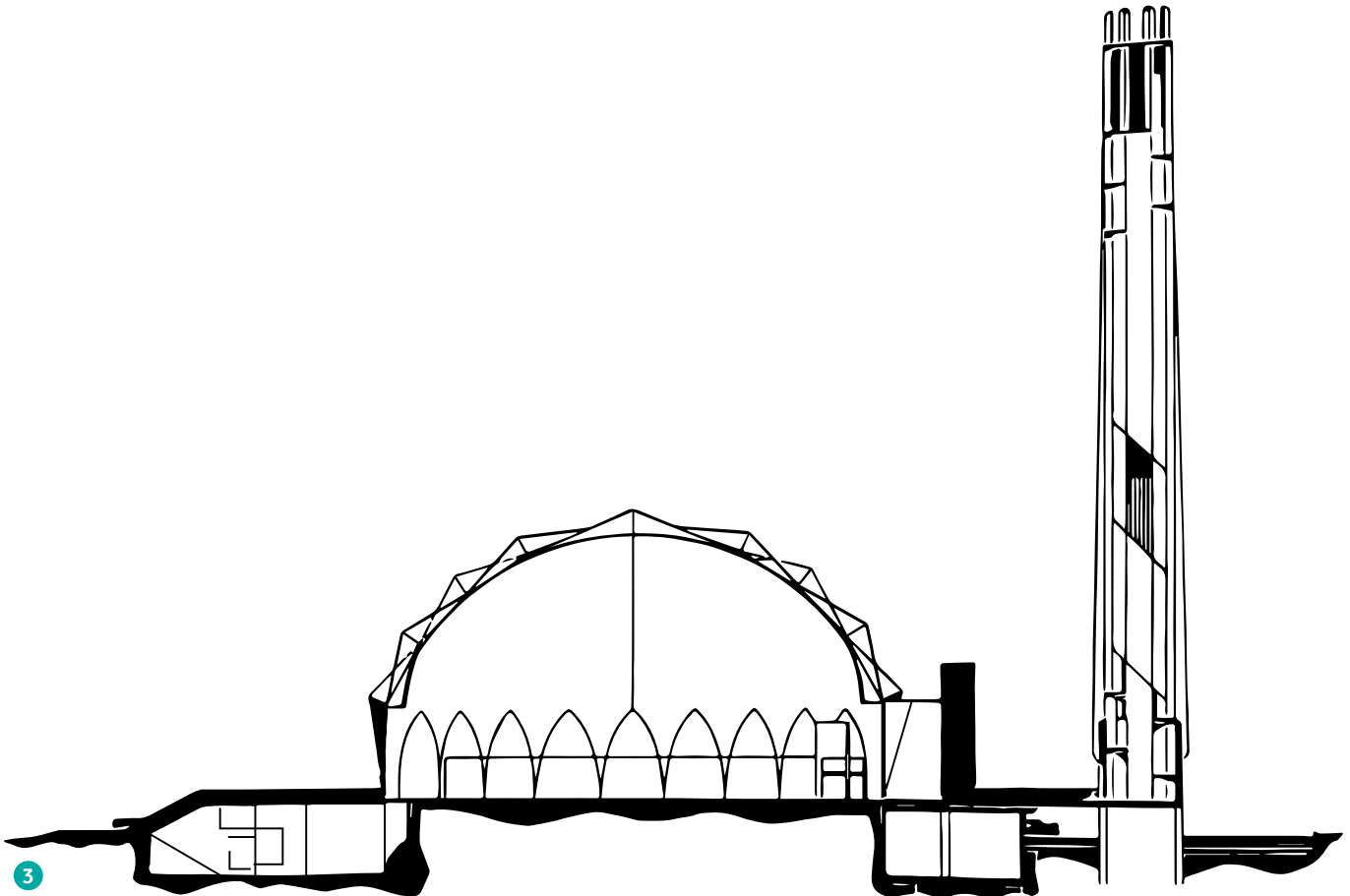
Architectural design is a mixture of Malaysian style and modernity. The mosque accommodates 24,000 worshippers, which is large enough to be seen on a clear day in some distinct places in Kuala

3





- 1 Top view, Nilin Mosque, Sudan
- 2 Natural surrounding, Nilin Mosque, Sudan
- 3 Section, Nilin Mosque, Sudan
- 4 Ground floor plan, the Islamic Society of North America (ISNA), Plainfield, Indiana

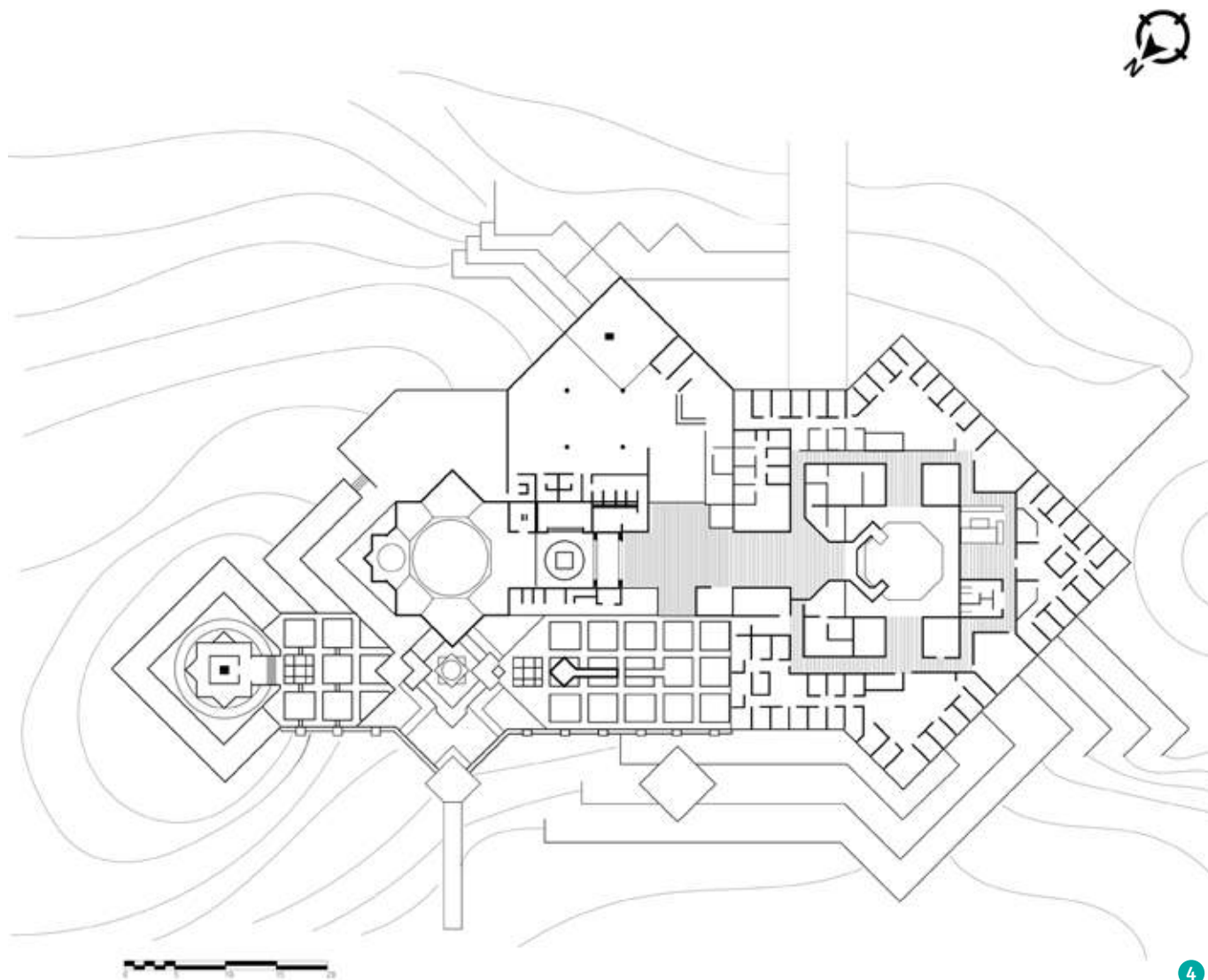


Lumpur. The main dome of the mosque is 51.2 meters high and 106.7 meters high from the ground. Constructed primarily of aluminum, the minarets were constructed at the four corners, with a height of 142.3 meters.

Elements of Malay and Islamic architecture are incorporated into the finishes of the building. Fine decorative khat (Arabic calligraphy) can be seen on the inner curve of the dome and parts of the walls. The calligraphy work was executed by the Egyptian calligrapher Shiekh Abdel Moneim Mohamed Ali El Sharkawi. Aluminium grills of intricate design can be found on the doorways, windows and walls of the Mosque. The windows are fitted with blue stained glass to reduce the amount of light that can enter the hall. The resulting filtered illumination renders a bluish ambiance to the interior spaces evoking a sense of peace and serenity. The high ceiling has triangular panels of red balau and ramin timber wood that are set in crisscrossing pattern. The dome is constructed of aluminium and the outer surface is clad with vitreous enamel-baked triangular steel panels decorated with a rosette of verses from the Qur'an. The main prayer hall is over two levels, is fully carpeted and air conditioned and is one of the largest spaces in the world. The upper gallery of the prayer hall is reserved for the use of female worshippers. The second floor houses a gallery, the ground floor contains the administrative office, conference rooms, library, reception and

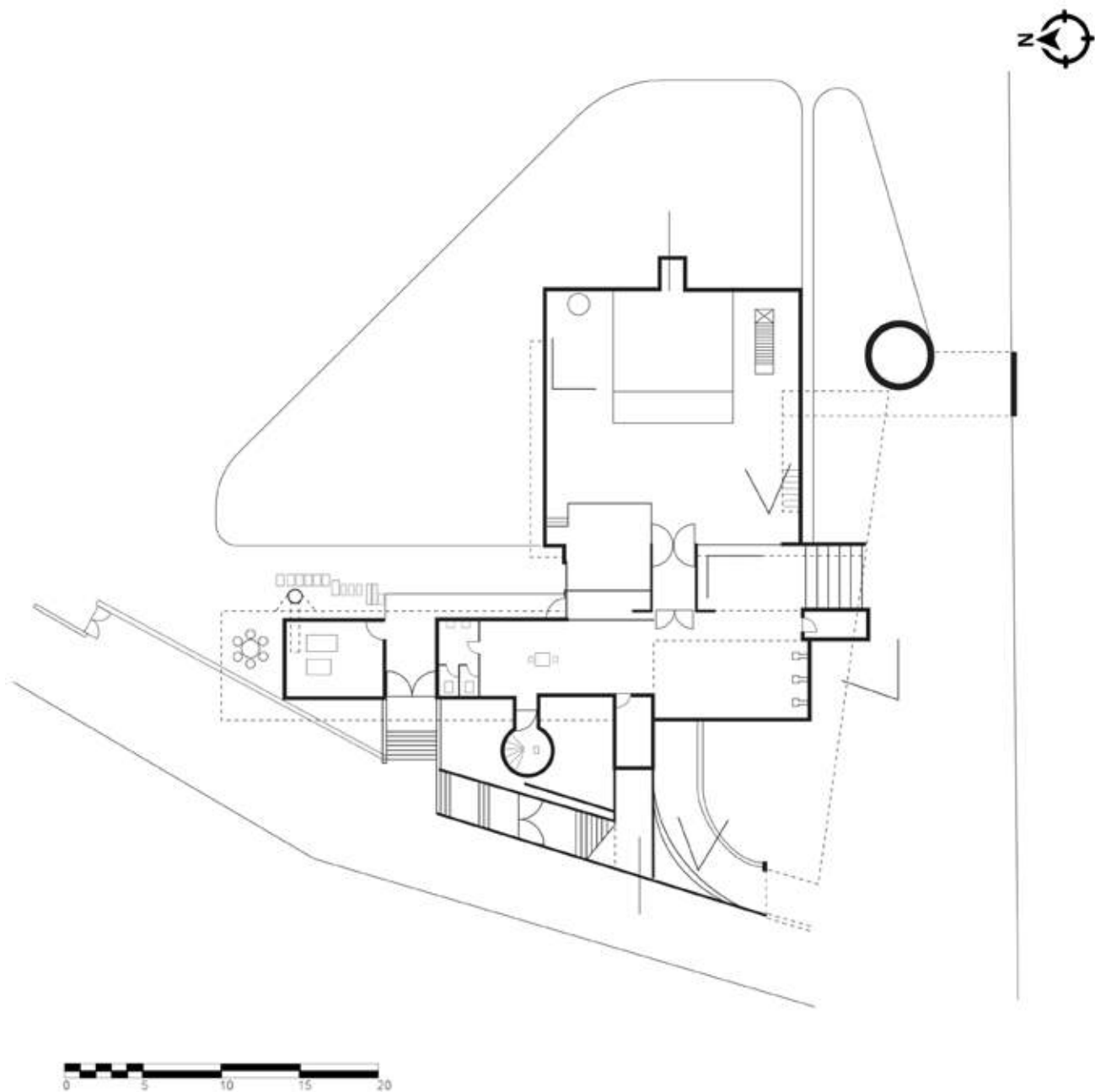
lecture rooms. The Blue Mosque overlooks the Garden of Islamic Arts, a landscaped park inspired by the Quranic Garden of Paradise (Jannah). This 14 hectares of spiritual sanctuary houses nine galleries exhibiting a rich array of Islamic arts such as calligraphy, sculptures, paintings and architecture. The site is occasionally used for traditional Islamic performances

Rome mosque in Italy, it is considered important model in presenting modern architecture mixed with classic. This is expressed by the three architects through their view of architecture in general. The Mosque of Rome provides a model for mosques of the twentieth century within the principles of form modification based on the architectural idea within mosques established in western countries and coexistence between religions. The Islamic Cultural Centre in Italy organized an international competition and approved a complex and creative design presented by an author team Sami al-Musawi, and two Italian architects, Paolo Portoghesi and Vittorio Gigliotti. It was built between 1984-1995. It is the largest mosque in the western world ever in terms of land area with an area of 30,000 meters square and can accommodate more than 12,000 worshippers. It is located in the area of Acqua Acetosa, at the foot of Monti Parioli, north of the city. It is the headquarter of the Italian Islamic Cultural Centre.



- 1 One of the spaces, the Islamic Society of North America (ISNA), Plainfield, Indiana
- 2 Outdoor view, the Islamic Society of North America (ISNA), Plainfield, Indiana
- 3 Ground floor plan, white mosque, Bosnia
- 4 Facade and minaret, white mosque, Bosnia





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The mosque was jointly established by Prince Muhammad Hassan of Afghanistan and his wife, Princess Radhia, and it was funded by King Faisal, Custodian of the Two Holy Mosques. His planning took more than ten years. The city council donated the land in 1974, but only the cornerstone was laid in 1984, with attendance of the President of the Italian Republic, Sandro Pertini, was opened on June 21, 1995. There was some opposition to building the mosque at the beginning, but much of this dissipated later. In 1973, the Saudi Monarch, King Faisal, was welcomed in Rome. Islamic countries and peoples began to donate about 20 million dollars to build the mosque after his visit. Rome City Council granted a plot of land of 7 acres. In addition to be a meeting place for religious activities, it provides cultural and social services variously connecting Muslims together. It also holds teachings, wedding ceremonies, funeral services, exegesis, exhibitions, conventions, and other essential events.

One of the issues that had to be agreed upon was the height of the minaret and its impact on Rome skyline. Ultimately, the problem was solved by shortening its height slightly to less than St. Peter's dome about one meter. Architecturally, Professor Portugesi said, the Mosque of Rome presents challenges that must be mixed with the site and be compatible with the architectural context of Christian Rome. The architects had to combine the mosque's modern

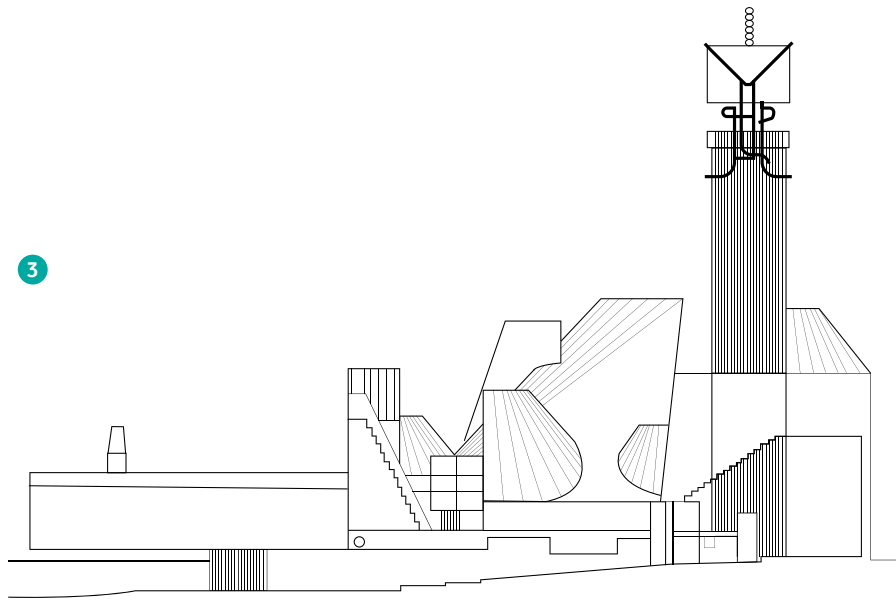
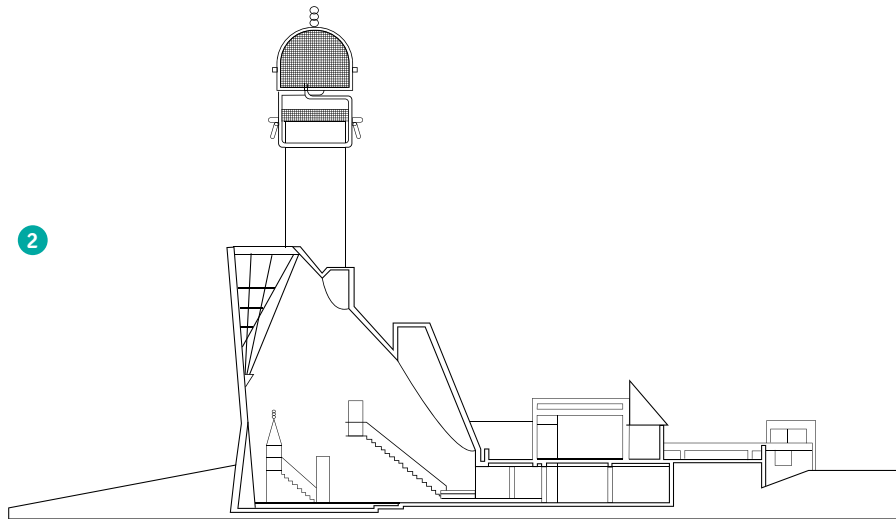


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functional needs, which include conference facilities and a library, with traditions in the historical civilization of Islamic architecture and the possibilities offered by modern building technology.<sup>54</sup>

And because the mosque is a house of prayer, as Portugesi said, the architects of the **classic period** of architecture in Islamic civilization used to divide the mosque into smaller spaces that seem to emphasize the direct relationships of everyone with Allah. Heading to Mecca was the only important physical condition for construction. Therefore, Rome's architects designed a rectangular space, directly connected to a courtyard and stormed the smaller spaces by a series of unusual columns. Four sides, narrowing upward and then emerging again in two slim curves, indicating a shape hands open during prayer. Supported domes are formed by interlocking arches, intersecting a complex and beautiful pattern. In another adaptation of traditional Islamic design, Portugesi surrounds the mosque with gardens that take advantage of the renewed terrain of the site. The gardens were planted with palm trees, pine trees and cypress trees, as well as ponds, fountains, and streams, as a metaphor for the paradise and flowing rivers.

In the context of searching for solutions that inspire the environment, the religious Hikma complex presents a traditional model in mosque architecture as it contains traditional



- 1 Internal view, white mosque, Bosnia
- 2 Section, white mosque, Bosnia
- 3 Elevation, white mosque, Bosnia
- 4 Outdoor view, Kerman University Mosque, Iran

vocabulary that prevailed in mosque architecture historically. But it nonetheless provides an original model in dealing with environmental elements, and seems to merge with context, socially, physically and environmentally.

Al Hikma complex is located in Dandaji, Niger. Area of site is 5238 square meters, designed by Yasaman Esmaili, Mariam Kamara. Dandaji is a Hausa village in arid western Niger with a very young population of 3000, low literacy rates, and high economic vulnerability

Al Hikma complex re-introduces these values embedded in Islam itself, by transforming a derelict mosque into a library that shares its site with a new mosque for the village of Dandaji in Niger. The project is a culture and education hub where the secular and religious peacefully co-exist to cultivate minds and strengthen the community.

The local middle school serves children from 5 surrounding villages with plans for a high school underway. The new library is impactful by providing books, a computer lab and quiet study spaces to improve reading and vocabulary skills for the community and to, increase graduation rates. By involving women groups in the project, additional spaces for literacy, accounting courses, and workshops were added. As a mosque, women never used the current building, preferring to pray at home. The library and its proximity to the new mosque engage them and the youth positively with these religious spaces as productive members of the community.

To renovate the old building to its previous glory, the original masons are invited to join the project's team. In the process, they learn about adobe-enhancing additives and erosion protection techniques. Instead of the region's traditional but scarce wood, the interior renovation uses metal for study spaces, partitions, stairs and a mezzanine level, as a contemporary touch to a traditional space. The new building in turn re-interprets traditional Hausa mosque organisation with contemporary

structural support and detailing. Its two blocs and outdoor prayer space are suited to daily prayers, Friday assemblies, or large Eid celebrations. The dialogue between formal structures of the old and new leads to further collaboration between the traditional masons and the construction crew.

The project introduces Compressed Earth Bricks (CEB) made with laterite soil found on site; a new material in the area with the advantage of being lower maintenance than adobe, with similar thermal benefits. Most of the project materials are sourced from less than a 5km radius distance to the site, while the use of concrete is limited to structural elements such as columns and lintels. The thermal mass of the CEBs and natural ventilation keep indoor temperatures comfortable and remove the need for mechanical cooling.<sup>55</sup>

The Yaama Mosque in Niger is a model of mosque architecture in the twentieth century. The mosque introduces the concept of community cooperation in mosque architecture production from start to finish. In doing so, it turns the mosque into more than a place of worship into a symbol of community integration and interaction, or as a place for societal convergence in which different classes of society meet, which is the essence of mosque message in Islam.

It is located in Yaama, Niger and built in 1986. The first version of the Friday Mosque, built of clay bricks, which was built in 1962, took the form of a rectangular hypostyle prayer hall with the projecting mihrab as the only secondary volume. In subsequent repairs a central dome was added and four corner towers built. Each tower is an individual sculpture with banded tapering walls becoming gradually more elaborate toward its pinnacle. Crenellations of half circles decorate the parapets and rounded cones mark the corners. Mud brick structures require cyclical maintenance, alterations and repairs. For the Yaama mosque this activity was from the beginning an act of religious devotion in which the entire community participates, and so it continues



to be. Everyone contributes to the caretaking of the mosque in proportion to his or her ability to do so. Some make mud bricks; others carry them to the building site. Women carry water for brick and mortar production while others cut and gather wood. Critics commended the “manifest will to use traditional techniques in a creative manner, to experiment with them and to achieve results that induce a new awareness of their possibilities.”

The Grand National Assembly Mosque in Ankara in Turkey can be considered an unconventional developmental style in the architecture of mosques that prevailed and developed historically



1 Simple straightforward cubical form, Kerman University Mosque, Iran

2 Bricks and Arabic calligraphy in the top of the external wall of Kerman University Mosque, Iran

3 External view, Sultan Salahuddin Abdulaziz Mosque, Malaysia

4 Finish of the dome, Sultan Salahuddin Abdulaziz Mosque, Malaysia

5 Arcade leading to the main entrance, Sultan Salahuddin Abdulaziz Mosque, Malaysia

6 Prayer hall, Sultan Salahuddin Abdulaziz Mosque, Malaysia

7 Minaret and facade, Sultan Salahuddin Abdulaziz Mosque, Malaysia



throughout the Islamic world in the eighties of last century. The design is majestic and interacts extensively with the environment, natural and physical, climatic and cultural. Moreover, the architectural design bears strong symbolism, represented in visual and urban shapes and forms.

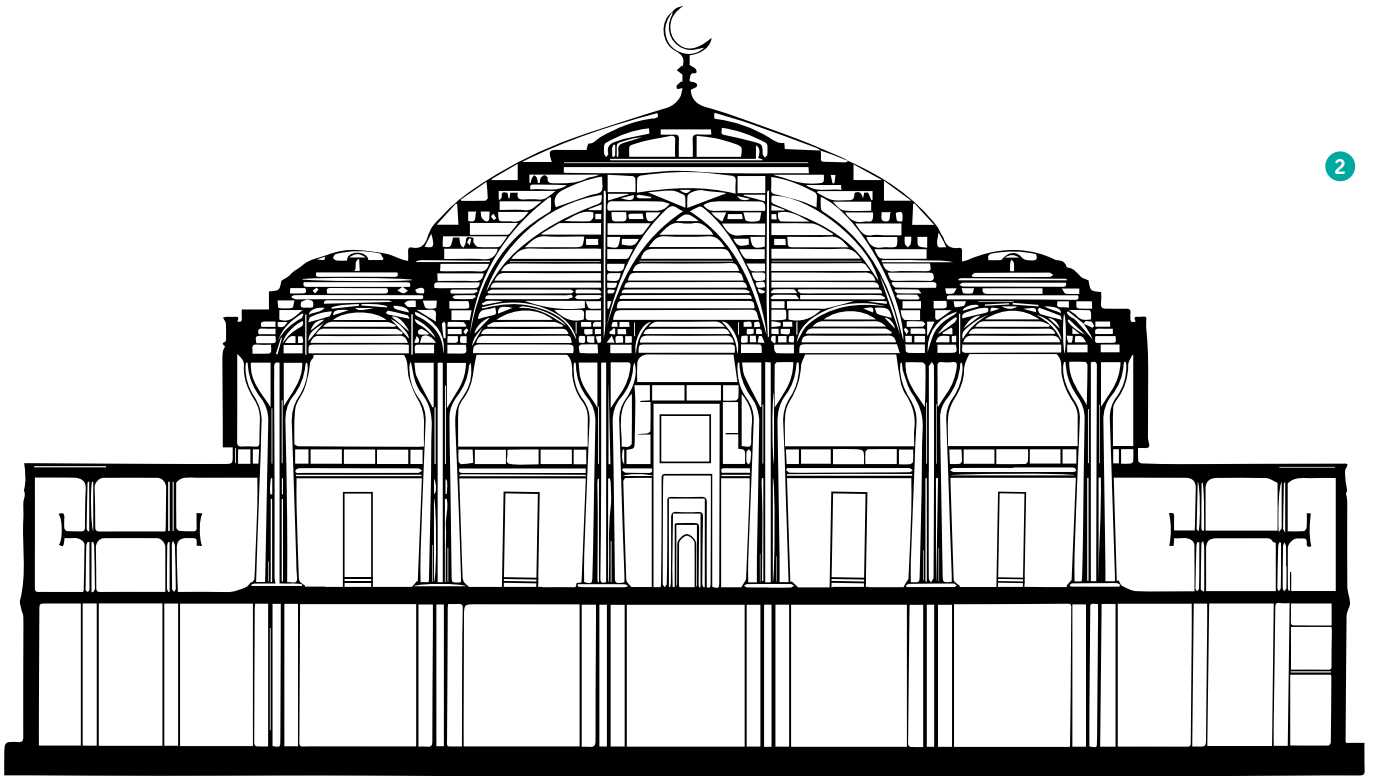
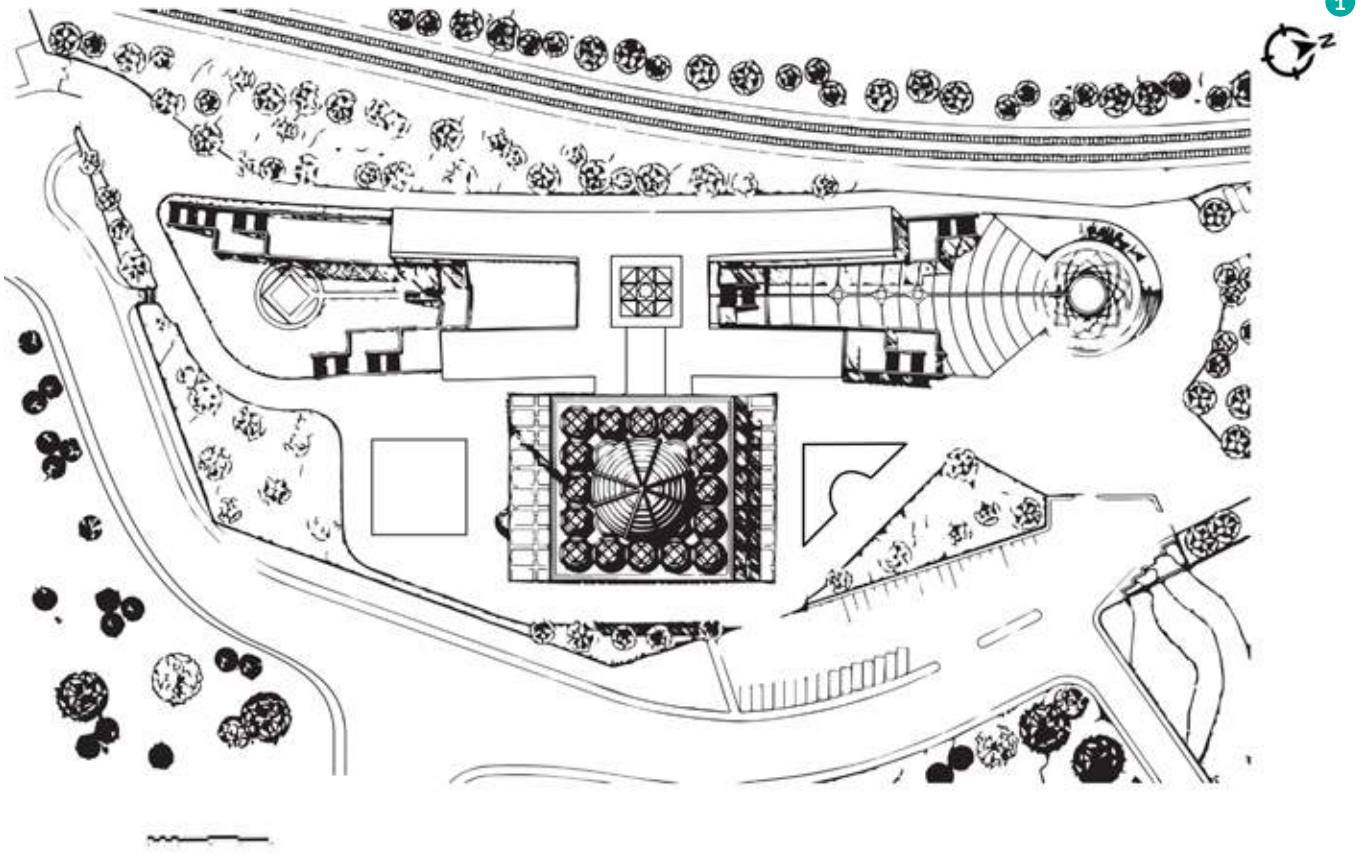
Designed by architects Behruz and Can Cinici, the client is the Turkish Grand National Assembly, the ground floor area is 950 m<sup>2</sup>; total site area is 16,000 m<sup>2</sup>, it was completed in 1989. The mosque is located at the Southern edge of the group of buildings, which make up the Turkish National Assembly complex in Ankara. The mosque is located to the South of the Public Relations buildings of the complex. It is intended for the members of the National Assembly and the staff working in the complex. The building consists of a prayer hall, an ablutions area, imam room, and a library for religious publications.

The Mosque, a low key structure which deliberately avoids monumentalism of the National Assembly Complex it is located within, moves beyond conventional mosque architecture and points towards new direction in layout and design. Much of mosque complex is hidden within the slope of site, only parts of it rising above surrounding landscape. This horizontal quality is reinforced by a fragmentary, abstract treatment of the conventional vocabulary. The minaret is represented by balconies and a cypress tree; the dome is replaced by a terraced pyramid which gives the impression of growing out landscape.

The mosque also incorporates completely new spatial arrangements, including the Qibla wall and mihrab. This mosque eschews dependence upon the architectural conventions of the past; it defies religious space through the treatment of form, space and light and the relationships of landscape and building

This mosque is characterized by new symbolic possibilities and design alternatives for the mosque in contemporary world. It also represents boldness and courage to experiment with a different







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architectural treatment for mosque, this building was awarded by 1995 Aga Khan Award for Architecture. From its incorporation in the site, to the transparent Qibla wall, to the absence of domes and formal minaret, this mosque challenges the conventional and opens the door to freeing up designers' imaginations everywhere.<sup>56</sup>

As for the complex of the Islamic Centre for Technical and Vocational Training and Research in Bangladesh, which was completed in 1987 on the outskirts of Dhaka, It represents a deliberate reinvention of historical layout. The mosque in this concept is a model and an attempt to re-employ engineering in the

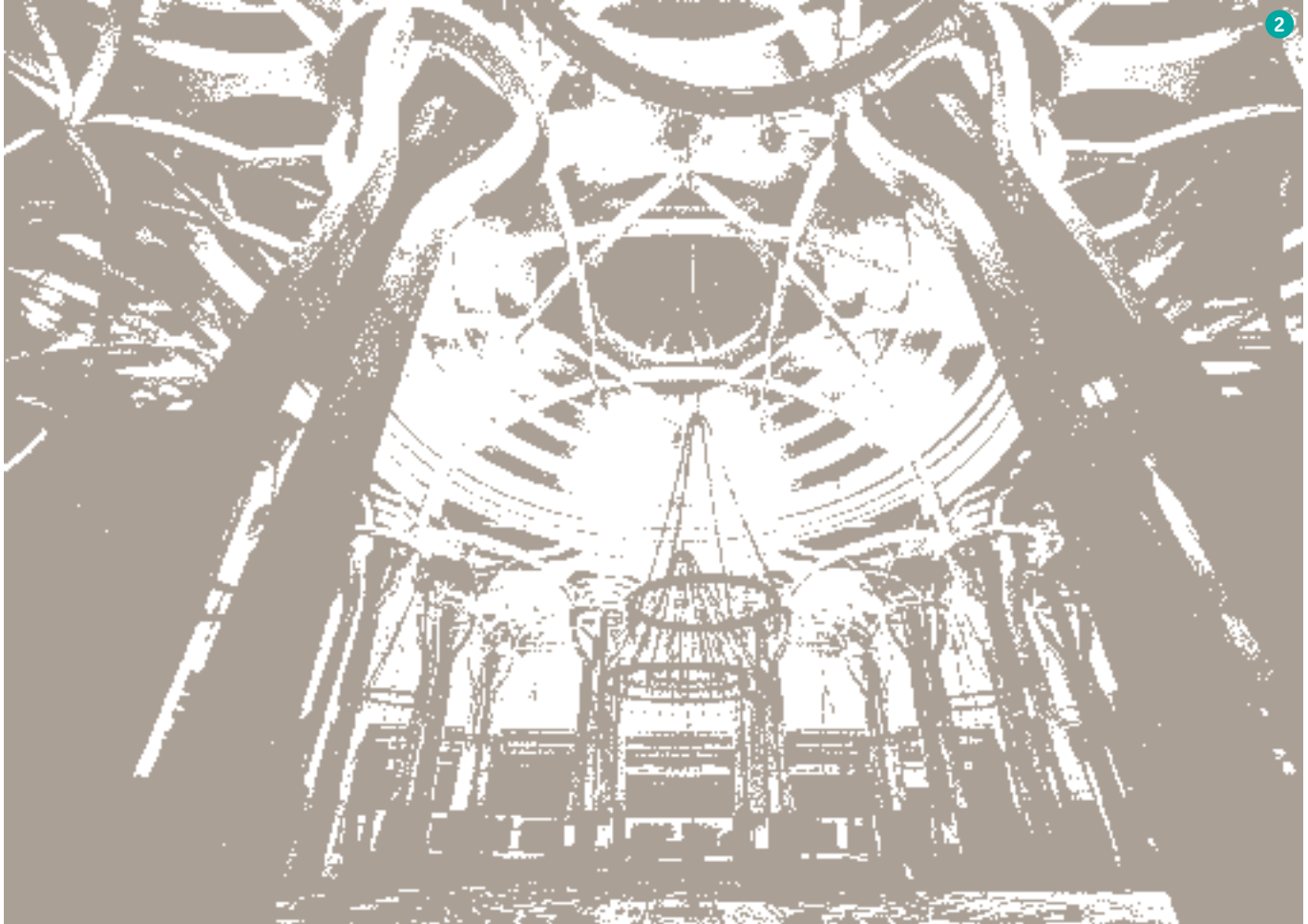
- 1 Site plan, Mosque of Rome
- 2 Section, Mosque of Rome
- 3 Mosque of Rome from outside
- 4 Main elevation, Mosque of Rome



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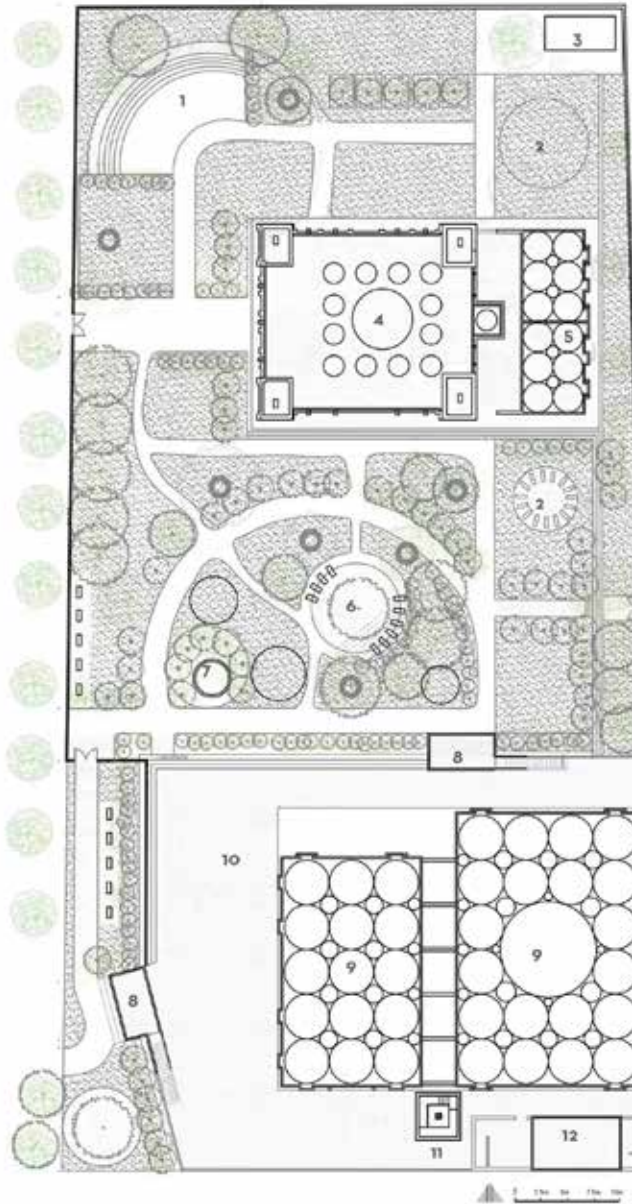
- 1 Courtyard, Mosque of Rome
- 2 Dome and prayer hall from inside, Mosque of Rome
- 3 Site plan, Hikma- A religious and Secular Complex - Niger
- 4 Main facade, Hikma- A religious and Secular Complex - Niger

formation of the mosque's formative structure with extensive use of elements prevalent in mosque architecture historically.

The most salient aspect of the ICRVRE complex is its combination of features from two distinctive cultures: an Ottoman prototype serving as an organisational scheme combined with local building technology and the Bengali tradition of the relationship of water to buildings. In addition, the complex owes much to Louis Kahn's design for the Sher-e-Bangla Nagar Capitol Complex in Dhaka in terms of its extensive use of brick masonry and particularly the centralized grouping of the primary functions, the connection with water, the tension in plan created by the orientation of the mosque, the double envelope of the façades, and the use of a circular layout and forms that have become associated with Islam in the subcontinent. In the sense that the design is concerned with meaning expressed in the abstract through the use of pure geometry, as opposed to the reproduction of meaning through symbols limited to a local cultural context, the mosque epitomizes a **style** that can be said to be universal. Taken as a whole, it is a dynamic descendant of Kahn's Capitol Complex idiom and makes a strong contribution to the contemporary architectural language of Bangladesh.

The design of the Islamic Centre is organized around a central courtyard. The core of the layout was programmed as a social-cum-

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1. amphitheater/workshop area
2. children's play area
3. restrooms
4. library
5. new classrooms
6. Garden
7. underground water reservoir
8. ablution space
9. prayer room
10. outdoor prayer space
11. Minaret
12. Imam's quarter

4



administrative area including an auditorium for up to 500 persons, a cafeteria with a capacity of 1,000, a library and research centre, an administrative building with an arcade for exhibitions, shops and a mosque to accommodate 500 worshippers. The rest of the facilities, such as dormitories, academic buildings and workshops to the north, faculty and staff housing and a guest house to the west, and a student centre and sports facilities to the east, constituted an outer ring around the core.

The plan of the central courtyard and the surrounding buildings is governed by a rigid orthogonal grid. The need to rotate the mosque in the centre to achieve the orientation towards Mecca simultaneously creates a dynamic tension within the grid and represents a departure from the basic külliye layout. Three gates - the Gate of Knowledge, the Gate of Instruction and the Gate of Learning - allow pedestrian access to the court from the different zones of activity on the surrounding campus, while a fourth gate - a monumental entrance composed of five freestanding arches (representing the five pillars of the Islamic faith)- provide ceremonial access.

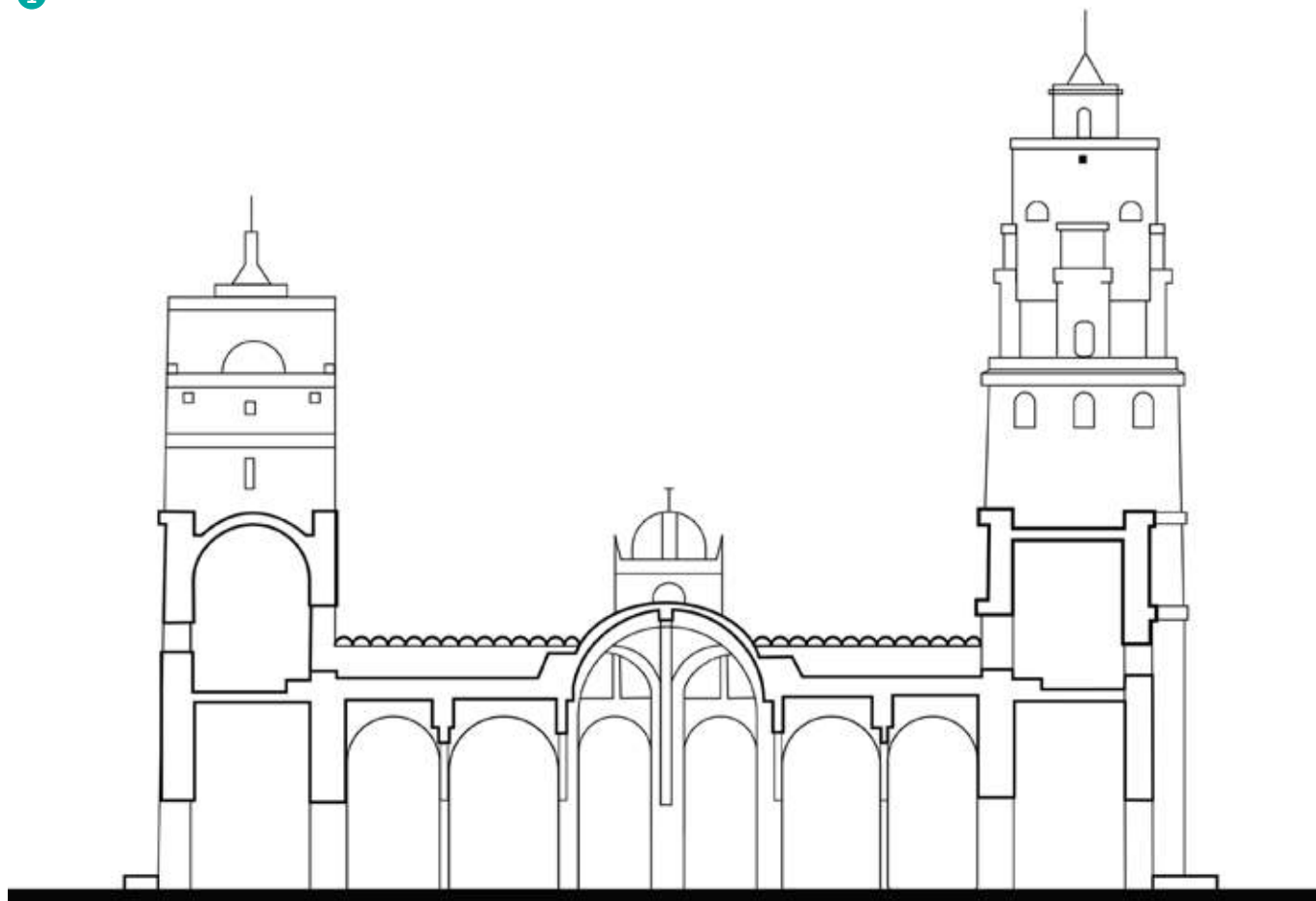
For climatic reasons, the courtyard was enclosed by buildings on three sides only, leaving the fourth open to the prevailing southerly breezes. The need to leave the south side open posed a

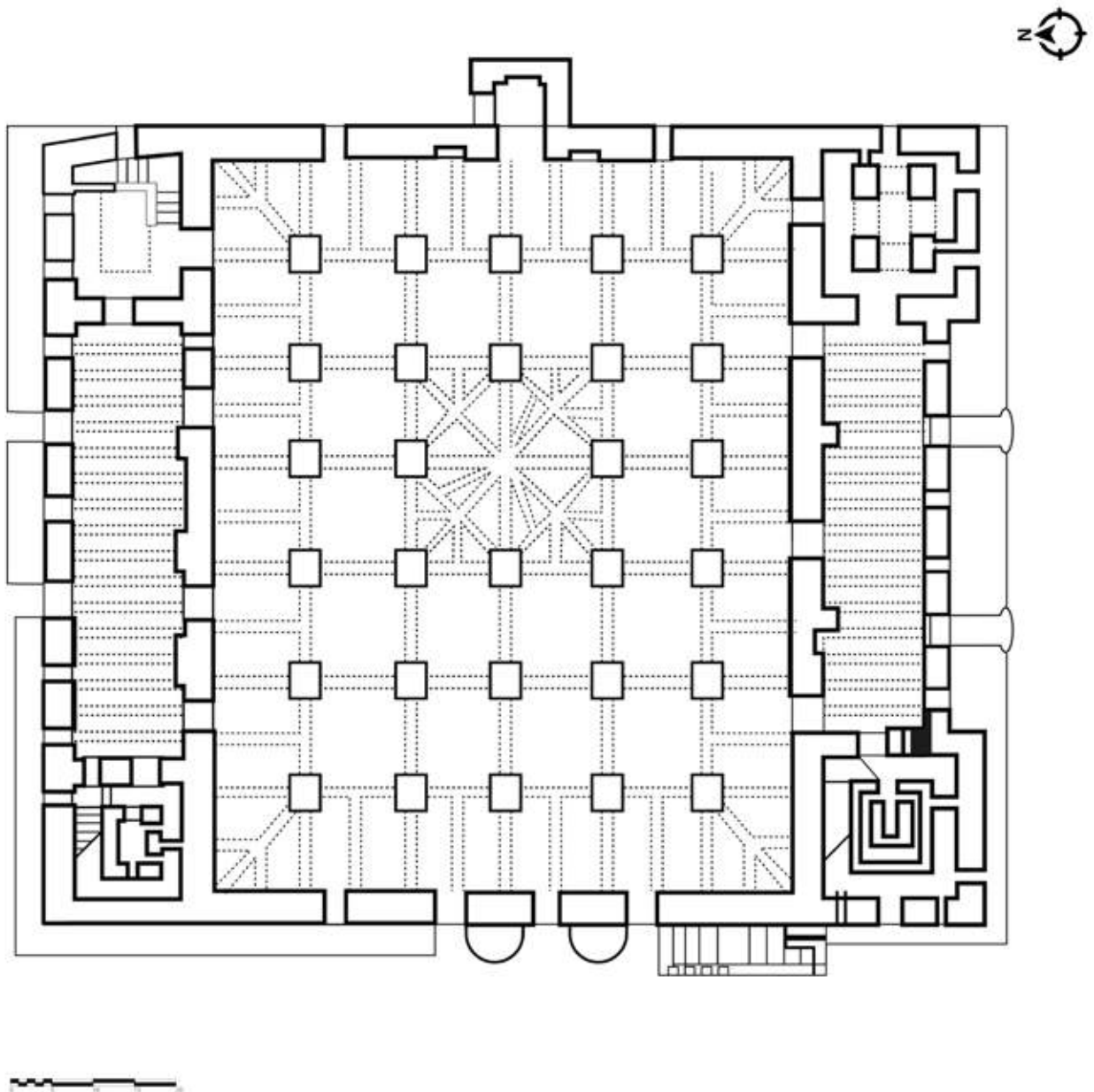
design problem, for in the chosen külliye prototype the courtyard is enclosed on all four sides. The architects resolved this difficulty by locating the ceremonial gateway in the southeast corner, thereby giving the layout a new definition without departing from the organizing principles completely. With the exception of the minaret, 21 m (69 ft) in height, the buildings retain a uniformly low profile.

The labour force and constructional technology readily available in Bangladesh dictated the choice of construction materials, load bearing brick and reinforced concrete, used throughout the complex. Financial constraints obliged the architects to develop an uncomplicated design vocabulary derived from the architectonics of brick masonry and based on modular units which would allow construction to be carried out in stages. In order to vary the surfaces, different types of arch - pointed, segmental, shallow and inverted - were employed throughout the complex, though in the mosque itself only inverted, semi-circular arches were used. The mosque with its detached minaret - a simple cylindrical shaft with a single balcony pavilion echoing the cubical form of the mosque - occupies a prominent position near the middle of the central court. A freestanding entity in keeping with the külliye tradition, the mosque can be entered from three sides, all of which give access to a perimeter corridor with staircases on the north and

- 1 Elevation, Yaama mosque - Niger
- 2 Different shapes of minaret, Yaama mosque - Niger
- 3 Ground floor plan, Yaama mosque - Niger

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south sides leading to the mezzanine level. The lateral entrances to the mosque are staggered in relation to the actual doorways prayer hall, while the entrance on the side facing the mihrab is direct. Square in plan, the prayer hall constitutes single space with a shallow central dome (partially visible when viewed from the exterior) supported on four columns.<sup>57</sup>

In general, the last two decades of the last century represent a struggle in mosque architecture over continuing experimentation or the return to strict historical mosque building, which is a conflict of the latest intellectual attraction to this day. This is because it poses the question “What is the mosque meant to be in the future?” In fact, mosque architecture in the first two decades of the twentieth century cannot be read without understanding what has happened in the last century, especially the very last years.



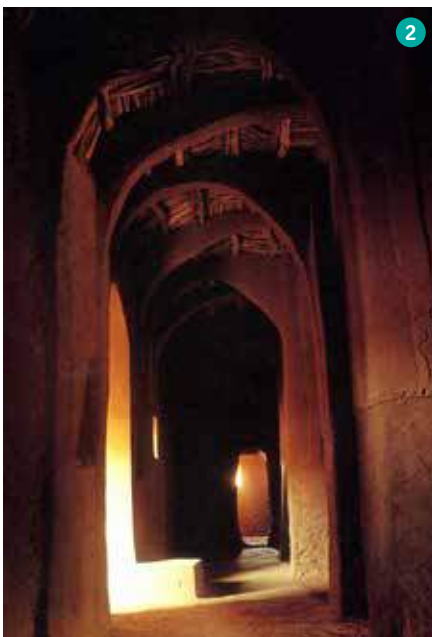
1 Outdoor spaces, Yaama mosque, Niger

2 Walkway, Yaama mosque, Niger

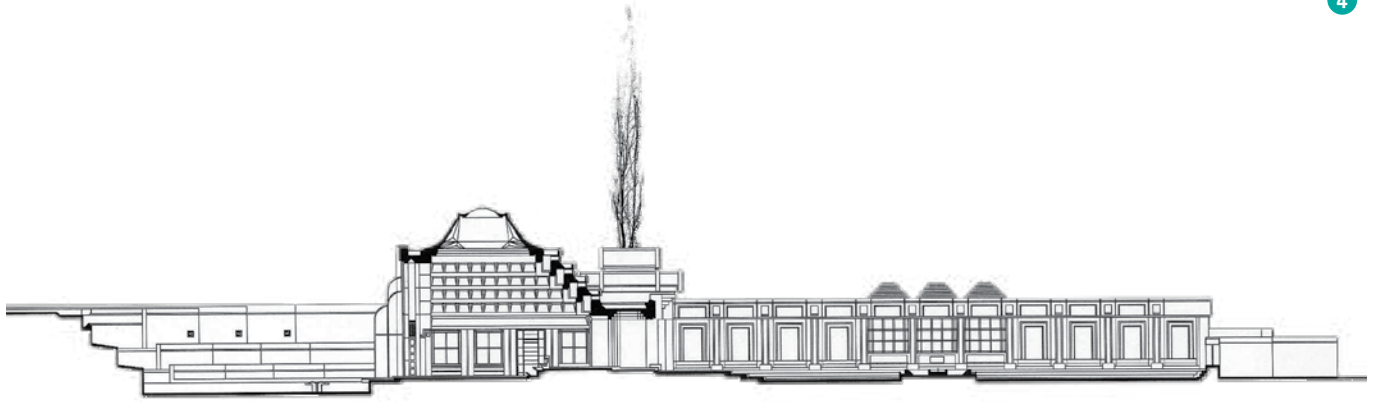
3 Main facade, Yaama mosque, Niger

4 Section, Mosque of the grand National Assembly, Istanbul

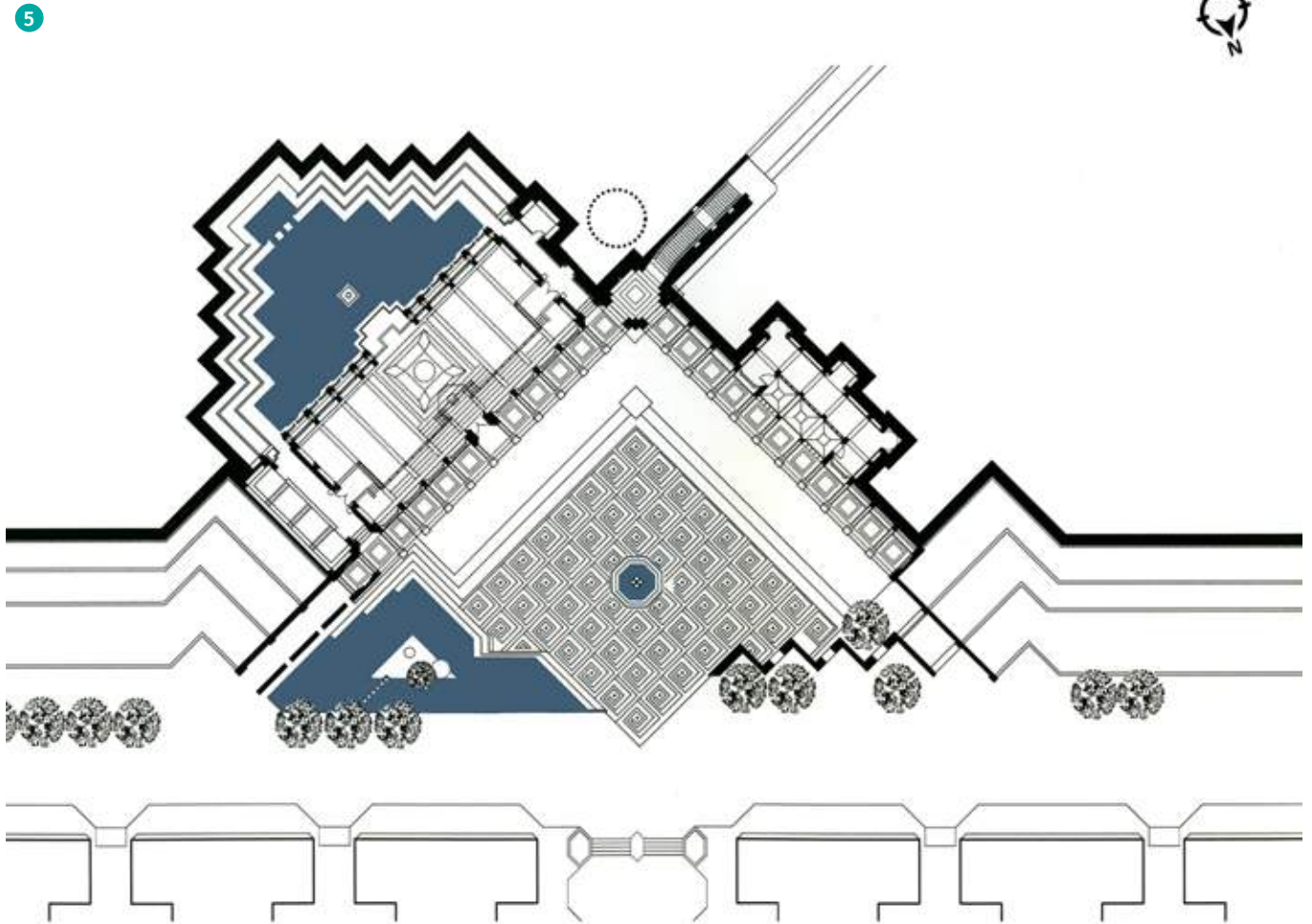
5 Site plan, Mosque of the grand National Assembly, Istanbul







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### Conclusion

This critical review of factors and influences of architecture and urbanism, which in turn influenced the crystallization and modification of thought and world architectural and urban discourse, presented reflections on Arab urban discourse and in Muslim environments, all contributed to this timeline, which this critical introduction strived to track. These examples were also from mosque architecture, with spatial models, and ideas and concepts embodied in a reading, which represent attempts to emerge from historical mosque architecture towards an evolutionary future offered by short listed mosques included in this book.

The general framework this introduction attempted to highlight is that no clear ideas evolved from these theories on mosque architecture, which has continued until today. This result is justified by epistemological view, as the accumulation of knowledge on mosque architecture did not turn into cumulative scientific and research **tradition** that ensures continuous development of critical discourse and therefore has had no deep effect on mosque architectural practice, as most of experiences were isolated and incomplete and were not accompanied by studies and dialogues to ensure its advance to more mature stages.

1 Main facade, Mosque of the grand National Assembly, Istanbul

2 Internal detail, Mosque of the grand National Assembly, Istanbul

3 External view, Islamic university of Technology (IUT)

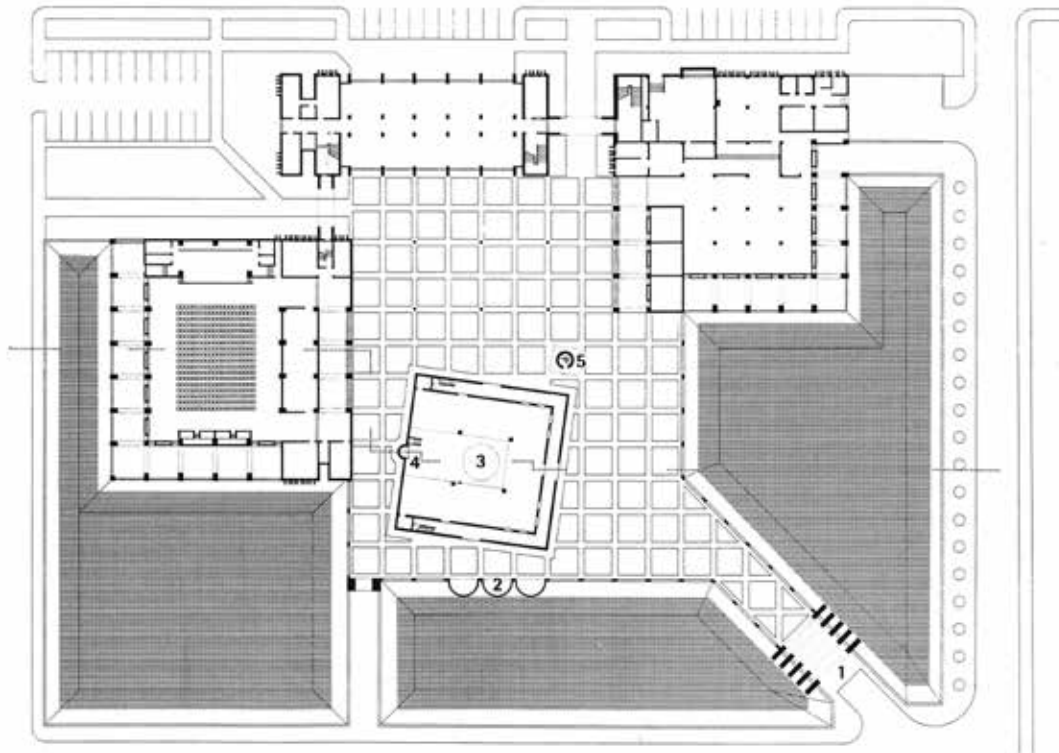
4 Ground floor plan, Islamic university of Technology (IUT)



2



3



- 1 Ceremonial gate
- 2 Ablutions fountain
- 3 Prayer hall
- 4 Mihrab
- 5 Minaret

4

## References and footnotes

- 1 In 1900, cities inhabited only by 10% of world's population, this percentage rose to 50% in 2007, and it is expected to reach 75% in 2050.
- 2 *Endless City*, Phaidon, 2007, London
- 3 The emergence of great cities known to mankind has been linked to two important factors: natural resources, the most important of which are fertile agricultural soil, and the strategic location overlooking trade lines.
- 4 An example of this physical isolation is represented by the city centre of Johannesburg as a result of "economic" apartheid until 1994, where neighbourhoods were found in what were known as "no-entry areas" for blacks and whites alike, and these areas where wealth centres existed in the urban settlement, and turned at night into lonely places where they were mixed with financial institutions and the remains of semi-inhabited residential neighbourhoods, which deeply reflected on the composition of the urban fabric of the city.
- 5 *Endless City*, Phaidon, 2007, London
- 6 This rapid change in the structure of the urban fabric is observed very strongly in China, India, Africa and part of Asia due to the fundamental change in the demographic composition. As opposed to limited speed of change in cities like London (6+), a city like Berlin stands at a change speed of (zero), while Johannesburg stands at (4+). On the other hand, there are medium-speed cities that change according to the study scale, such as Istanbul (16+), Khartoum (18+), Riyadh (14+), Baghdad and Nairobi (15+), and New York (12+). While the study notes more rapid growth cities and mutations affecting the urban fabric, such as Kabul (20+), Mexico (23+), Manila (25+), and Beijing (25+). The scale also indicates the existence of cities with high speed of mutation and change such as Dhaka which witnesses very high demographic and physical changes (50+), Karachi (42+) and Mumbai (42+), and most of all is the city of Lagos (58+). "Urban" speed effect.
- 7 There is a tendency to redesign cities in their overcrowded considerations in terms of movement of people. In North America cities of Oregon and Portland have been relatively overcrowded, relieving pressure on public transportation. 43% of its population uses buses and light trains more than other North American cities. And the use of bicycles to move around the world twice the number of cars and about 800 million bicycles, which are widely used in developing cities of the world. In the industrialized cities of the world, special lanes for bicycles within the streets were provided for public safety considerations and regulating the relationship of cars with pedestrians and bicycles as users of public roads. Cities with easy, flat geography, such as Amsterdam and Oxford, have an enormous amount of bicycle dependence. In Britain, the travel distance is 8 kilometers or less, which makes traveling using the bike efficient and possible. In the industrialized world, there is a need for more roads to meet its needs and expansion, but this increased construction of roads has been accompanied by cars, where traffic is increasing due to the dependence on cars.
- 8 *Eco-Urbanity, Towards well-Mannered Built Environments*, Edited by: Darko Radovic, Routledge UK, USA & Canada 2009
- 9 Ibid.
- 10 Ibid.
- 11 Ibid.
- 12 Ibid.
- 13 *Utopia: Social Theory and the Future - Edited by Michael Hviid Jacobsen and Keith Tester*. Ashgate 2012
- 14 Ibid.
- 15 *Urban Coding and Planning*, edited by Stephen Marchal. Routledge. 2013
- 16 *Urban and Regional Planning*, By Peter Hall. Mark Tewdwr-Jones. Published in 2010 by Routledge - p. 304.
- 17 Ibid.
- 18 *Renew Town: Adaptive urbanism and the low carbon community*, Andrew Scott, Eran Ben-Joseph, Routledge 2013
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- 21 *Architectural Theory, From the Renaissance to the Present, 89 essays on 117 Treatises*, TASCHEN, London 2011
- 22 *50 Bauhaus Icons You Should Know*, Josef Straber, Prestel. 2009
- 23 *Architecture in the 20th century*, Peter Gossel and Gabriele Leuthauser, TASCHEN 2012
- 24 Ibid.
- 25 *Architect Knows Best. Environmental Determinism in Architecture Culture from 1956 to the Present*, Simon Richards . Ashgate 2012
- 26 Ibid.
- 27 *Conservation in the Age of Consensus*, John Pendlebury, Routledge, 2009
- 28 Ibid.
- 29 Ibid.
- 30 Ibid.
- 31 Many of the theses presented by Dr. Mashary

Al-Naim on parallel heritage can be found in many lectures and articles

32 Bill Hillier, 'Theory Liberates: Intelligent representations and theoretical descriptions in architecture and urban design' Lecture given at UCL in the Darwin Theatre on 13th June 1990 p10

33 Vitruvius, 'The Ten Books on Architecture', Dover, New York, 1960

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40 After Amnesia: Learning from the Islamic Mediterranean Urban Fabric, Attilio Petruccioli, ICAR 2007

41 Ibid.

42 Ibid.

43 Identity in contemporary architectural discourse, Waleed Al Sayyed, Al-Watan Oman 2016

44 Al Sayyed, W. "Orientalist Tradition in Islamic Architecture", Lonaard, UK, 2018

45 Ibid.

46 Ibid.

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48 العبدروس، حسين أبوبكر (2004) مسجد الحضارة: تحفة معمارية فنية إسلامية بترميم حضرموت القرن 9هـ/15م

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50 Architect Maurice Tranchet de Lonel (born November 25, 1869, died in 1944), is the designer of the Grand Mosque in Paris. In 1912, he was appointed director of the Department of Antiquities, Fine Arts and Historical Monuments of French Protection in Morocco by Liaute. His mission was to preserve Moroccan monuments and create an ordered list of historical monuments in Morocco.

51 <https://www.dhakarachi.org/facilities/tooba-mosque.aspx>

52 <http://maquinamole.net/SustainabilityCorner/?p=1320>

53 <https://www.biyografya.com/biyografi/17300>

54 Source: Aga Khan Trust for Culture

55 (Source: pages 12 to 13 of the September / October 1978 edition of Saudi Aramco International).

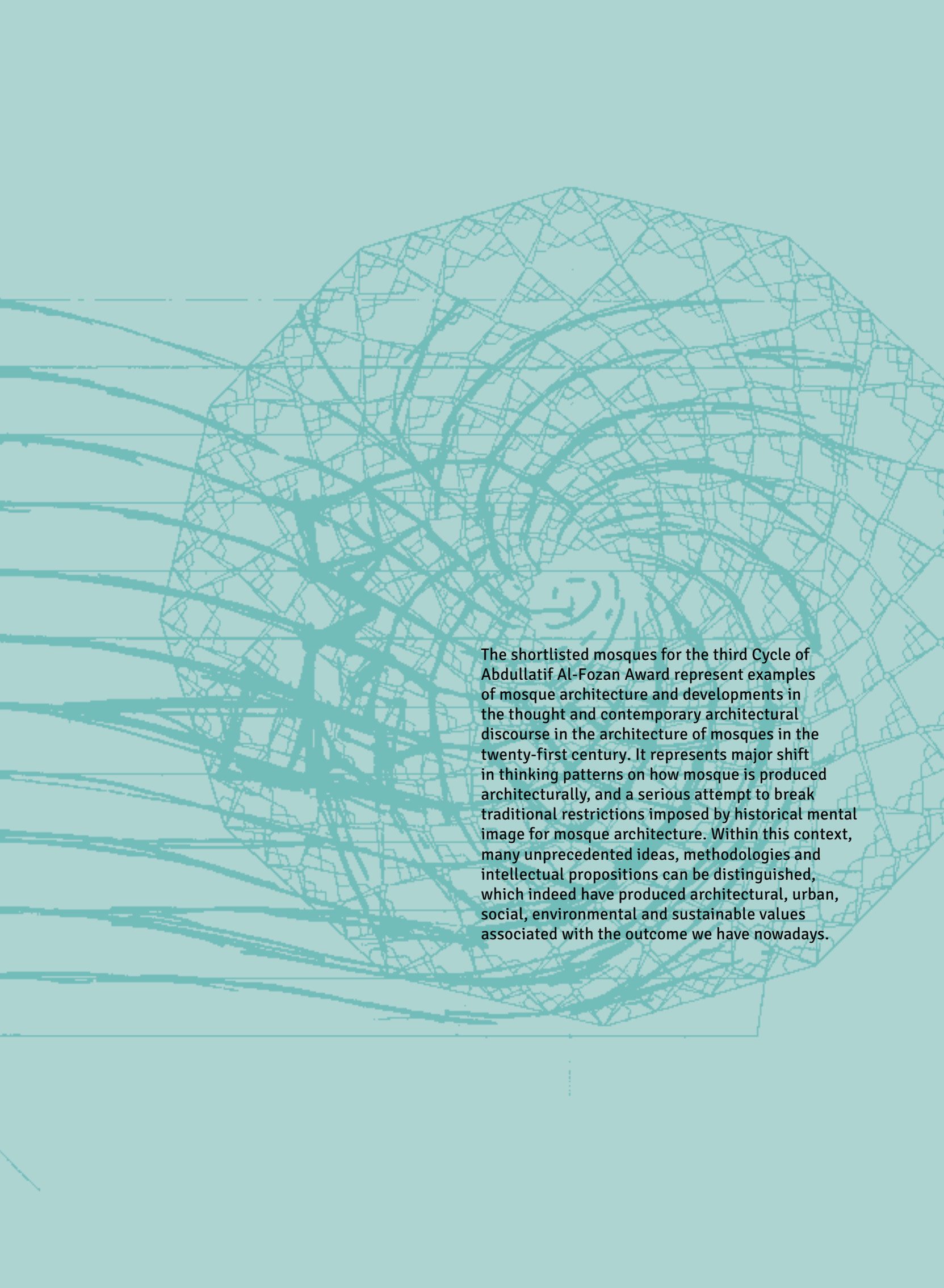
56 <http://www.ateliermasomi.com/dan-daji-mosque>

57 The Aga Khan Trust for Culture

58 <https://archnet.org/publications/2221>



# THE SHORT LIST



The shortlisted mosques for the third Cycle of Abdullatif Al-Fozan Award represent examples of mosque architecture and developments in the thought and contemporary architectural discourse in the architecture of mosques in the twenty-first century. It represents major shift in thinking patterns on how mosque is produced architecturally, and a serious attempt to break traditional restrictions imposed by historical mental image for mosque architecture. Within this context, many unprecedented ideas, methodologies and intellectual propositions can be distinguished, which indeed have produced architectural, urban, social, environmental and sustainable values associated with the outcome we have nowadays.



Argun Mosque (Russian Federation, Chechnya)

**118**



# CENTRAL MOSQUES



Imam Reza Complex Mosque (Iran)

**154**



Great Mosque of West Sumatra (Indonesia)

**166**



King Hussein Mosque (Jordan)

**190**



116

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The Flower of God Mosque (Kazakhstan)  
**130**



Tosyali Oran Mosque (Algeria)  
**142**



Vali-E-Asr Mosque (Iran)  
**202**



Great Mosque of Central Java (Indonesia)  
**178**



Minor Mosque (Uzbekistan)  
**214**





# ARGUN MOSQUE

Location: **Russian Federation, Chechnya**

Owner: **Chechen Sovereign Republic**

Architect: **Baykan Mimarlik**

Land area: **6950m<sup>2</sup>**

Built up area: **2955m<sup>2</sup>**

Completion date: **2014**

Capacity: **7000 worshippers**

Type: **Central Mosque**

**Argun Mosque was built in Argun City, Caucasus Chechen Sovereign Republic within the boundaries of Russian Federation. It was built with concrete shell and steel mix construction system. Argun Mosque's total span is about 80 meters.**

**The mosque's design and construction work began in 2011 and was completed in 2014. It was designed by Architect Deniz Baykan. Argun Mosque is surrounded by newly constructed high-rise modern complex called "Argun-City" with 21-storey, 16-storey and 12-storey buildings**

**The mosque was named after Aymani Kadyrova, the mother of current Head of State. The total area of the mosque is 6950 m<sup>2</sup> and has a capacity to hold 7000 worshippers. It was funded by the public fund named after Ahmat Kadyrov, the late president of the Chechen Republic. The mosque is designed in high-tech style and is the first mosque in Russia to incorporate state-of-the-art technology.**

### Site

The mosque is located in Argun city in the Chechen Republic, a sovereign republic in the Russian Federation. It was built on the Chechen foothill plain, on the banks of the Argun River, 10 km south-east of the capital Grozny.

Argun Mosque is surrounded by a complex of high-rise buildings called "Argun-City". "Argun-City" was designed by the same Architect Baykan as part of the large-scale reconstruction. The city was severely damaged during the first and second Chechen wars and it is undergoing active restoration and settlement works to revitalize it. Argun Mosque and the residential complex "Argun-city" create the heart of the city. A completely new architectural composition for Argun gave the city the appearance of a modern metropolis.

The main street of the city is A. Kadyrov Street which divides Argun into two parts. The same street connects the capital Grozny with other cities including Argun. Argun Mosque is located directly on the point of intersection where the main road splits into two streets and can be easily accessed by pedestrians living in the surrounding residential area or by car. Moreover, sufficient parking spaces are provided for visitors at several locations onsite. The main access point to the mosque is from the east from the biggest parking lot. Then a visitor crosses the mosque garden before reaching the steps of the main entrance. Unobstructed circulation for disabled people with limited mobility is provided via ramps and a lift. Separate WC's and ablution area are provided for them as well.

### Spatio – Functional Relations

The mosque comprises four levels; a basement, a ground floor and two mezzanine floors. The main prayer hall is found on the ground floor and is accessed through a transitory space. The basement contains the ablution areas and an expansion space and the first and second floor are used for women. The area of the main prayer hall is 2404 m<sup>2</sup>, the lobby area leading to the prayer hall is 361 m<sup>2</sup>. The first floor is 859 m<sup>2</sup> and second floor area is 402 m<sup>2</sup>. The ablution areas in the basement are covered by dome skylights providing sufficient natural light to the interior. They are made from glass and steel construction.

The user path configuration starts from the parking lot, then proceeds through a beautiful landscape garden with a fish pond and a river. The entrances to the ablution areas in the basement for men and women are found in the Garden. Worshipper ascends from ablution area to the main entrance which could be accessed via stairs or a ramp. A transitory lobby space is provided between the exterior and the prayer hall that facilitates the transition from outdoor to indoor. Monumental stairs are located at each side of the lobby which lead directly to the open space prayer hall.

There is a separate entrance and prayer hall/gallery overlooking the main hall that is dedicated for women and can be accessed via stairs or lift. Adequate natural light is provided in the ablution area

from the skylights and there are separate areas and entrances for men and women. Aside from the ablution area and technical rooms, the basement contains additional expansion space used as a prayer hall and Qur'an reciting school with separate Mihrab indicating the direction of Qibla. Separate WCs are provided for the limited mobility people.

### Form and Architecture

The mosque's plan is in the form of an octagonal star, with three corners extruded as modern minarets. It stands out from its surroundings with its form, scale and style. The height of the mosque is 24 m including the dome and has three minarets are about 51 m high.

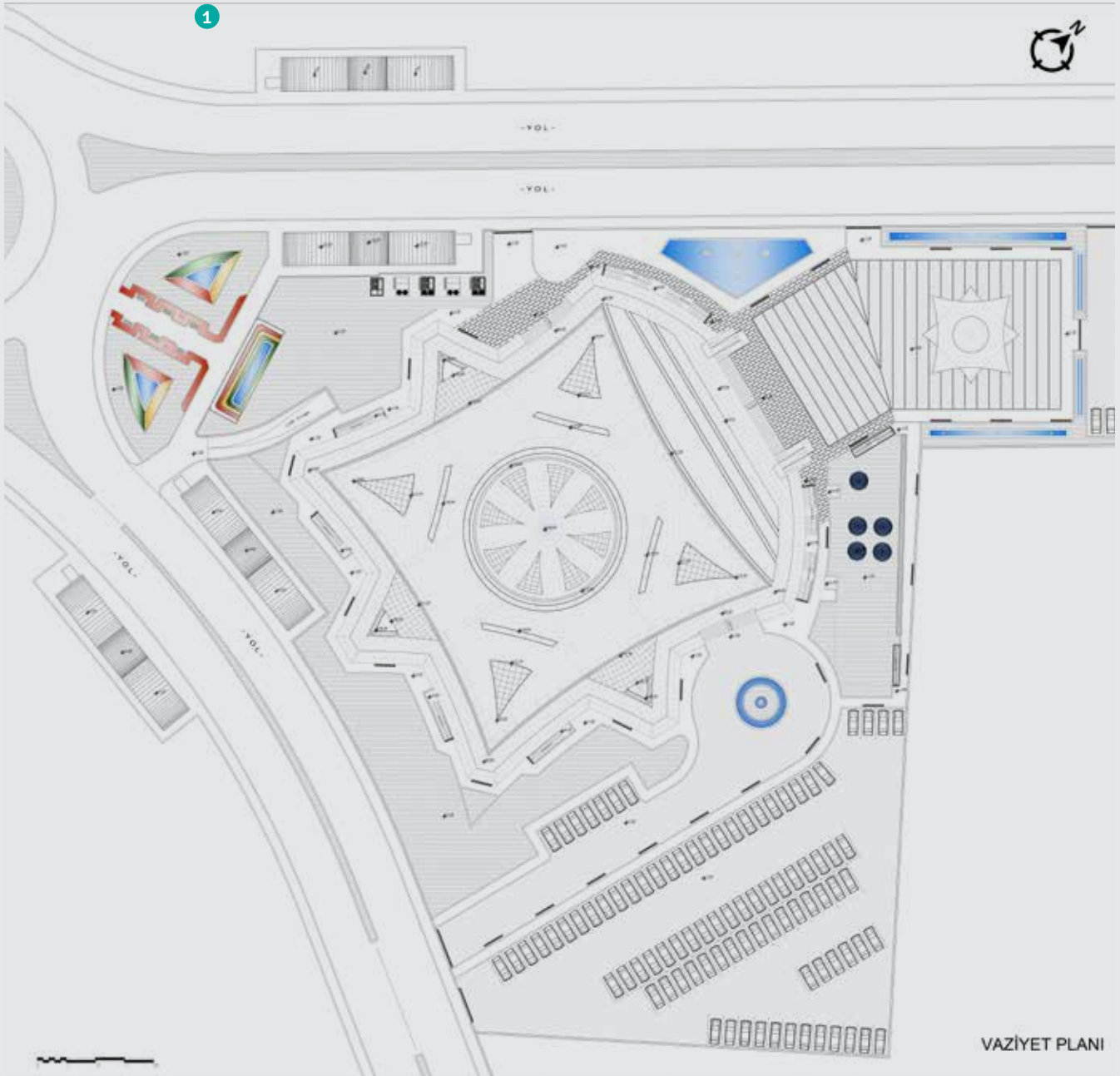
Argun Mosque, design was a process of creating contemporary architectural typology utilizing modern technologies while corresponding to local tradition. The mosque was designed eclectically, deriving from a wide range of styles and elements appropriated for local context, geography, and cultural background. Argun Mosque construction is a mixed design project of engineering and architectural disciplines working together.

It was designed after the endured hardships of post-war Chechnya. The concept of the design is to symbolize and emphasize the human ability to conquer and overcome difficulties and hardships and to elevate the nation to prosperity. According to architect Baykan the main slogan of the design was "yes, we can do everything for this country, if we believe".

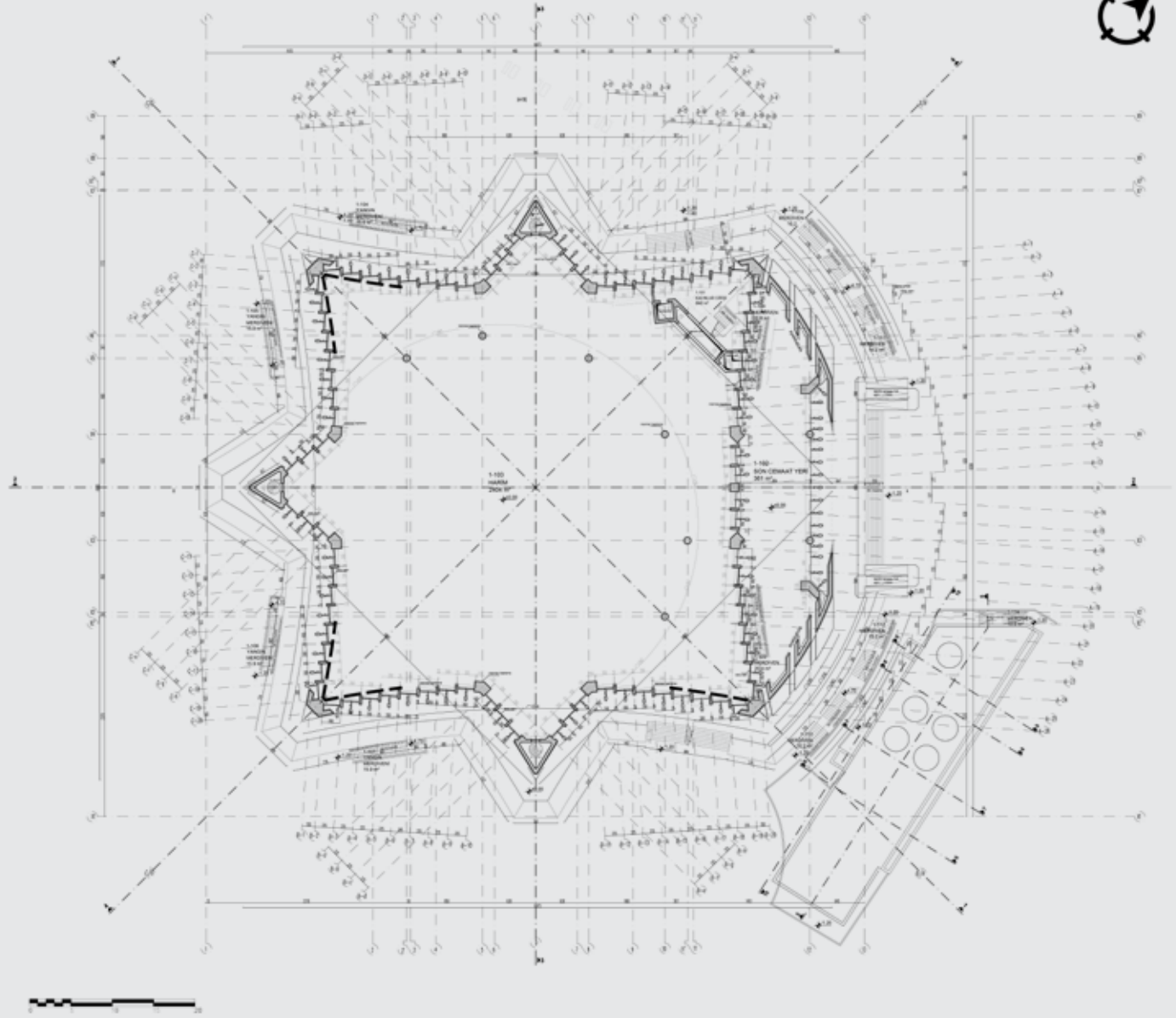
The initial idea was to create a shell with a big open space underneath for contemplation and prayer. The emphasis was on the big proportional space. The details of the shell and interior came afterwards and were secondary to main idea of an open space free of columns. The main task assigned to the architect was to create a landmark. The design was intended to be aesthetically pleasing, contemporary, with best quality. To do so, international experts from

1 Site plan

2 The mosque within its urban surrounding



1



different countries were invited to participate in the creation of this mosque to become as a symbol for the rebuilt city after being war torn and destroyed.

The mosque was designed in high-tech style characterized by integrating high-tech industrial and technological components into the structure of a building and placing technical features of building's exterior. The mosque is accentuated not only by its shape but by its technical elements considering roof structure is covered in LED lights changing in colour and adorned with traditional ornaments and calligraphy.

Considering that the initial task for the Architect was to create a symbol, the building stands out in terms of its form and technical aspects. Local architectural character in Argun is modern, as it was completely rebuilt. There isn't a typical local architectural character that could be used as a reference for the building style. Therefore, the task for the architect was to contribute to the creation of a new architectural language for future development of the city.

Despite the flat geography and scale of mosque, it is seen from a distance from the main street due to the shimmering lights on the buildings shell. It is further accentuated by two water features, one in the shape of a shell and a bigger one at the roundabout of the main street in the form of a crescent as a symbol of the Islamic faith. The scale of the main entrance is humble and inviting and is accessed by large stairs or a ramp.

Users were a little skeptical at first about the unusual style, the incorporation of lighting into the structure of a mosque and modern high-tech style in general, but after completion it was evident that mosque fulfilled its purpose in creating a landmark for the new city and Republic. Locals, have a strong sense of national pride associated with this mosque.

The exterior frame of the building is constructed in high-tech architecture style emphasized by its technical aspects that are displayed at the exterior of the building. The shell is composed of

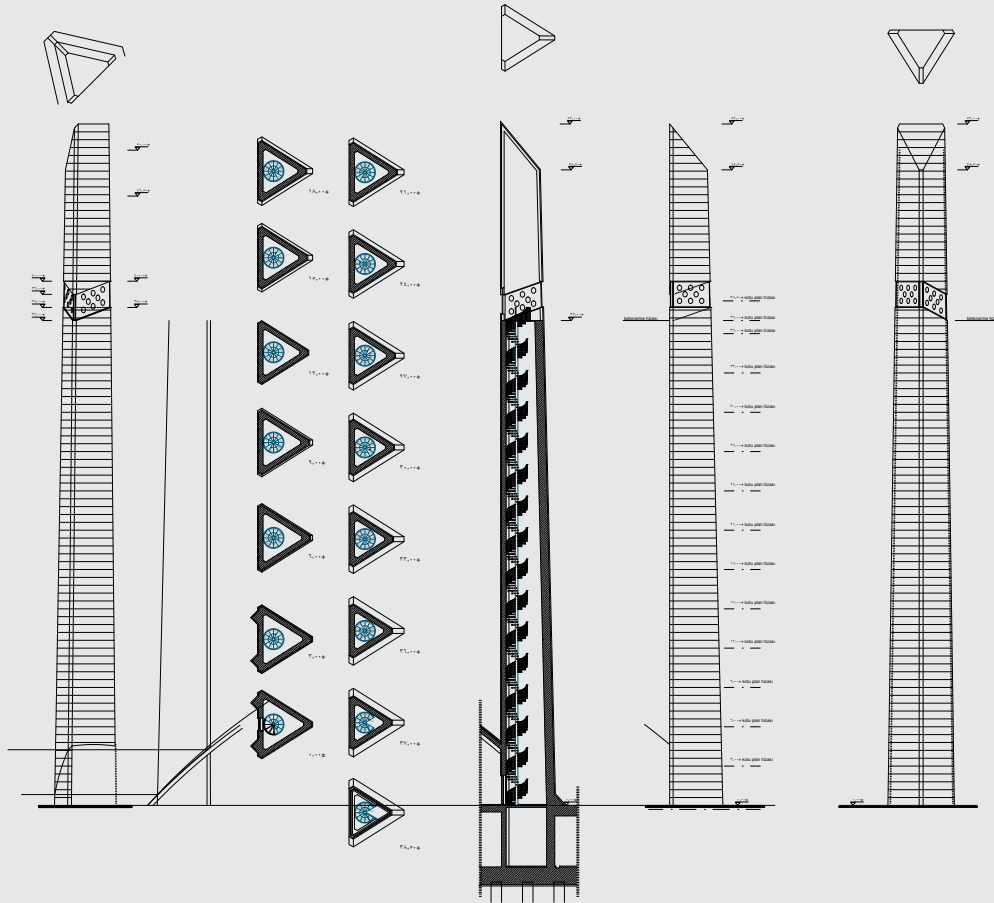
steel and glass and has a skeletal structure covering a spacious open prayer hall with easy access to all floors. The mosque was built with concrete shell and steel mix construction system. Its total span is about 80 meters. Glass openings are incorporated into the building's envelope to allow natural light to flood into the interior space.

The dome which is 23 m high and 24 m in diameter is shallow supported by 4 pillars. The construction of the mosque's exterior is made from reinforced concrete slab (30 cm) with fiber concrete coating (30 cm) with several layers of insulation including single component epoxy insulation, stone wool thermal insulation, air

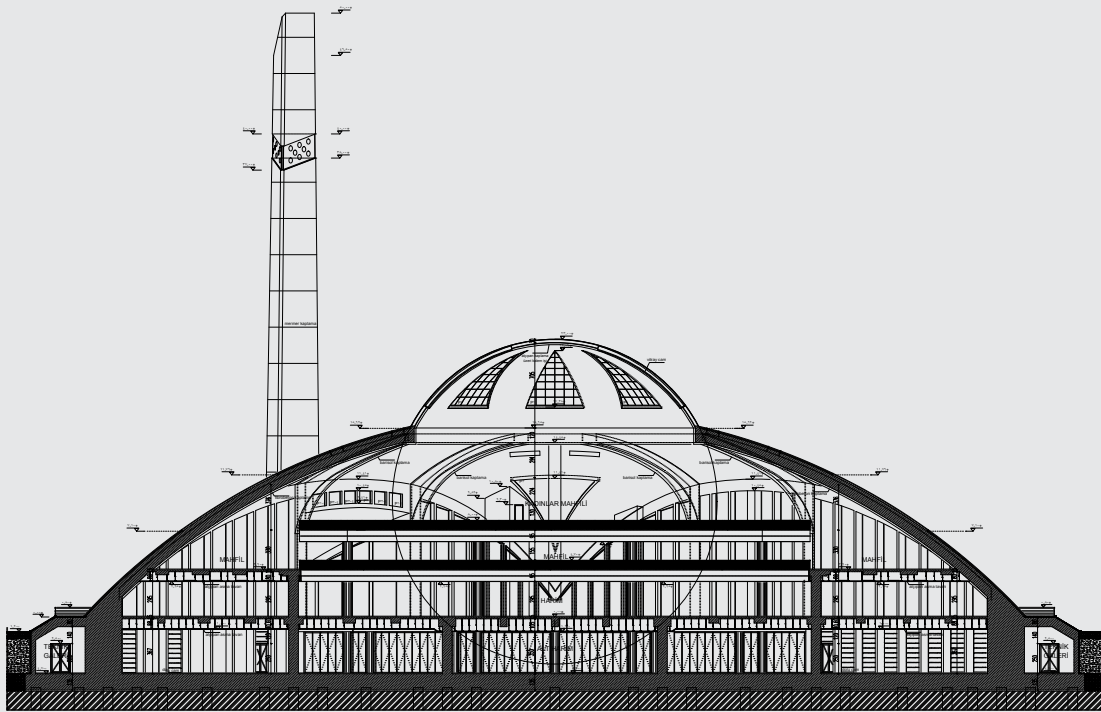
- 1 Ground floor plan shows the geometry of the Mosque
- 2 The Mosque mass



1



2



KESIT 1-1





- 1 Plans, elevations and sections of the minarete
- 2 Section of the prayer hall
- 3 A night view of the mosque

gap and waterproofing. The exterior cover is a composite material titanium metal plate coating.

The height of the three minarets is about 52 m. they are triangular in plan and are located at the points of the octagonal star shaped plans. They are attached to the mosque and constructed from reinforced concrete and hold an internal spiral staircase. They are simple and abstract.

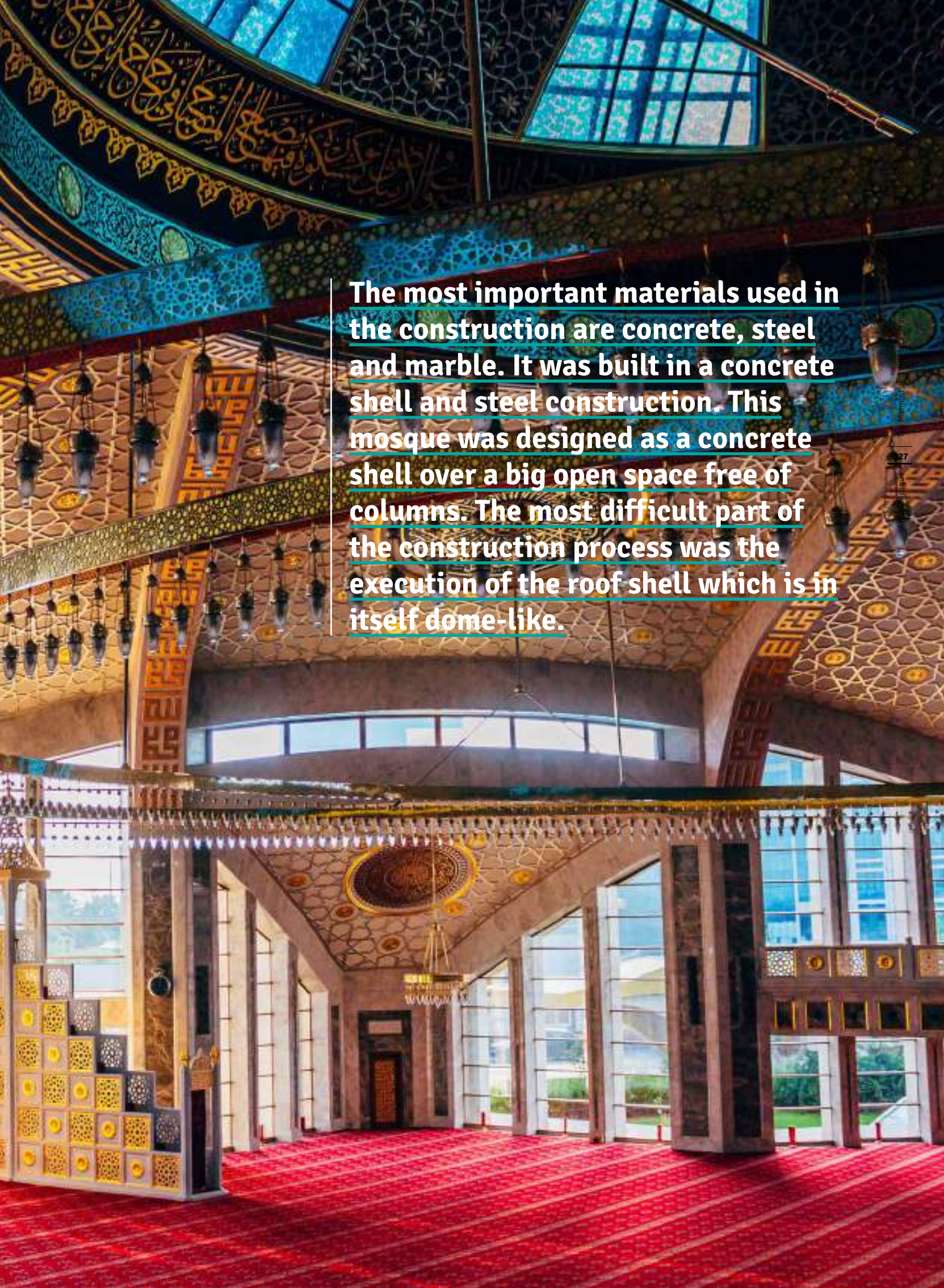
#### Interior Design and Technical Aspects

The most important materials used in the construction are concrete, steel and marble. It was built in a concrete shell and steel construction. This mosque was designed as a concrete shell over a big open space free of columns. The most difficult part of the construction process was the execution of the roof shell which is in itself dome-like.

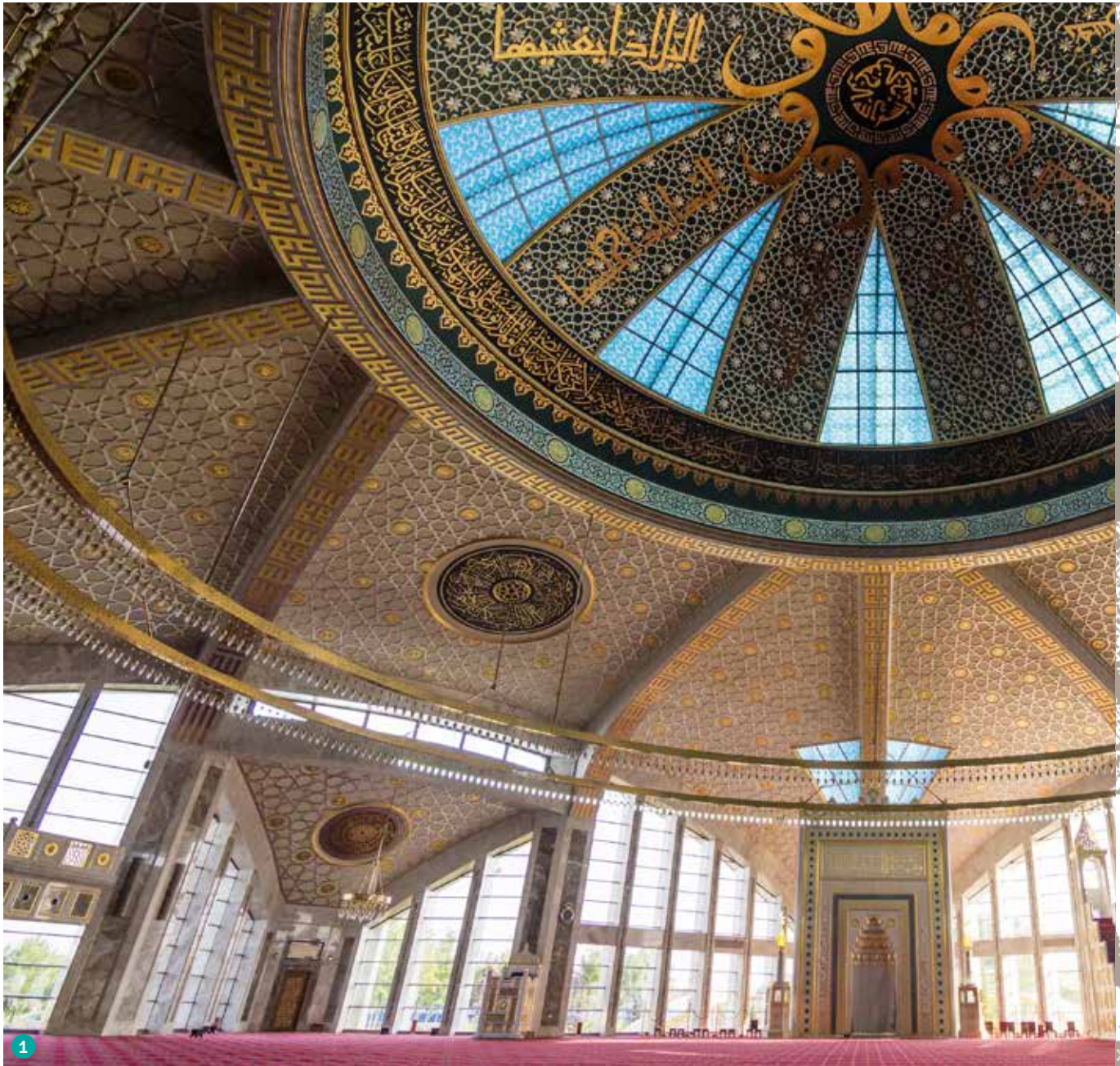
The envelope is covered in an LED light system that change in colour. This mosque is the first mosque on the territory of Russia to incorporate state-of-the- art technology in the form of LED lights covering the shell and dome of the mosque. In the evening the colour of the envelope changes between different colours. 50 000 lamps and 96 projectors were mounted on the exterior of the building. The interplay of light and shadows makes the mosque stand out and







**The most important materials used in the construction are concrete, steel and marble. It was built in a concrete shell and steel construction. This mosque was designed as a concrete shell over a big open space free of columns. The most difficult part of the construction process was the execution of the roof shell which is in itself dome-like.**



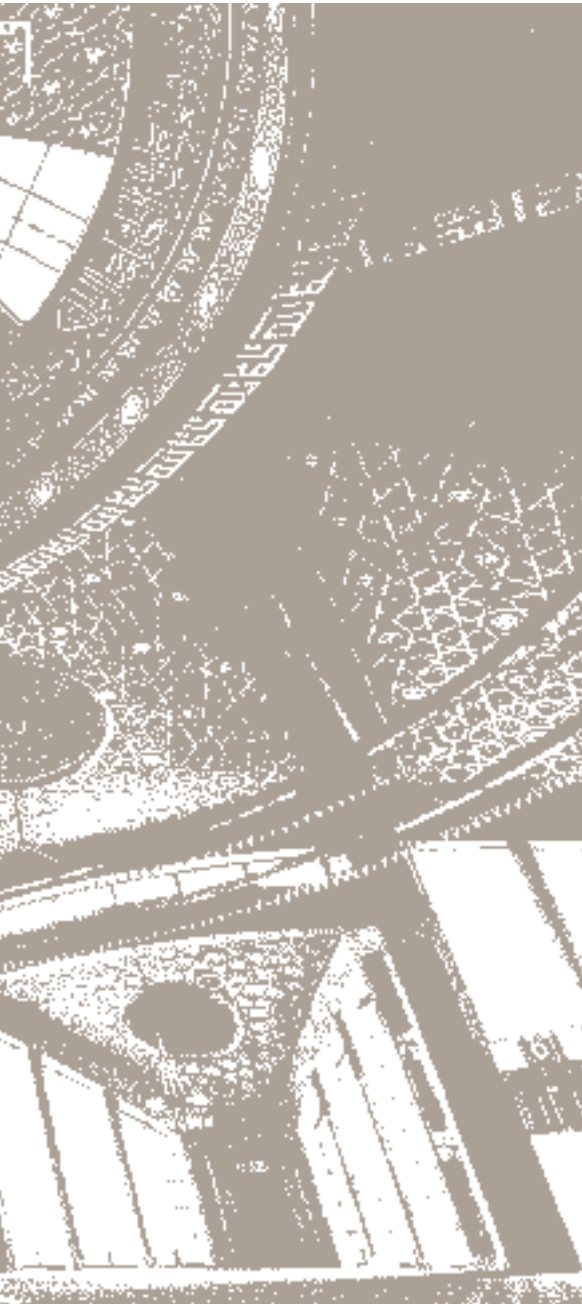
visible from a distance. Aside from the LED light concept the roof is covered in traditional ornaments made from composite material in gold colour.

One of the unique aspects of the mosque is its interior. The interior is heavily decorated and adorned with calligraphy and traditional ornaments. The prayer hall is big open space free from columns to avoid interruption of "Safs". The plan is shaped in the form of an eightfold star. Above the central prayer hall rises a 23-meter-high dome adorned with calligraphy, ornaments and pierced with glass opening to allow light into the interior of the mosque.

The interior of the mosque maximizes the use of natural daylight whether from the side elevations or the roof. There is a strong visual connection between the garden and the prayer hall. There is a great degree of transparency due to the glazed facades overlooking the mosque garden.

Across the prayer hall from the main entrance one can see the Mihrab which presents a strong focal point from the entrance of the mosque. It is heavily decorated in ornaments and Qur'an passages in blue, gold and white colours.

The freestanding Minbar is located near the Mihrab and is monolithic made from marble also enveloped in traditional Islamic geometric



ornaments. Both Mihrab and Minbar are handmade from Turkish white marble covered in detailed elaborate ornaments and gold-leaf.

One of the most unique aspects of this mosque is its surrounding landscape. The mosque garden includes an abundance of trees, bushes and flowers, water features and several walking paths. It complements the design concept of the mosque perfectly and significantly reflects on and improves the user experience. The user of the mosque reaches the main entrance of the mosque by crossing its beautiful garden which creates a transitory space from the busy city and allows for reflection and contemplation.

#### Conclusion

The designer has put forward in the design of this mosque quite a few novel concepts that deserve reflection, considering its social, political and national status and importance. It plays important national role in Chechnya, as there is a great sense of national pride associated with the mosque, let alone being a landmark.

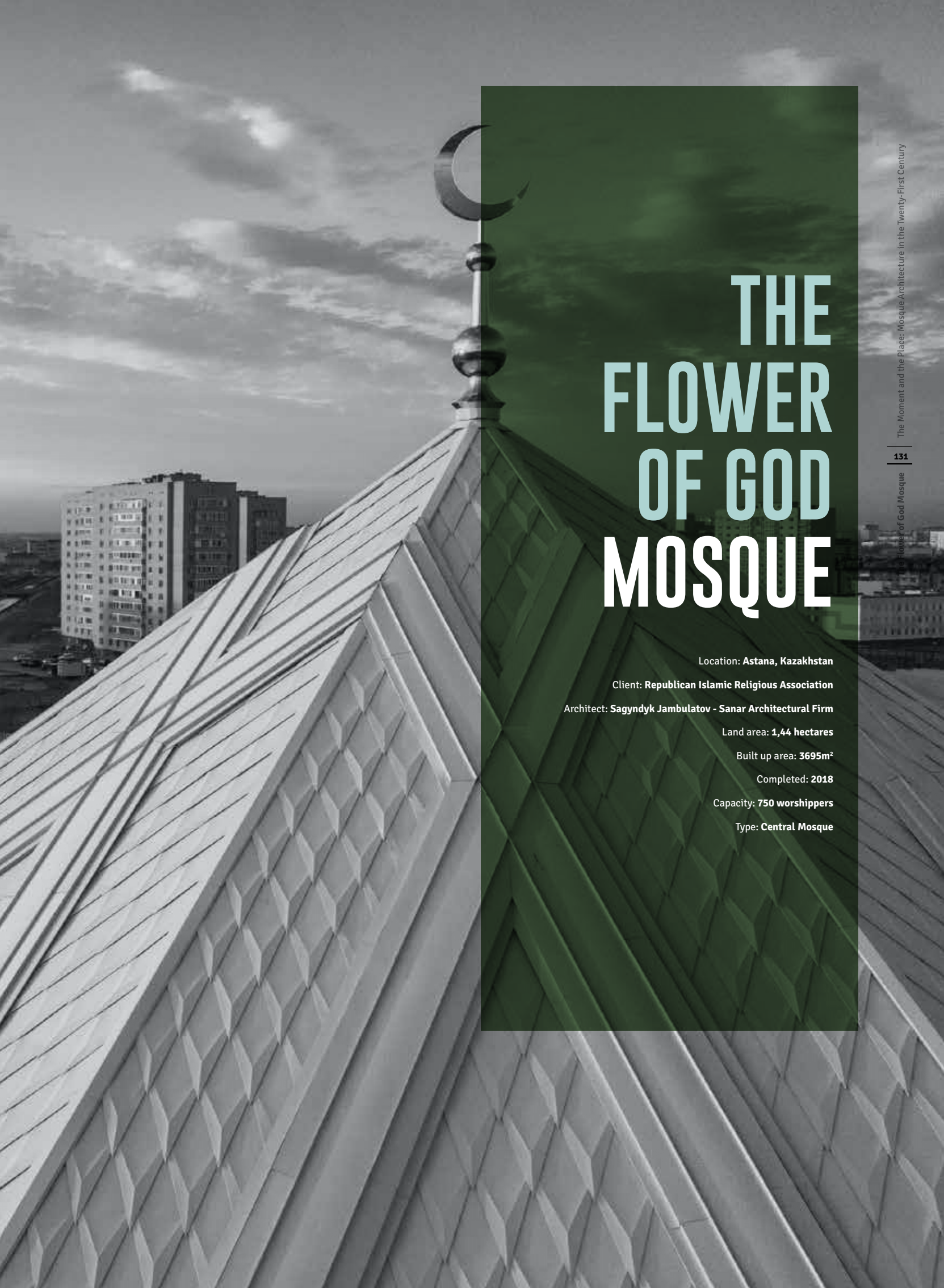
In terms of planning, the mosque and the surrounding high-rise complex were strategically situated at the heart of the city, rather than being secluded to create the heart of the city centre. Therefore, it plays key social role, as besides its role as a mosque, it works as a community centre. On the national level, it is considered a tourist attractions and a symbol.

Key concepts presented in this mosque, in terms of structural design, form and architectural character, technology, sustainability, symbolism and national identity, all point to a novel example towards futuristic mosque architecture.

1 The dome from inside

2 Mosque component in the night time





# THE FLOWER OF GOD MOSQUE

Location: Astana, Kazakhstan

Client: Republican Islamic Religious Association

Architect: Sagyndyk Jambulatov - Sanar Architectural Firm

Land area: 1,44 hectares

Built up area: 3695m<sup>2</sup>

Completed: 2018

Capacity: 750 worshippers

Type: Central Mosque

The mosque «Flower of Allah» is located in Nur-Sultan (Astana) city in Kazakhstan. Its total area is 3695 m<sup>2</sup> within an area of 1,44 hectares. It can accommodate up to 750 worshippers. The mosque was built in 2018, and was constructed in a period of 18 months. The client is the Republican Islamic Religious Association «Spiritual Administration of Muslims of Kazakhstan»

The mosque is unique as it uses alternative energy. The mosque is the first in the world with a zero-energy consumption. It uses photovoltaic solar panels with an area of 1295 m<sup>2</sup> to generate electricity. One of the aspects that make the mosque unique is the concept of environmental sustainability. The design took into consideration the extreme continental climate of Kazakhstan, therefore, it uses modern technology and systems such as photovoltaic solar panels for electricity and energy-efficient glass. The volume of electricity generated is 3-4 times higher than the needs of the mosque and excess energy can be used to pay for utilities solutions were devised to minimize heat loss and a ventilation recovery system was implemented. Photovoltaic panels are used in the parking and mosque garden as shading devices.

During its construction, locals were skeptic and curious, as the form was unprecedented in Kazakhstan. The design had to go through several phases of approval at the municipality. Upon its completion, it was apparent the unique design was a success, as well as a landmark and tourist attraction.

#### Site

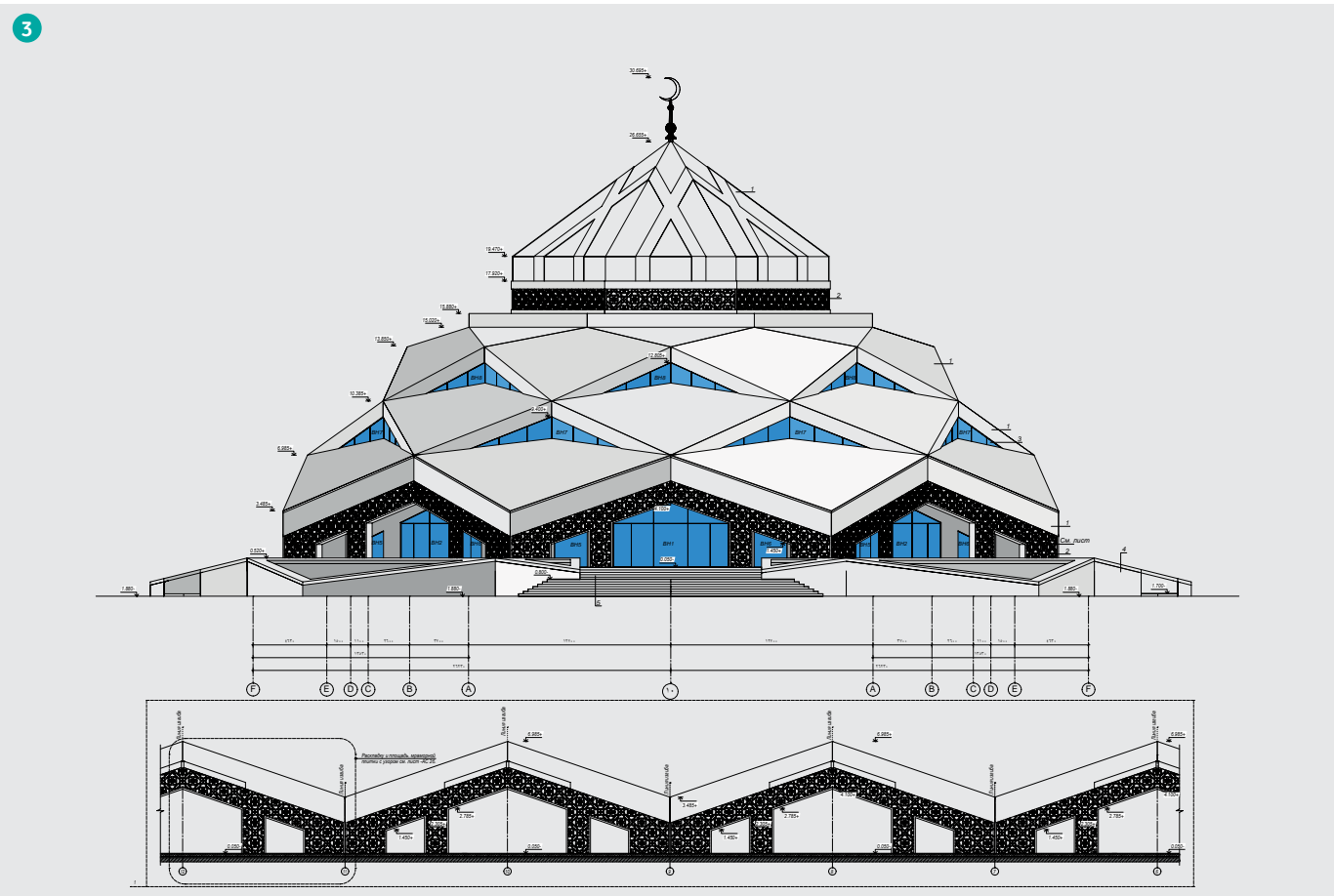
The Flower of Allah mosque is located in Nur-Sultan City at the junction of a quiet residential area and the bank of river Ishim next

- 1 Site plan
- 2 Mass of the mosque within surrounding
- 3 Elevation and section

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to a public river promenade. The vicinity of the mosque comprises several residential blocks, a kindergarten and a school. The new area surrounding the site witnesses heavy construction and development where new infrastructure being laid including streets, new residential blocks and a pedestrian bridge.

The river promenade adjacent to the mosque is open to the public and is used by locals for walks and social interactions. It is accessible, open and inviting. The mosque site is integrated into this promenade and its garden is open to locals. The streets and surrounding infrastructure were newly laid to serve the mosque contributing to surrounding neighbourhood development and local community.

Though this mosque is not the central mosque of Astana or the biggest, many people drive for Friday prayers due to its unique form, openness and inviting atmosphere. It is considered a community centre where many communal activities take place. It is a symbol of pride for the people of Astana and it symbolizes the fast growth of the new capital and its present technological development. As soon as it was erected, it became a vibrant landmark.

The mosque stands out from the surrounding environment due to its form, design and white colour. Local architectural character has a combination of two opposites, the futuristic architecture, skyscrapers



- 1 Top view
- 2 The geometry of the mosque roof



and city's skyline as seen across the river and post-Soviet concrete and brick aesthetics on the northern side of the site.

Mosque form and structure are unique and different, especially its white colour. Incorporating traditional ornaments within the façade, allows a combination of old and new. The height of the mosque is 27m. The height of the minaret is 44m.

The building is approached from the parking lot through a garden with shaded canopies made from Photovoltaic cells. The landscape is designed in a geometrical form. The parking exhibits 128 bays with additional parking for disabled badge holders. Photovoltaic cells are used as shading elements in the parking space. The mosque and landscape integrate with the developing green promenade along the river.

### Spatio-Functional Relationships

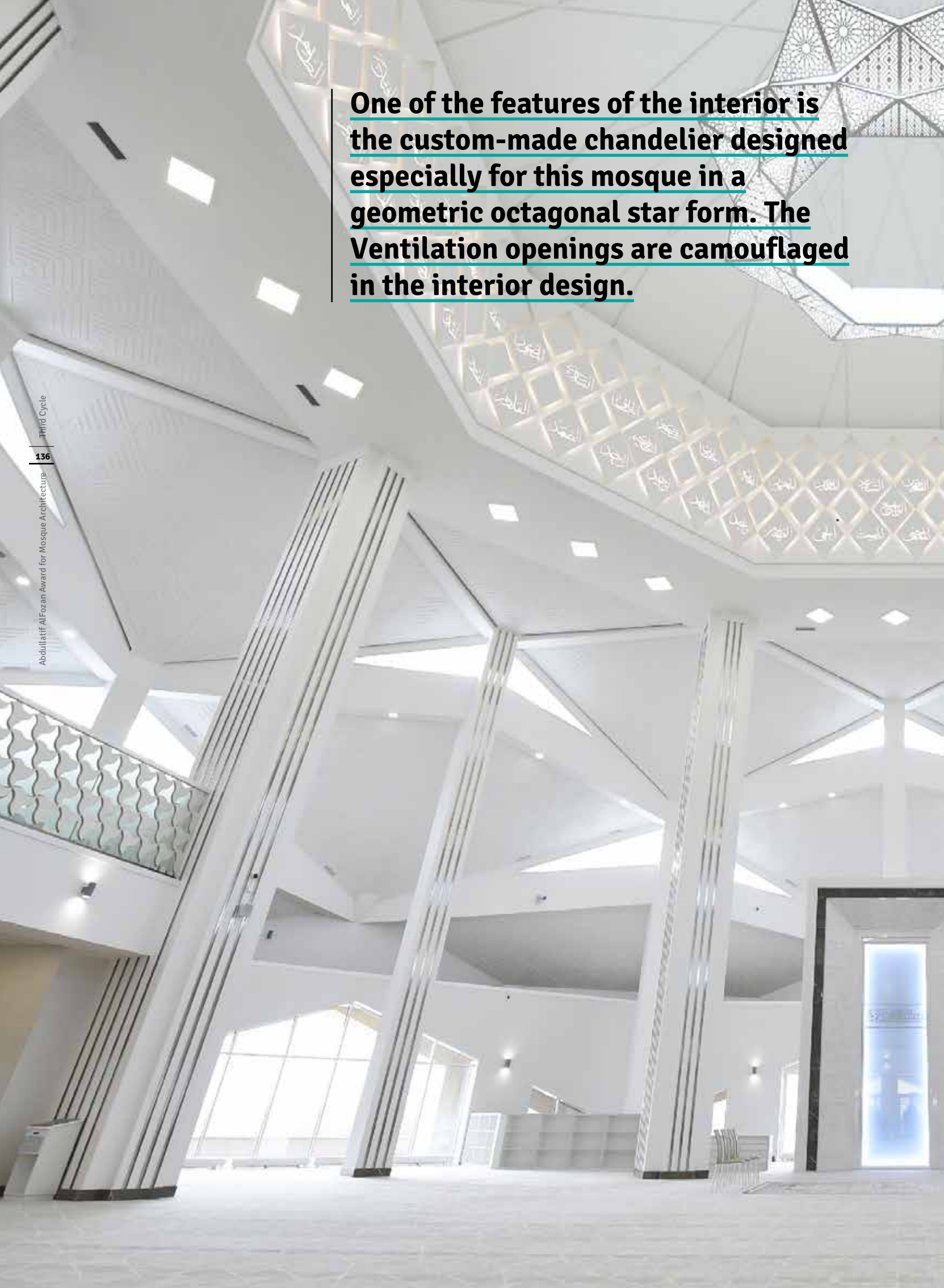
The mosque is a two-storey building and a basement. The main prayer hall is an open space (atrium) under a domed ceiling and is located on the ground floor. The first floor is designated for female worshippers. The building is symmetrical along the radial axes. The diameter of the building along its radial axes is 52m. Its height is 27m (including the dome). There is an outdoor gallery located along the perimeter of the building that allows the gradual transition from outside to inside and provides shelter from rain and snow.

There exist three entrances to the mosque, all symmetrical, but the main one is highlighted by a large staircase, which leads directly to the main prayer hall. The main prayer hall is an open space (atrium) free of columns, octagonal in plan. One side of the octagon comprises freestanding Mihrab wall, which creates important interior focal point oriented to Mecca. It is simple with its back light and subtle calligraphy of Qur'anic verses in white finishing, and is recessed in the middle as if indicating a movement towards the Qibla. The Minbar where the Imam performs his speech is also simple, minimal, abstract and modern. It is attached to the Mihrab, elevated from the ground and is made of glass.

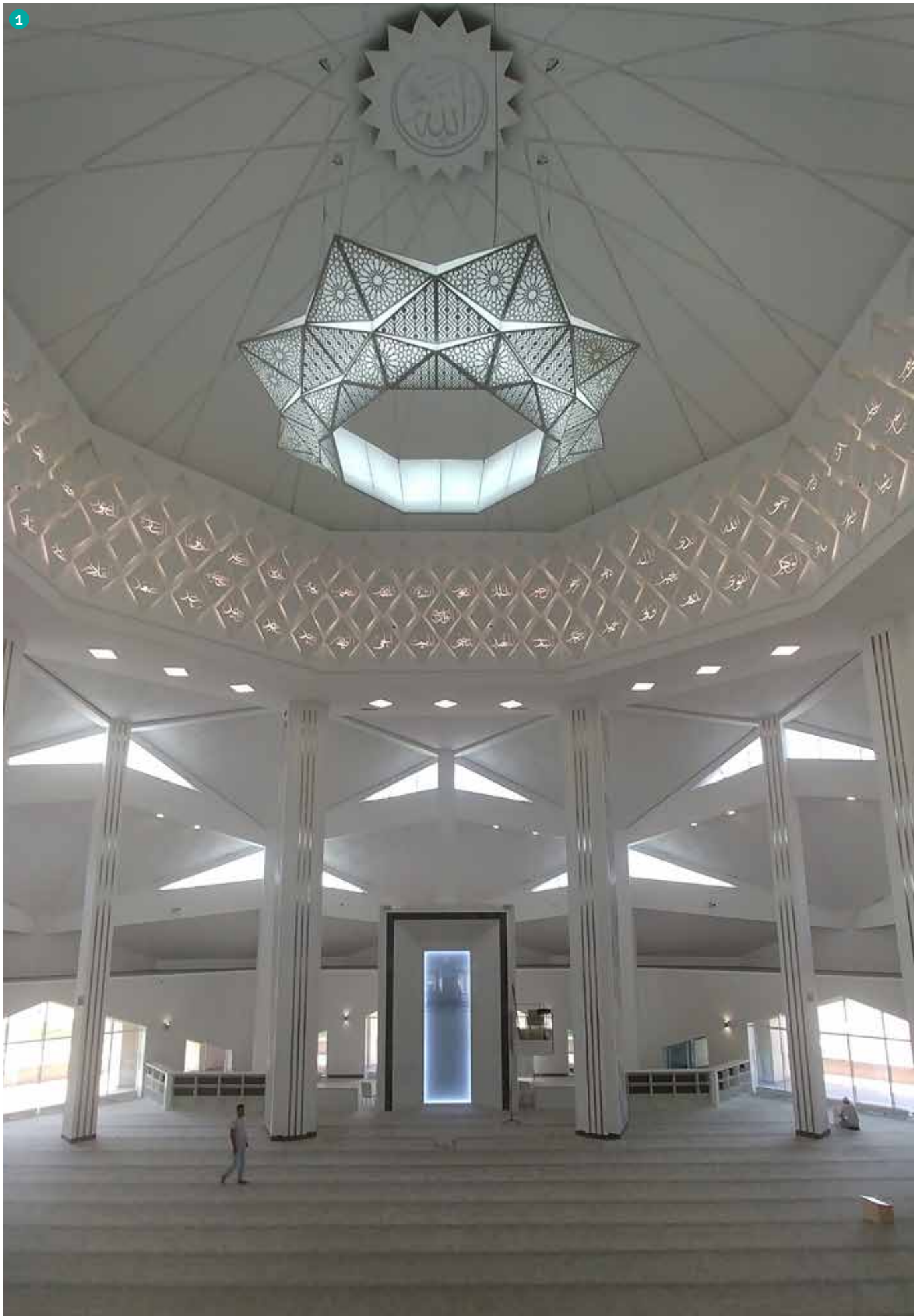
The main functions are located on the ground floor. Other functions include a cloakroom equipped with wardrobe and shoe storage, reading room, a recreation room and imams' offices. The area of the ground floor is 1248m<sup>2</sup>.

Women's prayer area is 870m<sup>2</sup> and is located in the first floor is separated with a light ornamented screen. Its walls are partially decorated with floral ceramic cladding patterns. The ceiling is also decorated with geometric lines and grooves. The dome drum is decorated with the 99 names of Allah and accentuated with a hidden lighting. Technical rooms, lift halls, women's and men's wardrobe and

**One of the features of the interior is the custom-made chandelier designed especially for this mosque in a geometric octagonal star form. The Ventilation openings are camouflaged in the interior design.**







ablution areas and toilets are located in basement. There is a separate changing and ablution room for the disabled.

One of the features of the interior is the custom-made chandelier designed especially for this mosque in a geometric octagonal star form. The Ventilation openings are camouflaged in the interior design. The facing of the columns is modern and simple, with clean lines. Considering that Islamic architecture uses repetitive geometric shapes to create harmony, the repetitive geometric shapes are produced from the structure of the building and the triangular ceiling openings.

The connection between the exterior and the interior is emphasized by the strong axis along the main entrance passing through the Mihrab wall focal point. The glass openings allow sufficient natural lighting and exterior view without distracting prayers. The interior finishing is made of plastering, painted with water-emulsion facade paint.

The mosque is easily accessible by pedestrians coming from the surrounding neighbourhoods as well as from the public river promenade. Drivers can conveniently reach the mosque, with sufficient parking spaces provided. The design provides convenient circulation of people with limited mobility throughout the building according to standards. Mechanized outdoor lifts and ramps are provided and two indoor lifts allow for barrier free vertical mobility between different levels.

### Form and Architecture

The mosque is called «Inzhu-Marzhan», which means «diamond.» The form of the building was initially designed to resemble a diamond, but it is also associated with the flower petals, hence the name “Flower of Allah”.

The mosque appears white in colour adorned with subtle national elements and ornamentation. It has a complex, hemispherical form, consisting of triangular inclined planes, consisting of three angled sloping petals, culminating in a hexagonal dome. It is octagonal in plan, with a 53 m diameter and 26 m height.

The architectural style can be characterized as post modern, which incorporates elements of high-tech industry and technology. The building derives its aesthetics from its structure, and may be associated with structural expressionism. The building appears heavy structure, and symmetrical.

The minaret, north of the mosque, is freestanding and detached from the main building. It is simple and modern about 43.5 m in height. It is designed in the form of a sacred feather.

The proportions of the mosque were established using the golden ratio and a balance was achieved. The height of the mosque is 27 m

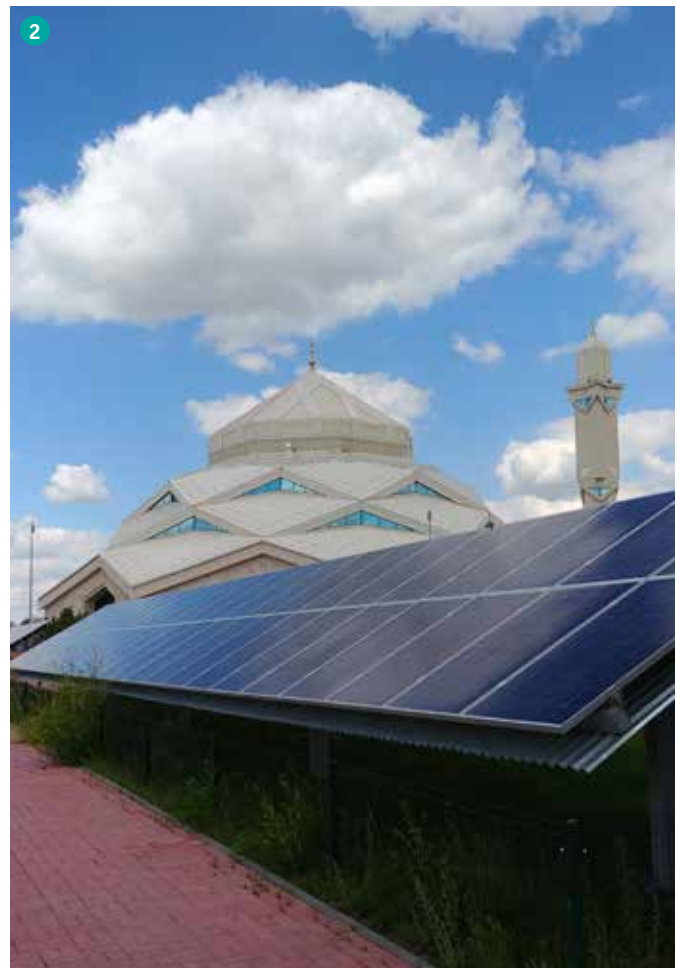
including the dome. Large clear stained-glass windows are used and are decorated with national ornaments.

### Interior Design and Technical Aspects

The most important material used in construction is reinforced concrete. It has a 150 mm insulation layer. The cladding of the external inclined facades and roof is made of fiber-composite, with marble, quartz crumb, which gives the mosque a single look. The facing of facades is made of natural marble, with carved ornamentation, using national Kazakh style. The multi-layer fiber composite cladding is supported by 40x40x1.5 metal frames. Marble and quartz crumb are applied on top of the composite using epoxy resin. All joints are insulated. Fiber composite achieves minimal expansion and contraction and retains its quality over time.

All external structures, horizontal and inclined planes, including the construction of the drum under the dome, and parapets are made of reinforced concrete. The bottom half of the structure is made up of concrete whereas the upper part were constructed from metal. The construction of the dome, parapets, and awnings, is made of sandwich panels 40x40x3 cm profiles. The multi-layer fiber composite cladding is supported by 40x40x1.5 cm metal.

- 1 Prayer hall from inside
- 2 Using the clean source of energy



The main load-bearing part of the inclined structures consists of: I-beams and channels. For protection of the panels from moisture, the inner side is provided with a vapor barrier, and the outer side is protected with waterproofing. The foundation is piles type, with a length of 9 m and a section 300x300 mm, the total number of piles is 790 piles, provided by local manufacturers.

Under floor, heating system is installed. The mosque has a modern ventilation system that detects carbon dioxide emissions from the sensors that circulate air. With a certain number of people in the mosque, the system starts automatically, and the ventilation works more actively. The ventilation system also sustains temperature in the building at any time.

The white, modern and minimal space distinguishes the interior with plenty of natural light. Ample natural light penetrates the interior through roof openings and windows. It seems light was used as a decorative element.

The geometrical shape of the mosque characterizes the interior space, which is uninterrupted, with little distractions providing convenient spiritual white, beige, open and inviting atmosphere. Local ornaments decorate lightly the interior. Instead of superimposed decorations, roof triangular openings create the ornaments. The floors are made of natural stone with light and simple carpet invoking geometric patterns produced locally.

Liquid membrane insulation was used, as well as 6 mm lining with fiber composite. Horizontal waterproofing partitions for exterior and interior walls made of two layers were used. The dome is a metal frame, sheathed with a metal sheet, insulated with a vapor barrier and liquid membrane waterproofing. An enamel coating is used to protect the concrete from water. For anticorrosive protection, the metal structures are painted with enamel and wooden structures are protected against fire and rotting.

The interior walls are made of hollow brick. External doors are made of insulated metal and glass. Internal doors are made of wood. Double glazed windows are used. Indoor Flooring is made of ceramic tiles 10 mm with outdoor flooring from natural stone.

### Conclusion

This mosque provides a living example about primary role of mosque as a place of worship, yet it functions as a community centre for social events. In addition to the primary function of the mosque as a place of worship where Muslims from Astana come to pray, it is seen as a community centre where local festivities are celebrated and community events take place such as the Qur'an school. Considering that there are 20 other mosques in the city it is not a central mosque. However, since its opening it has become locals' destination for Friday prayer due to its unique design.

Considering the environmental aspects of the mosque it is a role model for the new architecture of Astana that is being built according to the planned master plan. One of the unique environmental sustainability aspects of this mosque is being the first mosque in the world with positive electricity balance and an extremely low heat demand built with Austrian technological know-how. A complex photovoltaic system and solar panels were used to supply energy. The windows are energy efficient with tempered glass, double glazed and the building uses energy efficient lighting.

Due to the application of modern engineering solutions, energy balance was achieved: heat consumption was reduced by 61%; electric power consumption for ventilation and cooling was reduced by 80-87%. For this purpose, special equipment was installed, highly efficient energy-saving ventilation units and a set of solar panels with an area of 1295 m<sup>2</sup> for electric power generation. The amount of electricity generated as a result is almost 4 times higher than the needs of the facility, which creates the possibility of selling excess electricity to cover utility bills.

At the entrance lobby, a TV panel shows current energy balance of the building depending on weather conditions. Information about the amount of energy produced, used and statistics relating to the





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1 The mosque within its urban surrounding

2 The main view of the mosque from outside

environmental performance of the building. The photovoltaic panels, perform another function as well. They are used in the landscape of the mosque's garden and garage as shading elements that protect the visitors and vehicles.

This mosque provides a unique example that stands out in terms of form and concept. There is a great level of detailing in the interior and exterior to create an uninterrupted modern space for contemplation and reflection which influences visitor experience. Designing a mosque with the intention to correspond to the climatic conditions, maximize the use of local materials and integrate sustainable energy solutions, reflects the value of economy and sustainability, which is vital to consider in the future of mosque architecture.





# TOSYALI ORAN MOSQUE

Location: **Oran, Algeria**

Client: **Tosyali Holding**

Architect: **Bakırküre Architects**

Land area: **12000m<sup>2</sup>**

Built up area: **Unknown**

Completed: **2016**

Capacity: **8160 worshippers**

Type: **Central Mosque**

The decision to build the mosque presents an interesting case beyond a single section but the entire wellbeing of the community. That decision has been justified due to the central role the mosque plays in the community. It is entrenched in the socio-spatial practices of the inhabitants of the surrounding neighbourhoods, because of the quality of the religious practices that take place, ceremonies and conferences, preaching, orientation and by its involvement in the social life of the inhabitants, especially through donations, assistance to families in need, and learning for children.

The vision was beyond providing a place for worship, but incorporated social aspects that responded to the needs of the surrounding inhabitants. Beyond the provision of convivial public greenery and spaces for relaxation, the mosque performs a socio-cultural responsibility by way of provision of Quranic teaching, feeding of the needy and organisation of blood donation campaigns, cultural competitions, offered clothing to children from poor families and visits to holy places of Islam (omra) for the elderly. It also houses an office of preaching and guidance.

The idea for a mosque, its siting in Oran and its funding is a mixture of influence and politics. Turkish multinational and African leader in the steel industry, Tosyali is one of the main investors in Western Algeria. In order to mark its presence and contribute to strengthening relations with Algeria, it decided on a donation to the city of Oran. Initially, it decided on an aged home for the city but with the intervention of the then governor of Oran, the gift was exchanged to a mosque.

Covering an area of 14000 m<sup>2</sup>, the mosque project was incorporated as an essential feature in the planning vision for the southern entrance of the Wilaya in addition to other projects

#### Site

The mosque is distinguished by its location in green spaces. The city of Oran has no area of special ecological interest. In its immediate vicinity, the Eidur and the great Sabkha have a characteristic Mediterranean flora and fauna. The great Sabkha consists of a thin film of salt water devoid of vegetation. However, in the immediate vicinity of the Sabkha vegetation develops adapted to dry climate and salty land of the area.

The proposed site for the mosque, being close to the Sebkha was saturated with salt water. This posed a technical challenge which was handled through the excavation of foundations as deep as 40 metres to ensure stability. it is the southern entrance to the city of

Oran, on the main highway to the Ahmed Ben Bella International Airport becoming the heart of the district around which socio-spatial practices of the people gravitate.

The mosque comprises two parts, a Qibla-oriented frontal section and a rear street-aligned part. The Qibla-aligned frontal volume and the street-aligned rear section integrate with planning rules of visual aesthetics, and commodity. This latter connection is expressed through socio-spatial practices that have developed and gravitate around the mosque. It has grown to become a new centrality as the heart of the district, providing green space and a public square, children's playground and a sports complex consisting of several fields for social interaction. These accompanying public amenities were thought as a combined revitalisation project with the mosque.

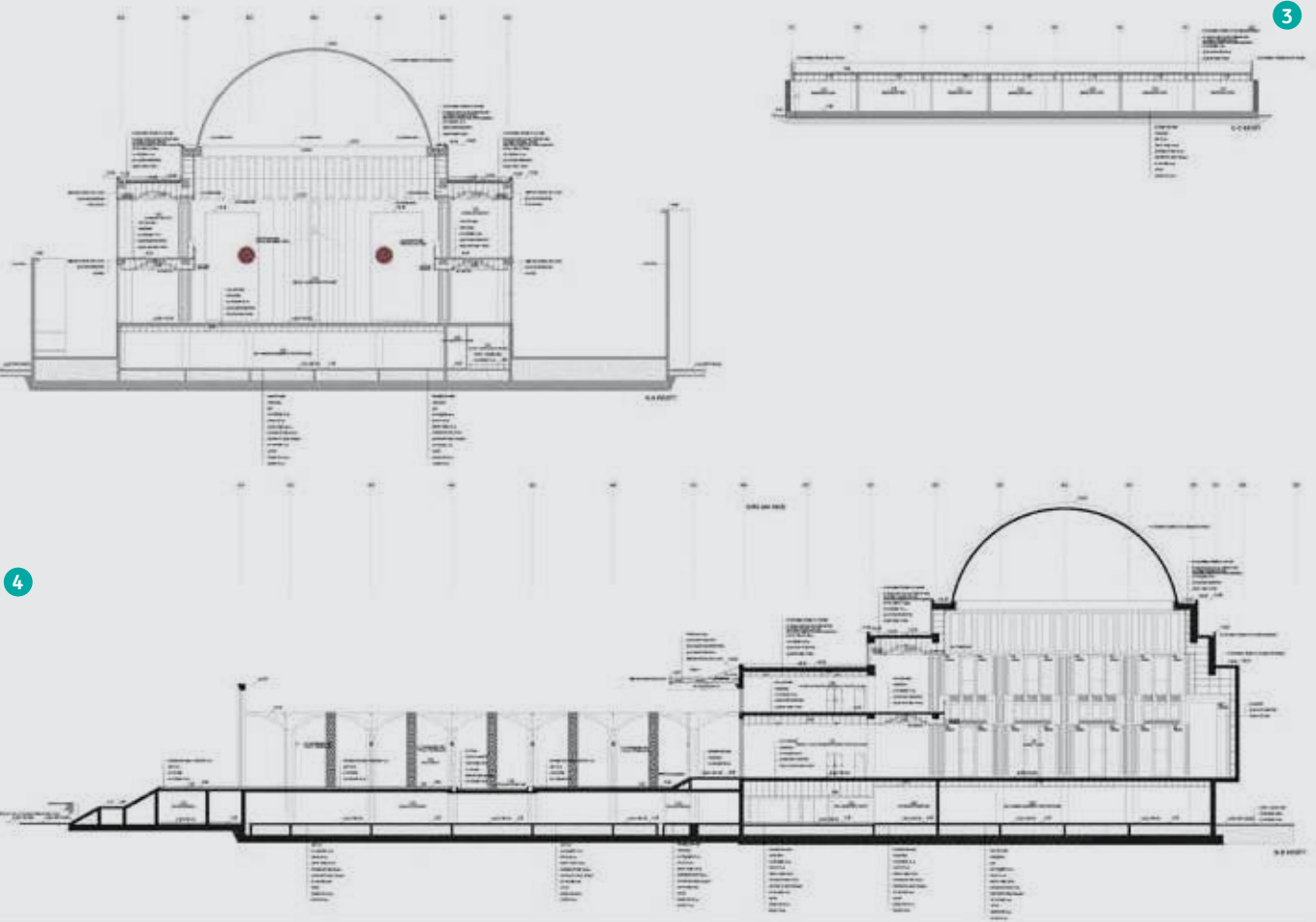
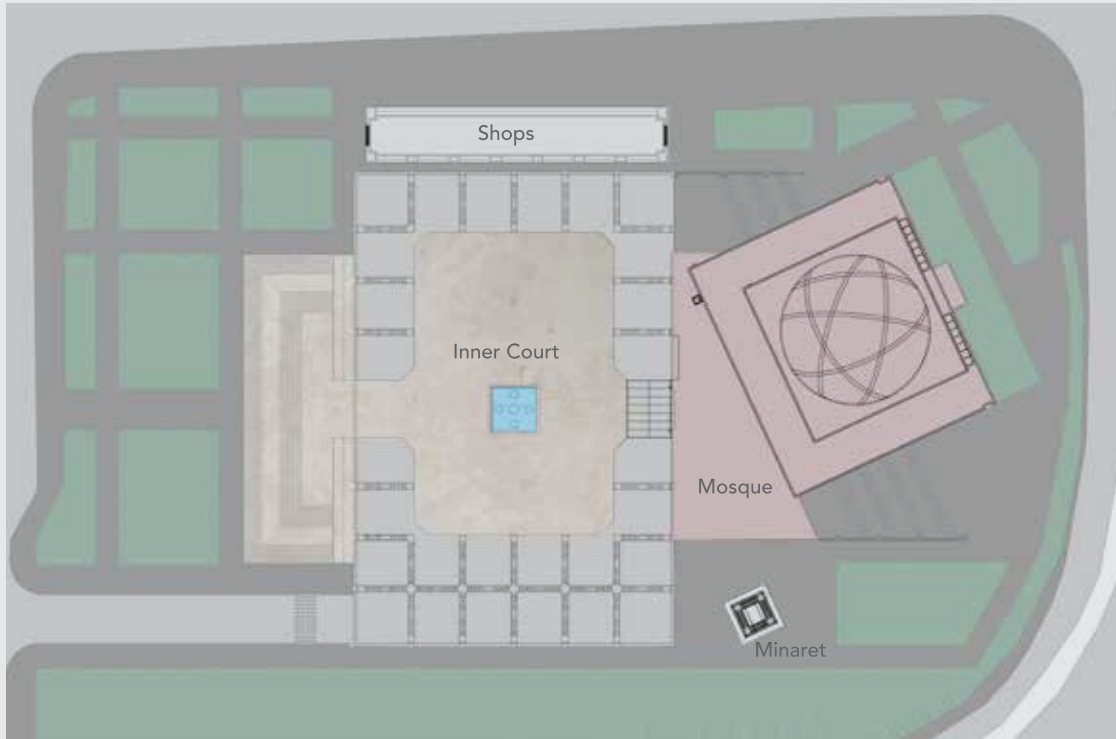
The mosque is accessible from the main road leading to Ahmed Ben Bella Airport and also other connection routes of the district. The mosque has an underground parking with a hundred places free for users of the site and also houses a number of services related to the proper functioning of the building.

Pedestrian access is multiple. The mosque has main entrance overlooking the mosque square and second official entrance used



- 1 Mosque mass
- 2 Ground floor plan
- 3 Elevation
- 4 Section

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- 1 Main gate of the mosque from the external wall
  - 2 Top view shows the mosque components
  - 3 Elevations



2

during religious ceremonies and the entrance reserved for the women's prayer room, beyond service spaces (ablution, entrance to car park, that of the minaret). In addition, all accessibility facilities for disabled people have been planned. The basement car park, accommodates 100 spaces as well.

### Spatio-Functional Relations

Visually, the mosque shares characteristic features with Oran's largest mosque Ibn Badis; both making references in their style to Maghrebian mosque architecture while seeking inspiration from Turkish/Ottoman architecture with a single minaret that towers above the surroundings, with a height of 50 meters.

Being at the heart of the district, the mosque is at the centre of important transport flux. Thus, the accompanying greenery in the vicinity serves a visual lightening effect in the urban landscape. This large area 14000 m<sup>2</sup> of landscape in a way gives a central park feel to the district in the midst of all the surrounding flux.

The entire building sits on a raised plateau that gives it a sustained height translating into a flight of stairs at the major entrances, in a way symbolically giving prominence to the approaching effect. On this raised plateau arranged two volumetric formations, distinguishable by the treatment of their exterior cladding colours;

one in grey bare concrete the other in brown. The one in brown, enclosed and topped with a spherical dome serves as the main prayer hall. Its orientation is thus towards the Qiblah. The second in the rear, covering about two thirds of the mosque area comprises arcades around a central fountain opened to the sky. This part is oriented to follow the street alignment.

The outer space of the mosque is divided into two parts, the enclosure of the mosque square and the gardens surrounding the building. The latter is marked by a thick layer of green grass, shrubs and pavements forming a generalized pattern around the mosque. The former on the other hand, being the surface of the raised plateau is covered in stone flooring with a central fountain. The extended space around the mosque in relation to the revitalization project consists of playgrounds and sports fields meant for the wider community. These provide avenues for competitive and leisure sporting activities. The mosque, thus with these spaces not only attracts faithful for religious activities but all other people thereby creating more avenues for attracting the larger community creating a safe mosque space open to all for diverse leisure activities.

### Form and Architecture

Built on a field of 12.000 m<sup>2</sup>, Tosyali Oran Mosque project is designed in compliance with the local identity, climatic characteristics and geographical position of the region. Contrary to the mosque types of the region, which owns no constant feature, it is based on a design determination influenced by Algerian, Tunisian, Moroccan and Ottoman architecture and it is protective of the historical fabric of the region. The modest but modern identity of the mosque is formed with material choices that reflect regional characteristics.

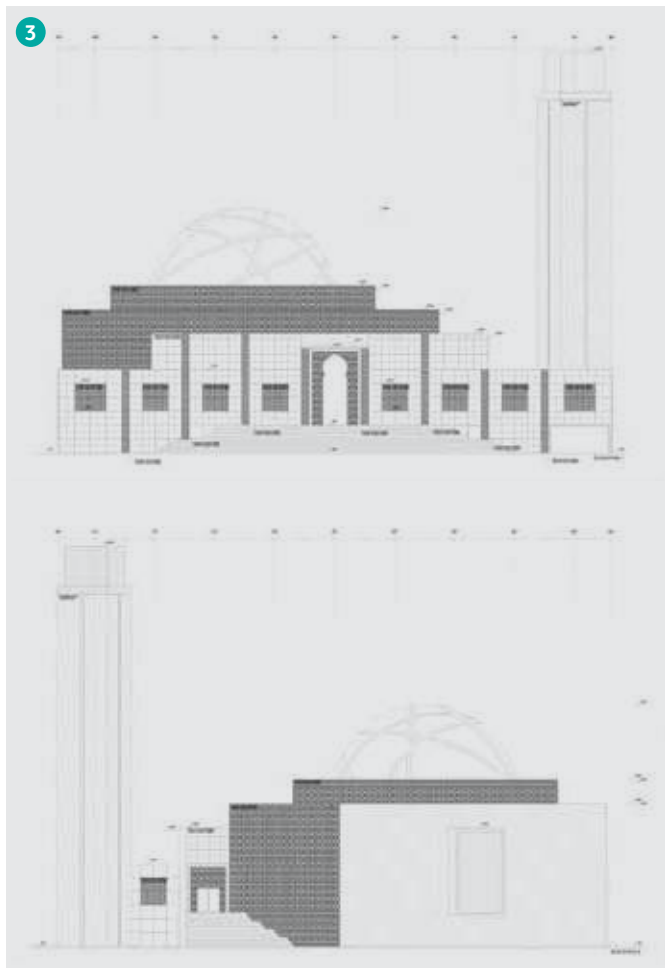
The primary structure of the building is reinforced concrete and the facade is strengthened with natural stones. The mosque with its minaret and dome is blended with contemporary architecture rather than traditional as a result of the key design decisions. The architectural style chosen to translate this vision by the architects portrays clearly a desire to mark the community and simultaneously create linkages between its modernist outlook and the local culture; a critical regionalist signature. This is evidenced by the many references to diverse styles; Ottoman/Turkish reverence to the builders and financiers and Arab-Andalusian for the context. The regulating layout, clean lines, material quality, limited and geometric ornamentation etc. give the building sobriety despite its grandeur which radiates throughout the neighbourhood

Oran mosque advocates a well-established minimalistic design, massive and simple geometric formation, in repetitive modules and bare materials. In this case the material of choice is bare concrete – béton brut, effective in terms of cost, realization times, aesthetic rendering and thermal performance especially for a building of this scale.

The architects took a critical regionalist approach to lighten the effect on the surrounding architectural language as if to negotiate a dialogue with the Arab-Muslim architectural landscape. To achieve this, they relied largely on the architectural details using the moucharabiah as a tool. In this regard, they pierced the repetitive bare-concrete massing on the sides of the mosque with openings covering them with steel formed moucharabiah. This produces a distinctive shadowing effect in the interior. Additionally, they relied on the moucharabiah to create a double skin effect in some parts of the mosque and for lining the colonnade around the interior mosque square, serving equally as a shading device for the passageways.

Thus, in general the style of the mosque, being brutalist is lightened through a dousing of its stark visual and contextual effect via an emersion in Arab-Muslim architectural ornamentation. Modern architecture combined with the materials and textures of the facades give a particular signature to this place of worship becoming in a short time a real urban landmark.

Environmentally, the preservation and enhancement of the existing green landscape formed an important component of the design. To







**The volumetric formation that serves as the prayer gallery expresses a structural ingenuity. It is made of concrete, light materials, waxed plaster and aluminium. To provide a covered gallery, spanned at great distances and ceiling height, the columns were imagined as umbrellas.**



allow for maximum use of the surface for greenery, surface parking was reduced drastically putting it in the basement of the building.

### Interior Design and Technical Aspects

Mosque site was previously an unstable and salt-water logged area. The engineers had to adopt a structural pile foundation system that involved excavations going as deep as 40 m. Architecturally, this translated into the levelling of the mosque on a raised plateau with women's prayer rooms located in the basement.

The volumetric formation that serves as the prayer gallery expresses a structural ingenuity. It is made of concrete, light materials, waxed plaster and aluminium. To provide a covered gallery, spanned at great distances and ceiling height, the columns were imagined as umbrellas. As can be seen from the interior, the umbrella-like columns spread their concrete canopy. The interstices between each of the elements provide for an interesting play of architectonic detail on the roof and the exterior façade translating into a kind of grid that runs around a bare-concrete volume suturing and dividing it at the same time. This contrasts with the column formation in the prayer hall which rather seems to be a regular repetitive grid.

Another key element in mosque design is the creation of the divine effect/aura. This is done in various ways. The architect's used the lighting design to give this impression. At night one can visualise the plateau (stairs) lighted up linked to an illuminated strip that runs along the minaret all the way to its glass-formed summit; a kind of aura merging into the skies.

The thermal comfort in the building is assured via site landscape design and architectonic elements. Seemingly, the mosque is submerged into the landscape, covered on all sides by greenery that therefore creates a micro-climate and at the same time reduces the direct impact of exterior strong winds. Additionally, the use of a double-skin effect by Macharabiah adds to its thermal protection. The mosque contributes significantly to sustainability via environmental, social and economic issues.

A critical component in ensuring sustainable design involves the choice and use of materials. For this, the architects in going brutalist adopted polished and waxed bare concrete for the exterior wall and floor finishing thereby allowing for ease of maintenance and thermal performance. Also, in this regard, local materials were introduced in the design; natural stone wall panels, interior natural stone cladding on columns, ceramics, gypsum panels, plasterboard and satin coating of surfaces to reduce use of water-based paints and Macharabiah double-skin protection.

On the economic front, the mosque project served as a revitalization initiative for the whole community. Through an integrated economic

- 1 Prayer hall from inside
- 2 Main entrance shows the outdoor staircase
- 3 Mosque façade shows the dome and the minarate

and urban planning programme, the living conditions of the neighbourhood has been uplifted through the provision of requisite infrastructure and services. It also serves as a source of income through the employment created via for instance a communication officer, imam, muezzin, religious leaders, gardening staff, cleaning, maintenance, security and surveillance agents.

The interior space of the mosque is characterized by its sobriety against the unique materiality of the exterior. Nonetheless, a variety of material finishing is used to convey a sense of aura typical of interior designs of mosques. The ceiling under the dome is treated to carved plaster in Arabic calligraphy and gold-coloured details. The other ceilings in the hall are treated with wood forming a pyramidal effect with the depth highlighted via the lightning. This is completed with a large chandelier.

The floor finish is in ceramic-tiles covered with thick woollen carpets in tones of wood marking the prayer rows. The interior columns are finished with natural stone veneer while the wall panels are covered in natural stone and Corten in some parts. The Macharabieh plates that envelop the main openings create moods of shadows and light.





- 1 Outdoor columns beside the wall of prayer hall and looking to the main courtyard
- 2 The main prayer hall and minaret from outside
- 3 Using different colours and materials in the main façade





Mosque modern architecture relies on simple materials. Indeed, most of the floors have been shaped in natural stone. Walls are made of polished béton brut and some interior parts coated with stone or wall panels made of natural stone. The ceilings are carved in clean lines in the absence of intricate ornaments and parts inside and outside worked in Corten steel. The glass canopy at the top of the minaret is surrounded by a balcony accessible from the stairs allowing for maintenance.

Water and energy are crucial resources consumed on a daily basis. The ablutions involve a lot of human waste and washing that consumes water. Sustainable approaches could be innovated to ensure sustainability such as purification and rainwater collection. In terms of energy, a lot goes into ensuring thermal comfort in both hot and cold weather through artificial air conditioning.

### Conclusion

Beyond prayers, the mosque plays various educational, religious, social, orientation and support roles for people as seen previously. The importance of the mosque in the socio-spatial life of the community is crucial. With support services rendered in the form of Quranic teaching, conferences and religious gatherings, donation campaigns etc. This results in involvement in the economic and

social life of the neighbourhood, and strong participation in the efforts of support for the target populations. Especially since the mosque participated in the revitalization and upgrading district.

Technically, the size of the mosque and the quality of its construction are a feat given the short period of time under which it was constructed, completed turnkey in just 18 months. Management of the building by professional teams and the Imam's fame help to enhance the value of the mosque.

The role of the mosque can extend beyond this to involve all inhabitants of the community. The expanding role of the mosque involves regarding it as a mixed-use facility that combines a diverse architectural programme such as commercial activities, lodging and the traditional educational activities. In this regard, the mosque could experiment with introducing a few activities to diversify and encourage more people to use the space beyond leisure and religion. This should prompt other such mosque-led projects to diversify activities to include commercial, educational and other activities in the immediate vicinity.





# IMAM REZA COMPLEX MOSQUE

Location: **Tehran, Imam Hossein Square, Iran**

Client: **Tehran Municipality**

Architect: **Saeed reza Boreiri, Samaneh Ghasempour**

Land area: **1900m<sup>2</sup>**

Built up area: **6500m<sup>2</sup>**

Completed: **2012**

Capacity: **550 worshippers**

Type: **Central Mosque**

The location of the Imam Reza religious and cultural complex in the cultural zone of Tehran oriented the project towards creating an urban space for social interaction and participation of different generations and social groups living in the vicinity. To this effect, Kalout Architects Studio won the national competition announced by Tehran municipality to design and build this project.

The main idea of this project was making connections between the mosque and the surrounding neighbourhoods. To achieve this, a strategy of integration with the existing arteries was adopted via two internal streets and a frontal public space. Two narrow, seemingly internal connections were introduced to partially emulate Old Iranian urban fabric. "It allows people to feel comfortable walking and hanging-out within the site," the architect exclaimed. These internal connections make easy access to the mosque and lead people to the main courtyard: a sunken plaza, which acts as a public space and separates the building from noise pollution and street congestion.

The dense urban fabric in which the mosque is located, with lack of cultural facilities nearby, called for introducing supplementary functions for the project to compensate. Therefore, architects, alongside the client (the mosque administrators), worked out a socio-religious programme that contained different functions and facilities that respond to the social needs of the neighbourhood. Thus in addition to the mosques' known functions, the programme included art gallery, auditorium, classes, library, public cafeteria and parking facility.

1 Night view of the mosque shows how the main courtyard open and welcoming the public

2 Conceptual analysis of the main components of the mosque





## Site

The Imam Reza religious and cultural complex is located in the central area of a cultural zone of Tehran, alongside the Enghelab, one of the main East-West axes of the city. Although the west part of this street is the main cultural zone of the city, including the famous city theatre, Tehran University, bookshops, and other educational and cultural centres alongside the Enghelab street, its east part where the project is built, is mainly residential, lacking many cultural and social amenities.

Since the project's site is located along one of the most important streets in Tehran, with heavy vehicular traffic, the architect perceived providing at least two levels of parking facilities with the capacity of almost 70 cars, usually fully occupied, especially during the many special religious occasions and when the auditorium is in full use. The plot was designed to make pedestrian access to permeate the premises via the two alleyways bordering the mosque.

In terms of accessibility, the main mosque entrance is situated at the back street not at the main frontal entry plaza situated at the Qibla side. The architect attempted to compensate this seeming shortcoming by introducing the two alleyways. All the other remaining "secular" functions enjoy a prominent accessibility.

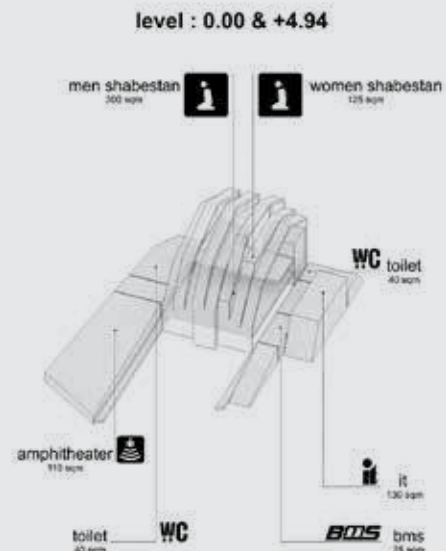
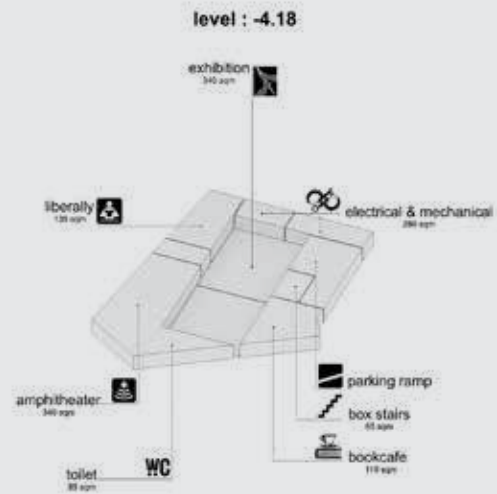
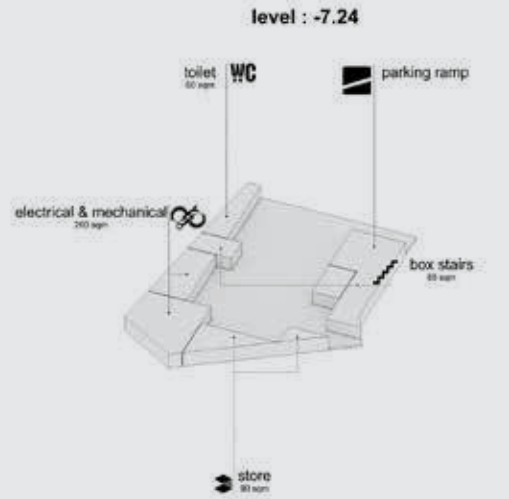
## Spatio-Functional Relations

The complex consists of various functional zones such as a mosque, an art gallery, a bookstore, a coffee shop, an amphitheatre, and IT centre, all with unified design. The project engages/interacts very well with its community of users, infusing an added value to its urban context (through plazas, alleyways and urban landscape). It is a new interpretation of the mosque as a primarily public contemporary space. Besides, users' presence and possible movement are enhanced by lateral corridors alongside the Shabestan, to extend surrounding urban spaces to bring it to life.

The main form of the Shabestan, with the grandeur of a religious space, provides opportunity of unique experience to fulfill the immemorial ambition to connect with the Creator and feel the symbolic form of the dome. This immediate and elucidate connection is also formed by a sunken courtyard as one of the characteristics of Persian architecture, which allows the users to get away from the exterior crowd and perceive the building in a tranquil space. Also, the presence of water increases the transparency of the design. This space not only makes the separation from the everyday life possible but also participates in the process of meaning transference.

The innovative design vocabulary allowed a strong visual connection with the site through interacting with its unique placement. At the corner of the allocated sharp-angled plot, a Cedar sculpture can be seen with prominence, introducing a visual anchor for articulating the urban juncture existing between the two bordering streets. Typologically, the sculpture compensates for the absence of a minaret in this project. More importantly, is the main body of the mosque. The architect insists on calling it the "Dome". Nevertheless, it is a "dome" made of several slender folded slices, plates (or ribs) tectonically well adjoined together side by side to form both roof and enclosure for the prayer hall. Noteworthy are the last two "ribs", on the right and left of the mosque that spread out to reach and touch the ground, establishing a soft visual/physical connection with the public space. Starting from the human scale, these two ribs take the eye gradually to the higher part(s) of the dome. The "ribs" metaphor becomes more of a "finger" in this last fold as it spreads out to meet the ground below. This makes an interesting visual sequence for the eye from a perceptual point of view. The main intended metaphor for the dome was taken from the gesture of the interlocking hands as a symbol of unity and social cohesion.

The visual connection is not only highlighted by the two built/physical elements: the Cedar sculpture (minaret) and mosque mass (dome), rather there are the two spatial components of the design complimenting them, namely, the sunken plaza and the two bordering internal-access alleyways. Both of these built and spatial forms constitute the two design elements visually connecting the



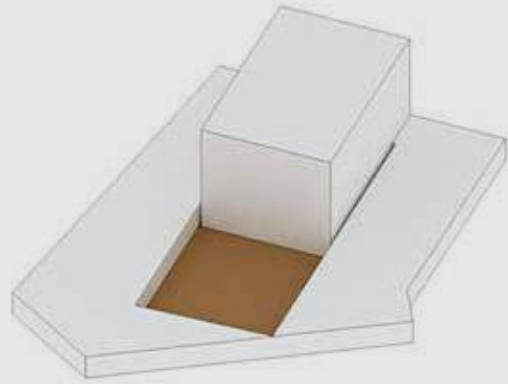
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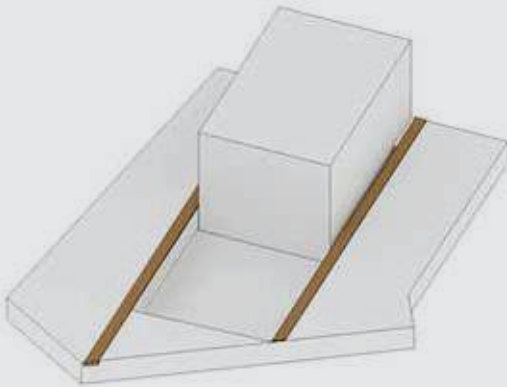
Qibla orientation



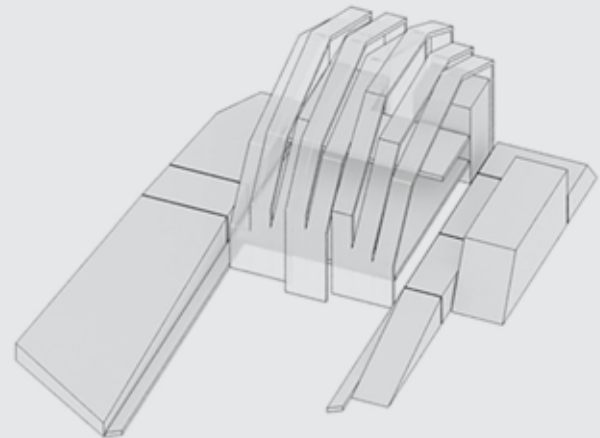
Courtyard



Shabestan placement



Lane



Shabestan form

- 1 Diagram shows the concept of “connecting people”
- 2 The geometry of the prayer hall ceiling



mosque with the site, the overall utilization of which respects both human scale and surrounding skyline, rendering the project more related to the immediate neighbourhood and to the city at large.

### Form and Architecture

The main idea of correlation and interrelationship between different social groups and encouraging the presence of the new generation in the complex, is reflected in the final form of the Shabestan which was shaped by the idea of interlocking hands as a symbol of unity and social cohesion. Following this main form, the side wings of the building with the supplementary functions rise from and rest on the ground to create an innovative form visually.

The quality of public space-design in this project, inasmuch as it enhances architecture, is perhaps its main merit and positive counterpart. Situated on a prominent corner between two important streets in Tehran, the architect focused his design to reflect his thesis of a new interpretation of “the mosque as a primarily public contemporary space.” Thus he started by a strategic decision to setback the building as far as possible to accommodate two plazas in two spatial typologies: one frontal, at street-level, the other sunken. The frontal plaza melts with the public pavement; its oblique configuration sucks the passing-by pedestrian towards the mosque

via a second spatial typology, the sunken plaza. The two spaces (plazas) are separated/connected by a generous public stairs.

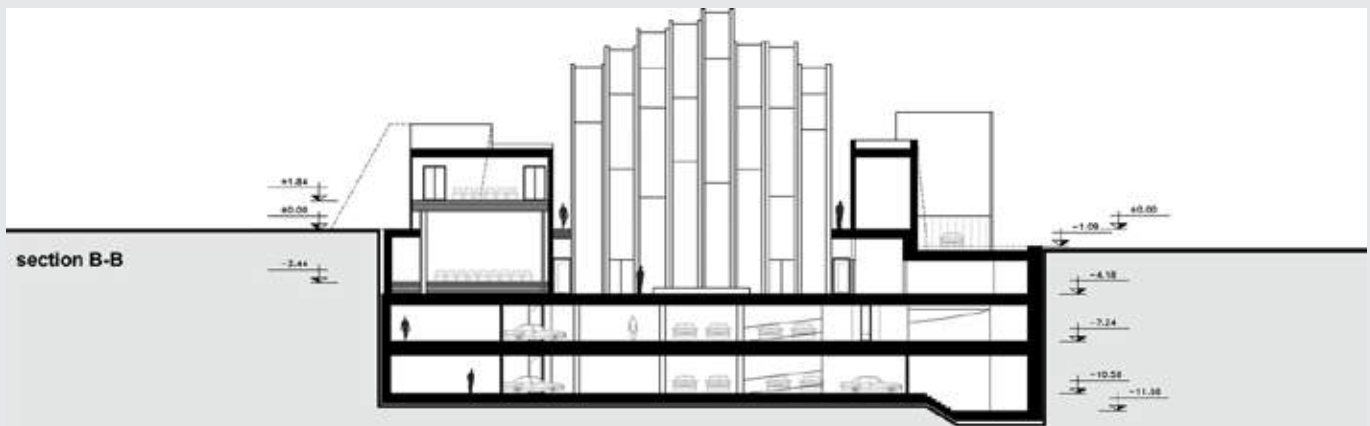
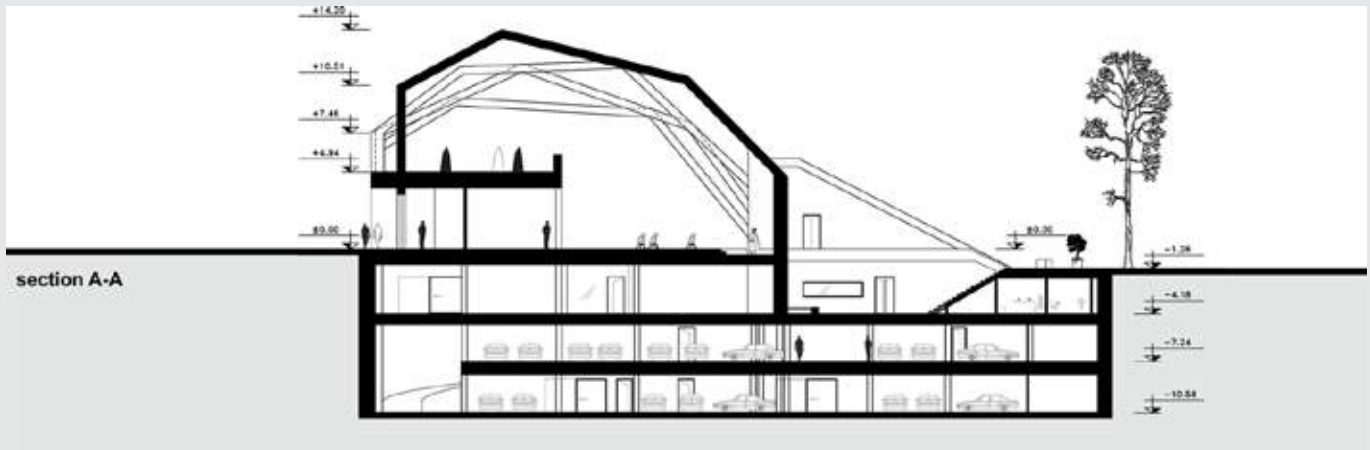
The sunken plaza is an emulation to the traditional Iranian Shabestan, which allows the users to have distance from the exterior crowded streets and use the complex’s amenities in a tranquil meditative-like semi-enclosed space. In the middle of this space, one would find that the presence of reflecting pool increases its transparency, lightens and reduces the possibility of claustrophobia resulting being in a subterranean space, by reflecting the sky above.

The two introduced alleyways framing the building from left and right, enhance the intended quality of urban space permeating the building. The two alleyways, thus, must be considered as a third spatial element in addition to the two plazas. Two other built elements enhance the interaction of the building with its surrounding public space: the Cedar monument (a vertical element) and a huge epigraph wall (a horizontal element), both of which should be considered as urban/urbane public art statements, especially the latter.

As for the other element, the epigraph wall, it is a huge stone on the western side of the complex. It functions as an evocative mural



**The main idea of correlation and interrelationship between different social groups and encouraging the presence of the new generation in the complex, is reflected in the final form of the Shabestan which was shaped by the idea of interlocking hands as a symbol of unity and social cohesion.**



1

for the pleasure of passers-by. The calligraphy on it is a repetition of the phrase/aya: 'In the name of God' in different variation of thicknesses and sizes, allowing the possibility of the text being readable from different distances. Bricks used in the walls of the corridors and Shabestan together with glass, express the symbolic ascending movement from earth to light. The handmade glass covering the main dome is engraved with the names of God and starts from a face to face connection with the prayers and culminates to sky along the dome.

The tectonic configuration of the structural elements (the ribs) forming the roof of the prayer hall (the dome) are the main dominating element in the space. This configuration gives the mosque its unique 'modern' interior spatial character. Nevertheless, this modern ambiance is compromised as the architect opted to add a rather dissonant mix of traditional types of ornamentation and epigraphs. It would have been perhaps more in line with the architect's modern design outlook to stick with tectonic properties of brick introduced elsewhere.

This project could be seen as a genuine attempt to explore new forms in mosque architecture: functionally (programmatically), structurally and aesthetically/tectonically. It further has a clear embedded "message," a concept stemming from the highly symbolic metaphor adopted in the main mass.

### Interior Design and Technology

The innovative folded-plate "dome", as the main architecture represented structurally the main challenges. The structural engineers associated with the Kalout Architects Studio explained that in the main prayer hall, the span was 24 meters with 1.80 m strips. Because of the differentiation occurring between the structure of each part, 6 expansion joint were defined. The construction of these strips/ribs in steel (rather than concrete) was another structural challenge, as all connections had to be formed by an on-site welding system. Since the parts of the folded dome

- 1 Sections in the prayer hall and other components
- 2 Side walking
- 3 The mosque and surrounding urban features



behaved differently in each part of the structure [like the phalangeal bones in the figures], three major expansion joints had to divide the structure in six different parts, the engineer explained. All parts were joined and assembled together in the basements and separate foundational columns were placed for each part. Further, a giant boundary link was defined between the parts in basements.

Given that the folded roof/dome, the most difficult part of structural design, with each row of the folds behaving independently, lateral movements of all rows were equalized by increasing or decreasing the member's stiffness. The gradient of deformation thus was limited to 10%.

Material-wise, one could observe that at the exterior side of the prayer hall there is a galvanized system of layering placed beneath the handmade glass-blocks. Its purpose is to collect rainwater and channel it to be used for toilet flushes and cleaning. (Most of the excess rainwater falling on the roof is channeled down to the pool at the sunken plaza level). One of the highlights of this project is its use of the local time-proven eco-friendly material (brick and glazed brick) made and installed on-site by local craftsmen. Tiles are produced by a local traditional factory/workshop. The steel was also produced locally then brought to site in a few shipments to be assembled and built by local builders and contractor. The use of local handmade traditional materials both in construction and cladding (especially the perforated brick walls and ceramic tiles) produced a high insulation matrix.

The bricking of this project (interior and exterior) could be seen as a modern interpretation of the Iranian 11th century bricking style, namely the Mored-Moghalee, in which pieces of glass are uncommonly incorporated between the bricks. Translucent blocks, made of 5 layers of glass, are thus fitted between the bricks, as they have the very same dimensions. The four sides of these glass-blocks neighbouring the traditional bricks, are covered with mercury in order to create mirrors that increase the reflection of natural light into the interior space. The number of these blocks

multiplies up the wall, metaphorically resembling the ancient Iranian religious architecture where the gaze moves from soil to light. Generally, the Islamic-Iranian motifs and patterns used in interior decoration are simplified to make the place “look modern,” the architect pointed out.

Stylistically, the epigraphs on the Prayer Room's ceiling(s) is an adaptation of 11th century Kufic script calligraphy inspired from the dome of Mosque of Isfahan. These epigraphs are made of a combination of plaster, turquoise pigment and concrete fibers cast within polystyrene modules, later to be installed by nails and wood glue on the ceiling. The rest of spaces appear modern with added ornamentation, seen in the auditorium, parking floors and art gallery, accentuating the dichotomy between the sacred and worldly functions of the complex

It is notable the structural integrity is intact, especially that built in modern materials (steel, concrete, in additions to the external hardscape), and cladding and tiling. While the brick-work for the walls is still in very good shape and constitutes an obvious added value, tiling seems not to have aged very well, especially at the rubber gaskets and joints.

### Conclusion

The Imam Reza project is a “complex”, housing much more than the traditional religious facilities of a mosque. For alongside the usual prayer hall, the complex comprises other facilities. In fact, these other facilities occupy much more floor area than the mosque itself. Yet, the architect managed to conceal these other function, giving them less prominence in order to keep the mosque's mass dominant.

The architect does not subscribe to the modernist discourse of a tabula rasa that forges complete rupture with the past. Rather, he tries to engage in a respectful dialogue with tradition (through traditional materials, ornamentation and emulated spatial types) while still maintaining a clear modernist agenda. The stance that the architect took, his compromise, to prove to the “conservatives”







that a modern mosque is relevant, was in the form of lavish internal ornamentation in the prayer hall and some other minor spaces. The result, however, compromised the purity of the highly symbolic main space/idea.

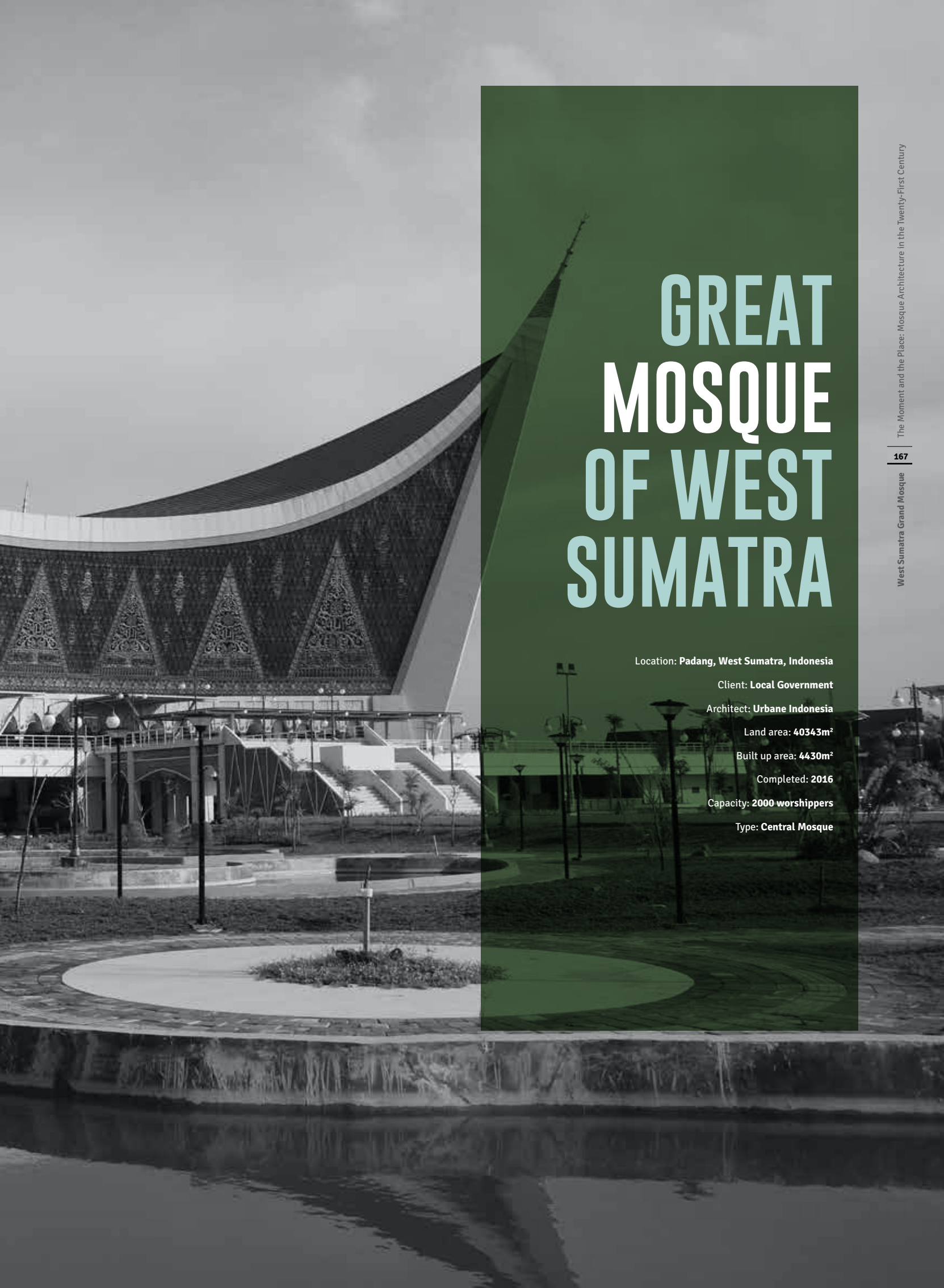
In terms of, post-occupancy evaluation, the project seems to be serving its intended purpose very well. It is highly popular with the community, with no indication of any architectural (or structural) faults. However, the project is a typical example of the rift between the well-intentions of the architect and the misuse/ abuse of the client/operator.

Sustainability could be observed in this project, in the semi-transparent walls of the prayer hall, both brick (on the side walls) and glazed tiles (on the dome). Not only the previous features lead natural light in providing a fairly spiritual ambiance but they provide filtered light during the daytime, saving a considerable amount of energy. The second is building's social sustainability consideration: programmatic/functional self-sufficiency financially speaking. the project contains various functions such as classrooms, a library, a coffee shop, which makes it a multifaceted building, able to generate its own income running cost during different seasons. Energy is also saved, by saving on transportation emissions: people/users of immediate neighbourhood do not need to travel far.

1 Part of the mosque façade shows ornamentation and materials

2 Motifs and geometry in different parts of the mosque





# GREAT MOSQUE OF WEST SUMATRA

Location: **Padang, West Sumatra, Indonesia**

Client: **Local Government**

Architect: **Urbane Indonesia**

Land area: **40343m<sup>2</sup>**

Built up area: **4430m<sup>2</sup>**

Completed: **2016**

Capacity: **2000 worshippers**

Type: **Central Mosque**

Masjid Raya Padang exemplifies regionalism in mosque architecture. Incorporating Islamic concept and Sumatran local wisdom of communal consultation, the mosque stands out. The West Sumatra Grand Mosque locally known as Masjid Raya Sumatera Barat was completed in 2016. It was partially funded by the Saudi Government.

It was designed by Urbane, headed by Rizal Muslimin. The mosque was announced as a competition, organized and sponsored by the provincial government of West Sumatera, for the design of Masjid Raya Padang in 2006. A requirement of the competition was that the mosque should accommodate 20,000 congregations, including disabled worshippers. The design should also incorporate local wisdom “Adat basandi syarak, syarak basandi

Kitabullah,” meaning that traditions should be based on law, and the law should be based on the Quran and Hadith. Furthermore, the mosque should be a centre of community’s religious and educational, as well as social activities. It should serve as babalai bamusajik or a place for the community’s notable persons to gather and deliberate communal issues.

The Minangkabau people have been the majority ethnic group inhabiting the island of Sumatra for centuries. They started embracing Islam in the 16th century. The mosque has unprecedented connection with residents. Although the programme given to the architect required “the mosque to be a centre of community’s religious and educational, as well as social activities the West Sumatra Grand Mosque has exceeded the client programme manifold. It is now used as students study place, relaxation, weddings, and is considered a main tourist attraction.

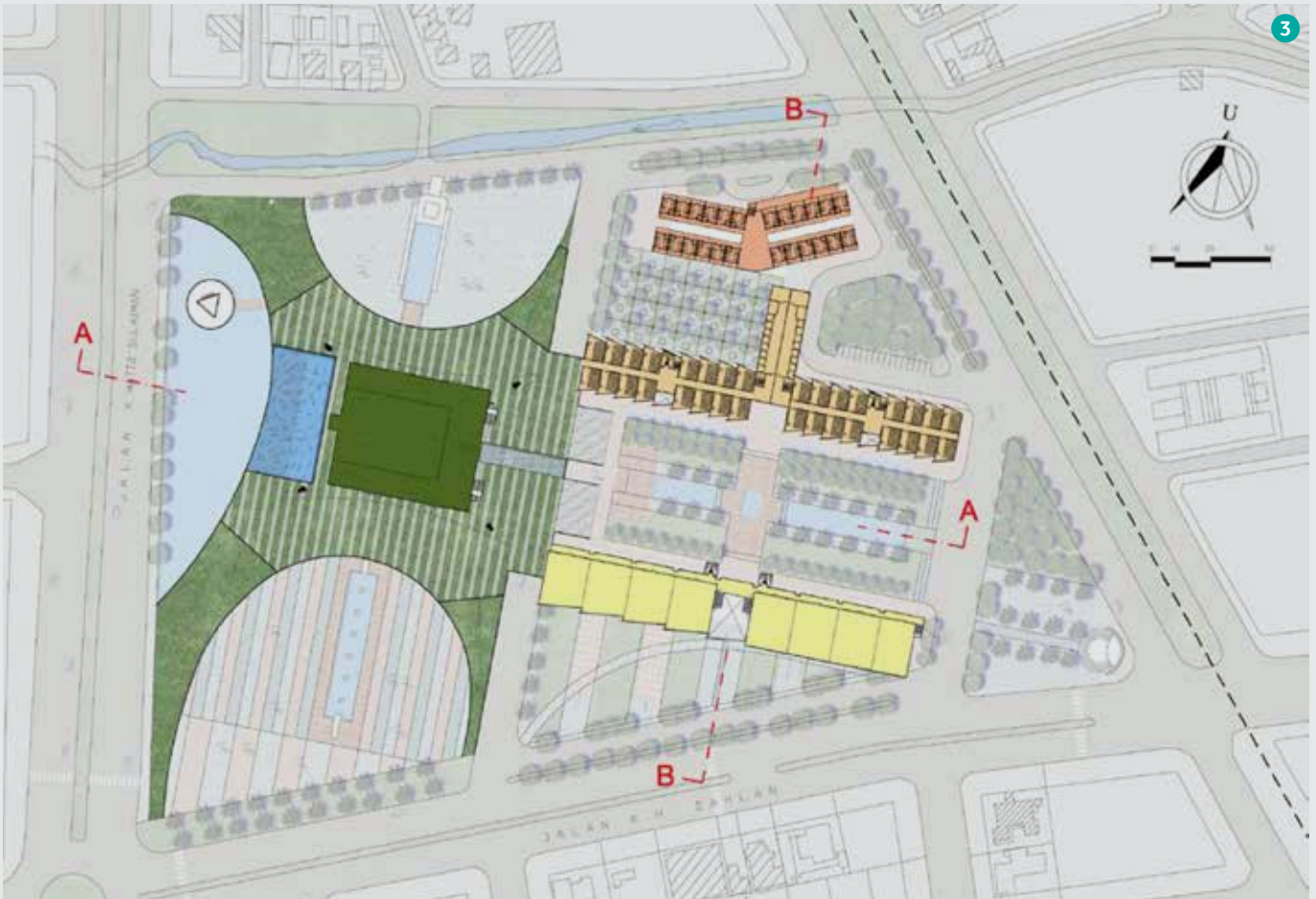
#### Site

The mosque is located in the heart of Padang, the capital of West Sumatra and is a major landmark. Not only it is located on the junction of major roads, it is also built on elevated ground and has a very unique shape derived from Sumatran vernacular architecture. The landscaped sides of the mosque merge with the roads without

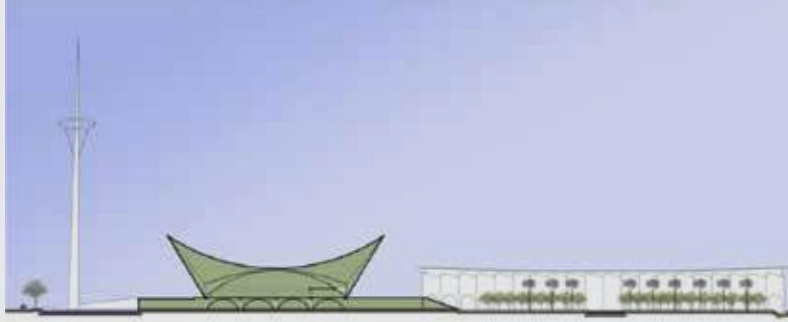
- 1 Top view of prayer hall
- 2 Site plan
- 3 Site plan with details of the ground floor plan



1



1



POTONGAN B - B



POTONGAN A - A

1 Sections

2 Side façade of the mosque

2



any boundary walls or fencing making it a public place used extensively by the pedestrians and visitors.

The complex has several entrances located at the four sides of the site. Vehicles enter site from the southern side of the mosque and park at the semi basement parking lot under the plaza area at the east of the mosque. Vehicles can use site at its outer ring and reach the other side of the complex. This mosque provides most facilitations to the pedestrians. They can walk comfortably because their paths are designed to avoid crossing with vehicles. The mosque itself is accessible through four sides using ramps, which allow easy disabled access to the prayer hall situated on the mosque's second floor.

The architect has used landscape skillfully to integrate main roads and pedestrian paths with the mosque complex. The curvilinear shaped sloping grass areas swoop down and merge with footpaths, creating inviting entrance for passersby. The shape narrows as it goes up creating an enhanced perspective. It makes the pathway inviting to climb up and reach the grand and imposing mosque. These sloping lawns serve as public space where citizens of the city come for photographs. With the increasing number of people using mosque landscape, roadside food- sellers gather in the area providing activity and a human touch.



Although the mosque seems very accessible from all sides, including main roads, the access used mostly by the prayers is quite an anticlimax to the imposing scale of the mosque. It is accessed from the parking area which is used by most people. As the main prayer hall is on the first floor, and the parking is on the ground floor, a flight of stairs takes the visitor up to the prayer hall. The ablution area and the toilets are also on the ground floor so this narrow staircase is frequently used by the prayers and visitors. The entire ground floor area houses a large hall used for weddings.

### Spatio-Functional Relations

The complex comprises several functions, which are grouped into several zones. The mosque zone includes the prayer hall for men on the second floor and one for women on the third floor, a museum, and the mosque office; the business and commercial zone (food stalls, café, retails, banks, insurance offices, and a multi-function hall); community centre zone (art centre, polyclinics, and daycare); education zone (playgroup and kindergarten, Islamic schools, library, and indoor sport facilities); guest house zone; utility zone; and parks and plazas. The parks and plazas, including Friday Market Plaza, Pool Plaza, Commercial Plaza, Main Park, School Plaza, Guest House Plaza, and Art Plaza, spread on several locations within site. This provides visitors with spaces for gathering and social interactions. The plazas are all covered with materials using Qibla oriented patterns serving as prayer lines in case of congregation overflow, particularly during big events like the Eid and Friday prayers.

Unlike traditional mosques, there is no dome, but an allusion of a dome created through a centralized circle in the ceiling which symbolically defines the «drum» of a dome. Just like the domes of the Ottoman Turkish mosques, this circle in the ceiling marks the centrality of the symmetric interior space. The centrality is further accentuated by two cross beams emanating from the four corners and intersecting right at the centre of the circle. This intersection marks a point in the vast ceiling, which is the exact geometric centre of the ceiling that alludes to the tip of the dome. This has traditionally been used to mark the centre, and to symbolize the concept of «Tauheed» (The Oneness of Allah). This appears to be a more refined symbolism in highlighting the concept of centrality than a regular dome.

Innovation has also been shown in the main Qibla wall which starts as a wall but rises smoothly to convert into the ceiling, blurring the line between a wall and a ceiling. This increases the size and scale of the Qibla wall. The Qibla wall breaks the pure geometry of the aforementioned circle, hence appearing to create an overt importance for itself. To accentuate this importance, the entire Qibla wall is covered with «Asma Allah al Husna» (the 99 names of Allah) that appear to connect the Mihrab with the centre point of the ceiling. This in itself exudes a powerful symbolism where Asma Allah al Husna physically enjoin the Qibla, the direction of the Holy Kaaba with the centre point, the symbolism of Tawheed. Asma Allah al Husna geometrically written on the Qibla wall are overt, bold and traditional without any attempt to make them symbolic or veiled. This is a good combination of traditional versus modern repeated on the exterior of the mosque as well.

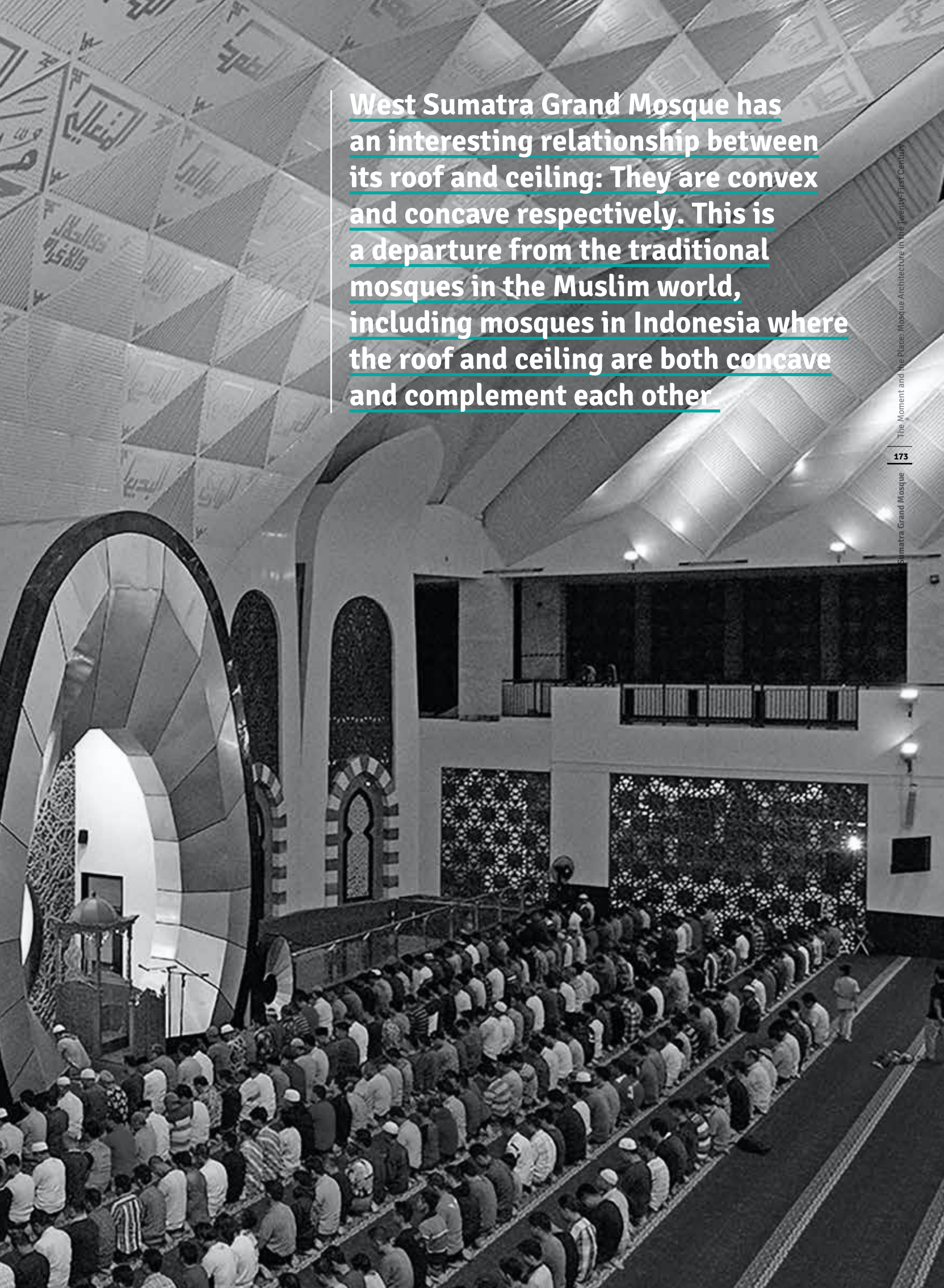
In the human-scale verandah surrounding the main prayer hall, three-pointed arches superimpose on reverse ogee vaults rest on columns with capitals which are in form and proportion Corinthian-inspired, but diluted in detail. The column capitals are golden in colour. Moreover, this verandah with its traditional arches does not go well with the overall scale of the facade and makes the visitor pass through a human scaled verandah with standard concrete beams and a low ceiling before entering into the vast and spacious interior of the prayer hall.

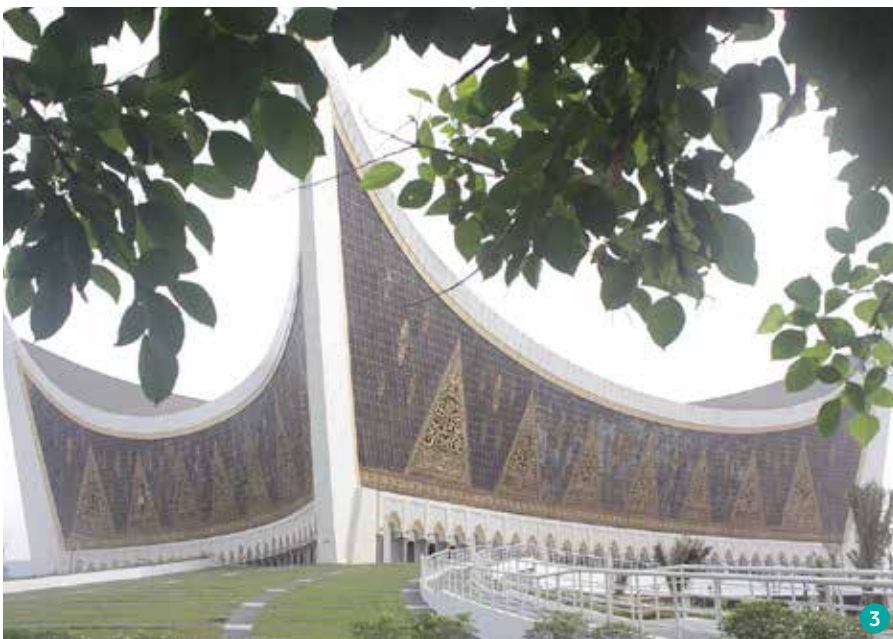
The mosque is set at the front most side of the site to affirm its position, which allows to be most visible from four corners. Given its public accessibility, the commercial and educational area is located at the neighbourhood street, which is a quite area. These zones are unified by the Qibla axis. The ground floors are located at the same level with the street and are freely accessible to public. This allows





West Sumatra Grand Mosque has an interesting relationship between its roof and ceiling: They are convex and concave respectively. This is a departure from the traditional mosques in the Muslim world, including mosques in Indonesia where the roof and ceiling are both concave and complement each other.





- 
- 1 Local ornamentation of the prayer hall walls
  - 2 The four horns in the corners derived from the local heritage
  - 3 Site view of the prayer hall
  - 2 Detail of the column cap



people to enjoy the parks and facilities in the complex easily. This is also a response to the city's growth in the future.

### Form and Architecture

In response to the competition requirements, the architects designed a mosque articulating West Sumateran traditional house, known as rumah gadang (big house) or rumah bagonjong (horned house). Rumah gadang is traditionally used in both residential buildings and communal houses. The spired roof symbolizes the strength and utility of the community when an individual becomes part of a larger community. The West Sumateran house traditionally has two spikes. Developed from this prototype, this mosque's roof instead possesses four spikes, adopting the traditional roof, while representing a cloth used by community's notable persons to lift something together, as inspired by a legendary story of how Prophet Muhammad once dissolved the dispute among the chiefs of prominent tribes in Makkah on who deserved to put the detached Hajar Aswad (the Black Stone) back to the Kaaba. Thus the form of the roof symbolizes the idea of communal living of Minangkabau community wisdom and ingenuity that need to be preserved.

The original design placed a unique minaret at the northwestern corner of the site, thus visible to the city's prominent streets.

The minaret, instead of using the ubiquitous dome, consists of a branched-tree thin, tall tower and is embellished with a crescent moon facing toward the Qibla. At night, the crescent moon is illuminated with light and thus seen as an artificial moon from the ground floor and the mosque's surroundings. The crescent moon itself is actually a room available for rent for placing telecommunication devices. Thus in addition to a signage, the minaret can also be an income source for the mosque.

Entering through the arch doors, visitors will immediately be welcomed, which spans under a shell-like ceiling made of fiber reinforced plastic. The finned ceiling is interspersed by openings, allowing air flow into the prayer hall and making it cooler than the outside. The outstanding mihrab, oval in shape and located in the middle of the Qibla wall, was inspired by the Hajar Aswad, the black stone attached to Kaaba's corner in Makkah. The ceiling in front of the mihrab is covered with tiles carved with Asma Allah al Husna.

The ceiling has an interesting element: It is not completely closed but has cut out strips which enable the onlooker to see the steel frame truss above the white covering sheets. The deliberately exposed ceiling in parts hints at exposing the structure and the letting one have a glimpse of the void between the concave ceiling at the convex roof and the steel framing in between. It also adds visual depth and material modernist purity. The opening slits create a connection between the pristine interior and the structure; the ceiling and the contrasting roof.

### Interior Design and Technical Aspects

Mosque structure is mainly made of concrete. It forms a huge mass on site. In order to avoid bulk appearance, the façade of the building uses glasses, allowing lights to shine out of the building at night and make a dramatic appearance. The four sides of the roof are covered with canvases using patterned bamboo shoots decoration, symbolizing the hope for human's usefulness.



1

West Sumatra Grand Mosque has an interesting relationship between its roof and ceiling: They are convex and concave respectively. This is a departure from the traditional mosques in the Muslim world, including mosques in Indonesia where the roof and ceiling are both concave and complement each other. This contrast creates an interesting effect and a surprise.

Padang is in the equatorial region, almost on the Equator, where the temperature remains almost constant throughout the year at around 27° C. The relative humidity also remains constant at an average of 65%. The architect has taken advantage of the elevation to harness the wind in order to reduce humidity inside the main prayer hall.

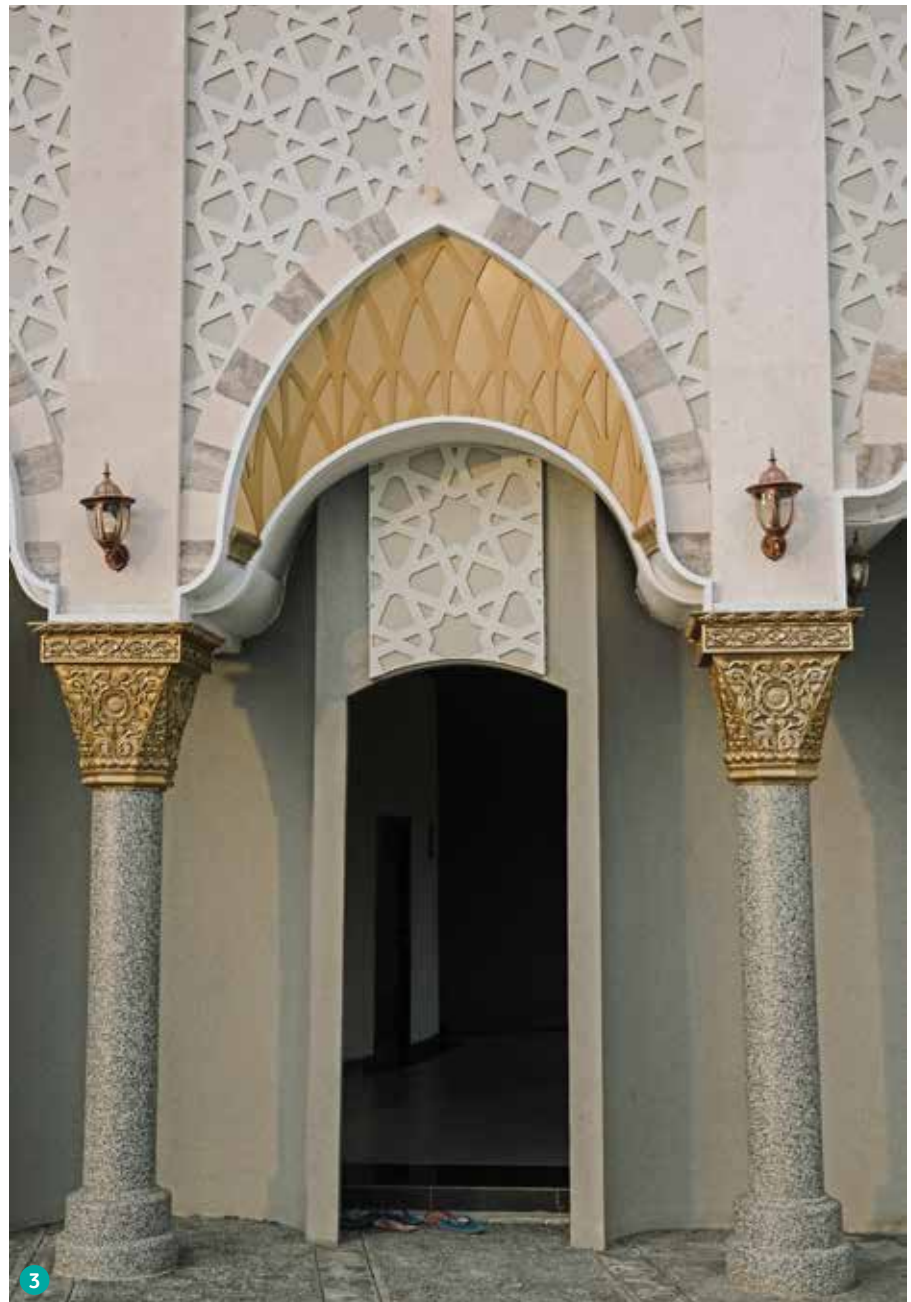


2

Direct sunlight is prevented from entering the main prayer hall by means of verandahs on all sides that keep the steel grills under shade, hence reducing the temperature outside.

The interior is spacious, well-lit and well-ventilated. The oval-shaped Mihrab is prominent. The curved Qibla wall with Asma Allah al Husna curves up all the way up to the centre of the ceiling. This transition guides and forces the onlooker to gaze up.

The plain crimson carpet is in contrast to the otherwise overwhelming white interior. The imposing ceiling takes up most of the visual frame and dwarfs the side walls made up of geometric grills. The carpet keeps the visual frame firmly grounded and «with feet on the ground».

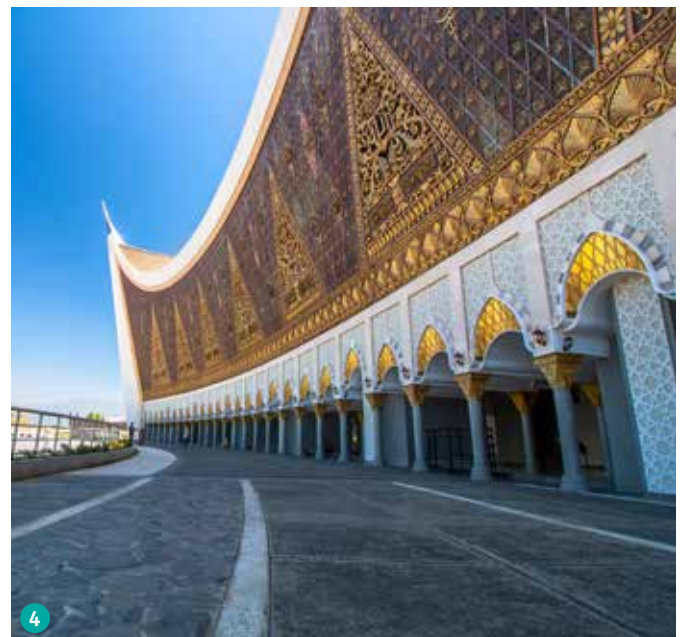


- 1 Prayer hall from inside
- 2 Side walking
- 3 Visual detail of the outer arcade
- 4 Using outer arcade to provide sense of human scale

### Conclusion

The West Sumatra Grand Mosque has developed into the centre of activity of the city and has assumed the role that the mosques in early Islam had. Residents visit the mosque frequently not only for praying but for more activities such as studying, getting married in the basement floor (community service), wedding photography, relaxation, discussions and as a collection and gathering spot for a plan to go somewhere together. Friends also come to have their meals together in the quiet and extensive verandahs which are in shade and have cross ventilation of cool breeze

It has added a lot of value to the city of Padang. It is not very often that a mosque becomes the identity of a city. There are billboards in the city advertising local politicians to their voters with the West Sumatra Grand Mosque in the backdrop. This testifies to the impact of the mosque on the community and citizens of Padang.







# GREAT MOSQUE OF CENTRAL JAVA

Location: **Samarang, Indonesia**

Client: **The Government**

Architect: **Achmad Fanani, Yahya Abdurachman and Adi Nupsiko**

Land area: **100 Hectares**

Built up area: **7669m<sup>2</sup>**

Completed: **2004**

Capacity: **7000 worshippers**

Type: **Central Mosque**

The Great Mosque of Central Java is located in the city of Semarang, the capital of Central Java province, Indonesia. Semarang has a population of 1.6 million people. Its history dates back to 9th century and 15th century. It has been a major settlement established by the Arabs and later occupied by the Dutch. It originally had an agrarian economy dominated by sugar production, which has since then waned.

The mosque, or rather the mosque complex is on 100 hectares of land, with a 7669m<sup>2</sup> of prayer area inside. The mosque can accommodate up to 30,000 people including the front court. Up to 7000 people can be accommodated inside the mosque and 20,000 in the front court and entrance plaza. For normal prayers about 500 people attend and during Jumma 5000-7000 attend.

There was competition for the design of the mosque in 2001. It was won by a team of three architects, Achmad Fanani, Yahya Abdurachman and Adi Nupsiko, Achmad Fanani being the principal designer. The mosque was constructed from 2001 till 2004 and the first prayers in it were held in 2004.

#### Site

The complex is located at one edge of the city with open agricultural land towards its west and north. It has entrances from 4 sides, of which usually two are open at normal times. This large mosque complex is located towards north of the city centre in a relatively low-density area. There are open lands to the west and north of the complex.

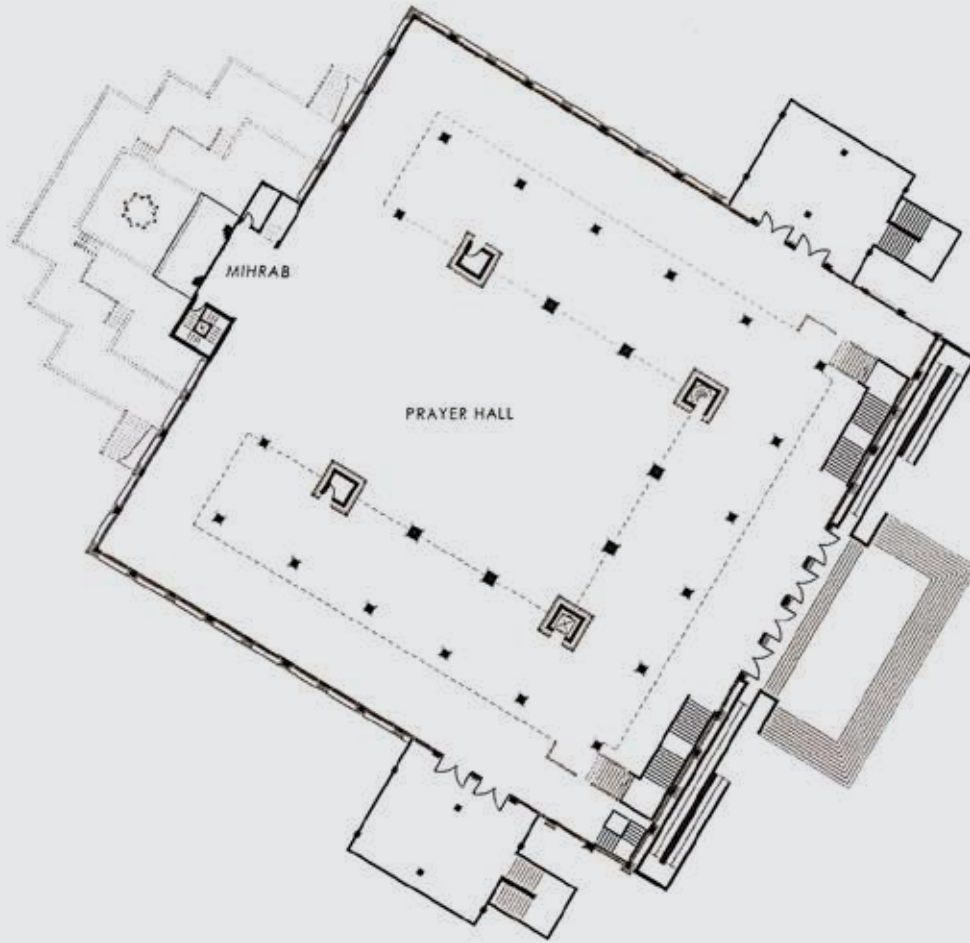
There are commercial activities and habitation to the east of the mosque. They do not seem to be well related to the mosque complex. Given the scale and size of the mosque it would seem more suitable to be located near the centre of the city. It lies to one edge and the surrounding social environment is modest.

Visual correspondence between mosque and its physical environment is very strong. It is emphasized by a number of visual connectors, such as the mosque and the minaret. The mosque is a grand structure rising to a height of about 41m from the ground

- 1 Panoramic view shows the components of the mosque
- 2 Ground floor plan









- 1 Top view
- 2 Curved arcade defines the mosque's courtyard



the minarets reach a height of about 62m. Within the physical environment that it is in, it stands out because of its grandness. The mosque can be seen from quite a distance. For such a large mosque it is appropriate that it draws attention to itself. The surrounding structures as one approaches the mosque are low and none have any architectural significance. The mosque complex dominates the surroundings physically

Accessibility factors are well taken care of with ramps that approach the front court and into the mosque. There are also lifts inside the mosque for easy mobility. For safety, and due to the huge number

of users, especially during big events like Friday prayer or Eid celebrations, four entrances have been designed and provided, which lead to open spaces for gathering before and after events.

### **Spatio-Functional Relations**

Apart from being a mosque it serves a multitude of functions. Auditorium, library, gathering hall, offices etc. Within the three buildings that forms the main complex. Besides, there are other functions in the tower; observation deck, restaurant and a community radio station. Within the grounds there are a hotel and shops. The mosque authorities promote sport activities for the youth.

Socially the mosque complex serves a number of functions, such as teaching children, sports activities, a community radio station housed in the tower at the entrance, which also has a restaurant and a museum. The tower is also used for moon sighting. The complex also houses at the lower levels, accommodation for the Imam and Muazzin There are plans in the future to build a hospital on the grounds.

The mosque comprises three levels, the lower level has outside access from the east, where cars can drive right up to the entrance below the mosque. The lower level has VIP access, a meeting hall and mosque authority office. The intermediate level has prayer spaces, ablution spaces and toilets and the upper level, the mosque's main prayer hall.

The footprint of the mosque complex takes up a significant portion of the current total areas of site. There are open grounds on either side of the complex. The access from the east is through a formal paved plaza with steps that lead to the mosque's front court. Before which is the car parking area from which the shopping structure can be accessed. The landscaping here is fairly straightforward without any noticeable features. The south side of the complex is narrower as opposed to the north. The south side has the vehicular access route that leads to the parking spaces below the main front court. The northern side is also vehicular access and is the exit for cars parked at the end of the mosque. The road also leads to the hotel in site. There are landscaped portions between the road and the mosque complex. In one such grassy area is a small-scale replica of the Ka'aba which is an interesting feature. There is a fountain in the entrance court styled in plan on Islamic geometrical pattern

The design of the main mosque complex is a symmetrical arrangement of buildings along the east-west axis. The mosque is at the end of the axis on the western side. It is flanked by two similar structures on the north and south, which house the ancillary facilities, such as auditorium meeting hall, and library. Between these two structures lies the front court from which the main mosque is accessed through stairs and ramps. To its eastern side in the entrance court, the entrance court is accessed by a series of steps and ramps on either side. The entrance court has a semicircular arrangement of free-standing columns with arches, arranged in a semicircle at the centre of which is a fountain. As one approaches the main stairs to the entrance court there is an observation tower on the south.

### **Form and Architecture**

The architectural style is a hybrid of local and Islamic, predominantly local. The main mosque has sloped roofs on four sides and meeting together in a square base on which rests a dome.



The mosque does not rely on mechanical means for environmental control. There is clerestory lighting and a number of arch shaped openings under the dome. The light inside is adequate for prayer functions.







There are 4 minarets in the 4 corners of this base. The flanking buildings have sloped roofs. The sloped roofs are reminiscent of traditional Indonesian architecture. In contrast to these traditional formations, the main square with umbrellas, resemble the umbrellas in the Holy Mosque in Medina, contribute to the structural formations for the general composition of the complex. The architectural style is made up of buildings with a distinctive architecture and character.

Arches have been used in the doorways, inside and along colonnades that are around the ancillary structures. Horseshoe arches have been used in doorways, and inside the mosque, and semi-circular forms, are also used in external works, especially at the end of the axis perpendicular to the mosque block, ending in the semicircular square along the columns around the semi-circular hallway.

According to the architect, the arrangement of the mosque is like a gateway or "Gopura" in Javanese accentuated by the freestanding columns and arches in the entrance court. It is like a gateway to Allah. The year the mosque was commissioned was 2001 according to Gregorian calendar, which corresponds to the year 1934 in the Javanese calendar. Each of the digits (1,9,3 and 4) have a significance in the concept. When rearranged as 4, 3, 9 and 1, the number 4 in Javanese represent sacred, 3 represents place, 9 represents the way and 1, is Allah. Put is words this could mean "A sacred place towards a way to Allah"

### Interior Design and Technical Aspects

The structural system is fairly simple with a reinforced frame with block infill. The mosque complex is designed as a frame structure with an RCC frame. The centre of the main mosque is supported by 4 hollow RCC columns of 2.4m x 2.4m spaced in a square formation of 15.2m x 15.2m and tied to each other through arches. This supports the single dome above of 13.4m diameter.

The other interesting feature, though not original in concept are the 6 mechanical umbrellas in the front court. They were not in the



- 1 Ceiling and arcade internal details
- 2 Mihrab and Qibla wall
- 3 Prayer hall from inside

original design but were added in the design development phase. Inspired by similar umbrellas in the great mosque of Medina, they do well to provide shade at prayer times.

The mosque does not rely on mechanical means for environmental control. There is clerestory lighting and a number of arch shaped openings under the dome. The light inside is adequate for prayer functions.

The upper hall is a lofty space rising 31.85m supported by four columns on which the dome rests. The spaces along the edges of this hall have sloping roof seen from the inside and outside. The elements of the space, the columns, the side wall and floor have decorative features which are a combination of Islamic and local patterns to enhance the quality of space.

The adjacent structures are fairly straightforward in design, a series of large and small rooms accessed by corridors on either side. The corridors have arches, and there are various decorative features on the walls and columns, derived from traditional motifs.

The building materials of the mosque complex comprise reinforced concrete frame with infill of nonstructural blocks. The floors, both outside and inside, are made of marble that require washing only, yet some open grounds require maintenance.



- 1 Outside view
- 2 Mosque façade from the main courtyard
- 3 Top view shows the surrounding urban tissue



The mosque was built and maintained by the government for a while, partially from mosque's income (hotel, restaurant, shops, rental income from the auditorium and multifunction spaces), and supported by donations. Given the physical state of maintenance, there is lack of adequate funds for proper maintenance. The mosque authorities had to allow some shops on the north side to supplement incomes, yet the huge expenses hinder economic sustainability.

**Conclusion**

The name «Great Mosque of Central Jaffa» refers to the role of the community mosque, as the main mosque of the whole province. Its sheer size asserts that it is not only for the surrounding community but also for the entire city of Semarang. The enormous size of the complex reflects the importance of the mosque communal position. Although it is not in a central urban location in Semarang, however, its social, religious and vital significance goes beyond the question of location.

The spatio-functional relationships fulfill the urban concept of performance in interacting with the environment, social, commercial, functional and spatial dimensions. Access to the complex has been designed well, and the functions are arranged to serve the desired purpose. The parking lots were hidden from the urban scene, in a way that serves the architectural character, to balance the relationships between pedestrians and vehicles, and to achieve the urban visual and functional composition.

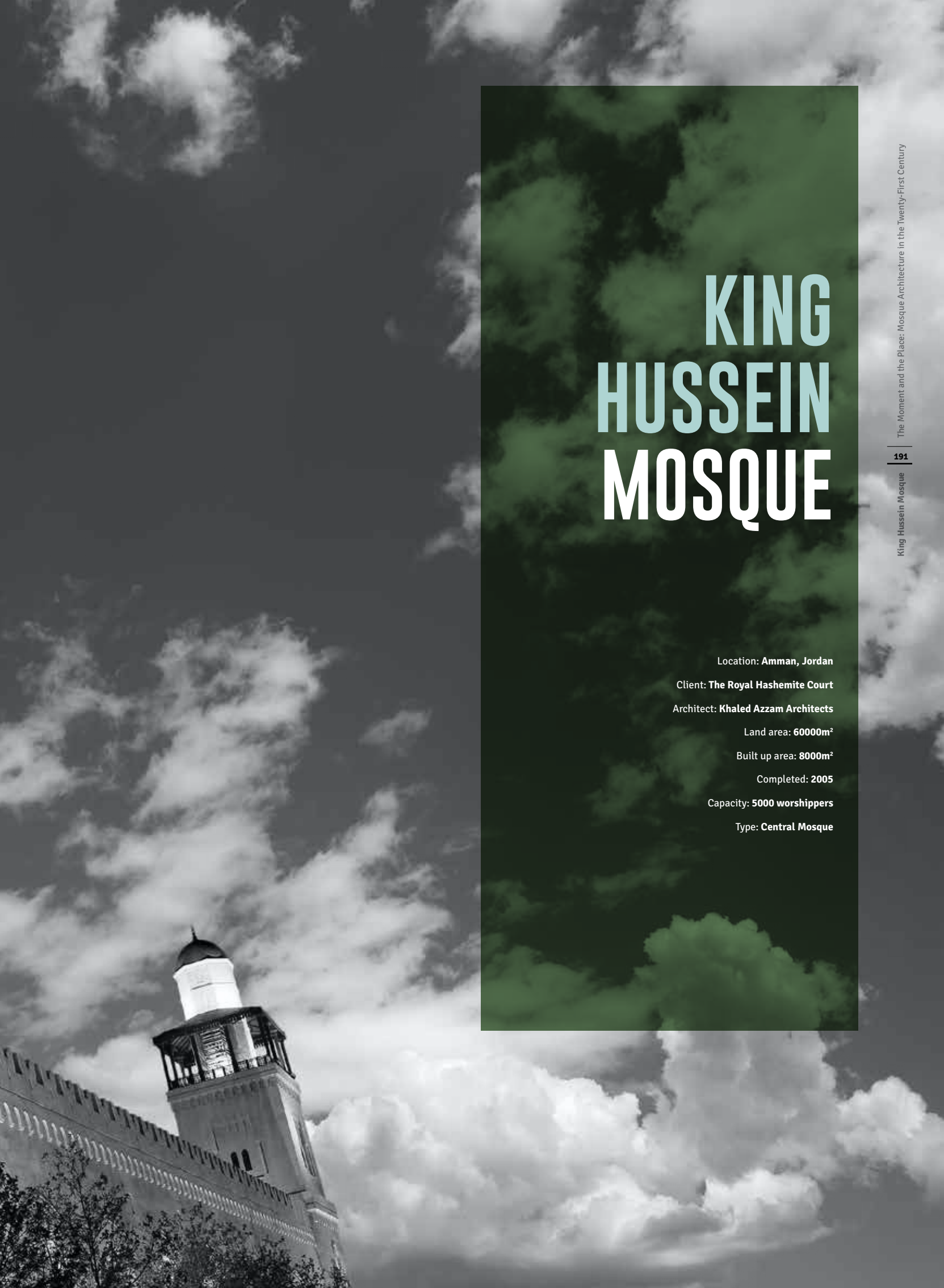
The mosque is characterized by the urban and architectural character, known in some North Africa mosques, despite location differences. The functional relations give value to the mosque as its religious importance extends to a socio-economic sustainable role, and that would be a case to learn from.











# KING HUSSEIN MOSQUE

Location: **Amman, Jordan**

Client: **The Royal Hashemite Court**

Architect: **Khaled Azzam Architects**

Land area: **60000m<sup>2</sup>**

Built up area: **8000m<sup>2</sup>**

Completed: **2005**

Capacity: **5000 worshippers**

Type: **Central Mosque**



**King Hussein Bin Talal Mosque was built to commemorate late king Hussein in Amman. The Mosque is the largest mosque in Jordan and the new state mosque. It can accommodate more than 5,000 worshippers in its indoor and outdoor prayer areas.**

**It is a major architectural visual landmark in Amman. The mosque acts as a civic place, extending the Al-Hussein Park inside its open courtyards. It provides research scholarships for scholars of Islamic sciences.**

**The mosque serves locals and state visitors and guests of Royal Court. The mosque holds a special place in Amman, for being the sponsor of the sacred Friday group prayers, led by the King, as he is accustomed to having his Friday prayers. The mosque is a heavily used both for prayer and as an attractive destination in the King Hussein gardens. The mosque complex occupies the highest plateau in the hilly area along city western edges, overlooking King Hussein Park.**

#### **Site**

King Hussein Mosque is located in Dabuq area located west of Amman. The location is adjacent to Al-Hussein Park, a landscaped garden covers 280,000 m<sup>2</sup> of a hillside, including a cultural village, sports fields, memorial building, historical passageway, decorated gardens, circular yard, and children museum. The Mosque with its gardens and outdoor spaces can be considered an extension of its major landscaped hillside.

The mosque sits on top of a hill overlooking Al Hussein Gardens. The surrounding area is a low-density residential district with recreational, commercial, office, medical buildings. Local architecture comprises a number of modern buildings in limestone, with architectural distinction.

- 1** The minarates of the mosque derived from the Umayyad mosque
- 2** Side view in the night
- 3** Top view shows all the components of the mosque



King Hussein Mosque includes a series of public spaces in the form of courtyards around the prayer hall as well as ablution and other supporting services. The architect devised the areas outside the mosque building as an extension for the praying hall; an outdoor prayer area as a public civic space.

The public realm is linking the outer and inner space; integrating the mass, volume, structure and surrounding space in harmony with its natural environment. The successful relationship between the outdoor spaces and the mosque building is predominant. This civic space is articulated by integrating a series of arcades and courtyards as well as landscape areas which encourage the community to interact with the building as a living space. The rich landscape concept strengthens the idea of public civic space in concept through the integration of trees, shrubs and green areas.

Access to mosque site from Al Hussein Park is clear and well defined. The main pedestrian approach is planned through a set of arches and vaulted arcades. The major approach to the mosque is well planned in complete integration with a well-planned parking area. The mosque is also directly accessible with Royal Hashemite Court through a series of privately controlled passages and courtyards. Access to the mosque indoor spaces is linked with main prayer hall during events or Friday prayer.



- 1 Mihrab
- 2 Wooden minbar
- 3 Main elevation of the mosque with its four minarets

### Spatio-Functional Relationships

The mosque, occupying an area of 70 × 70 m, represents a series of spaces connected by a large courtyard. A main Iwan, a vaulted space, leads from the courtyard to main prayer area, which occupies 2,000 m<sup>2</sup>, has a vaulted ceiling 10 m high, and accommodate about 2,500 worshippers. A two-wing, 350 m<sup>2</sup> prayer hall for women with a capacity for 350 worshippers is located on the second floor. Various facilities, including offices, lecture halls, and a library, are located on the first floor.

King Hussein Mosque attempts to assert an historic image of traditional prototypes. The mosque draws its reference from the regional architectural character prevalent in the region, a simple structure of a square plan. According to the architect, the vision of the mosque was to create a timeless building in contemporary mosque architecture, in both form and space organisation.

The visual sequence in the outdoor mosque spaces is notable, visitors approach the building experiencing the serenity of interior through open courtyards. Visitors are then led through sequence of open arcades to main entrance leading to the prayer hall, ending in the mihrab. The central area under the dome that covers the Mihrab is defined by arcaded walls and enclosed praying area, allocated for everyday prayer, within the main prayer area. This experience helps creating a sense of spirituality before approaching the praying hall.

While the ground floor is reserved for men praying area, the first floor comprises two sections allocated for offices, Quran school area, and library. Therefore, the mosque extends its role beyond being a worship place, it is used for public lectures and as an Islamic school in general. The function exceeds the primary role to respond to community needs. Often, the mosque attracts thousands of prayers for Friday prayer as well as for religious lecturing and events during religion occasions and reading Quran before and after praying.

### Form and Architecture

3

The overall image of the mosque building from a distance conveys an impression of fortress architecture rather than traditional mosques. This is evident in the use of the specific roof parapet found in military fortifications, in the monumental scale-four minarets of bold tower-form at the corners of the mosque building. Such an impression creates a sort of confusing reverence, as the mosque form is a large, solid, fort like with four corner minarets.

However, it attempts to negotiate an architectural identity for contemporary mosques through developing modernist historical prototypes. It contributes to the development of regional modern architecture that reflects new urban cultural context. The forms and architectural language invoked reveal emerging contemporary community spaces for specific functional conditions, with the use of local materials and skills for a spatial vocabulary.

It can be a simple interpretation of historical themes embedded within form and architectural context expressed through abstracted traditional vocabulary. It stands as accomplishment in the ongoing search for forms, designs and meaning of future mosques. The design is distinctive in abundant typical elements of regional architecture; such as thick walls, open courtyards, dome, vaults, arches and landscape.

The adoption of such a strict geometric form has resulted in stark symmetry. This is evident in the outcome seen in facades, sections, and the general layout of the mosque. This seems to contradict the traditional mosque model seen in traditional urban context of Arab cities or the regional historic context. Such a symmetrical composition is further asserted with the placement of four identical minarets around the corners of this rather fortress like composition. In this sense, it is rather not as simple as it seems to consider the setting of the mosque as genuine urban context, especially in comparison to historic references in urban settings.

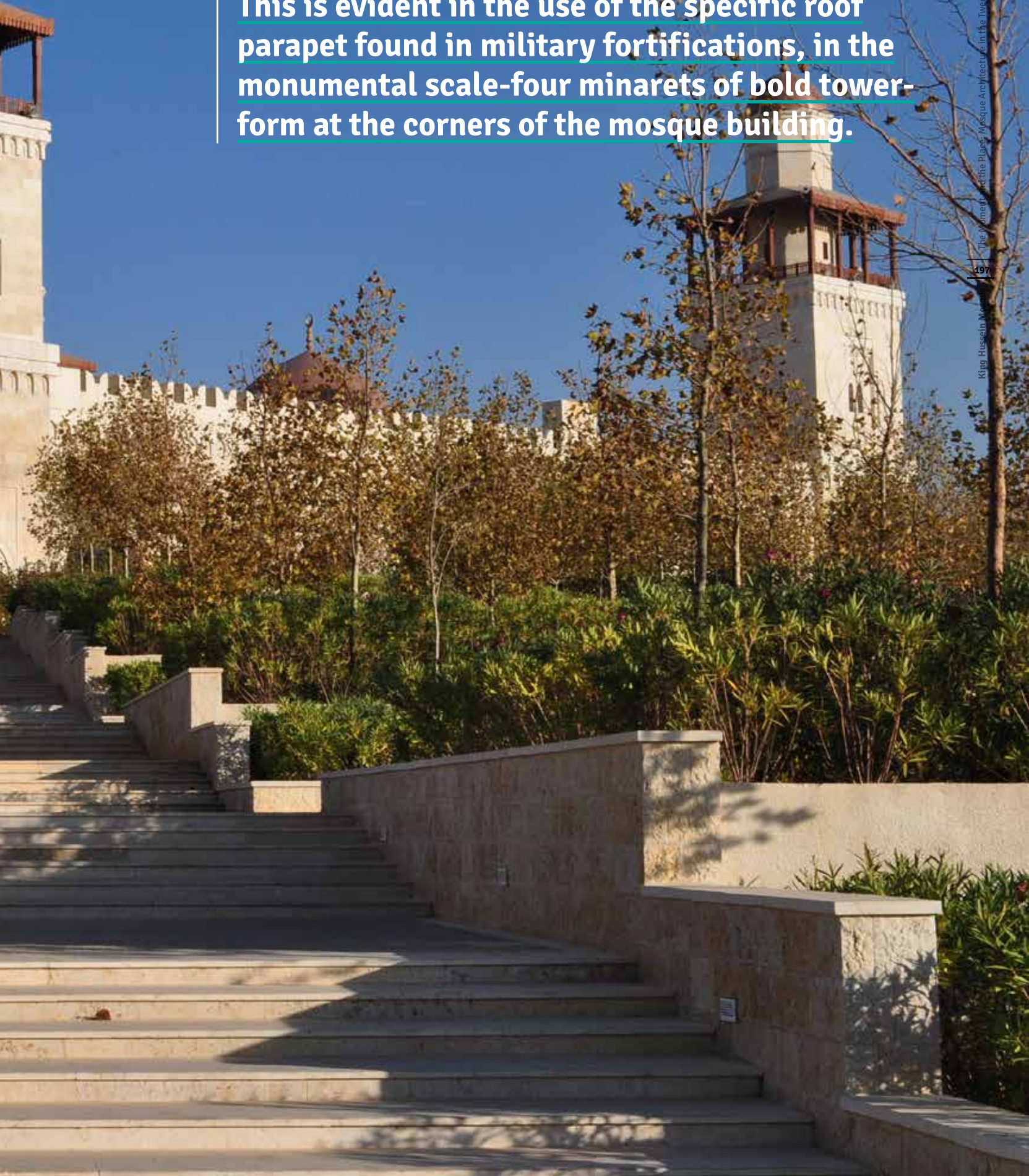
Despite this rather rigid symmetrical form, the proportions of mosque components seem in harmony with one another adding to a total simple settled overall scale. The minarets seems rather proportioned to mosque mass and to the height in general.

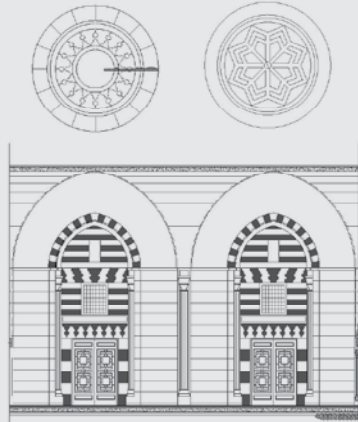
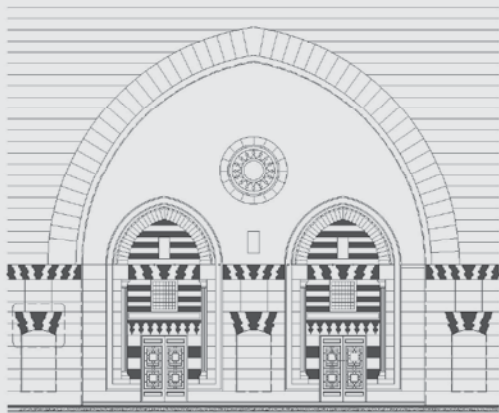
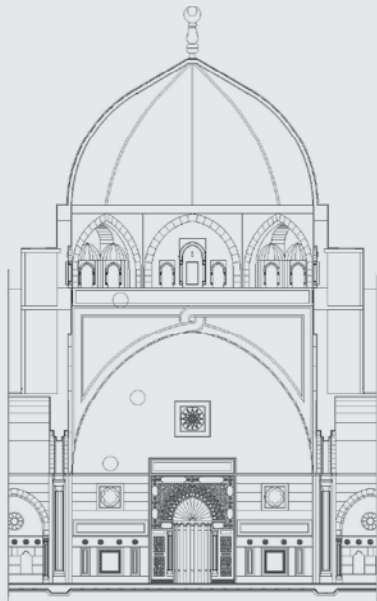
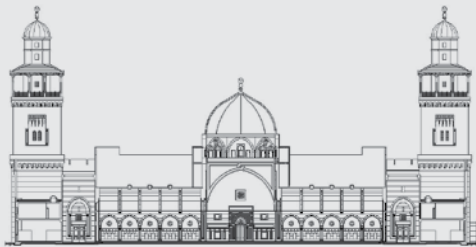
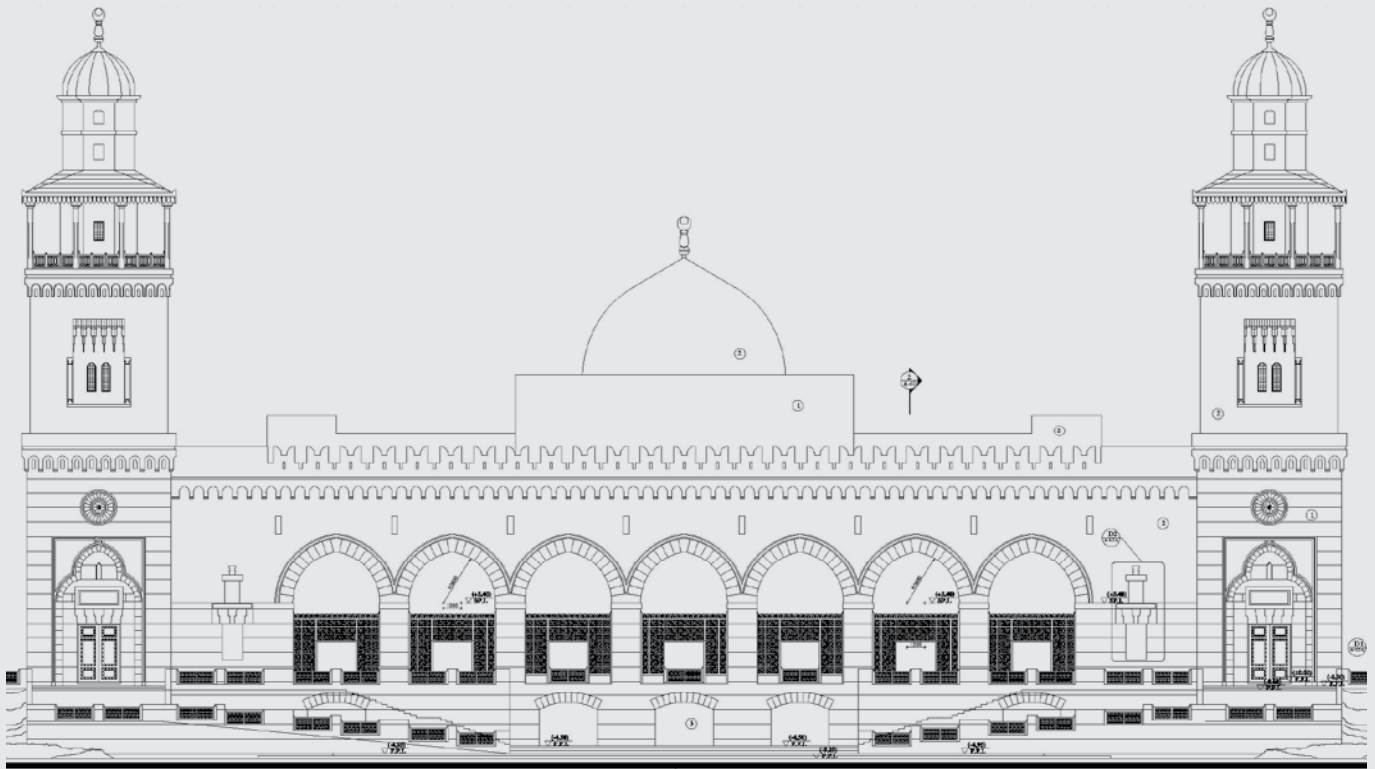






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- 1 Elevations
- 2 Reflecting view of the dome
- 3 Internal details

### Interior Design and Technical Aspects

The structural system of the mosque comprises reinforced concrete frames, vaults and domes for roofing, with dome covers central area of Mihrab clad in bronze mosaic tiles. The building materials are mainly natural stone for external cladding. The adopted structural system and used building and finishing materials are appropriate for representing the traditional architecture character of the mosque.

The mosque's Mihrab and Minbar are reminiscent of traditional Mihrab made of pure natural wood. It was made of walnut wood and used oak to bind it in the way of traditional interlock manner without the need for adhesive material or metal bond for installation, an old method that has not been used for the past 200 years.

The quality of daylight is unresolved issue. Daylight in the mosque building is filtered from the surrounding courtyards by means of screened openings. Overall, the thick walls, the screened openings, although it is inadequate in terms of the amount of daylight needed. The brass chandeliers are distributed throughout the prayer hall, which enhance lighting quality of the interior.

The mosque depends mainly on artificial lighting rather than natural light despite the significant location in the highest point from surrounding that allows it to receive large amount of natural light.

The Mosque receives less quality and a non-sufficient quantity of light all year at the hours 12:00 and 3:00 p.m., and less than 100 lux, while the average readings within the recommended illumination for crustal reading should be at least 300 lux. Most of light comes from the windows.

The design adopts a simple acoustical solution, where the use of curved ceilings and high vaults enhance the acoustic quality. The architect designed hidden speakers in the brass chandeliers that also distribute sound equally throughout the prayer hall.

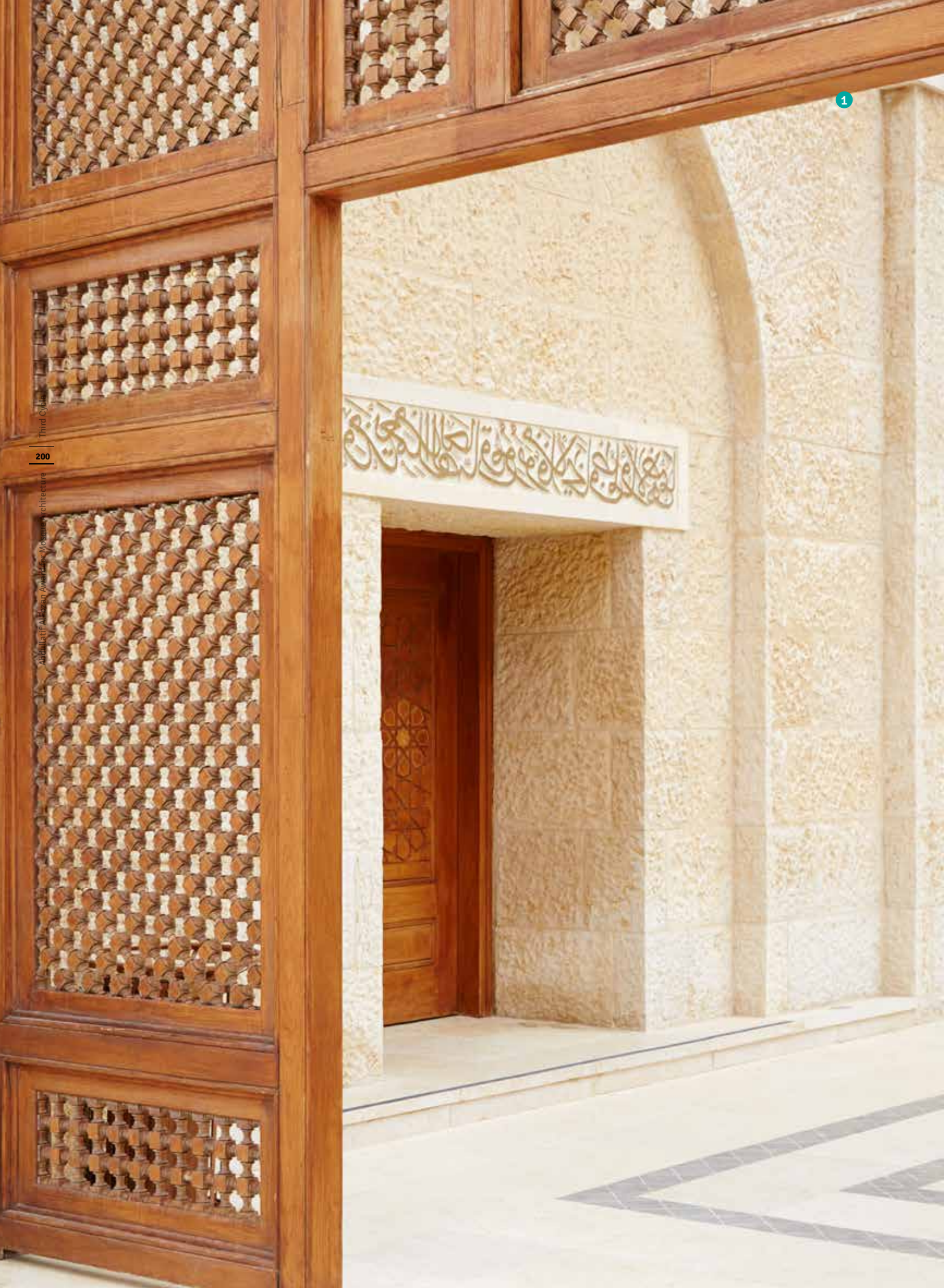
The interior design provides simple interior atmosphere that relies on the proportion and scale of the vaults and arches to create a fluid space, according to the architect. The interior space of the primary praying hall is based on clear rectilinear space that holds together linear arrangements toward the Qibla.

The interior praying hall is characterized by curvilinear simple vaulted ceilings and Umayyad-style ornamentation carved in local stone. Finishing materials accentuated the atmosphere of the interior, where proper finishing materials reflecting natural light are used, natural stone-walls, marble flooring for exterior spaces and carpet for internal spaces.

The mosque provides sustainable design solutions. The indoor and outdoor courtyards enhance air movement and natural ventilation. The prayer hall is surrounded by deep and narrow courtyards that encourage cool air to sweep across. The main prayer hall is ventilated through cool air which settles in surrounding courtyards. As the hot air rises and escapes through the top of the vaults, it creates a pressure that sucks cool air from surrounding courtyards through the prayer hall.

The design gives special considerations to facility management and maintenance. Being a state mosque, the building enjoys a high standard of management, operation and maintenance services. This is represented in the choice of building materials and access for maintenance through special arrangement of services. Wall







- 1 Some internal details
- 2 Entrance in the prayer hall

finishes consist of fluted panels with plain boarder around each fold to reduce sound rebound and enhance acoustical properties of the interior. The provision of maintenance facilities and special specialized ancillary spaces in specific locations help supporting related future service and management.

### Conclusion

The design seems to respond to current urban situations and social transformations in Muslim communities. Introducing a mosque example, that responds in terms of simple functionality, notable environment-friendly solutions, asserting high spirituality, and displaying sound integration with the urban context, the mosque contributes to the ongoing discourse on future mosques of historical references.

The building process was associated with local community. According to the architect, craftsmanship was fabricated in local workshops used as vocational training exercise for local community. Such social vocational process was intended to advance community affinity with the building indicating a wider role for the mosque as a vibrant centre for community life. Such an approach was previously adopted by Abdel Halim Ibrahim in the Cultural Garden in Cairo, which won him Aga Khan Prize for Architecture in 1992.

This mosque is exemplar in providing a conventional model that adopts rather a replica of regional traditional mosque architecture in terms of form rather than context. Such concepts it provides, could be reviewed in light of their socio-cultural, economic, political, and urban context in order to value the real contribution it actually add to future mosque architecture.



# VALI-E-ASR MOSQUE

Location: **Tehran, Iran**

Client: **Tehran Municipality**

Architect: **Reza Daneshmir - Catherine Spiridonoff**

Land Area: **4050m<sup>2</sup>**

Built up Area: **22000m<sup>2</sup>**

Completed: **2017**

Capacity: **1100 worshippers**

Type: **Central Mosque**

The mosque emerged as the latest battleground in a longstanding culture war between hard-liners and Iran's vibrant artistic community, which has hoped, often in vain, for greater openness since President Hassan Rouhani, a relative moderate was elected in 2013. Reza Daneshmir, one of the architects, said he struggled for months before finally convincing authorities that a traditional mosque would look out of place at the site. He even argued his case before a parliamentary committee.

The 45 x 90m site of the Valiasr Mosque is located in the heart of Tehran, near the intersection of two of city's most important streets; It is a location with the most

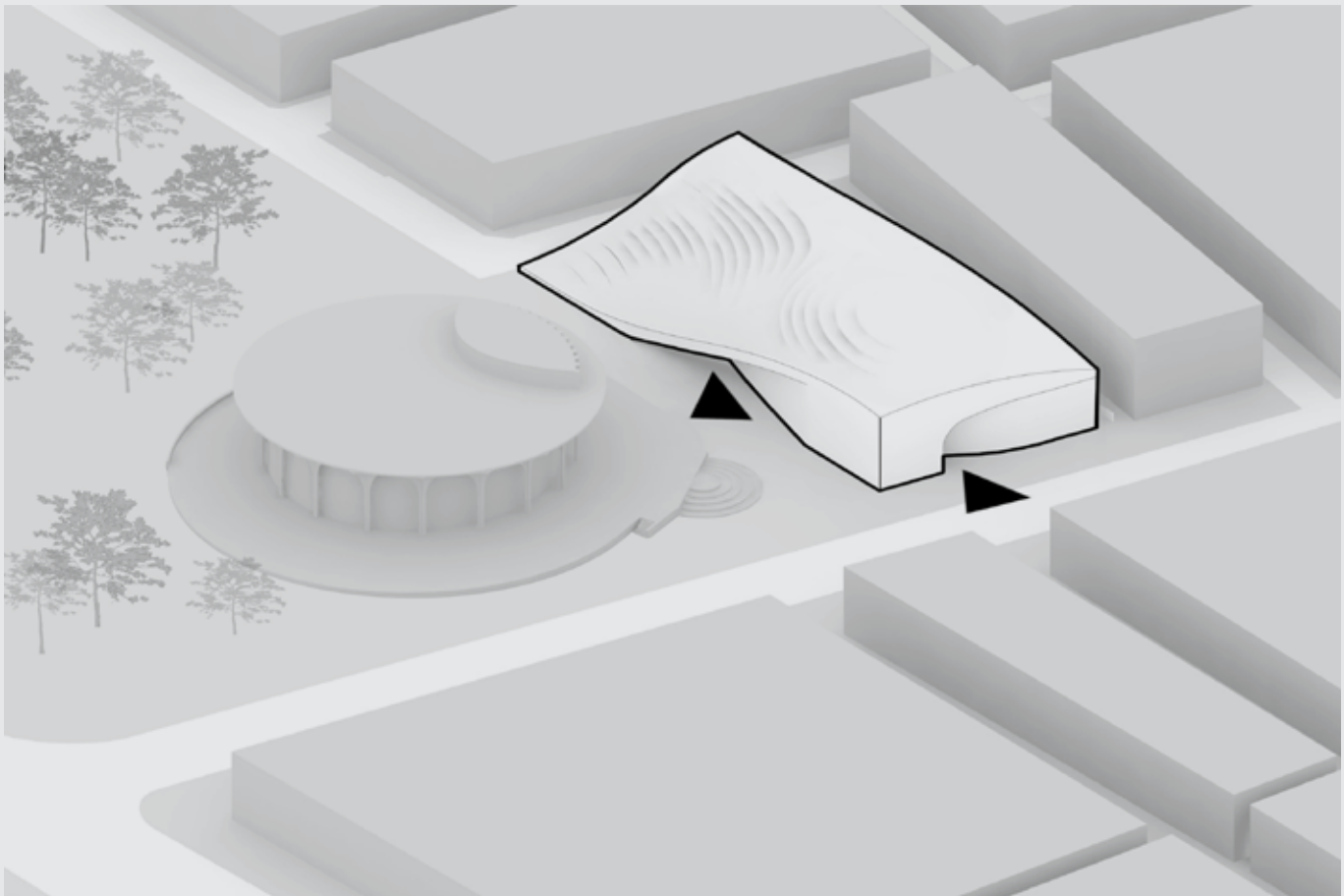
prestigious university of the country, prominent bookstores, the Daneshjoo Park and the City Theatre (an important building from the 1970s, regarded the most paramount cultural centre of Tehran). This area has always been an influential hub for intellectuals, and the cradle of culture and political developments. Most notably, it is where the Iranian Revolution took place.

About 17 years ago the former mayor of Tehran decided to boast the dominance of religion over art, culture and politics, by building a huge mosque at this location. But the general public protested against the large scale of the proposed mosque and its rather foreseen negative impact on the predominantly cultural atmosphere of the area. Under pressure, the mayor succumbed to the public demand and construction was suspended for two years.

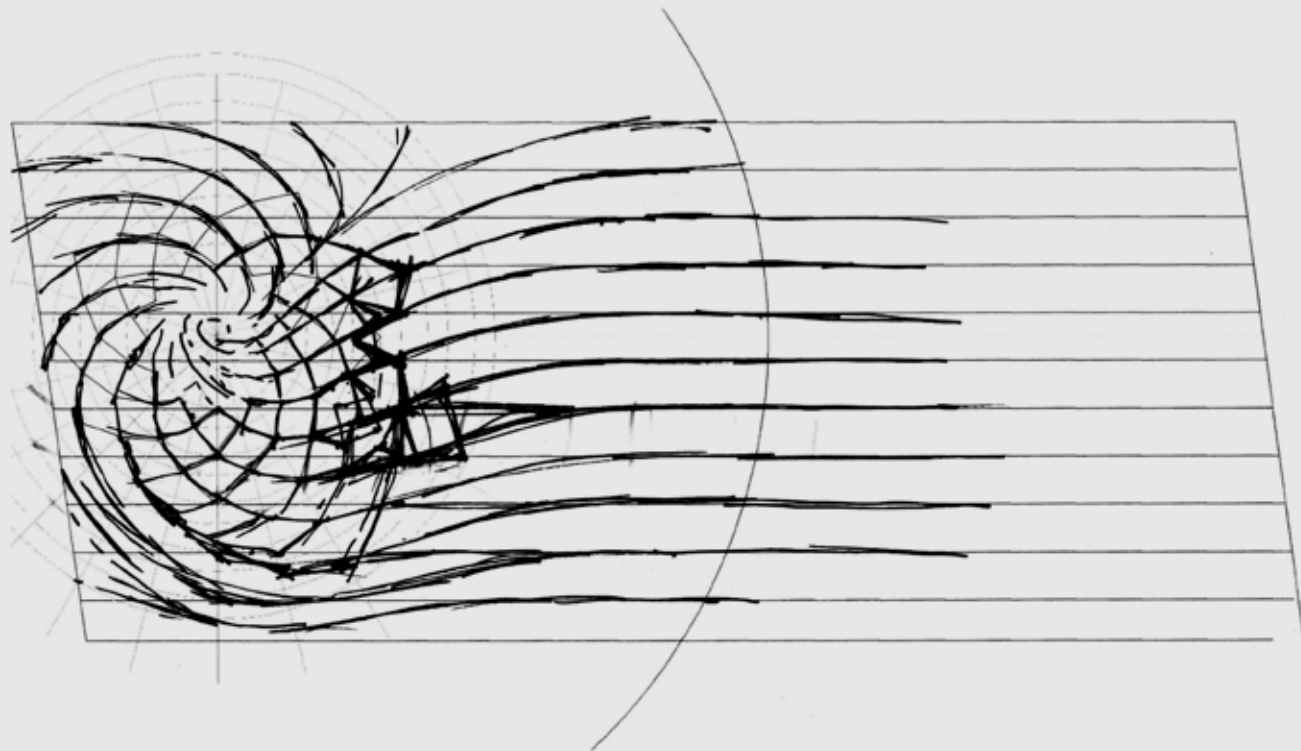
Later in 2007, the new mayor of Tehran who was luckily familiar with the work of Fluid Motion Architects from their Mellat Cineplex project (which was a successful public intervention in an important central park of Tehran) called on architects to find a solution for the Valiasr Mosque. They were thus assigned this project at a time when parts of the mosque had been already executed. They had therefore to incorporate these parts from the old design (such as the foundation and columns) into their new design.

- 1 Accessibility with the surrounding
- 2 Conceptual sketch
- 3 Ground floor plan

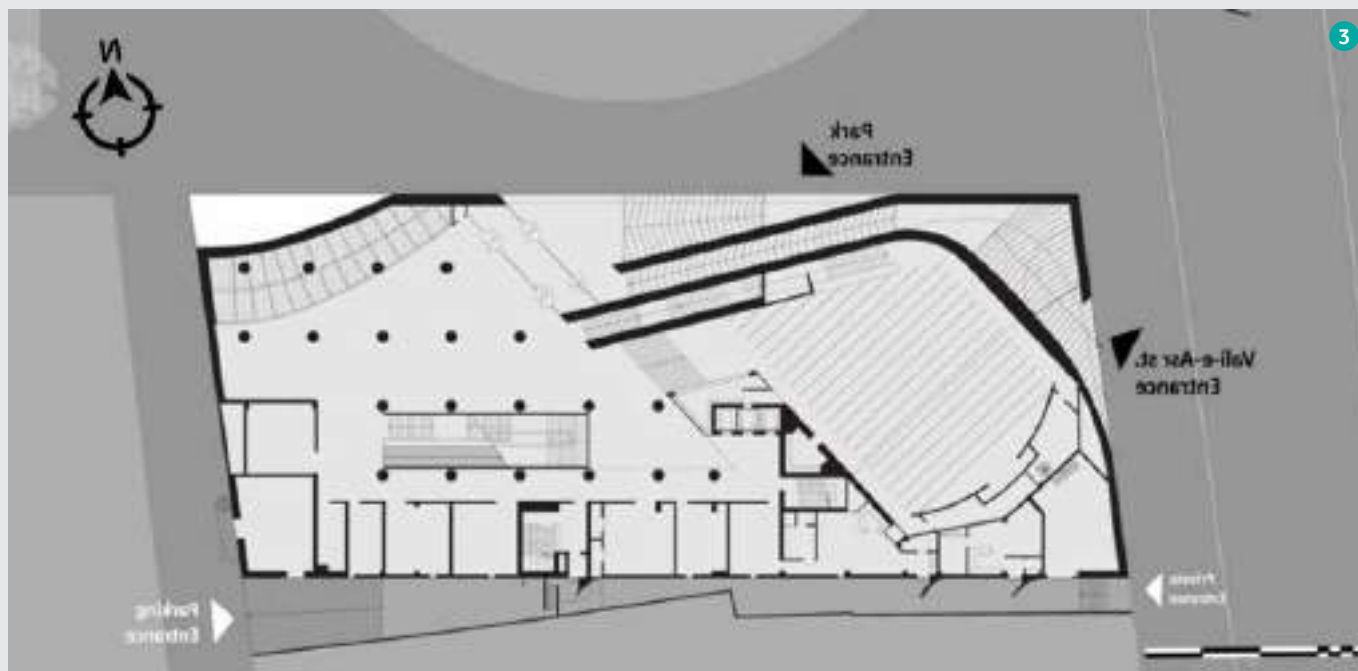
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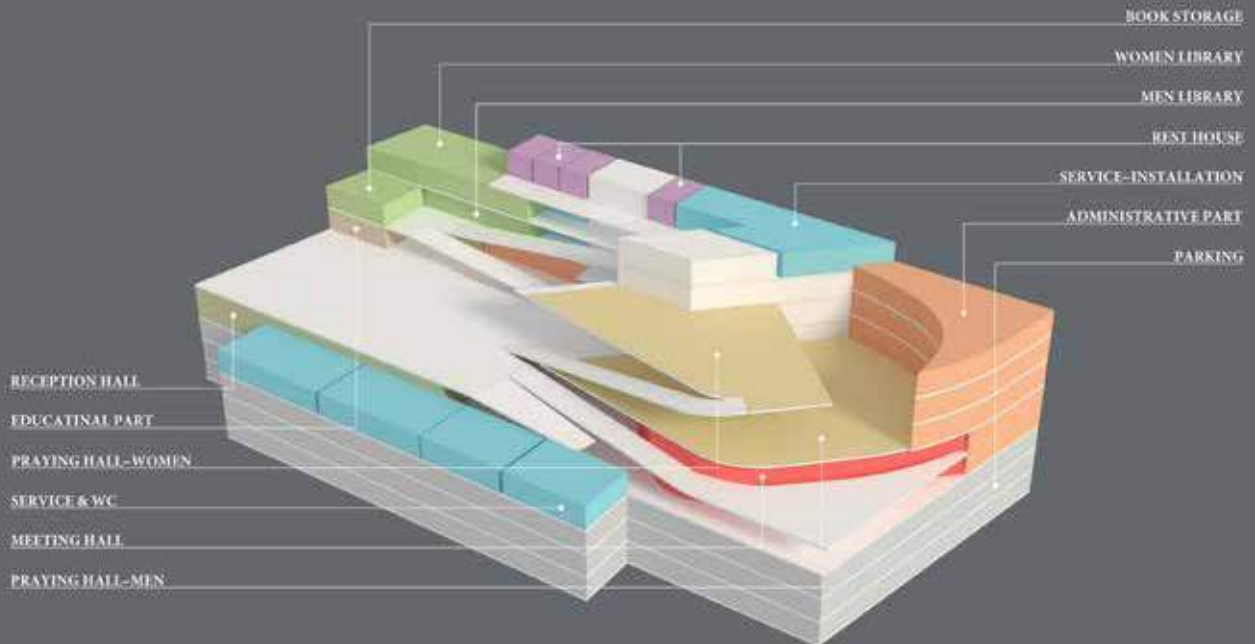


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2



SPATIAL ORGANIZATION DIAGRAM

## Site

The project is located in one of Tehran's most dense neighbourhoods that includes a variety of different uses such as higher education, bookstores, and cultural centres (including Tehran's City Theatre). With its elongated smooth form, the project "attempts to create a sense of calm within its surrounding crowded fabric," the architect maintained. "At the same time, through its relationship with its adjacent volumes, it tries to emphasize their strengths: on the one hand maintaining the order and harmonious quality of the eastern façade of Valiasr Avenue, and on the other hand providing a calm backdrop to City Theatre," one of the most important cultural symbols in Tehran.

The area of Tehran in which the mosque is located, was constructed over the past century, therefore, its architectural language belongs to Iran's first period of modernism. Most of the buildings along Enghelab Avenue and at its intersection with Valiasr Avenue have washed concrete finishing, whereas the City Theatre, a 50-year old edifice adjacent to the project site, has a simple geometric circular volume and a façade of brick, tiles and washed concrete.

It is interesting that the external pillars surrounding the volume of the theatre meet up at the roof and cross diagonally to create a deceptive array of arches/arcade, a design "trick" its architects then

- 1 Geometry of the roof allows daylight inside the prayer hall
- 2 Spatial organisation diagram
- 3 Internal view



forged to allude to traditional Iranian elements while still adhering to the modernist bylaws of "honestly" expressing the structural system of the building.

The Mosque can be accessed from two sides: on its western side, along Valiasr Avenue, the Mosque can be accessed via taxi and public transportation. But the project also contains parking levels that are accessible from the east. The main parking entrance is at its south/east corner, with three basement levels of parking. The project has two main pedestrian access ways: one on the west along the sidewalk of Valiasr Avenue, and the other on its north side facing the public space.

The access on the west is via a crowded sidewalk along one of Tehran's busiest streets. Therefore, it was designed similar to Sheikh Lotfollah Mosque in Isfahan, where a winding path smoothly leads the public to a hallway with a high ceiling and soft light. It acts like a filter from the exterior chaos to the interior calm. After passing through the main entrance hall, the path turns again before finally reaching the prayer hall.

The north entrance is adjacent to the City Theatre and the Daneshjoo Park and is intrinsically less crowded than the other entrance. After passing through a tent-like covered foyer, this access leads directly to the mosque and interestingly has a different spatial quality than the western entrance. Both of these entrances connect to a lobby with a modernist exposed circulation system of ramps and stairs, providing access and transparency to all interior spaces.

## Spatio-Functional Relationships

Because of its "progressive" unorthodox form, to say the least, the project received strong objections from hardliners resulting in suspension of its construction for a while. In order to continue the project, the municipality changed its name to "Mosque and Cultural Centre". The expanded role of the mosque could be viewed thus as an existential condition rather than a design choice.

The topologic quality of form of this mosque and the way it attaches to the ground on the north/east side gives the feeling of a three-dimensional landscape that acts as a connector between earth (the adjacent park) and the sky, the architect explained. By connecting the roof to the ground, he intended to provide public access to the roof so that during religious performances at City Theatre the public could use Mosque's roof as seating – in this way the architects "dared" to the integration between City Theatre and the Mosque, between culture and religion.

The architect chose to challenge the requirements stipulated in the original brief by not allowing mass to be dominant. Rather, he designed mass to be an integral part of the surrounding cultural matrix (especially the theatre), a site/place highly loaded with memories of extraordinary events of the current standoff between two opposing factions of Iranian society. The defiant architect, presenting an opinion. To understand what is at stake it could be observed that in a cultural context that is not as polarized as that found in Iran chances of such confrontations/conflicts are much less. However, there is a conflict between religion (or religious authorities) and culture (the intellectuals).

The project is principally a mosque but alongside its religious spaces it includes other functions: a library, classes, ceremonial spaces, etc., allowing access to the public outside the times of prayer.

Given that the folded roof/dome, the most difficult part of structural design, with each row of the folds behaving independently, lateral movements of all rows were equalized by increasing or decreasing the member's stiffness.



Formally, the main characteristic of Valiasr Mosque is its horizontality. The focus on a horizontal rather than a vertical structure provides a new outlook for a 21st century mosque, according to the architects.

### Form and Architecture

The architects behind the Mosque dispensed with the traditional architecture, opting instead for a modern design of undulating waves of gray stone and concrete, which complements the surrounding architecture and evokes the austerity of early Islam. The new structure has infuriated hard-liners, who see it as part of a creeping onslaught on the Islamic Republic, opposing Iran's vibrant artistic community, which has long hoped for greater openness.

The structure rises smoothly from a major intersection, in a popular shopping area that also hosts cultural and artistic events. The Mosque includes library, reading halls, classrooms and amphitheatre. The architects struggled before convincing authorities that a traditional mosque would look out of place at the site.

In their design for the Mosque architects apparently tried to expand on this architectural language, and create opportunities for making references to the surroundings (not least of which was using a washed concrete finishing on the building), while at the same time adding a contemporary image to the place. The Mosque is completely in volumetric harmony with its neighbouring buildings in terms of its height; on the south it is at the same level as the surrounding residential and commercial fabric, and on the north the highest part of the Mosque is as high as City Theatre (approximately 20m). By this context-conscious design strategy, the mass of project is generated, and "politely," ties in with its urban context.

To validate their design approach, the architects used the first mosque, built by the Prophet Mohammad, as reference to stress that over the years the horizontal form of that mosque faded away, and subsequently most mosques constructed later in the history of Islamic architecture thrived for verticality.

Therefore, the architects argued that a horizontal mosque form could provide a new direction for a 21st century mosque. In light of this, the main strategy for the project was a horizontal framework that could be reminiscent of "an open dome." Thus, the horizontal form is composed of two parts: concave and convex; the concave area, on the east side, bends down to reach the ground of the adjacent park, whereas the convex part is on the west side next to the City Theatre.

### Interior Design and Technology

Part of the structure of the previously designed project had already been constructed on site before the architects took over. "The client insisted on keeping it," the architect sadly exclaimed. He further pointed out that tying this old structure to the structure of the new design was a most challenging task. He had to use the old structure and its geometry grid, even though his proposal was based on a monolithic shell construction. Consequently, the final structure was a combination of a three-dimensional horizontal concrete shell, with a series of vertical walls and columns. At the intersection/clash of these two rather contradictory systems, an opportunity was for slash-like elegant openings, inviting natural light and ventilation into the building.

Thus by emulating the concept of "Horno", which is a traditional Iranian architectural method for ventilating interior spaces, the slits were opened in the roof's skin, allowing for natural ventilation in certain seasons, reducing energy waste/cost.

By and large, because of the overriding design concept, all interior spaces were organized under a single shell. On the east side, which includes the entrance hall and public spaces, the shell takes on a concave form and the slit openings, provided in this area, create visual ambiance and connection to the exterior (Daneshjoo Park and City Theatre).

On the west side, where the prayer hall is located, the shell takes on a concave form reminiscent of a dome. The interior spaces were

organized in different levels in order to avoid using walls that would separate different spaces, allowing the roof to be experienced as a single datum throughout the project uniting all the interior spaces with different nuances as the shell alters between concavity and convexity. Given its topologic characteristics and the intended mergence with the ground, the roof is essentially the project's parti pris. It introduces, in effect, a fifth elevation that descends to meet the ground, uniting the Mosque's interior spaces and exterior landscape.

Given the project's limited budget, the architects decided to deal with the issue of ornamentation (or the lack of it) and the separation of interior spaces through the complicated (but at the same time flexible) framework of the building shell, including its walls, roof, slits and openings. In this way, they claimed, to have eliminated the need for traditional ornamentation on the Mosque's walls and roof. Instead, they covered the building main surfaces in a limited palette of material using three primary materials: washed concrete (for the exterior walls and roof), cream-coloured marble (flooring and interior walls), plaster and white paint (for columns and ceilings). The low cost and availability of these materials allowed easy, cheap repair/maintenance work if/when needed.

The three-dimensional volume of the project was designed to provide innovative solutions to different issues not least

- 1 Daylight comes from the stepped roof
- 2 Prayer hall





2





sustainability. The roof shell includes long openings in different areas that provide natural light at different times of the day and by its shape, channels down rain/snow water to useful use.

### Conclusion

Current discourse in Iran is very strict about religion and religious buildings, considering any departure or deviation from traditional clichés - taboo. Still, from a wider historical perspective, Iranian mosques have always been among the most effective buildings in defining their urban context. After the advent of modernism, traditional mosques lost their distinct urban position and stopped playing a role in advancing the urban context/fabric. When Valiasr Mosque began to take shape/presence, many questions were raised by architects, architectural critics and defenders of Iran's cultural heritage. These led to many oppositions and protests against the project, demanding the mayor to stop it. Architects were thus asked to modify the design and include a dome and minarets. Given the shell structure, this seemed not to have been possible, and the only solution that remained was to demolish the building.

Valiasr Mosque could be seen, arguably, as one of the most serious attempts to explore a new language for mosque architecture in the 21st century based on the archetypal form of the first mosque of the Prophet. Still, locally, there are judicious lessons the architects critically incorporated from local historical example: the sophisticated entry sequence and the subtle allusion to traditional building vocabulary (the half arch). Courageously, the architects further chose to remain completely reticent regarding the expected ornamentation and verticality, as they insisted on reinstating the Horizontal Mosque archetype.

One of this project's merits is the lessons that could be learned from is the design process that was employed to generate its form, the interplay between objectivity and subjectivity. Objectivity is manifested in the self-imposed discipline of the architects to let the form arise mainly from the characteristics of the site (the raw parallelepiped volume introduced). Objectivity, on the other hand, is represented by the way the Mosque's pure platonic form is not only "tamed" to fulfill the architectural needs (entry, programme, structure..), but more importantly to carry the intended message(s).

This project is a stark example of how architecture could be viewed to represent a danger, an embodiment of a threatening political message. This, might shift our attention from viewing this Mosque as a mere architectural case to architecture as a cause.

- 1 Surrounding environment
- 2 Roof from inside
- 3 Irregular layers of the roof

3





# MINOR MOSQUE

Location: **Tashkent, Uzbekistan**

Client: **Engineering company for individual customer service**

Architect: **Abdukakhor Turdiev**

Land area: **3189m<sup>2</sup>**

Built up area: **2572m<sup>2</sup>**

Completed: **2014**

Capacity: **2400 worshippers**

Type: **Central Mosque**

Minor Mosque is located in Tashkent, Uzbekistan. It was designed by a local architect Abdulkakhor Turdiev, Karat Projekt architecture firm. Construction of the mosque began in 2013 following a request from the president of the Republic of Uzbekistan and was opened to the public in 2014. The construction of the mosque was financed by the state budget and the Spiritual Administration of Muslims of Uzbekistan.

Minor mosque is a landmark of Tashkent and one of the largest spiritual centres of Muslims in Tashkent and all of Uzbekistan as well as a tourist attraction. It is particularly full during Friday prayers since the head Imam of Tashkent resides in it.

The Mosque's white colour and blue dome make it stand out from the surrounding architectural character. It is often referred to as the white mosque due to its colour which makes contrast to traditional architecture of Uzbekistan typically constructed from stone brick.

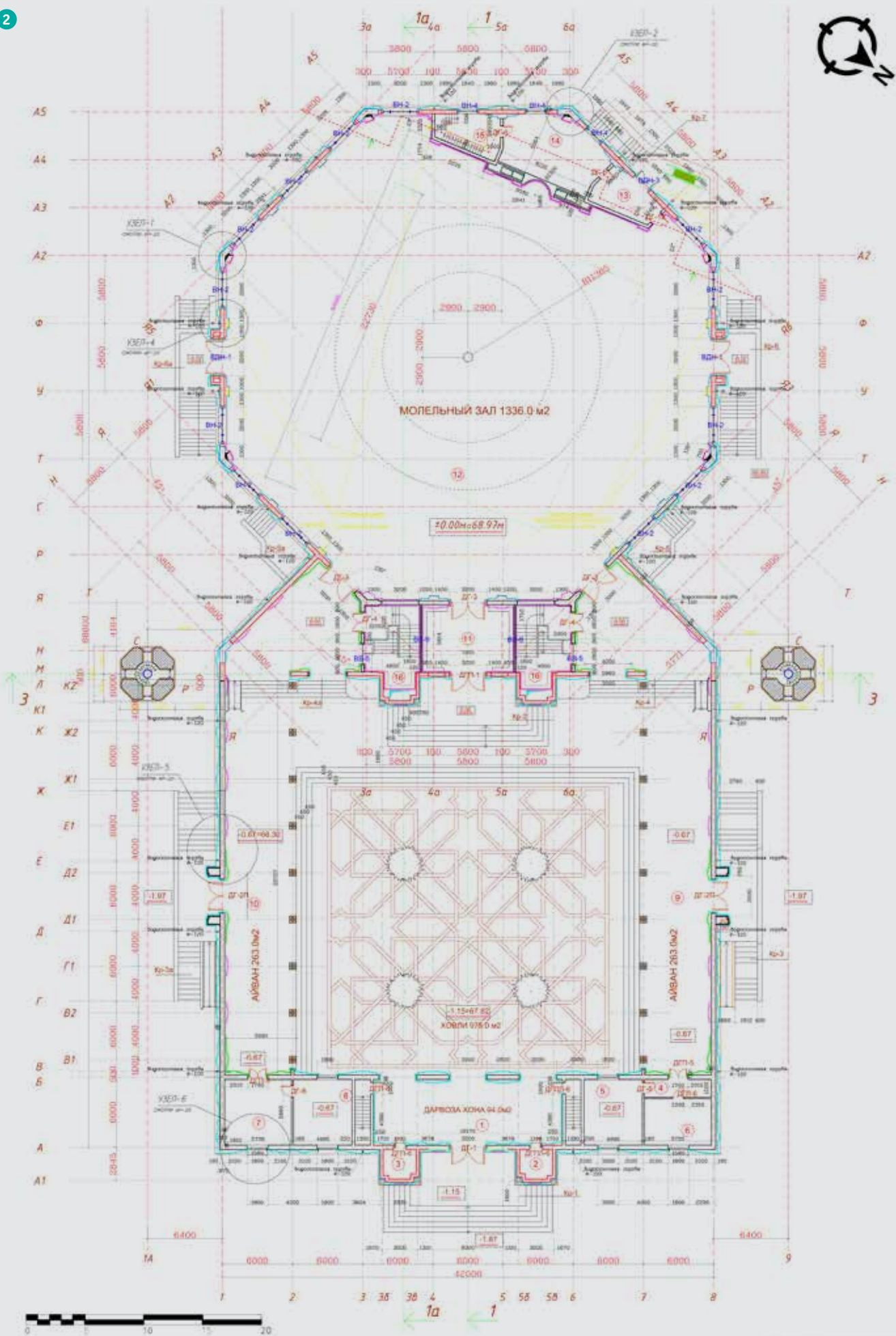
#### Site

Minor Mosque is located in Tashkent, the capital and largest city of Uzbekistan considered the most populated in post-Soviet central Asia. The mosque site is in Minor Mahalla (Minor area) on the banks of the Ankhor Canal. Minor area is particularly famous for the Minor cemetery where many prominent figures of culture and science of Uzbekistan are buried. The cemetery has a direct access from the mosque's site and the funeral prayers are performed inside the minor mosque. Architect Turdiev not only designed the mosque but also the entrance portal and walls surrounding the cemetery to create a corresponding design dialogue between the two.

The banks of the Ankhor Canal where Minor Mosque is located has undergone significant development recently. The surrounding area consists of private residential houses, multi storey housing units and public buildings. Moreover, a public promenade runs along the water canal. The Mosque's landscape garden integrates into the promenade

- 1 Top view shows mosque components
- 2 Ground floor plan





and blends into it creating a public space used by locals for evening strolls. Additionally, the mosque lies in close proximity to the business district of Tashkent and international expo centre. Therefore, the area is heavily frequented by traffic and easily accessible for the public.

The design of the mosque as well as the walls and entrance portal of the Minor cemetery complement each other and were designed by the same architect incorporating white polished artificial marble and detailing. The surrounding buildings are a mixture of small-scale private residential houses with brick, plaster and shingle roofs, housing complexes about 10-storey high, glass and metal modern high-rise, and about 10-storey buildings with traditional architectural elements like screens, domes and complex decorative arches, public buildings, near the busy business centre and expo centre.

The architecture style of the macro site is a mixture of Soviet concrete aesthetics, and historic landmark buildings made from brick in traditional Uzbek and eastern style with arches, heavy level of detailing, ornamented wood columns and cladding in the interior and the extensive use of blue colour particularly witnessed in the architecture of the region.

In order to increase its visibility, the mosque was elevated and positioned on a platform of about two meters. The height of the mosque including dome is 28.5 m. The mosque has two detached minarets that are about 40 m high. The mosque has monumental entrance portals that are about 21 m high.

The mosque is easily accessible by pedestrians coming from the surrounding neighbourhoods as well as from the public river promenade. The visitors can also conveniently reach the mosque by car as the mosque is located directly at the ring road connecting the most important areas of Tashkent. Sufficient parking spaces are provided for visitors on site. Additionally, the mosque is located near a metro station which further facilitates access to the mosque.

Although the mosque park, the promenade and the mosque courtyard are open to the public, the prayer hall is only accessible for men. Accessibility for disabled people with limited mobility in and around the mosque is facilitated using ramps.

### Spatio-Functional Relationships

There is strong connection between the exterior and interior in Minor Mosque. The exterior landscape flows into the mosque into the "Sahn" courtyard where trees are planted and surrounded by a wooden "Riwaq" arcade that also serves as a transitional space between interior and exterior. The connection to exterior is also reinforced with the large windows in the prayer hall that provide view into the mosque garden.

The mosque area is immersed in greenery. The mosque is surrounded by a park that integrates and blends into a public promenade of the Ankhor water canal and creates a public space which is used by locals for long evening strolls. The walking paths are radially connected to the prayer hall and connect from the mosque to the promenade as well as the minor cemetery where burial ceremonies take place after performing prayer. The garden of the mosque is open to the public. At the main entrance of the mosque there is a formal fountain centered at the main axis of entrance.

The landscape trees include chestnuts, bushes, lilacs and flower beds, large-size deciduous trees (chestnut, oak, double-bladed ginkgo, birch), coniferous trees (pine, spruce, juniper).

Considering the topography of the site is relatively flat, and being located in a pit, it was raised by 1.5 m ensuring correct positioning and improving visibility of the mosque and solving the issue of drainage of surface waters. The entrance area is covered in natural granite stone. Pedestrian paths and sidewalks are designed from 30x30x4 cm concrete tiles.

The project also provides conditions for the organisation of surface runoff with sufficient slopes, developed drainage network. Drainage of surface water from the roadway as well as from green areas is carried out in the trays and then discharged along the terrain.

1 Main façade derived from the deep rooted Tymurid architecture

2 Mosque masses and gates

The main mosque building is flanked on two sides by two free-standing detached minarets with an octagonal base. Although the main entrance to the courtyard is open to men and women, the prayer hall is primarily for men and is accessed by additional stairs. A secondary room can be used for women to perform prayer. Other functions on the main floor include the imam room and several offices. The ablution area is a separate building outside the mosque on site premises equipped with all the necessary amenities.

The Courtyard leads to the main entrance of the prayer hall. There are three entrances to the mosque. One main entrance through a vestibule and two secondary entrances all reached from the courtyard. The prayer hall is an open space, free from columns to avoid interruption of "Safs" and octagonal in plan with an area of 1336 m<sup>2</sup>. Each side of the octagon is 17.4 m. One of the sides of the octagon contains the Mihrab wall which is positioned offside from the main entrance axis. While the entrance and mosque building are aligned perpendicular to the street while the Mihrab wall is aligned with Qibla orienting the worshippers toward Mecca.

### Form and Architecture

Its design borrows from Timurid style with contemporary accents. In contrast to the traditional Uzbek style of baked brick, it is decorated

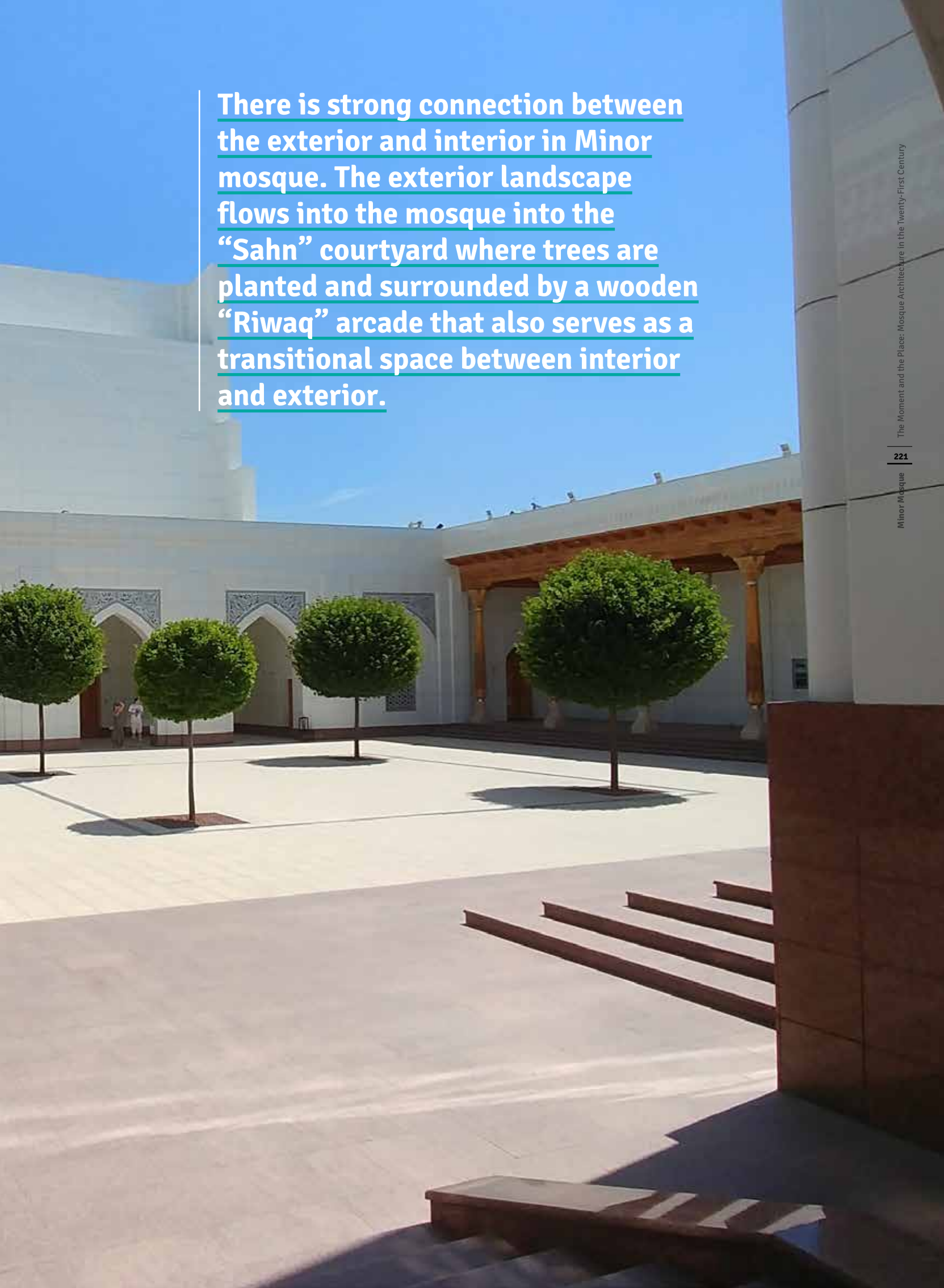


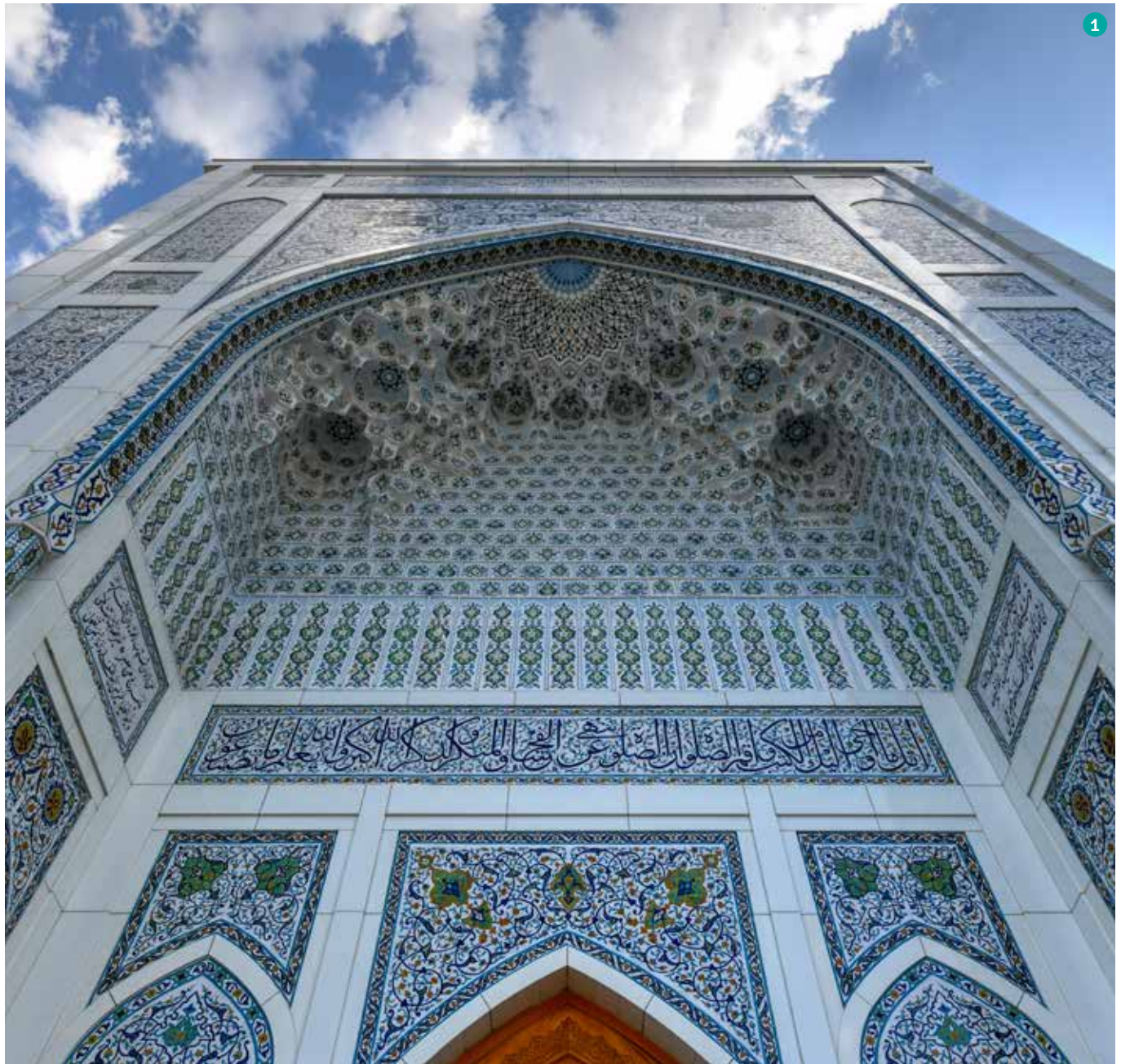






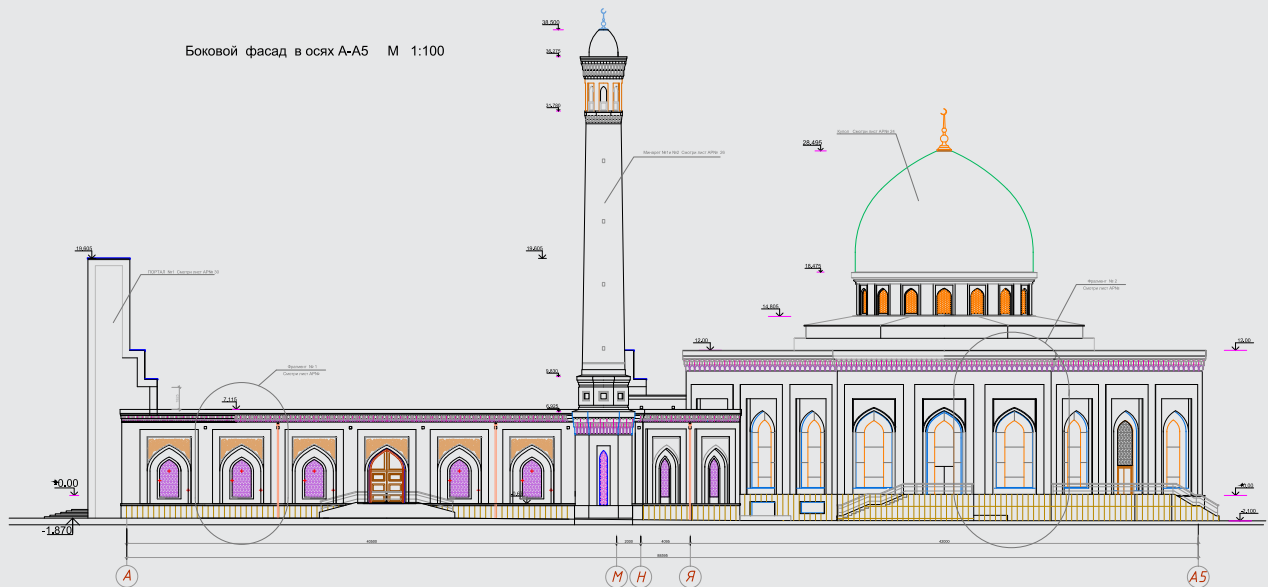
There is strong connection between the exterior and interior in Minor mosque. The exterior landscape flows into the mosque into the “Sahn” courtyard where trees are planted and surrounded by a wooden “Riwaq” arcade that also serves as a transitional space between interior and exterior.





1

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2

- 1 Ornamentation of the main gate follows the tradition of Tymurid architecture
- 2 Elevation
- 3 Main Qibla wall with the Mihrab

in polished white artificial marble. The design was chosen as a result of a local architectural competition. The mosque has two minarets overlooking a blue dome and the building itself is white in colour. As a result, it is sometimes referred to as the white mosque of Tashkent. The interior of the mosque is decorated in the style of «Naskh» and the mihrab is decorated with passages from the Qur'an and hadiths. It has a capacity for more than 2,400 people. Shortly after the opening, Minor mosque became a landmark of Tashkent.

The task of the architect was to design a mosque that combines elements of eastern tradition with a contemporary accent. Local influence can be clearly witnessed in the blue colour theme of the mosque, the dome and the monumental entrance portals traditional to many historical Uzbek buildings. The courtyard with "Sahn" and "Iwans" clad with wood and wooden columns with intricate detailing and mastery reflect local traditions. "Madrasa Al-Laqqar" in Samarkand was inspiration particularly in the detailing of the dome and Mihrab.

The mosque's style is influenced by Timurid style, reference to emperor Timur the great 14th century which is an important legacy of Uzbek national identity but in contrast to the traditional Uzbek style of baked brick, it is decorated in polished white marble. Timurid architecture typically uses Turquoise and blue tiles forming intricate linear and geometric patterns decorated the facades of buildings, incorporating axial symmetry, which is particularly a characteristic of central Asia and Uzbekistan

Visitor by car uses the parking space adjacent to the promenade and water canal and proceeds to the entrance of the mosque where a formal water feature fountain and flower beds are located at the central axis of the mosque. The monumental entrance is accessed by stairs with intricate detailing in blue and white marble, a muqarnas adorned in calligraphy and Qur'an passages. The entrances are vaulted "Iwans" adorned with ornaments and calligraphy, which lead to the open air square "Sahn" planted with four deciduous trees. The courtyard is surrounded by wooden faced gallery with intricate

wood detailing and wooden ornamented slender columns in the traditional Uzbek style that provide shade and climatic solution particularly during the hot dry summers as well as an extension space for praying. The "Sahn" is symmetrical and has an area of 978 m<sup>2</sup>. The surrounding gallery is 263 m<sup>2</sup>.

The dome of the mosque is almost 23 m in diameter and has a ribbed circular structure. The drum of the dome contains pointed-arch glass opening. The structure of the roofing consists of cross-rafter triangular system of trusses either 1.5 or 2 m in height and 32 to 22 m in length. The minaret ring is reinforced concrete with an outer diameter of 2.7 m and inner diameter of 2.1. The slabs are 200 mm in thickness.

The mosque and minarets are made from reinforced concrete with a steel structure. The facades of the building are decorated with proportional pointed arches and are faced with polished synthetic marble, glass crystallite, and ceramic tiles. The load bearing structure is reinforced concrete core with beamless slabs.

The leveling of the mosque and the several stairs between the levels allowed the basement to be positioned closely below entrance level which means sufficient natural lighting is provided for the interior. The basement is used as an extension prayer hall. Vertical circulation is provided via stairs and ramps on several sides of the mosque.

### Interior design and technology

Hydrogeological conditions were taken into consideration when choosing a foundation according to a survey. Due to seismic activity in the area, the structure of the building is designed according to seismic building norms level 9. Other norms such as the protection of corrosion were considered.

Minor Mosque maximizes the use of natural lighting rather than artificial due to large arched openings on all sides of the prayer hall and the drum of the dome which minimizes the need for artificial lighting and electricity use.

One of the unique aspects of the mosque is the intricate detailing of the interior facades of the "Riwaq" gallery faced in wood and supported by slender wooden columns with floral motives. The doors are also made from wood and ornamented in similar style traditional to Uzbek architecture.

The main materials used in the construction of the mosque are reinforced concrete and steel. The mosque differs from the traditional Uzbek architecture with its white facades decorated with polished synthetic marble (glass crystallite) and ceramic tiles which according to the Architect Turdiev is more durable, doesn't crack and is a more climate-appropriate option to Tashkent than marble. The facades use







- 1 The dome and the prayer hall from the inside
- 2 Outdoor view

polished material to retain its white colour over time. The project used local materials and craftsmanship.

The base of the facades is made of natural red granite. All the stones of the facade and minaret are mounted in a «dry mounting» system which ensures durability and uniqueness of the facade. The courtyard is faced with carved wood and supported by wooden carved columns and carved ceiling elements made by Uzbek craftsmen. The wood used is Beech wood.

### Conclusion

The importance of the mosque lies in its unique location in Minor Mahalla next to the Minor cemetery where many prominent figures of culture and science of Uzbekistan are buried and many funeral prayers take place as part of the burial tradition for Muslims.

Minor mosque maximizes the use of natural lighting and incorporates element of Muslim architecture in the form of the “Riwaq” gallery that provides a climatic solution and provides adequate shading and cooling effect as well as a transitional space from exterior to interior.

The interior of the mosque is spacious and bright. The unique aspects of the interior of the mosque are emphasized in the heavily decorated “Mihrab” wall and dome incorporating ornaments and calligraphy in

blue and white and gold leaf and inspired by Samarkand architecture. The windows in the form of pointed arches provide sufficient lighting and reinforce the connection between the interior of the mosque and the garden.

The landscape surrounding the mosque includes a variety of trees, bushes and flower beds. A formal fountain is centered at the main axis of entrance and trees are planted inside the courtyard. The Mosque’s landscape garden integrates into the promenade and blends into it creating a public space for the Uzbeks often frequented by locals for evening walks.

To ensure ease of management and maintenance through design and choice of materials, the architect used polished synthetic marble using a «dry mounting» system that is more durable, does not crack and is a more climate-appropriate option than marble and retains its white colour over time. It also used local materials and craftsmanship.

The architecture of the mosque is a unique experience for the visitor, as the most impressive aspects of the mosque are beautifully designed and implemented architectural elements with intricate detailing. The formal entrance portals in the form of vaulted “Iwans”, the courtyard, the extensive use of wood in the gallery surrounding the courtyard and the detailed columns as well as the blue ornamentations on a white polished background. All these elements significantly affect the visitor’s experience.

The prayer hall is only accessible for men. Additionally, the ablution area is designed a simple stand-alone building. Considering that performing ablution is an essential act before prayer, it would have been better to incorporate it into the building of the mosque or the mosque courtyard. This mosque is a living example of how design can integrate the building with its surrounding natural environment, working as a complex.

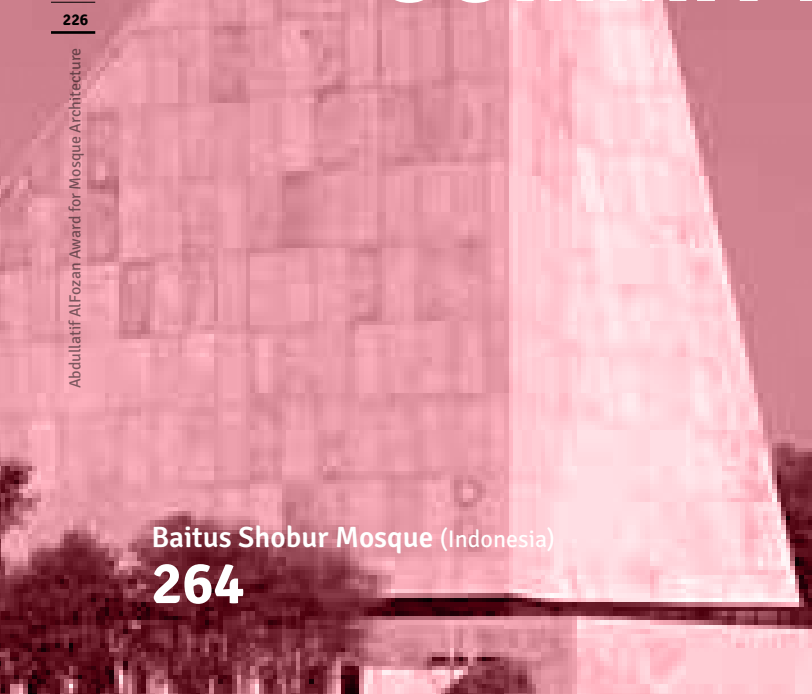


Al Asryad Mosque (Indonesia)

228



# JUMMA MOSQUES



Baitus Shobur Mosque (Indonesia)

264



Mohor Para Mosque (Bangladesh)

276



The Red Mosque (Bangladesh)

300



Bait Ur Rouf Mosque (Bangladesh)

312



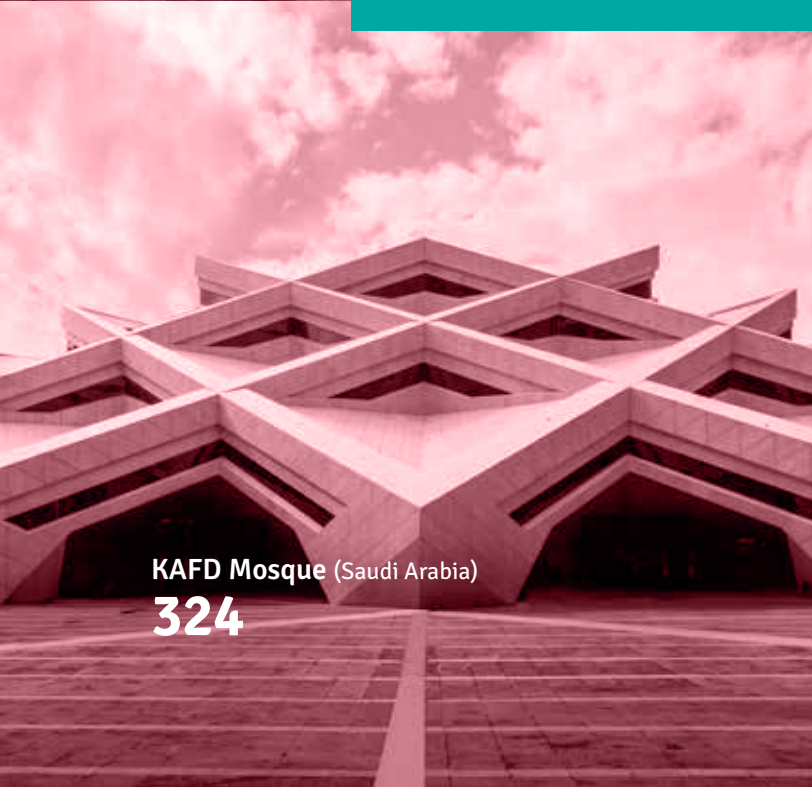
Al Safar Mosque (Indonesia)  
**240**



Chandgaon Mosque (Bangladesh)  
**252**



Sancaklar Mosque (Turkey)  
**288**



KAFD Mosque (Saudi Arabia)  
**324**



Surau Nusa Idaman Mosque (Malaysia)  
**336**





# AL ASRYAD MOSQUE

Location: Kota Baru Parahyangan, West Java – Indonesia

Client: PT. Belaputra Intiland

Service: Architecture Construction Drawing

Land area: 8.000m<sup>2</sup>

Building area: 970m<sup>2</sup>

Year: 2008

Capacity: ± 1000 people

Type: Jumaah Mosque

Al Irsyad Mosque is located in Kota Baru Parahyanganin, the sub-district Padalarang, West Java, Indonesia about 18 kms from the City of Bandung. It is part of a school complex called the "Al Irsyad Satya Islamic School". It was built in 2009 and run by funds from the company Pt. Belaputeralntil and that run the school and community contributions. The mosque was designed by the office PT. Urbane with Ridwan Kamil as the principal architect. The mosque is an iconic landmark, as it serves the community and beyond.

The designer recognizes the importance of mosque in Islam. He presents the mosque as a place of worship- a place of kneel, stoop one's head and pray solemnly. In addition to being a special place of worship in Islam, it has, throughout Islamic history, the history of architecture and Islam, special role that extends beyond the religious one, including, educational and communal. Such a concept is integral in the design and the general character, spatio-functional and planning aspects of the mosque within its relations with the context. The Qur'anic school with classes in the mosque have local pupils and orphans. The mosque is a place for people to gather for social exchanges at prayer times.

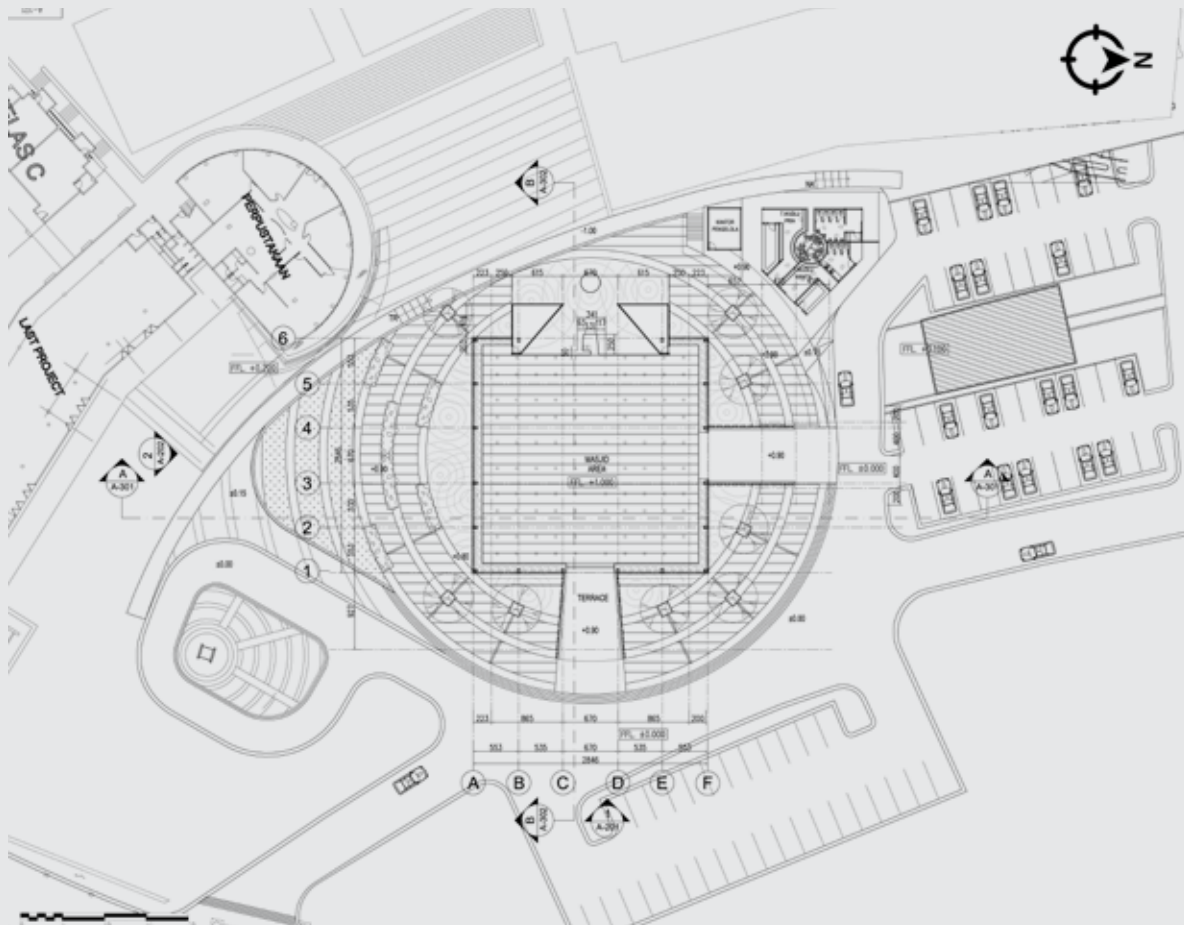
### Site

It is located in a relatively commercial and residential low-density area. Apart from working as a mosque for the school complex, which has 1200 students, the mosque also serves local community. It is popular and has a prominent location. The minaret is set at a distance from the mosque and is a landmark.

The surroundings, along the main road are mostly local businesses and residential areas. Socially, there are a large number of users from the businesses and the resident community. Local community is very fond of the mosque. Other people also come from a distance to pray,

- 1 Site plan
- 2 Toilets
- 3 Night view of the main entrance

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particularly during Friday prayers. Accessibility by vehicular means is fairly straightforward, bringing cars to close proximity of the mosque without interfering with functions.

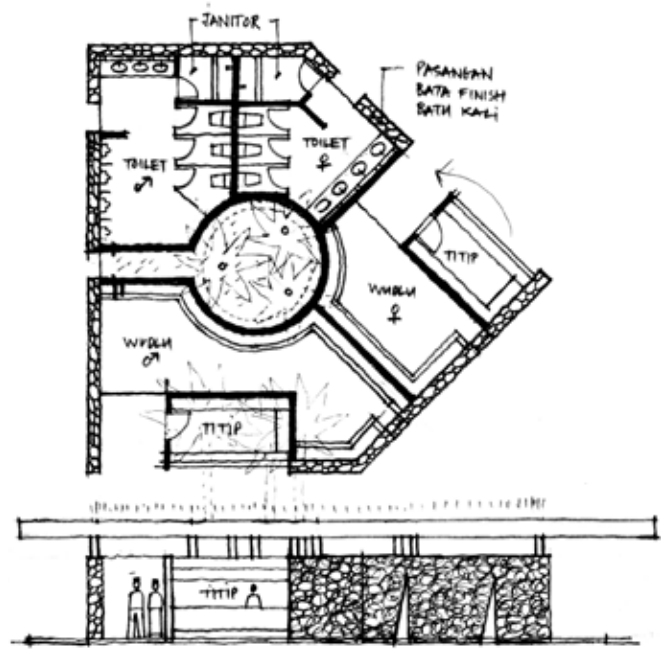
The designer used basic geometric site layout. The primary shape of the mosque takes the form of a square, which seems the most efficient since Muslims pray in straight rows facing a specific direction. Basic design elements were integrated with overall site layout. The square, which constitutes the physical determinant of mosque's plan, is positioned with deliberate geometric coordinates so that its center "merges" with the center of a circle that surrounds it in contact with the four corners of the square.

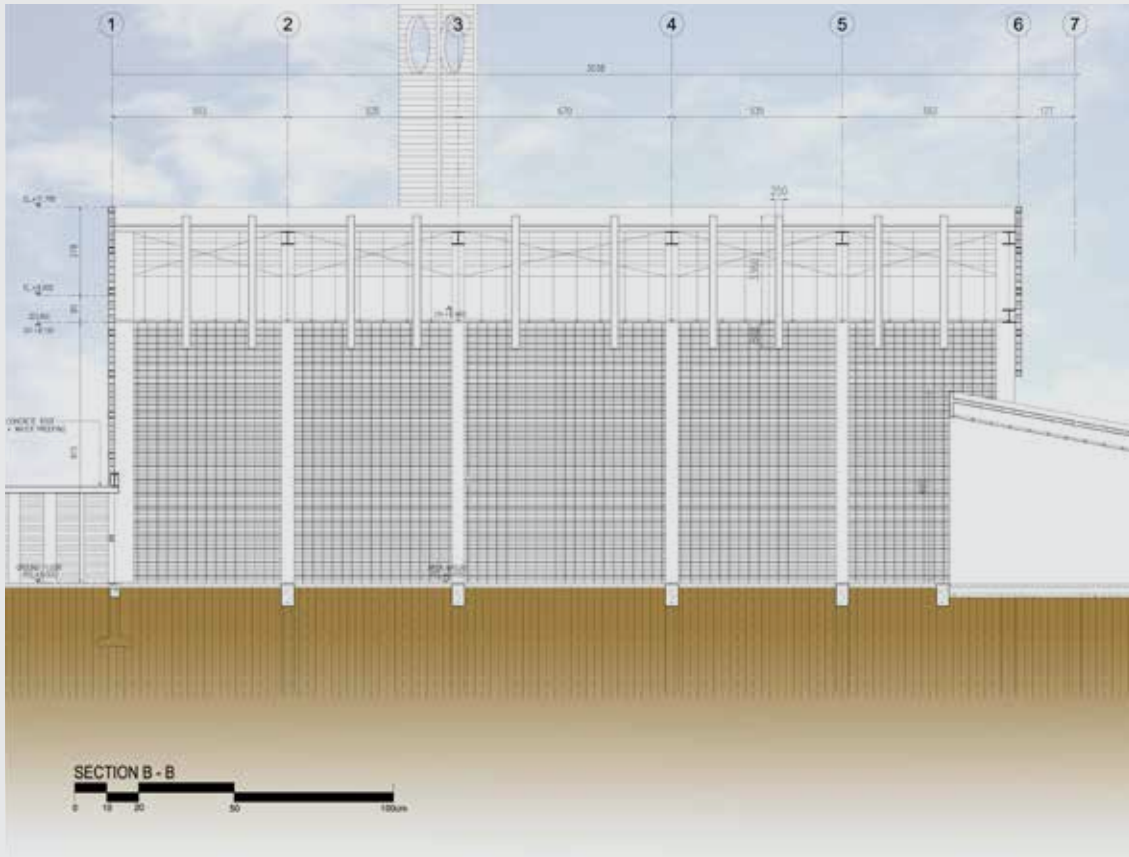
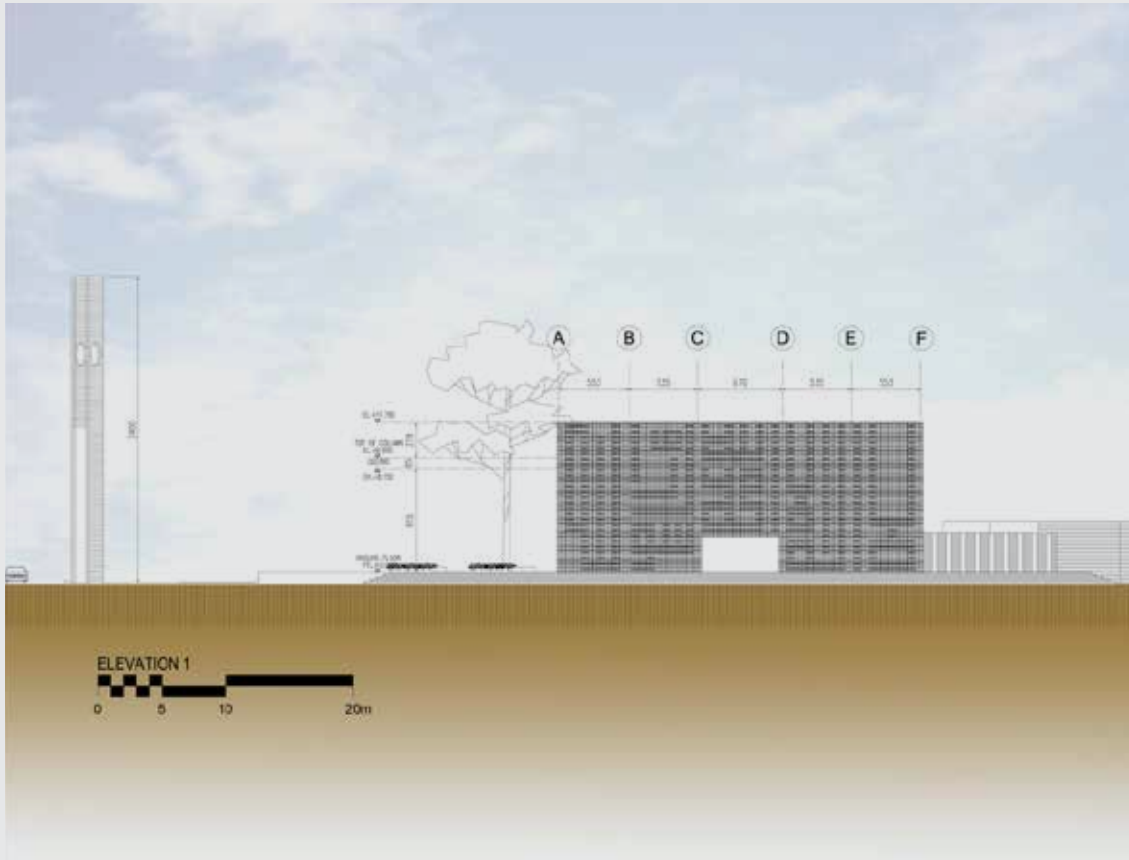
The main prayer hall, seems to be floating on water within the inner circle. The mosque and the circle swimming in water rose above the surrounding by several steps from its surroundings, physically and spiritually.

Vehicles and open parking lots were located at the borders of site to facilitate access, yet were surrounded by groups of trees to identify them visually. Car parks are functional and designed with care, so the designer allows a short walking distance from the mosque for carparks. With a capacity to accommodate approximately 1,000 people, the mosque is also designed to 'blend in' with nature.

### Spatio-Functional Relationships

The mosque is square in shape (reminiscent of the Ka'aba) of 970 sqm gross area with a column free space inside. The huge cube, which represents the main mass of the mosque dominated the rest of the mosque's organic parts. The mosque is a part of the site planning of the school complex and is integrated well. It has a prominent location in the site and in spite of it being lower in height, its location and visual characteristics draws attention. Beyond the site on the western side are hills and greenery, since the Qibla side is open, the interior of the mosque has strong visual connection with the surroundings on the western side. Not only the mosque is well placed in the site its visual correspondence with the surroundings is very strong.





Facilities like ablution and office spaces are integrated with mosque and covered walkway on the northern side. External spatial relationship connects parking, elements of garden design and water features.

The hypotheses of spatial formation have been determined by the symbolism of resorting to the cube as an overwhelming geometric shape that cannot be neglected. Therefore, any attempt to search for space relations in the internal geometry of the abstract cube is an attempt to break the strong foundations of the design philosophy in this mosque. Thus, the research and the attempt to link the spatial composition between the general space embodied by the cube and the general layout of site with its features and prominent elements, supports the strength of the spatial relationship, which is almost organic of the general spatial composition of the mosque.

The relationship between the inside and outside is not only spatial, but also visual. The power of abstraction adopted by the design was accompanied by a strict and strong openness to the outside. The natural landscapes that the designer highlights for the worshipper inside the mosque are reminiscent of the foundations described by Paradise in the Holy Quran, and contribute to the support of spirituality. The spatial link between the inside and the outside contribute to the redefinition of the relationship between man and nature.

### Form and Architecture

The first thing that catches attention about this mosque in Kota Baru Parahyangan (KBP) is the absence of a dome, which is almost always a quintessential characteristic of mosques. However, the architects have informed that the dome is not a cultural/religious identity, hence not a necessity. The other important, perhaps uncommon feature is that it was designed with no doors (although some have been added in the eastern entrance) and importantly it does not have Qibla wall as such. The Qibla direction is open and has a view of the surrounding landscape, with a sphere on a water body which is illuminated at night from its inside to reveal the words "Allahu Akbar".

The principal architect mentioned that when he went to the site for the first time, it was sunset and the sky was red as a background to the landscape. He wanted the worshippers to see this from inside the mosque and marvel at Allah's creation.

The architecture of the KBP mosque is unique in that it uses stacked stones as the main façade to create tectonic effect, while embedding Islamic text/calligraphy on the façade as a graphic element and reminder prayer. The stacked stones allow for natural ventilation without the need for air-conditioning. Surrounded by water, the

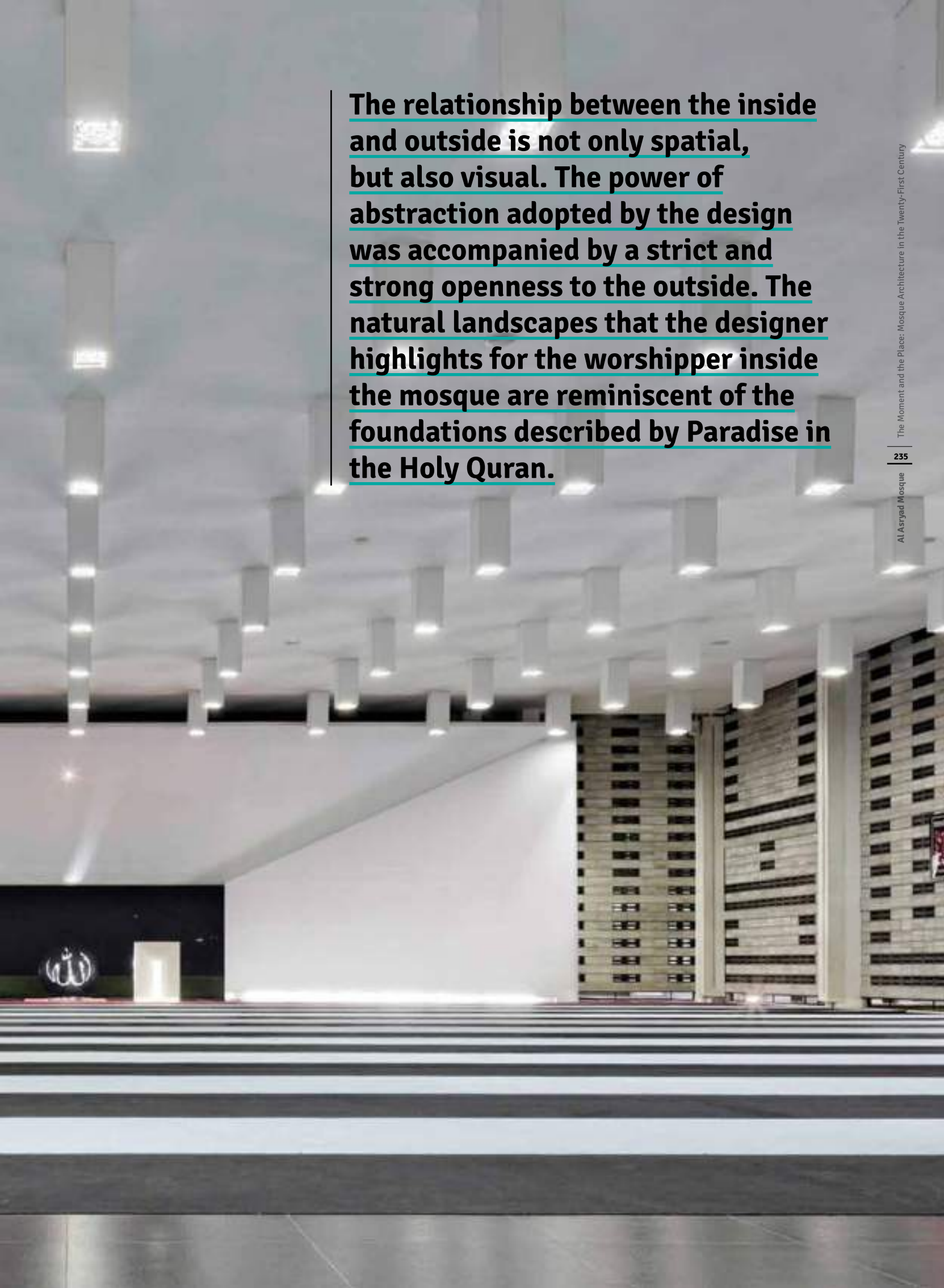


- 1 Elevations
- 2 External water element
- 3 Top view





**The relationship between the inside and outside is not only spatial, but also visual. The power of abstraction adopted by the design was accompanied by a strict and strong openness to the outside. The natural landscapes that the designer highlights for the worshipper inside the mosque are reminiscent of the foundations described by Paradise in the Holy Quran.**





ambient temperature around the mosque will be lower during the hot season. Once inside, the people are able to look out and appreciate the external scenery.

The structural columns are arranged in such way that the façade seems like it is not supported by any frame. Mosque form makes strong reference to Ka'bah, the most iconic cubic form in Islam, to which all Muslims prayers are directed.

The facades are designed with stacked concrete blocks to create a tectonic effect, with Qur'anic text (in the Kufi script) embedded in it by using a different color block. The formal concept of the mosque, as mentioned by the principal architect, is generated from the circular ambulatory path of 'tawaf' around the Ka'aba. Hence the square shape of the mosque which sits on circular base of a water body. Although parts of this circular water body have now been filled, to accommodate more devotees outside during Jumma prayers, the realization of this concept is clear.

### Interior and Technical Aspects

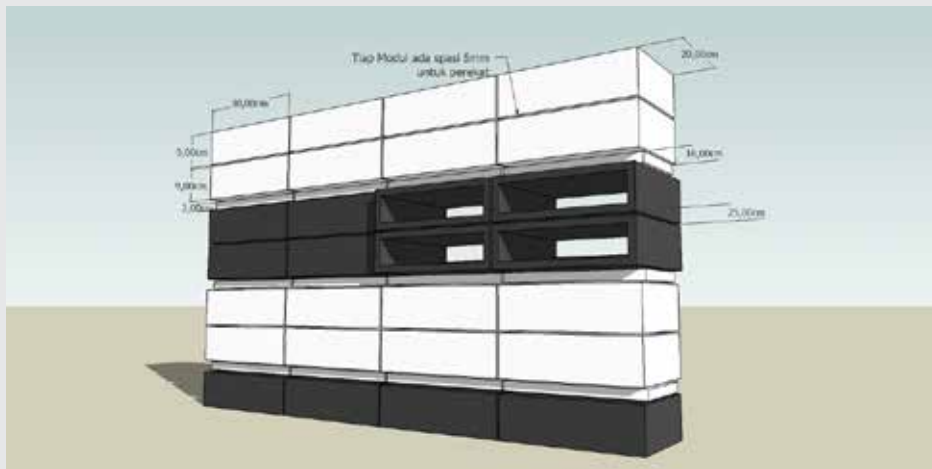
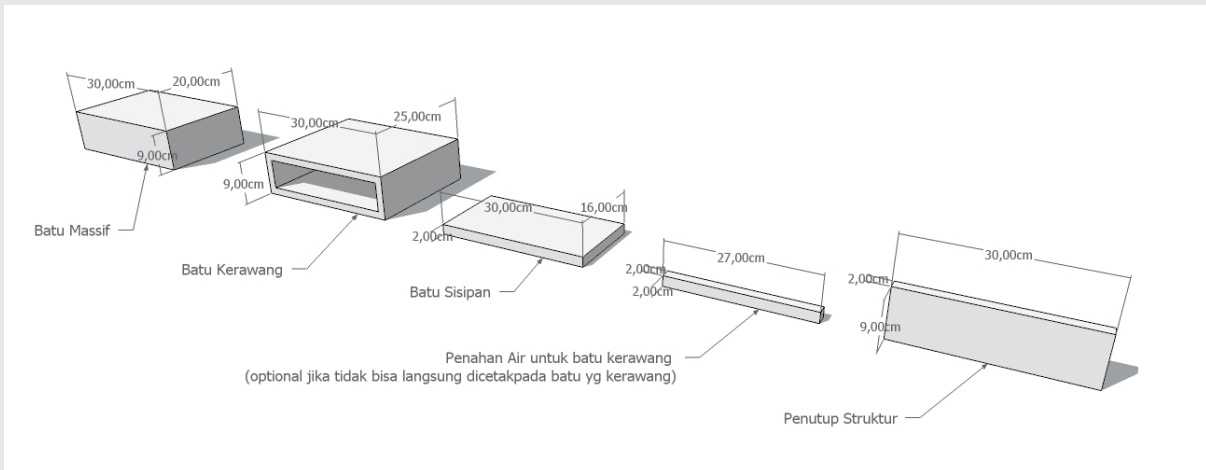
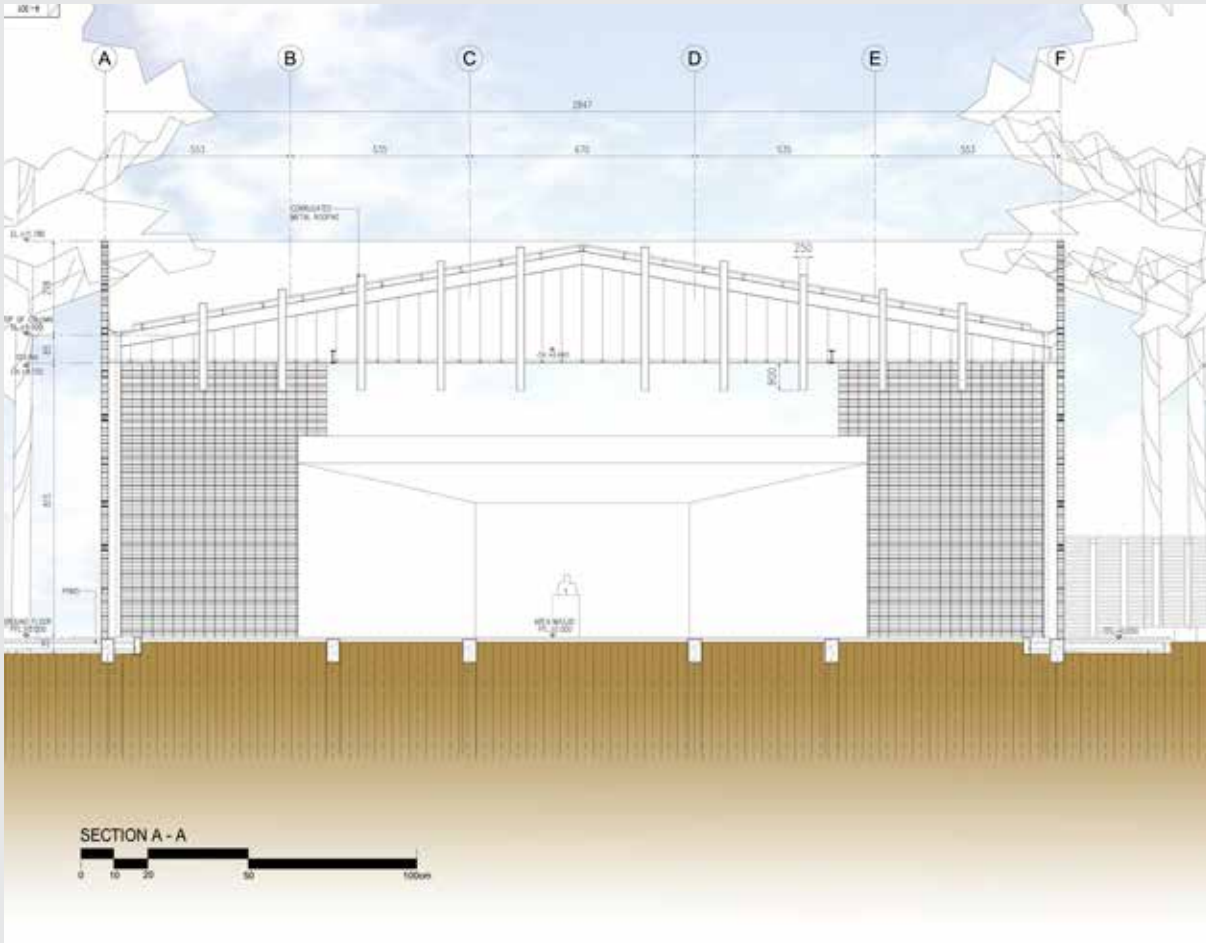
The structure of the mosque is a steel frame, with 18 steel columns (equally spaced on three sides, except the Qibla side where the central span is more) along the periphery on which rests triangular steel trusses, spanning 26.75m. The structural system is not apparent from the outside as the roof trusses of 3.5m height are hidden by the parapet walls. The internal space is column free and with a flat ceiling.

The façade is made with custom made concrete blocks in two shades of grey. The lighter shade is used as the background for the darker shaded ones, which are arranged to form the calligraphy on the façade. There are horizontal steel members every 5 courses of concrete blocks, to stabilize the walls. The darker concrete blocks are perforated and adds to the ventilation of the interior space.

The use of the concrete blocks to form the calligraphic patterns on the façade is a strong architectural feature that lends identity to the

- 
- 1 Indoor environment
  - 2 Section
  - 3 Analytical studies





2

3



1

mosque. The mosque has several distinctive architectural features e.g. the open Qibla direction, the column free space, the facades treatment etc. These features complement each other to form a strong architectural statement.

The electromechanical system equipment is hidden in the two triangular rooms on either side of the Qibla wall, which also act as directional walls towards the Qibla.

The mosque is steel structure with concrete blocks forming the peripheral walls. The materials are all sourced locally. It is also naturally ventilated and lit during the daytime, hence does not rely on energy consuming equipment. Embodied energy for steel is high, concrete blocks have relatively less embodied energy. The walls are easy to maintain as they do not require any painting, only periodic washing. The floor is marble and of low maintenance

The most striking feature is the open Qibla wall which connects the outdoor to the indoor. The visual transition is through a water body on which is the place for the imam like a small island, connected by a mini causeway. There is sense of strong spirituality in this link between the outside and inside.

The interior is enhanced by the flow of air and light. On the ceiling are 99 lights (9x11) with the 99 names of Allah inscribed below the light source. This interesting feature during nighttime prayers. The black painted metal sphere on the water body on the Qibla side is a directional and well a sculptural feature. The presence of this element is enhanced when the inside lit up at night, to reveal the words "Allahu Akbar" on its surface.

### Conclusion

Al Irsyad mosque is the realization of a strong conceptual basis, both formally and functionally. It retains the qualities of house of worship without having some of traditional elements that are associated with a mosque. Not having a dome does not diminish the character of the building. The mosque is innovative in its design and uses a





architectural language that enhances its spatial quality, particularly in the indoor space. The idea of keeping the Qibla wall open with a view of the landscape is a distinctive feature.

It fits well into the environment it belongs to, in terms of setting, three-dimensional quality and landscape. It is popular among its regular users and is also well known for its distinctive design. The user experience as related by some of them is positive:

Although the designer has superseded the traditional mosque stereotypes in mosque's regular features, he still decided to maintain the controversial non-functional minaret, though it has more symbolic value to do with identity. In revealing his design idea, the designer writes: "The tall pole-like structure next to the square building form is called the minaret, an important element for mosque. It was used in the past for someone to call out to all Muslims to pray on top of the minaret whenever prayer time has come. Today, the minaret still serves the same function, except loudspeakers are used instead. In a way, the minaret has become an icon of mosques; anyone searching for a mosque can see one from afar." With this statement, the designer determines the purpose of the minaret as a vertical witness and a sign.

Socially the mosque is popular and used for purposes other than prayers (Qur'anic school) it is also a place for social interactions. It attracts large numbers during the jum'ah and Eid prayers (overflows to the outside). Being a part of a school complex adds to its social sustainability.

- 1 Prayer hall in use
- 2 Façade detail



# AL-SAFAR MOSQUE

Location: Rest Area Km 88 - Padalarang, West Java, Indonesia

Client: PT. Jasa Marga, Tbk

Architect: Ridwan Kamil, PT Urbane Indonesia

Land area: ± 20 Ha

Building area: 1.200m<sup>2</sup>

Year: 2013

Capacity: ± 1000 people

Type: Jumaa Mosque



The Al Safar Mosque is located in Cipularang of Purwakarta Regency of West Java, Indonesia, on the kilometer 88 toll road along the Bandung – Jakarta Highway, 53.6 kms north-east of Bandung. The rest area is on both sides of the highway and the mosque is located on the western side which is not connected to the eastern part of the rest area. The mosque has a capacity to accommodate 1000 people. Other facilities on that side of the highway are a shopping center, restaurants, a filling station, a 'Musalla' or prayer room and some other structures.

The mosque is on flat land rising 12 meters from the highway. The place is surrounded by hills from which the shape of mosque is derived and then developed to a 'folding' form. The form itself, the architect argues, has some inspiration from Japanese art of origami. Because of its unconventional shape, it can be open to many interpretations.

The name Al Safar is derived from the Arabic word, meaning travel. The mosque is primarily meant for travelers who stop in the rest area. The mosque serves both travelers using the highway and the local community. The mosque's angular form unfolds using simple, modern structure at the purbaleunyi rest and services area.

### Site

The mosque is located in a rest area next to a highway. There is no habitation nearby and as such the mosque does not belong to a resident community. The users are transient and not regular. Physically the mosque is part of other structures that constitute a rest area, shopping center, restaurants, and station, although very different in shape. It stands out from its surroundings due to its unusual form and structure. The users are transient, while regular users, few in number, are the ones who work or live in the area.

The mosque stands out among surrounding physical environment

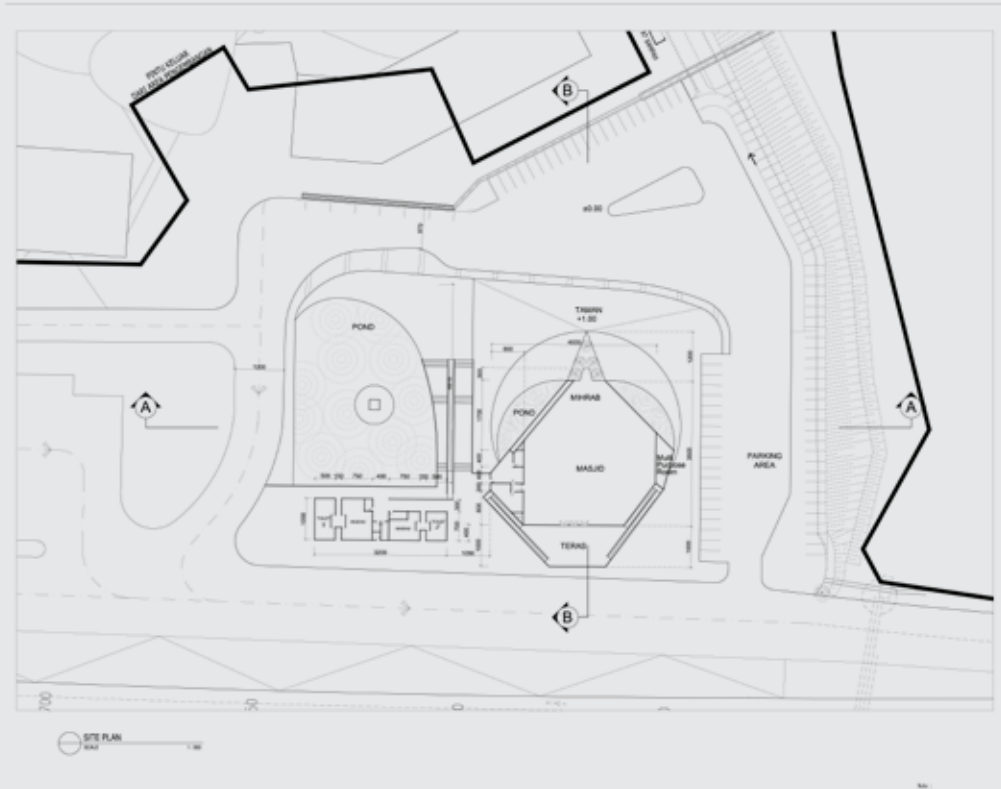
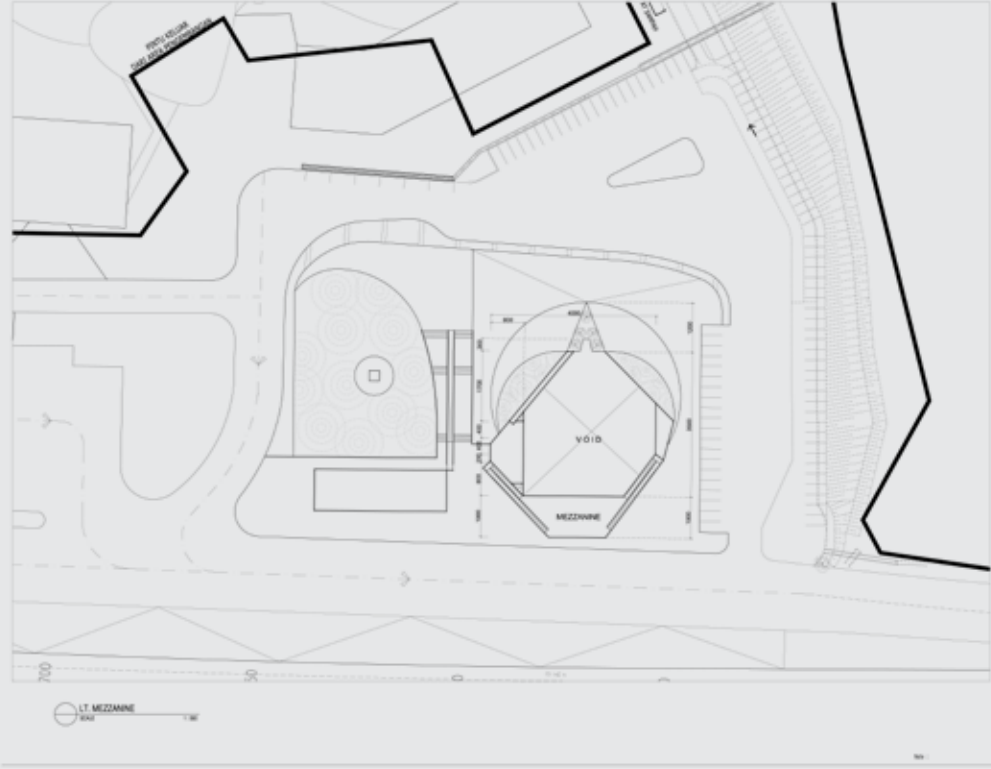
as a novel structure. Visually it stands out from other structures in terms of its shape and color. The connection to the mosque structure is through landscape and water located around the structure itself. Accessibility to the mosque and landscape has been carefully considered. There are ramps that lead to landscape and the approach to mosque for differently people. The ramps follow international standards. The mezzanine floor inside the mosque is also accessible via a ramp.

The green strip, which separated the designer from the main road, appears to be a buffer zone, which gradually widens. This separation was not only horizontal but also vertical, where site rises from the highway, and the green belt appears as a three-dimensional slope towards the highway. It also looks like the green façade of the whole site. Site is carefully designed to cast a certain degree of excitement and surprise as visitors approach the mosque from the highway, where the mosque and its surroundings are gradually experienced by drivers who access site through the service road.

Car parks have been separated from the mosque to allow a walking distance for visitors to practice. Cars are also hidden to maintain a natural looking site free of the interruption the car park might impose on the overall planning and architecture of the mosque and its surroundings. At the same time, accessibility has been considered

- 1 The minaret
- 2 Top view
- 3 Outdoor view

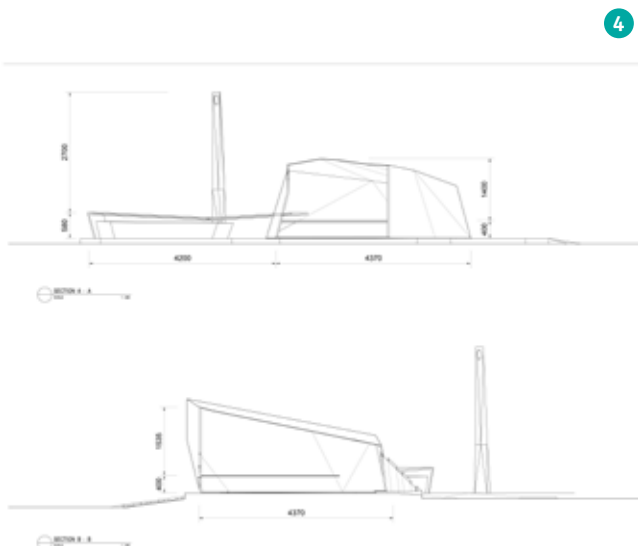








- 1 Top plan
- 2 Ground level plan
- 3 External geometry of the prayer hall
- 4 Elevations



for disabled people within reasonable proximity and for emergency access to vehicles around the mosque.

#### Spatio-Functional Relationships

The main mosque building consists of a main prayer hall, multi-purpose room and entrance hall; an open female prayer gallery is situated on the mezzanine floor. The mosque has a square layout; however, the corner sides have been tilted facing the Qibla, creating a triangular space for the mihrab.

The designer adopted organic forms to suit the general composition of the mosque, which blends with the overall site. The mosque blends with features of nature of greenery and water, and is reflected on large water pool that surrounds the mosque itself. The mosque is also designed next to an unorthodox minaret, which looks like an extended spear. The tall triangular minaret stands in the middle of a large water pool.

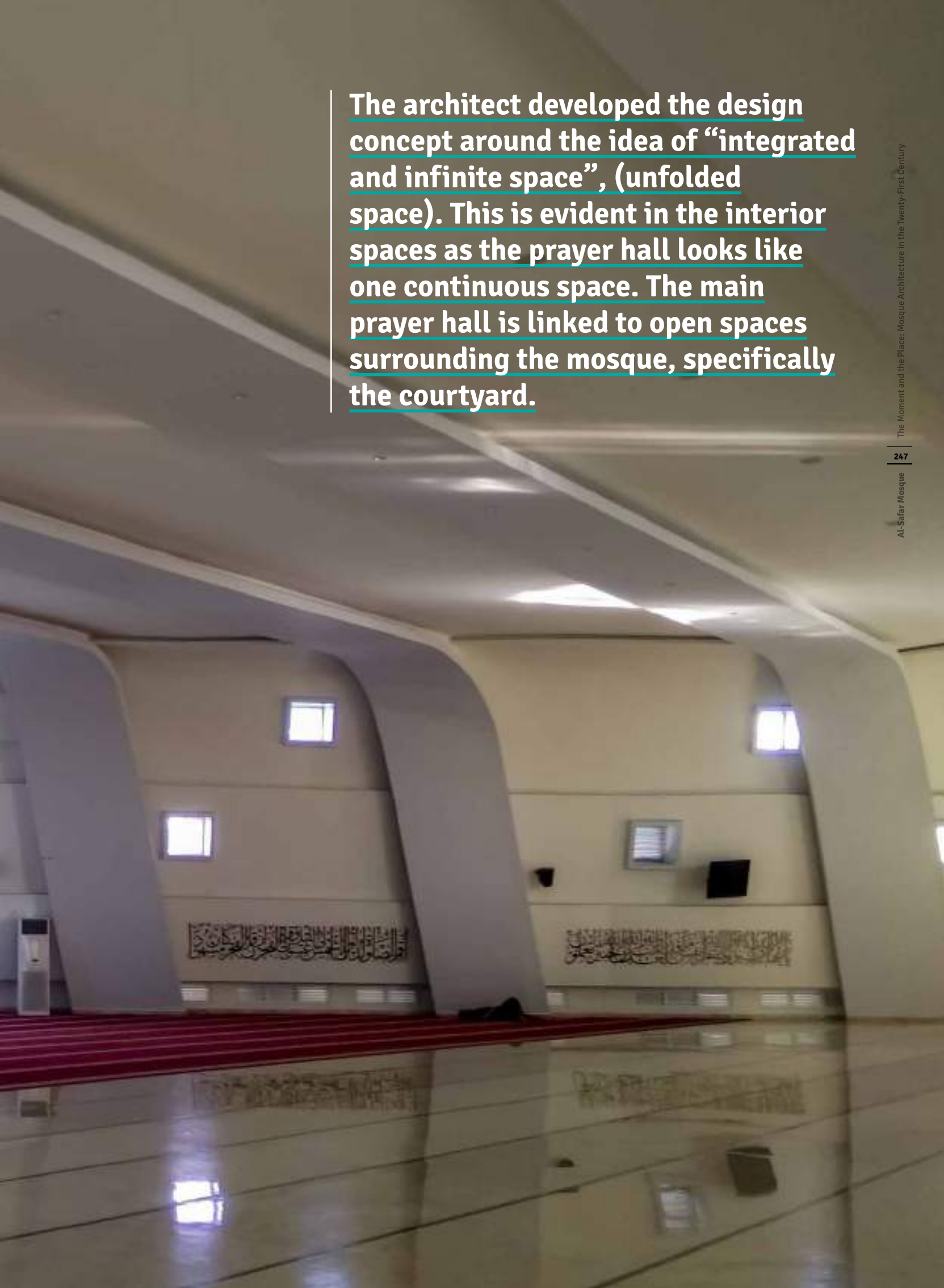
The mosque structure comprises main building and detached ablution facilities and washroom. The structure's hard concrete shell was softened by the surrounding green landscape and water features. The shell of the outer structure is made of glass fiber-reinforced concrete wrapping an interior steel skeleton wall, creating a modular façade with triangular openings and facilitating the mosque's angular, planer form.

The architect developed the design concept around the idea of "integrated and infinite space", (unfolded space). This is evident in the interior spaces as the prayer hall looks like one continuous space. The main prayer hall is linked to open spaces surrounding the mosque, specifically the courtyard. This relationship have been reconstructed and reconfigured in a contemporary and new style that the designer defined in his design. This new model restructures internal spatial relations based on rigorous novel structural concept.

The internal space offers calm atmosphere that inspires spirituality, with absence of complex decoration, rather abstraction and simplicity



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dominates. There is a focus in the main hall on the mihrab as the focal visual point.

The main mass of the mosque has been separated from its services and functional facilities, both internal and external, the bathrooms and places of ablution.

### Form and Architecture

According to Mr. Kamil the concept of the design is related to movement and speed, hence the dynamic shape. For travelers on the highway it is meant to be seen while driving past and is associated with motion. Visually it has none of the elements traditionally associated with mosques, except the minaret. It is modern structure using contemporary technology and materials. The form as mentioned, is dynamic, the structural system used complements this idea.

The mosque has faced some controversy about its shape. A certain quarter has likened the shape as seen from the top as a symbol of the infamous “illuminati” because of the use of triangular shapes in its structure. The architect has called it a misinterpretation also citing some examples of mosques using the triangular shapes.

The configurations are characterized by unprecedented horizontal

and vertical flow, as spaces and mass formations appear vertically as organic extension of one another. This is despite the sharp angles that characterize the form, both horizontally and vertically, where at first glance they seem to contradict the elements of nature around which are notably dense and abundant. The designer separated elements of the mosque, functionally using landscape as a means to do so. He separated parking area, services and secondary features like ablution and rest rooms using landscape, hence giving the overall site a more natural outlook.

The overall configuration and architectural character reflect organic holistic design. This was reflected in the mosque’s organic components, consisting of main building, separate ablution facilities and a bathroom. The design reflects the sensitivity as solid concrete structure is softened by green landscapes and surrounding water features.

A long triangular minaret stands in the middle of a large pond. The triple element symbolizes strength and durability, which has been translated through architectural composition to the structural design of the mosque.

### Interior and Technical Aspects

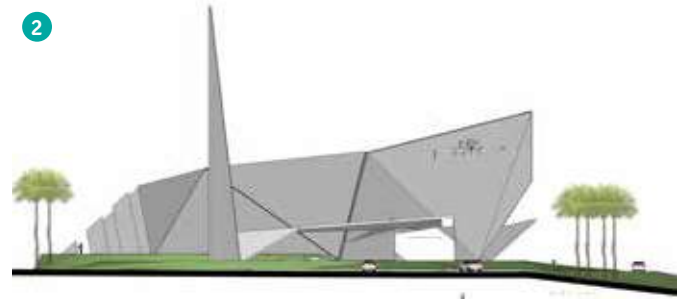
The mosque is innovative in terms of its structure and form. The main envelope of the mosque is made of steel truss like structure, using the principle of the ‘A’ frame. The envelope is crafted out of triangular shapes in two layers, inside and outside. Both layers were meant to be covered GRC (glass reinforced concrete) panels. In reality the outer layer is covered with blue colored aluminum panels. Between the two layers is glass wool insulation. Inside the mosque is a mezzanine floor which is a concrete slab on columns. The mihrab area is naturally lit because of the glass wall that covers it and it offers views to the outside.

The main interior space of the mosque is lofty and lends a sense of spirituality through its volume and enhanced by the light coming in from the triangular mihrab. The structural system is not apparent in the inside space as it has some added elements which span the space. There is a mezzanine level towards the back, accessed by the ramp. The scale of the space is reduced.

The mihrab is formed by a triangular arch, ornamented with a glass wall and embossed calligraphic plate. The glass wall replicated throughout the façade in the form of triangular glass openings, which create the visual effect of green color background of its mihrab. Rather than replicating a traditional mimbar with separate pulpit platform; a rostrum is provided in the front of the mihrab space.

The designer has largely succeeded in creating a balance between the mass of the main hall and the general composition. The

- 1 External cladding and random opening
- 2 Elevation
- 3 The Mihrab with the natural light





1

- 1 Ramp in the prayer hall
- 2 The Qibla wall and Mihrab



2



designer broke its form vertically in order to create the main space. The designer stretched public services that surround the mosque horizontally, and thus emerged in the background of the whole urban configuration abstract minaret that stretched vertically. This combination of vertical and horizontal vertical formations reflects the delicate design creating an architectural, visual and functional balance, which is clearly reflected in urban formations.

The irregular shape of the vertical prayer hall, both horizontally and vertically, has created a very unique interior atmosphere that turns the inner space into a focus for exploration, hence a creative renewed internal space.

The climatic and technical aspects also interacted with interior design where the exterior facades appear as groups of inclined surfaces at different angles. This allows permeability and control of natural sunlight controlling the amount of light, by means of carefully designed façade windows, which contribute to the required spiritual atmosphere. The design and distribution of openings and windows has both contributed to the interior design on the other hand, and to the balanced relation between solid and void in the elevations. Controlling the amount of light inside interior spaces played key role in the provision of natural lighting indirectly on the one hand, and was vital to reduce the amount of heat and exposure to external climate.

### Conclusion

This unique architectural composition is unprecedented in mosque architecture. It is unique on planning as well as architectural level. It is characterized by its unique form, style, and quality of spaces internal and external. This all adds to the quality of spaces and what this eventually contributes to the spiritual atmosphere inside and the architectural character outside.

This shift from the conventional form, design, planning and architecture, in this unique model is an example that deserves due reflection. This presents a case that calls for progressive architecture that derives its roots from the essence of the space and building type as a point of departure to reflect meanings to achieve qualitative spatio-functional contemporary mosque architecture. It is quite clear that the mosque is unique in terms of its form and structure, unlike what is the common perception of a mosque structure. In fact, for the general observer it is the minaret that provides the identity from a distance.

There is strong conceptual background to the evolution of the design. Its shape is derived from the surrounding hills, moderated with triangulation, reminiscent of the Japanese origami art. According to the architect, the overall, shape is related with movement, since it is next to a highway. This concept has inspired the overall design, in terms of architecture and the structural system, which compliment the formal concept.

The fact that it does not serve local community, being a mosque for transit users or those who work in the area, has resulted in few users. However, the design has proved to attract passersby through its unique form that reflects motion and dynamic architecture that is reflected upon its planning and architecture. Its unique location also has inspired many aspects of the design, planning, and landscape. The integration between all three is unprecedented and deserves to be carefully studied as a contemporary example of future mosque architecture.





# CHANDGAON MOSQUE

Location: **Chittagong, Bangladesh**

Client: **Faisal M. Khan**

Architect: **Kashef Mahboob Chowdhury**

Land area: **5300m<sup>2</sup>**

Building area: **1048m<sup>2</sup>**

Year: **2007**

Capacity: **230 people**

Type: **Jumaa Mosque**

In this project in the suburbs of the busy Bangladesh port city of Chittagong, architect Kashef Chowdhury of URBANA has shunned a noisy decorative style and created a calm and contemporary mosque that uses a minimalist design vocabulary to create an understated place of serenity. Chowdhury's respect for time, made him deliberately resist using any artificial light in his studio, forcing him and his staff to work within daylight hours, helping to create a natural pattern to the working day and discouraging working excessively long hours. This purity of approach and desire to bring the outside elements into his buildings is reflected in the design of the Chandgaon Mosque.

**Kashef Chowdhury's Chandgaon Mosque advances Islamic culture in line with Bangladesh's economic and material reality, yet it is also clearly and sensitively aligned to the wider project of global modernism.**

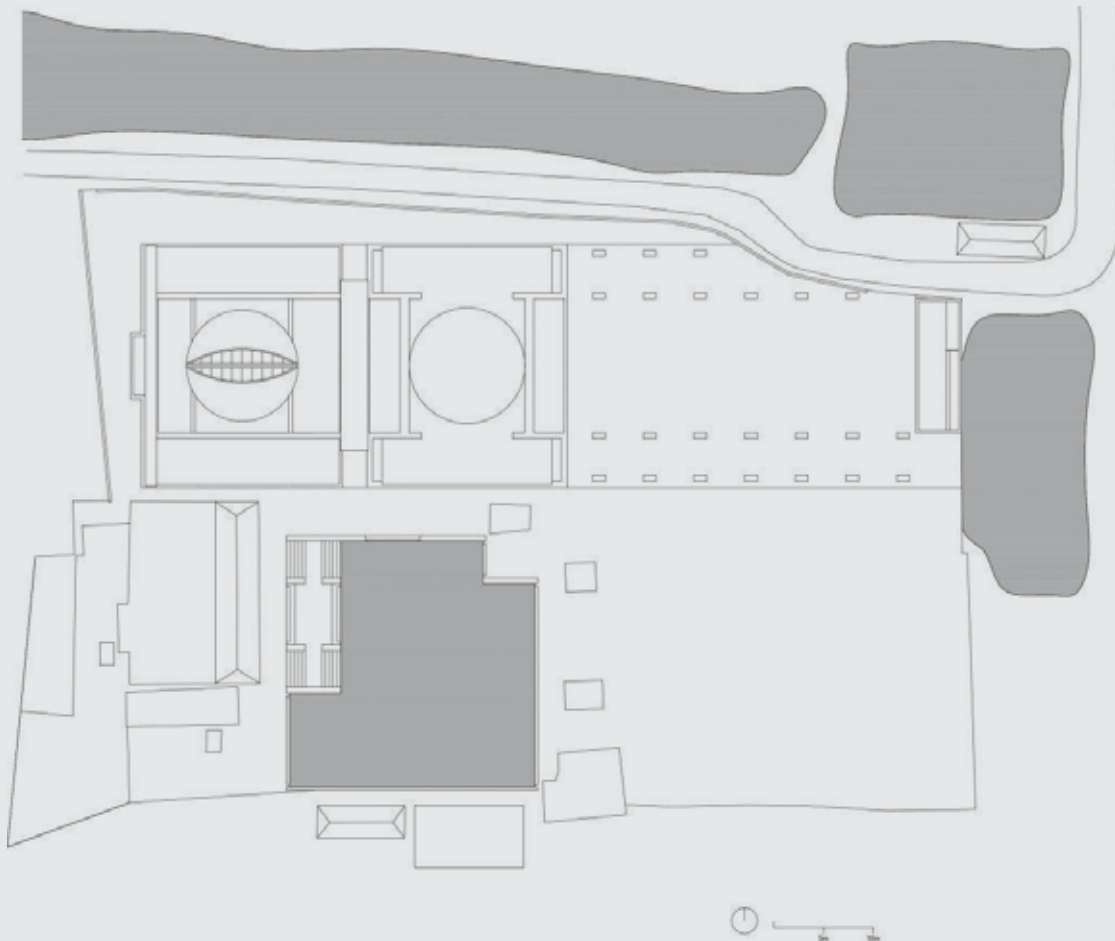
- 1 Site plan
- 2 The split dome
- 3 Main façade

#### Site

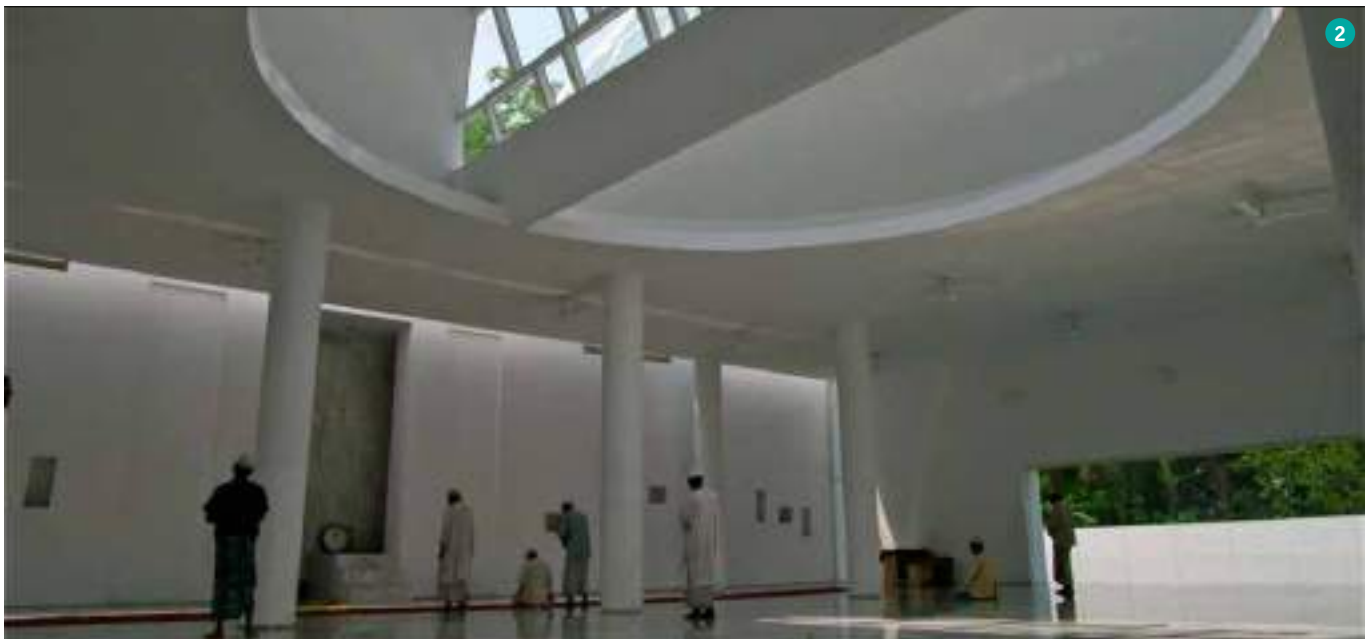
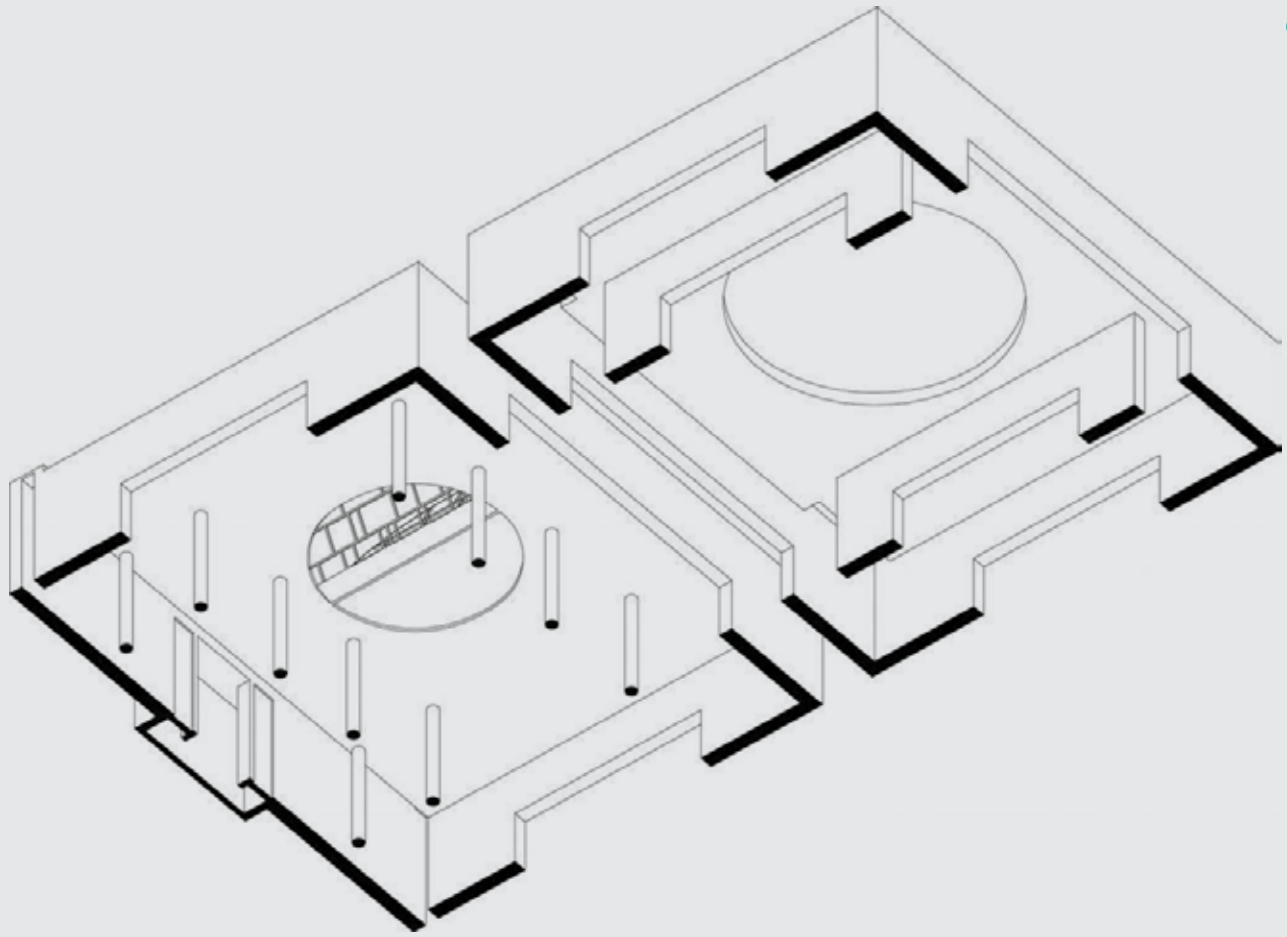
Chandgaon Mosque is located in a village on the northern periphery of Chittagong, second largest city in Bangladesh. As a background about the city, Chittagong, officially known as Chattogram is a major coastal city and financial centre in southeastern Bangladesh. The city has a population of more than 2.5 million while the metropolitan area had a population of 4,009,423 in 2011, making it the second-largest city in the country. It is the capital of an eponymous District and Division. The city is located on the banks of the Karnaphuli River between the Chittagong Hill Tracts and the Bay of Bengal. Modern Chittagong is Bangladesh's second most significant urban center after Dhaka.

The location of Chandgaon Mosque integrates in the property boundaries. The location fits in with surrounding areas. The mosque integrates with a water body as a natural geographic boundary, which limits the availability of land for development.

This mosque on the suburban periphery of the port of Chittagong in







Bangladesh seeks to fulfill the traditional role of mosque as both a place of spirituality and as a gathering place for the community. The architect began by identifying the essential elements of a mosque to create a new form and articulation for a typology that goes back for a millennium and a half, as well as using minimal surface decoration, the functional spaces have been stripped back to the minimum. This typological back-to-basics approach took the practice of building to a contemporary reading of what it should be. The mosque is intended to be both a meeting place for the community and a place of worship. The result is this monolithic and spare mosque, pared down to two identical cuboid structures. Being integrated with the surrounding context, the mosque is easily accessible by different age groups and those with special needs.

### Spatio-Functional Relationships

The essence of the design concept that relies upon using pure geometric shapes, has determined the spatio-functional relationships in this project. The use of pure volumes in the design has resulted in pure forms, which in turn has eventually been reflected on clear distinction of functions.

Such a stark division between form and functions has been compensated by a rather integration between the indoor and outdoor space. For this, the quality of the landscape and public spaces are evident to assert such an integral visual relation. The design approach, which asserts the relation between landscape design and interior spaces points to novel outcome.

The importance of referring to original forms was evident in the design and the attempt to interpret the form by the designer. The outcome, therefore points strongly to a simple design in terms of spatial organisation and the functional arrangement.

The idea of integrating the building with its surrounding seems central to the design approach of Chowdhury. He is well known for the inclination to merge the building within its surroundings. He also borrows natural features, including water. Such an approach suits well a project of this caliber that is meant to serve the local community and a rural context.

Once inside the complex, which is separated from the surrounding scrub land by a low white wall, a sloping path leads the faithful to two identical square volumes that sit squatly within the tree-lined boundaries of the site. The cuboid volumes lack any ornamental detail and only the large rectangular apertures that allow exterior views break their plain, whitewashed facades. These two blocks are identical in size and both have heavy masonry walls.

The first is the front court, its heavy masonry walls punctuated with low, wide openings onto the surrounding landscape, with an oculus



- 1 Sectional plan isometry
- 2 The prayer hall
- 3 Simple internal details
- 4 Main entrance





“eyelike opening in the ceiling”. The light thrown by this oculus moves across the interior as the sun moves through the sky, tracking the passage of time between prayer sessions over the white walls and stone floors.

In the second volume, the western block, accommodates the prayer space. Here, the circular language set up by the oculus in the courtyard is repeated, but in this case features a dome, whose large aperture allows indirect light into the room, illuminating the mihrab wall. In both the spaces, supporting columns are kept to the perimeter of each volume, creating a sort of interior cloister, the large span allowing for the uninterrupted gathering of a large number of worshippers.

### Form and Architecture

In Bangladesh, public buildings such as mosques, the architectural character can vary based on the size of community and the practical dictates of available material, budget and scope. From basic mud and brick to reinforced concrete, the mosques of Bangladesh are built using a wide variety of building techniques. There is no dominant motif or architectonic language beyond the basic use of traditional forms such as pointed arches, domes and screens and these are used with no significant regularity as to constitute a common style.

The design pivots around the tension between the horizontal sweep of the low, wide openings and the gathering people (earthbound) and the vertical reference to zenith of the circular opening or cut-dome (spiritual). Thus in the front court, the visual connection through expansive apertures to the surrounding landscape is offset by the circular disc of the sky above. A similar experience is proffered by the cut-dome of the main mosque, which also lays clear the nature of the dome – traditionally a spanning element but cut here to express its non-spanning character and also to bring in daylight.

At night the light from within spill out to announce the presence of the mosque in its locale. More than a place of worship, the design

- 1 The split dome
- 2 Outdoor spaces
- 3 The opening and water feature in the Mihrab





3

attempts to reflect the traditional nature of mosque as a central focus and gathering place of a community.

The design of the Chandgaon mosque consists of two identical cuboid volumes, one the front court and the mosque proper as the other. The front elevation is punctuated with low, wide openings onto the surrounding landscape, with a large eyelike opening above. In the second volume, the naturally lit mihrab wall is balanced by an iconic, cut dome. While the apertures give a sense of openness and draw in light and ventilation by day, by night they allow light to shine out of the mosque like a beacon.


The traditional courtyard in front of a mosque, which serves as spill over area during larger congregations, therefore manifests itself in the first structure – open to the elements and offering a preparation before entry to the mosque proper.

The front court, with heavy masonry walls is punctuated with low, wide openings onto the surrounding landscape, with a large eyelike opening above. In the second volume, the naturally lit mihrab wall is balanced by an iconic, cut dome. While the apertures give a sense of openness and draw in light and ventilation by day, by night they allow light to shine out of the mosque like a beacon. With its stark, geometric clarity, the Chandgaon mosque stands apart from many such structures that have reduced architectural features associated with the usual mosque type to the level of kitsch. It makes a definitive architectural statement in a different direction, pointing to the contemporary, to a desire to live in spaces that reflect the universal values of the present day.

These dynamics can be seen in the Chandgaon Mosque, which is located next to the older pre-existing mosque building. The older building consists of series of additions to the original simple rectangular structure. This structure, which is today used as a medrese (school), has typical features associated with mosques of Bangladesh such as a cupola, pointed windows along with a covered







The idea of integrating the building with its surrounding seems central to the design approach of Chowdhury. He is well know for the inclination to merge the building within its surroundings.



veranda. This series of courts, closed and open, with permeable walls is standard typology of mosque architecture of Bangladesh.

### Interior Design and Technical Aspects

The idea of designing Chandgaon Mosque lies in the spirituality of the Houses of God. We can find it in preventing ornamentation and decoration, in the monumental scale, and in the connection between outside and inside areas, especially in the night when it makes a dramatic scene, when openings provide natural light and ventilation and reflect the status of mosques in the community.

While the apertures give a sense of openness and draw in light and ventilation by day, by night they allow light to shine out of the mosque like a beacon. With its stark, geometric clarity, the Chandgaon mosque stands apart from many such structures that have reduced architectural features associated with the usual mosque type to the level of kitsch. It makes a definitive architectural statement in a different direction, pointing to the contemporary, to a desire to live in spaces that reflect the universal values of the present day. Marble flooring helps cool the space and gives a sense of understated opulence that evokes tradition without stooping to pastiche.

The visual permeability between indoor and outdoor spaces sustains comfort and tranquility. The series of created spaces with carefully designed hierarchy emphasize the functionality of major spaces such as the main prayer hall, whilst linking such major spaces with elements of nature horizontally and vertically.

### Conclusion

Design concepts put forward in this mosque bring the front certain essential original themes in mosque architecture, which vary from social to cultural and technical.

The location of this mosque has certain social, communal and economic values. It lies at the north-east limit of the Chittagong municipality in between the urban fabric of the city and the

- 
- 1 The main circular opening in the mosque courtyard
  - 2 Simple form and spaces
  - 3 Entrance
  - 4 Transparent wall



2



3

agricultural terrain of rice paddies. In parts urban, semi-urban and rural, Chandgaon encapsulates many of the economic, urban and architectural realities of Bangladesh today. The sense is of change and transformation - bamboo and thatch huts are interspersed with the newer buildings of the rapidly expanding garment sector. Real estate speculation pervades the landscape as small-scale rice production gradually gives way to global industry. At the same time as a centre for community activities, the mosque also seeks to align architecture with a social sensibility.

For this, the role of this mosque extends beyond its asserted religious values. It expresses economic themes among a rural community, as the design inclines to abstract forms, and finishes avoiding lavish use of ornaments or unnecessary decorations, thus asserting an original model for the mosque, which can be an exemplar for future mosque architecture.



4



# BAITUS SHOBUR MOSQUE

Location: **Lampung, Indonesia**

Client: **Tulang Bawang Barat's Islamic Center**

Architect: **Andramatin**

Land area: **1165m<sup>2</sup>**

Built up area: **289m<sup>2</sup>**

Completed: **2017**

Capacity: **2500 worshippers**

Type: **Jumaa Mosque**

**Baitus Shobur Mosque is part of an Islamic Center in the small city of Tuba Barat in Lampung Province on the island of Sumatra. The mosque is modern design surrounded by a man-made lake, with heavy plantation. The mosque complex is a tourist attraction, where tourists come to enjoy the park, sit by the lake and take photographs. The mosque itself is a landmark where many locals perceive it as a tall, recognizable landmark of the Tuba Barat city.**

**The Islamic Center, which is part of the complex designed in the traditional Indonesian Architecture with bamboos, wood and sloping roofs. This complex declares that Lampung has a new landmark. Baitus Shobur Mosque and Sesat Agung Adat Hall, are two modern buildings with a touch of Lampung, and one monument at the road junction, Tugu Rato. October 11, 2016 was the day of the inauguration of the Great Mosque, which was packaged in the “2016 Tubaba Cultural Rescue” event, a series of events from morning to night.**

#### **Site**

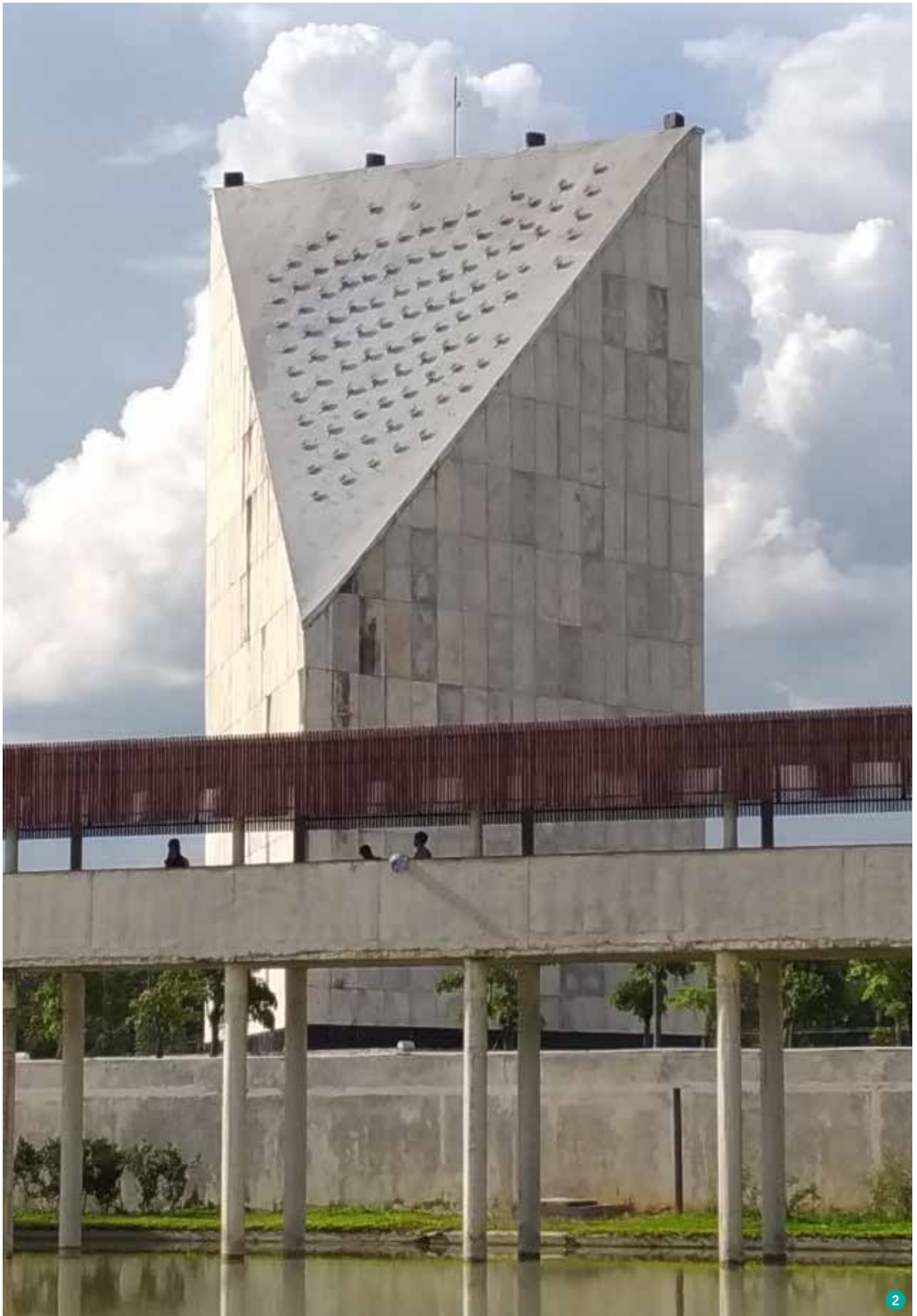
The complex is a major attraction specially the residents of the Tuba Barat city. It is probably the largest landscaped area with an imposing horizontal Islamic Center building in traditional architectural style of Lampung and a vertical modern, fair-faced concrete mosque structure with a pristine foreground of a calm and serene lake, pleasant landscaping, walkways, boulders, bamboo sculptures and lawns.

The mosque complex has been extensively landscaped. An artificial lake is designed to surround the mosque from two sides. The stark concrete vertical structure rising in the backdrop of the lake looks imposing and grand. The area between the lake and the main road has a car park and lawn interspersed with natural boulders which add to

**1** Mosque and urban surrounding

**2** The main mass of the prayer hall shows 99 openings in the top





1



The ground base form a 5 sided square, taken from 5 numbers of prayers



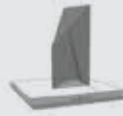
The platform for the roof is measured 34m x 34m, depicting the number of salat in 1 day



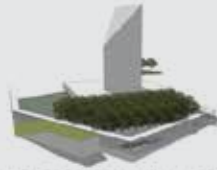
The roof is perforated, with 99 glass covered hole, depicting asmaul husna, the 99 names of Allah



The mosque itself is formed from a 17m x 17m x 30m cuboid shape, the numbers are taken from the numbers of prayer in farzu and the numbers of chapters in Al-Quran



Each side is adjusted to create silhouette and capture sunlight

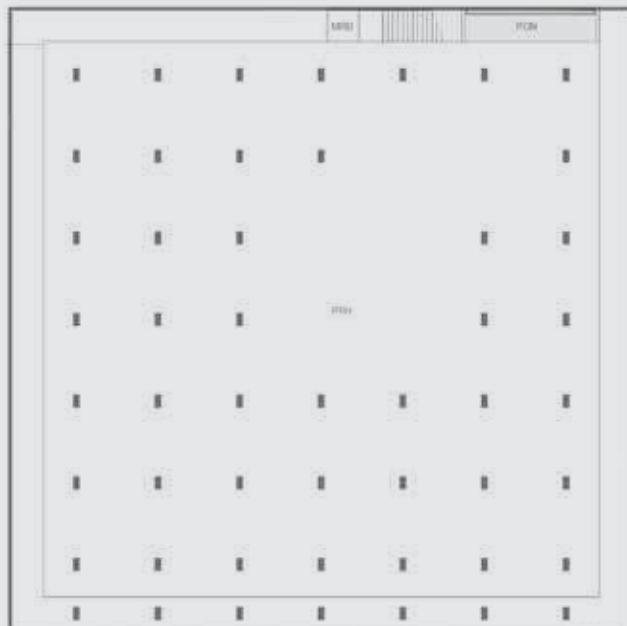


The innercourt is filled with trees that mark the salat rows to extend the capacity during holy days



The building itself is surrounded by a man made lake that reflects the mosque on its surface

2



0 4 8



GROUND FLOOR



the landscape aesthetics. One side of the lake is lined with trees and shrubs. The overall area gives the impression of a nice park.

There is a tree-lined courtyard at the back of the prayer hall surrounded by a colonnade which serves as outdoor prayer area when the interior space overflows. The hard landscaped area is designed at calculated distances so as to form 'Saff' or aisles for those who want to pray. They are visually connected to the main prayer hall through the opening with a drop beam, just like in the front of the mosque on the Mihrab wall.

There is a large car park next to the main road. Physical accessibility to the mosque is easy and directed. Access is well thought of and the user is directed through a wide walkway over the lake into a colonnade straight into the prayer hall. The mosque is accessible by the disabled too.

### Spatio-Functional Relationships

The Mihrab wall overlooks the lake and a small man-made island with lots of vegetation. It is a striking view and very different from traditional mosques. The concept of an aesthetically pleasing Mihrab wall remains the same, however, the traditional ornamentation, tile work, calligraphy, textures, stained glass windows or marble and lattice work, are replaced with elements of nature. The fact that the front is open, and not glassed, lets users have intimate connection with nature. Landscape blocks any activity from the user's line of sight. The Mihrab wall provides exhilarating effect based on the concept of connecting with nature, if the ceiling inside had been higher and the front opening bigger and higher.

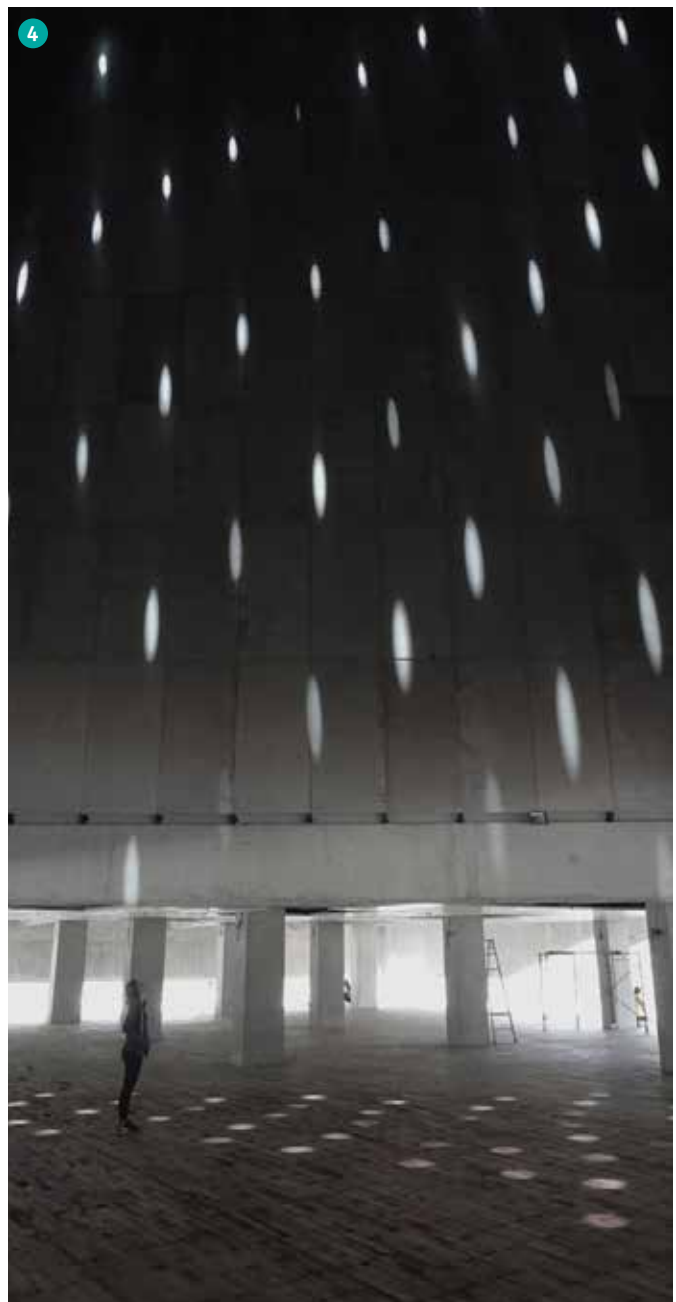
The main form of the mosque is without any windows in any wall, which looks like a vertical plain concrete box without any ornamentation. The relation between the scale of the prayer hall and the tower could have been better. The prayer hall is accessible through one of the colonnades and the user passes along the courtyard before entering the mosque from the rear.

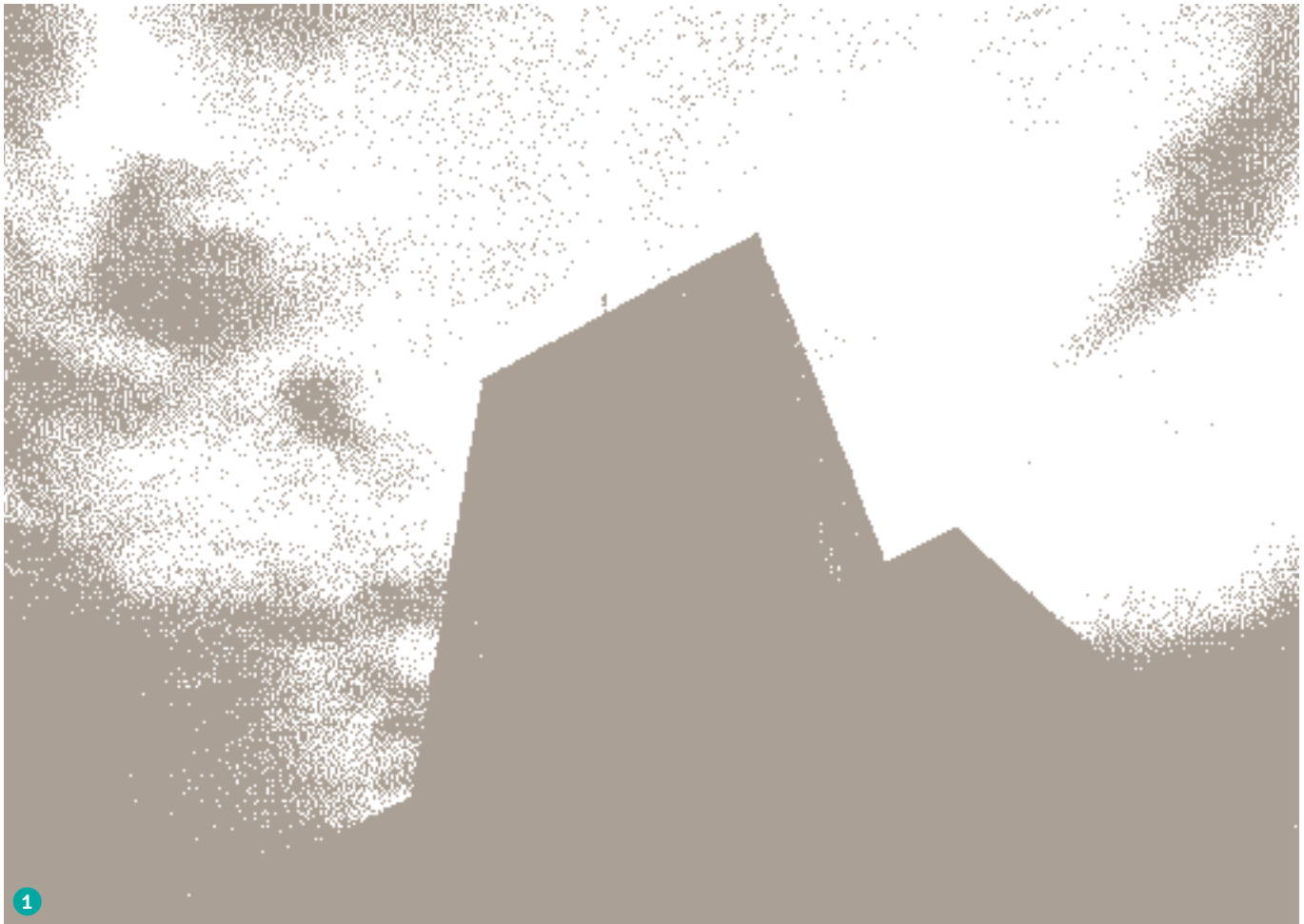
The mosque is an extension of the landscaped park. The lawns and the outside area are used extensively by visitors. As a public place, it is the most preferred destination for the locals. At night the park and public space become more dramatic with good lighting around the lake and lighting that highlights the mosque.

### Form and Architecture

The mosque was made without an onion dome and without any ornaments on the outside. The architect states: "Mosque combines two elements that are usually found in mosque architecture, a dome and a minaret (tower), into one, by creating a large and tall tower as its main mass."

- 1 Analytical studies
- 2 Ground floor plan
- 3 Outdoor view
- 4 The prayer hall





The architect defends his concept of not using conventional features of the mosque, he argues: “Now all mosques use domes, which does not mean we also have to use domes. Muslims do not like to imitate but must be at the forefront. Berislam must also be humble because Islam itself is already great”, Andra explained after the inauguration of the Baitus Shobur mosque in Tubaba, October 11, 2016. It took a year to design and a year for its construction.

As a house of worship, the mosque expresses vertically in its massing, to mirror human’s relationship with the higher power. The architecture of the mosque combines two elements that are usually found in mosque architecture, a dome and a minaret (tower), into one, by creating a large and tall tower as its main mass. The tower creates a very high void within the mosque. This tower rests on a low podium mass to highlight the tension of the interiors. The wide podium uses hanging walls around it to bring down temperature and protect it from rainfall, while still providing views to the landscape surrounding the mosque.

The design is based on Islamic numerology. The architect’s concept states: “mosque’s platform dimensions are 34 m x 34 m, taken from the number of prostrations (sujud) moslems do each day in their prayers. The distance between columns is 5 meters, taken from the number of fardhu prayers in a day. There are 30 juz in the holy Qur’an, and thus the tower stands up to 30 meters, and the building’s size is 17 m x 17 m, which took the number 17 from the amount of rakaat in a day’s fardhu prayers. There are 99 light openings at the top of the tower, taken out of the 99 names of Allah. In total, there are also 114 number of columns in the building’s corridor, taken out of the number of surahs in Qur’an”.

In the design, Andra inserted a lot of symbols. Colorless and ornamental exposed concrete symbolizes the absence that the outside appearance is not as important as its contents, and worship is not to be exhibited. The mosque was intentionally made without dome and without any ornaments on the outside such as mosques generally in Indonesia (mosques in the archipelago before the exotic

Republic of Indonesia were characterized by their respective regions and without domes).

#### Interior Design and Technical Aspects

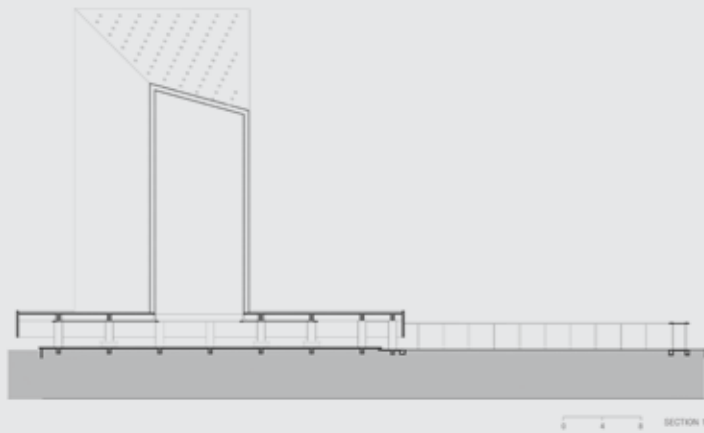
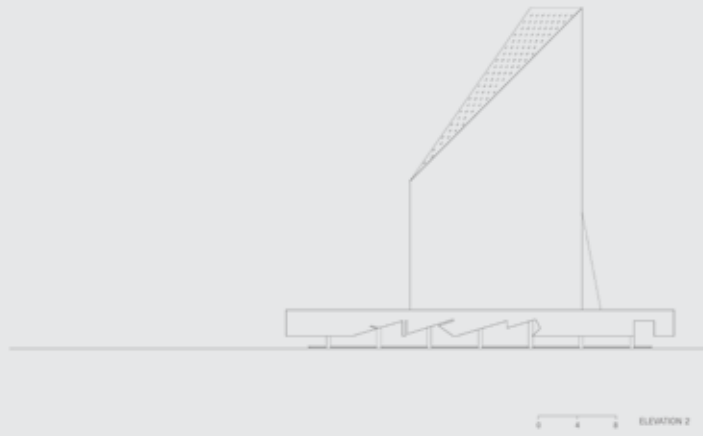
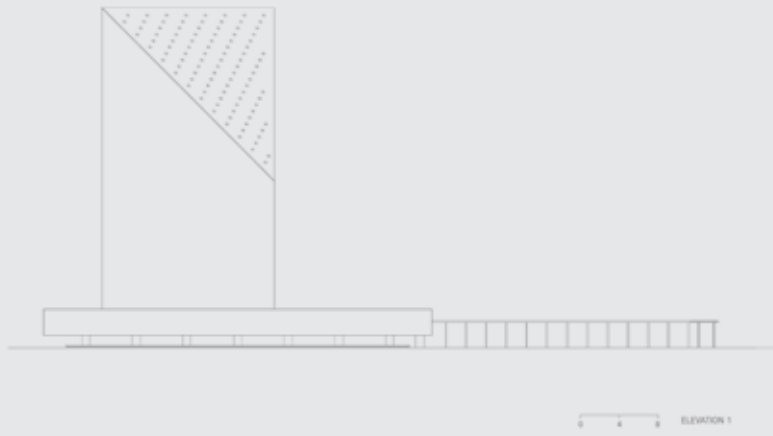
Structure used is a reinforced frame on the ground floor which supports vertical hollow concrete. Conceptually the tall vertical structure of the mosque is designed to represent the minaret. The entire structure is finished of fair faced and bare concrete which the architect describes as “Concrete was used as the main material, and applied to the mosque in a whole, to give out a sense of honesty and strength. The cold and bright expression of concrete was used in contrast with Sessat Agung’s material which is warmer and darker.”

The prayer hall is horizontal space with low ceiling, approximately 8 to 9 feet high made out of reflective metal sheet. The reflective surface makes the interior more open. The prayer hall is open from all sides, allowing free flow of air and cross-ventilation. On two sides lies artificial lake which cools air inside the prayer hall. Lake water adds to humidity inside the prayer hall, which has to be reduced through pedestal fans.

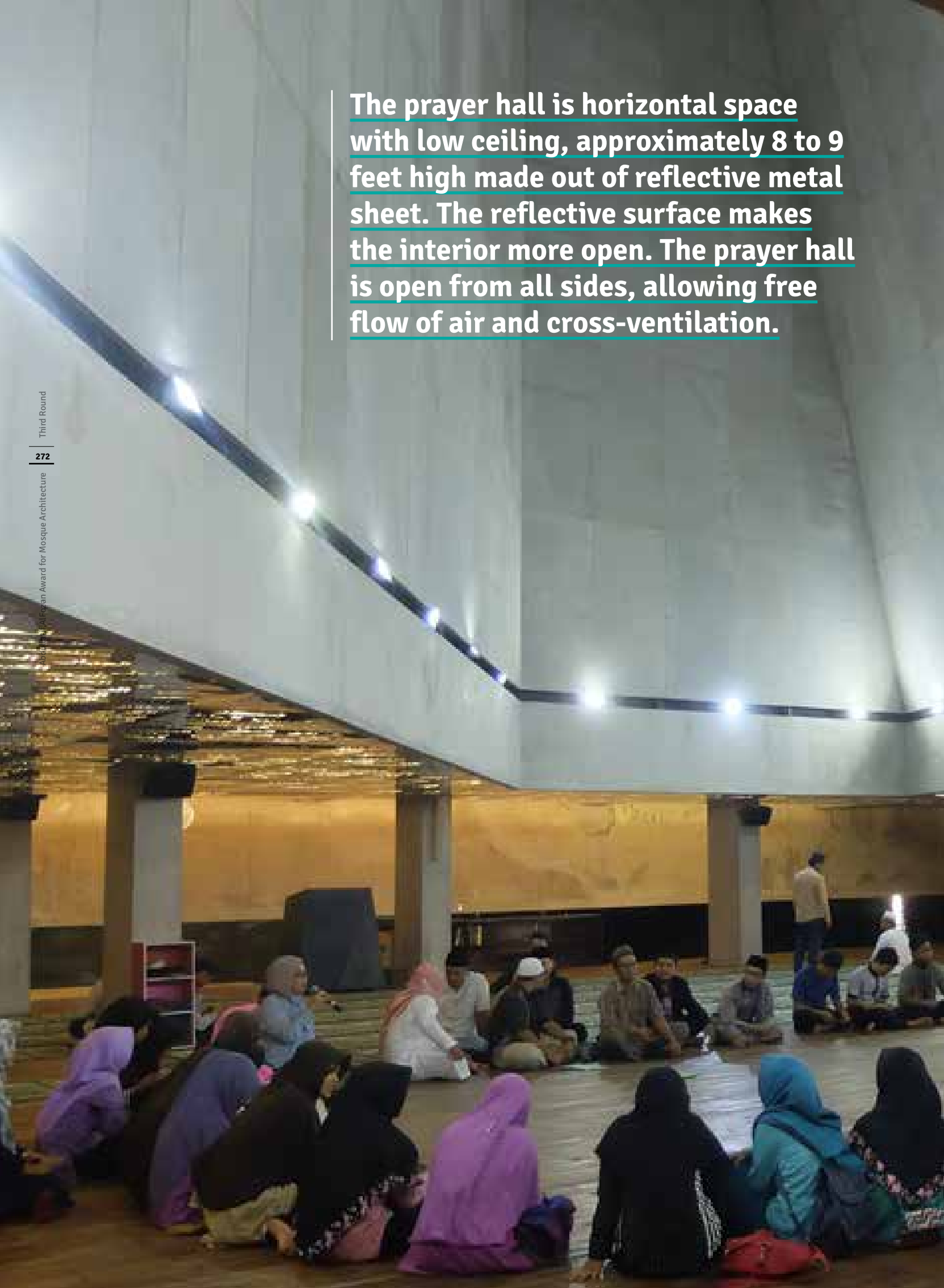
The hollow tall tower has small light punctures on its roof, covered with fixed glass, providing no ventilation or outlet for air. The tower is deliberately kept dark and shadowy from inside so that the 99

1 Mass of the mosque

2 Elevations and sections



**The prayer hall is horizontal space with low ceiling, approximately 8 to 9 feet high made out of reflective metal sheet. The reflective surface makes the interior more open. The prayer hall is open from all sides, allowing free flow of air and cross-ventilation.**







punctures on the roof are visible. The interior space is silent, quiet and peaceful. Large space dotted with columns and low ceiling made out of mirror with 99 names of Allah (Al-Asma Al-Husna) written on it. All four sides of the hall are open with beam-like shade coming down to eye-level, some of which are jagged shaped beams. This leaves a low continuous opening for viewing outside. Two sides look onto the artificial lake. The interior is not very well-lit and it seems darker because of the glare coming in from the continuous low openings and bright lake and landscape outside.

The mosque is entirely made of bare concrete, hence it requires no maintenance. The interior of the prayer hall is also very minimalistic. There are no doors and windows which brings the maintenance level down to almost zero.

The mosque's ceiling is made of reflective metal sheets so that people can reflect upon themselves whenever they look up and pray. The name of Allah (Asma Ul Husna) was carved on the ceilings repetitively. At night, these perforations function as the mosque's main light source. Therefore, the full name of this mosque, as written on the inauguration inscription, is "the Grand Mosque of 99 Light Asmaul Husna Baitus Shobur". Lampung's traditional scripts were carved into several sides of the walls to underline context and identity.

The ceiling in the deepest part is in the form of a high aisle, as high as the five-story building, which leads to 99 small holes in the top. Twice a year when the sun passes through the equator, in March and September, the light will enter the holes.

- 1 Internal view of the prayer hall
- 2 The mosque and its urban and natural surrounding
- 3 External details
- 4 External sidewalk



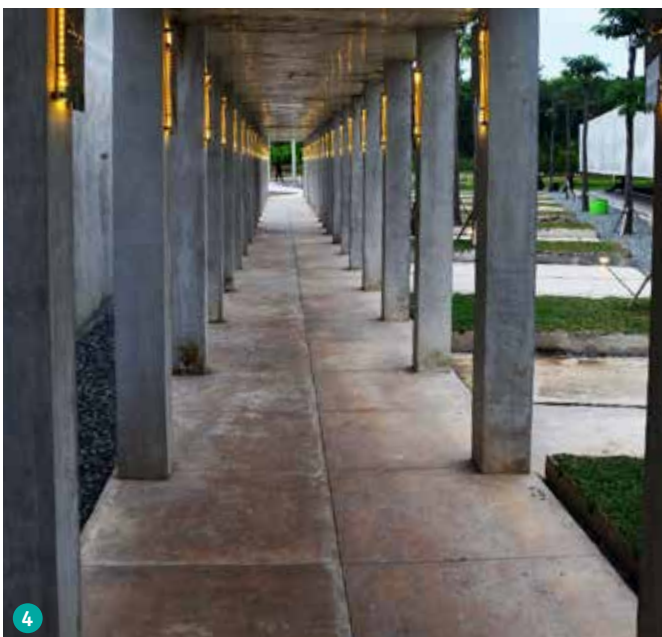
## Conclusion

Baitus Shobur Mosque, in its setting looks impressive and imposing: a bold experiment by the architect in an otherwise conservative Muslim country used to traditional mosque designs. The tower does not serve any purpose other than lending a form to the mosque from the outside. It could be argued that there exist some contradictions in the scale of different elements used, namely the prayer hall and the tower. However, the design still is unprecedented in mosque architecture and deserves careful and due reflection and study for the concepts it provides.

In addition to the integrated relation this design provides with the surrounding environment, material used make a point about thinking outside the box or prevailing common line of thought. In this mosque, concrete was used as the main material. Its homogeneity projects a sense of honesty and strength. There are no ornaments, only plain massive concrete without paint, from top to bottom.

The mosque in this case exceeded its role as a place for worship, rather it presents itself as a cultural centre, and most importantly, as a community place, where people and locals can find refuge from the outside world, enjoying the carefully landscaped areas provided in the vicinity within this complex.

The design provides attempts to link with the surrounding environment, visually, and physically, which makes it a good example about the required relation between the indoor and outdoor spaces. It also provides successful case about the supposed relation between man-made environment and nature. This relation is evident in the extensive use of outdoor spaces by visitors and locals, which eventually turns the mosque into a landmark. All the above in this review, present a good case that points to a new dawn of future mosque architecture.









# MOHOR PARA MOSQUE

Location: **Loira Para, Dhaka, Bangladesh**

Client: **Mahbubul Alam**

Architect: **A K M Tanvir Hassan Niru and associates**

Land area: **477m<sup>2</sup>**

Building area: **272m<sup>2</sup>**

Year: **2014**

Capacity: **200 people**

Type: **Jumaa Mosque**

It was intended to design a Socio-cultural landmark for the village of Mohor Para, which is associated with the needs and ambition of the client and the community. The client's aspiration was not only to serve the community in the enlightenment of Islam, but also to present them a socio-cultural space to congregate, where the Mosque was the impetus of development. He wanted to build a mosque rooted to tradition yet contemporary in material and technology, so that the village dwellers move forth intellectually and spiritually. In this era of misconception of Islam, the respected client wanted to manifest true Islamic ideology and education to become more sympathetic to all religion. So he covets the expansion of the mosque platform with the provision for a library, research center, gallery (on northern side within school) and Maktab for elders (on southern side) in future.

Mohorpara mosque design initiated in 2012 commencement of operation/ occupancy, though the project was completed in November 2014, the mosque was in use from January 2014. Believers started praying in the premise before the completion of landscape details. Mohorpara Mosque has drawn certain attention within the Narshingdi Shibpur region by its communal service to people. During the regional Tablighi congregation period, Mohor Para mosque becomes a station point for the travelling Tablighs. Weekly Friday prayer (Jummah ) has become a ceremonial activity in the area. An Imam comes from Dhaka to deliver Khutba (Islamic preaching) every Friday. People from close community join the Friday prayer particularly to attend the Khutba by the humble Imam.

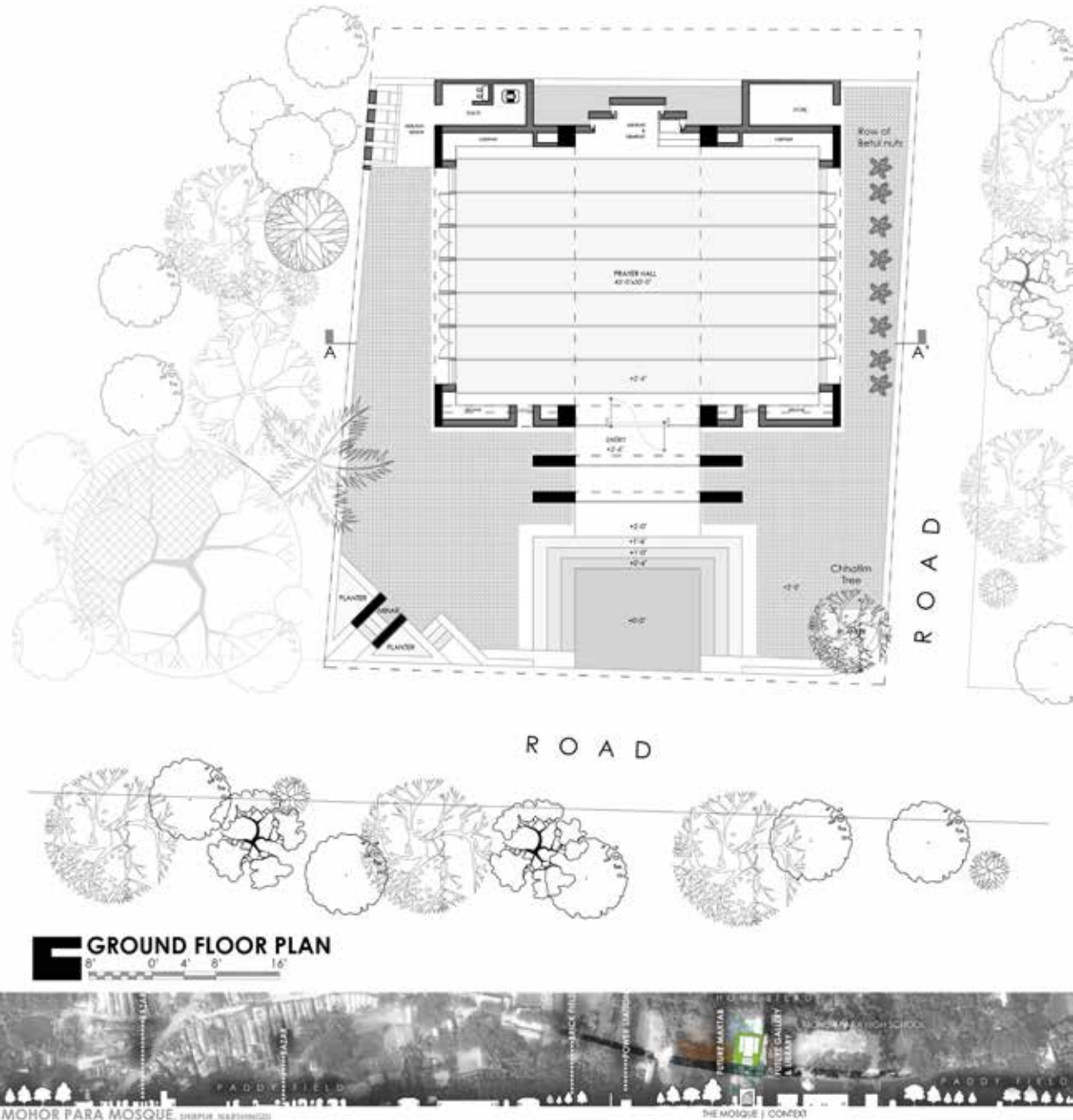
#### Site

Mohor Para Mosque is located in the city of Loira Para, Dhaka. One of the goals of this mosque was to continue educating its rural community from which the owner Mahbubul Alam descends. Located in a rural area, no buildings surround the mosque except a school, which stands to north side. The architect intended to distinguish the mosque from its dense vegetation.

The architect has spent considerable time studying site, people, and context, which is evident in his conceptual drawings conducted on

- 1 Main entrance
- 2 Ground floor plan





community. The architect claims that it is in his “intention from the beginning not to blend it with the surrounding.” He argues that a mosque must have its presence as a significant building for a Muslim community; however, it eventually should blend with its context. According to architect, the initial idea “was to design a mosque in a small forgotten community. The location was a low ditch land.” The design proposed a raised mosque on a platform with only one access through a U-Shape theatre-like flights that open directly onto rural street. The mosque also integrates with its community; intentionally built to school, with doors open for the students during dohor prayer. Teachers could take students to an outdoor theatre.

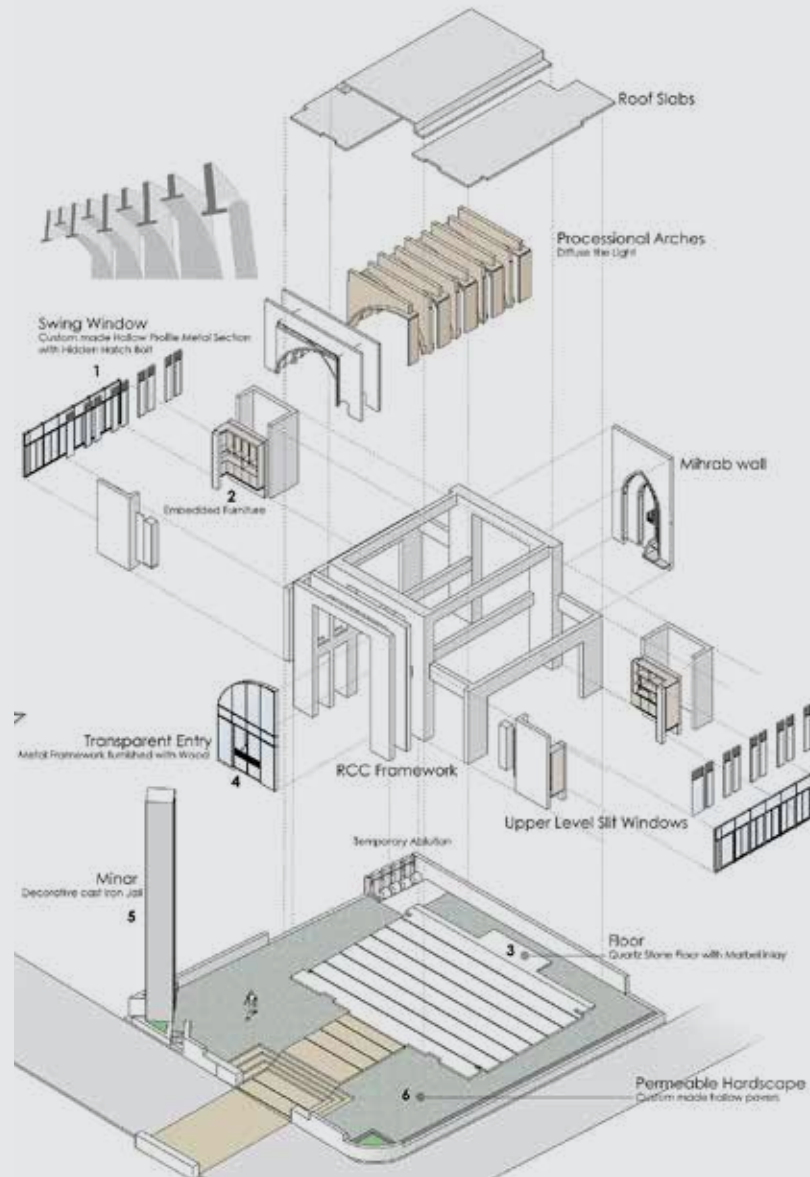
Site is characterized by natural landscape. There exist diverse plants, native trees like Chhatim (*Alstonia scholaris*) planted for seasonal white small flowers with aroma and beautiful leaves formation. In traditional Bengali villages territory is defined by planting Betel nuts trees (*Areca catechu*). This arboriculture has been followed and Betel nuts are planted along northern side. It’s an extension of the surrounding plantations to enhance bio-diversity. Hardscape consists of hollow permeable pavers, infiltrating rain water for greener environment.

The white Mohorpara Mosque has an impact on local users. They have become more aware about the cleanliness and hygiene. They try to keep it auspicious and pure like the colour white. It has become a village center to gather. The low height walls around the mosque encourage users and locals to sit and chat animatedly. The future extension of Islamic center is anticipated by the village dwellers.

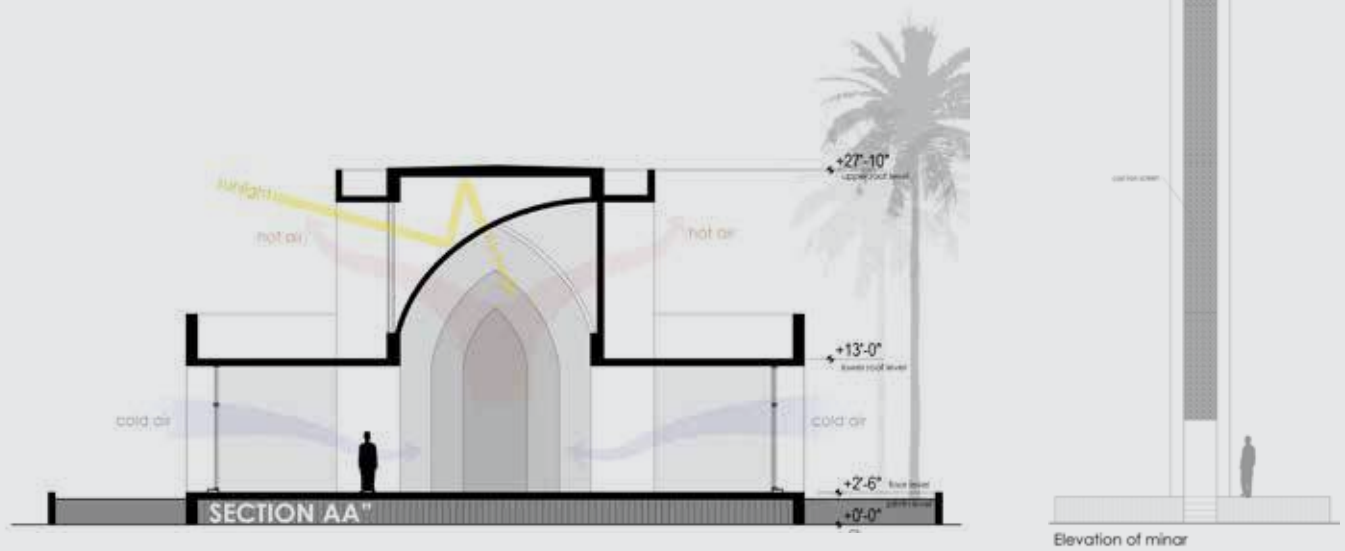
#### Spatio-Functional Relationships

Site is characterized by its small area and very simple spatial relations, with area 477 sqm, entry plaza: 95 sqm, main prayer hall: 177 sqm, landscape area: 200 sqm, temporary ablution space: 5 sqm The mosque provides ancillary facilities like ablution space for

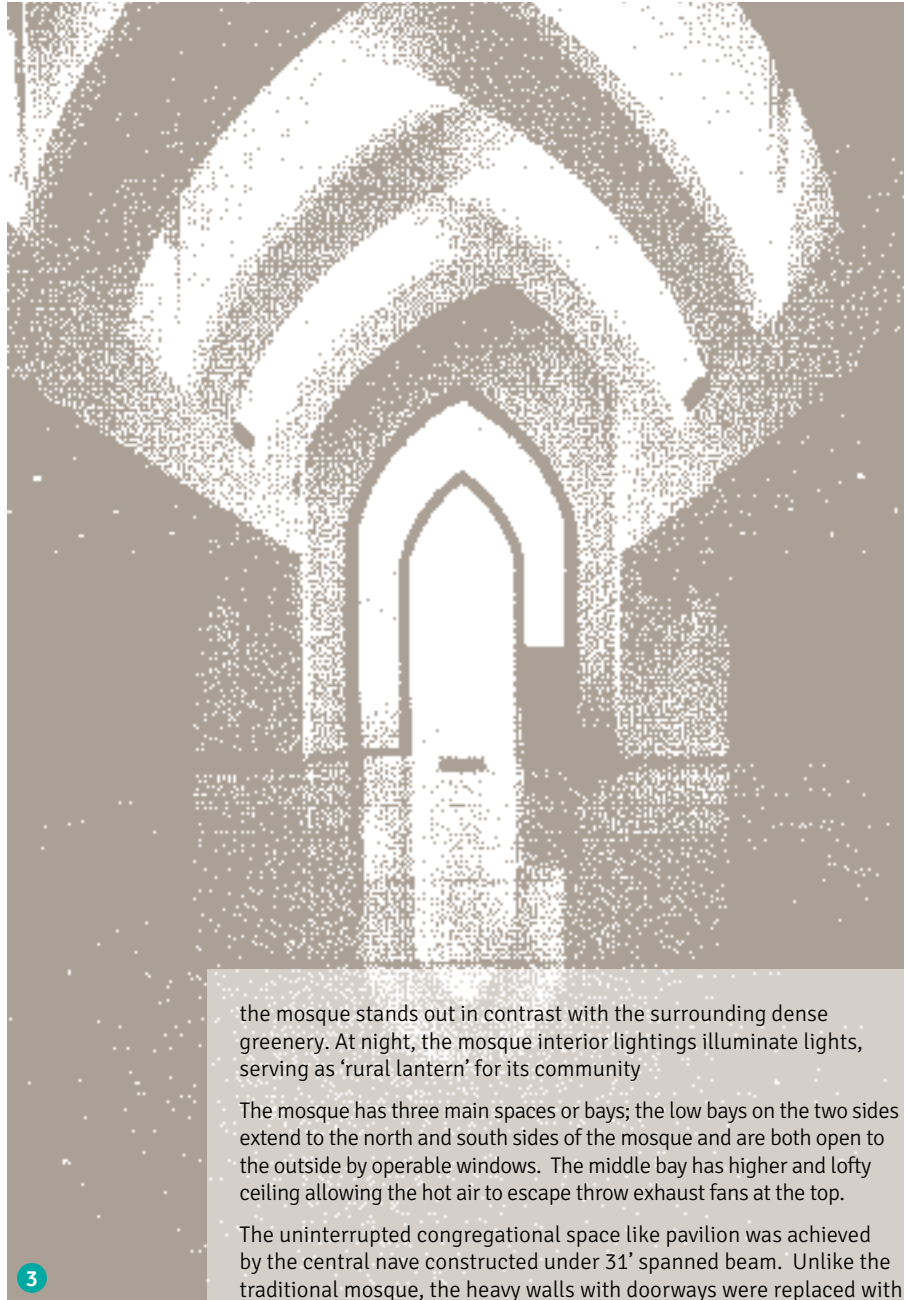
1



2



- 1 Analytical sketches
- 2 Section
- 3 The cross vault in the main axis



the mosque stands out in contrast with the surrounding dense greenery. At night, the mosque interior lightings illuminate lights, serving as 'rural lantern' for its community

The mosque has three main spaces or bays; the low bays on the two sides extend to the north and south sides of the mosque and are both open to the outside by operable windows. The middle bay has higher and lofty ceiling allowing the hot air to escape through exhaust fans at the top.

The uninterrupted congregational space like pavilion was achieved by the central nave constructed under 31' spanned beam. Unlike the traditional mosque, the heavy walls with doorways were replaced with simple clear glass metal framed doors to ensure physical and visual accessibility from the each side except west.

The Mosque is conceived as a 'rural lantern' amidst the exuberant greenery illuminating Mohor Para and beyond with its spiritual guidance and omnipresence. The white radiant façade bold yet sublime adjoins the worshippers and passersby throughout the day. During Night the transparency of the mosque acts as a lantern against darkness and calls for submission to the Almighty. The white mosque became innate part of landscape as well as the landform, whereas the traditional mosques floating amidst lush green with the glimpse of red bricks or lime plaster.

#### Form and Architecture

The initial design challenge, according to architect, was "to acknowledge the symbolic ideas in the mind of Muslim people about mosque architecture with a dome, loftily roof, arches, and ceramic tiles. They want these elements because these connect well with typical Islamic feelings toward a mosque." In contrast, the architects wanted to create a mosque that would transcend these symbolic and representational 'Islamic' elements. They came up with design concept that would create an abstraction of an arch that "speaks to the intellectual mind, a mosque that touches the people's intellect, whether they are aware or not." The design of this mosque is simple; the praying hall plan is a perfect square. The most significant

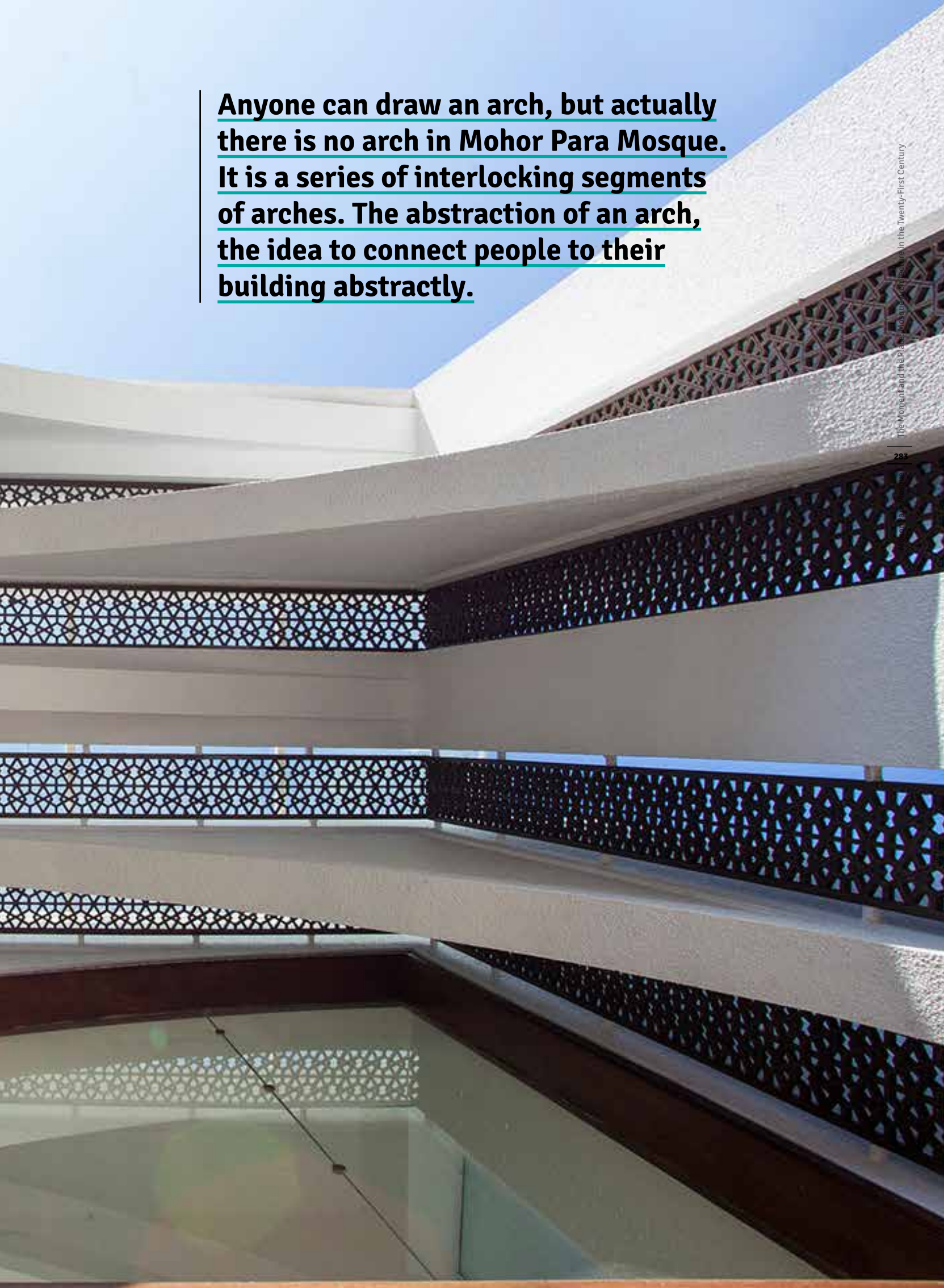
cleansing before prayer. The Mosque also provides potable water to the school children, the mosque users and the passersby.

The simple spatio-functional relationships have been reflected upon the cost of the construction of this mosque. Estimated costs at design stage- US \$ 113000 in 2012. Actual net cost of construction after completion in US \$ 163200 in 2014 (excluding cost of land).

The mosque is well integrated with its rural location and surroundings. The mosque layout has many side openings allowing sunlight and cross-ventilation through and allows worshippers to enjoy viewing the surroundings. Its bright white exterior color makes



**Anyone can draw an arch, but actually there is no arch in Mohor Para Mosque. It is a series of interlocking segments of arches. The abstraction of an arch, the idea to connect people to their building abstractly.**





1

element in its design, however, is the series of interlocking 'processional' arches

Tanvir argued that anyone "can recall what an arch is, anyone can draw an arch, but actually there is no arch in Mohor Para mosque. It is a series of interlocking segments of arches." He explains: "We took the abstraction of an arch, the idea to connect people to their building abstractly. We created a series of interlocking arches. There is no physically any arch, but the interlocking arrangement of segments of arches gave the illusion of pointed arches. We created that memory, the pointed arch, in the mind of anyone looking to the mosque, so they would believe that there are pointed arches. We looked for materials that would enhance our ideas and concept, the submission to God, togetherness. We were not worried about the materiality of things at the beginning."

Pre-Mughal and Mughal mosques were collectively small in scale yet monumental in essence. The Mohorpara Mosque translates the traditional lofty prayer halls and fore room (iwan) arched facades of the old mosques in Bengals by its contemporary rhetoric. The interweaving curves being detached from each other creates a progressive vista of oneness, resembling a pointed arch yet connected only in spatial-temporal-visual field. It represents the abstract connection between believers and the Creator; Their faith in the unseen and omnipotent amidst the rural setting. The pointed arch replaced by half curved lines creating an illusion of arches. Such half arches diffuse exterior light at day time and creates a pleasant ambience. On the contrary the half arches deflect light at night and acts as a lantern.

The premise is naturally ventilated. The wide open windows on north-south façade ensure prevailing wind circulation. Hot air rises to the ceiling and a mechanical exhaust fan keeps the air circulating. The Mihrab niche has been also transformed to reflect the light from the sides.

- 1 Prayer hall
- 2 Outdoor view
- 3 Mihrab
- 4 Gate and minaret
- 5 Extended gate







### Interior Design and Technical Aspects

The main skeleton of the mosque is made of reinforced concrete and infilled with locally produced bricks, and plaster then painted textured white paint, cement base paint, and finished with polymer topcoat, which is durable, and easy to wash. The praying hall floor material is made of artificial courted stone white sheets (120cm X120cm), locally made in Bangladesh. According to the architect, all the elements implemented in this mosque are locally manufactured; some of them are according to his specifications, such as the operable swing windows on both sides of the praying hall, are custom made with “hollow profile metal section with hidden hatch bolt.”

This mosque has no mechanical air conditioning. Its design implements several passive cooling and cross-ventilation strategies. The northern and southern sides have no walls, only operable swing windows that easy can be folded allowing fresh and cool air into the mosque with increased velocity due to the low ceiling on the two sides and the raised middle bay ceiling with exhaust fans that pull away hot air.

In an indication of cleanness and purity, both exterior and interior are painted white. The treatment of light, natural and artificial is the utmost important element. While admitting natural daylight into the mosque through operable windows from the sides and the ceiling,

the design strives for evenly distributed light. It attempts to reduce the possibility of sharp light or glare occurring inside the mosque by preventing direct sunlight from penetrating the praying hall. Instead, the interlocking segmented arches with white paint ensure the even diffusion of natural light from the middle bay into the hall.

R.C.C structure with beam and column, non-load bearing brick wall infill based on shallow foundation system was used. Custom made hollow pavers, custom made cast iron jail, M.S doors and windows made by local craftsman.

Local material was used for this mosque as follows:

**Structure:** The R.C.C superstructure based on a shallow foundation and locally produced brick was employed in the construction, which is cost effective and locally practiced. Local wooden formwork and steel formwork (for arches) had been made by local craftsman for shuttering.

**Door System:** Metal framework with floor-mounted pivotal system designed for the ease of maintenance and usage, furnished with wood and glass.

**Window System:** Swing window panels produced with custom made of hollow profile section with metal sheet. Floor mounted pivotal



- 1 Entrance from inside
- 2 The prayer hall
- 3 The main gate and axis

system, specially designed hidden hatch bolt concerning ease of maintenance was used.

**Hardscape:** Custom made hollow pavers was used to give the essence of tactility and permeability of storm-water runoff. The hollow paves help promote green grass and add another tactile soft edge along the entrance of the mosque.

**Flooring:** Locally produced artificial quartz stone with reflective white finish contrasting brown marble inlay were used for floor finishing. These 2" marble lines also define rows for prayer hall running transversely at 4' interval.

**Wall Finish:** Plaster finish with bontile paintwork impacts the overall presence of the mosque, inspired from the Mughal Mosques of Bengal where plaster were used on brick walls.

**Furniture:** These are made of particle board and wooden frame in-situ to store the Qurans, other religious books along with prayer rugs.

**Screen:** Geometric patterned and especially cast iron jaail (latticed screen) were used on entry portico (iwan) and Minaret to behold a place to call the believers both visually and acoustically.

### Conclusion

Mohor Para mosque can be viewed as a true community mosque as it is located next to a community school. It was clear to the architect that a critical goal of this mosque was "to continue educating this rural community." According to the Imam of the mosque, students of nearby school regularly come to the mosque, enjoying being inside to get together on the theatre-like entrance steps of the mosque.

This mosque is small in size, yet it has many interesting ideas. One of which is integrating traditional mosque elements into modern design (series of interlocking processional arches). It also employs sustainable techniques of natural lighting and cross-ventilation. It satisfies its community role by engaging students from the nearby school, and illuminating lights during night into its rural community. All its materials are locally made; some are custom made.

The mosque also provides important points to consider in mosque architecture in terms of its integration with the surrounding built and natural environments, let alone the community at large. It is also sustainable and economic for its simple spatio-functional relationships. It is a true reflection of its context, community and social customs and practices. It has not alienated itself from the context including the building material, making it truly a genuine reflection of its social, physical and cultural context.



# SANCAKLAR MOSQUE

Location: **Istanbul, Turkey**

Client: **Sancaklar foundation**

Architect: **Emre Arolat Architecture**

Land area: **700m<sup>2</sup>**

Built up area: **1300m<sup>2</sup>**

Completed: **2013**

Capacity: **650 worshippers**

Type: **Jumaa Mosque**

The structure was designed as a response to the Sancaklar Family who wanted to build a mosque on a site overlooking the Buyukcekmece Lake, at a neighborhood of many gated communities. The main issue was a confrontation with the classical Ottoman mosque scheme, which became a blank anachronism with today's construction techniques.

In 2013, Sancaklar mosque won first prize in the World Architecture Festival competition for religious spaces. In 2015, the project was selected for the Design of the Year Award, organized by the London Design Museum and it was also shortlisted among the 40 nominees for the Mies Van der Rohe Award. In the 2018 BBC series Civilisations, classicist Mary Beard described it as “one of the most striking religious creations of modern times” and “one of the most startling mosques in the world”.

## Site

In a suburban neighborhood in the outskirts of Istanbul, in Buyukcekmece, Sancaklar mosque is situated within the prairie landscape near a busy road and spread over an area of 1300 square meters. Sancaklar Mosque is located on a hill overlooking the lake where there is a natural slope.

When the architect started the project, there was nothing situated on one side of the road. The hill on which the project is situated has a gentle slope providing views out to the valley and lake. This existing untouched state of site was one of the starting points of the design. The outcome of the building disappearing as it integrates to land, holding on to the ground as if it was always there, in order to free itself from the cultural and temporal engagements.

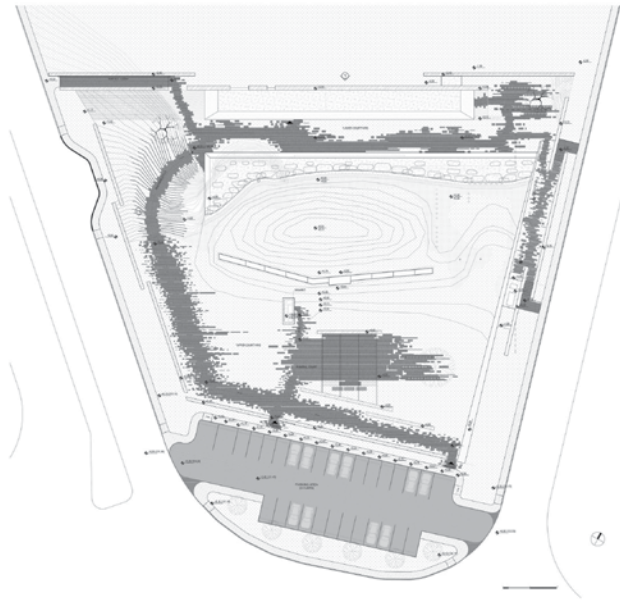
The mosque is situated today on four crossing roads. It acts as a node and a landmark at the top of the hill of gated communities. The connection with current built environment no longer seems homogenous and fluid as the design intended since the communities forced on gated communities. Therefore, the mosque does not rely on current neighborhood only, yet on visitors traveling from all over the region. As the mosque was built prior to the urban development, the building engulfs the preset site in a cave-like condition to merge within it and respect landscape grandness of the area.

1 External panoramic view

2 Site plan



2

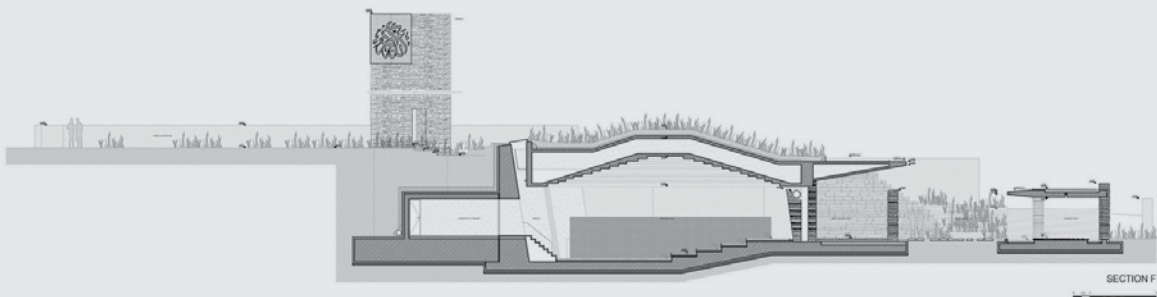
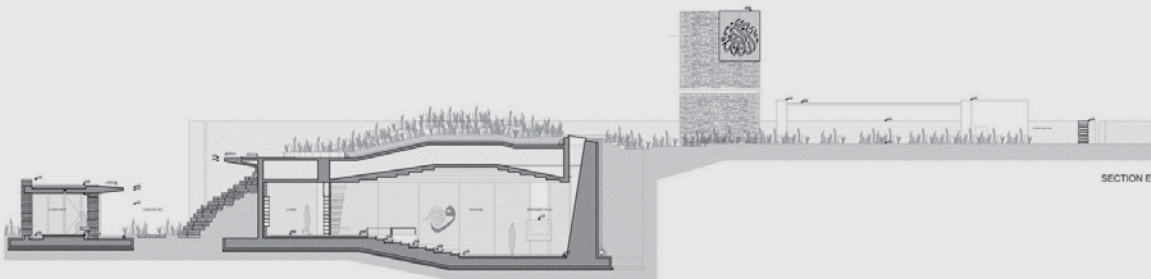
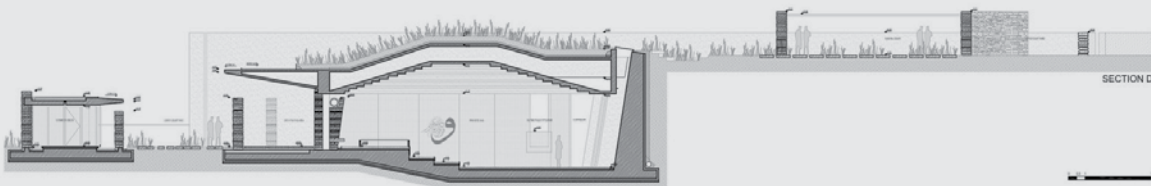
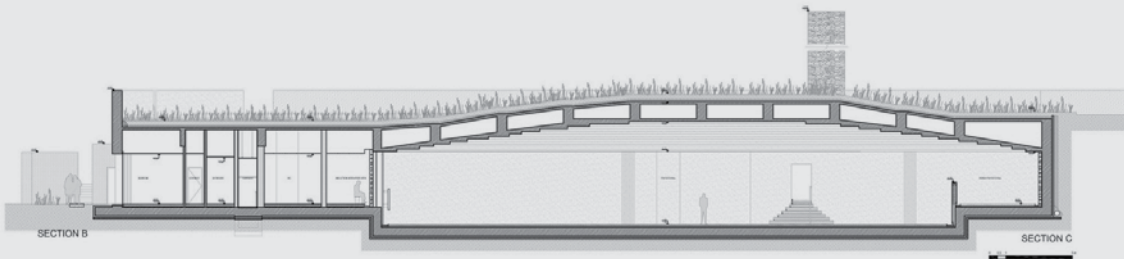
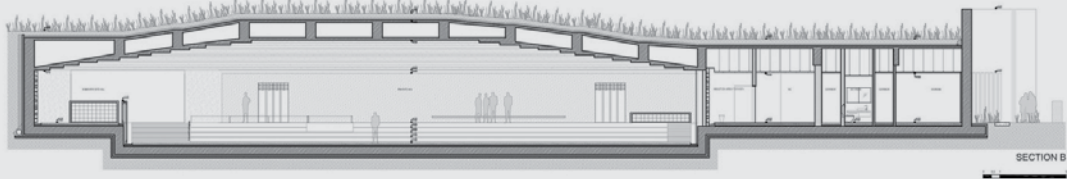
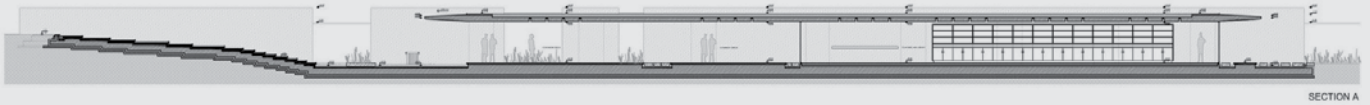


Sancaklar mosque is designed with harmony within the landscape that it respects the scale of wall with reference to the human figure. As the architect's initial intention is to remain low height with the landscape, the architect had explained that the vertical minaret was initially not part of the design yet Sancaklar wanted a signal to indicate the existence of the mosque, therefore, the minaret became part of the design. Thus, while a visual signal is provided by means of the minaret, from the vehicle roads towards the upper courtyard of the mosque via the parking lot. The visual connection between the mosque and lake starts at the upper courtyard to follow on the staircase leading to the lower courtyards where small openings within the architecture created in sheltered zone are prominent. The size of mosque the client asked to build was well below the allowed buildable area. Therefore, more landscape resided which added value to the building.

The only visible elements of the mosque are the courtyard surrounded by horizontal walls and a vertical prismatic mass of stone, minaret, which depicts that this is a "place" and the inscription signifies that this is a place for praying. The cascades following the natural slope turns into steps as one moves through the landscape, down the hill and leads to the entrance at the lower courtyard. The tea house, communal space and the library just across the mosque enriches the gathering feature of this open space. The prayer hall reached directly, a simple cave like space, becomes a dramatic and awe inspiring place to pray to Allah.

Due to its location, the mosque is accessed mainly by car. The road leading to the mosque is not very pedestrian friendly, therefore vehicle access had to be prioritized. There is a parking area located in the entrance of mosque from which users can reach main entrance to the complex. For the architect, the real experience of users starts from this entrance point, the procession to the prayer hall was an important part of our design process. The user can also access the lower courtyard by either eastern vehicular access next to Imam's residence or on southern side of the plot, users can access by a ramp.









2

### Spatio-Functional Relations

Accessed via the upper courtyard on street level, the minaret and funeral court become part of the natural landscape that extends over a 6m concrete canopy allowing for a green roof structure which resumes in a fully extended cantilevered landscape. This extension allows for a visual continuity with the surrounding existing prairie landscape.

As architectural promenade takes the user around the prayer hall to reach the lower courtyard where multiple entrances are available to various different functions: prayer hall, ablution and restrooms, Imam residence, library and tea house, the meditative process starts and communal areas reside. This architectural promenade enhances a meditative process of transition from a vehicle access to a pedestrian promenade to the prayer hall.

The library is designed in orthodox linear manner while the prayer hall is embedded within the landscape in a cave-like structure which opens up onto a prayer hall within a cascade of steps and stratified dome-like structure detached from the Qiblah wall with sunlight.

The Qiblah wall disconnects from the dome-structured roof by a skylight allowing natural light through. It opens onto the sunken garden in front. While it creates an intimate relationship between

the worshippers and nature, it also challenges the code of wall direction. The Qiblah wall in Sancaklar mosque is not a straight line yet it is slightly broken. This atypical strategy used for wall direction embraces main prayer hall. The break also emphasizes visual importance of the wall rather than mihrab and minbar. The Qiblah wall unites all elements in one: The wall.

As humble and submersed as the structure may be, the spiritual architecture interior quality advocates for a monumental experience.

In terms of functionality, Sancaklar mosque programme was well defined and functional and catered for a social cohesion of gender division prayer halls and extension of programmes towards the exterior. Although walls defined spaces, the human flow and programme remained borderless.

On an environmental sustainable level, Sancaklar mosque abided by standard mechanical and electrical equipment that feed into the building yet the heat and cooling load was reduced through the design of a green roof above a cave-like structure.

### Form and Architecture

The design of the mosque is a reinterpretation of questioning the fundamentals of mosque architecture and focusing solely on the essence of religious space. Emre Arolat Architecture had received the given and carefully researched the earliest Islamic mosques especially the early mosque of the prophet.

The main design strategy used in Sancaklar mosque is to create an architectural impression not on a stylistic impression, but rather an emotional experience articulated by the selection of material, nature and light. Emre Arolat states that “to reach the essence of the ritual of prayer rather than searching for an extravagant form, they focused on the essence that can be eternal only when the form is ephemeral.”

Therefore, as Gur states in his article, Sancaklar mosque: Displacing the familiar in the International Journal of Islamic Architecture in

1 Sections

2 External view of the prayer hall

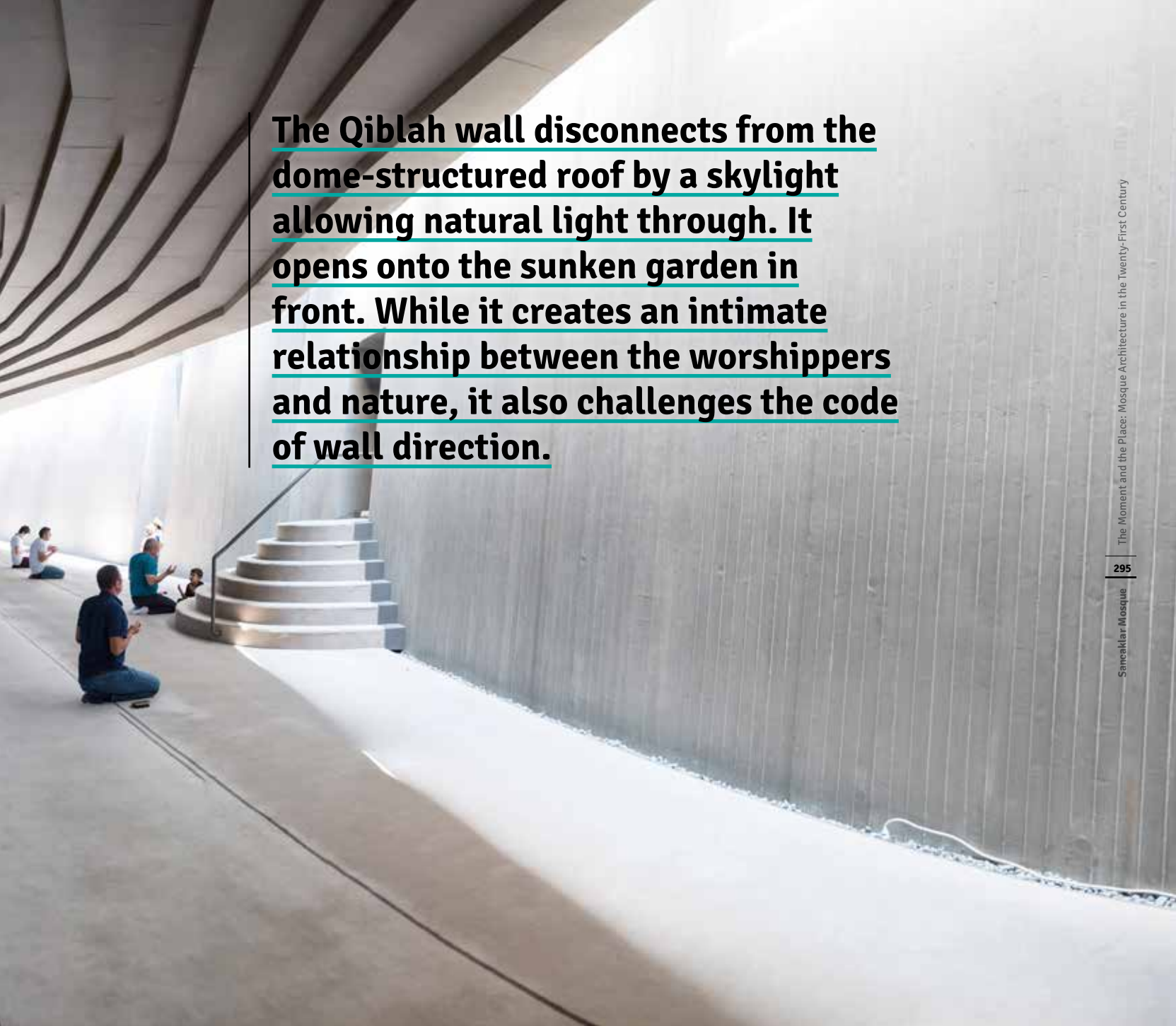


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2

**The Qiblah wall disconnects from the dome-structured roof by a skylight allowing natural light through. It opens onto the sunken garden in front. While it creates an intimate relationship between the worshippers and nature, it also challenges the code of wall direction.**



- 1 External details
- 2 The minaret
- 3 Outdoor elements





2017, a defamiliarization process was involved within the design that requires looking at historical models with a high level of awareness that it is not limited to the constraints of their origin. In Sancaklar mosque, this process of making the familiar unfamiliar is realized through such strategies as extending the mosque's field, multiplying and breaking the Qibla wall, dissolving the relationship between the roof and plan, and the flattening of the dome in the form of a stepped eclipse. As a result of the displacements in Sancaklar Mosque, the liturgical requirements are all present in the prayer space without being entrapped in historicist nostalgia: they are dissociated from their usual context and expressed as something unfamiliar.

Depending on the fact that a mosque does not have a predefined form and anywhere clean may be a prayer's room, the project focused solely on the "essence" of a religious space, by distancing itself from discussions on form. Physical and emotional pleasure was at the forefront. The design aimed at representing purest forms of light and matter, just as a primary inner world, free from all cultural burdens. The disappearance of the building in the slope of the site, anchorage to the ground as if it has always been there, getting rid of all temporal and cultural engagements was aimed.

The architect took his inspiration from the cave at Mount Hira near Mecca. Been characterized by some articles as the "underground mosque", this space plays on the relationship between architecture and nature. The tension between man-made and nature becomes borderless and allows for an ultimate fusion between the natural slope and the integrated stone pathway leading towards the inner spaces. The mosque blends completely with the outside world, redefining the architectural traditions in the Islamic place of worship.

Allowing the walls to stratify at different heights for different purposes around the full project has led to a monolithic coherent language serving as directional elements and borderlines to announce a transition from one area to another, from public zones to serene atmospheres.



- 1 Topography and landscape
- 2 The minaret
- 3 Using natural stone for external finishing

As the minaret is the only vertical element arising from the landscape, the canopy stretches out from the park and it becomes the only visible element within the landscape. Caving within the landscape with a canopy, the users reach the peacefully lit interior prayer hall.

#### Interior Design and Technical Aspects

The interior is simple where materials put forward themselves as they are, free from redundancies. The walls and the ceiling strengthen the feeling of purification and humbleness. The space may be defined as a meditation space. The only ornament is the daylight that leaks on the Qiblah wall, changing according to the

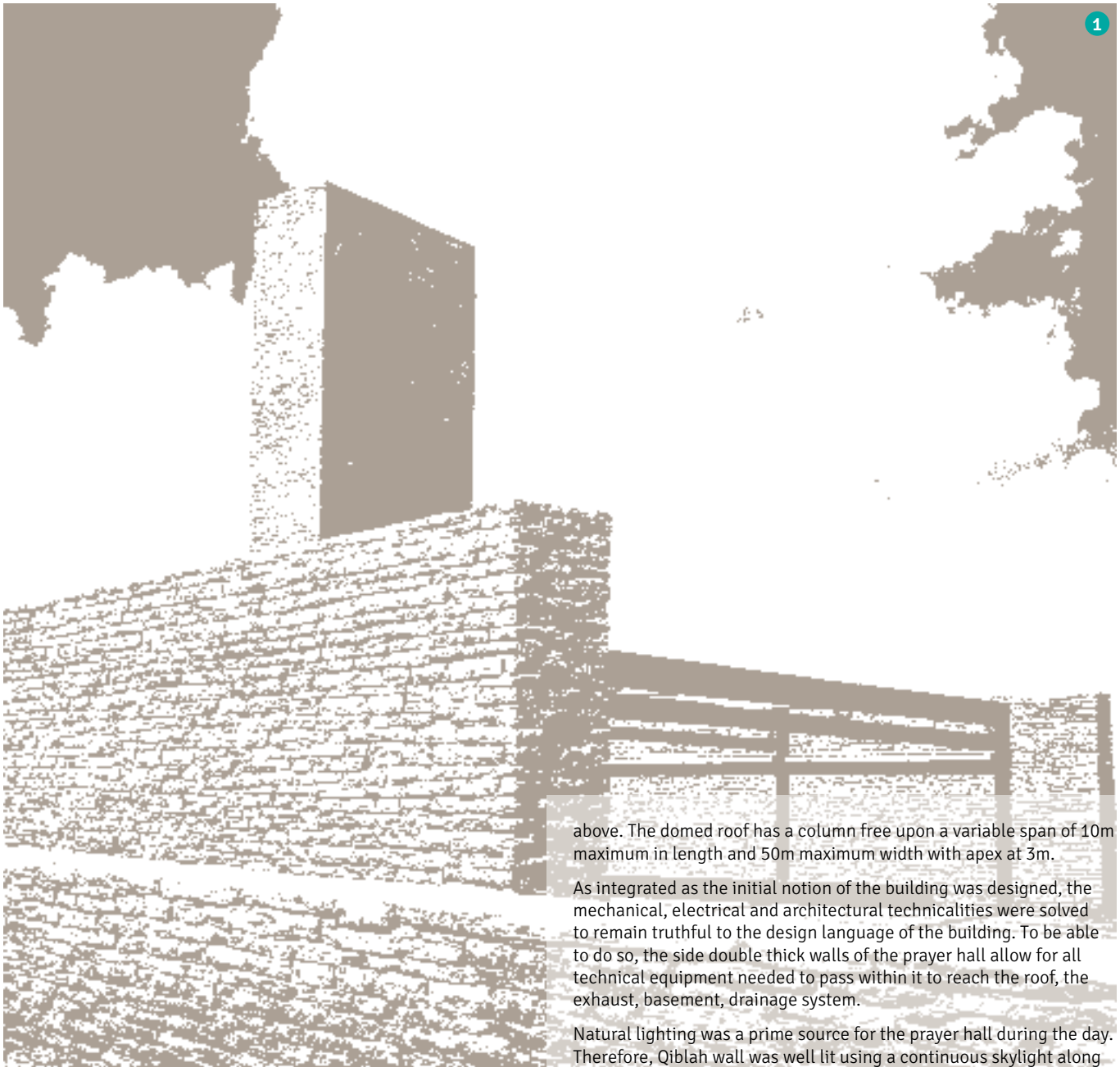
time of day. The slits and fractures along this wall enhances the directionality of the prayer space. A very special element is the letter “waw” on the reflective black wall of infinity. First time in mosque architecture, women have the chance to pray just in the same row as men, contrary to being at the back as in all others. They are placed at an elevated and separated part of the hall. The complex includes the ablution halls, restrooms and the imam’s house from where he can reach the hall directly.

The building blends in completely with topography and in this peaceful way, delivers back the form of ground. This submerging feature and the green roof all above provide natural insulation against heat loss and gain. Landscape materials are mainly of rural plants that need no maintenance and merges with the prairie of the surroundings. All these features prevent the use of extra energy and water.

Mainly the building has a simple reinforced concrete structure. Most challenging issue was to achieve the desired surface texture of concrete with carefully refined wooden scaffolding. The graded ceiling created both to lighten the concrete structure and enhance the main prayer hall which is an element specific to this building together with large cantilevers again having the same natural texture. Stone masonry built on both sides of vertical structural elements creates the cavity wall that provides natural insulation and form the gap for all mechanical and HVAC piping.

The project depends on two kinds of structures: an orthodox conventional one found in minaret, library, tea house, and the funeral court, and a cave like structure found in the prayer hall, while the ablution and the Imam residence remain orthodox in their structure.

The domed structure is a double skin one of 30 cm concrete connected with beams that allow for hollow area in between in which technical equipment could pass. Furthermore, it becomes a structural support for the load of soil and plants on green roof and the load of temporal weathering such as rain and snow and live load of users



above. The domed roof has a column free upon a variable span of 10m maximum in length and 50m maximum width with apex at 3m.

As integrated as the initial notion of the building was designed, the mechanical, electrical and architectural technicalities were solved to remain truthful to the design language of the building. To be able to do so, the side double thick walls of the prayer hall allow for all technical equipment needed to pass within it to reach the roof, the exhaust, basement, drainage system.

Natural lighting was a prime source for the prayer hall during the day. Therefore, Qiblah wall was well lit using a continuous skylight along the wall. Furthermore, the ablution also had natural lighting allowing for slight natural lighting to infiltrate.

Linear led artificial lighting was embedded within the landscape to accentuate the position and directionality of the walls and, on the interior, indirect artificial lighting was placed within the dome structure and top of the wall and under the steps to emphasize the structure.

To refine and define the acoustic level in the prayer hall, the dome like structure allows for a good performance of acoustic yet aided with technical speakers at certain points.

Integrating passive environmental control methods, learnt from tradition, to the design was one of important objectives. In this context, the natural insulation generated by green roof and natural stone wall, with some hollowness, is as significant as the shade provided by deep canopies and the contribution of the sheltered areas to accessing open-air spaces.

Local stone and indigenous reinforced concrete used for the project. The use of local materials, the use of natural materials ensures that the structure is robust and durable.





- 1 Harmony between the mass and the landscape
- 2 Ceiling design of the prayer hall
- 3 External canopy and walls
- 4 External features
- 5 Ablution zone

### Conclusion

Sancaklar Mosque is truly a well-defined human designed mosque. This has been achieved with the proportion of the building with respect to human scale. It truly abided by the criteria's given and the environment. Within a rural landscape environment, the structure is well integrated within the landscape without setting any borders therefore becoming borderless with a peaceful architectural promenade of transition from vehicular to pedestrian toward the prayer hall. Well defined proportions in design with respect to the human figure and cohesion with the landscape set within accentuates humbleness and embraces peaceful environment the architect wanted to achieve. The penetration of the minaret within the landscape allocates good visual connection within a refined structure. The structure therefore remains true to the human scale, landscape, experience of user and architect's intention.

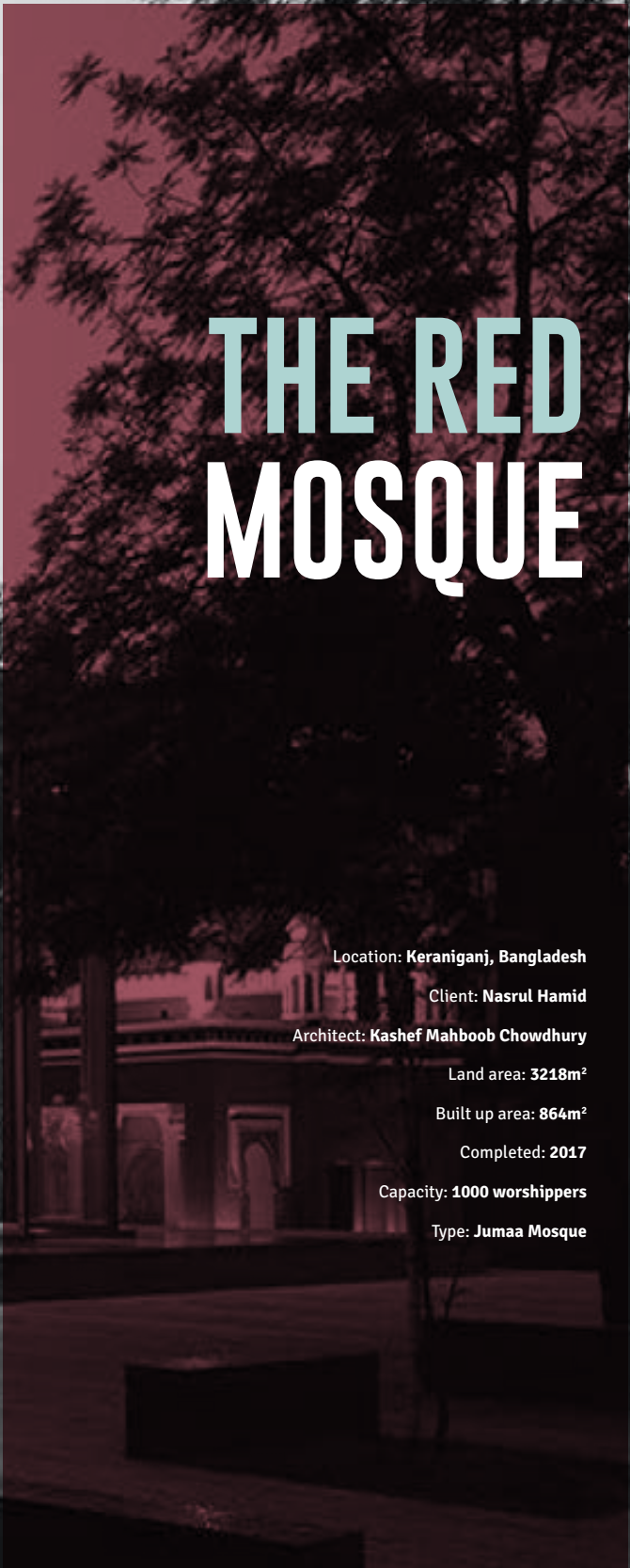
Socially, the mosque respects human behavior that worshippers passing by stop to visit and pray. The mosque has a simple, humble interior where the materials reveal themselves as they are. The walls and ceiling strengthen the sense of purification and humility. This space can be described as a place for intense meditation, contemplation and communion. The bare concrete walls give the feeling of primordiality. This space is a stance towards genuine, humble original nature, yet, it also resembles a progressive move towards future mosque architecture.





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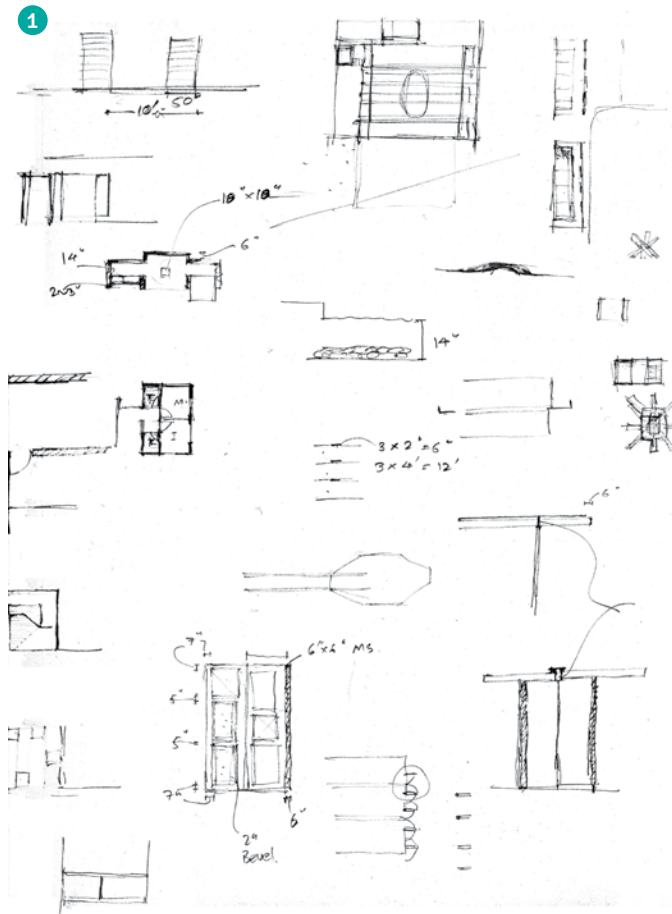




# THE RED MOSQUE

Location: Keraniganj, Bangladesh  
Client: Nasrul Hamid  
Architect: Kashef Mahboob Chowdhury  
Land area: 3218m<sup>2</sup>  
Built up area: 864m<sup>2</sup>  
Completed: 2017  
Capacity: 1000 worshippers  
Type: Juma Mosque

Keraniganj, Dhaka, which is now four hundred years old, grew from the banks of the river Buriganga but perhaps inexplicably, grew only northwards and not substantially on its other bank to the south. It was much later that the area south of the river grew to be part of Keraniganj, of very high densities and irregular unplanned growth. The Red Mosque is located in such a dense residential area serviced by narrow roads, with hardly any parks, playgrounds or open spaces.



In an area where there is so much pollution, noise and visual chaos, the mosque and its environs are conceived as a sanctuary of peace and simplicity. The 'Red Mosque,' built in 2017, designed by architect Kashef Mahboob Chowdhury. Its popular name, the 'Red Mosque,' comes from its principal facade and interior red color. The mosque located in Keraniganj, in a high-density residential area with hardly any parks, playgrounds, or open spaces resulted from "irregular unplanned growth." It was not easy to reach the mosque, as it was located amid dense residential areas, and without the help of residents, it is not easy to find. The area serviced by narrow roads, about 20 minutes driving from central Dhaka, the capital of Bangladesh. The mosque's official name is Doleshwar Hanafiyah Jame Masjid, and built adjacent to a 200-year-old, small but iconic in its architectural features and its role in the history of the community. The old mosque is now preserved and used as an Islamic library. The new 'Red Mosque' could accommodate 990 prayers inside the praying hall, while outdoor capacity is up to 1060 prayers.

#### Site

The Red Mosque, although very innovative in its design, has a strong connection to its location and surrounding. The design begins by respecting the local people history and their place by preserving the old community mosque and making it an integral part of the more extensive new mosque programme. The old mosque now is adopted into an Islamic library. Furthermore, the color of the new Red Mosque, the salient feature of this mosque, is inspired "by the color of the old mosque, the reddish clay color."

The Red Mosque beautifully and ingeniously integrates with its surrounding natural and built environment. According to architect Kashef, he intentionally wanted the new Red Mosque to stand in strong contrast with the dense surrounding greenery and the natural light. Indeed, the mosque 'reddish clay color' sharply contrasts with the green color of the trees around as well as with the bright blue color of the sky. This contrast enhanced the presence of the Red Mosque within its surrounding that became a background for the mosque.

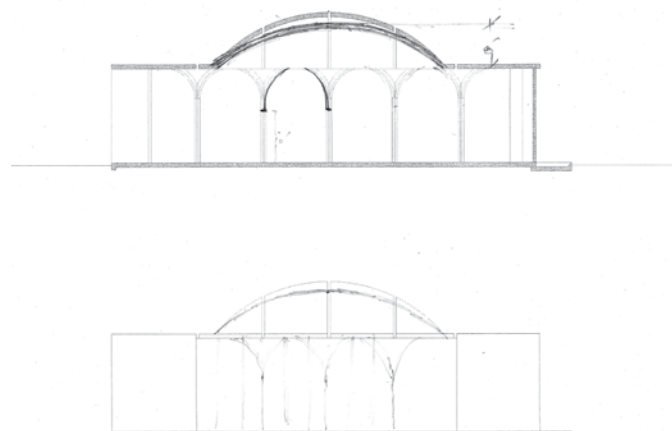
The Red Mosque height is not monumental, only six meters high, yet, it strikingly evokes a sense of monumentality for anyone approaching it. It took sharp response toward its chaotic residential area by presenting orderly repetitive columns sandwiched between two simple planes: the platform and the roof.

In response to its built physical environment, the design of the Red Mosque begins by acknowledging the historical role of the 200-year-old mosque; hence, it encompasses the old mosque and the new, the history of the place and its future, and its natural and built environment.

#### Spatio-Functional Relations

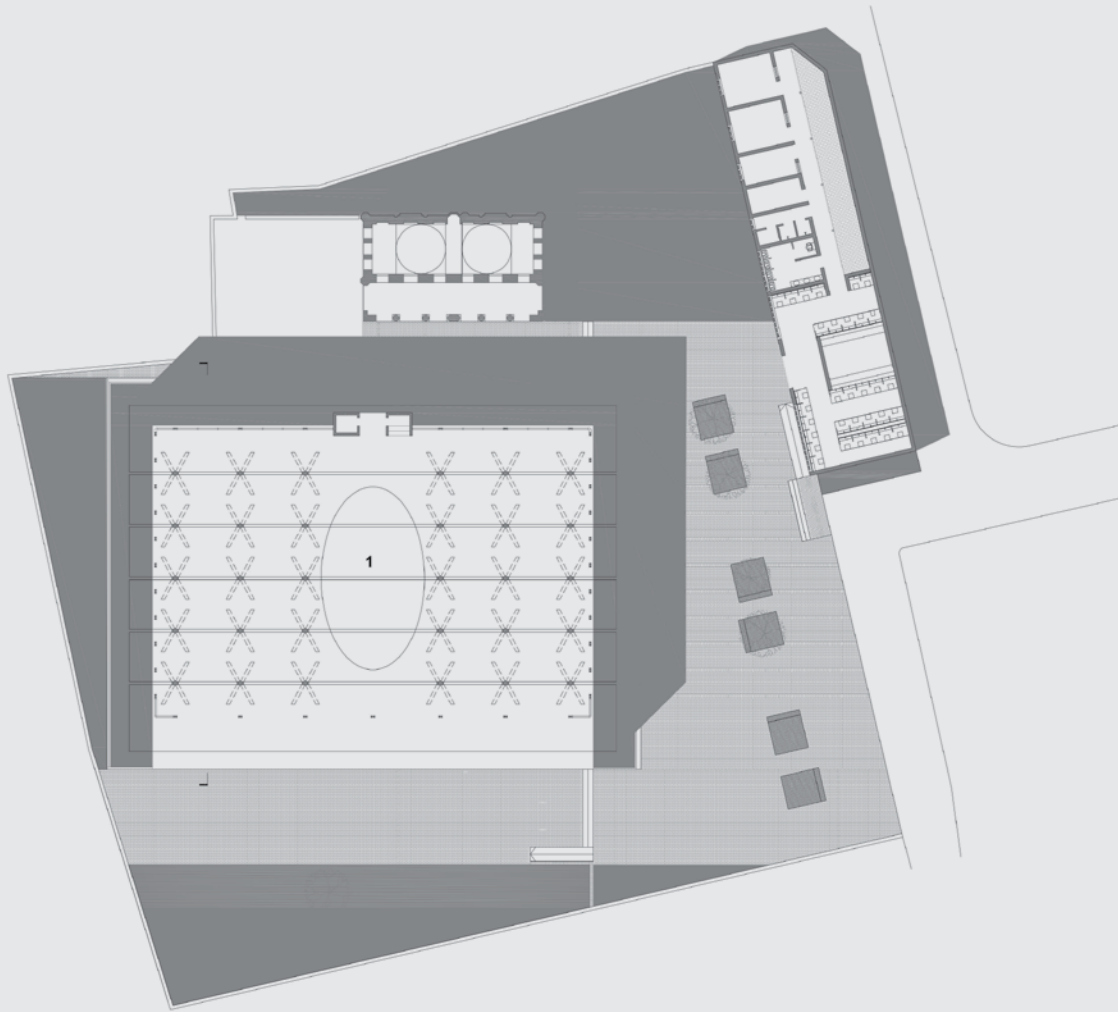
The existence of a two-hundred year old mosque and the client's intention to preserve was the generator of the design. From the outset, the architect felt this should be more than a place of worship for people whose religion is central in life. This was an opportunity to open up hitherto blocked or unused spaces and make it accessible to the community.

The Red Mosque relies on passive cooling systems with no air-conditioning system used. With raised roof up to 6-meter high,



- 1 Analytical sketches
- 2 Ground floor plan
- 3 Section

2



0 2 4M MASTER PLAN

- 1. EXISTING GRAVEYARD
- 2. IMAM'S ROOM
- 3. MOAZZIN'S ROOM
- 4. KITCHEN
- 5. STORE

3



operable curtain walls in all sides, the air movement is nicely felt crossing through the praying hall. A shallow pool “encircles the main prayer space, separating it from the adjacent garden and plaza and offering micro-climatic cooling.” Located in the middle of its plot, the Red Mosque has a plane space from all sides except for trees; such configuration boosts the cross-ventilation effect enormously.

By preserving the old mosque and adapting it to a library, the new design maintains the continuity of the people’s past, giving the new mosque more meaning since it contains their history, and the new function, library, will contributing to educating the new and young generation.

The areas around the most are well organized to better service the mosque. The entrance to the mosque plot is from the north side. The northern and eastern yards of the mosque are paved with red brick that would accommodate more prayers if necessary. Benches for gathering and seating distributed along these yards provide a gathering point for community activities to take place.

The ablution area kept in the distance from the mosque. It is located next to the entrance along the northern side of the plot. It is well lit and ventilated with several small courtyards that ensures the hygienic environment of the wet ablution area.

- 1 The concrete columns
- 2 General view for the prayer hall



## Form and Architecture

Inspired by the simplicity of the first mosque in Islam, the prophet's mosque, the Red Mosque takes on a true pavilion form, open visually on all sides to the elements on three large eighteen-foot tall apertures let in welcome breeze, obviating the need for air-conditioning in a climate where summer can get very hot. A shallow body of water encircles the main prayer space, separating it from the adjacent garden and plaza and offering micro-climatic cooling.

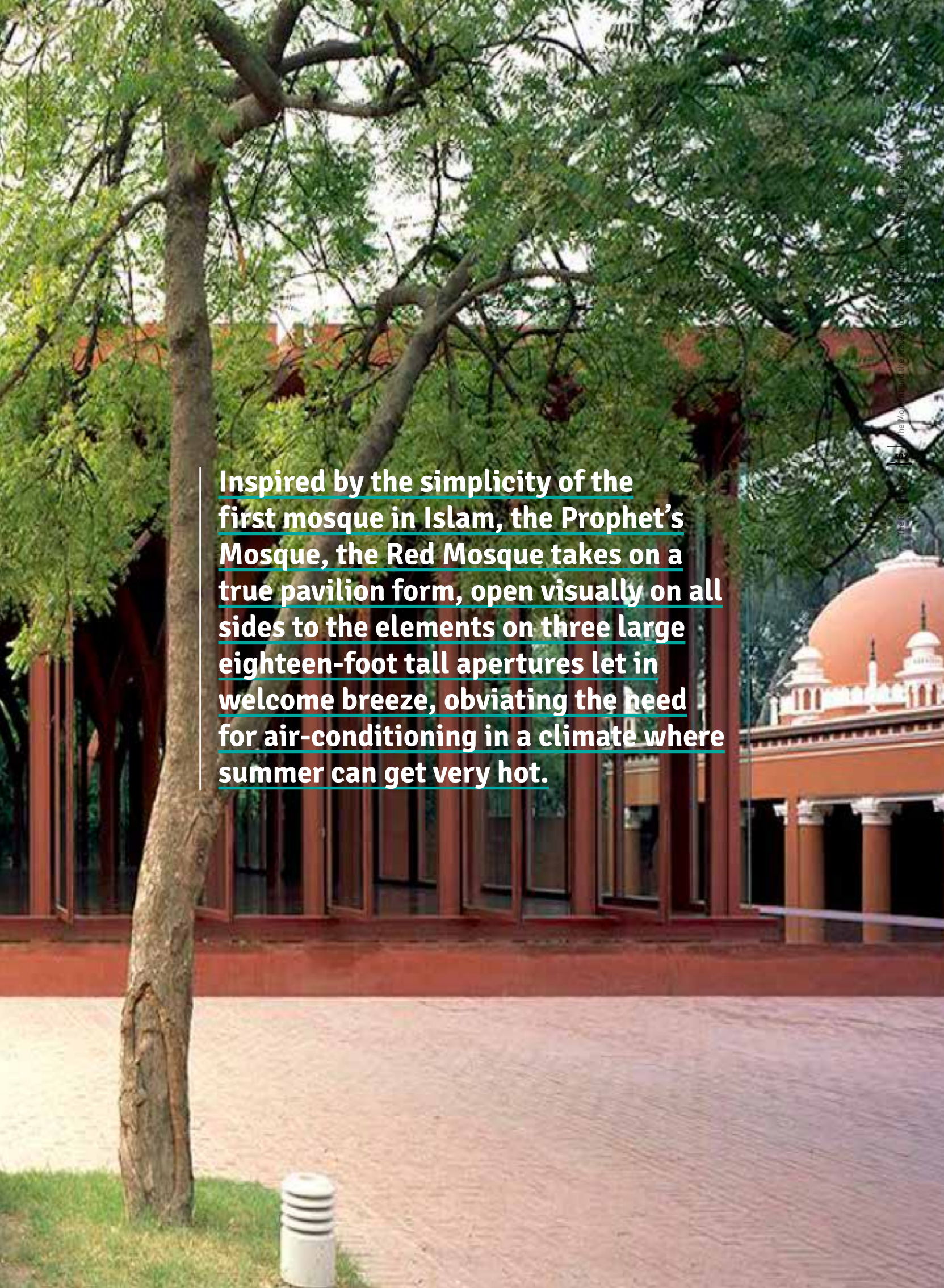
The Red Mosque design is genuinely innovative. In this mosque, one would experience a transcending intricacy throughout the beauty of simplicity. Kashef, the architect, argued that his design inspired by the "simplicity of the first mosque in Islam, the Prophet's Mosque." The simplicity as an architectural idea governs the overall design of the Red Mosque and transfers it into possibly a pavilion-like structure. The architect claimed that Islam imposes very little upon its followers; hence, the ritual of praying is minimal and short and could be done anywhere, unlike other religions. He asserted that a pavilion-form, similar to the early Islam mosques in terms of form and openness, is more appropriate to help prayers seek connection to God through the link to nature and cosmos. This intention of the architect presents a very radical break with conventional and typical mosque design prevalent in many Islamic countries.

The first remarkable experience one would feel when entering this mosque is the free space; the Red Mosque has surprisingly no walls. Yet, even more surprising is that the Qibla side has no walls, a bold break with the conventional standard in mosque design that often maintains solid and fenestration-less Qibla side/wall to prevent any visual disturbance of the prayers. Only two freestanding alcove-like partitions (RC walls) in the Qibla side, one contains the minbar's three steps while the other used as a store for audio systems. Instead of solid walls, the entire parameters of the praying hall are made of operable curtain-walls/tall windows. Only the Qibla side has 'red' textile shutters to block the sun if needed.

When the architect was asked whether his design of the Qibla side is going to distract prayers' attention and reduce the quality of praying rituals or not, he disagreed and argued that "early Muslims used to pray in any place without the need for solid-built Qibla wall, they only have to orient themselves toward Mecca and pray." He maintained that in early mosques such as the prophet mosque, prayers would have felt well connected to their God directly because they were able to observe the sunrise and sunset, the sky, and stars during their praying rituals. He claimed that the primary reason for him to design the Qibla side as open as possible was that the Qibla in Bangladesh is always on the west side, and when the sun sets, it is the time of Maghreb praying, the prayers would not have the chance to observe

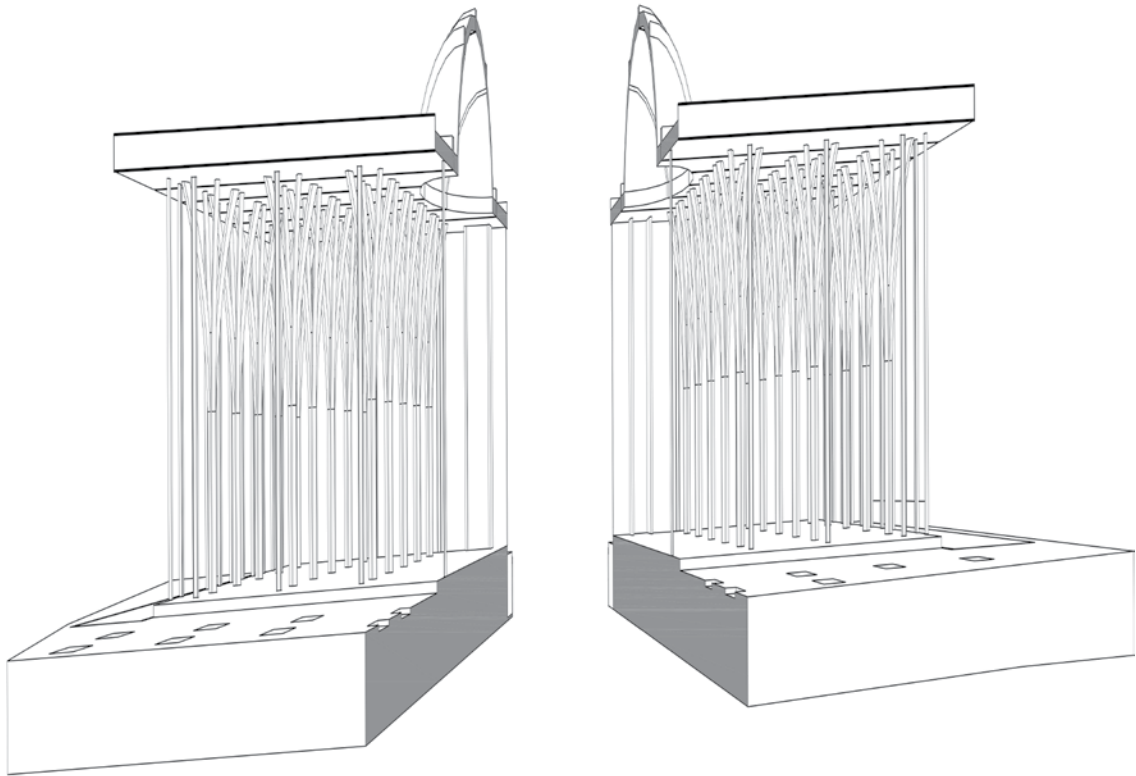






**Inspired by the simplicity of the first mosque in Islam, the Prophet's Mosque, the Red Mosque takes on a true pavilion form, open visually on all sides to the elements on three large eighteen-foot tall apertures let in welcome breeze, obviating the need for air-conditioning in a climate where summer can get very hot.**

1



2

- 1 Sectional model
- 2 Internal view
- 3 Top view shows the old mosque



and enjoy such beautiful moment of the sunset in Bangladesh. Having Qibla side as transparent as possible would enhance the praying ambiance and help restore the lost connection between believers and the Creator within a natural atmosphere.

The design concept of the Red Mosque starts with preserving and maintaining the role of the old mosque in its community. The old mosque presents richness of Mughal architectural characteristics that were predominant in Bengal region during the eighteenth century. The architect took this mosque as a source of inspiration and “the generator of the design.” He claimed that his design maintained the continuity of the history of the place and legacy of the people of which they are proud. The new Red Mosque is raised on a platform above the old mosque. Indeed, prayers standing in the first line inside the Red Mosque would oversee the old mosque and their grand-grandfathers’ graveyard, and they will make doa’a and pray for them every-time they are reminded of them. Such ingenious integration between counterparts of old and new, traditional and modern, deceased and alive, are all greatly enhancing the spiritual ambiance of the Red Mosque to become a unique experience.

### Interior Design and Technical Aspects

Palette of materials is limited: Exposed red concrete for structure and local red terrazzo for floors. So are architectural elements: columns, slabs and a tall glazing to protect from cold winters or dust when not in use. The open spaces are articulated unambiguously, leaving generous spaces for the gathering of friends or simply for the eye to travel or the mind to rest.

The columns in the Red Mosque are remarkable features, and one cannot but wonder around the shape and the effect of these columns. Each column shaped as a branching tree and the roof is elevated without literary any vertical support. The effect of the branching columns enhances the concept of airy and freeness space the architect wants to achieve. Each branching column begins with an octagonal base and shaft and begins to branch, at 2.5 meter high, into

four branches that take the shape of a pointed arch before they reach the roof slab.

There are 30 branching columns inside the mosque; however, there are 120 branches that hold the roof. The dense branching effect creates the impression of a forest of pointed arches infinitely interlocking in all directions, an idea the architect wished for achieving when he was visiting the Great Mosque of Cordova in Spain, during his design of the Red Mosque.

One branching column surprisingly found free-standing alone at the southern yard of the mosque like a sculpture; however, it blends well with the trees around it. It turns out that it was a testing sample done on the mosque location to assess the column shape and structure. The architect decided to keep this sample as sculpture that no one would expect to find in a mosque, another nice break with conventional mosque design.

In the Red Mosque, neither a dome nor a minaret is found. The roof made of 6 long parallel flat slabs stretching north to south with gaps between each of them that admit natural light. A slight reference to a dome is given at the center of the roof where the concrete “slabs rise and bulge at the center to form an ovoid form, giving a larger central space.”

Inside the Red Mosque, one could quickly feel the strength of spiritual atmosphere dominating the interior space during the day; very silent with soothing breeze coming from the greenery and crossing over the water pool from outside into the heart of the mosque. The high roof and glossy-dark-reddish color that dominates the space both help to reduce the sharp contracting effect that one would expect to have, especially at and parameters of the building. The glossy floor reflects the outside scenery, which supports extends the light inside; thus, one would feel much comfort and relaxation. The long bands of skylight that happen between the six slabs admit natural light into the heart of the mosque, which would be otherwise a dime space at the center.





1 Detail for the cap of the concrete columns

2 The relations between outdoor and indoor environment

3 Outdoor view





This concept of freeness continues in the structure itself: The roof is a series of slabs separated by a light gap and held in place by columns branching out like trees to hold adjacent sections. In straight perspective, these appear to form arches, a subtle reference to traditional examples, not unlike the old mosque which it faces to its west. The slabs rise and bulge at the centre to form an ovoid form, giving a larger central space. Underneath the mihrab and mimbar are simply delineated, visible from long distances because of the wall-free design. Bathed in light, the tall scale of the interior does not overwhelm yet brings in the colors of adjacent greens as well the reddish brown of the older structure.

The entire praying hall has one monotonous color, the reddish clay color of the old mosque. The interiors are finished in high-compressed red terrazzo panels that look like red marble, while the columns with smooth red-painted concrete. The unified color theme inside the mosque might help reduce distractions and promotes the concentration on one main task, worshipping and meditating.

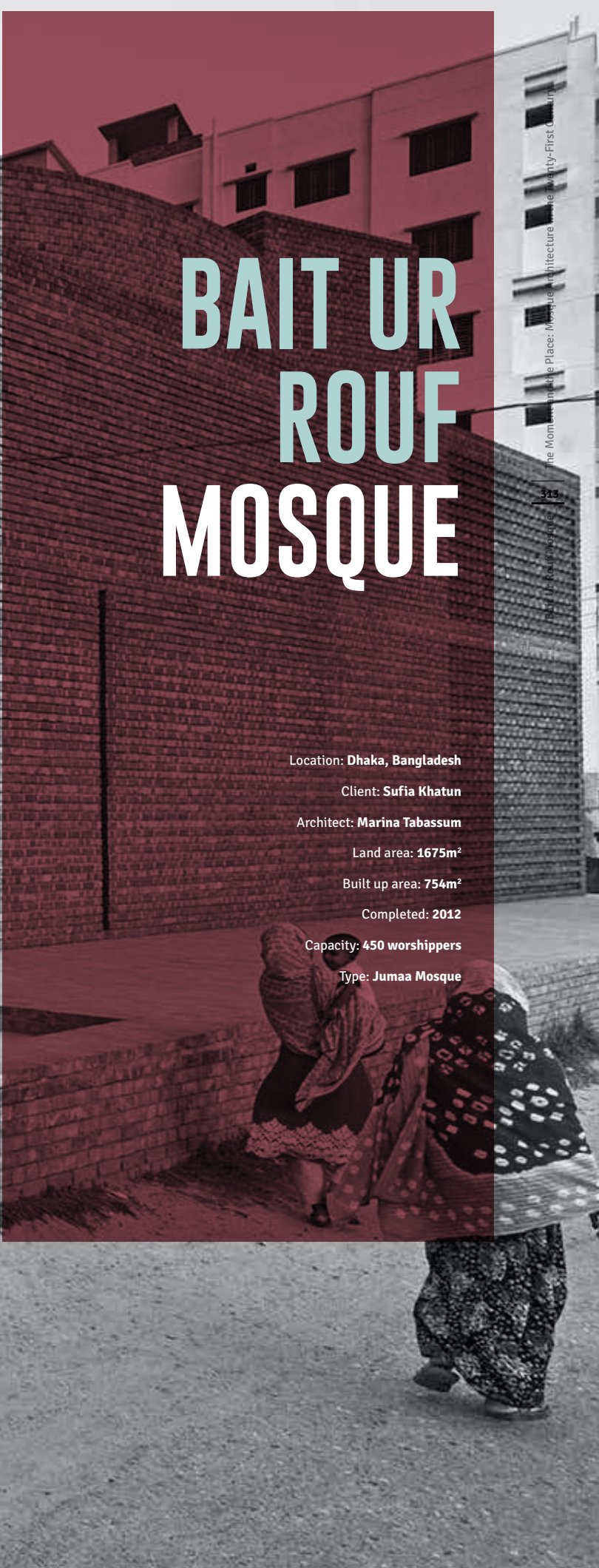
### Conclusion

The Red Mosque presents a radical departure from the norm of design a mosque. It begins with respecting the community's history

and heritage by preserving their grandfather's masterpiece, the 200-year old mosque, hence, engaging the community into the new mosque in which the old and new became one present. It reduces all conventional elements in the mosque except the essential ones; thus, it raises significant questions of what is the purpose of a mosque? How could a mosque better achieve its primary function? Even the well-established element inside the mosque, the Qibla wall, was removed. The use of unified color tone that meant to contrast the greenery around and the sky above is a bold decision that made this mosque stand against all the odds.







# BAIT UR ROUF MOSQUE

Location: Dhaka, Bangladesh

Client: Sufia Khatun

Architect: Marina Tabassum

Land area: 1675m<sup>2</sup>

Built up area: 754m<sup>2</sup>

Completed: 2012

Capacity: 450 worshippers

Type: Juma Mosque

Bait Ur Rouf Mosque is located in Dhaka, Bangladesh. Designed by architect Marina Tabassum, and completed in 2012. Land was donated by her grandmother, the architect has created an elemental place for meditation and prayer. The major attracting point in the design is ventilation and the play of light, which makes the mosque a refuge for spirituality. Therefore, it has received recognition for its beautiful use of natural light and for challenging the status quo of traditional mosque design.

It was built over twelve years with a minuscule budget. It lacks popular mosque iconography. Its emphasis is on materials, space, and light. It functions not only as a place of worship but as a meeting room, school, and playground for an underserved community.

Bait Ur Rouf Mosque is unusual for its environmentally-friendly design. Tabassum stated: “I’ve used a lot of brick predominantly because it is the only material we have. We don’t have a stone, and we have a labour force that is very cheap, so when we have budget projects brick is what we use. You can take a very simple material and by the action of your own creativity and innovation take that to any level you like.”

The original commission came from her grandmother Sufia Khatun, in commemoration of Tabassum’s mother and aunt, who had passed away unexpectedly. Tabassum has explained that her grandmother originally commissioned her with the project because she could sense her suffering. “In a way, designing the mosque became a kind of a healing process for both of us,”

#### Site

Baitur Rauf Mosque is located in Dhaka, in an area of 754 m<sup>2</sup>, which placed in a flood-prone area. Marina Tabassum designed the Mosque for Sufia Khatun, while locals funded and use the building. The designed operated by 2005-2006 while the construction completed on 2012. The capacity is 450 people.

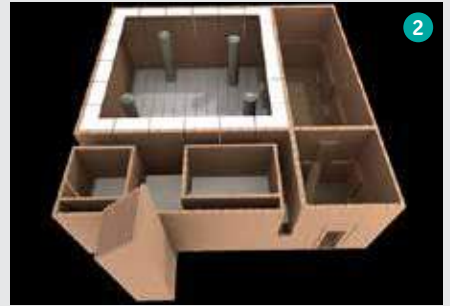
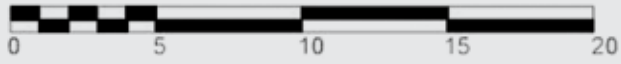
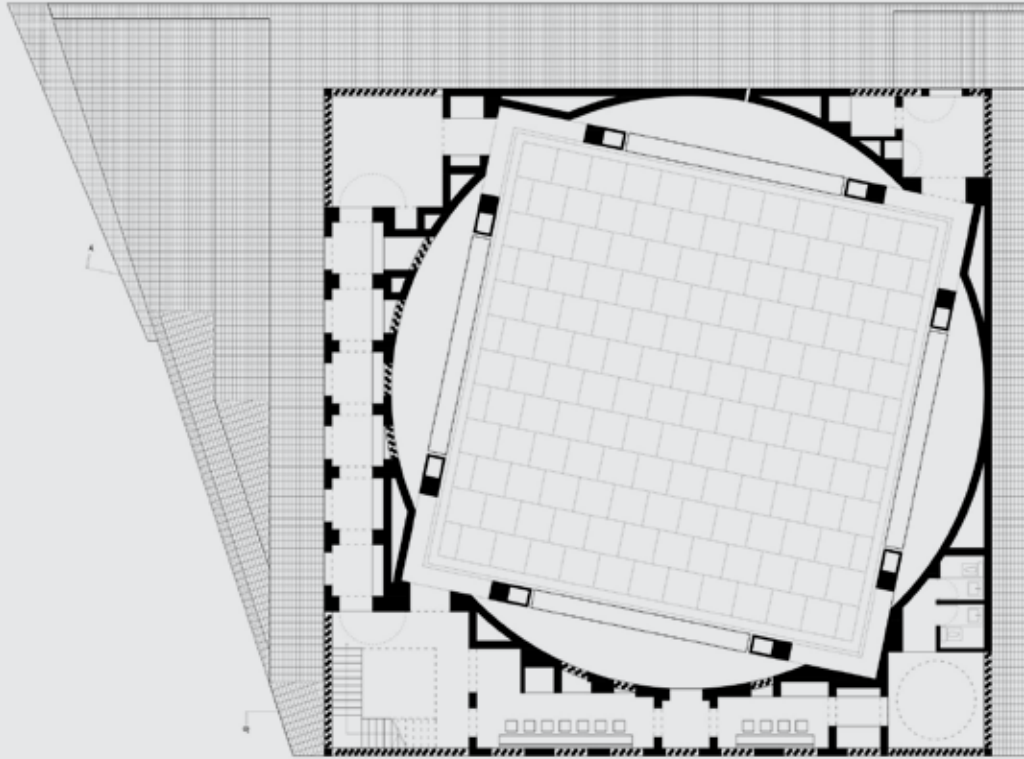
In the increasingly dense neighborhood of Faidabad, Uttara, a humble brick structure outshines the nearby tall apartment buildings, which

- 1 Urban surrounding
- 2 Communal activities around the mosque
- 3 Site plan





1



3





had completion in 2012. Bait Ur Rouf Mosque on the outskirts of Dhaka city stands out as an architectural masterpiece. Yet its earthy red hue blends into the surrounding landscape.

Addressing the shortage of community services in the urban context, the design consists of flexible spaces, which allow the mosque to play the role of education as a school rather than only place for praying, meeting room and children's playground. Both historical and practical concerns prompted Tabassum's decision to build with bricks.

Site's dimensions informed a square plan, within which the prayer hall needed to be positioned so it faces towards Mecca. The irregular site is covered by a high plinth, which not only protects against flooding but also provides a gathering place set apart from the crowded street below. On top of the plinth sits the mosque, a perfect square, 23m x 23m and 7.6m high. Within this square is a cylinder, displaced to the northwest corner of the perimeter.

The mosque on the high plinth protects structure from floodwater. The high plinth creates a communal area for relaxing that separates the building from busy streetscape. It allows people to sit and talk, and creates a separation between site and the busy street.

### Spatio-Functional Relations

Bait Ur Rouf manages to be both an aesthetic and inclusive space. It is as much a place of prayer as it is a community space.

The prayer hall is a carefully scaled and proportioned volume that is evenly lit to enhance the feeling of all as equal. The Mosque is open for people of all gender, age. There is no hierarchical position for the imam rather it promotes social interactions among people of all kinds of social backgrounds.

Wall creates additional depth for the colonnade and ablution area on the south- and east-facing sides respectively. In addition, within this cylinder is a smaller square, 16.75m x 16.75m and 10.6m high that is, 3m taller than the perimeter wall. Rotated within the cylinder to orientate itself with the Qibla, this pavilion contains the prayer hall, which is separated from the rest of the building by open-to-sky light wells.

Often women come and pray to the side of the prayer hall or in the small space upstairs. This is not unusual in mosques in Bangladesh, most of which do not have dedicated sections for females. Women who wish to pray are not turned away. Only around 10-12 women on average come to the Mosque to pray in a week.

Ancillary functions are located in spaces created by the outer square and the cylinder. The plinth remains vibrant throughout the day with children playing and elderly men chatting and waiting for the call to prayer.



- 1 Ground floor plan
- 2 Sectional model
- 3 Section
- 4 Internal detail
- 5 Opening in the corners
- 6 Natural light in the Qibla wall



Built in brick, the riwaq, or colonnade use the additional depth allocated by the cylinder off-centred on the south facing side. Along the southern edge of the Mosque, these colonnade forms a shaded entrance that provides access to the rest of the spaces. An area for ablution is accommodated in the void between the external facade and the prayer room on the eastern side.

### Form and Architecture

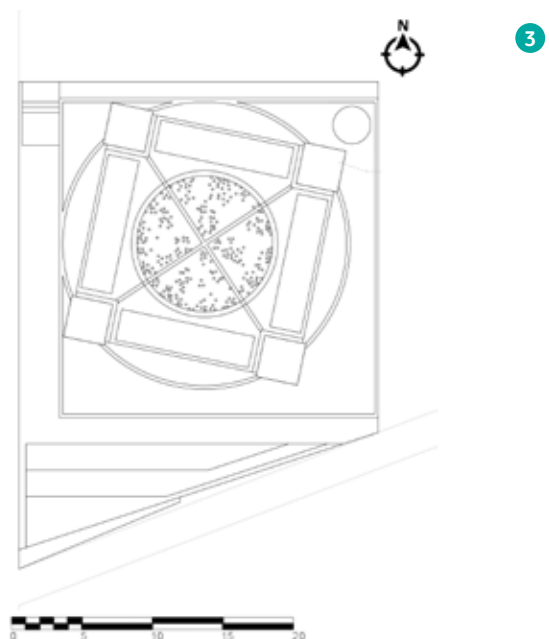
The innovative architecture appears in the quality of space proves that with the use of local materials and dedicated craftsmen, an attempt towards spirituality through light can be achieved.

The small-footprint, one-storey mosque has no domes, minarets, or decorative panels, and fits in with its surroundings. The design illustrates that “domes and minarets are symbolic gestures and symbols are not the essence of devotion or faith. At times, they can detract from the main essence of Islam, which is about complete submission to one God omnipresent. To be in complete communion with God one needs a space that evokes a feeling of spirituality, space where people can connect with the divine.”

Design concept, according to the architect, starts with an understanding of site, followed by a deep engagement with programme. The mosque is minimalist with almost no furniture. Other features include an opening at the front of the mosque which lets a crescent of light through. Natural light filters into the mosque during the day. It is inspired by Sultanate Mosque architecture in Bengal.

The geometry of the building recalls the architecture in Bengal, the simplicity of its materials and structure makes it unimposing and inviting. Bait Ur Rouf Mosque sets a precedent for the innovative use of local materials and design with respect to the immediate surroundings. Mosque raised on a site axis creating a 13-degree angle with the Qibla direction. To solve the 13 degree angle created by the existing site with the Qibla axis, a cylindrical volume was inserted into the square envelope to facilitate the rotation of the prayer hall towards Qibla simultaneously formulating light courts on four sides.

- 1 Walkways
- 2 Opening in the Qibla wall
- 3 Top plan
- 4 Using bricks as main material





A cylindrical volume was inserted into a square, facilitating a rotation of the prayer hall, and forming light courts on four sides. The rotation of the prayer hall at the centre of the building also results in the creation of four voids at the corners. These spaces create small courtyards, with open brickwork allowing light and air to filter into the interior. The hall is a space raised on eight peripheral columns. Eight columns surrounding the hall facilitate an open column-free space featuring a ceiling perforated by circular holes that cast a dappled pattern of light on the floor.

Terracotta brick building is exquisitely scaled, holding the corner in what is a fragmented, chaotic urban landscape. The architect used traditional methods in an attempt to create a language of architecture that takes essence from the legacy of mosque architecture in Bengal during the Sultanate period, while maintaining a contemporary expression.

Architectural expression is unique. The mosque is elegant yet elemental, with spaces that are simple and robust, allowing people to congregate in prayer hall. It shows the compliance with the principals of sustainability, environment, social and economy.

### Interior Design and Technical Aspects

Exposed building materials facilitate maintenance. It utilizes simple, unadorned materials and vernacular construction techniques to immense effect, emphasizing the interplay of light and shadow, and creating a space for religious reverie and transcendence.

The structure provides a communal space for men to congregate before and after prayers. It breathes through porous brick walls, keeping prayer hall ventilated and cool. Natural light brought in through a skylight is ample for the daytime.

Sustainability shows clearly in the function of the ablution uses the additional depth allocated by the cylinder off-centred on the east facing side (figure 18). While, the monsoon rain may pose a problem as the openings for the hot air to escape also allow in rain. However, it is important to keep cross-ventilation even when it is raining, and the rain seems to have good drainage in the spaces where it enters

Apart from being the spiritual centre for the residents, the mosque became a community centre, a place to gather, a place that was orderly, clean, and filled with light and good ventilation.

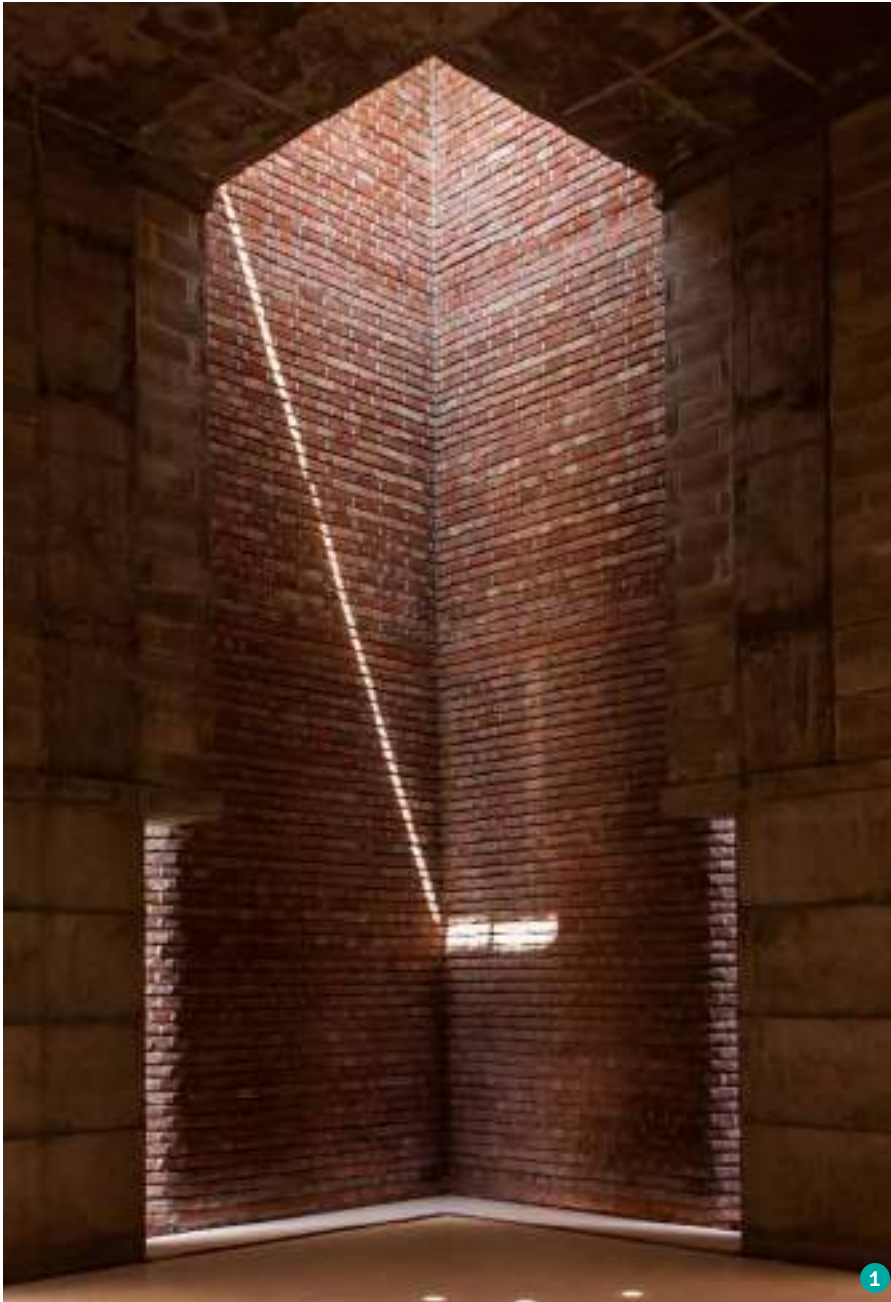
The relation between the building and the inner space environment is homogeneous. It is clear in the design of the prayer hall, which is free of columns, which is raised on eight peripheral columns, in addition to four light courts, random circular roof openings allows daylight into the prayer hall creating an ornate pattern on the floor enhancing spirituality through light. Therefore, the building respected functions and human behavior. Moreover, Qibla direction is marked by a slit of light penetrating the cylindrical brick wall, which forms a light court with the facing flat wall. While a gap in the brick wall denote the direction of Qibla, and then splays it so that, during worship, people don't get distracted by the sight lines onto the street, but see instead the sunlight bouncing off the thickness of the wall.

The prayer hall separates itself from the rest of the structure by open-to-sky light wells between the cylinder and the inner square. Light

The prayer hall is a carefully scaled and proportioned volume that is evenly lit to enhance the feeling of all as equal. Wall creates additional depth for the colonnade and ablution area on the south- and east-facing sides respectively.







- 1 The natural light in the corners
- 2 The prayer hall and the natural light coming from the corners and side walls
- 3 Internal view

pours down on the un-plastered brick walls, giving it a primordial character. While, the interior view showing the minimum materials used, exposed concrete and bricks, where light and ventilation are naturally provided by the simple vocabulary of bricks architecture.

Late afternoon sun showing the long shadows formed by the brick formation, where light and ventilation are naturally provided. It is also one of the well-thought mosques in Bangladesh that is not air-conditioned rather it uses the natural light and ventilation to create a natural ambiance and discourage extravagance in life. Light through the slit marking the Qibla reaches right to the far eastern wall, creating a shaft of light that stretches across the prayer hall.

There is strong relation between indoor and outdoor spaces. This relation is significant in creating special spirit for the visitors. It connects mosque to urban context.

### Conclusion

The Mosque is state of the art design with harmony and serenity that surrounds it. This project has presented new and important concepts in mosque architecture, revealing how it can express a building style, culture and life. What is emerging in this innovative architectural design is the ability of the designer to simply express the spirit and concept of mosque without the need for extravagance. This design

raises important questions that refute the extravagance and luxury of mosque architecture in particular. This design presents evidence of mosque architecture to express concepts related to time, space and circumstance in a simple and inexpensive manner.

The style, materials and how to adapt and interact with shape, color and architectural composition are most prominent features of this simple design. The idea of consciously dealing with light, hierarchy of functions is prominent design concept, which should be carefully considered in future mosque architecture.



2



3





# KING ABDULLAH FINANCIAL DISTRICT (KAFD) MOSQUE

Location: King Abdullah Financial District (KAFD), Riyadh, KSA

Client: Al Ra'idah Investment Company (RIC) / KAFD Development Company

Architect: Omrania and Associates

Land area: 10760m<sup>2</sup>

Building area: 6103m<sup>2</sup>

Year: 2017

Capacity: ± 1466 people

Type: Jumaa Mosque

Mosque architecture has evolved in line with technological constructional advances to reflect various civic and sacred roles as well as cultural, technological, and environmental characteristics. Despite the fact that Islamic history never dictated a stereotype for mosque form, yet many contemporary mosques borrow from traditional and local vernacular certain features that have become part of a common perception about mosque architecture. Such features have been associated with the mosque, as ubiquitous symbols.

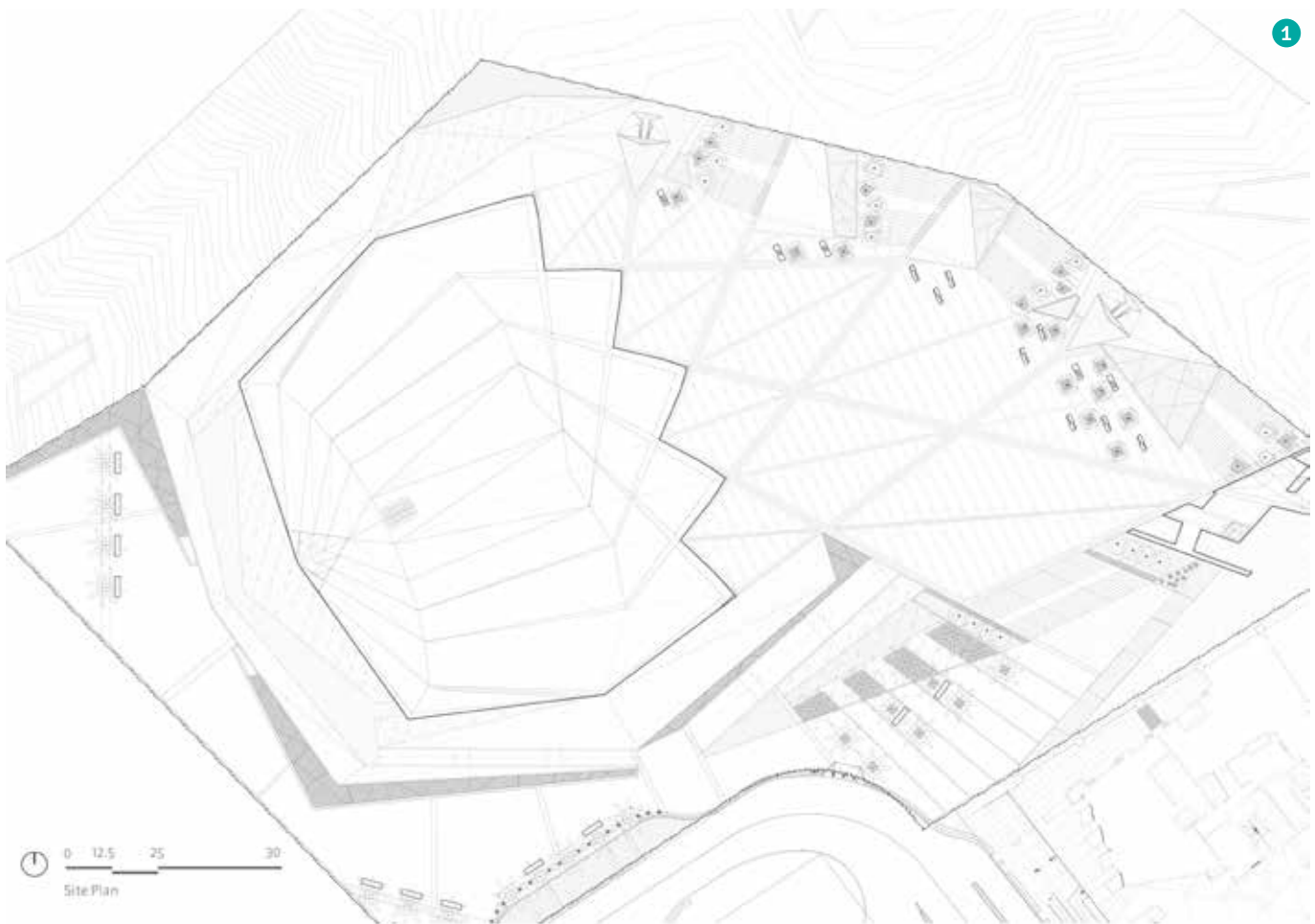
Rather than looking to these traditional forms, KAFD Grand Mosque designed by Omrania attempts to provide a new vision of mosque architecture as a progressive futuristic one within which certain technological, technical and deep embedded themes can be read

within innovation, pushing the limits of contemporary building technology just as the great mosques of the past featured innovative architectural features.

KAFD Grand Mosque is a landmark within a densely skyscrapers forest in Riyadh, it serves as the Friday mosque for visitors and residents of King Abdullah Financial District (KAFD); an all-new mixed-use district in Riyadh. KAFD Grand Mosque is considered to be an architectural centerpiece of the Financial District. The 6,103-square-meter structure sits on a large urban plaza that functions as a public space. Inside, the column-free Mosque interior space can accommodate 1,500 prayer spaces over two levels — a large central hall and a mezzanine.

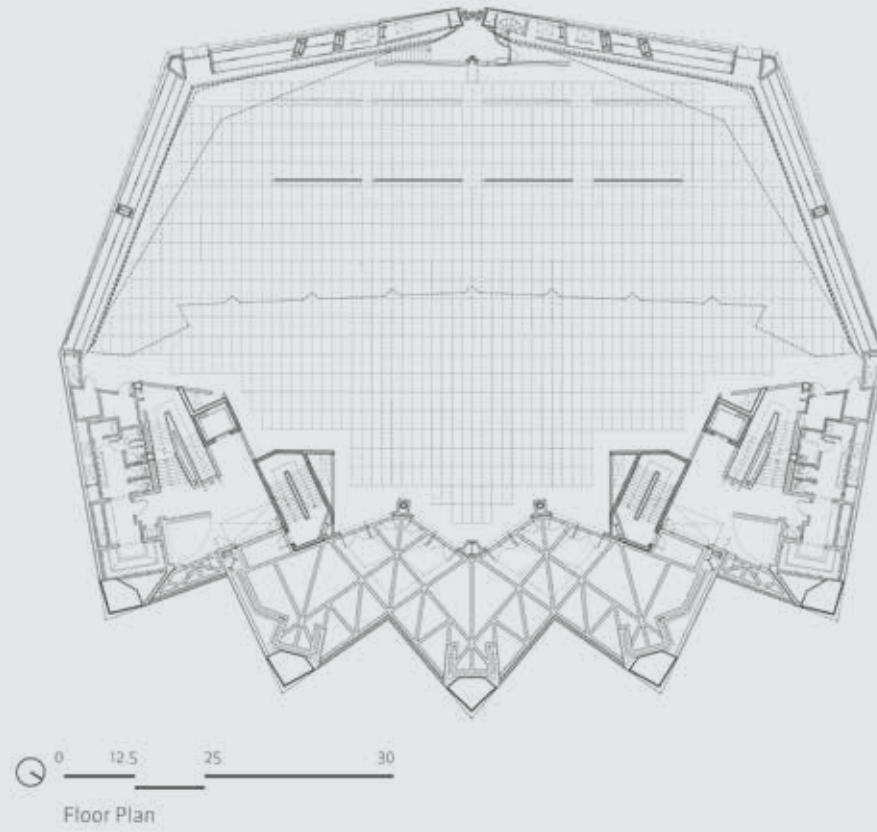
KAFD was the winning project in an international competition organized in 2006 to design a master plan for the new financial district in the center of Saudi Arabia's capital. The master plan by Henning Larsen Architects attempts to merge local urban traditions with advanced sustainable building technology. The project objectives centered on drawing inspiration from the Arabian landscape while creating a sustainable urban core for the city, combining function with innovative design.

- 1 Site plan
- 2 Urban surrounding
- 3 Top view shows the mosque elevation

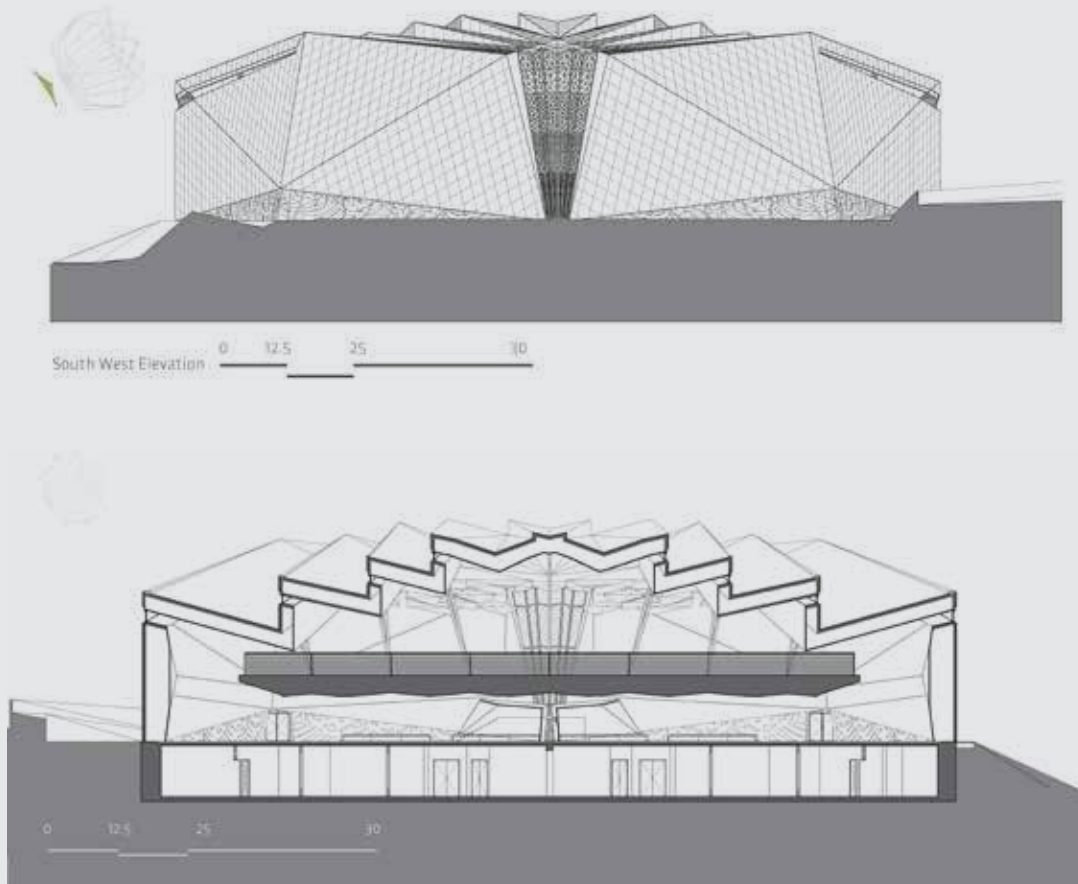




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2



## Site

The urban context of KAFD was the main driver of this 10,000-square-meter project. Omrania began with an extensive analysis of the district's master plan, studying its planning, architectural language, details, and the materials. Instead of thinking of the mosque only as a place of worship, Omrania thought of it as the main plaza of the financial district, a unifying element and a true center of the community.

The site is located at the intersection of three large "wadis", sunken landscaped walkways lined with shops, restaurants, and cafes, surrounded by the faceted towers that are characteristic of KAFD. This location inspired Omrania to place the building meticulously over three levels of the urban fabric and include the formation of a mid-level urban plaza. This unifying urban feature is unique to the KAFD master plan and forms a major connection between the wadi and the street level which signifies the importance of site as a symbolic unifier. The plaza provides a temporal public realm and amenity to the district, prior, during and after the prayer times and functions to serve as an outdoor prayer extension to the mosque during religious celebrations, such as Ramadan.

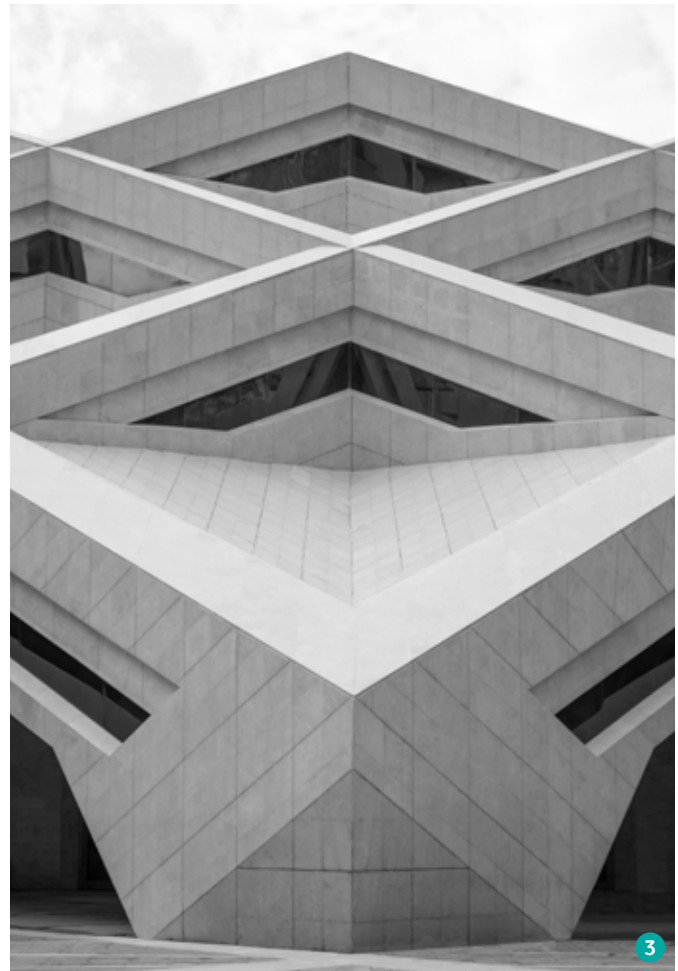
With such a prominent location, Omrania wanted the mosque to have a dynamic, sculptural quality that offered a different experience from every perspective, including, and most importantly, from the towers above, creating a "Fifth Elevation". Omrania intended to give this modern building a bold, modern form, yet one that still felt natural and representative of Riyadh.

The naturally occurring sand crystal known as the "desert rose" represents all these qualities. The formation of rosettes tends to occur when the crystals form in arid sandy conditions, such as the evaporation of a shallow salt basin. Shaped by wind, water, exposure and erosion these crystalline structures, common to the deserts of Saudi Arabia, inspired the unique geometry of the mosque. This reference to the geometry of the desert rose was developed from the parametric, radial repetition of a single mass, similar to elaborate patterns of traditional Islamic iconography. It was then refined to respond to the harsh Saudi climate and the desire to create a single, unified architectural experience from exterior to interior.

## Spatio-Functional Relationships

The Mosque comprises main praying area, daily praying area, women praying area, WC and ablutions, and a plaza that suits large number of congregations during religious occasions. The building is further landmarked by two sculpted 60m minarets. The minarets rise from the wadi to form elegant landmarks which send the message of the

- 1 Ground floor plan
- 2 Elevation and section
- 3 Geometry of the external mass



mu'azzin throughout the wadis in an uninterrupted call to prayer. These landmarks serve as wayfinders in the wadis providing a visual call to the mosque.

The separation between female and male users played an important role in allocating indoor programme. An analysis done by the architect on the usage in typical mosques in Riyadh showed that only male worshippers use the mosques during workdays, whereas female users attend mosques for Friday prayer only. With lower attendance on weekdays, only the mezzanine level will be used to reduce the need of lighting and overall energy consumption. The main prayer hall will only be accessible during events or Friday prayer.

The project is strongly linked with the surrounding landscape and the wider context. As the site is located at the intersection of three sunken landscaped, the formation of a mid-level urban plaza provides a major connection between the wadi and the surrounding streets marking a symbolic unifier the importance of the site. The temporal public realm and amenity serve as an outdoor prayer extension to the mosque, strongly connecting the inner space with the outer surrounding landscape.

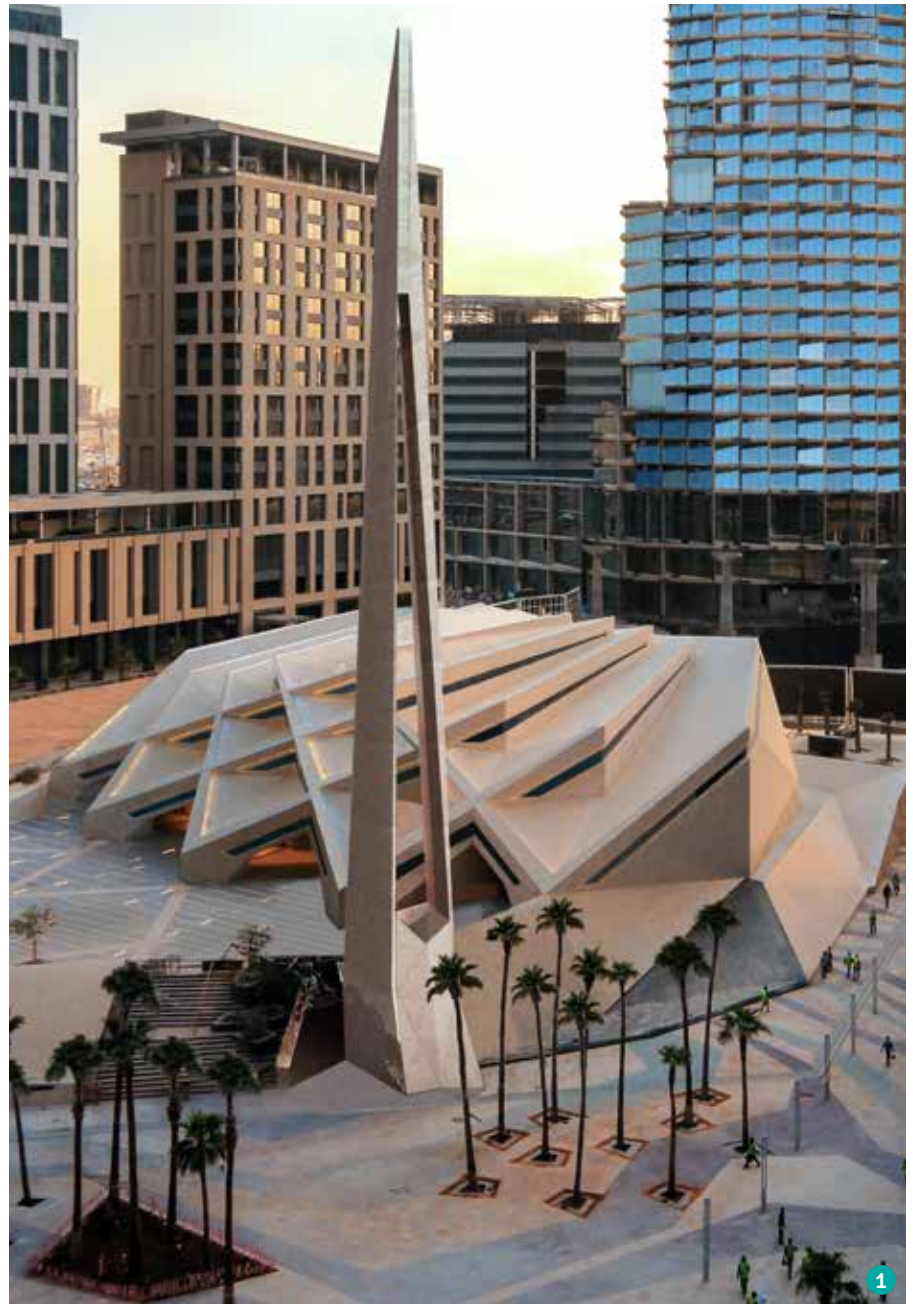
The spatial relationship between the interior space and the exterior is also a stimulating challenge, particularly with the careful use of

**Design is inspired by the desert landscape of Saudi Arabia and the meticulous geometric formations of Arab architecture. Such a novel outcome is evident, and strongly it presents itself among the modern forest of skyscrapers surrounding context.**





- 1 The roof of the mosque will be seen by the users of the multi-stories building
- 2 The mosque located in the Wadi and surrounded by high rise office and residential building
- 3 Entrance from outside







natural lighting. Internally, the dynamic movement is reflected in an exciting faceted lining which stays true to the external form. This delicate yet powerful form represents a visualized interpretation of a crystal cavern in reference to the desert rose.

### Form and Architecture

Design is inspired by the desert landscape of Saudi Arabia and the meticulous geometric formations of Arab architecture. Such a novel outcome is evident, and strongly it presents itself among the modern forest of skyscrapers surrounding context. KAFD Mosque placed amidst high-rise towers, the desert rose inspiration is particularly clear from above, from where it will primarily be viewed, and where the mosque resembles an architectural blossom emerging from the wadi. The building mass appears to rise from earth as if pushed up by seismic forces. The minarets thrust into the sky as if part of the same crystalline upsurge.

The locally sourced stone cladding reinforces the idea that this building is part of desert landscape. Viewed from the ground level of the wadi, visual experience is totally different. The elevated plaza partially conceals the mosque, which is gradually and dramatically revealed as one approaches and ascends the plaza. Its dynamic mass seems to change with the position of the sun, offering a new experience with every prayer.

The chandeliers were designed to not only provide additional lighting to the main space, but also as an acoustical element to further reduce potential echoing. By using a simple form that is repeated at different locations and levels, a focus was given to the central region of the main prayer space.

Triangular Natural filtered light penetrated the interior space through crystalline window slots of varied composition. Slotted windows on the vertical sides of the mosque roof structure illuminate the ceiling and create the sense of lightness to the planes of the ceiling. This is further complemented with shard like features such as the triangulated colored glass muqarnas. Triangulated 'floating' ceiling

sound and light baffles hover above the devoted adding to the 'lightness' and spirituality of the space.

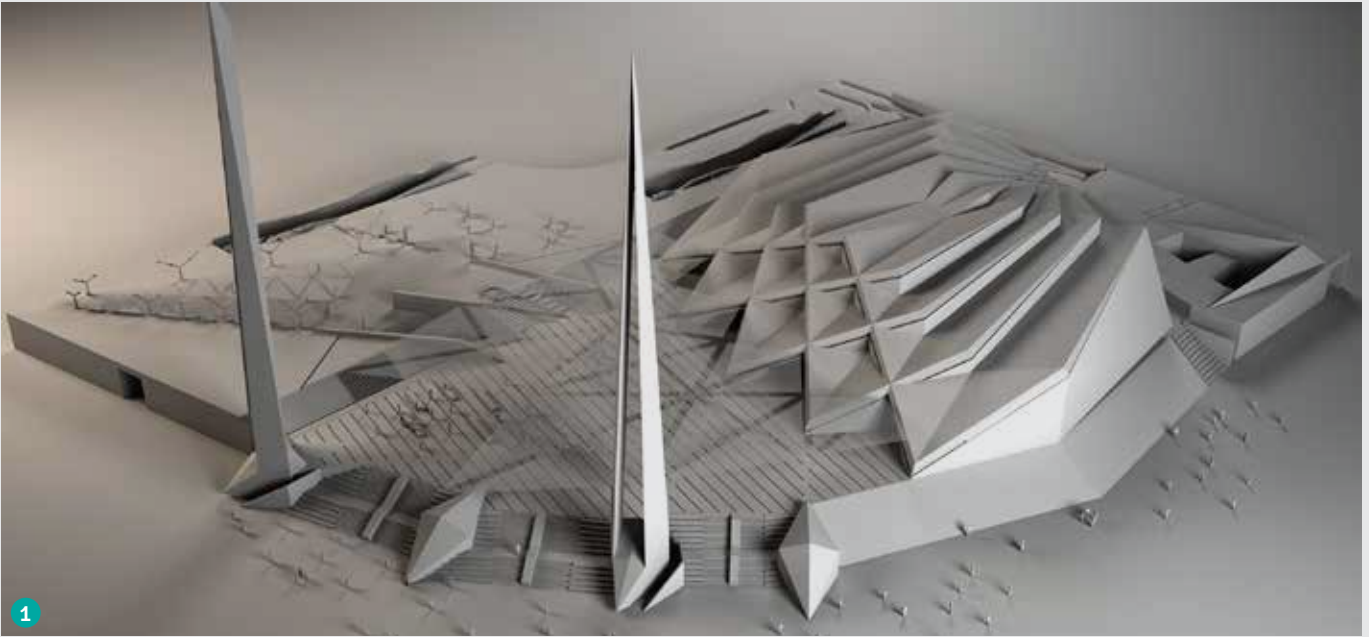
### Interior Design and Technical Aspects

The Mosque accommodates 1466 prayer spaces on two levels in an innovative way. One major challenge was how to develop the geometry to support a column free internal environment. All loads are transferred through the structural skin, which supports a flying mezzanine by hanging supports.

The skin is a tessellated stone, which enhances the notion of crystals in keeping with design principles for KAFD as whole, and in so doing complementing the Masterplan design intent. The skin of the mosque is lifted up at the corners to reveal a crack of light to the interior. These windows contain multilayered abstracted Arabic scripts, to filter light into the main hall during the day and to provide a glowing pattern to the wadi's of KAFD at night. Triangulated 'floating' ceiling sound and light baffles hover above the devoted adding to the 'lightness' of space.

Internally the dynamic movement is reflected in an exciting faceted lining which stays true to the external form. This delicate yet powerful form represents the visualized interpretation of a crystal cavern in reference to the desert rose. The interior is an expression of light as a building material. The interior volume of the mosque rises to 16 m and is brought to life by filtered light through recessed window slots.

As part of reducing the energy consumption of the mosque, a strategy was developed to massively reduce cooling throughout the internal volume. As a backbone of this strategy, the daily prayer of the mosque, which runs at reduced numbers during the week in comparison to the Jumu'ah prayer, is located at the mezzanine level only, where the cooling is applied locally in lieu of the whole space. During the Jumu'ah prayers, ladies occupy the whole upper mezzanine area and men the whole ground floor. Cooling at ground floor is provided from the edge of the mezzanine and at body height within the walls of the main prayer space and only during Jumu'ah prayer.



- 
- 1 The components of the mosque
  - 2 Skeleton of the prayer hall

KAFD Grand Mosque involved a number of innovative technological solutions. The mosque structural enclosure integrates building systems, producing a consistent architectural experience from exterior to interior, complementing modern architectural language of KAFD and respond to desert climate. Creating an integrated building envelope required coordination and communication between the architects, engineers, fabricators, and contractors. Everyone involved with the project shared a comprehensive BIM 3D model that included all the architectural and mechanical elements, as well as all other systems and finishes.

Clad in locally sourced stone, the building's geometric ridges shade it from sun and create spaces for narrow integrated windows. On the western side, the ridges converge to form a crystalline glass mihrab, indicating the Qibla. The mihrab is the focal point of the mosque.

The structural detailing reveal state of the art system, which includes the following: w33 structural slab, steel purlin, roof finish, 50 mm thick reinforced concrete slab, metal suspension system, ceiling, galv. metal stud framing, w33 struc. steel, rain water pipe, metal suspension system, water drain, metal ceiling runner, intumescent fire proofing, 50mm thick concrete slab, roof finish, double, frameless glazing, reinforced concrete wall, exterior wall finish mech.

The advanced building envelope produces a singular, sacred environment to achieve a sound level of performance that lowered the building's energy use. The building shell was designed to integrate the structure and MEP, leaving clean internal and external form, free of interruption, a column-free space, with a mezzanine suspended from the shell and directly supported to the structural system above. The column free space with no view obstructions provides an extended sense of spirituality. This column-free space with intricate structural system was strictly bound to the building envelope.

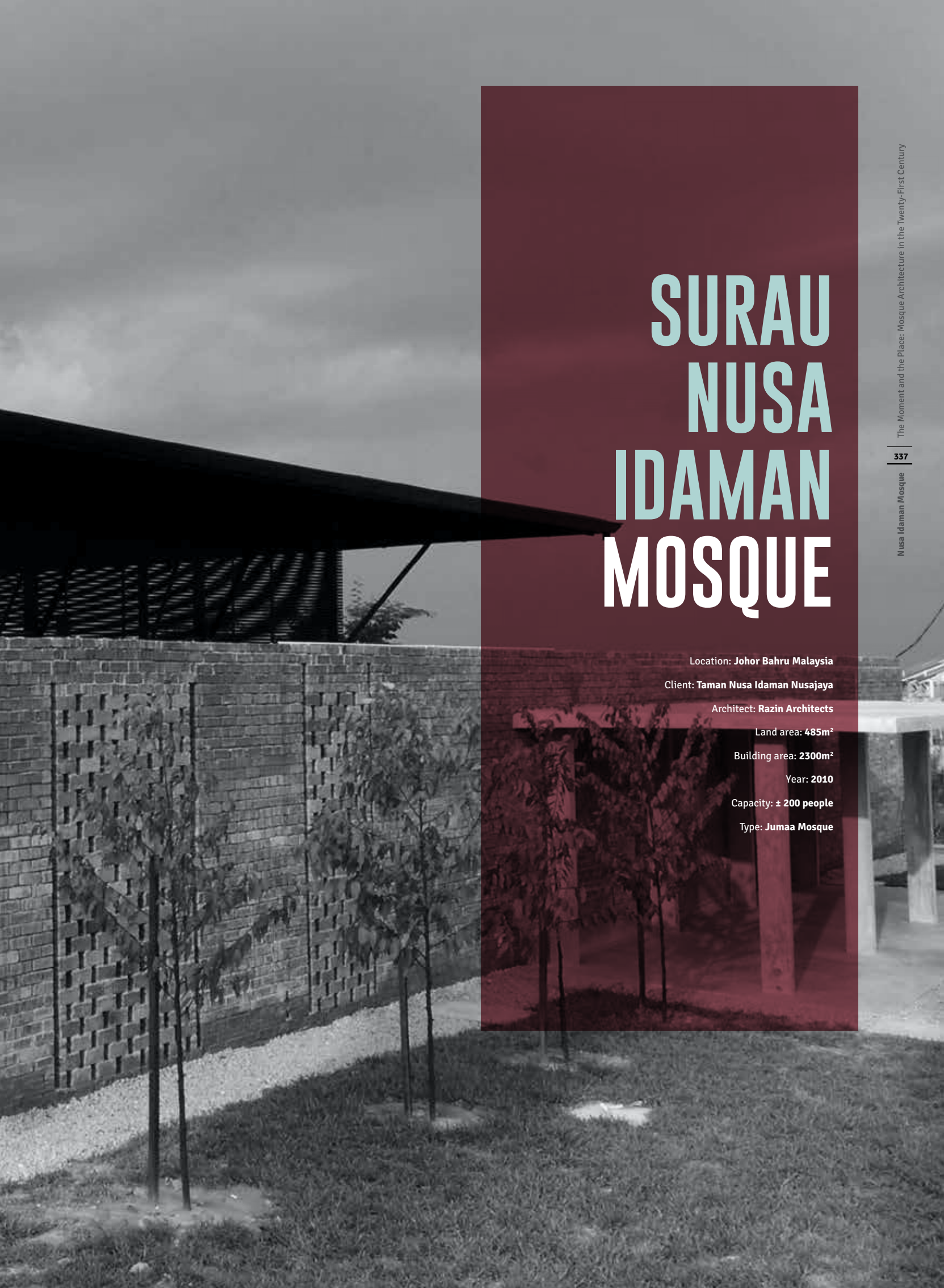
### Conclusion

The rich history of mosque design reflects a long lineage of Islamic innovation that embodies the diverse cultural expressions throughout the Muslim world, the same type of innovation that drives the development of the design of the Grand Mosque. The KAFD Grand Mosque is a reflection of values and innovation and is representative of the progressive development of Saudi Arabia as a nation.

This Grand Mosque presented progressive ideas in architecture and urban planning. It incorporates a number of issues, social, urban, and architectural within a technical structural unprecedented novel model. Architecture as such becomes integral to space and place. The design asserts itself amidst a modern context, highlighting as a mosque certain original values versus today's globalised world. In this sense, mosque architecture becomes a pivotal means to retrieve socio-cultural implicit values as opposed to material physical world.

Mosque architecture becomes an urban experience that can be decoded to de-construct a number of tangible and intangible levels. It becomes a tool to retrieve and deploy socio-cultural concepts and a set of social practices within the spatial organisation of the urban context. This way, it goes as a progressive architecture of the people that aspires to the future.





# SURAU NUSA IDAMAN MOSQUE

Location: **Johor Bahru Malaysia**

Client: **Taman Nusa Idaman Nusajaya**

Architect: **Razin Architects**

Land area: **485m<sup>2</sup>**

Building area: **2300m<sup>2</sup>**

Year: **2010**

Capacity: **± 200 people**

Type: **Jumaa Mosque**

The Nusa Idaman Mosque is local community mosque primarily serving the neighbourhood it was built for. It is a low cost mosque constructed entirely out of money collected through donations. When the mosque project was announced, people starting donating for construction and the mosque was completed entirely with the money collected through donations.

The original Nusa Idaman mosque is a small brick mosque adjacent to the new mosque. The old one had become too small for the community so a decision was taken to build a new one and convert the old one into an entrepreneur center, shops and mosque only for the females of the community. It is presently under renovation and extension.

It is a small local community mosque located in a quiet housing neighbourhood of approximately 500 houses in the Nusa Idaman district of Johor Bahru, the capital of Johor, the southernmost state of Malaysia.

Community participation started with collecting money for the construction, monitoring the construction process and finally selecting the Imam for the mosque. The committee is also responsible for maintenance and upkeep of the mosque. This is an unprecedented culture where a community successfully built a mosque through a systematic and democratic process without any external help.

### Site

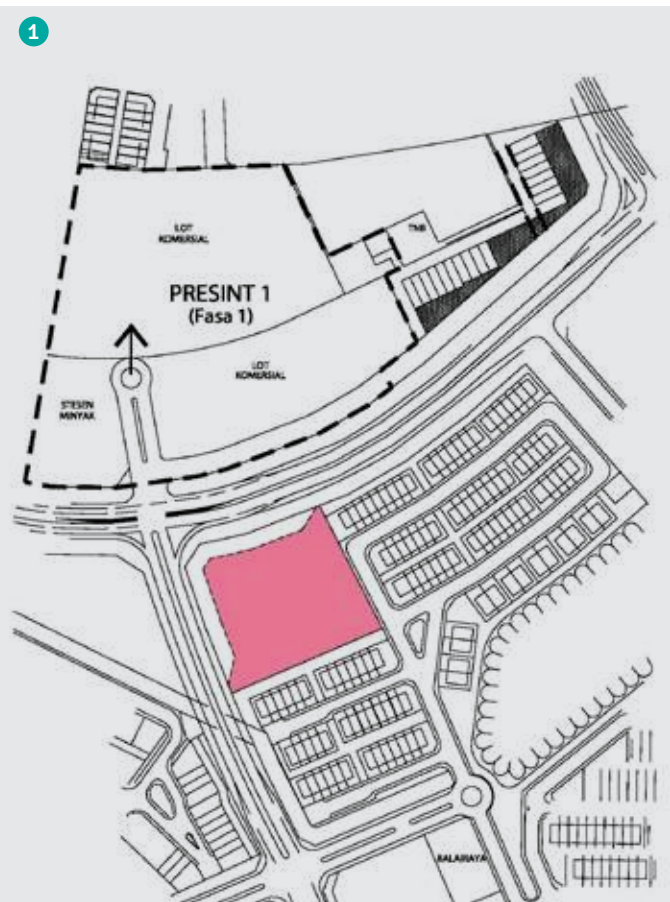
The site is located on the corner of two main roads from where the mosque is visible clearly. On one side of the mosque is the residential neighbourhood and on the other side, across the road is a small commercial area. The mosque is used by the residents of the neighbourhood for whom the mosque was built. But the gates to the site are always open and many people drive in from the passing main road to say their prayers. It is very convenient for a motorist as the car parking is right in front of the mosque.

The mosque has enough area for landscaping. The greenery used in the mosque is in the transition spaces between the interior and exterior, as described in the preceding paragraphs. However the architect planted trees all along the edge of the plot that runs along the two main roads to provide a visual barrier between the busy road and the quiet mosque to give protection from direct solar gain.

The front court, between the parking and the mosque entrance continues till the verandah and then inside the prayer hall. This gives a continuity in aisles from open to semi indoors to indoors in one sequence without any breakage. These 'saff' lines continue on the side courts as well.

The front court is used for public activities and gatherings. Eid festival was celebrated outside. This shows the very open and diverse outlook of the residents committee and the mosque caretakers towards perceiving the mosque as a place for all humanity, above and beyond religious, ethnic and nationalistic lines.

The mosque is accessible from all sides. It has ample space for cars in front and in a car park a few meters away. As it is a small mosque, the walking distance from the car park to the main prayer hall, through the front court and the covered verandah is less than half a minute.

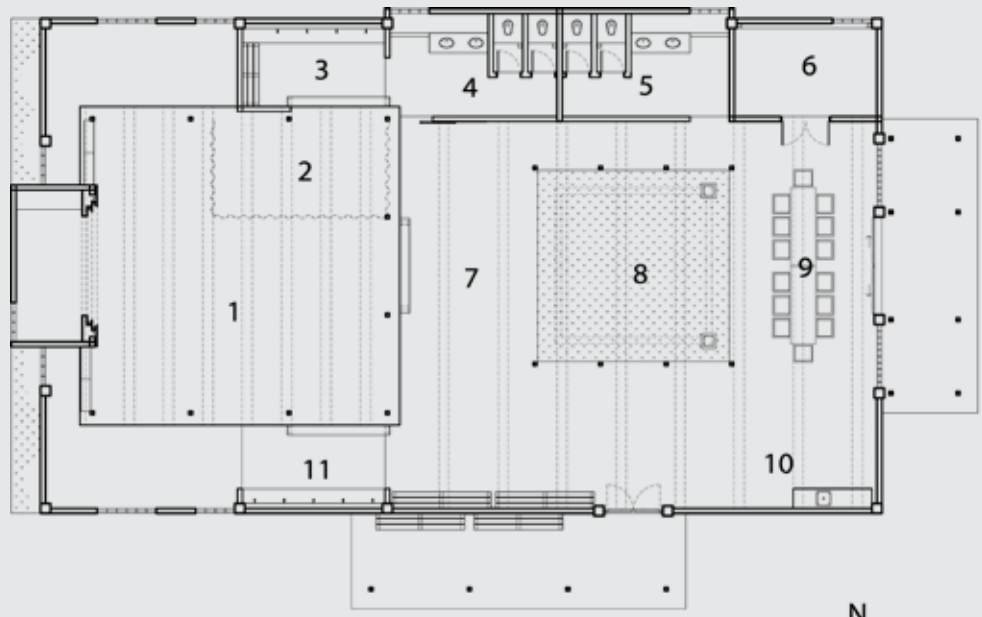


- 1 Site plan
- 2 External view
- 3 Ground floor plan

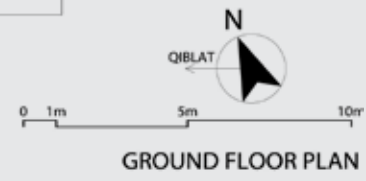


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3



- LEGEND**
- |                       |                 |
|-----------------------|-----------------|
| 1 RUANG SOLAT LELAKI  | 7 SERAMBI       |
| 2 RUANG SOLAT WANITA  | 8 LAMAN         |
| 3 WUDUK WANITA        | 9 SERAMBI       |
| 4 TANDAS WANITA       | 10 PANTRI       |
| 5 TANDAS LELAKI       | 11 WUDUK LELAKI |
| 6 BILIK MANDI JENAZAH |                 |









### Spatio-Functional Relations

In addition to the prayer hall, the mosque also has a large classroom for lectures and classes, not only on religious topics, but on every subject that a teacher would want to teach including sciences and languages. This gives the mosque a wider community outreach and diversifies the role of the mosque as a place for daily activities in addition to the core function of praying. In the early days of Islam, this was the original concept of a mosque: to be the center of all daily activities of people for enhanced community and social interaction, however, in the 21st century, the function of a mosque has reduced to just praying while other activities have been taken out of the mosque. Nusa Idaman Mosque seems to have revived the original concept of a mosque.

The design is simple and functional. The main prayer hall is on the ground floor. There are trees on all three sides. This makes the prayer hall a very vibrant, lively and elating space.

### Form and architecture

The architectural composition seems in perfect unison with the surrounding natural environment, with delicate balance and harmony between the horizontal and the vertical.

It is a very simple and functional building with lots of natural light and greenery. It does not have extravagance or expensive ornamentation or embellishments. It has a simple structure and it is pleasant looking from inside that gives the user a feeling of elation. From the outside it could not have been more simple.

The mosque does not have the conventional features like dome or minaret, as it has no single minaret. However, to balance the horizontal composition of the mosque with lack of vertical element like the minaret, the triangular roof seems to suffice to do the required balance.

The architect has designed green 'transition area' pockets on either side of the prayer hall. These tree and plant filled spaces are both in

- 1 Perforated wall allows natural light
- 2 Main courtyard
- 3 Prayer hall and Mihrab






لَقَدْ سَمِعْنَا بِاللَّيْلِ وَالنَّهَارِ  
قَالَ رَبُّنَا الَّذِي أَلْهَمَنَا  
تَعْبُدُونَهُ وَلَا تَعْبُدُوا مَا  
وَلَا تُرَاعَى وَلَا تُعْبَدُ وَلَا تُعْبَدُ  
مَا دَعَى مَا سَأَلَ لِكُلِّ قَوْمٍ دِينًا

لَقَدْ سَمِعْنَا بِاللَّيْلِ وَالنَّهَارِ  
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مَا دَعَى مَا سَأَلَ لِكُلِّ قَوْمٍ دِينًا



**The design is simple and functional.**  
**The main prayer hall is on the ground**  
**floor. There are trees on all three**  
**sides. This makes the prayer hall a**  
**very vibrant, lively and elating space.**



the inside and outside, and in between. This concept of blurring the line between indoors and outdoors has created a very pleasant effect in the main hall.

The architectural facades are exemplar to provide a unique simple composition, with the least inclination for the use of conventional features long associated with traditional stereotypical mosque architecture. All four façades of the mosque are made of red brick that casts harmony and balance with the surrounding environment.

#### Interior and Technical Aspects

The mosque is essentially made of brick with special touches of concrete used to support the triangular roof, which has a more traditional character with certain degree of abstraction. The architectural form has fused the two successfully where they don't look conflicting. The rigid form of the mosque is 'softened up' by the use of brick in a very traditional way.

The structure of the mosque reflects the identity of Malaysia: a country that is modern yet rooted in its culture, religion and traditions; a nation where tradition coexist in daily life without contradicting one another.

The prayer hall light filters through at day and night giving a calm feel to the mosque. However the quality of the mosque interior has a richer and well-thought out feel as compared to the exterior. The main prayer hall is surrounded on three sides by brick walls. The ground floor walls have covered spaces, which provide shade from direct sunlight in addition to giving a feeling of being surrounded by trees outside and making a strong connection with nature.

The openings on the architectural facades are susceptible to direct sunlight and heat gain but they are covered with roof with play of solid and void. This roof is placed a few feet away from the few openings on the façade and not only does it reduce the influx of direct sunlight, it also creates interesting play of light and shadow inside.

Due to the above innovations, undesirable solar gain is minimal all around the prayer hall.

The exterior wall is made of bricks which has a pattern that creates openings or pigeon- holes to let in air and breeze. The angled brick creates a very artistic relief on the wall. This pattern runs the entire vertical length of the central part of the exterior wall. As the wall is composed of voids, air or breeze passes through the patterned brick wall and enters the interior. Thus, the prayer hall is open to cross ventilation from all sides through the patterned brick wall.

The interior space is spacious and well-lit. The roof gives a very open and lofted feel. However, this spacious feel is brought down to human scale through the single storey Mihrab wall which is reduced in visual scale down to a detail by light-coloured natural material used which provides an exciting play of light, shade and shadow.

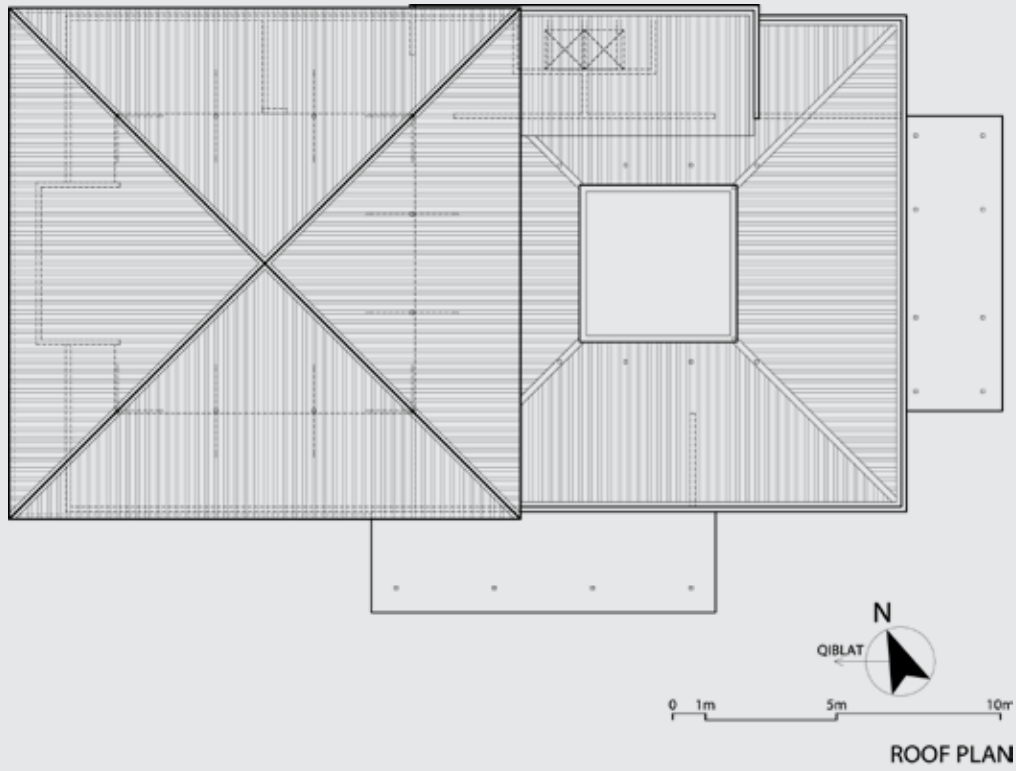
Use of colour has been kept to a minimum with no bright colours except natural ones for brick wall. The colour that attracts the eyes is the greenery and trees visible throughout and around mosque by bringing them in the fold of the interior space visually. The light redish coloured floor blends into the background instead of standing out.



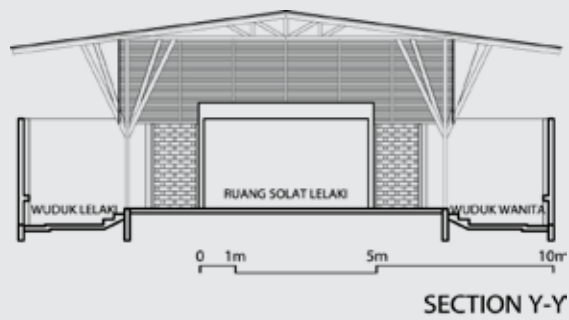
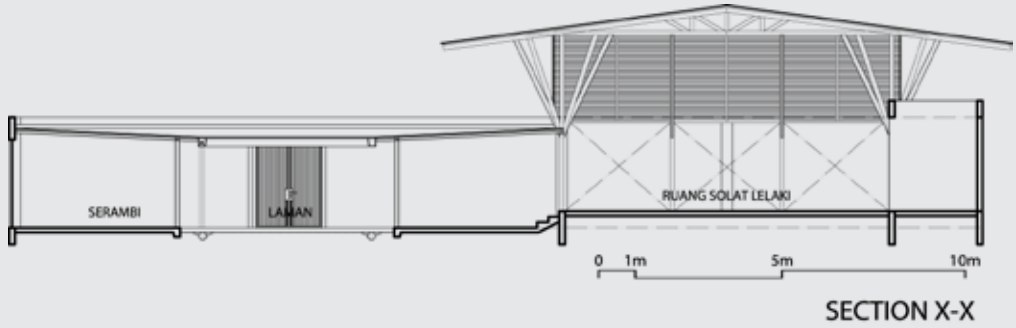
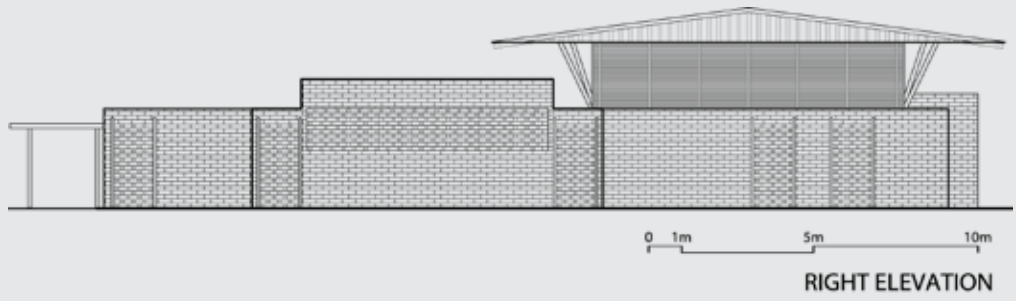
- 1 Main façade
- 2 External wall and roof



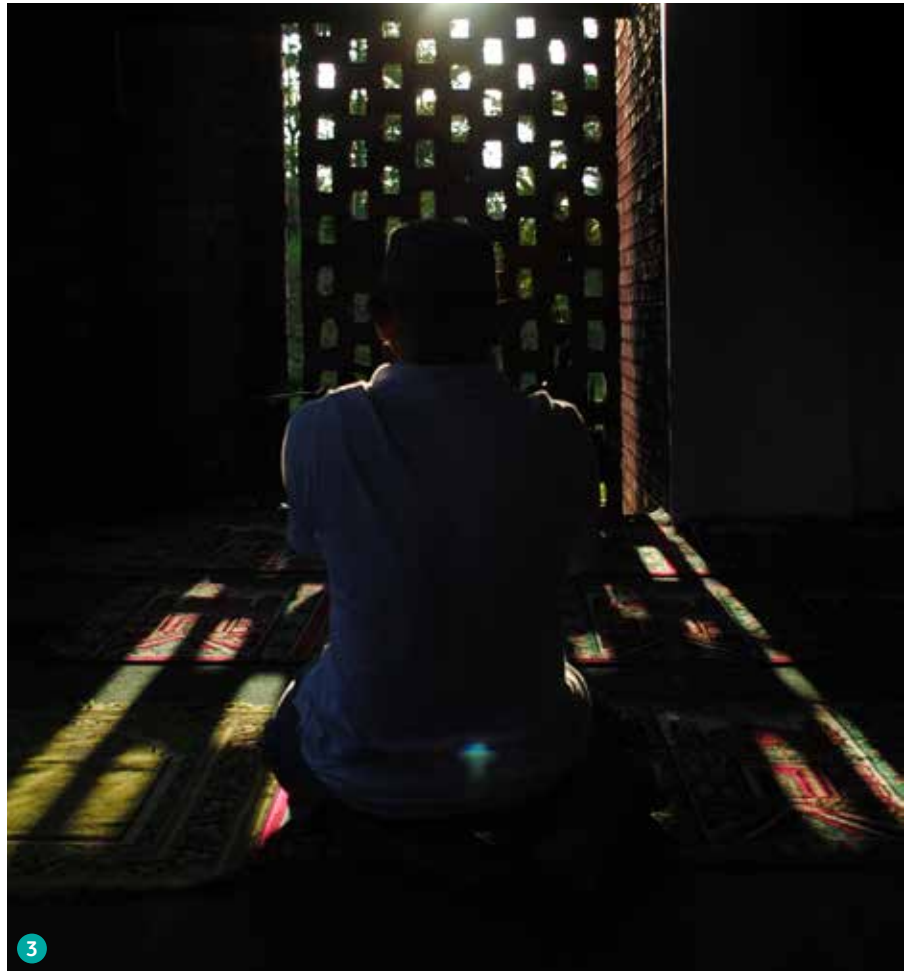
1



2



- 1 Top plan
- 2 Elevation and sections
- 3 Effect of natural light on inner space



### Conclusion

The Mosque sets a good example for community participation and the historic role mosque has played in Islam. It is used besides prayers for teaching and congregation to celebrate festival occasions and to educate children and organizing lectures. In addition, it can host a small library that is also used as a meeting room. The mosque has overtly projected itself as more of a community center. Competitions in the premises of the mosque have also been conducted, in addition to festivals such as a fruit eating festival. The Mosque is an excellent example of community participation and community ownership of a mosque till participation in community gatherings and events.

The most notable aspect is the participation of the community, passion of local residents to come up with new ideas to constantly improve the mosque and the interactive participation of the community. Projects are usually designed, built and then left to the users and the client. It is this emotional attachment and passionate ownership of the mosque by everyone who was part of the mosque that makes this mosque stand apart.

This historic old mosque sets forth an example to draw important conclusions in the extent the role mosque can and should play to provide for local community needs and meet aspirations.

Amir Shakib Arslan Mosque (Lebanon)

350



348

Abdullatif AlFozan Award for Mosque Architecture

Mogan Lake Mosque (Turkey)

374





Concrete Mosque (Bangladesh)

362

# LOCAL MOSQUES

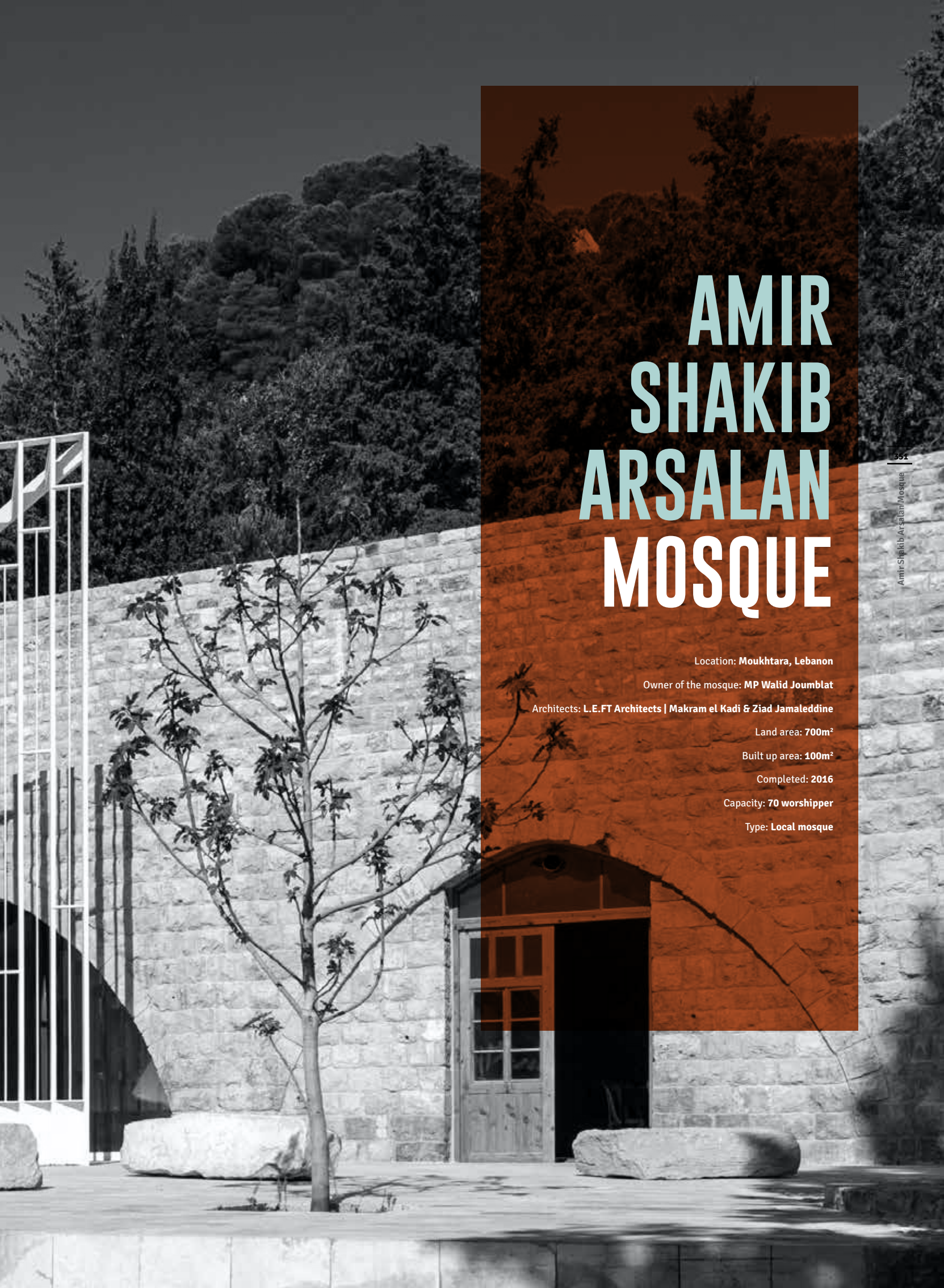
Prayer and Meditation Pavilion  
Mosque (Sudan)

386

Basuna Mosque (Egypt)

398





# AMIR SHAKIB ARSALAN MOSQUE

Location: **Moukhtara, Lebanon**

Owner of the mosque: **MP Walid Joumblat**

Architects: **L.E.FT Architects | Makram el Kadi & Ziad Jamaledine**

Land area: **700m<sup>2</sup>**

Built up area: **100m<sup>2</sup>**

Completed: **2016**

Capacity: **70 worshipper**

Type: **Local mosque**

The mosque was the centre of attention of orientalists, scholars and Western architects, given its pivotal place in traditional built environment, as well as Arab cities. They were fascinated by its visual impact upon its surrounding built environment. Le Corbusier observed in his 'Journey to the East' the monotheistic power of mosques in turning towards invisible visual point represented by the Black Stone, which is unique only to Islam and not prevalent in other religions. He writes:

“The orientation of the axis of every mosque on Moslem soil toward the black stone of Kaaba is an awe-inspiring symbol of the unity of faith.”

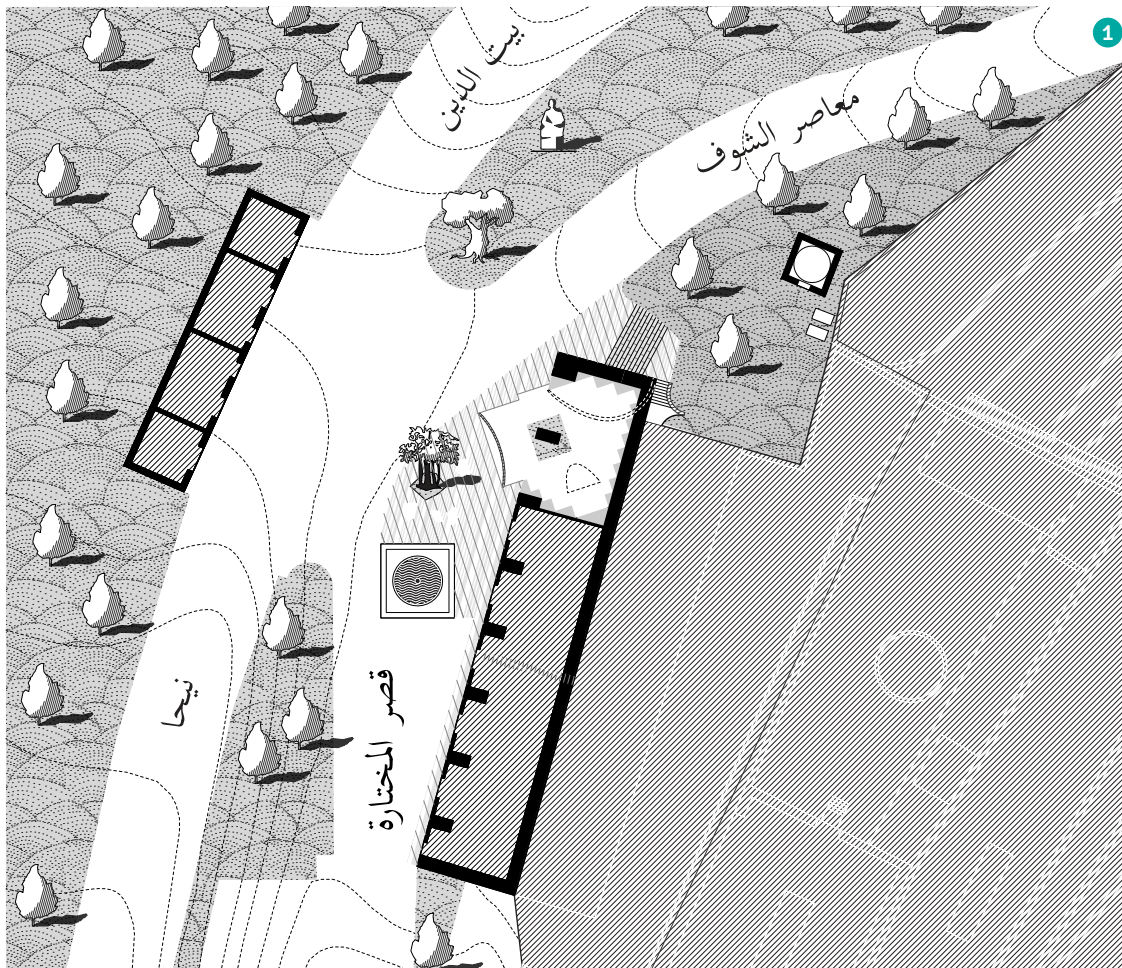
Within the context of the philosophical relationship between architecture and Islamic meaning, and the power of monotheistic thought on architecture and philosophy, some historians and theorists accounted for the role of mosque architecture on society, values, legacies and inherited societal practices. In *Understanding Islamic Architecture*, Muhammad Arkoun writes:

“The contention is that architects, more efficiently than intellectuals and scholars, can resist the devastating violence generated by the confrontation of religion, state and society (Din, Dunya, Dawla - the three major concepts developed in classical Arabic thought) at a greater scale than all societies and cultures in history have achieved thus far. This means that all important architectural achievements contribute either to strengthening the dominant ideology in any given historical tradition and political order, or to creating a breakthrough in the inherited, imposed system of values and beliefs.”

The building history of this small mosque, given the Islamic cultural and political character, inspired architects to envisage architecture, politics and culture as the design concept. The designer invokes Arsalan's character on a symbolic edifice in Mokhtara to emphasize the objection to hostility of larger cultural and social space, which may somewhat give credit for the functional parameter due to security measures preventing access.

1 Ground floor plan

2 External view



## Site

Prince Shakib Arsalan Mosque was opened on September 18, 2016. The project started two years earlier in an annex of Al Mokhtara Palace. The annexed building which dates back to the 18th century witnessed the addition of a floor in the 1970s. This addition was removed as part of mosque's building plan, so the building was restored to its original state.

This small mosque of 100m<sup>2</sup> included a renovation of an existing masonry cross-vaulted space and the addition of a minaret, grafted onto the existing structure as a symbolic landmark, next to the 18th century old palace. A new civic plaza was created in what was before an adjoining parking space, turning the frontage of the mosque into a public square with seating, water fountain, ablution space and shading under a newly planted fig tree.

Since current structure is not oriented towards the desired direction of Qibla and Mecca, the design philosophy was first based on adjusting Qibla direction through a series of transformations and additions to existing building. With these additions, the direction towards Mecca has become the architectural tool or language that has been created to shape the new mosque and its surroundings, from inside the mosque to outside square.

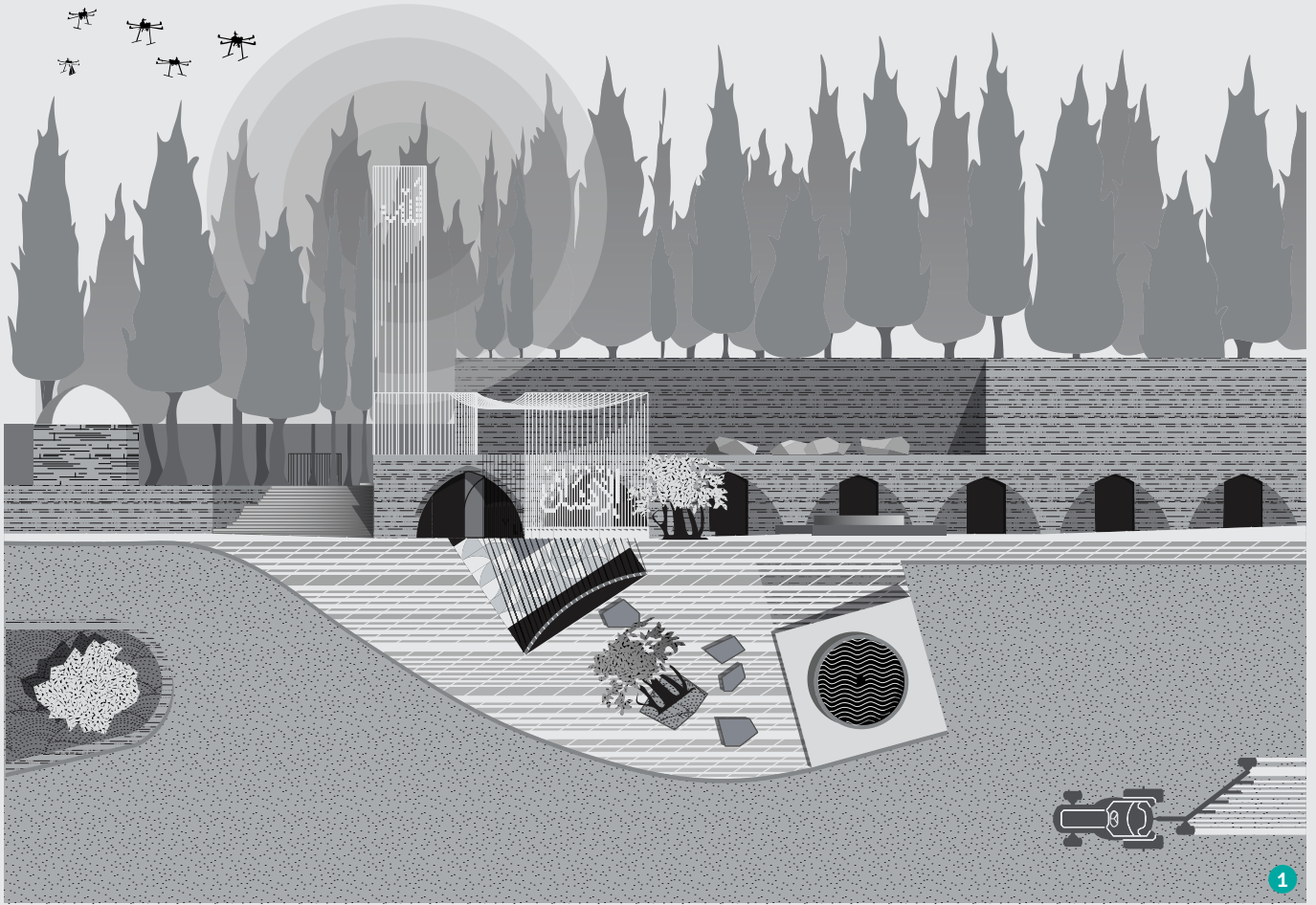
## Spatio-Functional Relationships

Prince Shakib Arsalan mosque comprises old interior spaces and openings, new tectonic elements with abstract minaret, a wave-shaped dome, transparent hollow, and calligraphy. The front yard was crafted around an 18th-century water space, shaded by a fig tree that exchanges breezes with surrounding olive trees and old staircase along the back wall opposite mihrab.

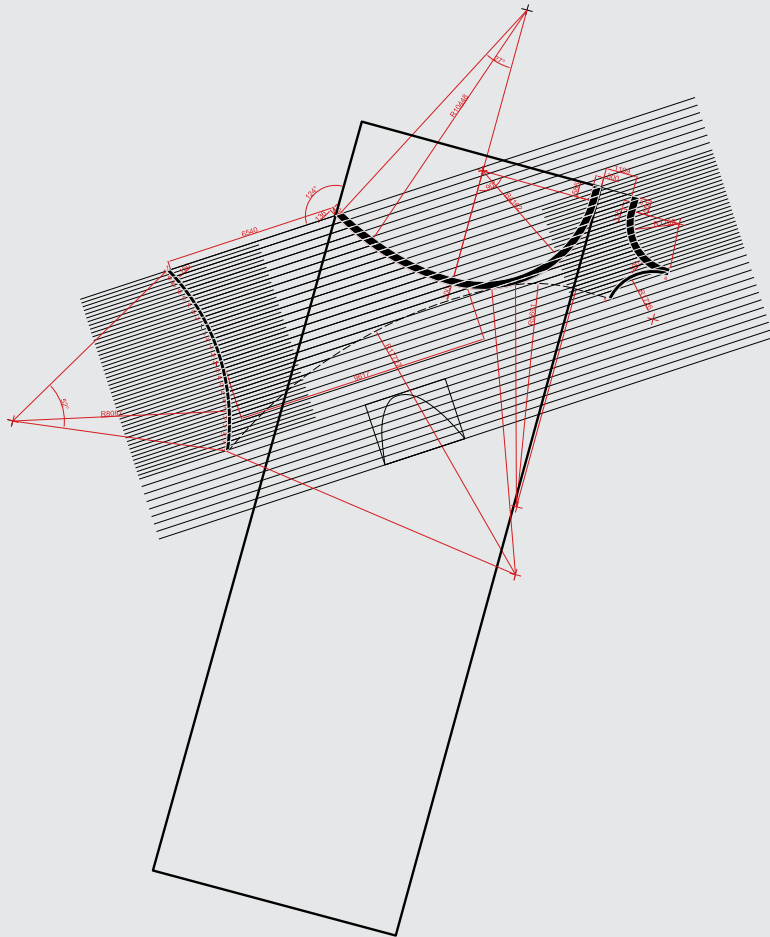
The design philosophy has been based on identification of the main elements through which the architect dismantled common stalemate in the popular form of mosque design. Instead of following typical analog system, often consisting of three sizes, the box, the dome, and the minaret, different language was made up of thin, undulating metal tectonic elements that adhered to the old building. Such tectonic elements rise in the mosque mass providing metallic abstract minaret and dome that point to Mecca. Such elements create dialogue with old building horizontally and vertically. Main interior space comprise skylight that connects space with the minaret. At the top of the minaret is a three-dimensional lettering of the name of Allah, which looks solid from the inside and nearby façade, ventilated, blurred by sky conditions.

The architect defines interior design, emphasizing physical and moral connection between elements and spaces. He confirms the connection between man and inner space crowned by the sky, hence roaming between inner spaces and suggestive elements. Man experiences the essence of human action and the word "Iqra". A word written on a wood-made that tops the mosque's face opposite mihrab. It is articulated in Islamic philosophical thought, as it is linked to human gratitude in divine act of human reading achievement. It is an act of conscious mental choice, slipping from the recitation and its metaphysics, to the truth of the flesh and speech that makes man every day.





2



- 1 Site plan and elevation
- 2 Analytical study of the metal form
- 3 External spaces
- 4 View in the prayer hall



### Form and Architecture

On the architectural level, the mosque's new slender minaret is linked horizontally through a gently concave canopy to a curved wall at the plaza level, delineating a portico for the mosque below and creating a transitional space between the interior of the mosque and the street as well as adding privacy for the mosque from the outside.

Rather than the traditional inert Cube/Dome/Minaret volumetric expression of normative mosque architecture, the design offers a lighter reading of the typology, an ephemeral tectonic presence. The concave/convex planar surfaces of the new mosque brace the outside plaza and street in an extroverted geometry, and link it to the interior religious space which would have been usually hermetically enclosed. As we now know, these two spaces (the religious space within and the public space of the street without) were hybridized where the public space of the city intersected the public space of the mosque.

Atop the minaret, the word Allah (God) is folded bi-axially from the minaret's elements, becoming an integral structural element that is reinforcing the fragile steel armature, rather than being just an ornamental applique. The minaret becomes a frail element that without this calligraphy would fail structurally and break apart. Seen from one side, Allah is read in an affirmative solid form, a modern interpretation of calligraphy. Seen from the other side, Allah is read as a void, a doubtful absence, but also emanating the immaterial and ineffable idea of God, in reference to the lack of representation in Islam. It is also a deconstruction of the word from a meta narrative to a text that can be interpreted, through the creation of a physical rather than an optical lenticular. Here, the text is literally a construct, and writing/reading happens between the lines. The Minaret itself is the same height as the surrounding trees; and when seen frontally becomes transparent to blend with its context.

Below, at the curved wall entry to the mosque, the pixelated and equally structural word *Insan* (Human) is added to the steel plates, to create a Hegelian dialectic of God/Man. The juxtaposition of both renders the idea of humanity as an integral part of the equation with God, placed in a new dialectic, and becomes a reminder of the humanistic tradition of Islam, which places Islam at the origin of the 18th century Enlightenment project. *Insan* becomes the epicentre of the ground plane of the plaza. As one moves around the mosque, the planar reading of the mosque formed by the steel plates becomes transparent, while the two words (Allah/*Insan*) becomes more apparent, and vice versa. The overall lightness of the mosque's tectonic sits also in a relational contrast to the heaviness of the Moukhtara's palace stone volumetric.

A fig tree shades the new plaza, and creating a book end along with the existing Olive tree on the other side of the street, alluding to the



On the inside of the existing structure, the minimal intervention involved a 'white-out' of the concave surfaces of the vaults, using special Lime mix brought from Aleppo in Syria, as well as the introduction of a new skylight that cuts the vaulted space to register the direction of the Qiblah wall towards Makkah, and bring light towards the Mihrab space.









1

- 1 Prayer hall from inside
- 2 Top view
- 3 Skylight in the prayer hall

'Fig and Olive' verse (sourat at-teen) in the Quraan and referencing the importance of both trees in Christian tradition as well. At the threshold, the entry to the mosque's hall, which accommodates both women and men in the same space, is articulated with a chiseled glass façade holding two wooden doors that float within it.

#### Interior and Technical Aspects

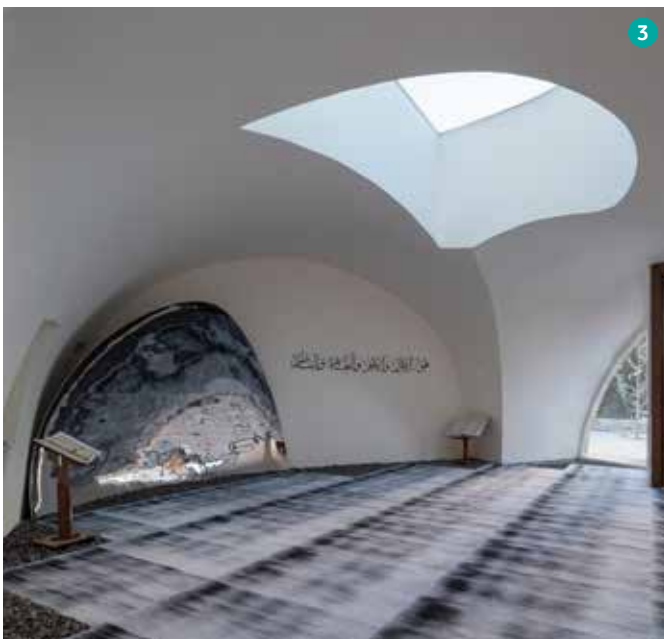
The envelope of the mosque is strictly formed of thinly sliced painted white steel plates, faithfully angled in a parallel direction to Makkah. When looked at obliquely from an angle, the steel plates stack to compose a complete and comprehensive volume of the mosque. Looked at frontally, the mosque's volume, through its thin planarity, disappears and blends with its visually rich historical backdrop, momentarily suspending belief in its actual presence.

On the inside of the existing structure, the minimal intervention involved a 'white-out' of the concave surfaces of the vaults, using special Lime mix brought from Aleppo in Syria, as well as the introduction of a new skylight that cuts the vaulted space to register the direction of the Quiblah wall towards Makkah, and bring light towards the Mihrab space.

Through the skylight, one can see the minaret in a visual looping of exterior back to the interior, linking visually the disassociation in typical mosques between the sound and the vision.

Similarly, the Mihrab is articulated with a concave reflective polished stainless steel arched wall that, though pointing towards Makkah, implodes this axuality by merging it visually with the wider context, bringing outside in, and distorting the interior spatiality of the mosque.

Towards the back of the mosque where the actual reading of the Quraan would happen, a wooden wall with the word Iqra' (read) is articulated in relief. It references the argument and interpretation that the first word in the Quraan, Iqra'.



A neglected element has been added by introducing it into the innovative context of the mosque in the design process, the acoustic element of the Athan. The architects collaborated with artists to achieve a sound of Athan from the vein to pair with the internal pulse of the body and to avoid the acoustic sharpness. It is also characterized by incorporating gender characteristics to reflect the call to prayer. This sound test was also reflected in the material of the mosque, through the carpet of the land in which the digital voice movement of Athan was weaved as decorative elements abstract.

The brilliant image the designer succeeds in drawing inside the mosque is the humanization of the interior space and presented as an icon that opens the mind of the visitor on beautiful meanings in simple beauty and architectural elegance and visual colour vocabulary. The warmth of colour also interacts with the rays flowing through the drop-down windows with the floor from which the details have been wiped out.

### Conclusion

The mosque has been reinterpreted by architects in the same way as a variation in the standard call to prayer with the idea of speaking instead of singing, as opposed to words where the listener focuses on meaning rather than melody. Overall, the design of the mosque is a celebration of the ethics of modernity as it relates to tectonicism in the concept of abstraction, time, and representative of the continuity of human traditions in Islam. It is a dialogue in which architecture is a weapon.

In this project, the architects offer an example of hybridization and experimentalism that dismantles the edifice, humanizes it, provides it with touches of life, from two models of varying size, importance, influence and location. The first model is the Rustom Pasha Mosque in Istanbul designed by Sinan in 1573 which was a hybrid. It was held in and around it and intertwined with many social facilities such as suqs, bathrooms, squares and work offices. The second is the Aisha Bakkar Mosque in Beirut, designed by Jaafar Touqan. On the basis



- 1 Skylight newly opened in the old roof
- 2 Outdoor view
- 3 Internal detail
- 4 The symbols of Allah at the top and Human at the bottom





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of these two models, despite the vast disparity between them, the idea of humanization and the ease of communication of temporal disadvantages is manifested.

The mosque provides an example of the deliberate conscious interaction between elements and vocabulary, all of which have merged to draw an iconic image of contemplation and study beyond what is perceived. It is an attempt by architects to send encrypted images and messages invoked by the walls of this small edifice to establish reading contradictory dichotomies that could meet in one architectural and artistic work.



4





# CONCRETE MOSQUE

Location: **Chittagong, Bangladesh**

Owner: **Osman K Chowdhury and family**

Architect: **Kashef Mahboob Chowdhury**

Land area: **440m<sup>2</sup>**

Built up area: **132m<sup>2</sup>**

Completed: **2014**

Capacity: **95 worshipper**

Type: **Local mosque**

Existence of a 220-year old mosque at site, conserved from its dilapidated conditions, was a generator of the new scheme. The new structure is designed in such a way that it forms a backdrop to the old mosque – an act of reversal in which the past is brought to the fore and the new comes after the old.

The architecture was inspired by the age-old heritage of crafted ornament in the various traditions of mosque building. From the outside, however, the treatment is spare: Only the texture of the concrete is caught by sunlight. Inside, the ceiling structure and finishes, inspired by Moghul and Nasrid examples, serve as a counterpoise to the otherwise bare, simple treatment everywhere. A departure for the architect in using such treatments, it is an ode to the craftsmanship and mastery of techniques which have adorned great mosques since centuries past.

The Concrete mosque located in Chittagong city, Bangladesh. Owned by Osman K. Chowdhury and Family. After visiting the Chandgaon mosque in Chittagong city, they appreciated its design and decided to hire architect Kashef Chowdhury to design their family's new mosque. The mosque located in a rural area with no main roads around; only a 4 meters wide street leads to the mosque location surrounded by agricultural land and beautiful nature. A primary school located at the North-West corner of the mosque. The mosque was built in 2015 with a total area of 438 square meters that can hold up to 300 worshippers, while the sahan provides another 666 praying spaces.

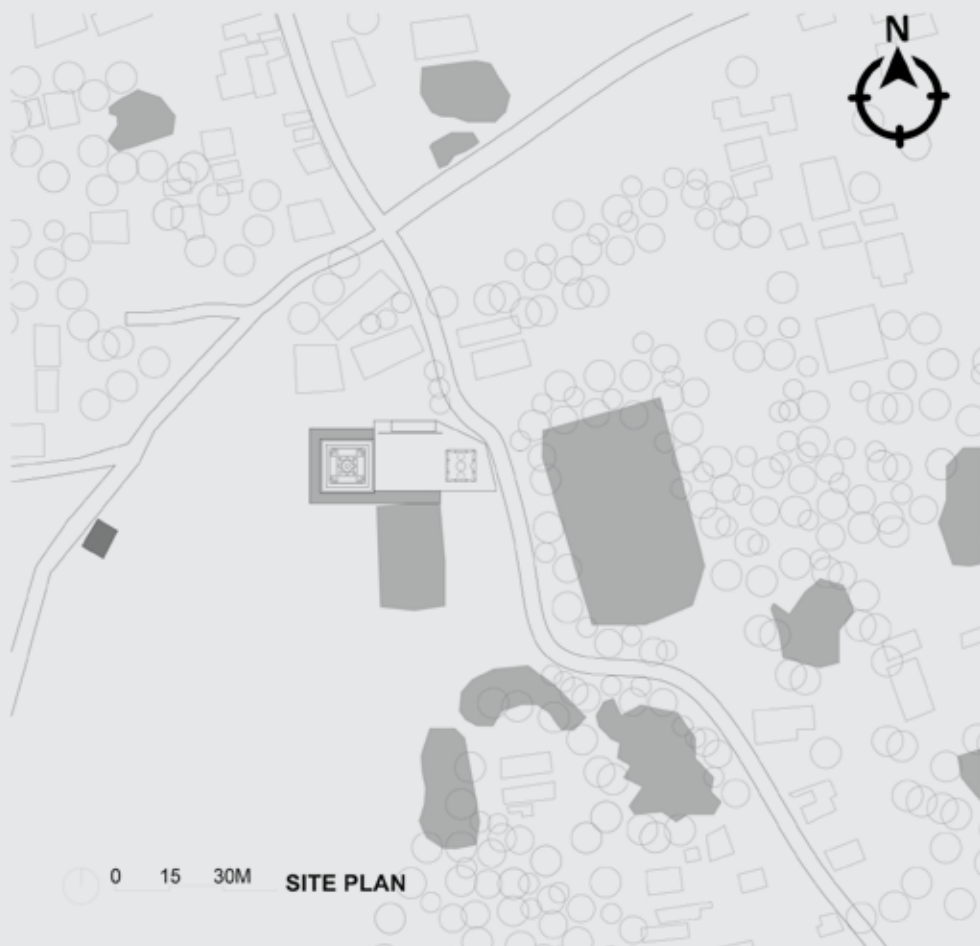
### Site

The mosque has a beautiful natural landscape. It is surrounded by a pool from three sides raised on a platform. A seating bench extends from the southern edge of the shallow pool, providing seating and relaxing area for worshippers in the sahan of the mosque.

The small 220-year-old mosque of Asgar Ali Chowdhury occupied this location where it used to be the original neighbourhood mosque and now converted to a heritage building. The concrete mosque was built besides "Asqar Ali" mosque. It is an example of a contemporary mosque. It is surrounded by agricultural land with small water body. The architecture was inspired by the age-old heritage of crafted ornament.

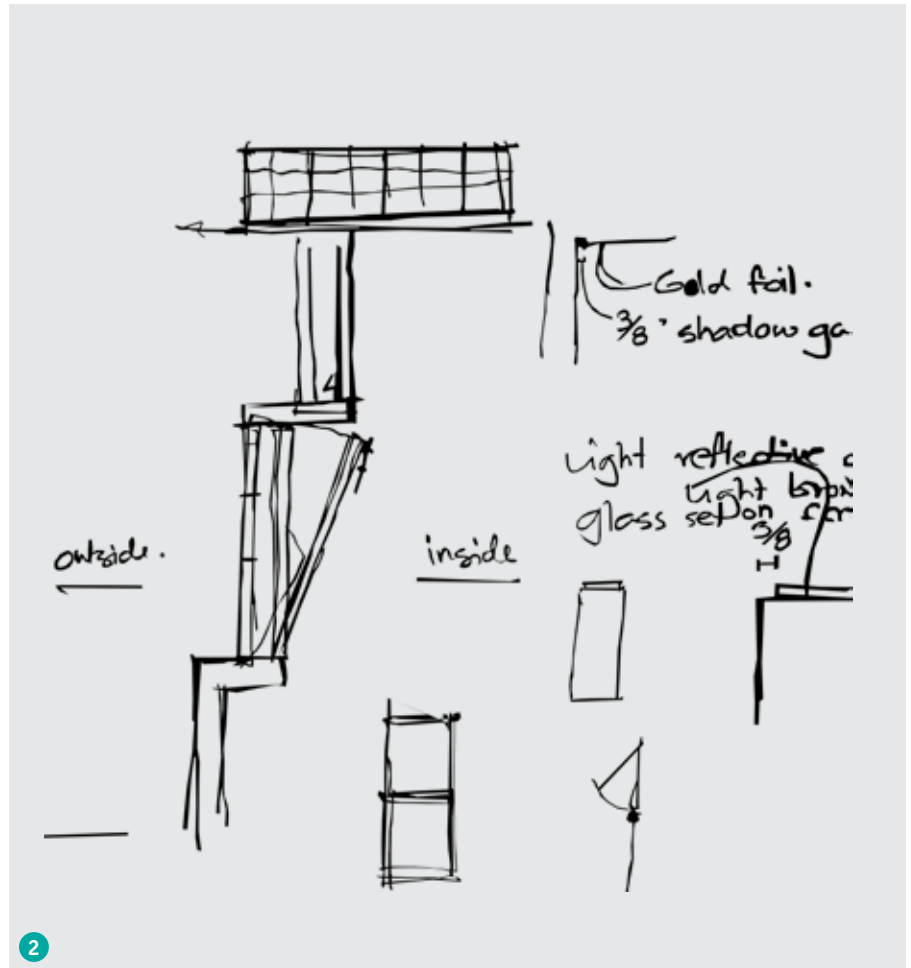
According to the architect, the owner's initial intention was to demolish the old mosque to make space for a new mosque. The architect advised the owner to preserve the old mosque due to its significant historical and architectural features as it represents Islamic Mughals period in the area. Therefore, the old mosque played a critical role in the conceptual design of the new mosque as "it forms a backdrop to the old mosque – an act of reversal in which the past is brought to the fore and the new comes after the old."

The architect placed the new **Concrete** mosque at the western edge

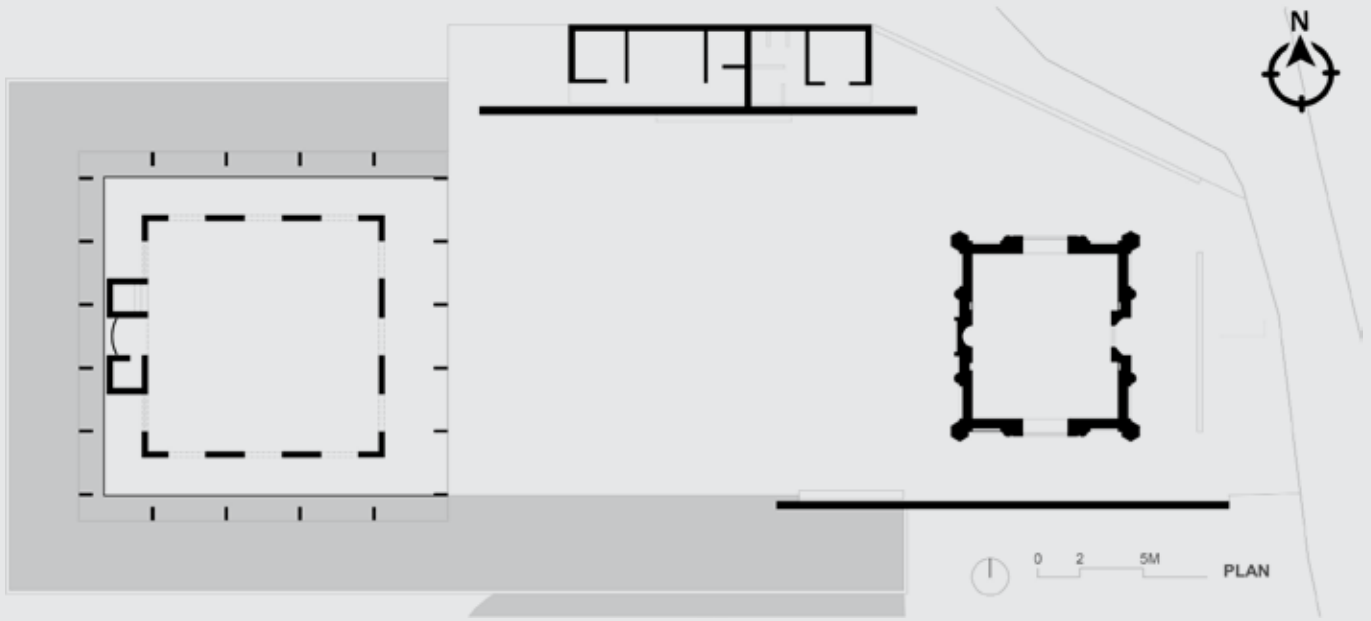




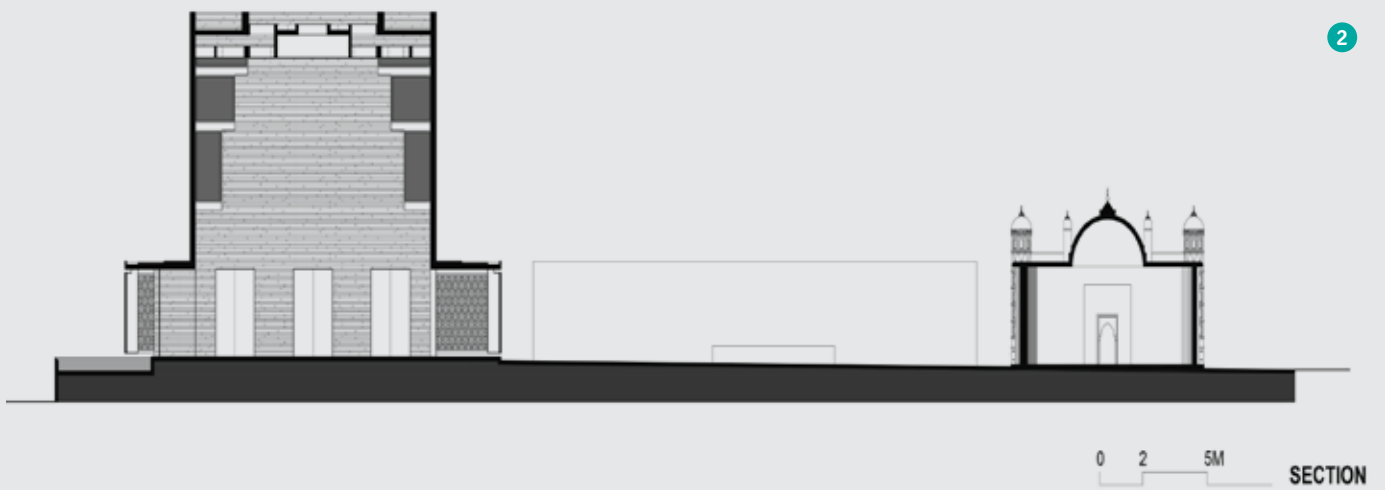
- 1 Site plan
- 2 Analytical sketches for the mosque
- 3 Main elevation

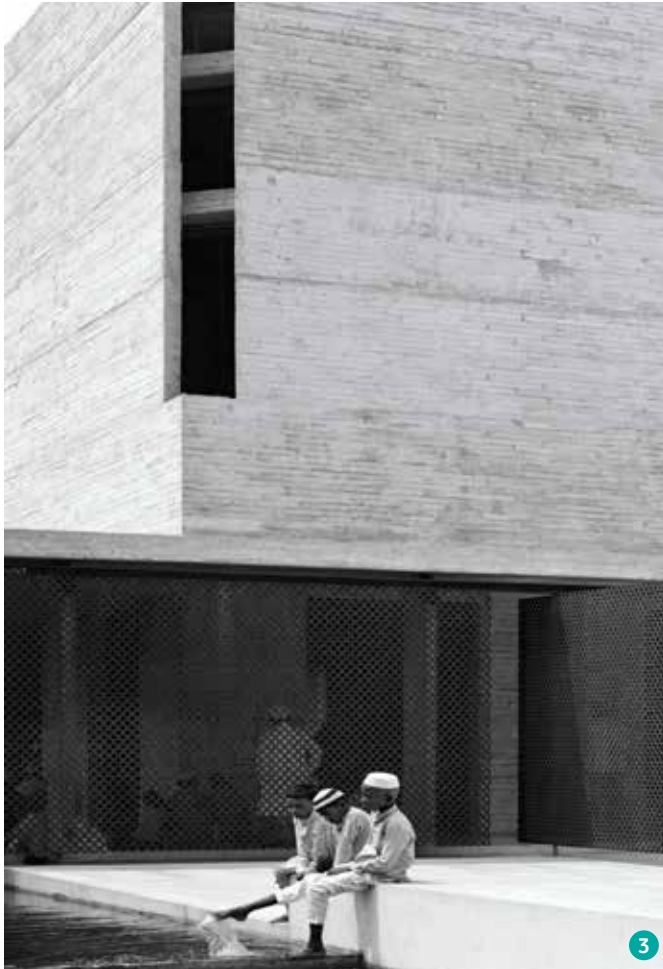


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of the mosque plot where it is surrounded by a lake from the southern and western sides, by the old mosque from the eastern side, and by greenery and residential buildings from the northern side.

The mosque could only be approached from the east side, next to the old mosque. The open space between the two mosques acts as Sahan that can hold extra number of worshippers adding to the mosque capacity. The Sahan is open to the lake from the southern side; one can appreciate the natural lake from the Sahan. While a low bench defines the boundary between the lake and mosque, the bench ends before reaching the old mosque, allowing visitors and worshippers to reach lake by floating steps that descend into the lake so that worshippers can wash themselves in the lake before praying. Another significant feature is the graveyard next to the old mosque which was reserved for owner's ancestors. To the northern side of the Sahan are the toilets and washing facilities.

The importance of site location, has inspired the designer to respond to climate and the environmental parameter, for this the building uses natural means to accommodate the tropical climate. The generous central volume with its high windows uses the "stack effect" to ventilate the space naturally. To further facilitate cooling, a pond is augmented by shallow pools on three sides of the mosque. Scented flower bearing trees have been planted to grant an olfactory experience. The materials here are some reflective and absorbing which are rough concrete wall, huge wooden doors, some glass works.

The lower volume is clothed in a cast-iron grille – provides security and shade but also lets in filtered light and breeze. It protects an ambulatory space which gives protection to the main prayer hall, whose doors can be left open for ventilation during rains.

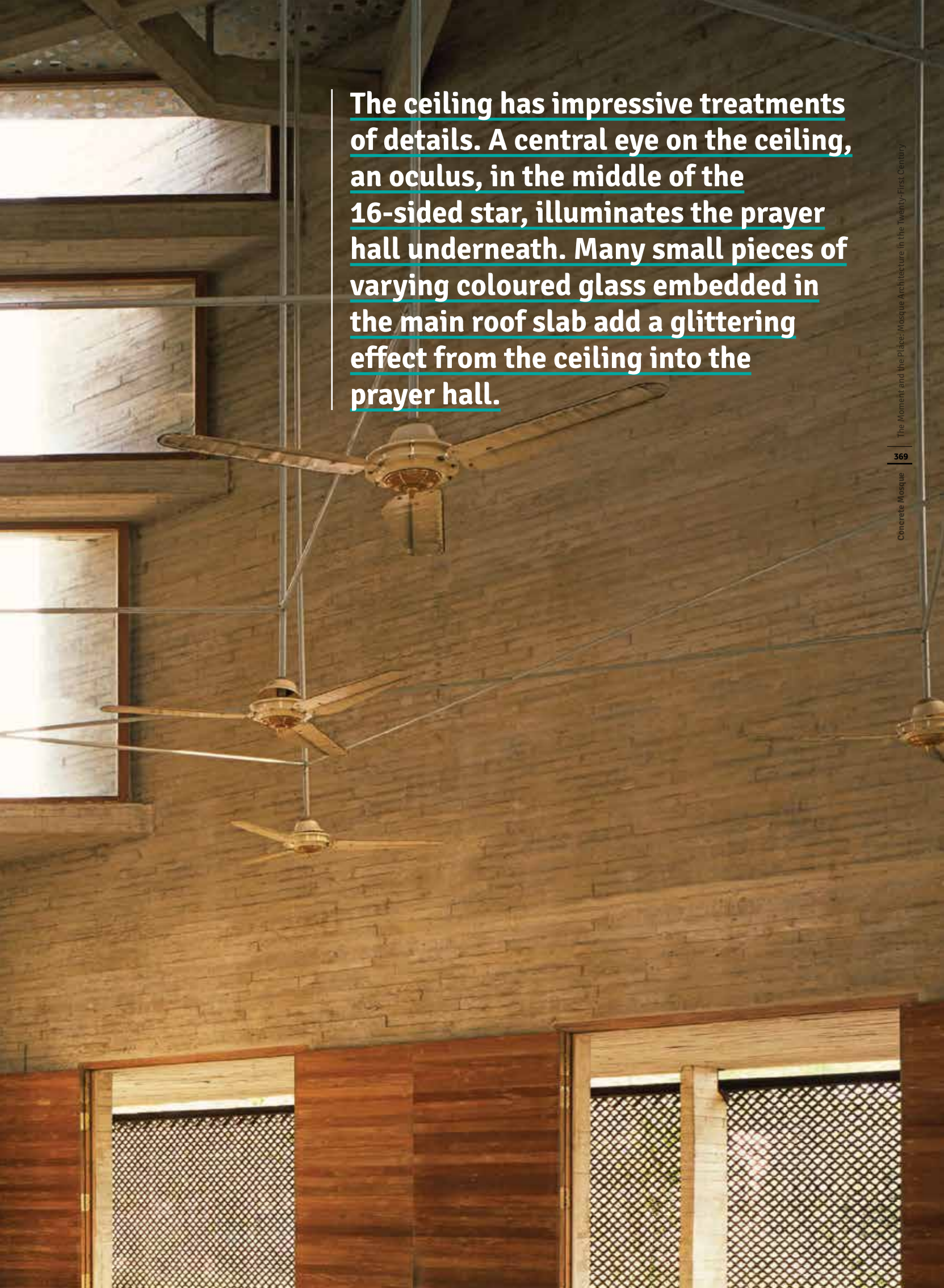
The mosque has only one vehicular access from a 4-meter wide rural road. It is easily accessible by pedestrians from surrounding neighbourhood as well.



- 1 Ground floor plan
- 2 Section
- 3 Mosque mass and surrounding spaces
- 4 Details



**The ceiling has impressive treatments of details. A central eye on the ceiling, an oculus, in the middle of the 16-sided star, illuminates the prayer hall underneath. Many small pieces of varying coloured glass embedded in the main roof slab add a glittering effect from the ceiling into the prayer hall.**





1

### Spatio-Functional Relationships

The Concrete mosque, with its substantial vertical cuboid volume and rough concrete exterior, dominates its surrounding environment. Although its form is simple cube, it is unusual for a mosque; it has no exterior architectural elements, nor does it have any characteristic features that would help associate with the traditional arch-and-dome elements of mosques. In contrast to the usual look, it has a featureless, tall central cuboid volume. The architect's idea was that the new mosque would have a **muted kind of expression** in contrast to the rich features of old mosque.

The cuboid volume sits on a seemingly wide platform of concrete and a cast iron-grille that enhances its overall standing. Its shape and materials are also unique and rarely found in conventional mosques. Red-burned bricks, the most popular local material used in Bangladesh, are implemented in most of the country mosques, but not at this mosque. Instead, concrete was the primary material used in this mosque, not only as structural, but also as an exterior and interior finishing material.

### Form and Architecture

The central cuboid volume of the mosque emerges like a modern monolith, embellished on the outside with only the heavy textures of white concrete cast in wood. The lower volume is clothed in a cast-iron grille, which, generated from a traditional motif of the old mosque, provides security and shade but also lets in filtered light and breeze. The grille protects an ambulatory space which itself gives protection to the main prayer hall, whose doors can be left open for ventilation during heavy rain. An experiential climax occurs when one enters the main hall with its soaring volume animated by light entering through slender apertures in corners and the ceiling.

A significant feature in this mosque design is the simplicity and clarity. From a square base measuring 12 by 12 meters rises the cubic volume into 12 meters high. A horizontally floating concrete slab surrounds the cuboid volume from the four sides, casting a shadow

and protecting the prayer hall from the regular heavy rain. A cast-iron-grille with Islamic geometric pattern is hanged over from the floating concrete slab, giving more security and shade to space and has huge wooden doors in the main prayer hall.

The sheer cuboid volume was a response to the client's preference for a dome atop the prayer hall. The architect convinced the client that the role of dome in traditional mosques used to be response solution to a structural problem of how to roof a large span needed in prayer halls. With the advent of modern construction materials and methods, however, domes in modern and contemporary mosques are increasingly becoming symbolic elements rather than functional.

The prayer hall opens from all sides, even the Qibla/Mihrab wall, by tall and wide wooden doors that would facilitate air circulation, a vital consideration in such a tropical, warm and humid climate.

### Interior Design and Technical Aspects

The new building uses entirely natural means to accommodate the tropical climate of its site. The generous central volume with its high windows uses the stack effect to ventilate the space naturally. To further facilitate micro-climatic cooling, a pond on the south - the predominant direction of airflow - is augmented by shallow pools on three sides of the mosque. Scented flower bearing



- 1 Screen walls allow light and maintain privacy
- 2 Ceiling detail
- 3 Sectional detail for the prayer hall

trees have been planted in specific positions to grant an olfactory experience to visitors.

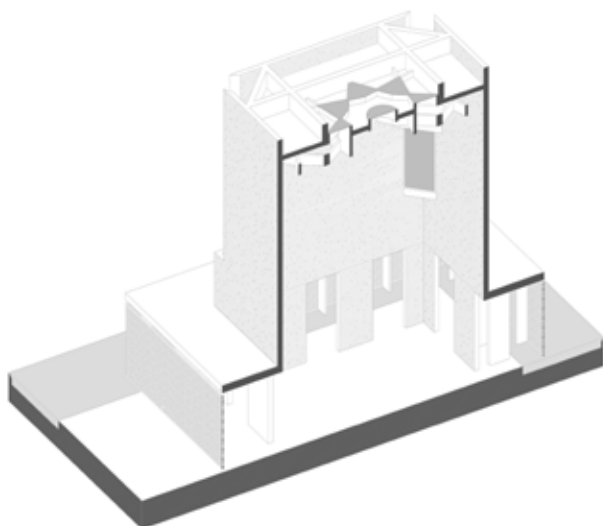
Another striking feature of the Concrete mosque is the meticulous and deliberate approach in dealing with the concrete as a primary building material, not only as core structural material but also as constructional, decorative interior and exterior finishing material. The exteriors, as well as the interiors, are rendered in one method and finishing technique: dense textures of white concrete cast in wood.

The design of this mosque implements significantly sustainable, environmental, and social strategies. It has no air conditioning; it relies on the passive cooling and ventilation systems. It makes the most of its natural surroundings, such as the pond and vegetation around. To maximize the cross-ventilation, the architect avoids using any boundary walls. Instead, he created shallow pools around the mosque.

Symmetry and balance dominate the interior space and elements inside this Cuboid mosque. On each side, there are three doors with no other features except for the Qibla wall side. There are three openings in this wall; two of these are for doors, while the third is used as mihrab. Two small concrete boxes flanking the central opening one is the minbar with three concrete steps, while the other one is a store for audio systems. A tempered-glass panel running between the two concrete boxes defines the mihrab niche.

The ceiling has impressive treatments of details. A central eye on the ceiling, an oculus, in the middle of the 16-sided star, illuminates the prayer hall underneath. Many small pieces of varying coloured glass embedded in the main roof slab add a glittering effect from the ceiling into the prayer hall; all enhance the richness of the spirituality that one would experience inside.

The flooring of the prayer hall takes its pattern from the required space dimension of a single worshipper; a rectangle of 80 cm by 120 cm, hence, it defines each worshipper's place within the mosque. This







- 1 Keeping the new mosque beside the old one
- 2 The plan concrete façade
- 3 Concrete feeling in the external façade



pattern helps worshippers to maintain proper praying rituals by lining next to each others in a very straight line. This flooring made of cast-in white terrazzo with small particles of white Italian marbles.

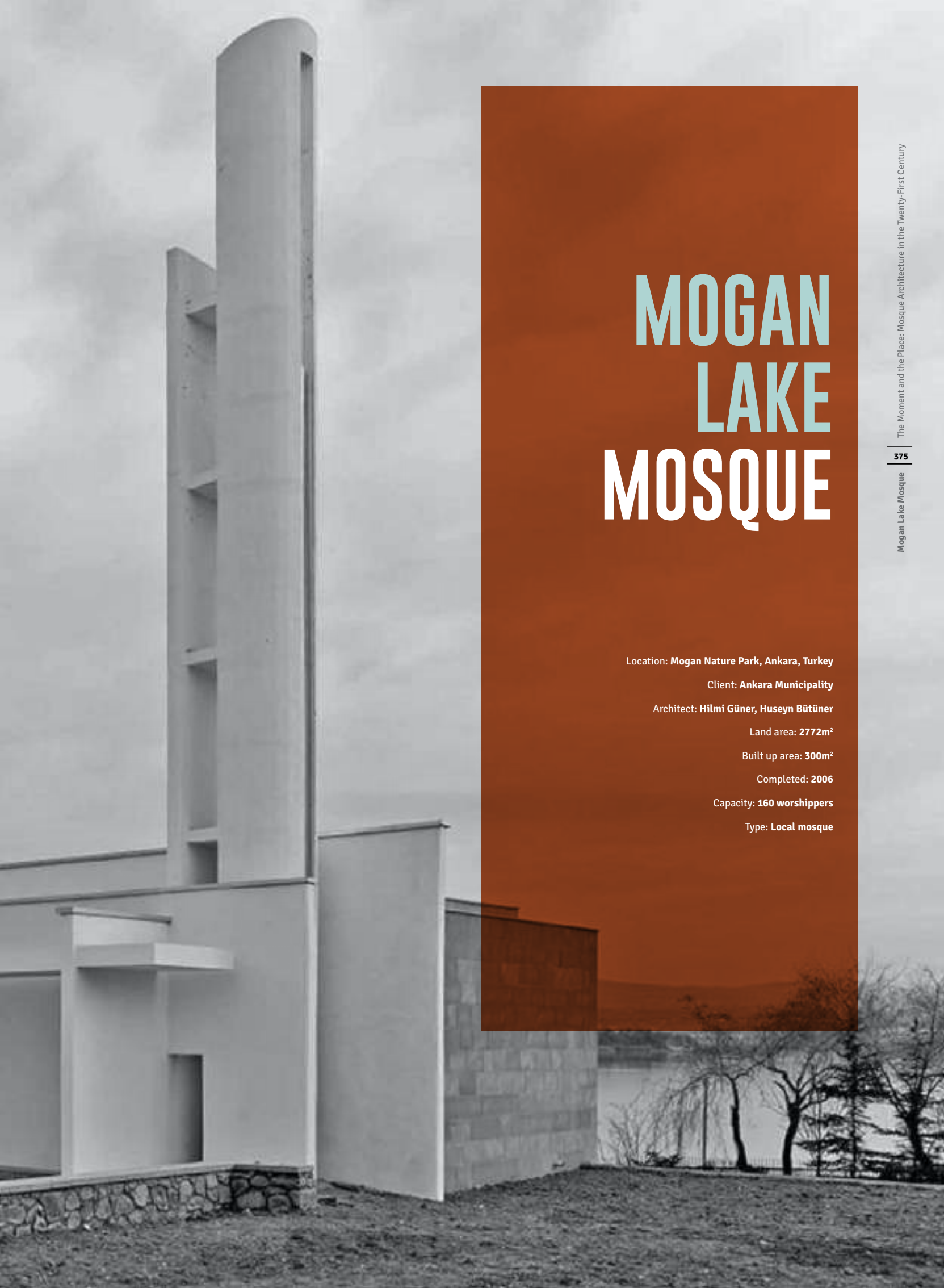
### Conclusion

The Concrete mosque's design is an example of how a modern mosque might look. This radical break is more evident with the decision to preserve the 220-years old mosque on the same plot. The Concrete mosque introduces a new approach to mosque design; a new understanding of mosque conventional elements and how to resemble them in contemporary technology and construction.

In this mosque, new concepts were introduced to replace old conventional features, where the volume of conventional dome is replaced by a contemporary volume, a cuboid. This mosque creates engaging experiences not only inside the prayer hall but also with the riwaq and within sahan space. The materials used in its construction and finishing are durable and available material, concrete, with rough fair-faced concrete everywhere inside and outside the mosque, in walls as well as roof. Its flooring, white terrazzo cement mixed with white marble particles, works well for its function and indicates purity and cleanness of space. The mosque relies entirely on natural means of cooling and ventilating; it has no air conditioning, only ceiling fans help circulating air.

The Concrete mosque design represents a milestone from conventional designs that had been prevalent in Muslim countries. The rupture with conventional mosque design is evident in two main aspects of the Concrete mosque design: its form, and its material treatment. The mosque with all its features, within the design concept the architect has provided, is a progressive example of future mosque architecture.





# MOGAN LAKE MOSQUE

Location: **Mogan Nature Park, Ankara, Turkey**

Client: **Ankara Municipality**

Architect: **Hilmi Güner, Huseyn Bütüner**

Land area: **2772m<sup>2</sup>**

Built up area: **300m<sup>2</sup>**

Completed: **2006**

Capacity: **160 worshippers**

Type: **Local mosque**

Twenty- five kilometers south of Ankara City centre, on a small lake in Ankara Province, Turkey, Mogan Lake Mosque settles within its landscape. Considered built within a rural area, Mogan Lake mosque was designed as part of the master plan of Mogan Lake Nature Park, a recreation, which is about 601,879 square meters where 203,650 square meters is reserved for the endangered waterfowl. The total length of the walking track in the area is 130 kilometers.

Mogan Nature Park addresses the entire Ankara Metropolitan region and park infrastructure protects the ecology of Mogan Lake. In this context, reed coverings have been protected in the nature park so that it can be experienced with fine walkways.

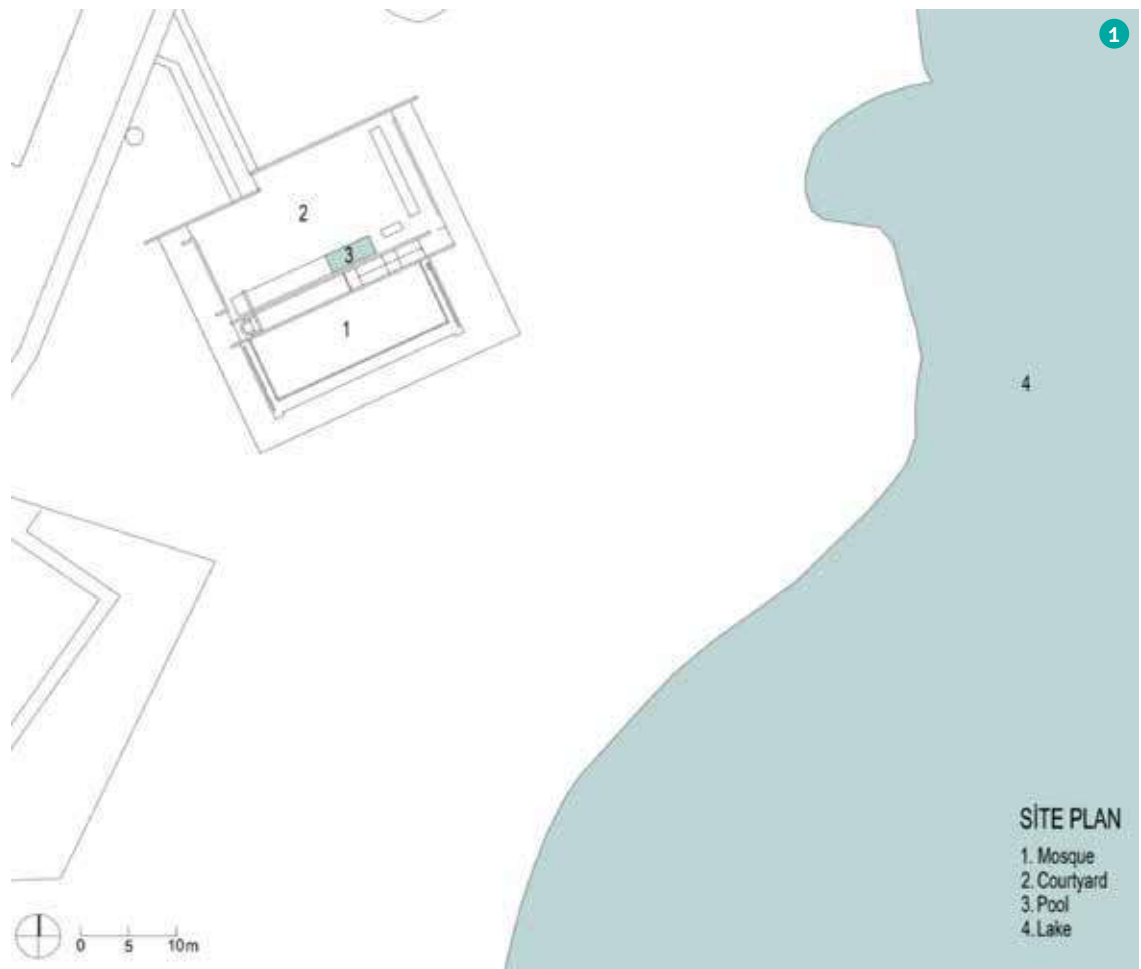
The nature park also contains different purposes expected from a metropolitan park of this size, such as open-air theatre, sports facilities, picnic areas, wedding hall, multipurpose tent, playgrounds, a hilltop restaurant, worship building and several administrative offices.

While designing the park, the mosque was located north of site, near the lake, isolated from other functions such as entertainment facilities. The mosque was developed as a genuine interpretation of the typological context within local set of conditions.

#### Site

Park and mosque landscape design work together to provide a holistic design. While designing the park, the mosque was located near the lake, isolated from other functions such as entertainment facilities. With this implementation of location to the edge of park, the structure is a retreat from noise and entertainment within the park, where several bird species acquaint holistic sounds of nature creating a peaceful setting.

- 1 Site plan
- 2 Outdoor view



The natural site within the suburbs of Ankara, suggests that the park is designed to meet the daily worship needs of visitors, employees and the community of immediate environment. In addition, intensive use on Friday was taken into consideration.

As these buildings and the park have been simultaneously designed, it was possible to restrict building scales and achieve harmony using similar materials. The scale of the structure has been kept within dimensions required by coastal arrangement aimed to provide integrity with other structures using similar materials on the built floors and façades.

Vehicle and pedestrian transportation is provided via ring road that runs through the park. Located in a higher level than the lake, the mosque is perceived from pedestrian path around. Thus, while a visual connection is provided, the connection from pedestrian and vehicle roads provides access to the courtyard and mosque. The visual connection between the mosque and lake continues at the entrance within the gaps created in sheltered zone.

Traffic is solved via a ring road system following the wall between two main gates in southwest and northeast, with car parks added and distributed at regular intervals.

### Spatio-Functional Relationships

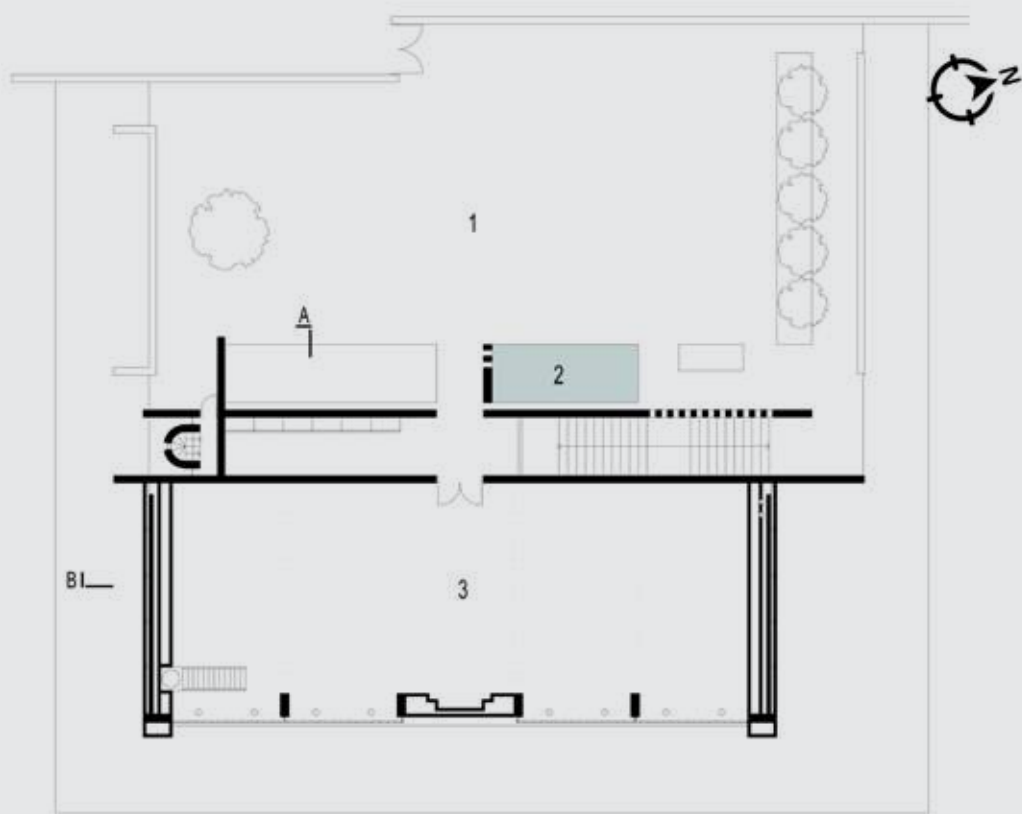
Mogan Lake Mosque is a panoramic architectural venue defined between two parallel surfaces of mihrab and narthex walls within contemporary interpretation of historical elements. While fully integrating design in a holistic manner with the surrounding landscape and park, the designed landscape continues as a transitory courtyard space. Accessed via external courtyard on the same alignment as the narthex wall, the building itself turns into a Namazgâh within its context. The entrance courtyard, which also provides access to the building, is one of the main elements. This courtyard was interpreted as open-air prayer place (Namazgah) and this idea was supported by plant selections. Plane and linden trees were selected from deciduous trees in Turkish garden culture. Plane tree provides air-conditioning in shaded courtyard, and providing smell of linden trees.

Equivalent attention was paid to vehicle and pedestrian transportation. This structure is also connected to the pedestrian road and the ring road formed at the back. Via the external slight ramp, a light transition takes one from the road into the courtyard before entering the prayer hall. The basement is non accessible except via stairs.

Mosque programme was handled in line with requirements determined by the client for park visitors and employees. Different functions have not been proposed except for the prayer area and services. To elaborate upon the structure's handling of the programme in the design process; three significant references were applied from mosque buildings and their evolution under certain plan and mass typologies. Firstly, similar to the earliest Islamic religious building understanding, the tradition of praying in close proximity to mihrab wall is applied as longitudinal rectangular plan disposition. Secondly, influenced by the Ottoman architectural tradition of using stained glass on mihrab walls, the Qibla direction is abstracted into a light wall. Thirdly, the idea of Namazgâh in extra urban settings is expressed in the structure as a set of mihrab walls above an artificial terrace.



1

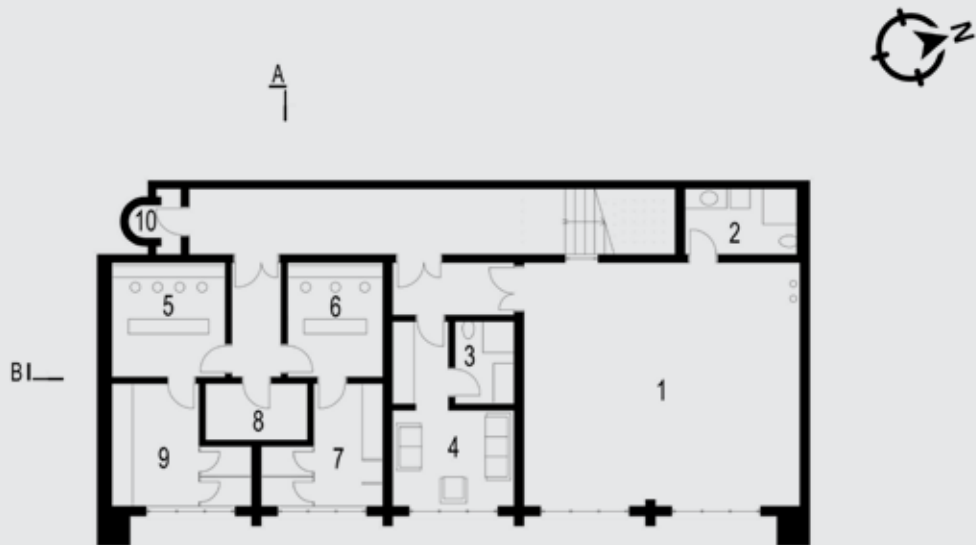


GROUND FLOOR PLAN

- 1. Courtyard
- 2. Pool
- 3. Prayer Hall



2



BASEMENT FLOOR PLAN

- 1. Technical Room
- 2. Toilet
- 3. Toilet
- 4. Imam Room
- 5. Ablution
- 6. Ablution
- 7. Toilet
- 8. Toilet
- 9. Cleaning Room
- 10. Storage





- 1 Ground floor plan
- 2 Basement floor plan
- 3 Location of the mosque

Narthex area is composed of two sets of parallel walls which shape an entrance hall leading to the minaret in between those and ablution rooms downstairs. An asymmetrically placed eave provides shelter to the main entrance gate located at the central mihrab axis.

The aim is to create a serene, peaceful prayer area both in the interior and exterior. Human scale was taken into consideration in building design, and comfort conditions were provided. One reaches a spatially unified prayer area after proceeding through this wall-structure. Five flat arches define the scale of space in the prayer area. It not only determines the scale but also contributes acoustically. Apart from the mihrab niche, the wall is defined solely with vertically placed semitransparent structural glass elements, which direct the congregation towards light filtering in from the lake.

### Form and Architecture

Prior to designing the mosque, the architect had researched earliest Islamic religious buildings, traditional Ottoman and Seljuk worship structures and places. The design has been made in accordance with Zoning Regulation of Ankara Metropolitan Municipality. Accordingly, the whole design has been evaluated in accordance with rules specified for parking and recreation areas such as maximum building

heights and number of parking lots. Noting that the building height ranges between 4.75m and 6m without the minaret, the building harmoniously lies within landscape, while the minaret accentuates the landmark position and visual connection with surrounding environment. Yet as the user distances from the structure and since structure is located at a higher elevation than lake level, the perception of pedestrian road from lake side is monumental although it is a single floor.

One of the main materials selected for the building was initially white exposed concrete, reflecting the form and contributing to the design visually. Yet since technically it was expensive and was never executed properly, the maintenance team resided for white paint. After the material change, addition of the roof over the stair passage for the rain and adding an enclosed female prayer room in the public passage between the two narthex walls, this language remained adequately true to itself and continued in the same way.

The mosque is functional, well integrated and defined. Its scale is adequate for the number of users although it is set within a rural area. The selected materials are mainly natural materials initially specified in the design to aim for a very long time with proper usage and maintenance.

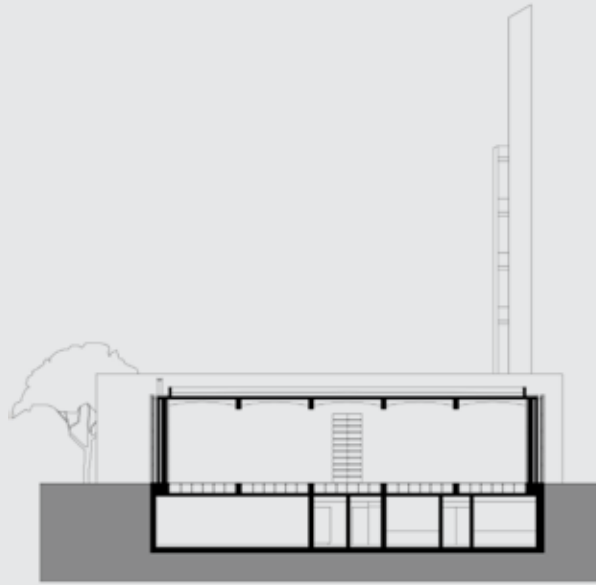




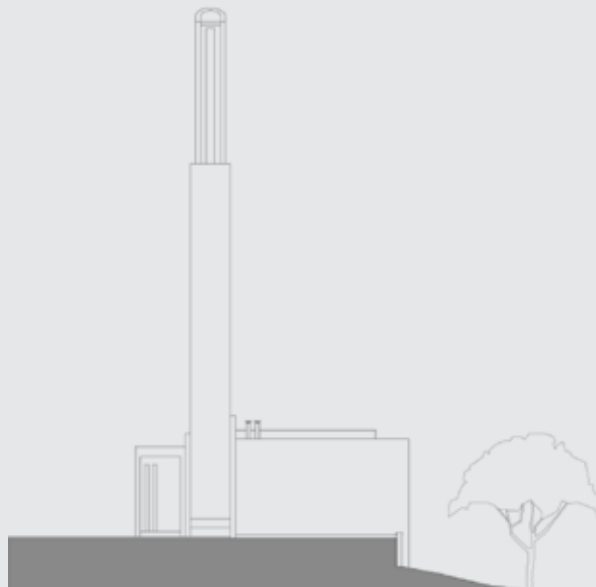
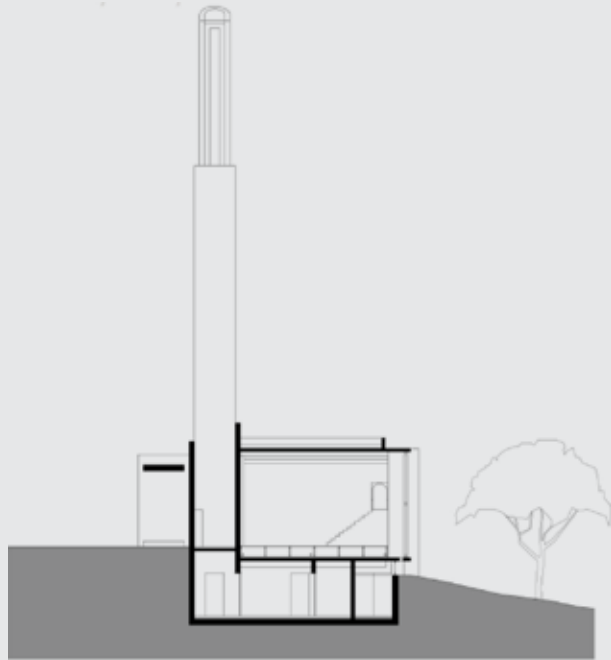
**Natural lighting is a prime source for the prayer hall during the day. Basement was lit with windows at the same level with landscape and, at ground level, semi-transparent U-Shaped structural glass was used to allow for daylight.**



- 1 Sections and elevations
- 2 Minaret



1





With a modernist approach, the mosque remains Cartesian in its design allowing for dominance to happen at minaret. The open air entrance between the two narthex wall was later covered by users to reduce rain exposure on the basement area adding a female prayer zone. With this transformation, a major visual connection that the architect intended at entrance level was cut leaving the entrance with less visual impact.

The basement level interior comprises technical rooms, ablution and washrooms. They have been maintained at a minimum possible level. The ground floor is divided into two areas: female and male prayer

halls. The former is inadequately sustained with little natural sunlight or ventilation. Male prayer hall is spacious and well lit. With no structure obstructing, the prayer hall allows for spontaneous space to be used as needed, therefore, flexibility is well achieved. The southern light infiltrates through semi-transparent U-structural glazing. The amount of light has been controlled by adding ceiling to floor curtains that can be closed as required.

To be able to manage and execute as per the architect's vision, few interior items were separately designed. After the necessary drawings and 3D model documents were prepared for the mihrab and minbar, one-to-one wood mockups were made before work was completed.

#### **Technology and interior**

The structure is designed to have adequate spans with 15 cm concrete slabs supported on columns. The basement is designed with reinforced concrete walls, which support the structure of the prayer hall above.

On ground level the structure stands on inverted beams that raise the floor upwards to allow for a technical area of 60 cm to exist between the 15 cm slab and finished floor of the prayer hall level.



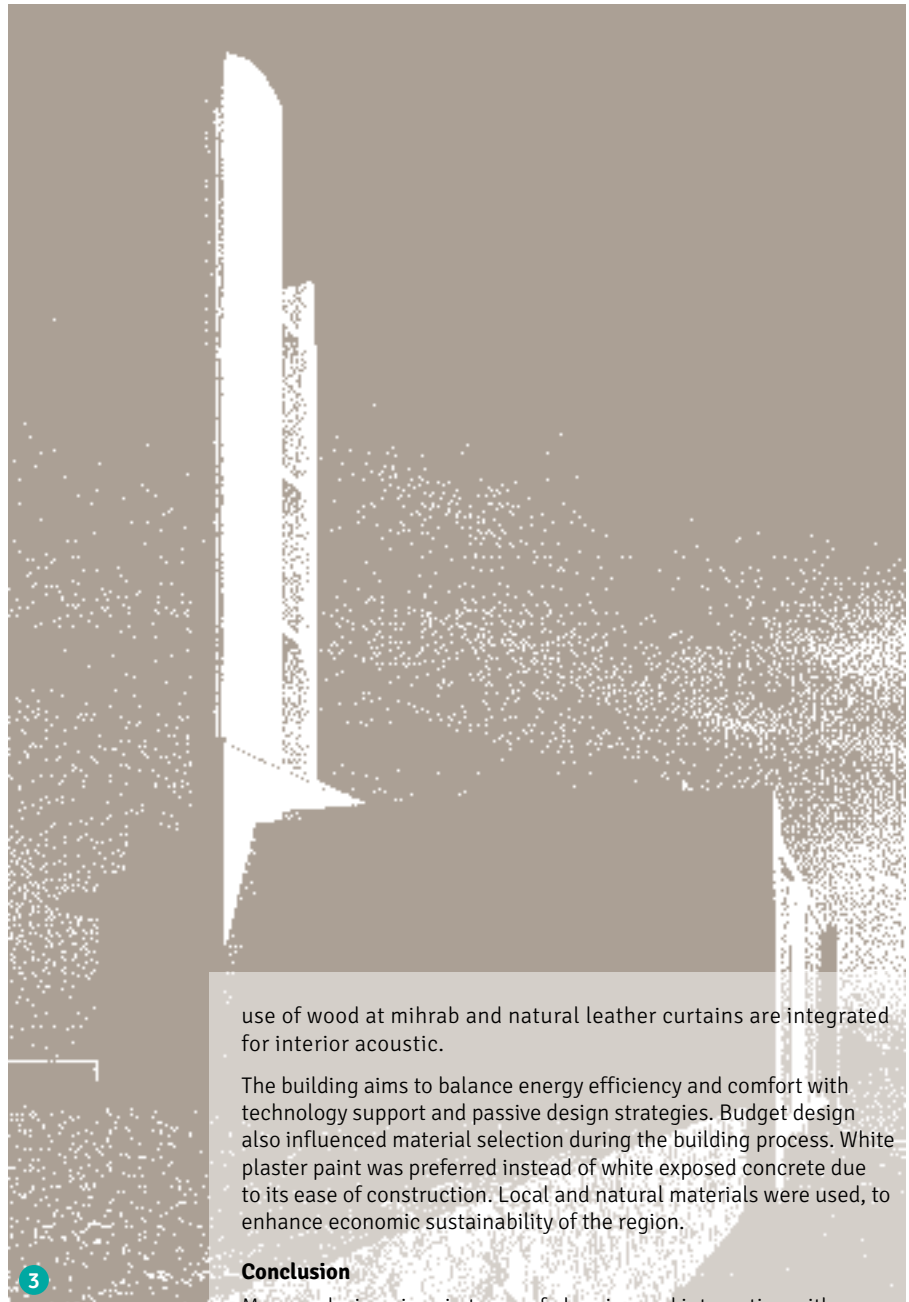
As columns extend the structure vertically on the periphery of the building without obstructing interior space, interior flexibility is achieved. At 4.60m from prayer hall floor finish, the prayer hall roof extends a 15cm concrete slab held on lateral beams ( $h=0.55\text{m}$ ,  $w=0.3\text{m}$ ,  $d=8.28\text{m}$ ) holding onto the narthex reinforced concrete walls and singular columns.

Despite being simple structured building, the mechanical, electrical and architectural technicalities were solved to remain truthful to the building design. For this, the prayer hall two side double walls allow for all technical equipment needed to pass within to the roof, such as the exhaust, the basement, or drainage system. Rain water is collected via sloped areas towards gutter points to the ground.

Heating and cooling system applied is water pipes or floor heating/cooling. With radiators in basement, the prayer hall has underfloor heating and cooling to allow for pure space unobstructed with wall mounted radiators.

Natural ventilation is provided via windows in the basement, natural air inlets are proposed in the culvert spaces left on the floor on lake façade. Using natural inlets of around 20 cm diameter on the ground floors, air flow passes over pipes to cool or heat the interior space.

- 1 Main façade
- 2 Detail
- 3 Mass of the mosque



use of wood at mihrab and natural leather curtains are integrated for interior acoustic.

The building aims to balance energy efficiency and comfort with technology support and passive design strategies. Budget design also influenced material selection during the building process. White plaster paint was preferred instead of white exposed concrete due to its ease of construction. Local and natural materials were used, to enhance economic sustainability of the region.

### Conclusion

Mosque design aims, in terms of planning and integration with surrounding natural environments, to serve not only as a prayer hall but as educational space, creating educational activities. For this, social features were added to support this purpose, such as small bookcase which has been placed within the prayer hall by the community. This has given the mosque wider role within the regional community, which brings back the historic role of the mosque.

Mogan Lake mosque programme was defined and functional yet it did not cater for the gender division spaces within the prayer hall, which led the community to add a non-equipped space, so as to widen and enrich gender usage, serving various age groups.

On environmental sustainable level, Mogan lake Mosque aims to create system that would naturally ventilate, cool and heat spaces. However, this design was not efficient enough to serve users of the mosque, thus invoking some additional mechanical equipment. Despite this, the design provides viable example in considering the environmental factor and sustainability. From a social sustainability perspective, the mosque caters for employees mainly during the weekdays and the community in wider area on weekends.

With these standards, Mogan Lake mosque tackles various levels, and is presented as means of interaction with diverse surrounding social, natural, cultural, religious and demographic environments. In this perspective, it offers progressive architecture for the 21st century.

Natural lighting is a prime source for the prayer hall during the day. Basement was lit with windows at the same level with landscape and, at ground level, semi-transparent U-Shaped structural glass was used to allow for daylight. Artificial lighting was placed with landscape and, on the interior, artificial lighting was placed centre to the beams and downlights above mihrab to accentuate its position and importance in the prayer hall.

To refine and define acoustic in the prayer hall, the architect added slightly curved false ceiling of 10 cm within the prayer hall between beams. ( $w=3.7m$ ,  $h= 10cm$ ,  $l= 7.23m$ ). Furthermore, the





# PRAYER AND MEDITATION PAVILION

Location: Salam Centre, Soba, Khartoum, Sudan

Client: Emergency NGO

Architect: TAMassociati, Studio Tam associate

Land area: 230m<sup>2</sup>

Built up area: 65m<sup>2</sup>

Completed: 2007

Capacity: 72 worshippers

Type: Local mosque

In a region that has starved for many years and has been subjected to ethnic and civil wars, a Meditation and Prayer Pavilion project in Sudan emerges as an aid to elevate the human spirit towards positive thinking and rapid recovery. In Sudan alone, the Arab ethnic group constitutes 39% of the population and 61% of all Africans, while, 70% of people in Sudan are Muslim and the remaining 30% are either Christian or other religious faiths.

The Meditation and Prayer pavilion was conceived as a space for tolerance that can accommodate multi-faith people to worship. The project is located inside the garden of the Salam Centre for Cardiac Surgery, a hospital that received the Aga Khan Award in 2013. Designed by an Italian firm, Studio Tam associate, and run by an Italian independent NGO.

The strong symbolic value of the combination of architecture and ethics lent great significance to the construction of the Pavilion of Meditation and Prayer. Set in the hospital garden it is an integral part of the Salam Centre for Cardiac Surgery in Khartoum, run by the Italian NGO called EMERGENCY, a centre that offers free high quality assistance to patients with congenital and acquired surgical diseases.

According to the designer, it was no easy task to design a space for prayer, customary in any health care facility, in a state that over the last twenty years had been ravaged by endless inter-ethnic wars, but above all inter-religious ones. It meant devising a building that could house the spiritual complexity of a country such as Sudan (inhabited by Muslims, Christians, and Copts), without giving priority to any form of worship, simply creating a space for the profession of all faiths, or perhaps more simply a meditation space.

#### Site

Although there are five components in the location besides this project (surgery centre, relative house, technical building, container medical compound and solar panel), there is no clear element, man-made or natural that helps to put all the components together. Symbolically, the disconnection of the building from surrounding

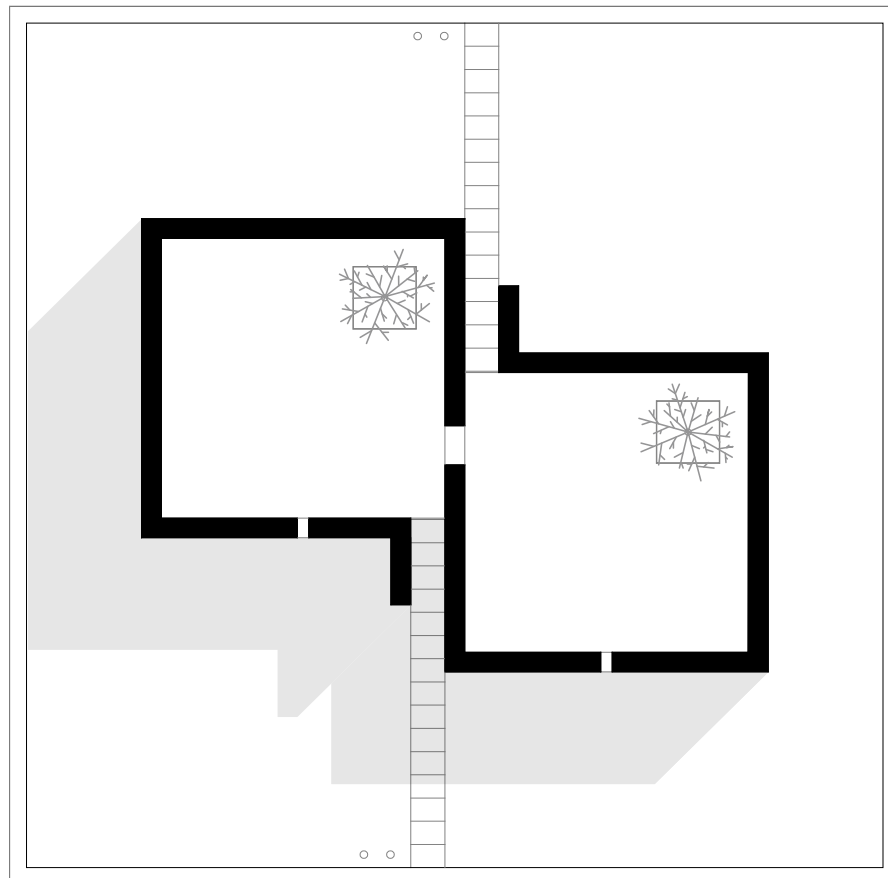
area is intended by the architect to reflect the need for a spiritual gap between the hospital and a place for prayer.

The building stands alone at the centre of the surrounding components, and no inspiration or any kind of responsive architecture elements have been used to reflect the architecture of the place. Due to the site of the project, the prayer hall is situated inside the garden of the Salam Centre. There is no relationship between the prayer hall and the surrounding buildings.

The hospital is called Salam, and has somehow succeeded in developing the plot of land into a real place of peace. The harmonious relationship between the buildings and the natural landscape elements, the proximity to the Nile River, and the green surroundings enhance the feeling of serenity and peace.

It was debated how the Prayer and Meditation Pavilion Project in the hospital did not provide any design plans for the handicapped. There were two main means of access to the building and it is unclear which one is for the entrance and which one is for the exit. A stampede may occur during egress or ingress.

There has been some conflict. This building was an ongoing project when the designer started and he didn't know in the beginning







- 1 Ground floor plan
- 2 Outdoor view

that the water level was meant to be equal to the ground level. The handicap access was an issue that, when the building was designed, was not factored into the planned level and has not yet been resolved.

Symbolism associated with the project within the natural site settings and water, all blend together in this rather unique unprecedented composition of a mosque. The whole setting comprises implicit deep meanings associated with site features, that can be discovered beyond the five senses, rather there is an added sixth sense that can be sensed within the location and its spirituality, human dimension and surrounding pure nature.

### Spatio-Functional Relationships

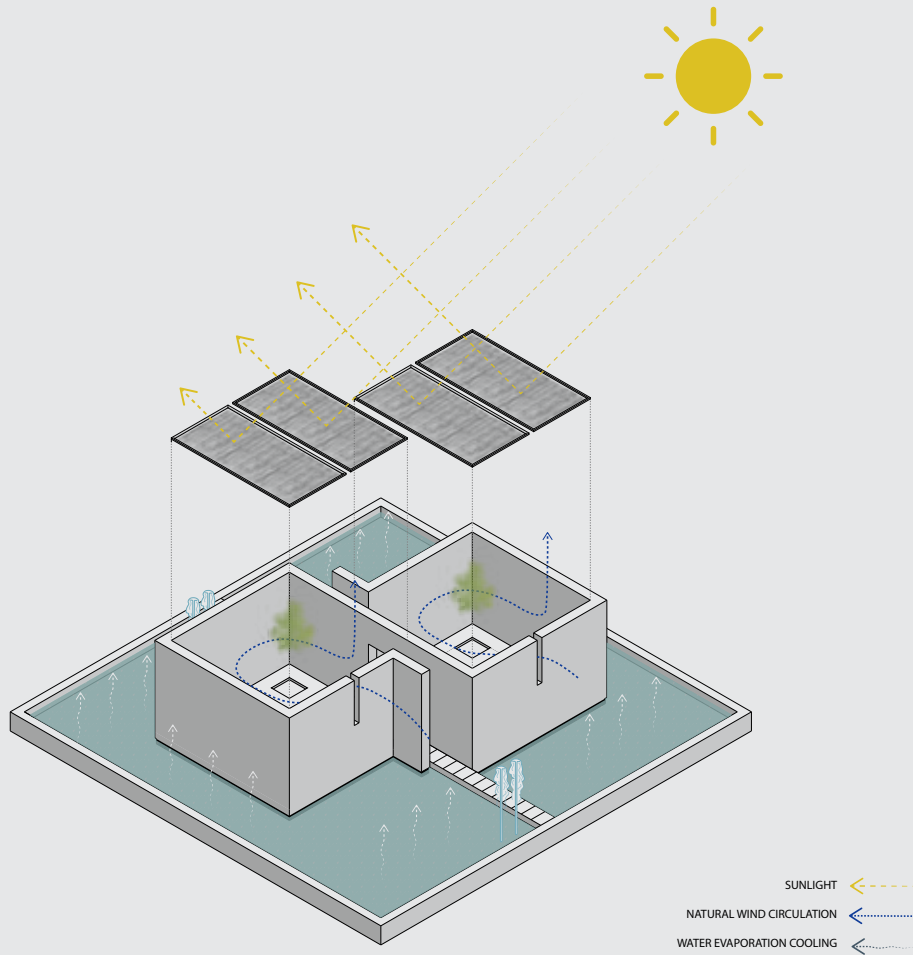
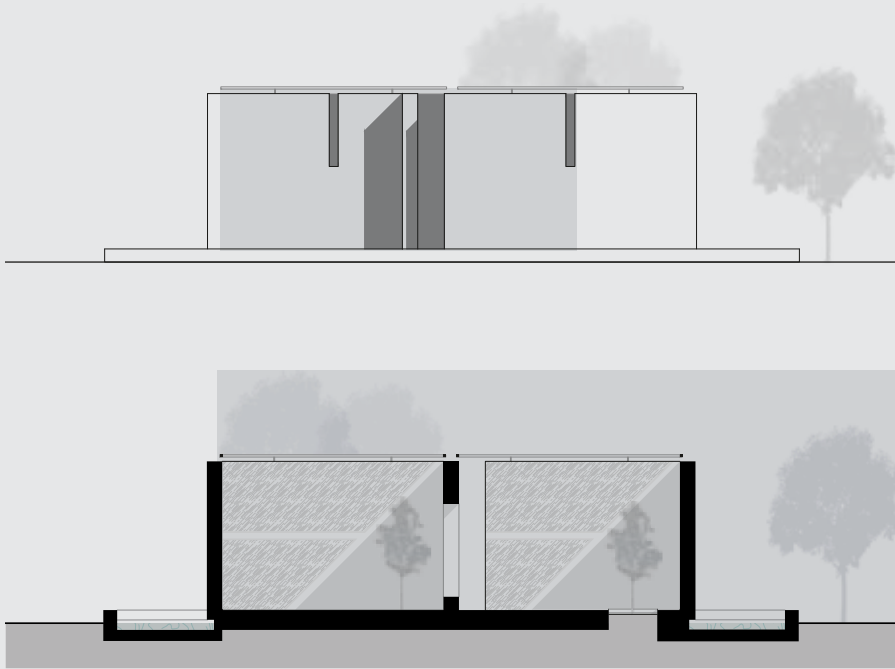
The idea for the prayer hall is based on the architectural principle that any architecture meant for social good should be cost-efficient and not exhaust the maintenance budget of the owner. The project is simple with regards to its reliance on technology. Sustainability, simplicity, and neatness are main design concepts, in addition to geometric proportions that add visual dynamics and perfectly engage the building in an active perceptual dialogue with the viewer.

The role of this prayer hall is limited to spiritual purposes. It is intended to serve as a space for prayers for all kinds of faith in addition to its visual role as a spiritual feature. This mosque has a

spiritual and psychological impact more than its functional purpose; its design concept is simple, straightforward, and well-achieved. Simplicity, sustainability, spirituality, and purity are the main values of this building.

Functionally, the interior space is relatively small and simple, and the building design has no regard for accessibility. The focus of the design is the visual and spiritual impact rather than functionality, even though the building serves its functional purpose as a place for faith practices. The surrounding trees and water, the roof covered with natural material, and the thick walls painted white make the building perfectly sustainable in terms passive approach of energy use.

The designer determines the rules for the spatio-functional relations, as simple, pure and functional to do with worship and spirituality aside from any ideology. The designer considers all religions as one leading to the same goal that is peace. As such, the architect states that 'though we did not mean to favor any religion, functionally we had to deal with the Muslim religion, dominant among the Sudanese, and the rules it imposes, such as ablution or the separation of men and women. But we set these rituals in an estranging setting which made them non-dominant, concealing all symbols and elements that could be traced to a single faith.'





- 1 Elevation and section
- 2 Sectional model
- 3 Ablution area
- 4 Prayer zone
- 5 Visual detail

Then the designer decides that due to the nature of religion in Sudan, the functions were determined according to this identity, which casted its functionalism upon the spatial layout. The designer decides that the space for ablutions, for example, is simply a water spray that rises higher inside the pool, an integrating element without any religious connotation, which enables the faithful to perform their ritual ablutions before entering the place of worship. The asymmetric union of the two volumes in turn allows for the separation of the sexes, giving this functional constraint an added value within the balance of a composition that seeks to embody the idea of tolerance in architecture.

For this, the spatio-functional relationships have determined a social pattern dictated by the wider social and cultural practices inherent within local community that were smartly embedded by the simple design of two interrelated cubes.

#### Form and Architecture

The meditation and prayer hall consists of two pure white cubes that are placed gently in the centre pool and reflect the surrounding nature through the translucent roof, which is constructed out of palm leaves.

Buildings in Soba are traditional with regards to the use of local materials, construction methods, and simple rectilinear forms. However, the neutral design of the prayer hall was intended by the architect not to reflect the area, but to be a place for all the patients to use. The simplicity of the white cubes work perfectly to deliver this message, and to identify the place as spiritual for different groups of people.

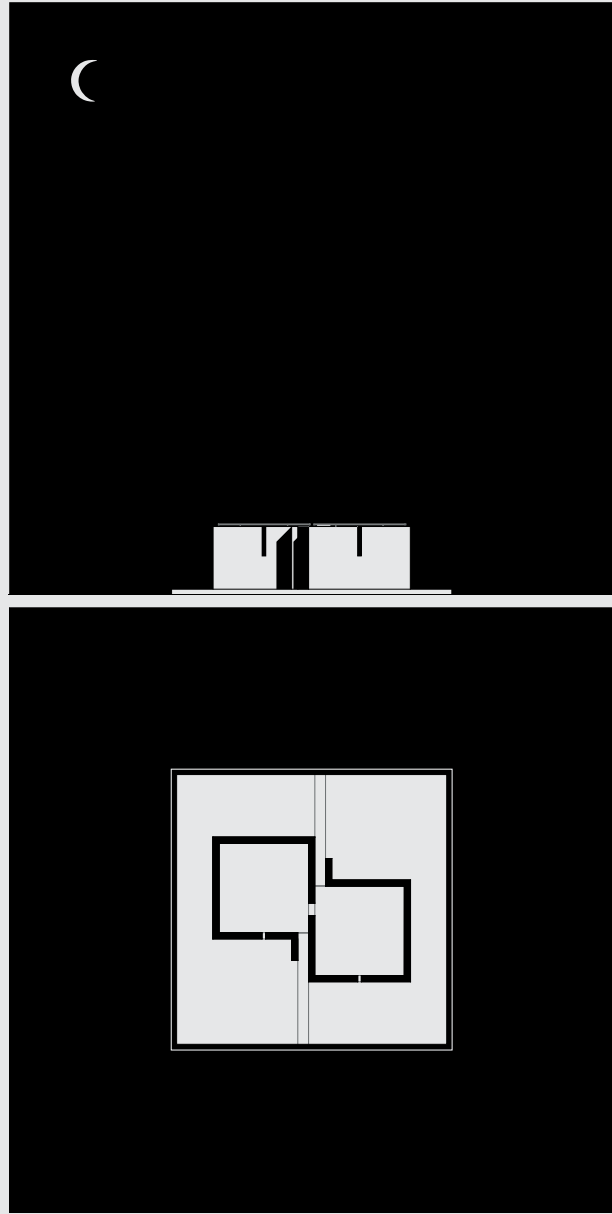
The project was designed to reflect the users of the space. Since patients are the main users of the prayer hall, the aim was to create a place that can be neutral and be recognised by any ethnic or religious group as a spiritual space that works for everyone and respects all faiths. The architect came up with white cubes as an ideal solution to







**The careful situation of the building above the pool helps to achieve passive cooling system, using natural evaporation that the prayer hall needs to avoid the use of active systems. This is, by far, is one of the best ways for encouraging a passive cooling system in a hot climate.**



1

- 1 Plan and elevation
- 2 Wood sticks and palm leaves in the roof
- 3 Simple external façade



2



represent purity, simplicity, and cleanliness. The cubes white textured finish matches the surrounding buildings, and the cubed form matches the surrounding rectilinear style. However, when it comes to location and landscape, the cubes stand out as a unique feature within the surgery centre.

The design features are basically water, land, and nature. The building reflects the surrounding nature more than it relates to a man-made environment or the culture of Soba.

The symbolic meaning of water as a source for life is reflected in the pool, which also connects to the spiritual journey that occurs in the prayer hall. The reflection of the building on water also adds spiritual depth.

The pavilion is a pure volume consisting of two staggered and communicating white cubes, protected by a translucent roof made of palm leaf pith. The interiors, characterized by neutral surfaces painted white, contained two ornamental trees that made these places at the same time sacred and profane, by the presence of a natural element in an artificial space. The few vertical openings along the outer walls allow light to enter, creating delicate patterns of shadow.

In his use of pure forms, the designer invoked in addition to the cube water features that represent pure nature, therefore the designer created a large pool that surrounds the pavilion, creating a spiritual gap between the hospital's outer macrocosm (and the rest of the world) and the ventral microcosm intended for prayer. Two walkways traverse the pool on opposite sides, giving access to the two nuclei of the small building. Water drawn from the Nile and then reused for irrigation is an element charged with symbolic values in the sub-Saharan region. Representing purification in religious terms, it is also the source of life, a vision of salvation in the arid desert, evoking the Garden of Eden.

The design, however, cannot be separated from the element of time and sun movement, which cast a fourth important aspect of the

design and its spirituality throughout the hours and times of the day and night, let alone seasons and various times of the year in relation to climate.

#### Interior Design and Technical Aspects

The careful situation of the building above the pool helps to achieve passive cooling system, using natural evaporation that the prayer hall needs to avoid the use of active systems. This is, by far, is one of the best ways for encouraging a passive cooling system in a hot climate. However, natural evaporation might affect the maintenance of the walls with regards to paint damage.

For the roof, local materials were used that reflect sunlight into the building. There is lack of cross-ventilation which, according to environmental studies, affects the thermal norms, specifically during hot season in Sudan, the temperature can exceed 50 degrees Celsius in the summer season.

Local brick, manufactured on site beside the river, is used as the main material. The roof is made of bamboo that was brought from the local market. The structural systems and the choice of materials were based on two factors: their availability in local market, which eliminated importation costs, and the cost effectiveness of materials.

It is remarkable that the whole budget for the prayer hall barely went above 5000 \$, which limited the architect from going beyond the simple building form or implementing local materials.

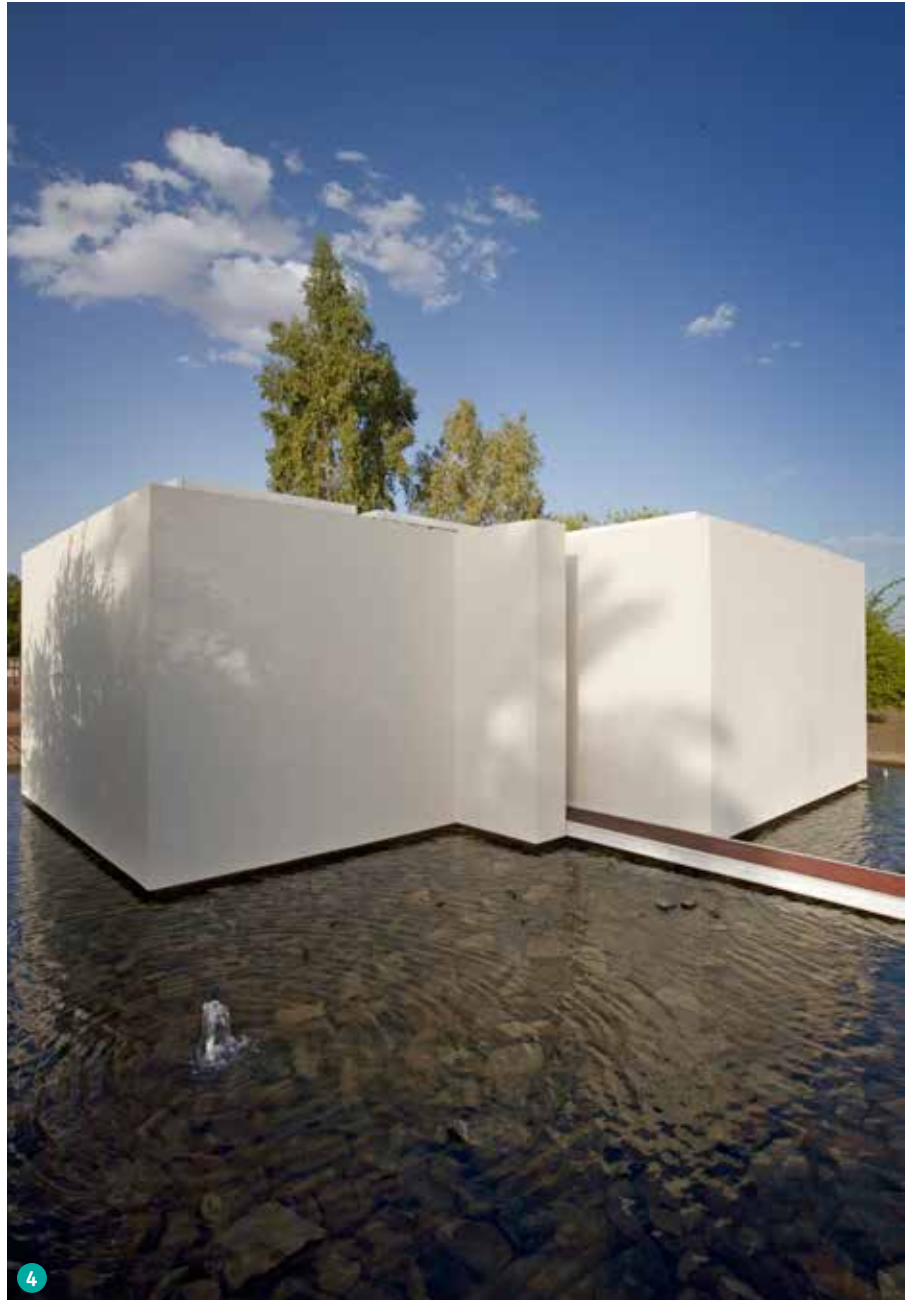
Due to the simplicity of the building and the choice of materials, the management of this prayer hall does not need any complicated or advanced kind of maintenance. The only maintenance needed is exterior painting and water cleaning. The natural roof material is durable, and the building has no mechanical or electrical equipment.

The quality of the interior space is emphasized by simplicity, which has been used by architect as the main manifest for the whole project. However, the manipulation of light and shadow is the most prominent





- 1 Effect of natural lighting on the roof and the walls
- 2 Shade and shadow
- 3 Prayer hall from inside
- 4 Solid mass



aspect in the interior space, which is simple and has no ornaments of any kind, or any interior physical components.

The interior design concept is based on the spiritual effect of natural light coming through the carefully proportioned and positioned openings. The light forms unique patterns, adding visual richness and spiritual effect while natural material roof drops patented shadows on the white walls. The thick walls and the vertical doorways create portrait interior viewpoints, increasing the spiritual atmosphere.

The prayer hall is covered with bamboo leaves, which gives the space a sense of transparency, and the roof is divided into two parts with a gap in between, creating the only window in the space. All these elements combined give the worshippers the kind of experience that helps them achieve serenity.

#### **Conclusion**

This very simple unprecedented design cannot be read any other way, but as simple pure space for meditation, from which it this pavilion draws its name. It has always been argued that simplicity exhibit indeed beauty, and this design is an excellent manifestation of such a statement.

Such a pavilion is an exemplar in sustainability, design, integration with natural surroundings and context. It is a place where architecture in its very native pure form can be expressed, and indeed it is an excellent model to learn from for a future mosque simple architecture. It is a design that goes beyond and above the realm of understanding architecture by our six senses.



# BASUNA MOSQUE

Location: **Sohag, Egypt**

Client: **Dr. Osama Al Azhari**

Architect: **Dar Arafa**

Land area: **497m<sup>2</sup>**

Built up area: **471m<sup>2</sup>**

Completed: **2019**

Capacity: **503 worshippers**

Type: **Local mosque**

**Basuna Mosque is located in Basuna village, the governorate of Sohag, Egypt. It is about 500 km to the south of Cairo. The history of the plot it occupies, as the location of the first mosque in the village, built 300 years ago, along with the village's cemetery to its east and a semi-public space to its north; the "Rahaba" point out the rich possibilities for social activities and public services, all of which stress and revive the traditional role of the mosque as the nucleus of the fabric.**

**For 300 years the Abu Stait Mosque has been Basuna's main mosque. It was built and rebuilt a couple of times. The latest building was completed 70 years ago, on the very same plot in the centre of the village, adjacent to the village's graveyard serving as the main Friday Mosque and the only funerary mosque in the entire village. A flash-flood and a soil subsidence caused by the construction of a neighbouring building, inflicted considerable structural damage rendering the mosque unsafe, and so it had to be demolished. The Old Mosque: comprises prayer hall for men only, with no room for women. It was structurally unsafe; with no minaret and not a single minaret in the entire village. Main Entrance to the mosque goes through the bathrooms and the Qibla axis directed towards the toilets.**

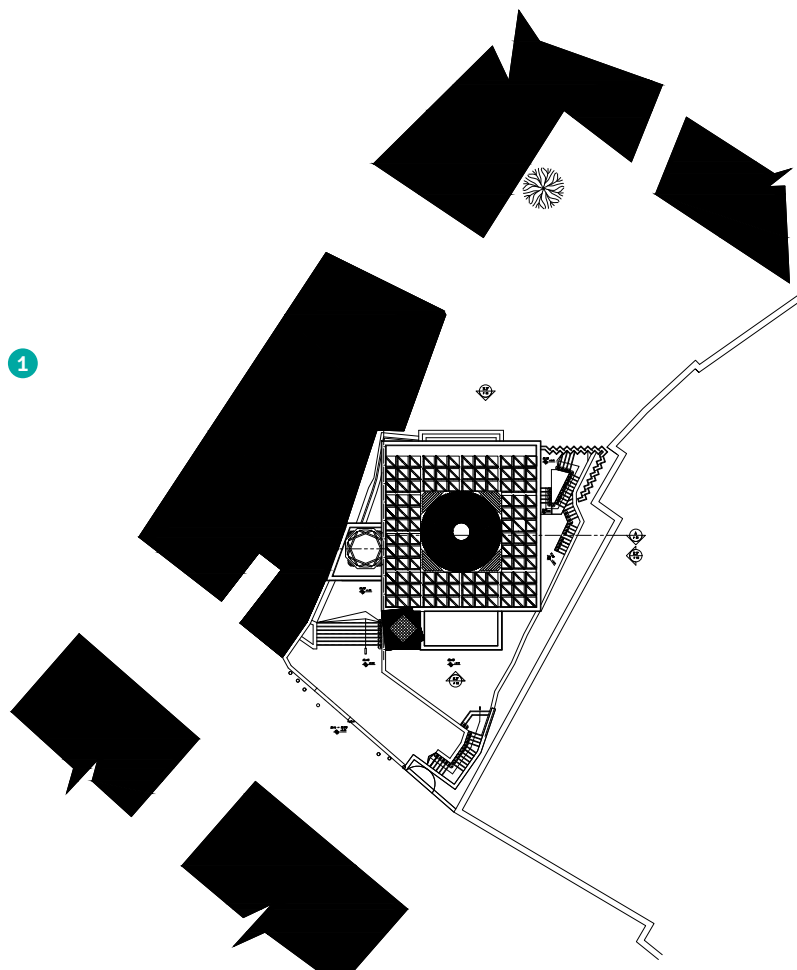
**The new design attempts to increase the capacity of the mosque in terms of the numbers of the worshippers, as well as in the quality of spaces and services. A main goal was to also bring forth an element of inclusivity, by introducing praying spaces and services for women, for the first time in the entire village.**

**Site**

Governorate of Suhag, over a site amidst a noisy, dusty and densely constructed area with encroaching residential buildings, a cemetery,

cattle frequently moving back and forth on the road and a weekly makeshift small market right outside the main entrance of this place of worship posed a major challenge. The new building must offer peace and tranquillity for its users and so a few requirements had to be met climate and noise control, dust and undesired odors, urban context and aesthetics, budget, and access during construction. Every challenge was not dealt with separately as it impossible to arrive at a satisfactory solution. For example, if operable windows were used on the exterior to allow for cross-ventilation that would have meant a poor performance on the fronts of noise, dust and odor control. The decision was to limit openings, at or close to street level, to just the main entrance, while tackling all these challenges at the roof's higher altitude. Budget constraints and limited or no machine-accessibility meant that any solution had to depend mainly on manpower and simple tools.

The connection between the mosque and its surrounding environment is very successful. This is evident in the careful situation of the actual building within the larger plot; the ratio of built area to open spaces; the planning, locating and architectural treatment of the entrances; the hierarchy of forms, especially in terms of scale and their respective heights generally and especially in relation to the surrounding building heights.



The location and height of the minaret, is strong evidence of the deliberate achievement of the balance between the benefits of introducing a high landmark, especially in terms of enhancing legibility, and choice of materials and building techniques, openings, natural lighting and natural ventilation.

The mosque is accessible from two main sides; the north and south. Female worshippers could access the mosque on all three levels from the south. The main entrance is 7 steps (105cm) higher than the street level and leads men to main prayer hall.

### Spatio-Functional Relationships

The mosque comprises the following functions: Lower ground floor: multi-use hall, ablution and W.C, storage, machine room, open space and circulation. The ground floor comprises main prayer hall, imam's room, open space and circulation. Mezzanine floor comprises women prayer hall.

The multi-use hall is designed to accommodate seasonal increases in the numbers of worshippers, of both genders, during Fridays and the Holy month of Ramadan. It is also designed to serve an array of purposes all year round, such as temporary medical clinics, after-school and literacy tuition classes, etc

The first thing the worshippers encounter as they turn from the main entrance into the main prayer hall is a single vertical window overlooking the cemetery, which reminds them of the end of their journey before they turn right to the Qibla to begin their prayers; "Stand upright and pray as if it is your final prayer".

There are four entrances to the building, two of which could be made accessible for worshippers with special needs, once the roads and infra-structure of the village allows for free and independent movement of people with special needs.

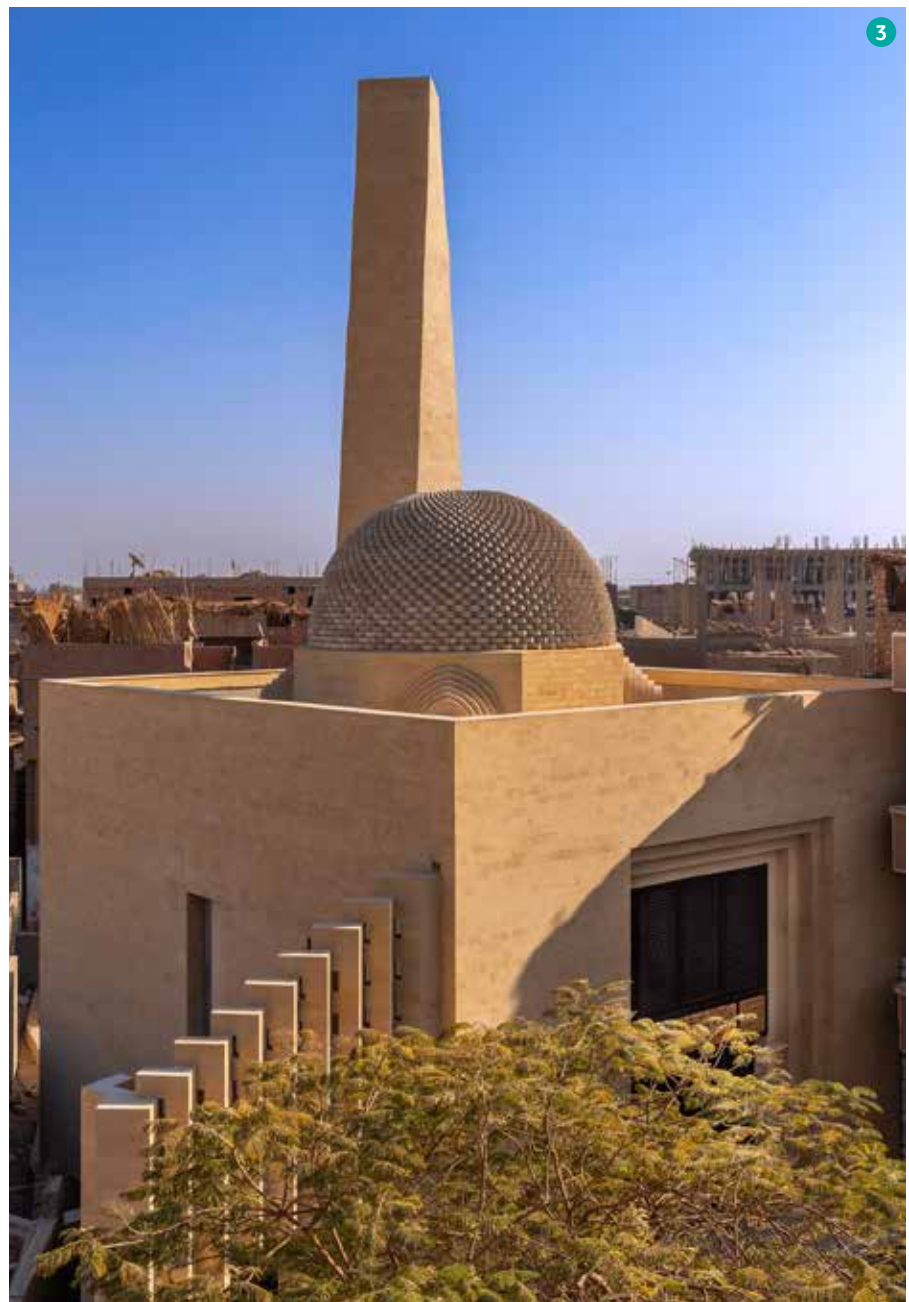
### Form and Architecture

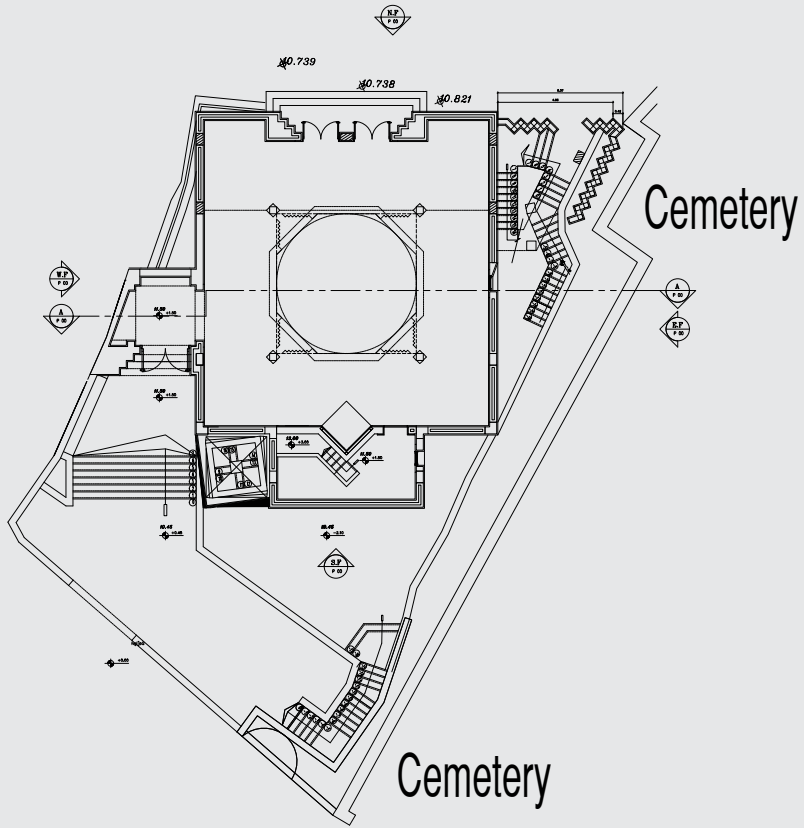
The shapes and forms of the mosque could be considered standard and context-friendly because they are simple extrusions of rectilinear shapes, just like the rest of the buildings in the village.

The main concept is the mosque as the "House of God". "No human vision can encompass Him, whereas He encompasses all human vision: for He alone is unfathomable, all-aware." [Qur'an 6:103] "[ ] there is nothing like unto Him, and He alone is all-hearing, all-seeing" [Qur'an 42:11]

The House of God houses His will, which is known to us through His books. The Revealed 'Written' Book Kitab Allah al-Massttur

- 1 Site plan
- 2 The mosque within the old town
- 3 External view of the mosque





(Qur'an and Hadith) and the Created 'Sensed' Book, Kitab Allah alMandhur, the Cosmos. The Revealed book shows us His will through a prescribed world view and prescribed worship, while the Cosmos shows us His will through natural order and scientific laws which govern physical existence. A Qibla, the point of origin and return, the archetypal House of God, which could be understood by creatures only through the Attributes of Divine Perfection, more famously known as the 99 names of God;

Vertical creates an upward spiraling force, represented in the apparent Hajj-like counter-clock circumambulation of all four columns bearing the main dome, which is formed by 64 circumambulating blocks in each of the 35 vertical courses. The blocks represent worshippers in their attempt to escape their earthly material being, which shrinks in dimension as they leap up from one orbit to the higher orbit.

The pendentive-domes take their form and orientation from respecting the wind behaviour and the principles of solar movement to allow for the breeze and light to shower the interior of the mosque while keeping away glare and heat.

Villagers were eager to have the tallest minaret in Sohag. Some of them asked the architect to go as high as 70 meters or more. However, the final height decided by the architect was carefully calculated in order not to terribly exceed the height of the surrounding buildings, all while maintaining a strong vertical presence, which enhances the mosque's legibility without overpowering its surroundings, which reflects his interpretation of the role of the mosque, socially and visually.

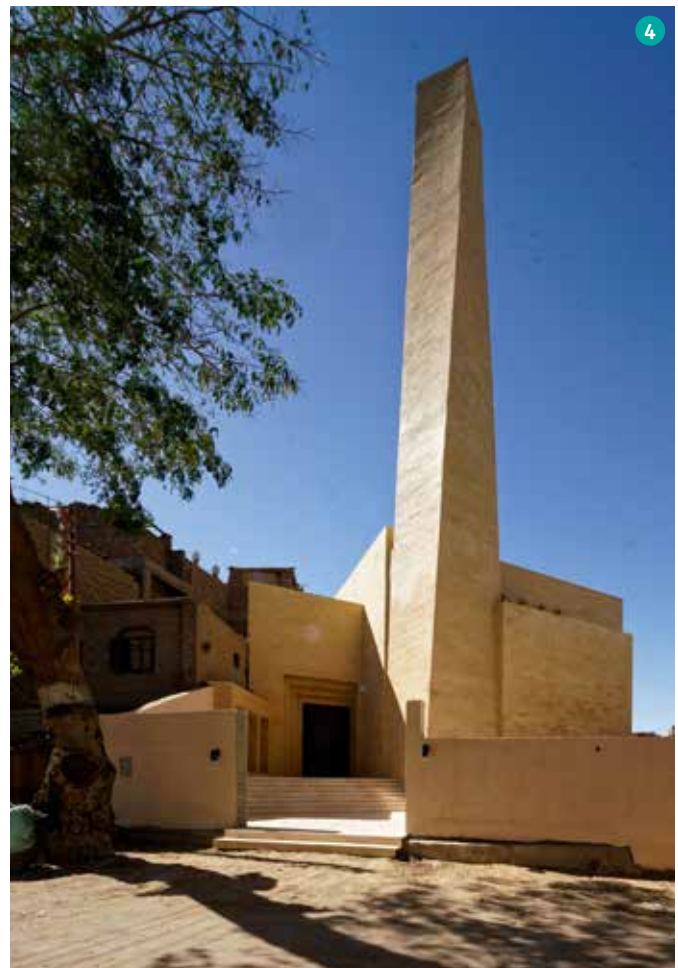
This is manifested in the architect's approach in creating an interior enclosed within a monolithic form with no openings in its thick walls, except a single window on the eastern wall, welcoming worshippers as they turn through the main entrance,

The architectural and structural innovations inspired by local architecture and architecture of Egypt, along with the use of local materials, helped in providing a solution that delicately balanced the need of a new architecture capable of confidently addressing the present world architectural discourse, while respecting and expanding the traditional architecture and local needs.

### Interior Design and Technical Aspects

The innovation is mostly in its roof architecture and structure. The main entrance boasts a slightly modified version of the stacked-arches dome. However, the latter is completely solid, while the Basuna version of it is partially covered with glass, allowing the inherent geometry and structural anatomy to be appreciated, as well as allowing a play of light and shadow to animate the entrance space.

- 1 Ground floor plan
- 2 Elevations
- 3 Prayer hall
- 4 Main entrance and the minaret





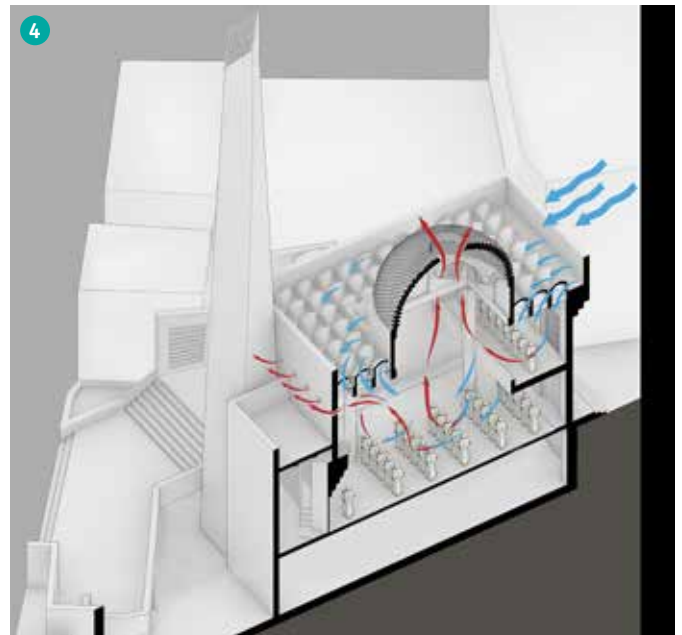
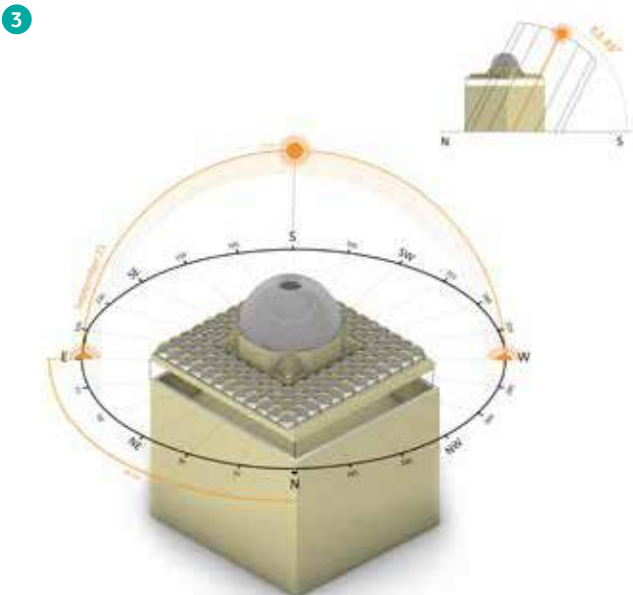


The image shows the interior of the Basuna Mosque. The ceiling is a prominent feature, consisting of a grid of concrete beams with square openings, allowing natural light to filter through. A tall, slender, tapered concrete column stands on the left. In the center-right, a large, light-colored stone archway frames a dark wooden doorway. A person wearing a light green thobe and a white ghutra is standing in the doorway, looking out. The floor is covered with a dark grey carpet featuring a repeating pattern of white and blue geometric shapes. The walls are white with a light-colored stone base.

**The main roof structural system**  
**balances the need for natural air and**  
**light, and minimizes the dimensions of**  
**the concrete sections of the roof.**

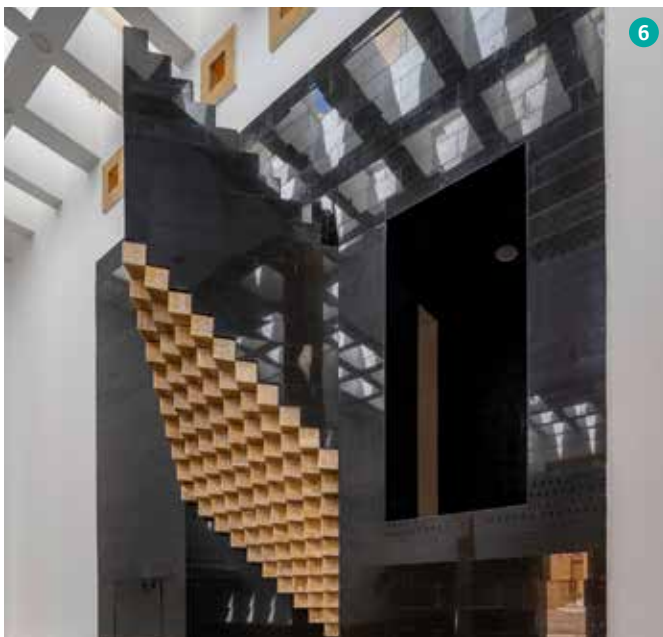


- 1 Mihrab and internal detail
- 2 Natural light inside the prayer hall
- 3 Mass analysis
- 4 Sectional model





5 The ceiling of the prayer hall  
6 Internal detail



The main roof structural system balances the need for natural air and light, and minimizes the dimensions of the concrete sections of the roof. The architect divided the area of the roof via intersecting beams, resulting in 144 square openings (12 x 12), of which 36 were combined in one bigger square equivalent to (6x6) squares covered by the main dome. This left 108 smaller squares, to be partially covered by 108 pendentive red-brick domes complemented by horizontal glass panels, which allows in natural ventilation and light.

The main dome was constructed using an Egyptian-made light block made of sand, lime and air, with a density of 0.5 ton/m<sup>3</sup>, thermal conductivity 0.136-0.132 W/m<sup>2</sup>.°K, fire rating (relative to thickness) 4-7 hours, sound insulation (dB) 37-48. The remarkable lightness of the block decreased the building's own-weight, in turn decreasing the required dimensions of all reinforced concrete elements. Its dimensions (100x200x600 mm) were perfect for introducing an original aesthetic, serving the conceptual scheme of the mosque, through employing a special cutting list and a simple staggered tessellation. I had to devise a special steel compass to guarantee the meticulous spatial positioning of every single block regardless of a mason's skills and accuracy. Pendentive-domes are a known traditional element, hardly used as an independent element. Their main use is recognised within dome systems, facilitating the transition from square to octagonal plans to finally receive the circular plan of a dome. In Basuna Mosque, this element was an independent unit, with innovated functions; structurally as a roof system, environmentally as a wind-catcher and skylight, and aesthetically as an independent geometrical object, appreciated both from the interior and the exterior -only from the higher buildings overlooking the mosque-.

The entrance dome is a stacked dome, referencing the historical dome of the Cordoba Grand Mosque, with minor modifications. It serves as a reminder of the rich potential of historical architecture in both the architectural discourse and construction innovations. This project presents a hybrid roof system utilizing brick and block masonry, aiming to introduce innovative, energy efficient, economic, sustainable and aesthetically creative solutions. It is an attempt towards a new resilient and meaningful architectural paradigm, which seeks to learn from the past in order to create relevant innovations for the future.

The designer used a passive strategy. This is evident through his decisions with regards to the orientation of the different volumes, openings, roofing systems, construction materials, finishes, textures, natural cross-ventilation, natural lighting and the resort to building techniques which require very low-maintenance.

The designer's use of the light sand block to construct the walls of the mosque, especially using the cavity wall technique (100mm wall + 100mm void + 100mm wall) helps decrease the overall own-weight of the building, and significantly improves its sound and thermal qualities.

The interior space is one of the most appealing and distinctive aspects of the mosque. The careful articulation of the natural light that penetrates through the building's roof, transcending the worshippers' experience into a state of immateriality, is well designed and implemented.





## Conclusion

Basuna Mosque makes a very good case in supporting what the cultural and social role of architecture should be. It is exemplar in how it respects the surrounding fabric and enhances the experience of the users, both who actively use it for worship. It offers a clever case for a harmonious dialogue with nature and establishes a dialogue with the residents of the village, connecting them with the world-class architectural discourse and future possibilities for their architectural and aesthetic identity. The involvement of the architect, not just as a designer but also as the chief builder on site, helped create a direct connection between the two sides.

The new generation of villagers has witnessed an unusual architectural and construction process that is certainly altering their perception of buildings, architecture, space and beauty. The different forms of recognition the mosque has enjoyed since its completion; one of which is the honoring of the mosque and its architect by the President of Egypt, has instilled a renewed sense of pride amongst the people of Basuna and a great shift in their perception of the role of mosque architecture.

- 1 Outdoor view at evening time
- 2 Outdoor details
- 3 Outdoor spaces
- 4 The staggered external wall

Community Mosques (Saudi Arabia)

412

# COMMUNITY MOSQUES

410

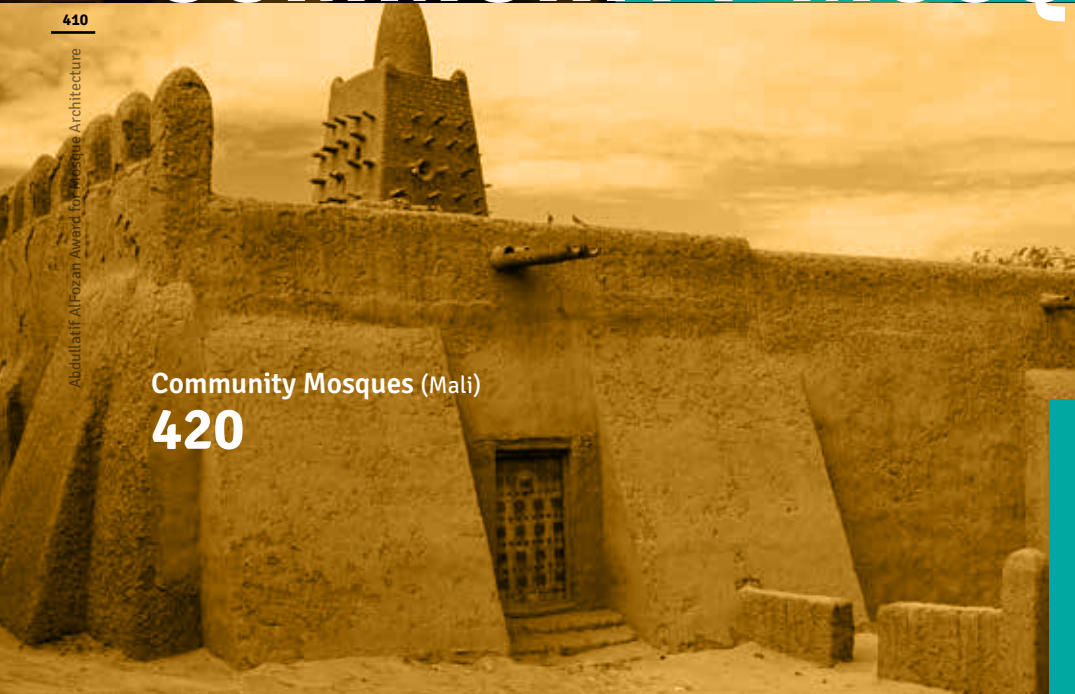
Abdullahif Al-Fozan Award for Mosque Architecture

Community Mosques (Mali)

420

Community Mosques (Ghana)

436











# AL DWAIHERA MOSQUE

Site: **Bujairi District, Dir'iyah, Saudi Arabia**

Client: **National Built Heritage Centre**

Architect: **Local community**

Land area: **420m<sup>2</sup>**

Built up area: **747m<sup>2</sup>**

Year of completion: **1157**

Mosque capacity: **400 worshippers**

Type: **Community mosque**

The mosque gains historical significance due to its establishment during the reign of the first Saudi state (1157-1233 AH), in the historical district of Bujairi, the largest neighbourhood of the historic city of Dir'iyah, which was inhabited by Sheikh Mohammed bin Abdul Wahab, his family as well as students.

The name 'dwaiherah' is derived from "dhahars" in Arabic meaning 'appear". If you want to emerge from the Bujairi neighbourhood to other neighbourhoods, the mosque is in the middle. The mosque is also called "alhouta", the largest neighbourhood of Dir'yia'.

The mosque was a scientific and cultural beacon for the people of the neighbourhood of Bujairi, where several workshops were held at the mosque. For sixty years two remarkable sheikhs used to teach in the mosque, namely Sheikh Saad al-Taweel and Sheikh Abdullah bin Awad, who was a hafith of the Holy Quran and is known for his devotion and piety.

The most famous imams of the mosque during the reign of the first Saudi state, Sheikh Abdul Aziz bin Mohammed bin Isa bin Qasim. In the fourteenth century AH Ibrahim bin Abdul Rahman Almusind prayed in this mosque, and Ali bin Abdul Aziz bin Olayan, Hamad bin Dawood, and Abdullah bin Mohammed bin Awad, And Abdul Aziz bin Nasser Al Baridi, and Saad bin Abdullah bin Dawood, and the most famous muezzin Ibn Juwair, and Abdul Aziz bin Nasser Al Baridi.

The Heritage Foundation has renovated and rehabilitated the mosque through a generous donation from His Royal Highness Prince Sultan bin Salman bin Abdul Aziz in 1436 AH as part of the project to develop the historic district of Bujairi. It has been preserved under heritage programme.

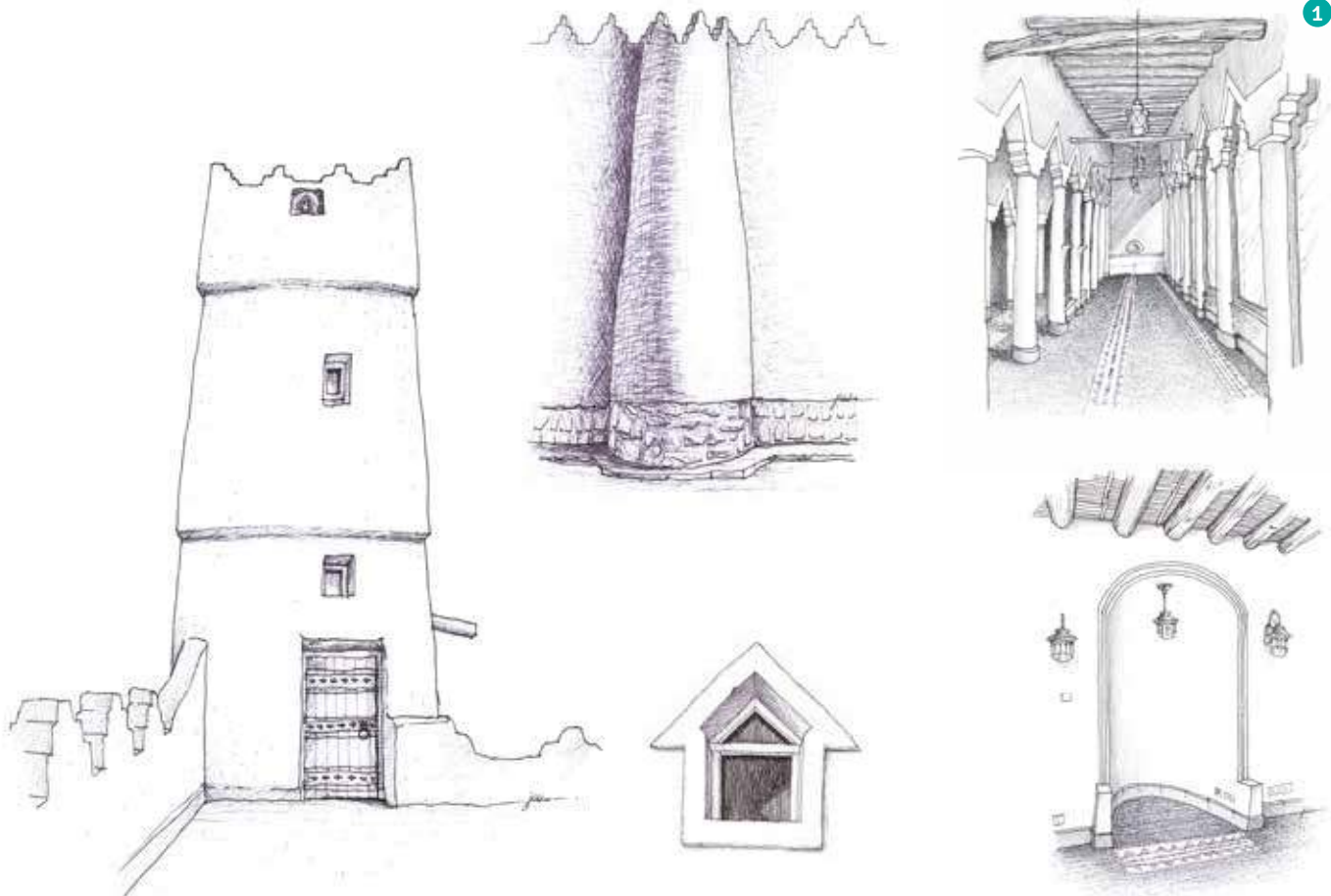
### Site

The mosque is located in the historical district of Bujairi in the province of Diriyah, dating back to the era of first Saudi state. The mosque is characterized by Najdi style. One of the oldest mosques in the historic Diriyah, the mosque is currently in operation where prayers are held.

The mosque is characterized by urban integral connection with the context. It connects physically and visually with plazas, courtyards and alleys that surround the mosque. Visitors can wander around the mosque, which is a separate, free standing block surrounded by paths and alleys before one can reach gates on both sides, made of heavy wood and copper with distinct traditional inscriptions.

The outside courtyard is spacious with human scale proportions, and distinctive character. Low-rise palm trees are abundant in the place. The association of the palm with urban space in local context is organic, symbolic, and has visual associations. The palm tree in traditional surrounding environment naturally integrates with buildings visually, environmentally and socially.

Natural stone materials have connotations related to architecture and urban design. The natural stone paving acts as the fifth surface that seems part of surrounding urban context.



- 1 Mosque elements
- 2 Mosque façade and minaret

### Spatio-Functional Relationships

The composition of mosque spatial structure is characterized by simplicity in general. This vertical composition makes the mosque function as a single building on layers and adds important value to the composition and interior space.

At the lower level along main road, which can be accessed from two entrances on the ground floor, there exists a prayer space open to the mihrab on the Qibla side. This space is divided into three longitudinal spaces separated by seven columns in two parallel rows. Such a separation was necessary for construction reasons related to the maximum distance for load bearing structure using local building materials.

At this lower level, which can be entered from main road, the worshipper enters from the eastern and northern sides, ending with a lobby in shaded area, followed by a staircase that leads to the upper deck. At the upper level, the worshipper move from the southern side to the Sirha area, which is an open space that separates the lower prayer hall from the main prayer area on the upper level.

From the Sirha, the space opens visually along the prayer hall through the facade, and it is possible to enter through the facade, which is interspersed with columns along its length. Sirha is a transitional

zone between the roof of the prayer hall on the lower floor and acts as a climate buffer between the outer and inner spaces.

The main prayer hall is characterized by irregular geometric rectangle. Entry is from the eastern side, and the western wall is surrounded by a mihrab inside the Qibla wall. This prayer hall is reminiscent of the first mosque in Islam. The length of the horizontal projection towards the Qibla wall is set in favor of a longest first row. The prayer hall is divided into three longitudinal spatial regions and interspersed with two rows of columns with arches in the middle of a special architectural character.

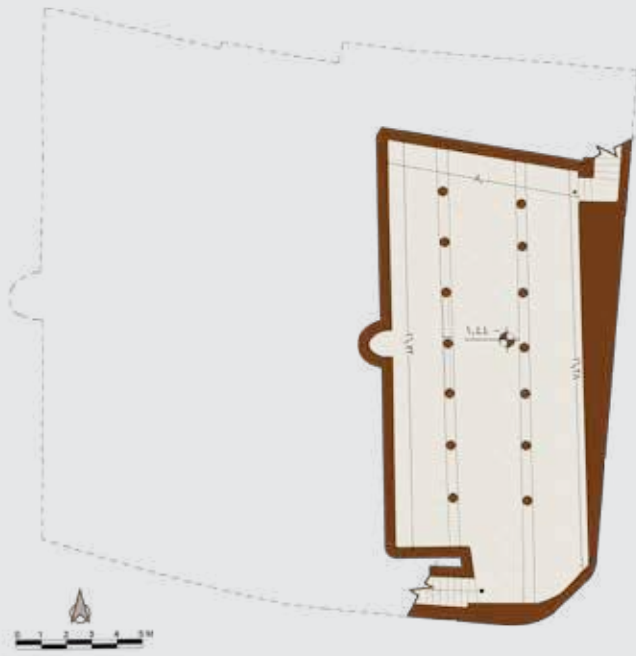
The spatial and visual extension inside the prayer hall strengthens visual and structural security where the construction distance between columns is little, which enhances this secure feeling of structural stability.

### Form and Architecture

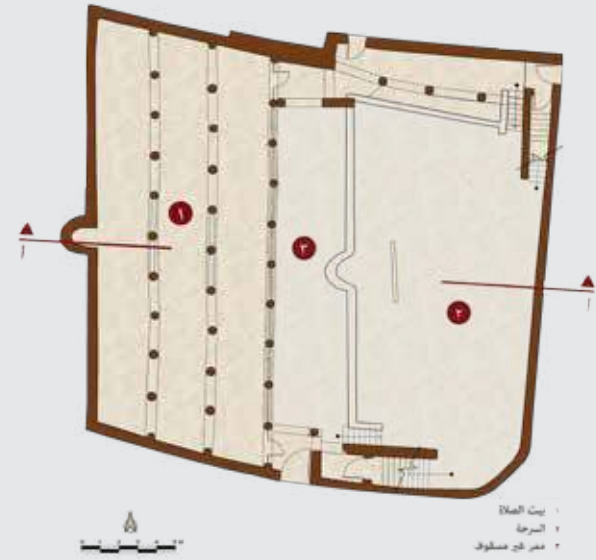
The mosque is characterized by its construction in Najdi style, and the architectural character of the mosque is simple and beautiful. Adobe is the main building material. It was roofed with wood and palm leaves. The total area of the mosque is about 537 m<sup>2</sup>, and can accommodate about 400 worshippers. The mosque consists of a prayer hall, located in the western part of the mosque, and consists of



1



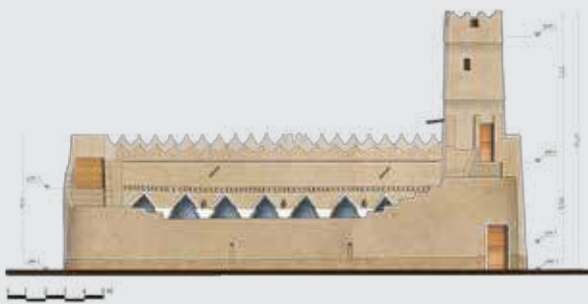
مسقط الأرضي للحلوة



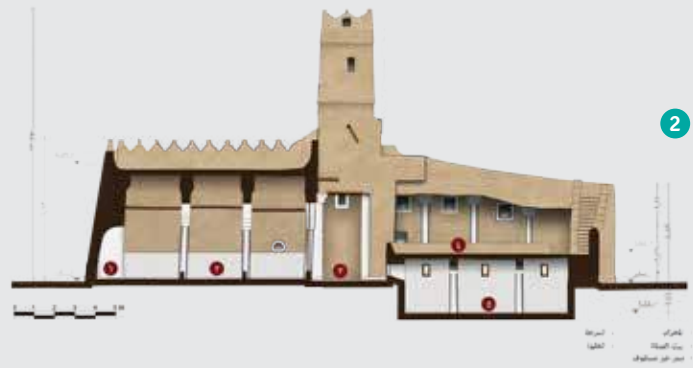
مسقط الأرضي للدور الأرضي

- 1 بيت الصلاة
- 2 السجدة
- 3 منبر الخ مسلول

2



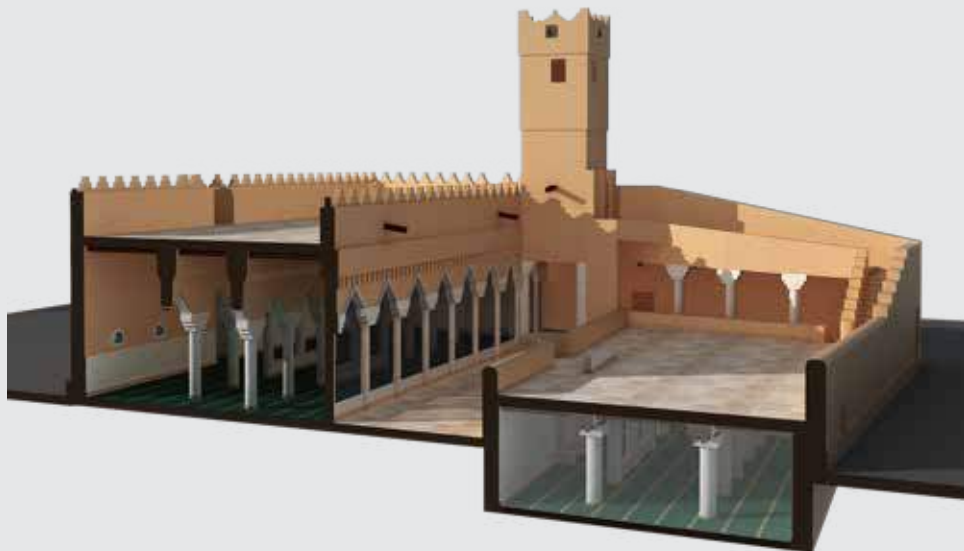
الواجهة الشرقية بقو



الواجهة الغربية

- 1 السجدة
- 2 بيت الصلاة
- 3 منبر الخ مسلول

3





- 1 Plans for Al Khlwa and Al Musbah
- 2 Elevation and section
- 3 Sectional 3D model shows the mosque components
- 4 Prayer hall from inside

three corridors parallel to the Qibla wall. Inside there is a mihrab, and a special area below currently used as a prayer area for women with a niche, the minaret is located in the north of the mosque with a height of about 13.5 m.

Mosque composition is tower like, reflected in the external facades being vertically divided as in the traditional tower architecture. In the lower part of the façade, the stone was used in its naturally trimmed shape to give rough, smooth surface.

In the middle and upper part, clay bricks have been clad to give an integrated surface for the required composition and character. At the top, friezes have been formed, which have a traditional character, used in local tower architecture. At the upper level of the façade, some elements were used to drain water in order to maintain the integrity of materials with a framework to reduce maintenance.

The general composition of mosque expresses genuine integration between the covered and open spaces, as well as the horizontal and the vertical. The minaret is well proportioned with facades in terms of height.

The formation of blocks and volumes reflects ingenuity seen in urban local Najdi and traditional architecture. In addition to intelligent manipulation of horizontal and vertical levels both functionally and visually, there is articulation of vertical surfaces with regard sun movement to provide shaded cool interior, with surfaces forming natural insulator in relation to the relationship with the directions and movement of the sun.

Generally, the architectural character is characterized by simplicity and spontaneity. But it is nevertheless full of symbols, both in terms of the use of materials and colours and the use of simple motifs, which have cultural connotations and historical backgrounds that link urban character with identity and historical assets that can be read and tracked back to society customs and social and religious traditions.



1 Staircase leading to roof deck for prayer in the summer night

2 The Sarha (courtyard) and the main arcade of the prayer hall

3 Some details of the external walls

### Interior and Technical Aspects

Materials used express style and mechanism of construction that prevailed in heritage buildings, and it is best expressed in historic Dariya region. The material used historically locally and regionally was and still environmentally provide a set of functional and climatic elements and features. The adobe used in the construction of traditional buildings, including this heritage mosque, has worked to shape the interior space to suit human scale.

The process of restoring this mosque, at the expense of His Highness Prince Sultan bin Salman, and under Urban Heritage Development Authority, has added to the mosque a touch of simple beauty. The white colour of columns and triangular arches that characterize Najd architecture in general have been paired with natural light and the brown colour in the construction of walls.

The restoration process undertaken by the authority to rehabilitate the mosque and preserve its most important features was marked by full awareness of its historical significance, its religious connotations, and the cultural and architectural dimensions. This process involved social dimensions in maintaining an important feature for local community. It included cultural dimensions in re-introducing the mosque as part of urban heritage, with its implications for traditional crafts, as well as a model for maintenance of traditional buildings,

including building materials, which is re-presented within a conscious process within urban traditional built environment.

The facades are adorned with friezes, as aesthetic visual element that expresses a style, as well as a local and regional identity and character. The palm shadow is reflected on the architectural façades during the day, which makes the integration of natural elements with urban landscape a backdrop for urban landscape.

In the ceiling of the main prayer hall, logs were used for roofing, which added a natural touch. The corridors made of wood and white triangular arches show simple composition.

The interior space of the upper prayer hall is characterized by simple and quiet calm atmosphere. The interior wooden ceilings hang simple, natural lighting elements. The colours chosen for the mosque floor mats express balance and calm and inspire the spirit of meditation and the atmosphere required for spiritual prayer.

The interior details of the prayer hall provide the simplest intervention, with touches that serve the function of the mosque. This includes the small niches framed in white used to keep copies of the Quran. Likewise, the use of white colour in framing niches, drawing white colour along the interior facades and the lower part delineating the features of the mihrab are all important signs in a delicate and



beautiful drawing of interior space that interacts with the colour of the prayer rugs that cover interior floors.

Also, elegant medium-height columns look like white bright marks work in contrast with brown colour, which gave a simple beauty reflected on the purity and clarity of the atmosphere in transparency of using building materials.

### Conclusion

The meanings, contents and various dimensions represented by the mosque's rehabilitation and restoration process are multiple and significant. At the urban level, the mosque presents a community urban model that re-documents urbanism versus local community and emphasizes the need not to alienate heritage, which represents the memory of place and society.

The symbol and significance of form and inherited vocabulary stand out, it means more than just two-dimensional and even three-dimensional. The genesis of form is associated with a narrative story and has roots in the history of the place and is transmitted as the genetic characteristics of society, history, customs and heritage. Hence, preserving it is an important part of the narration of heritage and its social extension through urbanism, configurations and the architectural character.

On the social level, the preservation of mosque represents identity and memory of local community. In parts of this urban heritage, life of worshippers is related to the place. This mosque represents the essence of preserving society, identity, memory, place, urbanism, character, because the place with its complex dimensions requires time as a fourth element to the peculiarities of culture, identity and society. The mosque is for society and everything becomes attached to this framework and this concept.

The community mosque means that the process of restoration, rehabilitation and use of materials and all traditional crafts associated are all consistent with the idea of devoting a pattern of social customs and behaviors to remain in local community that has the right to be associated with it emotionally, and culturally. This mosque offers this successful model in strengthening the relationship with society.





# DJIN- GAREYBER MOSQUE

Site: **Timbuktu, Mali**

Client: **Mosque Management Committee's**

Architect: **Local community**

Land area: **5100m<sup>2</sup>**

Built up area: **5100m<sup>2</sup>**

Year of completion: **1327**

Mosque capacity: **2000 worshippers**

Type: **Community Friday mosque**

The Djingareyber Mosque is known to have been constructed in 1325 by the Andalusian architect Abou Ishak, at the initiative of King Hadj Moussa, upon his return from pilgrimage to Mecca. Since then the mosque has experienced a number of modifications, resulting from the organic nature of earthen architecture and its vulnerability to weathering. Archaeological test pits carried out in 2009 in the main prayer hall have shown that at least three successive buildings have occupied the site. The main earthen ornaments on the Qibla wall and some pillars may date back to the sixteenth century. In 1988 the site was included in UNESCO's World Heritage List, together with the city's other two historic mosques, Sidi Yahya and Sankore.

### Site

The Mosque is located at the southern edge of Timbuktu's historic city, forming the core of modern Timbuktu, the home of 30,000 inhabitants and capital city of Mali's Northern Province. Lying at the meeting point between the Niger River Delta and the Sahara Desert, Timbuktu and the Sahelian environment is affected by growing desertification. Trees that used to form raw materials for the Mosque's carpentry are no longer available. Wind erosion and accumulation of sand deposits in the city's open spaces are also of concern for the integrity of the urban fabric and public open spaces.

Timbuktu urban fabric follows organic traditional cities, characterized by spontaneity, as well as irregular roads according to spatial importance and the relationship of buildings to the urban fabric of the city as a whole. It is less dense, and the urban tissue is homogeneous with organized pattern.

The location of the mosque and its relationship to the city on the southern edge is striking, which is uncommon with regard to the location of the mosque traditionally. Despite this rather isolated site at the edge of the urban fabric of the city, the mosque, with its organic composition, is in harmony with the organic fabric of the city as a whole.

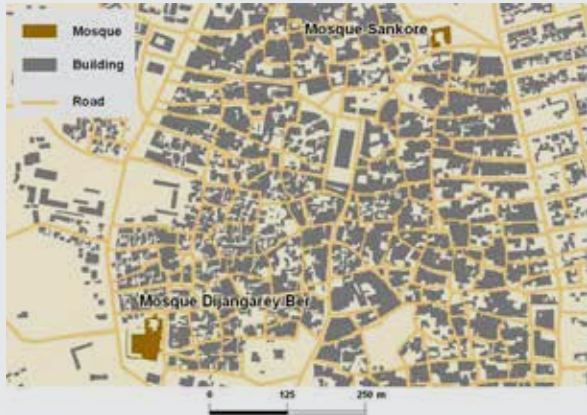
- 1 External wall of the mosque
- 2 Surrounding urban fabric
- 3 Ground floor plan
- 4 Model of the mosque and its components



1

2

This location on the southern edge of the city, however, has an advantage for its location on a major road that surrounds the mosque and the city. This facilitates accessibility to this Jumaa mosque from different areas of the city.



### Spatio-Functional Relationships

The mosque is characterized by its relationships with the outside, depending on the structural composition of surrounding urban fabric. Because it is located on the southern edge of the city, the mosque has been linked to the main road, which made the mosque a landmark seen from distance.

The mosque is linked with irregular surrounding squares, roads, and courtyards from four sides. Although it appears to be a free standing building, it has been carefully linked to the surroundings, and has responded to irregular external shape. This, in turn, appears to be a response and a reflection of the surrounding courtyards that respond with flexibility to the natural movement of pedestrians, visitors, and worshippers gather after Friday prayer.

Internal space relations in the mosque are distinguished by diversity, which enriches visual experience in an unprecedented and significant way. Inside, groups of internal space web appear, like layers that lead the visitor and worshipper from the external public space surrounding the road through small gates. After an inner wall, the worshipper moves to the courtyard facing the Qibla wall, where group of doors that allow visitor to the inner part of the mosque. This space and the inner courtyard are characterized by being open as exterior spaces that can be used for outdoor prayers during occasions.

In the western part of the main prayer hall, there is an inner courtyard or an open courtyard that acts as an adjacent space for the main prayer hall. Adjacent to it is the minaret, which functions as a visual and functional landmark, in addition to its role as a vertical feature of the entire urban composition.

Generally what defines the spatial and functional relationships is the organic and spontaneous pattern of construction, where the mosque takes an organic structure that interacts and integrates with the general composition of the city as a whole. The nature of spatial and functional relationships also reveals the spontaneous and organic construction mechanism and methodology that appears to be cumulative over time drawn by necessity and need rather than pre-construction formation. In the case of this mosque, the function appears to be predominant over form, where the growth and expansion of the spatial formation accumulate according to the function and societal factors that in turn determined the shape of the mosque over long time spans.

### Form and Architecture

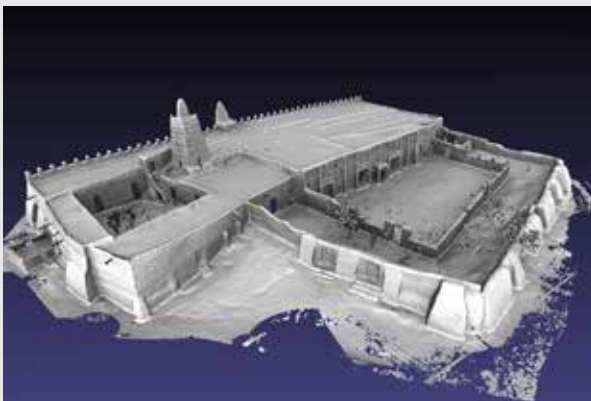
The urban composition shows the features of natural clay architecture, which generally characterizes desert environment and harsh hot climate. These urban formations are mainly a reflection of a set of environmental and climatic factors, reflected and integrated with other social factors, local cultural and prevailing and traditional building methods.

In the first place, building materials, the method of building process seem to play primary role in the resulting urban configurations. The building appears to stem from the surrounding land or as if it melts in it. It looks like a natural extension horizontally and vertically from the earth's environment and adobe used for construction. The formations

3



4



are so natural that the simple human touch appears all over it. The roof looks tilted as if built in a primitive way that has nothing to do with any modern technology. The mud-brick and clay were built with simple primitive mechanisms without relying on regular engineering, on the horizontal or vertical levels alike.

The roofing also depended on simple building materials, which in turn was reflected in the horizontal construction, as columns increased, so that distances between them decreased. The horizontal and vertical areas, including the minaret, are covered in clay, which need maintenance. For this, the vertical surfaces are sloped in order for the loads to be distributed and to be sustainable for periodic maintenance purposes.

The human scale was carefully considered in the horizontal formations that appear to be close to the ground, while the minaret also rises modestly and is proportional to the horizontal composition of the urban formation. It is also notable in the horizontal formations the sequence of surfaces, which reflects stages of construction and expansion, which appear harmonious and consistent.

The architectural façade expresses desert tower architecture, with a frieze that runs along horizontal surfaces. The towers, one of which is the minaret, are built with adobe, and wood.

### Interior and Technical Aspects

Built in mud and tuff stone, Djingareyber Mosque was in poor condition when it was first documented by the Aga Khan Trust for Culture (AKTC) in early 2007: a full topographic and architectural survey, first performed on the Mosque, was the basis for a damage assessment. It revealed that the building was in weak structural condition, particularly the roof and wall-bearing systems, due to water ingress in the roofing. This occurred because of defective slopes and accumulation of earth fill and the mediocre quality of local mud plasters due to the decline of familiarity with traditional crafts.

The project first focused on consolidating the mud masonry and carpentry, making the roofing watertight. Then the project aimed to conserve decorative earthen motifs and plastered surfaces in the interior spaces of the Mosque's covered prayer hall and replace the defective sound, ventilation and lighting installations.

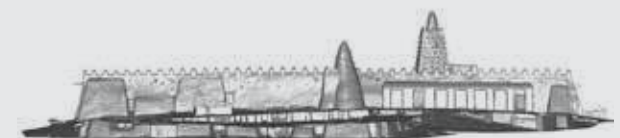
Timbuktu is a remote location posing challenging logistical conditions. Sourcing quality construction materials in the immediate environment is difficult due to the decline of appropriate mud construction techniques. Logistics and local transportation, combined with the lack of skilled mid-level labour and security threats, are also challenging. As a result, the work on Djingareyber Mosque was entirely in-house managed, employing traditional masons active in the neighbourhood's corporation. This mode of operations also enabled direct quality control, flexibility in resource allocation and on-the-job training in traditional building crafts and contemporary conservation methods to more than 140 community masons and craftsmen. Literacy classes were offered to all implementation crew and foremen as well as training in basic computer skills.

The interior is a reflection of this natural architecture. It takes the worshipper back to the first and original spiritual atmosphere, away from the complexities of mosque architecture throughout Islamic history. Building materials used inside and outside were a simple and transparent representation of surrounding natural environment and in harmony with it. Therefore, internal spaces are most simple. The mosque takes architecture back to the building of first mosques in Islam, namely the Prophet's Mosque in Medina. These internal relationships and atmosphere are calm, simple and expressive.

1

Djingareyber Mosque  
Timbuktu, Mali

To-South - View

Djingareyber Mosque  
Timbuktu, Mali

East View

Djingareyber Mosque  
Timbuktu, Mali

North View

Djingareyber Mosque  
Timbuktu, Mali

South View





- 1 Sections and elevations
- 2 Mass of the mosque and its Sudano-Sahelian architecture style
- 3 Simplicity and spontaneity of the form
- 4 Top view of the mosque

# GREAT MOSQUE OF DJENNÉ

Site: Djenné, Mali

Client: Mosque Management Committee's

Architect: Local community

Land area: 5625m<sup>2</sup>

Built up area: 2220m<sup>2</sup>

Year of completion: 1907

Mosque capacity: 3000 worshippers

Type: Community Friday mosque



As one of the wonders of Africa, and one of the most unique religious buildings in the world, the Great Mosque of Djenné, in present-day Mali, is also the greatest achievement of Sudano-Sahelian architecture (Sudano-Sahelian refers to the Sudanian and Sahel grassland of West Africa). It is also the largest mud-built structure in the world. We experience its monumentality from afar as it dwarfs the city of Djenné. Imagine arriving at the towering mosque from the neighbourhoods of low-rise adobe houses that comprise the city.

Djenné was founded between 800 and 1250 C.E., and it flourished as a great centre of commerce, learning, and Islam, which had been practiced from the beginning of the 13th century. Soon thereafter, the Great Mosque became one of the most important buildings in town primarily because it became a political symbol for local residents and for colonial powers like the French who took control of Mali in 1892. Over the centuries, the Great Mosque has become the epicentre of the religious and cultural life of Mali, and the community of Djenné. It is also the site of a unique annual festival called the *Crepissage de la Grand Mosquée* (Plastering of the Great Mosque).

#### Site

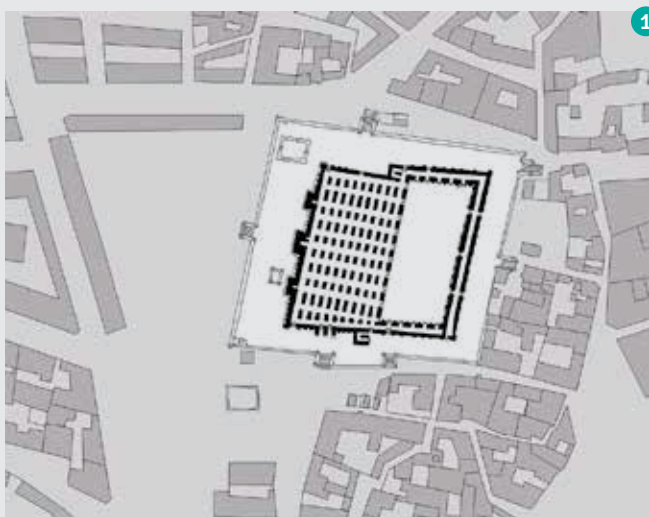
The Great Mosque of Djenné is located in the midst of urban fabric and dominates city's architecture. The structural composition of the surrounding urban fabric reflects its dominance indicating religious, social and urban importance. Due to its location and symbolism, it is accessible via many roads around.

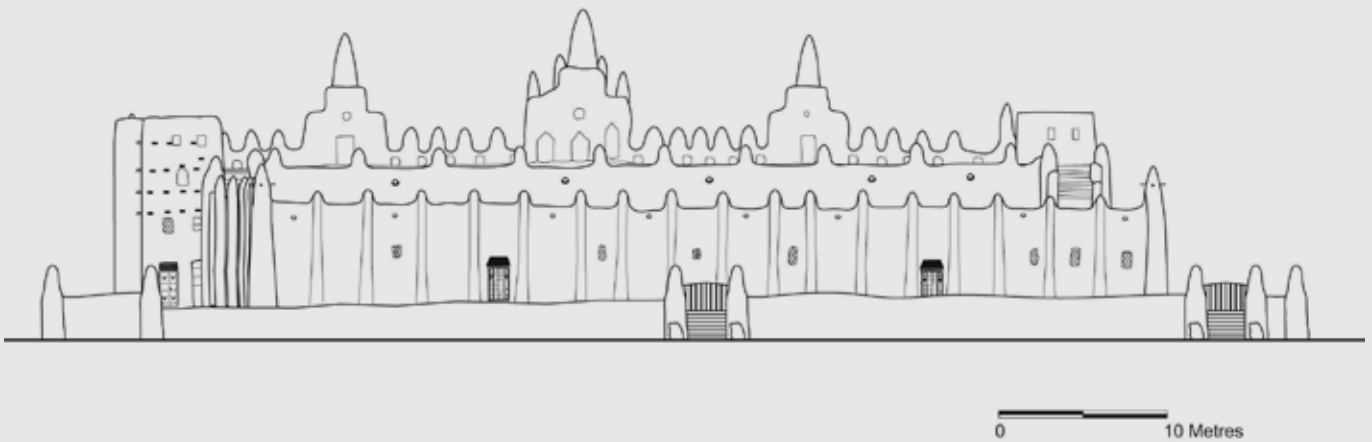
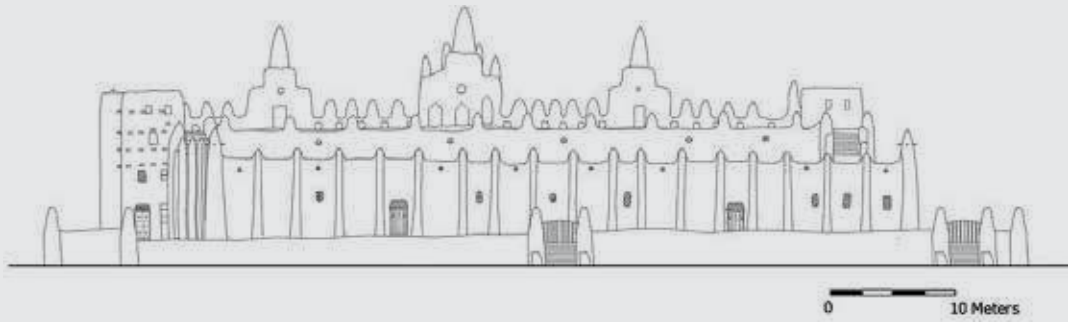
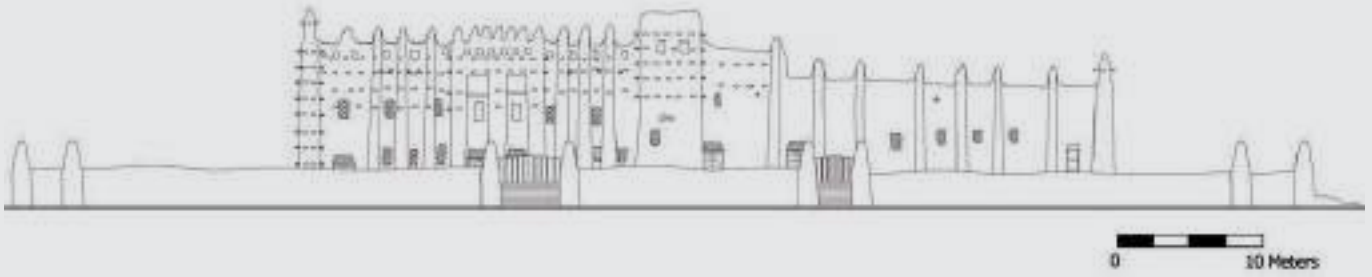
#### Spatio-Functional Relationships

The relationship between the interior and exterior was characterized by progressive space division due climatic considerations. This gradual separation from external public space to the outer space of the mosque, which is defined by the wall of what resembles a Mastaba, represents a gradual shift towards the privacy of space by religious socio-religious contexts.

The boundary between these two public spaces is determined by an external gate, and a vertical set of stairs to create a Mastaba that brings added value to the Mosque with its urban composition. This gradual portal transfers visitor's mindset and sense of architecture with concepts related to the value of the building and its symbolic connotations socially and religiously, regardless of social status, as there is no portal for the poor and another for the rich. The building has value in the visitor's mind for its distinction from the surroundings vertically and horizontally. Within the urban concept, the gate and

- 1 Ground floor plan
- 2 The mosque and the surrounding traditional fabric







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1 Sections and elevations

2 Mosque façade

low wall symbolize the transition from one space to another, hence redefining space.

This relationship between the two very public areas surrounding the mosque and their relationship through the entrance portal or the external gate is fully expressed by the simple relationship expressed by the spontaneous sitting of children near the front steps of the Mosque. This feeling of closeness to the place is the result of balanced relationship between the physical and moral values embodied in this composition, and the relationship between the interior and the exterior. At the special level of these interrelationships towards the inner hall of prayer, the spatial organisation begins to form religious and social hierarchy. The space that precedes the inner prayer hall is bright and colourful, defined by an inner simple courtyard.

This physical transition soon turns into spiritual and functional. In such meaningful relationship between the physical and the spiritual, the public and the private, the spatial and the functional, the hierarchy of space and the structural forms the special composition of this mosque.

### Form and Architecture

The Great Mosque that we see today is its third reconstruction, completed in 1907. According to legend, the original Great Mosque was probably erected in the 13th century, when King Koi Konboro - Djenné's twenty-sixth ruler and its first Muslim sultan (king) - decided to use local materials and traditional design techniques to build a place of Muslim worship in town. King Konboro's successors and the town's rulers added two towers to the mosque and surrounded the main building with a wall. The mosque compound continued to expand over the centuries, and by the 16th century, popular accounts claimed half of Djenné's population could fit in the mosque's galleries.

It is notable that the formation and the urban character in this mosque is closely related to the urban formation as a mechanism or a process rather than just as a product. The architecture of the





Mosque and its composition are linked to the building process itself. The pictures illustrate the association of this formation with social participation, where the urban fabric adheres to the social fabric, and the facade becomes a mixture of human and clay blocks that are difficult to separate.

In this framework, architecture cannot be separated from society, in the same way that the facade cannot be separated from the colours that represent human bodies that climb the wall, hence closely relates society and the urban building process. In such cohesion, the façade becomes the property of community, just as society becomes an expression of simple facade of the mosque, or simple spontaneous expression of values, mechanisms, and methodologies in the construction industry.

The architectural composition of the mosque does not follow regular geometric form. The resulting form of the prayer hall tends to determine rows towards the Qiblah, albeit the predominant shape is the rectangle with rows of columns. The same irregular spatial formation can be seen in the outer courtyard that precedes the inner prayer hall. In the wider perimeter of these two elements, the Mastaba upon which the Mosque sits, appears close the shape of the square.

### Interior and Technical Aspects

Some of the earliest European writings on the first Great Mosque came from the French explorer René Caillié who wrote in detail about the structure in his travelogue *Journal d'un voyage a Temboctou et à Jenné* (*Journal of a Voyage to Timbuktu and Djenné*). Caillié traveled to Djenné in 1827, and he was the only European to see the monument before it fell into ruin. In his travelogue, he wrote that the building was already in bad repair from the lack of upkeep. In the Sahel—the transitional zone between the Sahara and the humid savannas to the south—adobe and mud buildings such as the Great Mosque require periodic and often annual re-plastering. If re-plastering does not occur, the exteriors of the structures melt in the rainy season. Based on Caillié's description, his visit likely coincided with a period when the mosque had not been re-plastered for several years, and multiple rainy seasons had probably washed away all the plaster and worn the mud-brick.

A second mosque built between 1834 and 1836 replaced the original and damaged building described by Caillié. We can see evidence of this construction in drawings by the French journalist Felix Dubois. In 1896, three years after the French conquest of the city, Dubois published a plan of the mosque based on his survey of the ruins.

The structure drawn by Dubois (left) was more compact than the one that is seen today. Based on the drawings, the second construction of the Great Mosque was more massive than the first and defined by its weightiness. It also featured a series of low minaret towers and equidistant pillar supports.

The present and third iteration of the Great Mosque was completed in 1907, and some scholars argue that the French constructed it during their period of occupation of the city starting in 1892. However, no colonial documents support this theory. New scholarship supports the idea that the mason's guild of Djenné built the current mosque with the help of forced labourers from villages of adjacent regions,

brought in by French colonial authorities. To accompany and motivate workers, musicians were provided who played drums and flutes. Workers included masons who mixed tons of mud, sand, rice-husks, and water and formed the bricks that shape the current structure.

In the resulting interior design is a natural, spontaneous product of the general architectural composition of the Grand Mosque, in which has the vertical dominates the interior scene. Arches that separate the rows of the inner columns, to which natural earth colour is added, with the reflection of the natural light infiltrated inside, all interact in the formation of a simple but majestic scene that inspires respect, naturalism and transparency and creates a calm spiritual atmosphere.

The nature of the interior floors covered by simple mats all restructure the interior and reproduce simple scene. In such an atmosphere and internal structure simplicity is reproduced, in a way in which social habits, daily practices and simple societal behaviors that reflect local societal culture overlap without unnecessary additions.



- 1 External walls and plazas
- 2 Old town of Djenné
- 3 The annual festival of Crepissage de la Grande Mosque



# SANKORE MOSQUE

Site: **Timbuktu, Mali**

Client: **Mosque Management Committee's**

Architect: **Local Community**

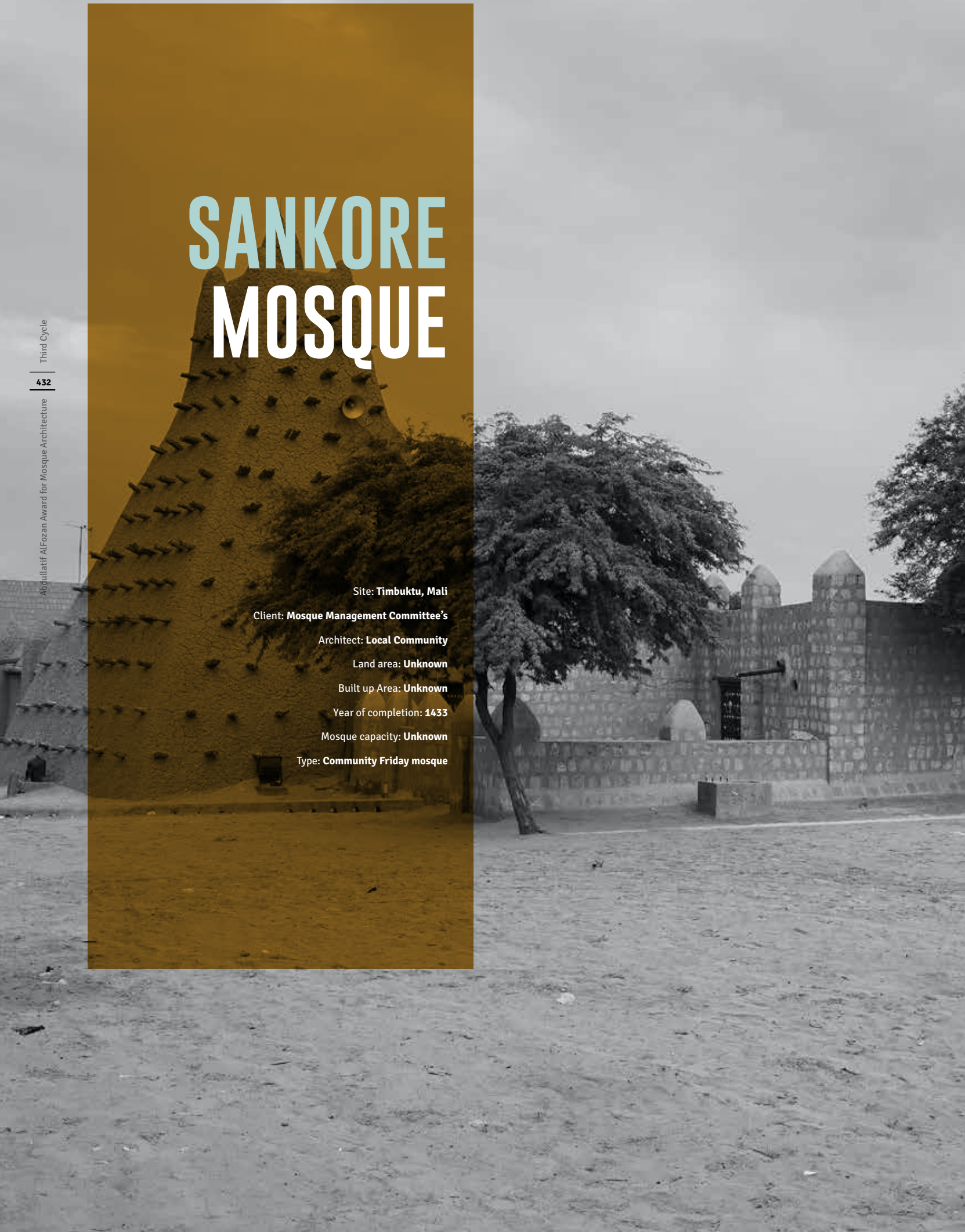
Land area: **Unknown**

Built up Area: **Unknown**

Year of completion: **1433**

Mosque capacity: **Unknown**

Type: **Community Friday mosque**



Like the two mosques presented in Mali, Sankor Mosque offers another example of community mosques in many features, forming different relationships within the urban landscape based on the careful division between the physical and the spiritual.

- 1 Ground floor plan
- 2 Mosque wall and minaret

At the level of mosque's site planning, Sankor Mosque shares similarities with Djingareyber Mosque, being off centre of the urban fabric. It also shares similarities with regard the relationship between the public and the private and the hierarchy of spatio-functional and other social, and environmental relations.

The relationship between space and function is determined by the simplicity of the outcome in general, which reflects on the urban output, and capitalizes on simple building materials to produce spatial configurations and urban character.

The architectural character reflects the environment and climate, its formation, and its features formulate natural materials used, where the mosque stands out as if it were a product of earth. This shapes the parameters of the environmental dimension of the structure as a whole as it provides environmental sustainability with regard to energy.

The architectural formations are horizontal, while the minaret stands out and dominates the urban scene and becomes a vertical landmark. The horizontal composition of the mosque shows tendency to regular prayer rows in a rectangular direction towards the Qibla, where the inner columns extend and appear as openings in walls without columns in the common sense. In the middle is the inner courtyard of the mosque, whereas the southern part occupies the huge mass

of the minaret, which can be reached via a staircase from inside the courtyard at its eastern end. The hallway, in the traditional sense is integrated within rectangular configurations, as if the corridors around the inner courtyard were organized in rows in response to the call to prayer.



## Conclusion

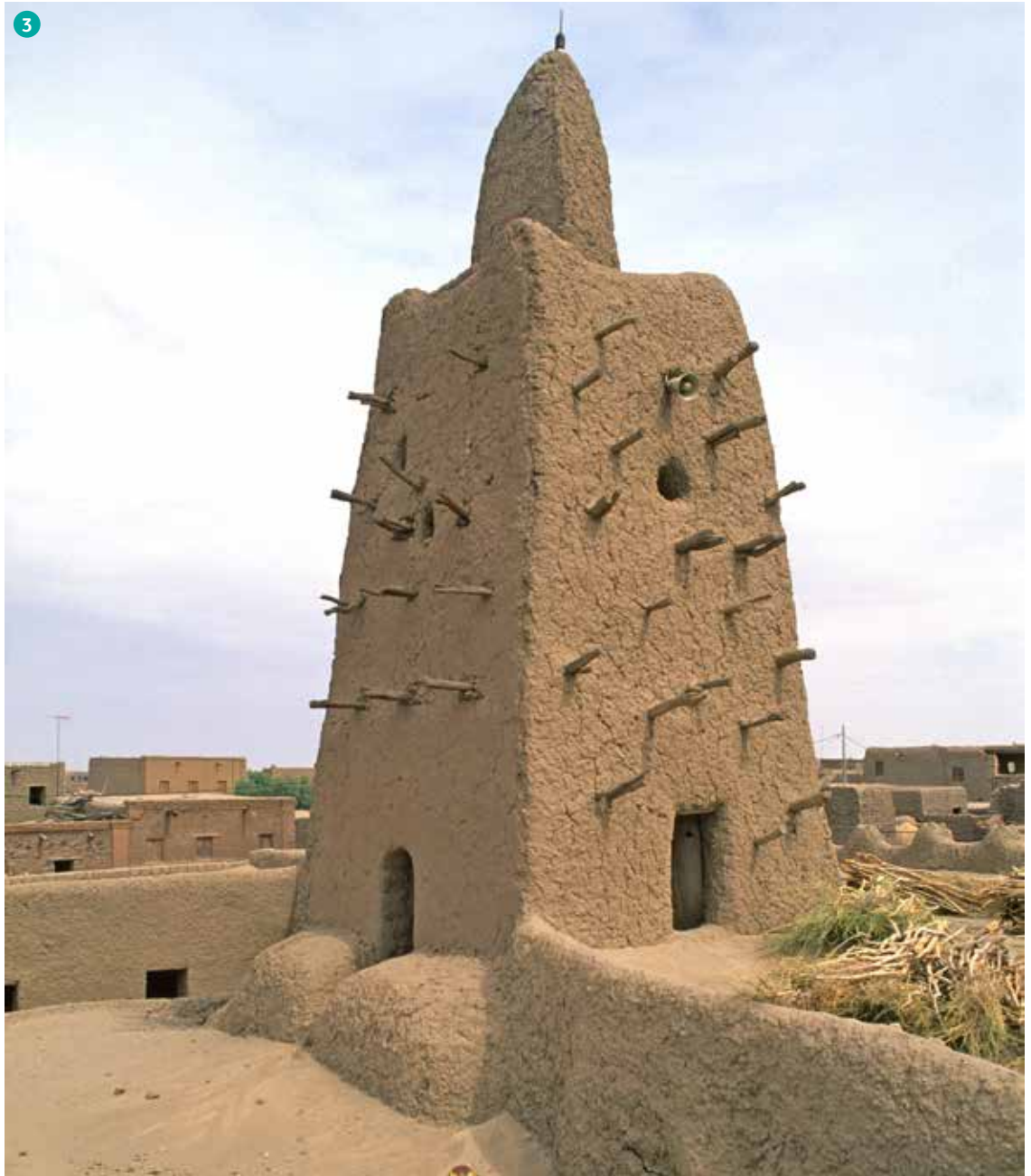
These three community mosques offer distinctive models in identifying and re-visiting the various relationships between overlapping levels. These three models rearrange the relationship between the environmental, natural, and climatic levels in which spatio-functional, the use of natural materials, and the effects of each of these factors overlap.

These models also show the importance of these factors in formulating other levels, so that the output is a tool and a means at the same time. This process in the production of mosques with their complex interfaces has resulted, however, in very simple outcomes.

These community mosque models emphasize the need for the mosque to be for society and society only. These models adhere to society requirements, as the architectural façades are shaped and made by people and for people.

- 1 External view
- 2 Communal activities beside the mosque
- 3 A unique minaret form
- 4 Main façade









# LARABANGA MOSQUE

Site: Larabanga, Ghana

Client: World Monument Fund

Architect: Local community

Land area: 64m<sup>2</sup>

Built up area: 64m<sup>2</sup>

Year of completion: 1421

Type: Community local mosque

The history of the mud mosque in Larabanga is difficult to distinguish from the many myths about it. Its fame and popularity probably owe a lot to the appeal of the mystery and magic in those fascinating legends.

Oral and some written historical accounts regarding the founding of the community of Larabanga indicate that it was by a man named Ibrahim Braimah. He was a powerful mallam who came to the region in the 17th century with the Malian invaders that established the Gonja Empire in present-day Ghana's Upper West and Savannah Regions.

The Larabanga mosque was founded in 1421 instead of 1600s and the claim that it is the oldest mosque in all of West Africa. This idea comes from another oral account of

an Islamic trader named Ayuba had a dream while staying there instructing him to build a mosque. He awoke to find the foundation of the mosque already constructed. The challenge comes where elements from that oral tradition begin to duplicate and/or conflict with the stories surrounding the mallam Braimah.

Legend has it that after the war in the late 1600s, Braimah threw a spear and determined that he would settle wherever it landed. It traveled through the air and landed on a high spot that seemed unnaturally bright. It was there that he built the mosque and his home. He named the community that sprung up around him "Larabanga" meaning "Land of the Arab."

### Site

The building is detached from its surroundings, as it looks like a group of small, interconnected conglomerates that make up the features of the mosque. This idea supports the concept and significance of the place from an architectural aspect to give the building a symbolic religious character.

Therefore, the relationship between the mosque and its surroundings appears to be bound by open outdoor space, so worshippers can easily access the mosque from all sides. However, this relation is

guided by the direction of the Qiblah, and accordingly the direction and location of the entrance. Site characteristics were determined by built and natural environment and the building culture in Ghana, which defined the physical features of site in relation to climate.

Its nature and total area as local community mosque has largely determined the urban configuration, so that access does not require more than few steps, as the muezzin still rises to the roof of the mosque to call for prayers. This brings back to mind the first beginnings of mosque in Islam.

Adjoining the mosque from one side is a large tree that occupies site and appears in close proximity and integration with the mosque. The layers of this tree symbolize the time span it took to grow, indicating coexistence between the mosque and its natural and social environment.

### Spatio-Functional Relationships

Spatial relationships are characterized by sharp divisions between the inside and the outside in specific and strict manner. The spatial unit that constitute the main and simple prayer hall determines the correlations with the outside horizontally and vertically where it is possible to ascend to the roof through simple staircase.

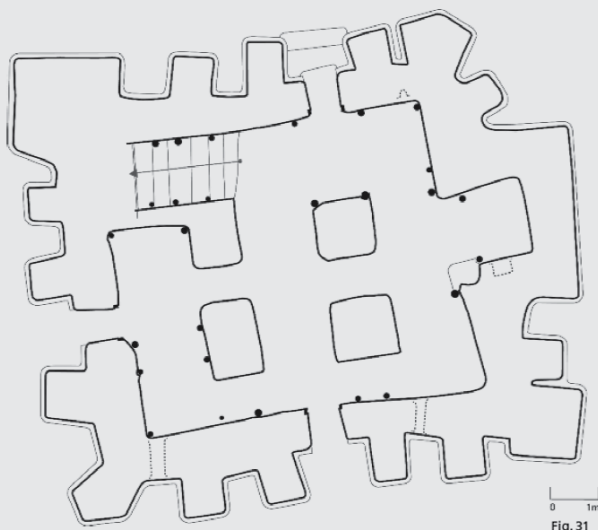


Fig. 31

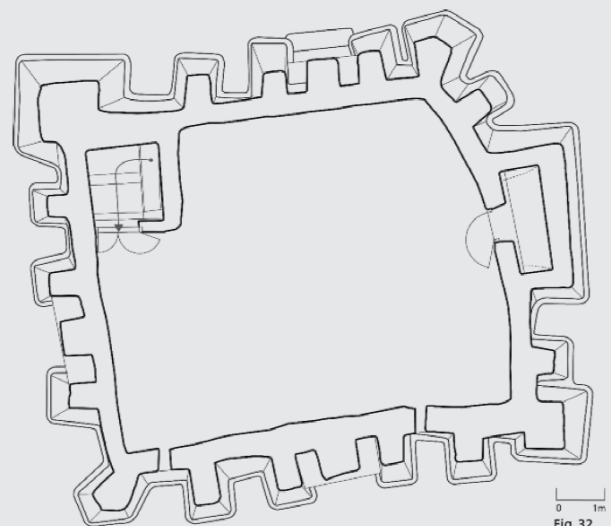


Fig. 32

- 1 Floor plans
- 2 External view

This functional staircase allows the muezzin to ascend to the roof to call for the prayer. Therefore, the vertical horizontal relationship is interrelated within religious and social framework within close contact with the community.

The structural requirements of having large pillars to bear roof dead load have shaped mosque layout. The internal space relations are largely defined, as internal fragmented enclosures. Despite the simple structural and spatial configurations, the mosque links local community five times per day within this simple socio-spatio-functional composition.

As such, spatial relationship becomes more complex than meets the eye in this simple unit. In this framework, these relations can be viewed as a series of interconnected indoor and outdoor spaces, interconnected physically and socially.

The simple entrance works beautifully to define the line between material world and the world of meditation and spirituality. It works symbolically to express the architectural composition in a clear and distinct manner. Above the entrance there exists an umbrella that rests on simple tree trunk pillars. Then the entrance soon consumes the visitor inside, where the worshipper leaves material world behind. Above the entrance, there are some simple decorations, as expression of the contrast between white and black, perhaps to resemble the distinction between the inner and outer worlds, thus becoming rather symbolic.

### Form and Architecture

This Mosque was built by the people, and The World Monuments Fund (WMF) has contributed substantially to its restoration. It is built in the traditional Sudanic-Sahelian architectural style, using local materials and construction techniques like mud, reeds, wood and bricks.

It is the oldest mosque in the country and one of the oldest in West Africa, so it has been referred to as the “Mecca of West Africa”. It has two towers in pyramidal shape, one for the mihrab forming the facade on the east and the other as a minaret in the northeast corner. In addition, 12 buttresses on the external walls are strengthened by horizontally aligned timber elements.

The composition of the mosque appears as a group of individuals bound by horizontal links. The architectural facades are characterized by consistent vertical and horizontal elements, where the vertical appears to be controlled by lines, levels and horizontal elements and beams that control mosque general architectural composition.

The architectural facade appears in the simplest of forms, yet replete with environmental, climatic, cultural signs. In the lower part of the facade, a black base contrasts with white upper parts. The black lower



part works to combat environmental forces, dust and mud, whereas white upper part functions for environmental cooling purposes.

The tower like general composition appears to symbolically express the concept of communal gathering in the mosque and the congregational prayers. These diminishing white towers with tree trunks also point to local architecture in Ghana and the building styles that have been reflected in the architectural character and overall composition.

The symbolism of urban formation can be read within societal and religious concepts. This symbolism and its implications can be explained within the concepts of social solidarity and societal relationships within the neighbourhood. It can also be read within the Islamic religion system, community solidarity, and analogy as a compact structure. It is a rhetorical religious analogy that connects urbanism and social relations of individuals and communities.

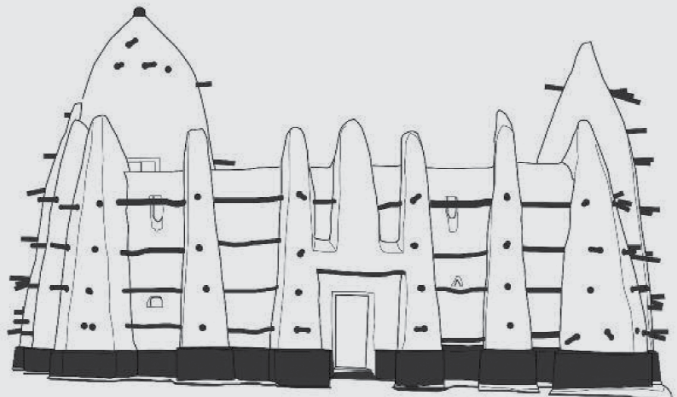
Within this symbolism, simple architectural character and form appear to hide deeper implications. In this context, urban form appears intertwined with deeper societal and religious concepts, hidden within simple external form, which also belongs to a local cultural system formed within conscience of local community, individuals and groups.

With this framework, the outcome becomes an expression of interconnected tangible and intangible systems, between the perceptible and the unconscious, between the present and the absent, between the explicit and the implicit. This relationship is manifested by tangible forms, though it embeds, signs, meanings related to the implicit.

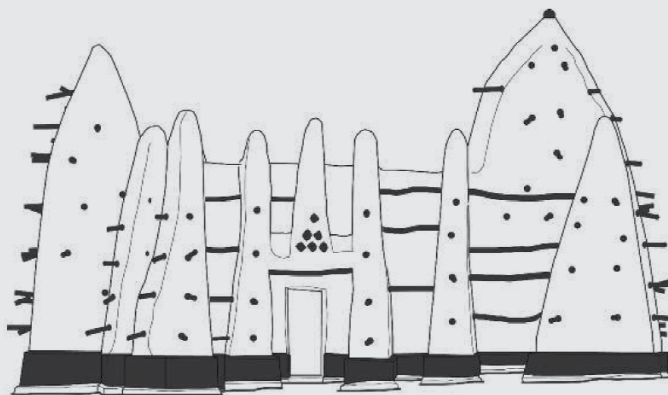
With this methodology, urbanization becomes a cause for reflection on meanings and values of simple architecture associated with social, religious, cultural and identity, and accumulations of habits, behaviors, values and social heritage.

- 1 Elevations
- 2 Some external details
- 3 Inner spaces

1



0 1m  
Fig. 33.4



0 1m  
Fig. 33.3



### Interior and Technical Aspects

Simplicity in this mosque is an eventual outcome of simple building technique and local materials of bricks, adobe and wood, which reflects available facilities and limitations. This structural simplicity was reflected specifically on the inner prayer hall, which seemed as enclaves for individual meditation rather than the usual concept of mosque architecture.

The construction using building materials that withstand roof load has resulted in the definition of internal space as a series of intermittent spaces between large internal pillars. This redefined the mosque as space for congregations, but at the same time defines spatial spiritual meditation enclosures. The simple interior inspires spiritual contemplation, calmness and tranquility.

Simplicity was not limited to building materials, but extended to elements of interior design. Everything that constitutes the mosque and its interior design has the advantage of being a natural product of society. Also, the multiplicity of colours for materials used for floor finishing seems like society contributions, indicate that the mosque is primarily community-based. It is a mosque that serves society, and for society.

### Conclusion

The Larabanga Mosque is an exemplar of simplicity that mosque architecture can offer for Muslim societies, still living natural built environment of indigenous African cultures.

The form and its connotations are deeply linked to culture. The colour has its interpretations that can be linked to more than one level, social, environmental, climatic and urban. In addition, the use of local building materials denotes to accumulative experience of community construction industry, and these cannot be thrown away easily, especially when the construction is at the level of mosque society and for society.


The levels presented by this unique model make it necessary to reflect on developments in mosque architecture. It also makes it essential to draw rigorous comparisons within the developments of mosque architecture. In this concept, future mosque architecture must fulfill present demands and associated legacy of customs, social behaviors, traditions and social practices that affect urbanism, culture and the environment.

This mosque sincerely expresses cultural factors that produce architecture and urbanism related to society, environment and identity. Therefore, such an integrated product should not only be reviewed with the due respect it deserves, rather it should be viewed deeply in a world where material has overshadowed morals embodied by environmental architecture throughout the ages.





# CONCLUSION



The shortlisted mosques of the third Cycle of Abdullatif Al-Fozan Award are examples of developments in contemporary architectural discourse and practice in the twenty-first century. The shortlisted projects represent major shift in patterns of thinking about the architecture of the mosque, as they exhibit serious attempts to break traditional stereotypes. In this context, many unprecedented ideas, methodologies, and intellectual propositions have produced architectural, urban, social, environmental, and sustainable outputs.

The group of mosques reviewed in this book, pose many questions. They exhibit positive critical philosophical, intellectual, cultural points of view relate to future mosque architecture. All short listed mosques critically discussed in this book, are distinguished unconventional models as opposed to common historic mosque architecture. Most of these mosques are not stereotypical cases unlike common mosque typologies that prevailed in mosque architecture throughout Arab and Islamic history. Hence the Award strives to present and bring to the front stage these unique projects to explore the architecture of mosques in the twenty-first century.

We believe that shortlisted mosques can contribute to the critical dialogue about what we called **parallel architectural heritage** to propose new ideas based on original architecture reflected through the Prophet's Mosque in Medina and on foundations that define the mosque in addition to broad contemporary technical urban life. Parallel architectural heritage can be the big title for mosque architecture in the twenty-first century, as it searches for intellectual platforms that may be almost unknown.

The many levels dealt with in this Cycle open the way for careful studies that dismantle the physical structure of mosques linking them with intangible mosque environment to restore its historical human socio-political role as sustainable institution. It restores its role in architecture and urban development linked progressively with cultural heritage associated with civilization and society.

On the social level, the mosque's role in establishing the relationship with society is evident before, during, and after its operation and maintenance. A group of shortlisted mosques offer important proposals to integrate society and the mosque, reviving the concept of mosque societal configuration beyond its physical structure. Shortlisted projects showcase models of interaction activating the social role of the mosque and the role of community in reviving important historical relationship with local and Friday mosques, all present proposals for study and inspiration. This

social level is concerned with presenting the mosque as a spatial and religious institution upon which to lay the foundations of relationship between society, its community members, and between the mosque as a religious legislative institution that evaluates relations in society. Thus, the religious concept moves from its abstract theoretical concept to a practical reality framed by the spatial architecture of mosque in Islam. This is, of course, another dimension of parallel heritage through researching the role of the mosque making it a contemporary social platform, regardless of the historical model that derailed the genuine role of mosque.

At this same important social level, a hierarchical and functional relationship has emerged in presenting this social concept. Some examples of mosques have provided us with the participatory role for members of local community to present the mosque as a platform for social interaction over periods of time, as the community with its various categories merges with the mosque in a natural way consistent with local culture. In several models, the mosque was presented as the local community, and the community was the mosque, to the extent that the facade has become elements of society with bright colors, as if the building blocks of the mosque have become members of the community, such an expressive picture, where mosque's architecture shines with local community as individuals become building bricks or blocks of mosque's architecture, which is the true Muslim community as stated by Islam.

At the environmental level, mosques of this Cycle provided concepts on how to represent the climate in a simple, spontaneous way free from complication or fabrication. This important level merged with another one expressed in the principles of sustainability. The careful use and selection of building materials was in line with construction methods that are consistent with the properties of materials, on the one hand, and with the principles and foundations of climate design that works to save energy and its consumption in natural ways that serve the climate factor



and provide a distinct atmosphere that frame and establish the principles of environmental factor for harsh climates.

The amazing harmony presented by mosques that exhibit sustainability and environmental design satisfy required functional and spiritual aspect within the mosque, which draws lessons from the simple close relationship between natural architecture and surrounding environment.

The environmental aspect is almost the important factor in many mosques of this Cycle. Mosques exhibit interaction between shade and light and natural local building materials without exaggerated decorations to enrich mosque architectural and urban experience in the twenty-first century. All point to proposals that attract global collective awareness, where the Award has brought to the front stage cases of mosques that employ social and cultural environments, calling for the mandatory return to the foundations of mosque architecture, and architecture for Arab and Muslim societies. With this framework and perception in mind, the presentation of mosques becomes more than just a critical study or review, to serve as a revision of important concepts and propositions, all of which calls to rethink the rules. Just as the home in architecture generally embodies behaviors and societal customs and traditions, the mosque, if restored to its basic role as presented by these unique models, showcase multiple levels inherent in its organisational composition, to exhibit social, cultural, environmental and political levels.

Without a doubt, the physical, architectural, and social levels still play important roles in any profound reading. Architecture is still the most prominent evidence, which can be deconstructed to re-read formative structure as well as the spatio-functional, abstract visual levels, all of which have important historical, social, environmental, political and economic implications. Architectural design is the means to re-read the decisions and intentions, social practices inherent in forms, vocabulary and urban character. All of these have important implications for tracking designer decisions and evolutionary historical meaning to understand relationships between shapes and the evolution of historical forms, which reflect important stage in the development of architecture in general. Above all, studying the outcomes of architecture leads to tracing and understanding social practices, behaviors, customs and societal traditions to establish deeper understanding of the nature of society and its social heritage tracking its changes and transformations. Hence the importance of presenting these models in different environments throughout the Islamic World, lies in the fact that they constitute a fertile environment for studies in social sciences, the environment, and urbanization as individual cases or as groups.

Mosque cases presented are distant from the political level, especially in view of the natural evolutionary history of mosque architecture in Islam. Many models were inspired by the first simple model of mosque architecture in Islam, the Prophet's Mosque in Medina, in attempts to emphasize the simplicity of such models away from the forced politicization of mosque architecture, as opposed to the simple prophetic model. These simple propositions produced simple natural architecture in some of the mosques of this Cycle. This framework suggests that the political level in mosque's architecture is almost integrated with the cultural and social levels. Architecture and the mosque are for people and from people, far from attempts to present the mosque as an institution or tool in the hands of elite political class, as this is not the spirit of the mosque in Islam.

The multiple models presented by community mosque proposals were the most prominent examples of humble and simple mosque's architecture, which presents simple atmospheres and climates that come out of the surrounding local environment. The term «community mosques» is almost the most accurate expression of a mosque in Islam. It is an expression that embodies the broad concept of the term society in every sense. It is a term that exhibits habits, behaviors, inherited, folklore, genetic structure of society, and its memory. These community mosques provided important insights into restoring society to its origins. The preservation of the heritage of religious society is the preservation of its inherited values and origins from which it originated. It is a promise to start that is inspired by religious tradition within a broader urban framework than a private or specialized architectural agent.

Some mosque models pointed to the importance of sustainability and the concept of maintenance or operating the mosque, which entails a lot of necessary attention, as well as proposals related to evaluation and reassessment, concepts of recycling and energy and water consumption, all that have become necessary in dealing with environmentally friendly buildings and are the most

prominent aspects of architecture in the twenty-first century, green architecture, which must be one of the priorities and most prominent proposals in mosques of the twenty-first century.

The mosque in the twenty-first century, as presented by the examples of these various mosques, emerges from the traditional frameworks that have dominated a long period of history in the development of mosque architecture throughout the Arab and Islamic worlds. It is a mosque that emerges from the formal retreat that has been associated with elements and features that have become stereotypes to represent **Islamic** identity. It is a mosque free from the limitations of form in order to prevail over function. It also provides a simple underlying idea in which the meanings of spiritual atmosphere in which people relationship with Allah is asserted without decorations or visual disturbances.

Mosques of this Cycle offer unprecedented proposals to liberate the mosque from elements, and unnecessary additions, as these examples have demonstrated. Some mosques have been completely liberated from the qibla wall. Some were liberated from the whole form, and others were liberated from historical traditional elements that became signs of **Islamic** identity, as if identity was related only to form. Some examples were freed from the narrow geographical restrictions that historically prevailed by presenting the mosque as a building isolated from its surroundings, where some mosques have physically merged with natural surrounding environment. At a more profound level, the mosque merged functionally, commercially and socially with the natural elements and groups of surrounding community, so it became a social, educational and commercial center in which individuals and groups of local community can spend their times throughout the day, week, and year.

With these multiple meanings presented by these mosques, the concept of the mosque can be reviewed in the twenty-first century. It can also be reconfigured at different levels and priorities of mutual importance to provide urban milieu in which the outcome is a tool and content at the same time. In the sense that the mosque can be presented, as these models reveal, to revisit the mosque, architecturally, environmentally, socially, economically, politically, and within the principles of sustainability and green architecture, the destination of future architecture.

With all these implications, the importance of each of the mosques of this Cycle supersedes its limited importance in reaching the winning list, because each represents a unique case of contemporary Arab and Islamic architecture. Therefore, just as the Al-Fozan Award has a role in highlighting these cases that have almost evaded the collective perception of contemporary Arab and Islamic architectural discourse, at the same time, these unique

cases have merit and a role in re-introducing the mosque in the form and context in which can restore historical transformations to its origins. This is what this reading should be in this book for the origins of mosque's architecture in the twenty-first century, as presented by these cases and within a deep and careful reading that draws inspiration from lessons and propositions that go beyond the surface and needs re-readings on more than one dimension and more than one level.

In general, we can say that the short list in this Cycle presents important ideas dealing with the crisis of mosque architecture that prevailed in the twentieth century, and the most important thing is that it opens a wide field for professionals and critics in architecture to build a future architectural heritage of the mosque by presenting many new experiences and ideas which challenges many traditional ideas within the architecture of mosque in its character in the previous century. We envisage that new ideas presented can be a prelude to major transformation in the near future that makes mosque architecture at the center of the global interest in architectural practice and thought.



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