AN INTERPRETATION OF TIMELESSNESS IN SACRED ARCHITECTURE:

AN ISLAMIC CENTRE FOR DURBAN

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DECLARATION

I declare that this dissertation is my own, unaided work and carried out exclusively by me under the supervision Mr. Mthethwa. It is being submitted for the degree of Master in Architecture to the University of KwaZulu-Natal. It has not been submitted before for any degree or examination in any other University.

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Rozana Mullah

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بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

"In the name of God, the Most beneficent, the Most Merciful"

To my parents

Moosa Mohammed Mullah & Kurshida Banu Mullah

And my dear husband

Zaid Paruk

ABSTRACT

Timelessness is an ethereal component of sacred architecture as defined by the belief of man. The spiritual vision of humanity has demonstrated techniques of expressing belief in the existence of a Higher Being within the universe. Various systems of belief, based on religion today, have their own interpretation of their existential being in relation to the cosmos; this is strongly conveyed by means of architecture and built form.

Modern interpretations of ancient belief systems have transmitted timeless qualities in ancient architecture. This research is aimed at providing an interpretation of timelessness that is able to capture and portray a sacred identity in built form and architecture. The author has identified a complex inter-relationship between the spirit, earth and the universe, forming a timeless design philosophy. The evaluation of various sacred archetypes in a historical setting has set a foundation to timeless design, which when implemented in sacred Islamic architecture, reveals its timeless elements.

The contemporary interpretation of theory in this research has led to a timeless design philosophy, which when applied to any sacred architecture, will reveal timeless design elements that can be used today. This contemporary application of timeless elements or physical representations of belief may stimulate the deep spiritual vision of humanity once again, where qualities of 'ultimate human value' detached from differing religious belief systems enhance the 'collective human experience'. Ultimately leading toward an architecture expressive of unity in multiplicity.

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GLOSSARY OF TERMS AND ABBREVIATIONS

A. D.: An abbreviation used for a Latin word, Anno Domini and directly translates into 'the year of the Lord' and used as a time period

A. H.: After Hijrah (A time period) See Hijrah.

Arabesque: French word used for Muslim art style based on the use of interweaving plant motif with leaves and tendrils.

Arcade: A series of arches supported by columns or piers.

Asr: Asr is the late afternoon Prayer, the third compulsory Prayer of the day. It is prayed between mid-afternoon and a little before sunset.

Azaan: A call to Prayer. The Azaan is announced five times a day from the Mosques.

Column: A cylindrical support used widely by the Greeks and Romans (often marble). In addition to its structural function, it is used as decorative means.

Dawah: Propagation of Islam through word and action.

Fajr: Dawn. The time of the first obligatory prayer (Salaah), prayed at any time between the first light of dawn and just before sunrise.

Fard: A compulsory act in Islam

Hadith: The authentic sayings of the prophet (p.b.u.h) as told by his companions. Plural: Ahadeeth

Hijrah: Emigration. The Islamic calendar starts from the year Prophet Muhammad (p.b.u.h.) emigrated from the city of Makkah to Madinah, in 622 C.E.

Imam: One who leads the prayer in the mosque.

Islam: Literally means 'submission to the will of Allah'. The fundamental concept of Islam is the Oneness of God.

I'tikaf: A religious practice of spending the last ten days of Ramadaan (either wholly or partly) in a mosque to devote oneself exclusively to worship.

Jamaat: An Islamic term for 'Congregation'

Jamaat Khana: A communal house or communal gathering place

Jihad: In Islamic terms means the 'Holy War'

Ka'aba: The cube-shaped stone building towards which all Muslims face when praying

Kaliph: Title used by the successors of the Prophet Mohammed (p.b.u.h) exercising the position of the supreme leader of the Muslims (ruler).

Kufi: A calligraphic style based on straight linear organisation of letters

LailatulMiraj: The Night of Ascension

Lailatul-Qadr: 'The Night of Power,' concealed in one of the odd nights in the last ten days of Ramadaan.

Madressa: A school based on Islamic teachings consisting of a Mosque for regular prayers and study rooms.

Maghrib: Sunset. The fourth obligatory Prayer of the day offered between just after sunset and before the stars appear in the sky.

Mahal: A Mogul Palace.

Masjid al-Aqsa: The 'Furthest Mosque' built by the early Muslims in Jerusalem, on or near where the Temple of Solomon once stood. See Baitul-Maqdis.

Masjid: A mosque used locally for five daily prayers. Plural Masajid (Arabic)

Mausoleum: Structure accommodating a tomb of an important person.

Mihrab: A niche in the Qibla wall of a mosque indicating the direction of Makkah

Mimbar: A pulpit (sometimes wooden steps) placed on the right of the mihrab used by the Imam to deliver his Jumma lecture (khutba)

Minaret: A tower of the mosque used for the call of prayers.

Mi'raj: The Night Journey of the Prophet (p.b.u.h.) from Makkah to Jerusalem and then through the realms of the seven heavens, beyond the limit of forms.

Mosque: Place of worship for people of the Islamic faith

Muqarna: Also called stalactite or honeycomb, a decorative pattern consisting of small niches arranged like honeycomb and made mostly from plaster for internal treatment of curved surface especially in transitional zones between domes and their supports.

Muslim: A person who accepts Islam as his or her way of life

Musallah: Prayer enclosure where every day and other ceremonial prayers are held.

Naskhi: Type of calligraphy consisting of cursive script style.

Nave: In a mosque it is the main central aisle leading to the Mihrab. In the church it is the main longitudinal space of a bascilican church. It is where the Christian congregation stands in prayer and religious services.

Niche: A recess in the wall, like a mihrab.

P. b. u. h.: An abbreviation of Peace be upon him, usually used after the Prophets name in respect.

Pointed arch: An arch with a pointed apex invented by the Muslims and first appeared in Al-Aqsa Mosque (Jerusalem) then to IbnTulun Mosque (Egypt), before reaching Europe in 11th century.

Qiblah: The direction of Ka'bah in Makkah, which Muslims face when praying.

Ramadaan: The ninth month of the Islamic calendar. Fasting is obligatory during this month for all Muslims.

Sahn: A term used in Islamic architecture which means courtyard

Salaah: Prayer. There are five daily obligatory prayers.

Salaat al-Janazah: Funeral prayer.

Squinch: An arch placed at the corners of a square base to act as the transition to a circular dome placed on the base.

Tawaf: The circling of the Holy Ka'bah. Tawaf is done in sets of seven circuits.

Tayammum: Literally means 'to intend to do a thing'. As an Islamic legal term, it refers to wiping one's hands and face with clean earth as a substitution for ablution when water cannot be obtained.

'ulama: A body of Muslim scholars trained in Islam and Islamic law, who are the interpreters of Islam's sciences and doctrines and laws and the chief guarantors of continuity in the spiritual and intellectual history of the Islamic community

Whudu: The Islamic ablution before any kind of prayer and is done by washing parts of the body with water.

Zuhr: Noon. The second obligatory prayer (Salaah) of the day. Prayed at any time between noon and mid-afternoon.

CHAPTER 1:

OVERVIEW OF RESEARCH ISSUES

1.1. INTRODUCTION

1.1.1. Background

The evolution of sacred buildings over the centuries has resulted in some of the most inspiring monolithic structures created by humanity (www.sacred-architecture.co.tv). From time immemorial, humanity has used creative abilities to convey its acknowledgement of the existence of a Greater Being in the universe. They have searched for ways of proving this existence on earth. This spiritual vision of humanity encompasses truth as well as beauty and has been captured by the Sacred Arts, which explores it in various ways – 'from architecture to music, from dance to landscape and in classical texts such as Tao Te Ching' (Mann, 1993).

Sacred architecture, now also known as religious architecture, has always been associated with design and construction of places of worship dedicated to a particular belief system (www.sacred-architecture.co.tv). These basic belief systems of man were an advancement toward religion and religions today *'have shaped the world's civilizations based on different views of ultimate value: mercy and benevolence in Buddhism; morality and ethics in Confucianism; respect in Shintoism; devotion and mystical unity of divine Self in Hinduism; obedience and perseverance in Judaism; love for the Creator and one's fellow man in Christianity; and submission to the will of Allah in Islam'*(Haft, 2005);all of which have their own sacred identities in the manifestation of stupas, temples, synagogues, churches and mosques.

Today, sacred identity has become an aspect of human diversity. Societies have become fragmented and people now characterize themselves according to their peripheral circumstances while their central identity is yet to be inspired from within. Continuity of historical evolution and sacred archetypes contribute to a 'collective human experience' (Foster, 2004) or 'ultimate value' (Haft, 2005) and sense of identity. Foster (2004) expresses Colley's view on history thus: 'history can best be experienced as a guide to the future'. If sacred identity were seen as a 'collective human experience', ethnicity and religion apart, the result would be a novel type of universalism, where human diversity is accepted, appreciated and celebrated. If yesterday and tomorrow were similar concepts as in the Hindi and Urdu language, where the word *kal* is used for the word yesterday and tomorrow, then from the current position in time, the past is acknowledged and appreciated for what it has to offer the future (Foster, 2004). Therefore, in the metaphysical plane, the concept of time itself becomes timeless.

1.1.2. Motivation for Research

As the world progresses away from modernism, the spiritual vision of ultimate value has been diluted among the masses. Human diversity in all aspects of life has been implemented in contemporary lifestyles. Worldly activities, which Foster (2004: 11) refers to as 'dominant themes of our time' focus on the value of external or man-made social experiences of life, instead of focusing on ultimate values which highlight humankind as a creation, such as freedom, justice, and human dignity for all.

The sacred evolution of man has converted ultimate human value to specific religious sects and now fragments of indefinite sacred identity. Authentic views of conflicting nature, which lack spiritual vision, constrict or limit almost every aspect of human life today. It should be understood that today there is no 'pure religion' and human chronological studies and science now reveals that neither is there a 'pure race'. Human beings are, by definition, hybrid species with hybrid cultures (Foster, 2004:8). There will always, however, be a need for spiritual and religious comfort in this world, no matter how tainted it may become. A shift of focus is in order, where a spiritual transparency that adopts yesterday's principles today is implemented, both in theory and in practice. This allows for an architecture that is responsive to a multiplicity of people (Foster, 2004), bringing people from the fragmented state to a complete religious state and in turn to the 'ultimate human value' state, while capturing a sacred identity that is accepted, appreciated and celebrated in all its diversity.

> *'We need an openness of spirit to see that the setting up, as an absolute priority, of any one thing – hi-tech architectural applications or traditional constructions, democratic capitalism or economic integration, or anything else to the exclusion of other supporting values - is unintelligent.'* – Foster (2004: 10)

1.1.3. Justification of Research

South Africa and Durban in particular has been identified as expressing fragmented sacred identities within a particular religious sect, where sacred buildings based on ultimate values have now become impersonal. An ideal solution, in terms of this research, would be to propose a building that unifies the different religious sects based on their different views of ultimate value. A survey conducted by Seepersad (2005) in Durban, however, suggests the reluctance of people from different religious sects to perform sacred rituals and worship together in one building. Seepersad (2005) found that a building that caters for different religious groups in order to unify

them is unrealistic. Human diversity of sacred identity is too widespread for that kind of research to be effective. Hence, in order to avoid the effect of running before learning how to walk, a different approach has been adopted.

Contrary to the concept of a novel type of universalism, the sacred identity of a particular religious sect will be adopted and transformed into a universal architecture. If achievable, it will celebrate diversity and encourage the enquiry and appreciation of such architecture. While failing to unify people based on religion owing to conflicting views, it will attempt to unify people based on their personal 'views of ultimate value' (Haft, 2005).

1.2. DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.2.1. Defining the Problem Statement

Sacred Islamic architecture is a spiritual architecture initiated by religious belief (Özkan, 2004).It was later influenced by a diversity of different aspects such as culture, locality and climate. Foster (2004: 6) states that 'Islam succeeded in unifying the sacred and the secular'. Sacred geometries and pure mathematical proportions were used in sacred Islamic architecture to express its unity with the 'various orders of reality' (Foster, 2004). The spiritual vision of Islam was to relate its 'basic abstract belief to the material world' as an expression of an acknowledgement of God and the human relation to the universe. Additionally, the teaching of Islam is founded on a principle of unity, while our modern nations are based on limited ethnic and religious identity (Foster, 2004). As a result, the 'Islamic world is an ideal space for the discussion and practice of cultural and social issues of architecture'(Foster, 2004).

The essence of life is based on a balance of spirituality, history, identity and all things. The place of architecture in terms of creating this balance, has been questioned considerably by Foster (2004) with no real solution except to delineate the conditions of the past with the hope of influencing and transforming the future. When looking at architecture and built form in terms of its influence on the process of evolution from past to present, contributory factors such as form, techniques, materials, time period, region and other stylistic influences (Copplestone, 1963) have led to a series of architectural movements, some of which were timely and some of which were timeless. Sacred architecture always seems to achieve a timeless quality that re-enforces a man-place environment and ultimately brings people together by allowing them to feel 'at home' (Jones, 2000).

Numerous publications within the sphere of sacred arts and architecture have been established; however, many authors do not draw parallels between sacred identity and a timeless realm. Subtle indications of their relationship are acknowledged, yet inexplicable.

So how can sacred identity, devoid of timely implications, be defined in order for it to be used in architecture to encourage the acceptance, appreciation and celebration of human diversity?

1.2.2. Aim

The aim of this research is to propose a facility that creates a balance between spirituality, religion and ethnicity. It will involve an integrated approach where the facility becomes an integrative communal facility as well as a platform that is universally welcoming to present the richness inherent in the Islamic world. As a result, the proposed facility needs to:

- primarily, balance out the disparities' between the fragmented sacred identities within the Islamic sect.
- be a platform of expression of Islamic sacred identity that is also responsive and welcoming to a multiplicity of people.
- have a spiritual transparency within the limits of Islam for others to accept, appreciate and celebrate human diversity.
- be, ultimately, a communal building that caters for the needs of the Muslim community, while expressing sacred identity in the public realm.

1.2.3. Objective

The objective of this research is to recognize and interpret sacred identity in architecture - how it is portrayed effectively and timelessly.

- This can be done using various architectural theorists to understand sacred architecture and to determine the various elements that contribute to its timelessness.
- The physical impact of sacred identity and belief on architecture and its application also needs to be understood and acknowledged.

1.3. SETTING OUT THE SCOPE

1.3.1. Delimiting the Research Problem

Sacred architecture may be defined as a variety of different building types according to different aspects. The precedents used in this research focus mainly on religious architecture and built form that have been derived from a spiritual belief. Architecture that awakens the spiritual vision in man is the central focus of this research. Most of this is from a historical setting, as the author believes that contemporary architecture is losing the man-place environment that is required by people today. Religious architecture reinforces that man-place environment and provides a spiritual connection to something greater.

This narrowed down to Islamic architecture, as this is one of the most well-known sacred architectural forms. Most of the architectural elements are derived from spirituality or have a spiritual connotation, which awakens the soul. Certain cultural and traditional influences will also be looked at; however, the bulk of this research deals with spirituality and not culture and tradition. Islamic architecture appeals to and represents the Islamic culture, but it is a universally appealing architecture with an air of practicality. The religion of Islam and its influences are deconstructed to find the association of sacred architecture and timeless design.

The fieldwork case studies as well as the intended building design are limited to a South African context. South Africa, being a multi-cultural country has the freedom of religious practice with a few timeless Islamic religious buildings of its own, one of which is the Ladysmith Soofie Mosque (1969) located along Ladysmith's Klip River. This sacred building has no comparison with contemporary Islamic buildings such as the Umhlanga Islamic Society (2002). Durban has a few Islamic centres, none of which handle the scale of the Durban Muslim community. This research is structured to cover buildings that are timeless, with special focus on sacred buildings, their setting, identity and aesthetic qualities.

1.3.2. Defining Terms

- Timeless refers to something that is unaffected by or independent of time. It is ageless and eternal (www.TheFreeDictionary.com[a])

- Sacred is something '1.dedicated to or set apart for the worship of a deity; 2.Worthy of religious veneration: the sacred teachings of the Buddha.3. Made or declared holy: sacred bread and wine. 4. Dedicated or devoted exclusively to a single use, purpose, or

person: sacred to the memory of her sister; a private office sacred to the President. 5. Worthy of respect; venerable. 6. Of or relating to religious objects, rites, or practices'(www,TheFreeDictionary.com [b]).

- Architecture, by definition, is '1. The art and science of designing and erecting buildings. 2. Buildings and other large structures: the low, brick-and-adobe architecture of the Southwest. 3. A style and method of design and construction: Byzantine architecture. 4. Orderly arrangement of parts; structure: the architecture of the federal bureaucracy; the architecture of a novel'(www.TheFreeDictionary.com [b]).

- An Islamic Centre is a centre that provides a variety of functions for modern day society while retaining the community whose way of life is conditioned by religion and prayer. It will contain functional buildings for a diversity of people and will be welcoming to the rainbow nation of South Africa.

- Cosmology, in cultural terms, refers to a 'system of beliefs that seeks to describe the structure and origin of the universe A cosmology attempts to establish an ordered, harmonious framework that integrates time, space, the planets, stars, and other celestial phenomena. In so-called primitive societies, cosmologies help explain the relationship of human beings to the rest of the universe and are therefore closely tied to religious beliefs and practices.' (www.dictionary.reference.com).

- A Mosque is a place of public worship for Muslims also known as masjid (مسجد) and described as a building that usually has one or more minarets and is elaborately decorated with tracery and calligraphy (www.dictionary.reference.com).

1.3.3. Stating the Assumptions

- The link between timeless architecture and sacred architecture is definite.
- A sacred building that is welcoming to other religious cultures may open new doors of understanding and appreciation of human diversity.
- Islamic architecture is universally alluring.

1.3.4. Key Questions

- What defines timelessness in sacred architecture?
- How can a sacred Islamic building adopt these timeless elements?
- What elements of Islamic architecture are timelessly conveyed in buildings and do they support a sacred identity?

- How can these principles be implemented today for future generation?

1.3.5. Hypothesis

Timelessness in sacred architecture establishes the spiritual identity of people in built form.

1.4. CONCEPTS AND THEORIES

According to Mann (1993), *sacred architecture* refers to built form or architecture with religious functions that represent religious practices. Finding the 'sacred' in architecture is much like a journey where the spiritual and or monumental aspects of architecture are expressed in almost every culture. Sacred architecture is the kind of architecture that has 'a common root in the soul and the spiritual vision' of man (Mann, 1993: 13) leading toward a place where the human spirit is at ease with its Creator.

Established religions around the world utilize architecture and built form as a means of religious expression and identity, focusing on the spiritual connotations of architecture. This is expressive of the 'spirit of place' (Porter, 2004: 88) or *genius loci* as discussed by Norberg-Schulz (1979). The concept expresses the sense of place as having a distinct character that should be portrayed in architecture in order to create meaningful spaces that improve quality of life. A similar idea is conveyed by Trancik's (1943) theory of place, which states that architecture and landscape can be used to enhance an environment while responding to it to develop its identity and sense of place. While Kevin Lynch (1960), planner and author of several significant books on place theory explains that, every region should have continuity with its recent history and near future (which will give a cultural context, no new things can happen without the old). All of the above ideologies are diverse and varied yet acceptable and advantageous. Most of all, the profound relationship between the 'sacred' and 'spirit of place' prevails.

The spirit of place can easily be associated with contextual issues, which help develop unique, meaningful space for occupants to identify with. Incorporation of natural environments with that of man-made environments contributes to the identification as well as the portrayal of the sense of place. This can either be done in an eastern or western system (Ando cited in Nesbitt, 1996). Cultural Japanese architecture is typically eastern and expressive of 'spirit' in architecture, whereas American architecture in typically western and representative of 'man' in architecture. Both Tadao Ando as well as Raimond Abraham, cited in Nesbitt (1996), present conflicting

views of eastern and western systems of integrating nature into architecture. Both systems exist throughout history and both systems are adequate in the impression of sacred architecture.

Sacred architecture is a process whereby the religious and social aspects of a particular people are manipulated to create timeless design. The allurement of architecture is a recent concept presented by Lindsay Jones (2000). Art and architecture is believed to have an incredible influence over people and sacred architecture exudes a lot more power as it includes the interpretation of belief. This concept presents the emotional response and attachment of man to man-made objects as it awakens the sixth sense of architecture. Freedberg (1989: I) as cited by Jones (2000) strongly affiliates with the emotional influence of art and architecture on people and develops the idea in terms of perception. Eliade (1958) on the other hand, a phenomenologist of religion, relates the influences of sacred buildings on the qualities of the site. Van de Leeu (1976) and Stokes (1965) are both of the view that 'sacred places' reunite one with one's spiritual self. Certain views presented here may not be as strong, but they are all desirable in understanding the psychology behind sacred architecture.

Symbols, according to Jung (1964) are related to humans and 'spiritual problems' as symbols transmit responses through the subconscious mind to the conscious mind. Symbolic language or images used by religions are called *archetypes*; a term used by Jung (1964) to describe conscious representations of the unconscious, instinctive mind with unknown origin. These may present themselves at any time, in any part of the world. As a result, sacred architecture needs to adopt these theories of architectural discourse and embody it to produce a sacred building that both celebrates the beauty of nature as well as capturing the spirit of place, using symbols and factors of allurement.

1.5. RESEARCH METHODOLOGY

The focus of this research was to explore the research statement using qualitative approaches in terms of research methodology. Qualitative research methods assisted in understanding the meaning behind activities and events that occur at sacred places, to the people concerned (Emerson 1988 cited in Bailey 1996) as well as what influences the buildings - timeless or timely qualities and its effect on people. It also aided with the development of a design resolution with building setting, architectural form and composition, spatial and functional articulation as well as building detail. The approaches used in this research include primary sources: observation studies, focused interviews, questionnaires, and secondary sources obtained from libraries, archives and the world-wide web. Additionally, sketches and photographs were used to

document aesthetic and anthropometric data of existing Islamic buildings as well as the uses of such spaces. Randomly selected candidates who were knowledgeable of the space or who were involved in administration of the space, were chosen for interviews, questionnaires or general discussions in order to analyse their perceptions of the space in terms of functionality and aesthetics.

1.5.1. Primary Research

The primary research of this study was carried out using the views and opinions of the Durban Muslim community as well as suitable case studies within a South African context. The primary research methods used were observation studies, surveys, interviews and questionnaires. The Islamic centre is a composition of various facilities that meet the needs of the community to ensure its success, which many current facilities are unable completely to do. This research has lead to an adequate understanding of the facility required, its needs and spatial layout for the benefit of the community.

Observation studies were done on case studies to record physical traces in an inconspicuous and non-interfering way. The observation and record of physical traces were done in both a natural and a contrived setting and focused on a variety of aspects. This study aided in identifying types of settings, reasons for allurement, symbolic representations of the built environment as well as activities that occurred in and around particular precincts. Sites were observed on normal working days and then during weekends to determine the contrasting activities from weekday to weekend as well as from morning to afternoon. This study was recorded with the use of sketches, photographs, annotated diagrams and tables.

Upon the understanding of the space from an exterior perspective, the understanding of the users' perception and opinions of the space was necessary. This was done with an observation study, and focused interviews were used to test the observed information to achieve a thorough investigation of social and cultural behavioural patterns of the site. Focused interviews were directed to those who were in charge of administration of the building as well as a first-time users of the space. The major aspects of concern were orientation, setting, functionality, aesthetics, symbolism, allurement and perception. Minor interviews were also conducted with a variety of administrators of various Islamic centres in Durban in order to determine a preferred or futuristic structure to their existing facility. This assisted in understanding the administrators' and users' feelings, preferences and opinions of the space. Focused interviews were recorded by transcription.

Other methods of gathering primary information were through questionnaires. These were used to obtain information from a wide geographical area. A single questionnaire was prepared in order to determine the Muslim community's needs and requirements for the facility and was directed to different people that hold different positions in the community while covering a variety of age groups and genders. Questionnaires helped to obtain data on contemporary practices, conditions and demographics. This led to a diversity of information that will assist in bettering the current structure of Islamic buildings in South Africa.

1.5.2. Secondary Research

Secondary research was carried out using relevant and available published works such as books, journals, articles, reports, published papers, monographs and others. It was mainly used to acquire information (including precedent studies) to evaluate the concepts and theories of the research, which was done in the format of a comprehensive literature review. In addition, secondary sources were used to fill in gaps of information for the selected case studies; information that was not attained using primary resources. Secondary sources were useful in acquiring relevant information in terms of theory and history of the research, which ultimately enlightens the design process.

1.6. CONTRIBUTION TO KNOWLEDGE

This research explores an innovative way of thinking which attaches the psychology of time with that of religion. It investigates the influence of belief and spiritual identity on architecture and how this can be used to change the perception of people.

Herein is the hope of achieving a different type of unifying architecture which primarily bridges the gaps between the Muslim community and allures people of different religious cultures so that they may understand each other better. Hence attaining knowledge from each other on different aspects of life and spirituality, whichever they may be better at.

Sacred architecture already possesses a timeless allurement that any person, Muslim or Hindu, Sunni or Sufi, young or old, can relate. By maximizing the effects of this type of architecture on the psychology of people, one can bring about sacred architecture which encourages the appreciation of contrasting beliefs under one roof. It essentially evolves into an architectural compound of spirituality, image and functionality.

1.7. CONCLUSION

The timelessness of architecture is what gives it its sacred quality; a type of quality that people are in awe of and a type of quality that people travel across the world to be a part of. While this quality is not subject to change with the evolution of the world, so too are the belief systems of the Muslim Community. Hence, the comparison between timeless architecture and religion prevails in this research study.

By expanding on the issues inferred by this topic in the chapters to follow, it is hoped that the research findings will assist in proposing an Islamic centre that achieves the goals of the research in terms of social and communal integration or simply the use of architecture as an integrative image and functionality tool.

Theoretical foundations and expressions of sacred identity are key areas of this research. The thought behind the process of design as well as the practical implementation of that thought process is ultimately the sought after interpretation of the author of this research.

CHAPTER 2:

THEORETICAL FOUNDATION OF TIMELESSNESS IN SACRED BUILT FORM

2.1. INTRODUCTION

The system of processes that an architect undertakes when he intuitively develops and designs architectural form and rationalises justification thereof, is regarded as his theory of architecture (Johnson, 1994). It is an expression of the existing connection between the hand and the mind, with which an architect is able to function fully (Tigerman (1994) cited in Johnson, 1994) by applying theory in practice. In order to establish an architectural foundation for any architecture, it is essential to understand the background and thought processes undertaken by a designer relevant to that architecture.

Sacred built form backdates to the beginning of humanity and expresses a spiritual belief of man. For this reason, many ancient precedents were analysed to determine the thought processes involved in design, which have lead to timeless design of built form and architecture as well as undying beauty in the expression of physical elements. Saward (1997), a theorist on beauty and holy lives, cited in Carey (2011), defines beauty according to a tradition of harmony (*consonantia* or *debitaproportio*), radiance (*claritas*) and wholeness (*integritas*). *Integritas* represents a sense of completeness, *consonantia* characterises 'the material form of the work' and *claritas* indicates the 'substance or essential form' (Carey, 2011). Timelessness, much like beauty, has a unique theoretical architectural approach which is covered in this research.

This chapter articulates architectural concepts and principles that primarily envelop the timelessness of sacred architecture and built form. These concepts may not apply solely to religious architecture, but universal architecture that captures the essence of timeless design.

2.2. THEORETICAL PRINCIPLES AND CONCEPTS

"People's responses [to built and natural environments] depend upon the meaning which they attach to the stimuli, which is associational and, in turn depends on past experiences and culture influencing standards and environmental elevation". –Rapoport, 1977: 320

2.2.1. Introduction

Timelessness in architecture and built form is an ethereal component of architecture that requires a philosophical design approach, as presented in this sub-chapter. Timelessness manifests itself in architecture in numerous ways according to various theorists and is more widespread in the sacred arts, however, difficulty in finding theorists that pinpoint the timelessness articulated in sacred architecture has led towards a universal theoretical approach where indications of timelessness are prevalent. The relationship between man, place and timelessness is a complex one and the influences of nature, spirit, identity and belief on these relationships have prevailed since the first day of man's existence. A gradual unveiling of attributes related to timeless design will bring about a further understanding of this ageless architecture and its association with man, with which architectural design generators or concepts may be derived.

2.2.2. Spirit of Place

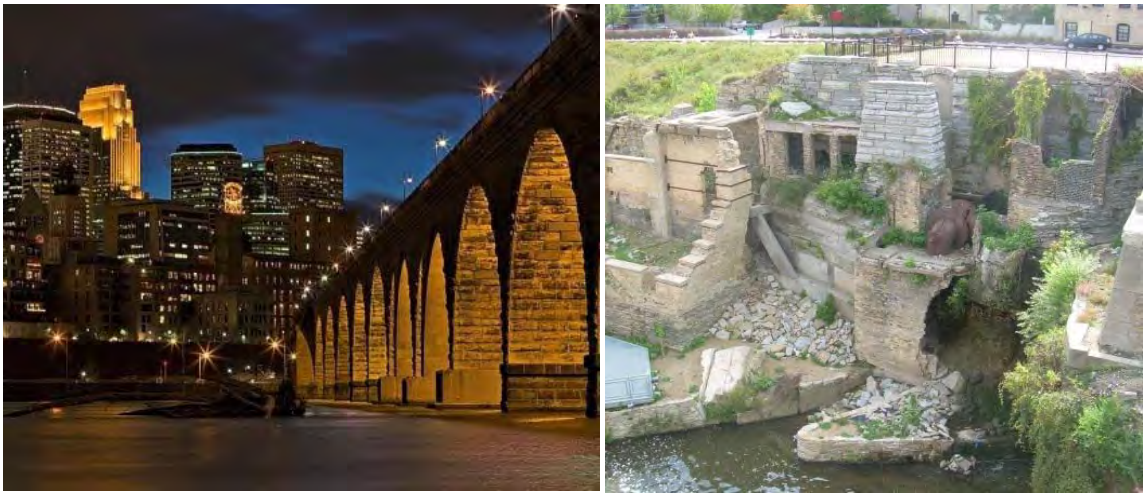
Genius loci, in architectural jargon, is a term used to describe a concept that was originally derived from Roman civilizations who believed in the existence of two guardian spirits in the form of fallen angels (genii) that accompanied every human being and gave life or spirit to people or places. The development of such a concept toward modernity attached the idea of inspiration to the idea of 'spirit'. Therefore, the term *genius loci* is now accepted architecturally as the denotation of '*spirit of place'* (Porter, 2004: 88).

Norberg-Schulz (1979) in his ground breaking book; *Genius Loci,* shifted architectural theory discourse from quantitative to qualitative, with the prime intention of creating a focus on the 'psychic implications of architecture' instead of the more commonly investigated practical implications (Schulz, 1979: 5). A man will dwell when he is able to do two things: *orientate* and *identify* himself with an environment. He expresses the sense of place as having a distinct character that he refers to with the ancient term of genius loci or spirit of place and goes on to say that architects must visualize the genius loci of a space in order to create meaningful spaces that improve quality of life.

When scrutinizing the term spirit of *place,* Schulz (1979) conveys the importance of the word *place* in the human existence as everything on earth happens within a context or environment. Therefore, a solid term given to a particular environment is the word *place.* This can also be gathered from the often-used phrase *'takes place'*, when referring to an occurrence. It may be relevant here to form the connection between genius loci and place theory. The essence of place, according to Trancik's (1943) place theory lies in the understanding of cultural and human characteristics and their connection to physical form and not a mere relation of occurrence to context and environment as indicated by Schulz (1979). Trancik (1943) argues that 'space' is devoid of meaning and will only become a *'place'* when the cultural and regional aspects derived from the context add meaning and significance to the space. The terms '*space'* and *'place'* are analogous to the words *'house*' and *'home'*. Even though spaces can be classified using physical elements under different typologies and placed throughout the city, the sense of place of these spaces is achieved over time with human and cultural associations (Trancik, 1943: 113). Based on this analysis, *place* is not a mere abstraction but a sequence of different aspects that contribute to a complete environmental character or atmosphere, reinforcing the essence of place (Schulz, 1979 and Trancik. 1943).

For example, the Stone Arch Bridge in Minneapolis, U.S.A (Figure 1), creates a link across the river within a unique setting. The function of the bridge is to transport people across the river, however, the stone arches of the bridge give it a distinct character, which makes it meaningful to the people of the city. Furthermore, the area around the bridge hosts some of the most breathtaking and beautiful views of the city which light up magnificently at night. The bridge also has intimacy with the history of America as it lies close to the ancient mills ruins. As a result, the genius loci is accomplished within an entire environmental character.

(a) View of the structural arches reflected by the water (b) View of the city from the bridge



(c) Night View of the city and bridge lit up (d) Ancient Ruins close to the bridge

Figure 1, An expression of Spirit of place at the Stone Arch Bridge of Minneapolis, U.S.A. (Pictures taken by Kornovich, K. 2006.)

It is also true to say that various occurrences or activities require places of different characters. "*A dwelling has to be protective, an office practical, a ball room festive and a church solemn.*"(Schulz, 1979: 14).Trancik's (1943) theory of place reinforces this idea by stating that people require a stable system of recognizable places that can be used, for example, to orientate themselves within a city and develop their social and cultural lives. This allows an emotional attachment to a man-made space of physical content. Tourism, however, is one of the chief interests of modern day man. Note, when one analyses the character of foreign cities such as Venice, Cairo (Figure 2) and Istanbul, all of which have unique characteristics, the very atmosphere of the city enhances the experience of that city.

Figure 2, An expression of city character: View of the Island of Zamalik in central Cairo, Egypt (www.newworldencyclopedia.org)

A number of different factors, according to Schulz (1979), determine the character of cities:

i. Landscape (barren, fertile, natural, threatening)
ii. Function of time (changes in seasons, weather, light)
iii. Material and form constitutions (spatial articulation, definition of boundaries, building construction, connection of the building to land and sky, fenestration, facade modulation, motifs and all other aspects that contribute to the urban environment)

As a result, the character of a place is determined by how something has been constructed – the technical realization of building. According to Schulz, this is the basis of architectural theory.

Kevin Lynch (1960) explains, however, that every region should have continuity with its recent history and near future (which will give it a cultural context- no new things can happen without the old). Every place should have the potential to be something greater (Figure 3). Lynch identifies the image of a city according to (i) Legibility (a mental picture of the city), (ii) Structure and Identity (the pattern of the city, coherence of spaces and recognizability) and (iii)"Imageability" (the perception of the users and their experiences of space in the city). The concept of space and time developed together in which we order our own experiences Lynch (1960).

Figure 3 (a) The Hassan II Mosque , Casablanca, Morocco 1986-1993 'undeniably marks the continuity of a Modernized ancestral art and bears the sign of innovations that are due not only to technical reasons but also to a fertile exploration of new aesthetic possibilities'. (www.petra-archaeology.com)

Figure 3 (b)Ariel View showing the site and its relationship to the water (www.flickriver.com)

These places constructed by man will always have a relationship with nature and can be read in conjunction with Norberg-Schulz' (1979) and Lynch's (1960) determinants of city character. The three aspects of this relationship are (Schulz, 1979: 17):

i. **Visualization**

   This is a manifestation of man's idea or understanding of nature with the use of familiar construction methods to attain precision of natural structure. *"Where nature suggests a delimiting space, he builds and enclosure, where nature indicates a direction, he makes a path."* (Norberg-Schulz, 1979: 17)

ii. **Complementation**

   This involves the harmonization of an environment with the addition of what man thinks is lacking.

iii. **Symbolization**

   A symbolic representation of man's understanding of nature and where he fits in: this is done by adopting a natural character and translating the atmosphere into a building. As a result this develops into a portrayal of natural character, extracted from nature and transformed into the properties or elements of a man-made building (Norberg-Schulz, 1979: 17).

The above-mentioned relationships demonstrate how man gathers experienced meanings to construct an '*imago mundi'* or '*micro cosmos'* that solidifies his natural world. This gathering of experienced meanings is dependent on symbolic representations and entails a transposition of meanings to other places contributing to the development of an existential '*centre'*. Norberg-Schulz (1979) states that the existential purpose of architecture is to uncover the meanings potentially present in an environment in order to make a site a *place* and a *place* can be seen as a totality of experiences consisting of aspects of space and character that contribute toward a 'structured world' .

The man-place relationship is best described by the word 'dwelling', which implies the distinction between space and character. A dwelling refers to man's location in a certain space, which contributes to a particular character. Aspects of *orientation* and *identification* also become important psychological functions that allow man to become familiar with space. Lynch (1960) reinforces this idea with his concepts of 'node', 'path' and 'district' (Figure 4) which become elements of man's orientation and contribute to an environmental image that in turn gives emotional security (Norberg-Schulz, 1979: 19).

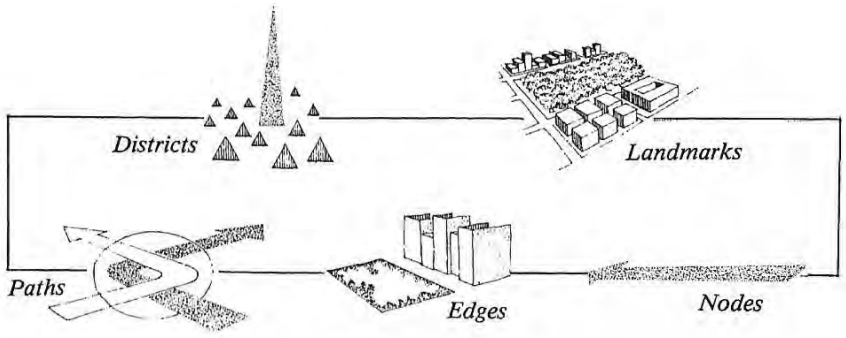


Figure 4, Lynch's diagram of spatial elements of a city presented in a 'mental map' of how people view their environment..(Lynch cited in Trancik, 1943: 121)

Every human psychologically follows representations of orientation as well as identification. Norberg-Schulz (1979) indicates that with modern day societies there is a tendency to concentrate entirely on the practicality of orientation without much concern for identification. He goes on to say that it is very possible to do this, however ,man can orientate himself and work his way around without feeling 'at home', as identification is now left to man-made things such as streets and houses. The relationship of natural environments with urban societies has now dwindled to fragmented portions which diminish man's ability to identify and feel *'at home'* (Norberg-Schulz, 1979: 20-21).

The very same ideas are expressed in the works of Christopher Alexander in *The Nature of Order* (2004). He refers to the relationship between man and nature as the theory of “relatedness”, which, according to his teachings, is under-developed: man in modern society fails entirely to relate to man-made objects. Yet every human is connected to this earth in a concrete way and requires that connection to be reinforced by means of a distinctive expression.

2.2.3. Designing with Nature

Designing with nature requires an area of expertise that contributes to the understanding of existential space, where the use of culture or religion gives man a stable image of his environment, 'imago mundi'(Norberg-Schulz, 1979). Architects represent nature in design in a variety of ways, which contribute to the man-place relationship. A distinctive example of this is between the Eastern and Western civilizations; Eastern cultures "emphasize a spiritual threshold between the building and nature, as opposed to a physical boundary in Western culture", however, the eastern way of designing may be utilized in certain instances in the west and vice versa. Ando and Abraham express their views on both types of architectural identity in terms of designing with nature (Nesbitt, 1996).

Tadao Ando is a contemporary architect of an eastern origin whose architecture expresses peacefulness within simplistic forms. Ando's design process and theory is based on two major aspects; phenomenology and nature of the site. He understands that with architecture, there is a creation of new landscapes; it is the 'responsibility of the architecture' to embody the characteristics of the place. A deep involvement with a site results in the creation of a '*vital – tension'* between building and landscape that in turn generates a '*spiritual awakening'*. The two main concepts that Ando uses to do this is *Transparent Logic* and *Abstraction* (Ando cited in Nesbitt, 1996).

Transparent Logic is a concept based on the logic implemented in architectural design allowing for a coherent spatial structure supporting perception as well as reason; it extends beyond the exterior geometry. It is quite evident today that modern-day society has moved away from this. What one may call the 'spiritual attachment' of man to nature and architecture is now substituted for man's quest for economic benefits; a quest ruled by conformity and standardization. It is imperative for a designer to look deeper than the surface requirements and possibly even question the requirements in order to find hidden aspects that will contribute to the realization of a unique building with special emphasis on '*intrinsic logic'*, explains Ando. An example of this is the design of the Chikatsu-Asuka Historical Museum (Figure 5) on a historical Japanese site. In an attempt to preserve the existing landscape, Ando's focus shifted to '*architecture's power to create a new landscape'*. As a result, the entire landscape was huddled by the exhibition component of the museum. This is T*ransparent Logic* (Ando cited in Nesbitt, 1996).

Figure 5 (a) Above, Creating New landscape with architecture: Chikatsu-Asuka Historical Museum, Osaka, Japan by Tadao Ando (www.galinsky.com)

(b) Left, Perspective sketch of Chikatsu-Asuka Historical Museum, Minami-Kawachi, Osaka, Japan by Ando (www.moma.org)

Abstraction is a concept used to develop solutions to architectural issues, be it 'place, nature, lifestyle or history' in order to achieve a 'rich and variable architecture'. Take residence design for example - here abstract geometrical form should be harmonized with daily human activities. The reconstruction of Ando's Row House (Azuma Residence) in Suniyoshi (Figure 6), into a 'concrete enclosure' endeavoured to create a microcosm within it. Ando best describes the abstraction present in the design of this house: "*The house is divided into three sections, the middle section being a courtyard open to the sky. The courtyard is an exterior that fills the interior, and its spatial movement is reserved and discontinuous. A simple geometric form, the concrete box is static; yet as nature participates within it, and as it is activated by human life, its abstract existence achieves vibrancy in its meeting with concreteness"*. One of the main concerns of the house was the extent of fusion between geometric form and human life as *geometric abstraction* inevitably clashes with '*human concreteness'*, however, the architecture created with this contradiction in mind is able to produce spaces that '*provoke and inspire'* (Ando cited in Nesbitt, 1996).

Figure 6, The Row House by Ando in a dense urban area, showing the three sections of the house with the central courtyard. (www.courtyard-house.blogspot.com)

The presence of nature in Ando's design is achieved through the concept of transparent logic. Natural elements such as water, wind, light and sky arouse spiritual life within architecture. Japanese tradition embraces nature, draws nature into architecture, and intimately associates the two to form a fusion between them. The interrelationship between human and nature is in fact used in various Japanese spiritual exercises. This has brought about a culture that 'de-emphasizes the physical boundary' and brings about a focus on a '*spiritual threshold*' where the demarcation between inside and outside no longer exists. An example of this is the Children's Museum in Hyogo (Figure 8), in which Ando has allowed for 'congenial meetings' of the architectural elements with natural elements such as water, forest and sky. Architecture that transmits the presence of nature through abstraction may bring about a place where nature and humans 'confront one another under a sustained sense of tension'. Ando believes that this tension stimulates spiritual receptivity that is dormant in modern day man (Nesbitt, 1996).

Figure 7, Children's Museum in Hyogo by Tadao Ando where the distinction between inside and outside is not definite (www.panoramio.com)

Using nature in design also creates a sense of place, despite the character and function of a building, the architecture will always create a new landscape. The Times Building on the Takase River in Kyoto (Figure 7) is an example of this. The characteristics of the building have been derived from the unique setting of the nearby river. The building is set along the river instead of along the road: one is able to dip one's hand in the water from the plaza, and the deck above resembles a bridge over the river. Ando always looks at architecture in terms of what the 'site itself is seeking'. As a result, Ando is able to create a new landscape that completely expresses the sense of place. He uses his theory of *transparent logic to* draw out the recognized characteristics of the site which also include its 'cultural, traditions, climate, and natural environmental features, the city structure which forms its backdrop, and the living patterns of the age-old customs that people will carry into the future'. This kind of architecture transforms place into an abstraction (Nesbitt, 1996).

Figure 8, Times building By Tadao Ando along the Takse River in Kyoto (www.flickr.com)

When designing with nature one of the main aspects is that of the site and the way the architecture relates to it. Raimond Abraham is another contemporary architect who deals with this relationship but from a western background, which significantly contrast, with the theories and concepts of Ando. Abraham deals with concepts of '*conquest and negation of a site and its topography'* as from the western perspective where man withholds any right to manipulate the natural environment. By conquering a site, the topographical nature of the site is altered to express the ontology or 'beingness' of the architecture (Figure 9), however, the architecture is then used to harmonize the *negation* of the site, with its design process, which becomes a fluctuation between *negation and reconciliation*. Architectural space then becomes a confrontation between 'geometric and physiological space' *or 'ideal and matter'* as described by Abraham. The *ideal* is congruent with eternity and infinity, while *matter* represents the human body-'its presence and absence'. The design process is undefined by the ideal which is man's 'conceptual powers' and defined by matter which is man himself, who like material, will perish with time. Abraham's view of architecture is that it 'always has been and always will be a monument to the eternal, commemorating the presence and absence of man'(Abraham cited Nesbitt, 1996).

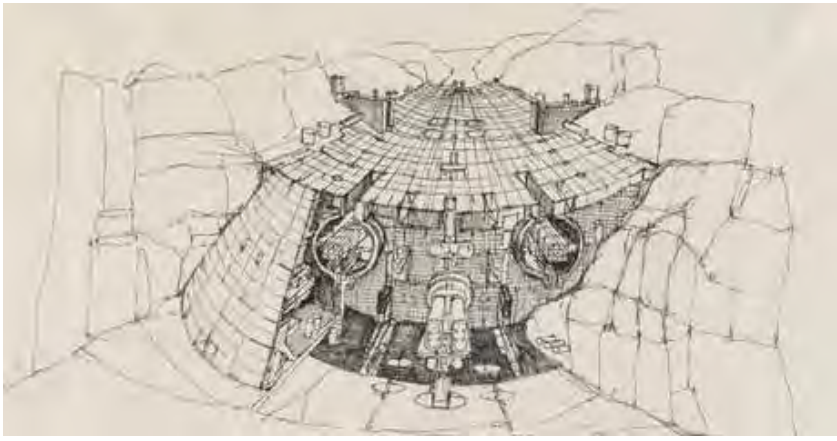


Figure 9, Glacier City by Raimund Abraham; from the Linear City Series Project, Sectional perspective. This visionary project is devoid of people and contains the expulsion of missiles and other engineered gadgets (www.moma.org)

It is evident that the western approach of designing with nature leads toward a more iconic type of architecture, whereas the eastern approach is more of a spiritual type of architecture. Spirituality in architecture is the prevailing quality sought after by all sacred buildings, however, both eastern and western approaches to designing with nature generate an *alluring* and *everlasting* effect of the experience on one's mind, becoming identifiable within the urban environment. Be it in a spiritual or an ornamental way architecture has and always will have a strong influence over man. The type of allurement sought after is up to the designer.

2.2.4. Quality of Allurement

The quality of 'allurement' refers to the manner in which art and architecture may be used to allure man as presented in the work of Lindsay Jones (2000); *The Hermeneutics of Sacred Architecture*. Art and architecture have an enormous influence on people. Sacred architecture, however, has greater power as it includes the interpretation of belief. This concept reinforces the emotional response and attachment of man to man-made objects as discussed in spirit of place which ultimately awakens the sixth sense of architectural interpretation.

Jones (2000) states that the power of art and architecture is quite often misunderstood, however, it is prevalent in one's day-to-day experiences. Freedberg (1989: I) as cited by Jones (2000) eloquently expresses how pictures and sculptures have an emotional influence on man:
"People are sexually aroused by pictures and sculptures; they break pictures and sculptures; they manipulate them, kiss them, cry before them, and go on journeys to them; they are calmed by them, stirred by them and incited to revolt. They give thanks by them, expect to be elevated by them and are moved to the highest levels of empathy and fear."

In the case of architecture, people interact with buildings on a daily basis, however, some buildings give one a sense of satisfaction that other buildings do not. Various buildings provide no feelings of interest to a person at all while there are those that command attention usually resulting in a pause or second look to reflect upon the meaning and dynamics of such architectural form (Jones, 2000: 74-75). The question then arises as to what the causes of allurement to such buildings are.

According to Eliade (1958), a phenomenologist of religion, sacred buildings that have a magnetic tug are situated on a site in which the sacred manifests itself. 'Hierophanies' is the term Eliade (1958) uses to describe such sites that emanate divine power (site specific) or energy and attract people's religious senses. A noted example of this is the sanctuary of Minahasa in Indonesia that is referred to as 'The callers' because the stones that form it call the local villagers back from other regions; it awakens homesickness (Van de Leeu, 1967). Van de Leeu (1976) is of the view that sacred places "attract the faithful to themselves in the literal sense". He continues to say that pilgrimage sites present themselves as a sort of home to people. It is a place secured in the heart of people as a place of comfort, stability and familiarity whether they have actually been there before or not. As a result, despite being situated in a 'hierophany', sacred art and architecture endorse the 'character of a homecoming, a reunion with oneself and one's character', which creates that initial draw (Jones, 2000: 76). Stokes (1965) sees this type of process as a reunion equated to that of with a mother or as a suckling at the breast. It is a togetherness brought about by a gripping invitation or an attraction by familiarity, comfort and nourishment (the metaphor of

a mother) and states: "In every instant of art we receive a persuasive invitation...to participate more closely."

Freedberg (1989: 191) further develops the idea in terms of perception: "To perceive an image in terms of the intimate and familiar depends, in the first instance, on the perception of similitude. However mistaken we may be in our perception, we empathize with an image because it has a body like ourselves; we feel close to it because of its similarity to our own physique and that of our neighbours; we suffer with it because it bears the marks of suffering." Even though these invitations of participation seem to be more apparent with bodily images in art and sculpture, they can also be associated with architecture. An example given by Jones (2000) is of a little boy captured by a three-foot stone angel carved into the archway of the Cathedral of Cuernavaca, Morelos (Figure 10). At the elaborate Sunday evening congregation, where the hymns can be heard, one can smell scented smoke; the parade of priests can be seen - the boy has found an element within the architecture with which he can relate. He can see an image of himself within the sculpture that *allured* him to it (Jones, 2000: 78).

Figure 10 (a) Cathedral of Cuernavaca, Morelos. North Portal with steep pediment and battlemented wall. (www.mexicanarchitecture.org)

(b) Cathedral of Cuernavaca, Morelos. Tequitqui Angels, Monogram of the Virgin. (www.mexicanarchitecture.org)

Another example of an invitation of participation is the Vietnam's Veteran Memorial in Washington (Figure 11). As one experiences the memorial, the long wall on the left hand side of figure 11 begins to ascend and one would have to look down almost as one reads the names listed from top to bottom. Eventually on the right hand side, one is faced with a reflective stone of the monument onto which names are superimposed. People are then forced to view themselves in the light of the war; to acknowledge that it is *their* war, *their* soldiers and *their* tragedy (Jones, 200: 78). By seeing themselves in the monument, literally forces them to engage with it and emotions are evoked as one becomes captured by it.

The thought of '*self identification'* can also be achieved with the continuity of tradition (minaret) to give one a meaningful experience of architecture (Jones, 2000: 79) as demonstrated in the Templo Mayor of the Aztecs (Figure 12). Even though the Aztecs may have struggled to achieved this, they succeeded by abundantly using building materials and offerings from the 'geographic periphery' and the 'temporal periphery' which included the Toltec, Teotihuacan and Olmec eras (Jones, 2000: 79).

Figure 11, Vietnam's Veteran Memorial in Washington (www.picasaweb.google.com)

Figure 12, Representation of Templo Mayor of the Aztecs. (www.travel.webshots.com)

On the other hand, architecture that may have been alluring to some may not have the same effect on others. *"I must insist that no architecture is universally alluring."* (Jones, 2000: 81). Additionally Jones (2000) places emphasis on two types of architectural allurement; one being the 'specificity of allurement' related to the decisive role of history and tradition (Lynch, 1960 and Trancik, 1943) and the second being the 'coercive power of architectural allurement'. The first type places emphasis on the perception of allurement throughout the generation, cultures, class, to mention some factors. For example, the type of architecture that an Egyptian would find alluring, may not strike an American in the same way. As a result, the spectator of such architecture should be considered carefully as the components of tradition used should be identifiable, not necessarily on a conscious level, but in a conservative, specific and stabilizing way.

The second case involves the 'instigation of architectural events', when one becomes involved with the interaction of an architectural monument. This is not a 'matter of free choice or casual curiosity' but rather a subconscious allurement. It may be through one's 'personal pre-understanding' of the art, relating to one's emotional desires, fears, hopes and history. It can be seen that people have a 'deep trans-intellectual' link to art and architecture, specifically religious buildings (Jones, 2000: 83-4).

"It is essential to realize that, constructed and framed in the appropriate way, sacred architecture particularly in the context of its ritual usage, has the power to yank people into involvement, to insist upon their participation, to coerce their serious consideration of the meanings and messages offered by that architectural event." -Jones, 2000: 84-5

2.2.5. Symbols

Symbols, according to Jung (1964) are related to humans and 'spiritual problems' as symbols transmit responses through the subconscious mind to the conscious mind.

Symbolic meanings are attached to anything that is recognizably significant to a person, perhaps in an indistinguishable way even though it may have a more 'conventional and obvious meaning'. Jung (1964) gives the example of the Cretan Monuments which have the double-adze design. The adze is an object known to man, yet the symbolic connotation of it is not. Another example is that of the wheel and the cross which is well known around the world for which the symbolic implication is controversially speculative. Owing to the indefinable nature of symbols, they are often used to represent concepts incomprehensible to mankind in general. The same rationale applies to symbols of religions of the world (Jung, 1964: 21).

Symbolic language or images used by religions are a conscious representation of symbols and are called *archetypes*; a term used by Jung (1964) to describe conscious representations having unknown origins, of the unconscious, instinctive mind. There may be great variations of the details of these representations while the basic pattern is still preserved. Jung (1964) uses the motif of the hostile brethren (Figure 13) as an example. Archetypes may 'reproduce themselves in any time or in any part of the world' (Jung, 1964: 69).

Figure 13, Double axe design of the hostile brethren (www.tmp.kiwix.org)

Figure 14, The crescent moon and star (Photo taken by Wojtkowiak, M. 2010.)

It is important to recognize that people have attached emotional and spiritual meaning to archetypes that now affect global populations and are identifiable to any person. Even though these are conscious representations of the unconscious, people are unable to determine the reason behind certain symbols such as the Christmas tree and the crescent moon and star (Figure 14). Jung (1964) is of the view that these symbols were established and accepted first before any person began to question them (Jung, 1964), however, a number of 'archetypal forms are not just static patterns. They are dynamic factors that manifest themselves in impulses, just as spontaneously as the instincts'(Jung, 1964: 76). This is crucial to the understanding of the psyche of people as this is the point at which religion draws a parallel with culture and tradition.

2.2.6. Conclusion

The concepts discussed in this sub-chapter are very closely related to each other on different levels; the links between them are fine yet identifiable and comprehensible. Primarily, the spirit of place creates a focus on the 'psychic implications of architecture' allowing the potential of something greater. It involves a distinctive character of place that allows people to orientate and identify themselves with it (Norberg-Schulz, 1979). To create such character, one needs firstly to understand human and cultural characteristics that connect people to physical form, as well as the relationship of meaningful occurrences to a specific environment. Secondly, it is important for these places to reflect the type of activity or occurrence that takes or took place there in order for people to identify with them on a psychic level. Thirdly, unique city character, described by Norberg-Schulz (1979), such as landscape, function of time, material and form constituents influences Lynch's place theory of legibility, structure, identity and 'imageability' all of which relate to nature on some level or the other. This relationship is characterized by Norberg-Schulz (1979) in terms of visualization, complementation and symbolization. All of the above are meant to be used to enhance experiences of space.

As a result, the provision of such meaningful space to improve quality of life needs to be visualized by the architect in terms of contextual analysis, before being implemented, however, the association of physical elements with people is achieved over time, creating *place* with *space*. This type of identification (with physical elements) allows one easily to orientate oneself within the city in order to develop culturally and socially. This also allows an emotional attachment to man-made space of physical content which is induced by way of construction, maintaining continuity with the city's recent history and near future. This concept of space and time developed together with our ordering of our own experiences.

This research explored identification, owing to the lack thereof in today's world. Norberg-Schulz (1979) indicates that with modern-day societies there is a tendency to concentrate entirely on the practicality of orientation without much concern for identification. Every human is connected to this earth in some metaphysical way that is beyond one's understanding. It is the nature of man's existence to find peace and tranquillity in all things natural. By incorporating natural elements into architecture, man is able to identify himself in the context of being a creation instead of the creator, which is why Ando cited Nesbitt (1996) emphasizing the spiritual aspect of integrating nature.

One of the major influential factors of *self-identification* in architecture is the site and the relationship of the architecture to it. The site should be dealt with in the following ways: First is the identification of sacred sites within the city's fabric that are strongly alluring. These sacred

sites, referred to as 'hierophonies' emanate divine power and attract the faithful to themselves, providing a place of comfort, stability and familiarity. Secondly, the site should generate a spiritual awakening for those who require it. This is done by looking beyond the physical and establishing what the '*site itself is seeking'* in order to create a new landscape in tension with the new architecture. This arouses spirituality within a dormant being, creating an attraction or invitation to participate through perceptions of similitude, where he is given the characteristics of 'homecoming' or reunion with himself.

These perceptions may be universally alluring if based on history or continuity of tradition or socio-cultural issues that are relative to a global community such as the Veteran Memorial in Washington. In such cases the identification of components related to any of the above-mentioned issues of a community should be carefully considered, whether on a consciously or conservatively. Some are religion-related monuments allure man subconsciously through a personal perception of art relating to one’s emotional self. These concepts reinforce the emotional response with 'self-identification' and may include symbolic representations.

It has been established that symbols are used to relate religion to tradition and culture, while maintaining the existing differentiation between religion and tradition and culture. Therefore, sacred architecture and traditional architecture are symbolically related yet different to symbols. Sacred symbols are often abstract representations that are identifiable, which are referred to as archetypes. The origins of archetypes are unknown and may appear at any time and in any part of the world. Primarily, ancient man conjured up archetypal elements; they have stood the test of time. There may be some variations in these, however, the essence of the original idea remains intact allowing it to be passed on from generation to generation thus becoming a tradition. This research perceives traditional elements of sacred architecture as symbolic elements of architecture.

A better understanding of archetypes in built form is presented in the following sub-chapter in order to identify their timeless character. The origin of the built form is not the concern here, be it eastern or western, although the manner in which the sacred is manifest is most relevant. With this is the hope that when man views sacred architecture that has been framed and constructed in an appropriate way, he may realize a deep sense of satisfaction allowing him to become involved, participate ritually and reflect upon the meaning and dynamics of the architectural form.

2.3. THE MANIFESTATION OF SACRED ARCHETYPES IN BUILT FORM

"Throughout the ages creativity has been one of the ways in which people have expressed their religious beliefs. The aim of The Sacred Arts is to explore those arts which reflect the spiritual vision of humanity and contain truth as well as beauty." - Mann, 1993: I

2.3.1. Introduction

This sub-chapter discusses that sacred architecture is one of the most prevalent types of architecture with which timeless design may be achieved. It looks at a historical context where various natural and cosmological issues adopted by *ancient* man was used to develop a kind of architecture or spatial design that has appreciated throughout the years and attracted people toward it till today. Primarily, the contextual issues of any architecture support a design philosophy, be it eastern or western, which is why the site selection for architecture of the sacred is vital. Ancient man has acknowledged the existence of a higher spiritual power-God - in the awe and beauty of natural settings and biological elements; and has made site-specific choices to locate their places of worship. Location and geographical orientation is certainly one of the basic principles of sacred architecture. This sub-chapter dwells on the reasons behind the selection and placement of various natural bodies and their astronomical values.

2.3.2. Natural Sanctuaries of Sacredness

Throughout history, people have chosen their own sites to position their centres of worship. This has resulted in the development of certain principles that now determine the basis of the sacred, which the modern era, as Mann (1993) explains, has lost sight of. Ancient civilizations had a set of needs that contributed to the choice of the setting for living and for worship.

Water

One of the most natural locations for a sacred setting is near water. Water is universally symbolic of life - the connotation of sacredness was attached to springs and wells in ancient eras. It is a sanctity attached to increased fertility, cures for illness, prophecy and for addressing the spiritual. Natural waterways were said to emit fresh and pure energy that was captured by megalithic man; Druids, Romans and Christians, namely for baptism; in other religions for sacred rituals. Not only was water a necessity of life, it became a necessity at sacred sites as well (Mann, 1993: 55).

Chalice Well (Figure 15) is a sacred well situated at the foot of Glastonbury Tor which is a hill in Glastonbury, Somerset, England. The well is proven archeologically, to have been in existence for two thousand years, producing 25000 gallons of water a day, even in periods of drought (www.chalicewell.org.uk). Yaxk'in (2006), a sacred site guide, describes the well as a 'timeless and sacred place that is full of legend, symbolism, sacred geometry and tangible healing energy'. She also mentions that the well is located at the crossing point of twin currents of energy which are called the Michael and Mary lines that 'travel from distant Cornwall to the Glastonbury Abbey, St. Michael's Tor and through Chalice Well before heading off to the Avebury's monolithic stone circle'. The chalybeate (iron-bearing) spring is believed to have therapeutic and healing properties owing to its high iron content, which also gives iron-rich water a reddish hue. The Christian legend behind this well is that after the crucifixion and resurrection of Jesus Christ, Joseph of Arimathea journeyed to the Chalice Well and 'buried cruets containing blood and water from the wounds of Jesus'. From that day, the hue of the water turned reddish and has attracted pilgrims for centuries to benefit from its healing properties (Yaxk'in, 2006). Acknowledged as a sacred spring offered to humanity as a gift from a higher power, religious establishments developed around it (Mann, 1993: 55).

(a) (b)

Figure 15 (a) VesicaPiscis pool of the Chalice well in Glastonbury, which has a reddish hue due to ferrous oxide. (www.narrung.blogspot.com) (b) Chalice Well Garden Map by Jakie, The paths are marked in grey, the grassy areas are green lines, the tree and shrubby areas are green squiggles and the areas where the water flows are outlined in russet. (www.thatfunnyhill.me.uk)

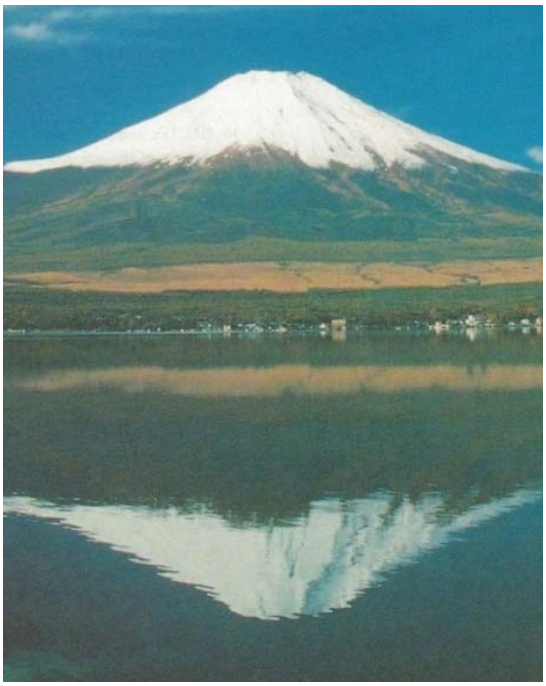


Figure 16, Mount Fuji and Lake Yamnaki, potent symbols for the Japanese. (Mann, 1993: 59)

It is quite apparent that many cultures acknowledge the divinity of water; for some it is in sacred springs like the Chalice well, for others it is in lakes and rivers. To some cultures, the properties associated with water alone give it a sacred place in their lives, like the reflective properties that are believed to *'reflect the image of the soul'*. In Japanese culture (see Figure 16), for instance, water signifies purity and the *'simplicity of life'* and is viewed either in a state of calmness where 'the Japanese may contemplate the unruffled surface of a temple pond' or in its animated state where the Japanese migrate to view waterfalls (Witcombe, 1998).

Figure 17,Hindu devotees take a dip in River Ganges and pray on full moon day at Phaphamau, in Allahabad, India. (www.newshopper.sulekha.com)

Figure 18,River Yamuna that lies north of the Himalayan Mountains, flows through the states of Delhi, Haryana and Uttar Pradesh, before confluence with the Ganges at Allahabad. (www.indianetzone.com)

The *River Ganges* (Figure 17) is a sacred river in India where the *'water of life'* flows. The purification properties of water are seen here, as the Indians believe that if one had to bathe in the sacred water, one's sins would be forgiven. It is believed that by purifying one's exterior (the body) a symbolic purification of one's interior (the soul) takes place. The source of the holy water in the Ganges River is the Himalayan Mountains (Figure 18), known as *the 'mountains of the gods'*. The descent of the water from the mountains to the plains of India is equated to the descent of water from the heavens to the earth (Witcombe, 1998).

Hills, Mounds and Mountains

Naturally, hills, mounds and mountains have been related to beliefs of spirituality and religion throughout history. These vertical swells of earth symbolize the concentration of spiritual energies (Mann, 1993: 58) that brings one closer to the heavens. In order to capture the essence of such sacred places, not only did man begin to construct monuments at the top of hills but he began to create elevated sanctuaries of sacredness that represented hills, mounds and mountains (Mann, 1993).

Mount Ararat (Figure 19), a natural mountain in Turkey has gained its sacredness in ancient times through Syrian (www.famouswonders.com) and Islamic beliefs that this is where Noah's Ark is believed to have landed (Figure 20) . Noah is a theological character who was commanded by God to build an ark that would accommodate him, his family, as well as a breeding pair of every animal species on earth to protect them from the floods (www.skepdic.com). Another ancient Hill in Christian mythology is the Glastonbury Tor (Figure 21) in Somerset, England, at the bottom of which lies the Chalice Well (Figure 15). The Tor is said to be the sacred hill of the

Celtic god of the underworld – *Gwyn apNudd* (Mann, 1993: 59). The perimeter of the pre-Christian Glastonbury Tor was modelled into a vast three-dimensional maze.

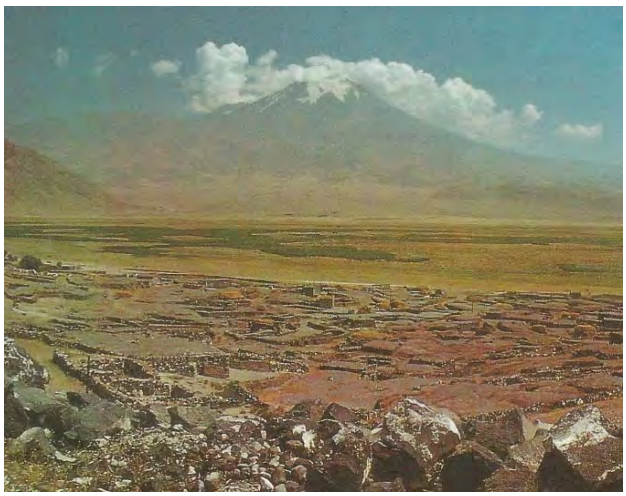


Figure 19, Mount Ararat in Turkey where Noah's Ark is believed to have landed. (Mann, 1993, 58)

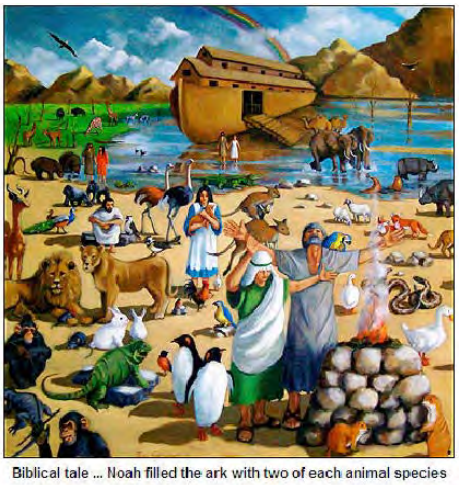


Figure 20, Representation of Noah's Ark. (www.skepdic.com)

Figure 21, Glastonbury Tor, Somerset. The sides of the pre-Christian Glastonbury Tor were modelled into a vast three dimensional labyrinth. This was the holy hill of the Celtic God of the Underworld - Gwynn apNudd. (Mann, 1993: 59)

Figure 22, Pyramid of Giza, Cairo Egypt. (www.hotelmanagement-network.com)

The *Pyramids of Giza* in Egypt (Figure 22) is a good example of man-made creations used to transmit the sacred essence of natural mountains. They were built in ancient times as mortuary temples in which deceased members of the royal family and officials were buried (Millmore, 1997). The Mayan pyramids of Central America were representations of hills (Figure 23), some built to support and elevate temples, others built as tombs, while some fulfil both functions. Some of these pyramids represent culminating points and are sacred; no person is allowed to mount them. Other pyramids are meant to be climbed to allow for the ascension of priests to meet the gods (Stierlin, 1981). In south-east Asia all religious buildings and complexes are symbolic of holy mountains. The circumstances under which these pyramids were created have

given these sacred mountains and hills a monumental significance which people travel across the globe to experience.

Figure 23, The Mayan Pyramids, Indonesia (www.soulwise.net)

According to Mann (1993), smaller representations of sacred mountains exist in all areas of prehistory as burial mounds. The prototypes of the earliest monuments, such as burial mounds, established in the Neolithic times, were sacred sites that were claimed from nature. The new Stone Age era of people (5000-2000 BC) built monuments across Europe in the form of burial mounds and rings of standing stones. Astronomers have recently discovered that these two forms of monuments have astronomical significance both in their siting and in their form.

Stone

Today, a sacred stone can be found in almost all world religions, while in ancient cultures sacred stones were either worshipped or more commonly used as demarcation and outcroppings of sacred sites. Such stones, of various kinds and sizes, are considered to be representations of earth spirits that embody them (Mann, 1993) and some have simply been bequeathed with sacredness from primordial times (Witcombe, 1998).

Numerous *omphalos* sites that mark oracular centres exist throughout Greece and Egypt (Temple, 1976). The omphalos (navel), in Greek mythology, represents a stone that marks the centre of the earth's energies, which were previously dispersed, and is located in Delphi. Before the appearance of the omphalos at Delphi, Delphi was associated with serpent images which represented the power of time and space (Figure 24). Once Delphi had become the oracular

centre dedicated to Apollo, it represented a taming of the serpent power; Delphi became a sacred place with positive energies (Mann, 1993: 57).

Figure 24, Serpent symbols, Temples of Sobek, KomOmbo, Egypt. The serpents represent the power of time and space, and their use on temples or head-dresses show these powers harnesses in a sacred art. (Mann, 1993: 57)

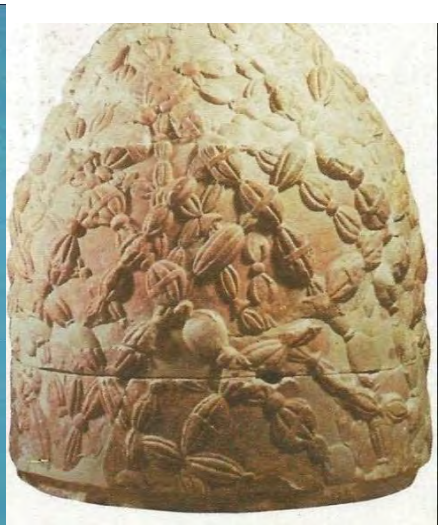


Figure 25, Omphalos, Delphi, Greece. (Mann, 1993: 57)

According to Greek legends, Deukalion (Noah) dispersed his mother (Gia's) bones behind Mount Parnassus, where his ark landed, to repopulate the earth. Another legend portrays the location of the omphalos as the crossing path of two swans. Zeus, 'the supreme ruler of Mount Olympus and of the Pantheon of gods who resided there' (www.pantheon.org), sent out two swans to locate the centre of the earth; their paths crossed at the location of Delphi (Mann, 1993). In appearance, this sacred stone contains a basket-like geodetic mesh (Figure 25); within its design it points out the specific locations of all the omphalos stones on the planet (mainly around Greece), but also the one in Egypt at the temple of Ammon at Thebes (Mann, 1993). The positioning of these locations is critical to a geodetic stone as it expresses an advanced level of understanding that could not have believed to have been conceived in ancient times. Appollian priestesses for oracular rituals used the omphalos at Delphi (www.ancientsites.com).

While the omophalos is a stone typically used for demarcation, the *Stone of Destiny* is one that was simply invested with sacredness. The Stone of Destiny is a revered stone in the shape of a prism, which is placed beneath the Coronation Chair in Westminster Abbey, London. Directly below the chair are four sculptured lions, one at each leg, guarding the sacred stone as seen in figure 26. All kings and queens of England have been enthroned on the Coronation Chair and directly above the Stone of Destiny (Mann, 1993: 56).

Figure 26, Coronation Chair and Stone of Destiny, Westminster Abbey, London. (Mann, 1993: 56)

Figure 27, Sacred Black Stone preserved at the holy shrine of Makkah, the Ka'bah (Mann, 1993: 56)

The Black Stone (Figure 27) is believed to be a sacred stone bestowed upon man in Islamic culture; a meteorite that fell from the heavens. It is now contained in the holy shrine of Makkah, the Ka'bah which is the determining factor of all religious buildings around the world. Owing to this religious requirement the development of Arabic astronomy occurred. Mann (1993) states that: *"in this case the practical needs of the people governed metaphysical considerations in the process of making astronomy and the sacred in architecture a unified whole"*.

2.3.3. Megalithic Science

Megaliths are classified as monuments; pre-historic passage graves, tombs, burial mounds, single standing stones, stone rows and circles which were constructed in various areas around the world by megalithic man. Devoid of any literature based on the construction of such megaliths, the curiosity of modern day man took over. It led him towards a theoretical approach of what the significance of the location and forms of such monuments were.

Sir Joseph Norman Lockyer (1836-1920) (www.encyclopedia.com), an English scientist and astronomer, indisputably believed that megalithic monuments had a common significance for the people that constructed them. With an eagerness to highlight the similarities, he travelled throughout the British Isles measuring these pre-historic megaliths. As a result, he was able to connect the builders of these megalithic monuments with sun worship; he determined that the siting of the monuments reflected appropriate times of the year for hosting certain festivals. These calendar dates were timed by astronomical events demonstrated by these monuments and

included the location of sunrise, sunset, moonrise and moonset on specific days such as the solstice and equinoxes (Mann, 1993: 64). Lockyer also discovered that these monuments were not merely functional as burial or meeting areas; they had a deeper significance. He also claimed to believe that the people of this early era had a class of astronomer-priest who associated religious ceremonies with the siting and construction of these monuments (Mann, 1993: 64).

Figure 28, Boyne Valley, Co. Meath, Ireland. The river Boyne sweeps majestically through the Irish countryside and some of the most powerful megalithic mounds in Europe are found along its course (Mann, 1993: 60)

Figure 29, Newgrange, Knowth and Dowth passage mounds from top to bottom (www.ancient-wisdom.co.uk)

Boyne Valley complex, Meath, Ireland (Figure 28) is one the most renowned megalithic monuments of Europe. It was constructed around 3200 BC during which several other prominent European megaliths were built; it is made up of a complex of pre-historic passage tombs with a large central mound flanked by several smaller ones. The three key features of the complex are the Newgrange, Knowth and Dowth passage-mounds (Figure 29). Dr. John Patrick, who surveyed the site, discovered that the monuments were laid out according to a plan. By the orientation of the passage-mounds, it was established that the whole complex was constructed and designed using accurate measurements of both solar and lunar cycles simultaneously (Figure 30). The plan was then linked with astronomical events (www. ancient-wisdom.co.uk).

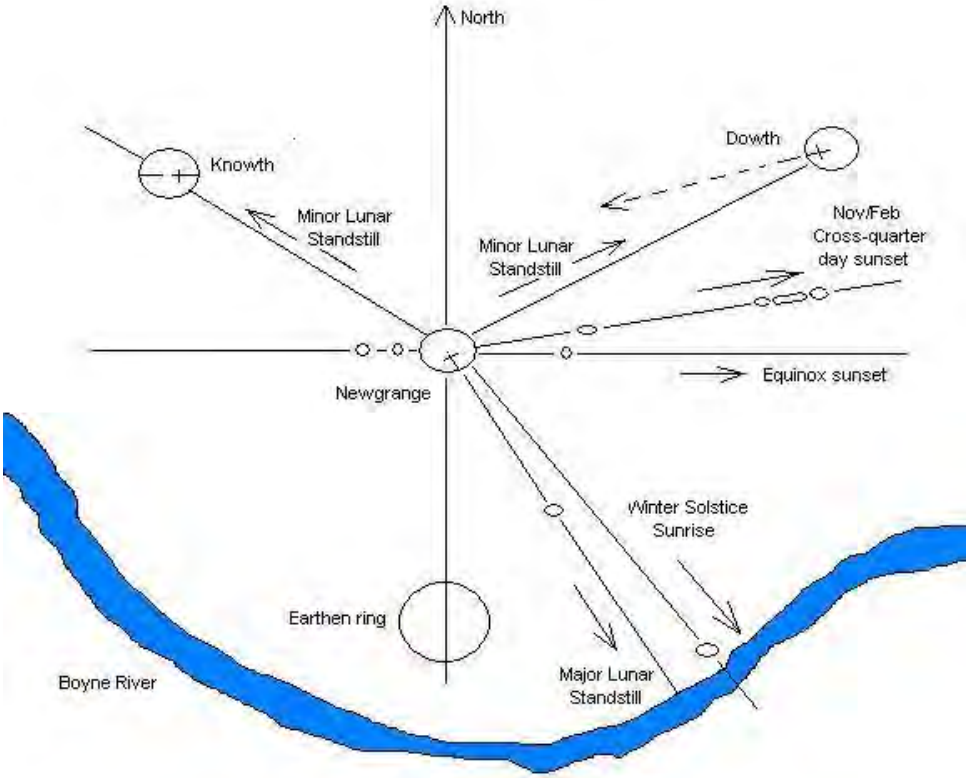


Figure 30, This diagram shows the placement of the megalithic mounds. 'The whole complex was devoted to accurate measuring of both the lunar and solar cycles simultaneously.' (www.ancient-wisdom.co.uk)

The kerb stone art of the Boyne Valley provided a cultural connection with foreign megalithic structures in France, Scotland and Malta showing similarities in art (Figure 31, 32). From the careful and accurate positioning of elements and from the astronomical association of the complex of Boyne Valley, it is evident that astrology was fundamental in the design and placement of the structures.

Figure 31, Kerbstone at Newgrange (K-52) (www. ancient-wisdom.co.uk)

Figure 32,Gavr'inis, France (www.ancient-wisdom.co.uk)

It can be seen that from Boyne Valley, one of the primary characteristics of a megalithic monument is its orientation which is achieved by astronomical calculations for religious purposes. The rings of stone and burial mounds of Stonehenge in figure 33(a) all have alignments with celestial objects such as the sun, moon, pole star Polaris, Sirius, other lesser planets and constellations in figure 33(b). Stonehenge is one of the most powerful and convincing examples of megalithic astronomy and architecture that exist today, and as research has shown, it has been used for various functions such as sacred ceremonies, priestly observations, burial mounds, a measuring device for the calculation of accurate calendars and a space of powerful earth energies (Mann, 1993: 66).

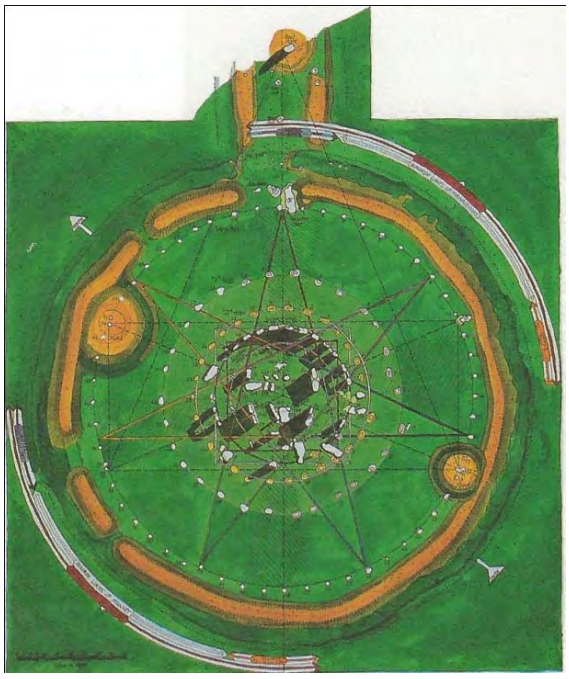


Figure 33 (a) Cosmic temple of Stonehenge, Wiltshire, England (c. 2100-2000 BC). The form of Stonehenge was created by the geometry of the successive rings of stones, the central group being the U-shaped ring of sarsens. The entire monument is orientated as a lunar-solar observatory and calendar (Mann, 1993: 66).

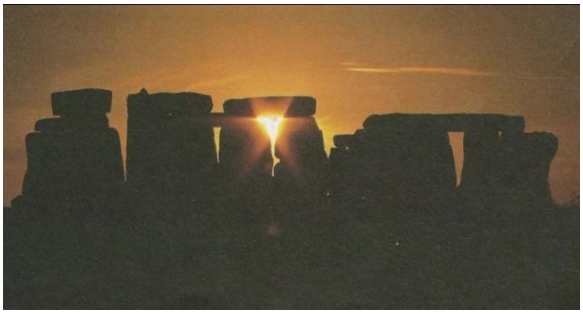


Figure 33(b) Stonehenge (Mann, 1993: 69)

It can be concluded that early cultures must have had a highly advanced understanding of *megalithic science* that contributed to their culture, religion and architecture. Mann (1993), however, maintains that scientists dispute this idea, arguing that sophisticated understanding of astronomy or building is not demonstrated anywhere else in these cultures. It can also be seen that megalithic science preceded the age of literature, hence the rationale and skills behind the megaliths are only speculative from a scientific standpoint. Even though these historic sites have been precisely measured as well as computer-analysed to find the possible and probable astronomical lines of their positioning, some may argue that it is impossible to prove that the alignments were anything other than random, having no evidence of astronomical placing from

that era. The argument continues to favour these civilizations, however, as most of these sites, if not all of them have significant alignments portraying a high level of civilization with technical achievements (Mann, 1993). Impelling proof of this can be seen in the mythology and religion of these ancient people. Their belief systems with regard to fertility, myths, seasonal cycles and death and the afterlife, all support the site selection and context of these megaliths.

2.3.4. The Intersection of Time and Space

When various sacred sites were studied, like the Maya of Central America and Hindu temples, one of the most prevalent aspects of the site selection of the sacred place was the cardinal axis; a cross of lines that point in the directions of north, south, east and west. The cardinal axes are important at ancient sacred sites as they were used to unite different points in *space* and *time* (Mann, 1993).

The Maya pointed out this interaction of time and space using the cardinal points by carving out designs in stone. These designs indicate astronomical orientation using dotted lines that cross each other at right angles, surrounded by concentric circles (Figure 34) (Hadingham, 1983), and have been found in various locations; forty or more, around Teotihuacán in Mexico. In some of the designs, rays of lines protrude from the outer concentric circle that appears to represent the sun. The dots used to make the original designs link the diagrams with days of the calendar; they often add up to the lunar number of 260; in multiples of thirteen and twenty (Mann, 1993).

The designs carved in the stone are a reflection of the design plan of the entire Teotihuacán monument, which is based on the concept of the square and the circle. The main thoroughfares exist as the crossings of cardinal axes. Two huge pyramids, exact in design, are positioned to emphasize the axes of these avenues (Figure 35),however, the alignment of axes of the entire sacred city deviates more than 15° from the actual north-south and east-west axes. While the builders knew the correct positioning of the axes, they chose to align perfectly the city with the cross and circle design of their carvings in the cliff which was used for selecting the appropriate city site. These axes coincide with 'the rising and setting of the major constellation known as Pleiades' (Mann, 1993: 70). The Pleiades is a *star cluster* that is not only important in Mayan mythology but in ancient mythology in general (www.naic.edu). It also provides a connection between the sun pyramid and the avenue of the dead that exist in the Teotihuacán monument. When the grid plan was created during the first and second centuries AD, the Pleiades set moments before the sun rose in the exact spot that the sun would have risen on a day that the sun passed the zenith in the sky. This phenomenon occurred on a mid-summer solstice day, as it is

the only day that this happens, affecting both the customs of the people as well as the calendar (Mann, 1993).

Figure 34, Cross and circle at Cerrito el Chapin, near Alta Vista, Mexico. These stone carvings show the importance of the cross in astronomical orientation. (Mann, 1993: 70)

Figure 35, The plan of the city Teotihuacán, Mexico is based on the geometry of the square and the circle. Two huge pyramids, exact in design, emphasize the axes of these avenues. (www.ghcc.msfc.nasa.gov).

Hindus also used cardinal points to lay out temples of their gods and goddesses. The four cardinal points were established using the sun and the moon in a ritual that involved consulting the Oracles (Burckhardt, 1967). Accordingly, a position for an altar was determined and a 'gnomon' or vertical shadow casting stick/post was then erected, around which a circle was drawn using a chord that was attached to the gnomon (Figure 36). During a ceremonial day, dedicated to a god or goddess of the temple to be built, the points of the intersection of the shadow on the circle at sunrise and sunset determined two critical points. When the points were joined, it produced an east-west axis. A chord was then used as a compass from these points to draw semicircles that intersect, forming a vesica piscis shape (a *fish*). These points of intersection were then joined to form a north-south axis. By using the north and south points of intersection the same principle was used to form another vesica piscis shape in the opposing direction; this led to the establishment of four corners of a square by connecting all points of the intersection(Mann, 1993).

By following this procedure, the circle is able to generate a square determining the plan and proportion of the temple; the four cardinal points are established perfectly in relation to the altar. The god for which the temple is built, becomes the temple itself as he is pictured in the shape of a victim in the Vedic sacrifice whom the devas sacrificed at the beginning of the world to be incarnated into the cosmos (see Figure 37). In this sacrifice, the head of the victim lies to the east, his feet to the west, while his hands touch the north-east and south-east corners of the square. The cardinal axes are used to provide an intermediate place between the circular heaven and the Terrestrial Square.

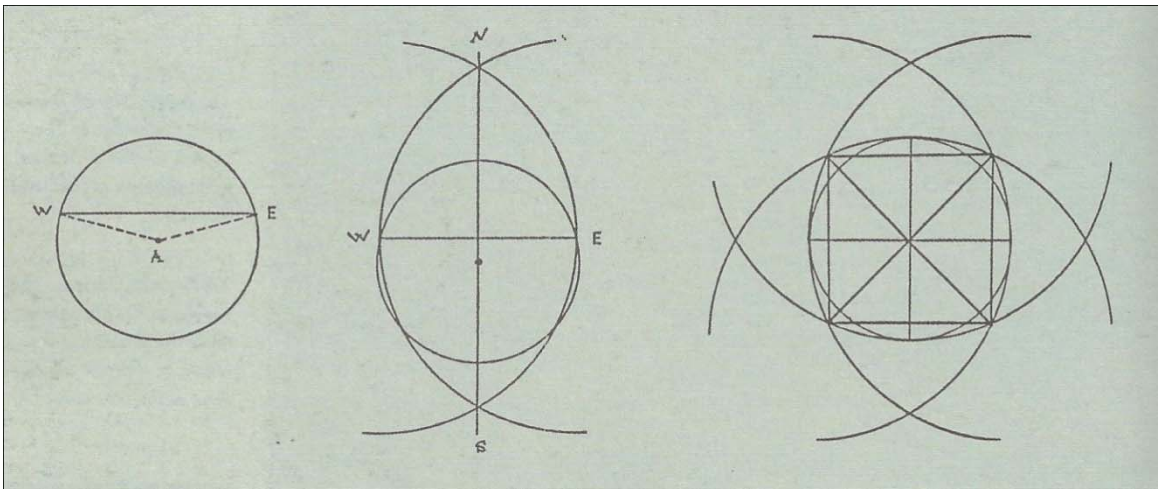


Figure 36, Creating the Axis. A vertical qnomon erected at point A cast shadows AE and AW at sunrise and sunset. A line WE connecting the two points exactly East-West in orientation. When arcs are drawn from W and E creating a vesica, the orientation of the temple is complete. (Mann, 1993: 72)

Burckhardt (1967) describes the ritual of orientation used by the Hindus as universal. Ancient Chinese and Japanese as well as Romans have also used this system to determine the cardinal points of their cities, after deciding on the geographical location by consulting the Augurs. The orientation of many sacred buildings was determined and built using the same system, or variations of the process. Under this process, altars of great cathedrals lay to the east while their main entrances lay to the west. Master masons utilized the same procedure to determine the long axis of the building, which was achieved by adopting the point of intersection of the shadow on the circle at sunrise. This assured that the rising sun would parallel the long axis of the cathedral in honour of the saint for whom it was erected. This had become a common way of constructing cathedrals - it is possible to determine the saint honoured at a particular great cathedral by determining the correct axis as explained by Mann (1993).

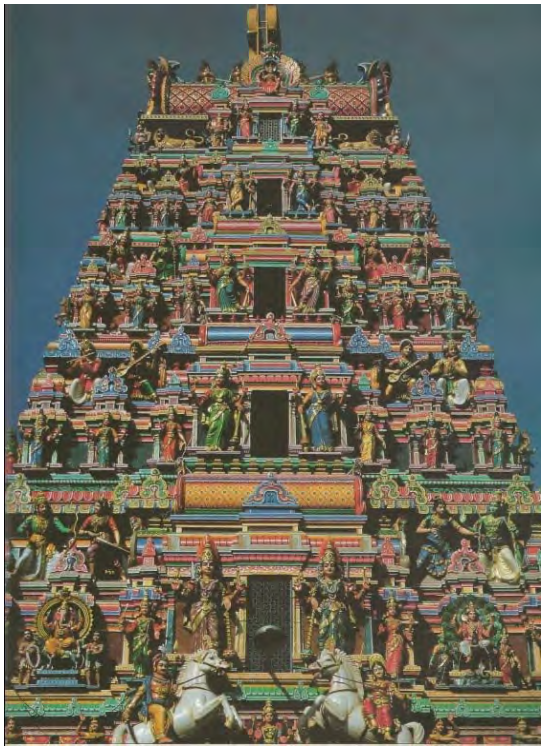


Figure 37, Goddess of Mercy Temple, Penang, Malaysia. This temple not only carries a likeness of the gods and the goddesses, but also constitutes a mountain of deities. (Mann, 1993: 73)

Figure 38, The holy shrine of the Muslims; Ka'bah in Makkah, Saudi Arabia. (www.projectavalon.net/)

Unlike cathedrals dedicated to saints, the temple is the only shrine that can be compared with the Ka’bah, the only Islamic sanctuary (Figure 38). Even though not much is known about its axial origins, Burckhardt (1976) explains that the holy shrine has been located at the lower extremity of an axis, which 'traverses all of the heavens'; other levels of sanctuaries are marked by the same axis and these are frequented by angels. The 'supreme prototype' of each of these sanctuaries is the throne of God, around which heavenly spirits circulate. The location of this shrine is an intersection of axes that encloses earthly and heavenly beings within a vertical axis. Here the cube is linked to the idea of the centre; each side of the cube corresponds to one of the primary directions that are zenith, nadir and the four main cardinal points. In the case of the Ka’bah, however, the sides do not correspond with the cardinal axes, but the corners of the cube do. The reason for this is that the Arab concept of the cardinal points is as corner pillars (arkán) of the universe.

Burckhardt (1976) further explains that circumambulation (tawáf) of the Ka’bah, which is also found one way or the other in other ancient sanctuaries, resembles the rotation of heaven around its polar axis. Islam and its ritual elements do not accept this interpretation. A well-known Muslim legend, explained by Burckhardt (1976), draws the relationship between the *ritual orientation* and Islam as a submission to the Divine Purpose. The eloquence of integration of

human will in the *universal will* is demonstrated with prayer toward a single point to the centre of every world.

With this, it can be seen that in Christian worship the orientation of churches follow the part of the sky where the sun rises at Easter. The orientation of churches has parallel axes whereas the axes of all mosques in the world converge to a single point (Burckhardt, 1976: 5).

2.3.5. Translation of Belief into Architecture

The very first inclinations of temples or spaces used to worship God were ceremonial trees that were adorned with symbols of God. The simplicity of these primeval people is what contributed to the awe and magic of their architecture. Many of their temples were glorified with the simple aspects of nature that was readily available. The organic forms of sky and ocean were captured in ancient temples in the forms of circles, domes and other such forms.

For some tribes, as the Teutons (native Germans), the word tree and temple were interchangeable; the tree was their universal temple. Very often temples located in caves had paintings and carvings of sacred animals or celestial beings. This was the beginning of adornment for places of worship. The temples of Babylon for example contained prominent statues and paintings of 'cosmic beings which created the world' (Mann, 1993: 48). In these temples, the dominating symbolic representations were the planets.

In the case of Hindu and Buddhist temples, the architectural form suggested the way they conceived the universe, which was in terms of tiers. The humans were at the lowest level, while the guardian deities occupied the middle tier, while the heavens were honoured by the uppermost level of the tier. This pattern of organization is reflected in the architecture of their temples as is the belief in the gods' residing in mountain caves, which contributed to mound and womb architecture (Mann, 1993). This exquisite type of architecture can be seen in temples such as Ajanta and Ellora which were beautifully carved out of rock mountains with barrel vaulted ceilings, windows with tracery around them and stone carvings similar to that of timber carvings. In Hinduism, all temples are mountains as are *stupas* in Buddhism. At first, temples were simply earth mounds that were made permanent with brick and stone. The symbolic placement of these marked the sacred spots where relics were found or preserved or where were places administered by gods, Buddhas or their followers (Mann, 1993).

Islam also has a tradition of beliefs that contribute to the architecture of the Islamic world. According to the holy book *The Quran*, God created the earth and the seven heavens. Within the

earth are layers and beings of higher existence that are invisible to the human eye. Such beliefs form the basis of Islamic art and architecture. They present the universe as a figure of contemplation, thus contriving an image that reflects God. As a result, Islamic art and architecture explores all aspects of the universe including numeric symbolism, alphabets, cosmology, biology, physical and spiritual sciences. Maths and cosmology, however, form an integral part of Islamic tradition, as the purity of mathematical models and diagrams translate into the purity of God and Islam as a simple way of life. This is then interpreted and converted into three-dimensional architectural forms. This can be seen in the holy shrine of Makkah, *The Ka'bah*. *"The magic of numbers contain the message that God is One, and the numbers are therefore a direct route to this revelation"* (Mann, 1993: 122). Numerology thus bestows sequences and proportions that are studied and utilized in Islamic art and architecture, which combines objects of nature with those man-made, to form patterns that are widespread in the layout of tiles, carpets and ornaments in mosques and other Islamic buildings.

The mosque, a sacred building in Islam, much like a temple, is a representation of the cosmos as a whole, where the human dimension is very much present. Quite precisely Mann (1993) expresses the sacredness of the human body and its co-existence with the Divine: "The human body is the temple." The human body as well as the cosmos are activated by similar energies and for humanity to experience the presence of God in a mosque; the mosque must reflect the image of the cosmos. Similar principles are adopted in the design of a house, palace or Islamic city.

2.3.6. Conclusion

This sub-chapter has explored sacred archetypes in built form, using an analysis of historic examples based on contextual issues. These contextual issues support a design philosophy diverging into three main constituents - earth, spirit and universe, forming an infinite system derived from ancient sacred architecture. It is very important to understand these three aspects which form a major part of this study, in order to identify the timelessness of sacred design as well as the sacred in timeless design. The architecture of any religious community is highly influenced by these three aspects; Islamic architecture is one of the most well known sacred architectures. As Foster (2004) states: 'Islam succeeded in unifying the sacred and the secular.'

Muslims firstly, are highly spiritual beings, influenced by historic teachings and beliefs. There seems, however, to be a barrier between communities - the essence of religion is being lost on this modern generation. Their way of life, symbols and rituals are important when understanding the simple planning of masjids around the world: separation of the sexes is one of the major issues in this type of architecture; in order effectively to welcome both sexes, separate entrances, rooms and spaces for both have to be allocated. As a result, the complexity of spatial articulation within simple geometric forms is an aspect of importance. The specific definitions of the different spaces can only be understood once the rituals and behavioural patterns of the Muslim people have been studied.

This sub-chapter, together with the previous one, demonstrates how the spiritual aspect of sacred architecture, formed from the three aspects mentioned earlier, transcend earth and the universe., The three-way relationship is not a rigid one where one overrides the other: it is quite flexible. Nevertheless, in this research, the spiritual context is the most important. In order to understand the spiritual significance of the religion to people, it needs to be analysed in a number of ways much like the way one would analyse the context of a site before designing a building. Some of the criteria in question (derived from this sub-chapter) are; the historical context of the religion, the significance of natural elements, rituals and religious obligations, sacred ceremonies, orientation and other significant belief systems. By understanding the belief behind the architecture, one is provided with a background for design.

2.4. CONCLUSION AND ANALYSIS OF CHAPTER

This chapter aimed at establishing a theoretical foundation in order to interpret a timelessness expressed in sacred built form using various theoretical arguments and international studies. Sacred architecture remains a vital component of this research; it is important to identify the theoretical background that influences its design. Theories attached to sacred built form include spirit of place, designing with nature, quality of allurement and symbols. The timeless quality of any sacred architecture is strongly influenced by these theories.

Firstly, all of the above-mentioned theories broadly cover the concept of identity. Spirit of place involves the psychic implication of architecture, which falls under the categories of orientation and identity. This research acknowledged the gap in contemporary architecture, where identity seems to be compromised, and the focus now mainly being on practicality of orientation. In the light of this, identity became one of the major components of this research which can be further sub-categorized in terms of architectural identity and personal or 'self-identity' both of which bring about an emotional attachment to architecture. It has been established that identity in architecture has been achieved by means of physical elements, historical context and natural context. Essentially, it is the influence of the external context on the internal being, whereas 'self identity' is the influence of the internal being on the external context. Self-identification has been achieved with architecture when the relationship of the site to the architecture becomes personal, when the architecture goes beyond the physical and through general personal perceptions. It is important to understand the people for whom the architecture is intended. The sacred identity of built form therefore strongly influences its timeless qualities.

Both eastern and western cultures portray timeless qualities, where the highlight of the design is expressed by the site or setting of a building. While eastern cultures focus on spirituality, western cultures focus on monumentality. The essential difference between the two is that eastern spiritual architecture reinforces man's existence as a creation (of a higher being) and is somewhat humbling, whereas western monumental architecture focuses on man’s existence as the creator (of architecture) and becomes narcissistic in nature. Additionally, spiritual architecture spans all time barriers while monumental architecture is a representation of a population of a particular era. More and more architects today are being influenced by western monumentality.

It is evident that a building cannot be declared timeless simply by stating that it is a timeless design. The way a building ages in the minds of people or establishes an identity of timelessness in sacred architecture is vital knowledge. This research has determined a design philosophy

derived from ancient sacred architecture on the foundation of *history and identity* of people and can be used to achieve timelessness in sacred architecture.

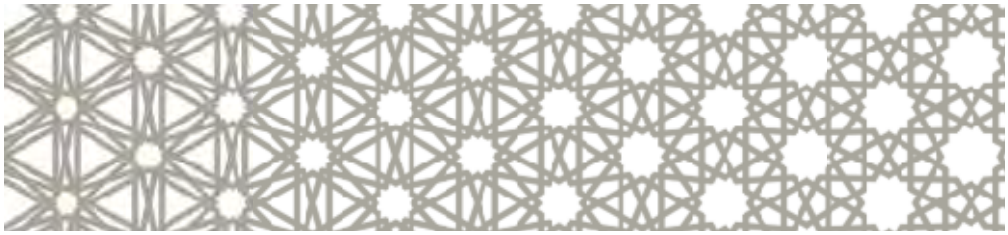
Figure 39, Diagram representing the three main categories of a timeless design philosophy. (Author, 2011)

This philosophy includes a spirit, earth and universe (Figure 39), achieved by identity, setting and planning. The spirit refers to all aspects of spirituality and belief, the earth represents all the physical aspects mainly in the form of symbols and the universe represents all metaphysical aspects of human life. All of these interlink and are infinite in nature much like timelessness. From these timeless qualities of sacred architecture, one is able to determine timeless sacred elements which can be implemented into design. Timeless elements of sacred architecture are those that symbolically represent the earth, the universe or spiritual belief. When implemented, this philosophy reinforces the feeling of being a creation instead of the creator (which is expressed in all facets of western life today).

"One cannot design timeless buildings, but buildings with timeless qualities" - Author, 2011

CHAPTER 3:

AN EXPRESSION OF TIMELESSNESS IN SACRED ISLAMIC ARCHITECTURE



3.1. INTRODUCTION

The expression of timelessness in sacred architecture according to this research requires a philosophical design approach. In light of this approach, an interpretation has already been established in the previous chapter where the earth, spirit and universe became the determinant factors of a timeless design philosophy in the form of symbolic representations of physical aspects, spiritual belief systems and metaphysical elements of human life. In order to express timelessness in sacred Islamic architecture, this philosophy has to be applied to and tested in the context of Islam and the architecture thereof. Thus, the focus of this chapter is sacred Islamic architecture.

Sacred Islamic architecture is a spiritual architecture initiated by religious belief (Özkan, 2004). The spiritual vision of Islamic architecture is to relate its 'basic abstract belief to the material world' as an expression of an acknowledgement of God and the human relation to the universe. However, through significant adaptations of architectural elements influenced by global culture, locality, religion and climate; 'Islam succeeded in unifying the sacred and the secular' (Foster, 2004: 6).

In order to understand the influence of spirit on earth, this chapter discusses the belief systems of Islam and how they have been used to influence the architectural and physical components through interpretation of spiritual beliefs.

3.2. SACRED BELIEF SYSTEMS OF ISLAM

"It is not surprising, nor strange, that the most outward manifestation of a religion or civilisation like Islam-and art is by definition an exteriorisation-should reflect in its own fashion what is most inward in that civilisation." -Burckhardt, 1976: I

3.2.1. Introduction

When looking at the sacred architecture of people of a religious sect, it is very difficult to determine the characteristics of such architecture without first examining the system of beliefs that have contributed to its establishment, as discussed in the previous sub-chapter. This chapter focuses directly on the origins and core beliefs of the Muslim people, which have been in existence for many centuries and are referred to in this research as timeless belief systems of Islam. One of the main attributes touched on in this sub-chapter is Islam as a religion of the centre (Burckhardt, 1976). It also takes into account the historical origins, reasons behind each belief system, and describes what the religion of Islam is all about in a spiritual context.

There are four major religious groupings within the religion itself, namely *Sunni*, *Shi'a*, *Sufi* and *Ahmaddiya*. Certain groupings do not support certain aspects covered in this sub-chapter as these belief systems are based on the Sunni religious group **(**Jenkins, 2007). Ultimately, these belief systems are analysed to determine the belief behind the architecture; emphasizing spirituality, devotion and sense of community, all of which have become major influential factors of Islamic architecture.

3.2.2. Islam

The word *Islam* originated from the Arabic word *Salema,* and translates as peace, submission and obedience. This is the direct route of the belief system of the Muslim people; the religion of Islam is the submission of the Believer, to the will of God and to the obedience of his divine laws. Not only does this belief system include humanity, but every living and non-living organism is believed to be governed by the laws of God, hence they are obedient to Him and in the 'state of Islam' (Elmasry: 1).

Muslims refer to their God as Allah. Allah is the Arabic word for God, but more specifically, the One and Only Eternal God, Creator of the Universe. Strangely enough, it is a word used by the general Arabic speaking population including people of other faiths, to refer to their Gods (Elmasry: 1). For Muslims, however, being associated with the word Allah is of the purest and it is for this reason that the word God, instead of Allah is commonly used throughout this sub-chapter in the event of this document being mishandled.

Islam backdates to the time of Adam and Eve, as conveyed in the Holy Scriptures of the Quran. The message of God was sent to mankind via Prophets and Messengers which included Abraham, Moses, Jesus and Muhammad (p.b.u.h.) (Elmasry: 1). Four books were revealed to four different prophets of which the Quran was the only well-preserved and unaltered sacred book. The Quran mentions the names of 25 messengers and says that there were others. The Prophet Muhammad (p.b.u.h.) was the last and final prophet sent to rectify any misinterpretations of the word of God and the Quran was revealed to him in segments.

The belief system of a Muslim is guided by the teachings of the Quran as well as the traditions (teachings, sayings, actions) of the Prophet (p.b.u.h.) which were practical explanations of the Quran and are referred to as Ahadeeth (plural). The following sub-section contains many Ahadeeth and Quranic verses to assist in the exploration of the Islamic belief system.

3.2.3. The Ka’bah

The Ka’bah (see Figure 38, pg 48), best described as the *'liturgical centre of the Muslim world'* by Burckhardt (1976), is commonly known as the House of God and is currently situated in Makkah, Saudi Arabia, which is more or less the centre of the global map (Figure 39). The word Ka’bah literally means *cube*, which it is; a simple masonry cube of pure mathematical proportion expressing the spiritual dimension which links earth to the seven heavens as expressed in Quranic scriptures. Abraham, the son of Ishmael, built the Ka’bah, by divine intervention, also establishing the annual pilgrimage of Hajj. The Holy Ka’bah, numerously mentioned throughout

this thesis, is the centre and origin of spirituality for Muslims and somewhat the centre of the world (Figure 40). The architecture is quite clear and its central importance in Islam is fundamental (Burckhardt, 1976).

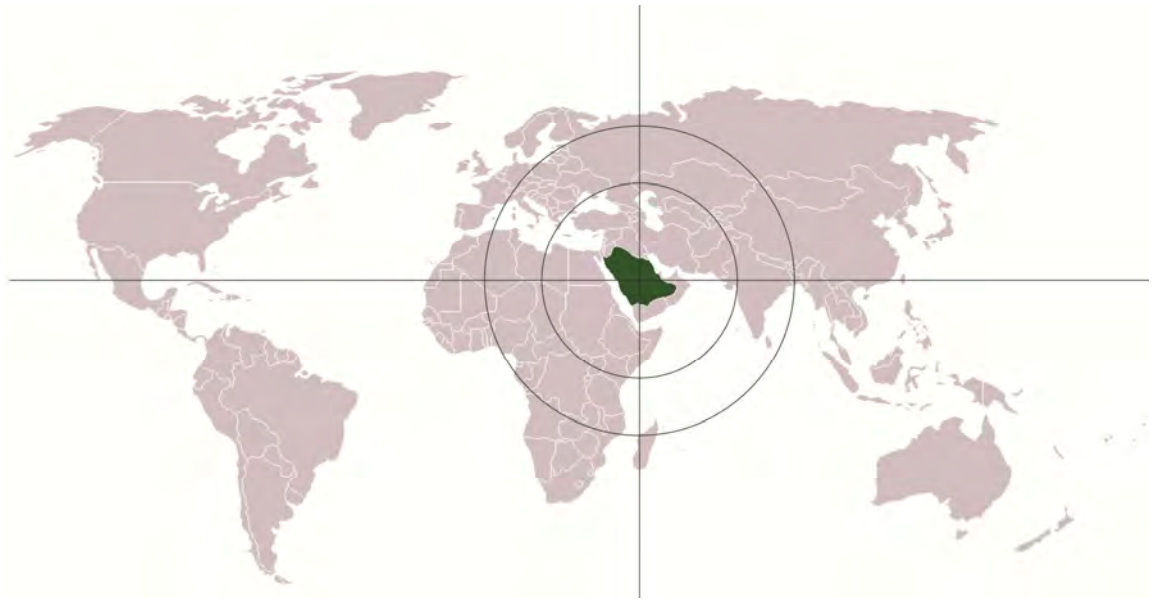


Figure 40, Map of the World showing the position of Saudi Arabia (the land of the Ka'bah) in relation to other countries of the world. (Clevelander, 2006 edited by Author, 2011)

Commonly understood by many, the Ka'bah is the direction in which Muslims face to perform their five daily prayers. This direction is known as *Qiblah*. Originally, the direction of Qiblah was toward Al-Aqsa mosque in Jerusalem. This was used for thirteen years until seventeen months after the arrival of the Prophet Muhammad in Medinah who received revelations about the change in direction from Jerusalem to Makkah (www.al-islam.org). Now, every mosque and masjid on earth is designed with Qiblah in mind. This way, the Muslim is distinguished from the Jews, who face Jerusalem and the Christians who orientate their churches according to the sunrise and Islam stands out as a *'religion of the centre'* (Burckhardt, 1976: 3). Perhaps it is only in the bird's eye view of the Ka'bah that the tangible and immediate expression of Islam can be seen; when thousands of believers bow down in prayer from all cardinal directions.

The exterior sanctuary is quite simple, covered with a black cloth (Kiswah) embroidered with gold thread in Arabic calligraphy (Figure 41). It has been changed annually since the Abbasid period (Burckhart, 1976). In the text of Burckhardt (1976), this covering is likened to that of clothing on a living body: the House was given life-like qualities. In the Greco-Roman world, this was a foreign ideology; however, the Arabs interpreted it this way. A Sacred Black Stone (*al*-Hajaru-l-*Aswad*), a meteorite that fell from the heavens, is placed in an outer corner of the Ka'bah close to its meridian angle (Burckhardt, 1976). This semi-circular stone, revered by

Muslims worldwide today, is comprised of several pieces bound together by a silver ligature. It was set into place by the Holy Prophet Muhammad (p.b.u.h.) himself (www.essortment.com). Lastly, the outer area of the Ka'bah, almost circular, simply forms part of the sanctuary (*haram*). The interior of the cube is empty and consists only of a curtain known as the '*Curtain of Divine Mercy' (Rahmah)* (Burckhardt, 1976).

Figure 41, Detail of embroidery lettering from a kiswah vesture of the Ka'bah, Cairo, Egypt. (Burckhardt, 1976: 6)

According to Burckhardt (1976) in his work *The Art of Islam*, the Ka'bah is related to Islam in two different yet complementary modes, the first being the 'static mode' in which case every part of earth is connected directly to the holy city of Makkah- the centre- where the Ka'bah resides. The Holy Prophet (p.b.u.h.) said:

> *"God has blessed my community by giving them the face of the whole world as a sanctuary"*

A Muslim may pray anywhere on this earth that is clean - not necessarily in a mosque, while facing the centre of this universal sanctuary, the Ka'bah. The second mode expressed by Burckhardt (1976) is the 'dynamic mode' which refers to the pilgrimage to Makkah that every Muslim should undertake once in his lifetime. Such a pilgrimage restores and renews the faith of a believer. This pilgrimage of Hajj is further discussed later in this sub-section.

The Ka'bah, the only equivalent to a temple (as pointed out in sub-chapter 2.3), is known to humanity as the *House of God* (*Baitul'lah*). This, however, is not meant to be taken literally, as Muslims believe that God is omnipresent, all hearing and all seeing. The Ka'bah, according to a Sufi (saint) interpretation, is therefore the heart of the Divine Presence instead of the dwelling of

the Divine and the circumambulation (*tawaaf*) of pilgrims around the Ka'bah is a representation of thoughts or meditation around the centre of the soul (Burckhardt, 1976).

3.2.4. The Five pillars of Islam

The teachings of Islam are vast, capturing every aspect of human life from 'spiritual beliefs and acts of worship, to economic dealings, human interaction, character, conduct, marriage, inheritance' (Desai, 1998: ii) and every other relevant condition experienced by a human being. The Prophet Muhammad (p.b.u.h.) was sent as the ultimate character of Islamic teachings as Islam is a way of life, a guide to living. There are, however, Five Pillars of belief that form the foundation of a Muslim's life. The acts associated with these pillars are considered obligatory for every Believer. They are a framework that is formulated in the Holy Quran; by abiding by this framework one expresses one's commitment to one's faith (www.islam-guide.com).

The Five Pillars of Islam are:

[1]*The Declaration of one's faith or belief in the oneness of God and that the Prophet (p.b.u.h.) is the last and final messenger.*
[2] *The Five Daily prayers (salaah) at their prescribed times of the day*
[3] *Regular Charity which makes it compulsory for the wealthy to give to the needy and poor.*
[4] *Observing Fasts in the Holy month of Ramadhaan (9th month of the Islamic lunar calendar)*
[5] *Performing the Holy Pilgrimage of Hajj at least once in the lifetime of a believer.*

The first pillar of Islam places emphasis upon monotheism (Harber, 1965). It is the sincere declaration of one's faith in God, consisting of a repetition of a simple formula or prayer that states that God is One and the Prophet (p.b.u.h.) is the messenger of God. This clearly translates into one's sincere and utmost devotion to God (Al-Khayat, 2004). The display of any animal or human idol or image is also prohibited in Islam as such acts lead to idolatry - associating partners with God. The major forms of decoration are geometric or Arabic scripture, unifying all mosques and religious buildings toward one God, the ideal (Harber, 1965). This pillar also affirms the solemn belief in the Prophet Muhammad (p.b.u.h.) as the last and final messenger to mankind with no other successor (Al-Khayat, 2004).

> *"Muhammad is not father of any of your men, but (he is) the Apostle of God and the Seal (of the Prophets)"* –Quran, S. 33: 40

The second pillar of Islam is prayer. Praying five times a day for a Muslim helps him to remember God in his busy schedule. Prayer should be performed promptly, perfectly and sincerely at the appointed times. Prayer is obligatory, therefore requiring to be performed under

most circumstances, whether ill or travelling. The five daily salaah (arabic) or namaaz (urdhu) are:

[1]	Salaatul Fajr	(Prayer before dawn)
[2]	Salaatul Zuhr	(Prayer after midday)
[3]	Salaatul Asr	(Prayer between midday and sunset)
[4]	Salaatul Maghrib	(Prayer after sunset)
[5]	Salaatul Esha	(Prayer at nightfall)

These prayer times are regulated by the sun and can be seen in figure 42(a).

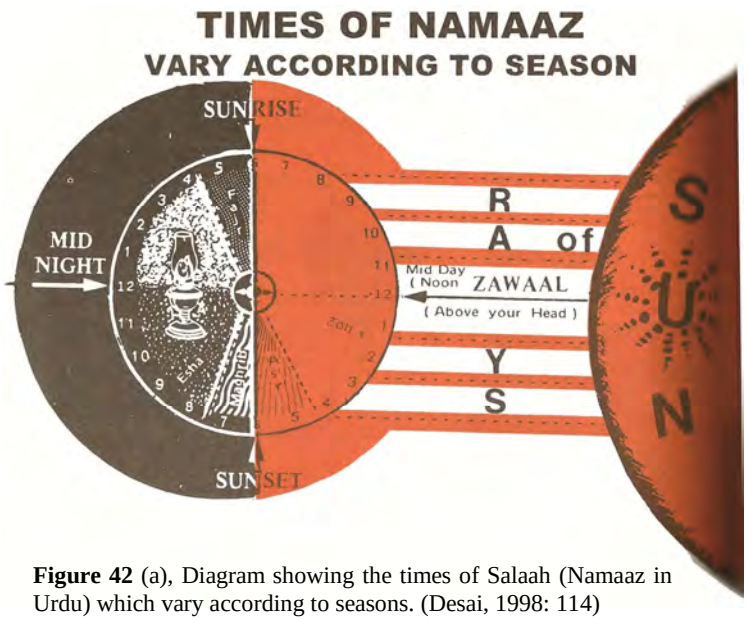


Figure 42 (a), Diagram showing the times of Salaah (Namaaz in Urdu) which vary according to seasons. (Desai, 1998: 114)

As there are specified times for salaah, there are also forbidden times for salaah as shown in figure 42(b) below.

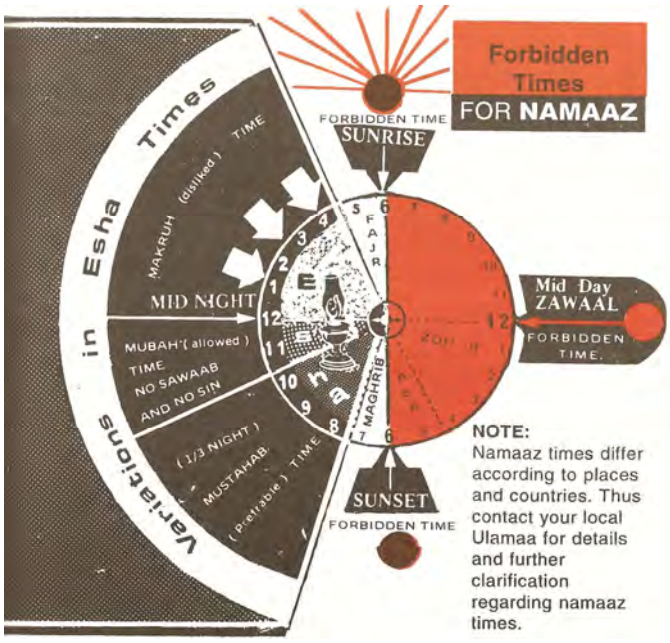


Figure 42 (b), Diagram showing the forbidden times of Salaah (Namaaz in Urdu) which vary according to locations. (Desai, 1998: 115)

Even though the sun is used to regulate the times of salaah, it should not be worshipped, hence it is forbidden to read salaah during sunrise, sunset, and midday when the sun is at its highest point in the sky. In many mosques around the world, a board is dedicated to the specific salaah times, while in earlier mosques a decorative sundial in the courtyard was used for this purpose. Today these boards are digitized; some are even placed outside the mosques for passers-by to view these times, ensuring promptness. At the time of prayer, the *imam* (one who conducts the prayer) calls the *azaan* (call to prayer), at which time all Muslims must stop what they are doing and listen respectfully. Thereafter, the men proceed to the nearest masjid to perform salaah in jamaat (congregation), while females prepare for salaah in the comfort of their homes.

> *"Prayer for a man in group is rewarded by twenty five folds over his individual prayers in the house or the shop"* -Hadeeth (Al-Khayat, 2004: 37).

In Islam, cleanliness is a great part of a Muslim's life, to such an extent that many would say that cleanliness is half of their faith. In many Islamic books, there are specific methods of cleansing the body under various conditions of impurities. The manner in which one cleanses oneself for prayer is called *whudu* (purification with water) or *tayamum* (purification with earth).

> *"O you who believe! When you intend to offer the Salaah, wash your faces and your hands up to the elbows, pass wet hands over your heads, and [wash] your feet up to the ankles."*- Quran, S.59:7 (www.1ststepsinislam.com)

Water and earth are considered the purest of easily available organic substances on the planet. When water is available, however, whudu must be performed with the sincerest of intentions. Furthermore, the place of worship must be absolutely clean and free from impurities. To be fully prepared for one's prayers and in order to observe the perfect prayer, the garments, body and place of worship should be clean and pure (Al-Khayat, 2004).

Contrary to popular belief, Islam holds the female equal to a male. She is neither less nor more in the eyes of God, however, owing to her obligations in Islamic teachings, she may be viewed differently in certain respects. Chastity and modesty in Islam, for both men and women is equally important. In the Quran it is mentioned that women should cover their bodies from head to toe to protect themselves from mischievous men. Both men and women in Islam are ordered to lower their gazes when in the presence of the opposite sex (Ashraf, 1974). Females, culturally, do not pray in a mosque in congregation, owing to the obligations of a female, as a mother or wife; it is preferred that she pray in the comfort of her home. A space should, however, be provided for women to pray at the masjid as these sanctuaries for females are often used for Friday (*Jummah*) prayer and the night (*Taraweeh*) prayer during the month of *Ramadhaan*.

Other types of special prayer are the *Eidgaah*, which is performed on the mornings of the special occasion of *Eid*. Often such a prayer is performed in congregation in an open space. Another type of prayer is *Janazah Salaah*, performed at the time of a funeral. The body of the deceased is taken into the demarcated area of the mosque for janazah salaah, and placed in front of the imam. The prayer is performed in congregation.

The third pillar of Islam is Charity (*Zakaah*). This involves regular charity, that when given, completes one's faith. In Islam, this regular charity is seen as a 'social obligation and a kind of worship observed for the welfare of the Muslim Community' (Al-Khayat, 2004: 57).
Zakaah is given to purify one's possessions by distributing a certain amount to the deserving, according to the Quran;

> *"of their good take alms, that so thou mightiest Purify and Sanctify them and pray on their behalf"*-Quran, S. 9: 103

"Zakaah is payable and calculated at a fixed rate on one fortieth or two and a half percent of the possession of wealth in the form of gold, silver, merchandise and cash by a person who possesses the Nissab (minimum amount liable to pay zakaah). Household effects such as furniture, crockery, personal clothing and so forth are generally exempted from the application of zakaah." (www. sanzaf.org.za)

Around the times best prescribed for giving zakaah, many mosques and Muslim organizations begin to collect cash or kind on behalf of the wealthy, distributing to the poor and needy. On days of distribution, the places buzz with activity and often queues extend to outside the yards of the mosques.

The fourth pillar of Islam is to observe fasting in the month of Ramadhaan. Fasting is an abstinence from food and drink and other worldly pleasures from dawn till sunset (Al-Khayat, 2004). It allows man to increase his spirituality while developing his soul. The month of Ramadhaan is considered a sacred month, as the Holy Quran was revealed as a guide to humankind during this month.

> *"Ramadhaan has come to you, a blessed month prescribed by God for fasting, during which the gates of Paradise are open; the gates of Hell are closed; and the devils are chained with fetters. It includes one night which is better than a thousand months; he who is deprived of its good fortune is a loser."* - Hadeeth

This one night comes in the last ten days of Ramadhaan and to benefit from this night, a religious ritual of *I'tikaaf (*meditation) is observed. This is when a man adopts a spot in the masjid and remains there for the full ten days to increase his spirituality. It is a period of seclusion from all worldly events, hence daily activities such as eating, sleeping and defecation have to be done within the confinement of the masjid and in close proximity. The need arises for a kitchenette and bath and change area within the mosque, in close proximity to the prayer area. A female can also do this ritual; however, it has to be done in a room of her residence.

At the end of the month of Ramadhaan, Muslims rejoice with the celebration of Eid, when families gather and remember God while partaking of food provided by him. A prayer is observed on the morning of this day, after the Fajr salaah, called Eidgaah. This prayer is performed outdoors as was practised by the Holy Prophet (p.b.u.h.) (Desai, 1998). Men gather in their finest garb at these fields to perform Eidgaah very early in the morning.

The fifth pillar of Islam is Haj: the sacred pilgrimage to Makkah. This pilgrimage is to be performed once in a believer's lifetime and is prescribed only to those who have the means to and those who are physically capable of doing it.

> *"Oh people, God has prescribed the pilgrimage to you, so you have to perform it"*
> - Hadeeth

An annual pilgrimage brings the global Muslim community together allowing them to become acquainted with one another and giving them an opportunity to discuss matters of mutual interest. This idea of unity and good will is encouraged in Islam. It is achieved by mosques also, and can be achieved by Islamic centres in specific localities of the world.

The Ka'bah, the central shrine of Islam, is the direction in which Muslims face when praying. It is held in the utmost respect, as a believer may not lie with feet toward the Qiblah.

> *"It is reprobate to turn the front or back towards the direction of Makkah if one wants to urinate or do anything also of that nature even though in a lonely place"*
> –Hadeeth (Harber, 1965, 12)

3.2.5. The Last Prophet

The Prophet Muhammad (p.b.u.h.) was born five hundred and sixty-nine years after Christ (Ashraf, 1974), approximately 1400 years ago in the pagan city of Makkah. He was a trader by profession. At the age of forty, during the sacred month of Ramadhaan, he received the first known revelation from God. The archangel Gabriel descended from the heavens to reveal to the Prophet that he was the chosen messenger of God to humankind. Gabriel commanded Muhammad (p.b.u.h.) who was at the time at Mount Hira, to READ.

> *"Read, with the name of thy Lord Who created, created man from a clot.*
> *Read, and they Lord is the Most Bounteous, who taught by the pen, Taught man what he knew not."*– Quran, S. 96: 1-5

From this point onward, the monotheistic religion of Islam was born and the Prophet (p.b.u.h.) continued to receive segmented revelations of the Holy Quran. The Prophet (p.b.u.h.) then began to preach the word of God secretly among friends at first, then to members of his tribe and then to the larger public (Ashraf, 1974). This was done for the rest of his life and as the religion of Islam grew and as more people began to convert to Islam, the pagan population grew agitated, as people moved away from their ancestral beliefs. Muhammad (p.b.u.h.) discouraged the worshipping of idols while introducing people to the One and Only Eternal God. As a result, the pagan people began to threaten and physically torture him.

A large number of Makkan Muslim then migrated to Abyssinia, which began a social boycott (Ashraf, 1974). It was around this time that the Prophet (p.b.u.h.) was blessed with *Mi'raj* (ascension). The ascension is believed to have been when the Prophet rose to the heavens, where he met other prophets, angels and ultimately God. From this sacred journey, it is believed that the command of the five daily prayers (salaah) was given (www.websters-dictionary-online.net). *Lailatul Mi'raj* (Day of Ascension) has become an important day in the Islamic Lunar Calendar.

Muhammad (p.b.u.h.) then migrated to the city of Medinah in 622 A.D., as the wrath of the pagan people became intense. This marked the beginning of the Hijrah calendar (Islamic Calendar) which is purely a lunar calendar (www.hijracalender.com). In Medinah, the Prophet (p.b.u.h.) built a basic courtyard house which served as a mosque as well. This was the first known example of Islamic Architecture (Figure 43). It was simple and did not intend to attract the attention of others or to impress them. It served its function as a house for his family; a covered area provided a place for congregational prayer (Edwards, 2006). *"I have not been commanded to decorate the mosques."* - Hadeeth (www.aaiil.org)

As Muhammad (p.b.u.h.) set an example to mankind, his house-cum-mosque became the traditional design of mosques (Figure 44) that were built several centuries afterward (Edwards, 2006).

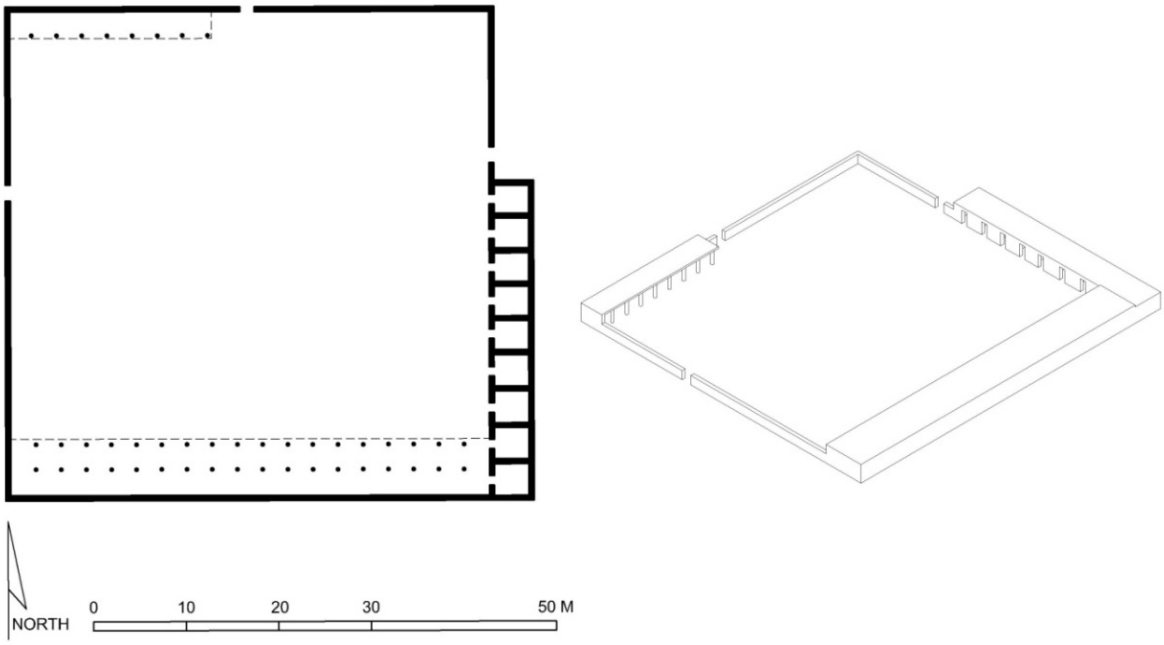


Figure 43, Hypothetical floor plan and perspective drawing of the Prophet's House, Medina.Saudi Arabia (7th century). (Arida, S, 2003)

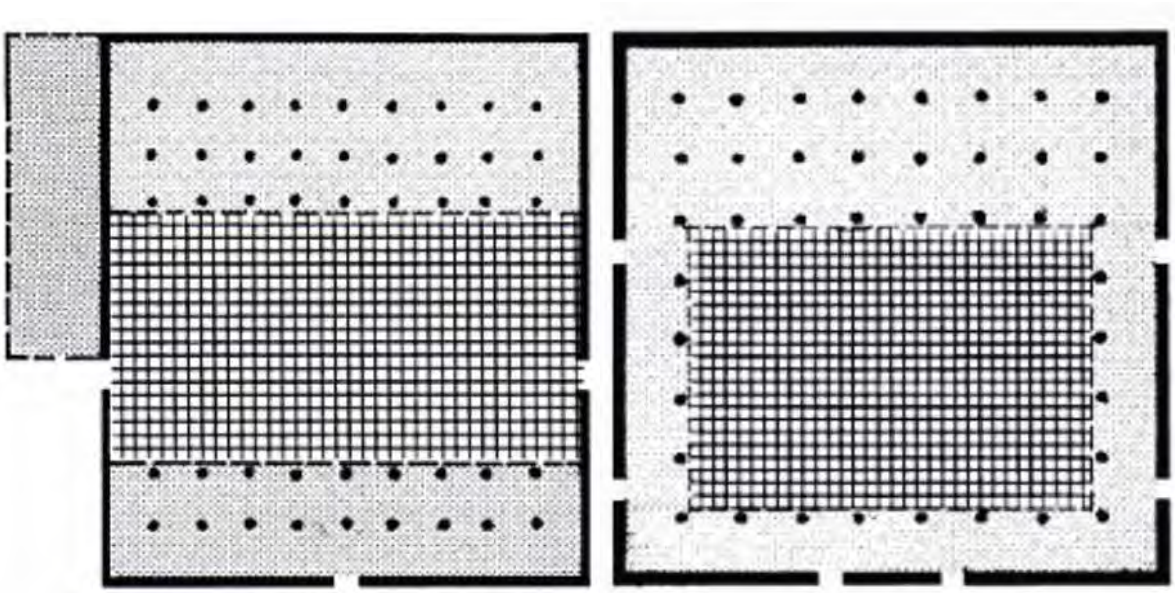


Figure 44, Plans of typical Arab Mosques that were derived from the design of the Prophets house-cum-mosque. (Edwards, 2006: 83-84)

"And We have not sent thee (O Muhammad) save as a bringer of good tidings and a warner unto all mankind; but most of mankind know not." –Quran, S. 34: 28.

It was from the Prophet's building that the typical Arab mosque evolved, advancing towards a low-rise courtyard housing (Edwards, 2006). Eventually, the year 8 A.H. (After Hijra) led to the capitulation of Makkah. Muhammad destroyed the idols of the Ka'bah while preserving the Black Stone. He then spent the next two years amalgamating his Prophethood and position as ruler of Arabia. He passed on in the year 10 A.H. knowing well that he had accomplished the tasks assigned to him with regard to spreading the Divine message to the world (Harber, 1965).

3.2.6. Islam Today

Islam is the world's youngest religion: it was established in Eurasia, *'the heartland of humanity'* (Harber, 1965: 13). Today the global Muslim community 'consists of between 1.2 and 1.6 billion people, or roughly one-fifth of mankind...or about 23% of an estimated 2009 world population of 6.8 billion'. Sub-Saharan Africa is estimated to accommodate 15% of the population, while the Middle East and North Africa accommodates 20% of the population (www.islamicpopulation.com) (see Figure 45).

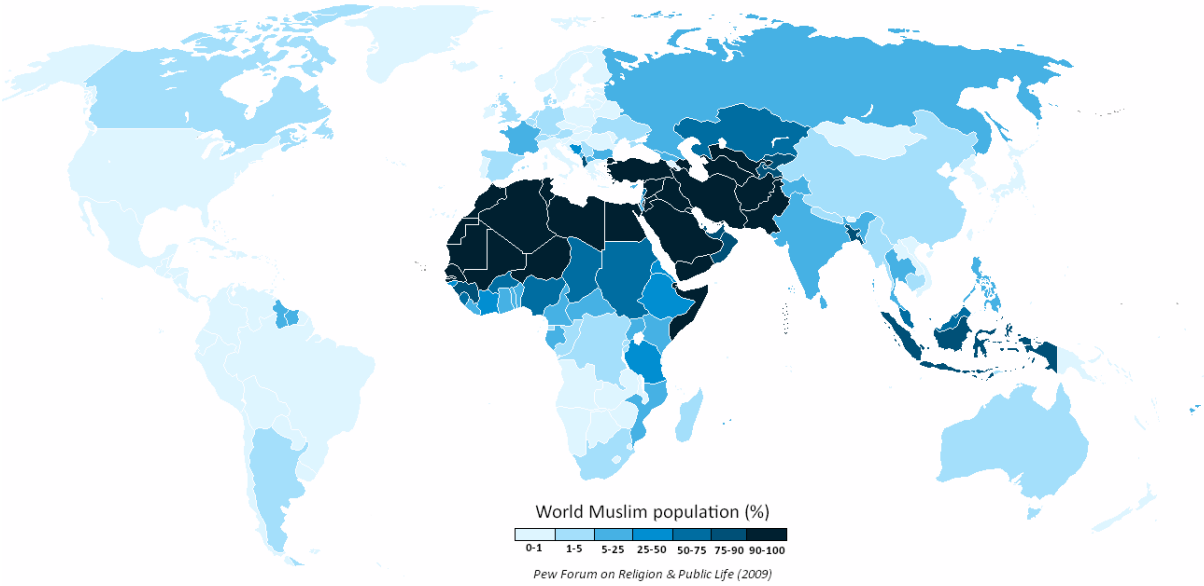


Figure 45, The Muslim world population map by percentage of each country, according to the Pew Forum 2009 report on world Muslim populations.(Dunya. H, 2009)

North Africa is believed to be significantly linked to the development and spread of the religion (Bugaje, 1997). During the period of oppression by the pagan Makkan Arabs, one of the places that the Makkan Muslims fled to was Africa. It is also believed that Islam reached Africa before going to Medinah (Bugaje, 1997), hence, the age of Islam in Africa computes to the age of Islam itself; the religion had developed and spread with the emergence of Muslim communities and political systems throughout the continent in only the first century of its existence.

One of the main reasons Islam spread as rapidly and was accepted so easily was owing to its promotion of literacy, liberation, trade, commerce, culture and civilization. The focus was community, not only at a local level but on a global level as well. Bugaje (1997) states: "Islam triggered unprecedented movements of people bringing about social integration at a scale never seen before and as yet unmatched by any modern state creation". European intrusion into Africa began, however, with the Portuguese in the fifteenth century, continuing with European colonisations in the eighteenth and nineteenth centuries, which disrupted the steady progress and amalgamation of the continent. From that point onward, the continent was imbued with the 'process of subversion and exploitation' which still exists today on a subtle and magnified scale. Bugaje (1997) believes that African independence merely created a false hope while Islam 'alone possesses the potential to liberate the continent once again'.

Today Africa stands as a 'weak and emasculated' continent. Even the strength of Islam has been destabilized. In the twenty-first century, the global Muslim community, Africa in particular, is challenged in many ways; the way these challenges are handled will determine the 'survival' of the religion 'in the first half of the century' Bugaje (1997).

Bugaje (1997) points out five major areas of weakness among the Muslim community:

[1]Sense of community and corporate image: This will bring the Muslims together and help them to realize their strengths, becoming 'models and pace setters' for other Muslims as well as for humanity in general. The corporate image of Muslims is quite closely connected with the sense of community. Once the community is established, the image of a Muslim will be relevantly portrayed.

[2] Human Resource development: The Muslims community now relies on the workforce of non-Muslims; as a result the 'values and sensitivities of a Muslim are ignored'. Bugaje (1997) expresses that the Muslims 'have got to have an idea of their manpower requirements as a community and plan to secure it through training'. It is also imperative that the traditional Islamic education be updated so that an 'ulama (body of scholars) of our age may be produced. The fields of science and technology 'pervade every aspect of human endeavour' and therefore require a deeper understanding. "The Muslim community ought to have learned people who can intelligibly discuss with their colleagues the world over and carry us (the Muslim Community) through the twenty-first century".

[3] Intellectual Development: One of the first commands sent down to humanity was to read; the Prophet (p.b.u.h.) encouraged the 'search and dissemination of knowledge'. Muslims established the first universities of Africa: Azhar in Egypt and Sankore in Timbaktu and 'produced great scholars of international repute'. Today the Muslims have lost their ability to produce knowledge

and civilization. This will surely affect the future of the community as they are consumed by other cultures and civilizations.

[4] Economic development: This can be achieved by the distribution of Zakaah which is compulsory among Muslim. The 'productive capacity of the Muslim community' can generate wealth which allows them to meet the needs of the community.

[5] Development of women: As the twenty-first century brings about a competitive world, women should be able to participate and compete on the same level as men, especially in the field of politics. As in the times of the Prophet (p.b.u.h.), Muslim women were able to 'participate in Jihad (holy war), attend mosques, serve the community in various capacities and above all excel in Islamic scholarship'.

Evidently, there are opportunities of development in these areas pointed out by Bugaje (1997). Even though the bulk of this research may be aimed at determining the timelessness of sacred architecture, the building typology and function is equally important.

3.2.7. Conclusion

It has previously been established that numerous beliefs within the spiritual context of man have led to a cosmological or natural context based on the previous sub-chapter. As a result, the focus of this sub-chapter was Islam, a monotheistic religion based on sacred text: Quranic revelation and Ahadeeth: teachings, sayings, actions of the last Prophet (p.b.u.h.), of which the spiritual context of Islamic architecture was explored. The outcome of such focus emphasized the simplicity and logic of the religion, as it involves an ecosystem of activities that contribute to the sustainability of the religion. It is a religion not only about oneself, as communal involvement is meant to be an active part of a Muslim's lifestyle. Islam, in terms of spirituality, is based on the following aspects: The Ka'bah, Natural elements and The Five Pillars of Islam.

The Ka'bah is the only equivalent to a temple. It has a central significance in the Muslim world, as it is the centre and origin of spirituality. Every Muslim prays toward the Ka'bah, which is the direction of Qiblah, and every mosque and Jamaat Khana in the world is designed with Qiblah in mind. The Ka'bah is designed as a simple masonry cube of pure mathematical proportion expressing the cosmological context of spirituality that links earth to the seven heavens. When Muslims embark on a pilgrimage to Makkah, the ritual of circumambulation around the Ka'bah is performed. The architecture is quite clear and its central importance in Islam is fundamental as Islam stands out as a '*religion of the centre'*. It may be concluded that the square and the circle are significant geometric symbols in Islamic architecture.

Natural elements that express the spiritual context include: the Sacred Black Stone, which is believed to have fallen from the heavens and is situated in an outer corner of the Ka'bah, also water and earth, which are used for the cleansing process before prayer and are considered the purest of easily available organic substances on the planet. The Black stone is a single sacred entity that already has its place on this earth; therefore, the next best natural elements of spirituality are water and earth.

The Five Pillars of Islam form the foundation of a Muslim’s life. Monotheism (1) prohibits the display of any animal or human idol or image, as such acts lead to idolatry, in other words, associating partners with God. The major forms of decoration are geometric patterns and calligraphy, unifying all mosques and religious buildings toward one God, the ideal. Prayer (2) is obligatory and meant to be performed five times a day in congregation, as established with M'iraj (Ascension of the Prophet to the heavens). Congregation or *jamaat* in Arabic is more significant for males than for females. The times of salaah are crucial. As a result, many mosques around the world have a dedicated board to the specific salaah times, while in earlier mosques a decorative

sundial in the courtyard was for this purpose. Today these boards are digitized and some are even placed outside the mosques for passers-by to view these times, ensuring promptness. Charity (3) is given to purify one’s possessions, giving back to the poorer communities. Around the times best prescribed for giving charity, many mosques and Muslim organizations begin to collect cash or kind on behalf of the wealthy, distributing this to the poor and needy. On days of distribution, the places buzz with activity and often queues extend outside the yards of the mosques. Ramadhaan (4) is a sacred month when Muslims observe fasting for an entire month. A religious ritual of i'tikaaf takes place during the last ten days of Ramdhaan. In addition, a sixth prayer occurs at nightfall which both men and women observe. At the end of Ramadhaan, men in an open field perform the Eid Prayer. Pilgrimage (5) to the Holy city of Makkah brings the global Muslim population together annually for spiritual reasons. The direction of Makkah is held in such high esteem that a Muslim may not urinate, defecate or point his legs when asleep in the direction of Qiblah.

As a result, all of the above belief systems have contributed to the development of Islamic architecture as the need arose for a place that would allow an expression of belief. This sub-chapter expressed the ultimate simplistic example of a mosque-cum-house built by the Prophet Muhammad, which was a guide to humanity, however, as the requirements of a mosque increased, with the addition of tombs, *madressas* and other communal requirements, the architectural elements and design qualities had to accommodate these greater requirements. As a result, various and specific architectural elements have been associated with Islam up to today, forming the basis of sacred Islamic architecture.

Today there are many issues facing the Muslim community as discussed by Bugaje (1997). These issues may be utilized to improve the quality of life of the Muslim community including the development of women. The belief behind the architecture may, in the greater sense, enhance communal bonding, develop the community's sense of identity and increase their faith and devotion, with the use of architectural allurement, symbols and nature. The following sub-chapter expresses the physical and cosmological portrayal of the beliefs covered in this sub-chapter.

3.3. ISLAMIC IDENTITY IN ARCHITECTURE

"The strength of Islamic architecture has arisen not only from the intrinsic cultural values of the societies that generated it , but also from the fact that Islam has adapted itself in interacting with other cultures as it has spread." – Özkan, 2004: 25

3.3.1. Introduction

The timelessness of any architecture lies in the eternal qualities of that architecture and the strength of its allurement would be its meaning and significance to the community. This sub-chapter expands on the elements of Islamic architecture as well as the origin of its being and the role it plays in the religion. These elements are there to provide recognizable features that allow a building to express its function by means of form. Islamic architecture is a very distinctive type of architecture and may easily be identified. Grube (1995) explains how Islamic architecture emits the *'spirit if Islam'*. The architecture as a whole, as well as its distinguished parts, can only be meaningful and expressive to a spectator if it is understood in the context of Islam as a culture, religion and political entity together with the circumstances under which it was created, as touched on in the previous sub-chapter.

This sub-chapter also deals with the cosmological expression of the building as well as with the important relationship between nature, architecture, and design. Even though the aesthetic influence of Islamic architecture may be derived from other cultures and traditions, such as, Arab, Iranian, Turkish and Indian (Pereira, 1994), the principles of internal and external features and form remain the same. A good starting point for this is a mosque where the translation of belief into architecture is best communicated.

3.3.2. Concepts of Islamic Art and Architecture

The beauty associated with Islamic art and architecture is closely related to human perception as discussed in earlier chapters; however, a large portion of this beauty is associated with geometry. This part of the research deals with the geometric and spatial proportions that relate to the form and ultimately the aesthetics of the building. Much like the Ka'bah embodies the spirit of God; the Mosque embodies its architectural expression and identity, which is specific to a site or a particular genre (Kahera, 2006). Mann (1993) refers to this expression as an awakening of the soul, achieved with the integration of numbers, lines, shapes and colours.

The use of geometry in planning, form and pattern is one of the fundamental issues when it comes to design as described by Kahera (2006: 53): *"Geometry is the primary language of Islamic art"*. The properties and geometry of a mosque plan must be based upon function, order and structure, while the geometry itself should be contextualised according to spatial order as seen in the *elements of mosque architecture* (pg. 82). Often in Islamic architecture, it is noted that 'cosmological patterns' and 'mathematical symmetries' are used to create a 'sacred geometry', (Kahera, 2006). These highly symbolic geometries recur in works of Islamic art and architecture from a 'macrocosmic level to a microcosmic level ' (see Figures 46, 47) and are extracted using the properties of the Golden Ratio and other mathematical and geometrical ratios (Mann, 1997and Kahera, 2006).

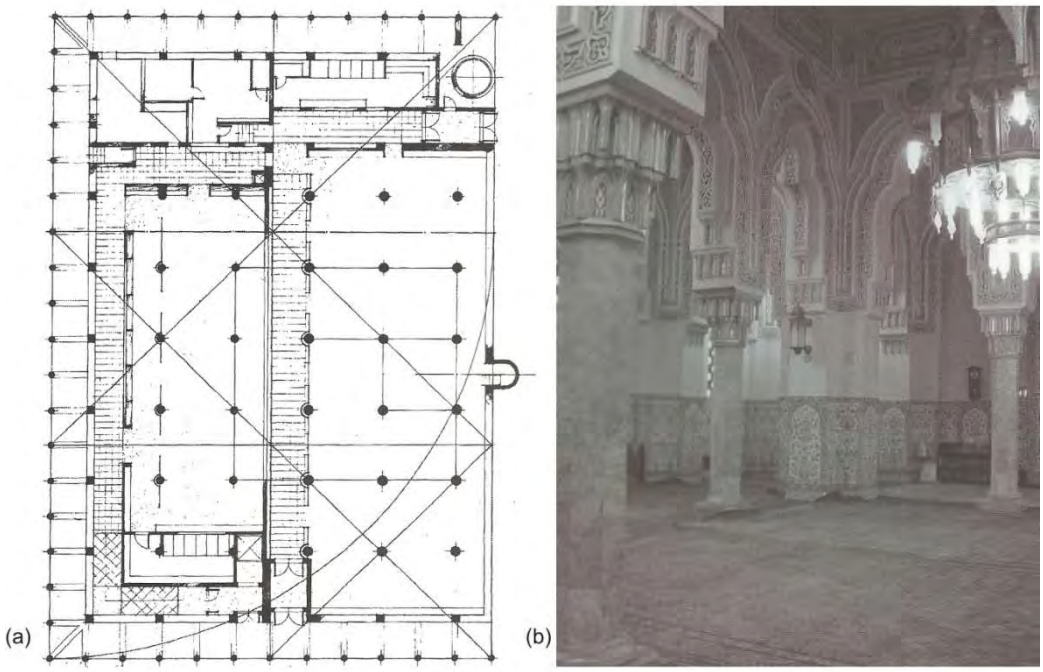


Figure 46(a) Floor plan based on geometric system (Drawing by Abdulmalik, L.) (b) Islamic Cultural Centre, Washington DC: the main prayer hall, showing the Arabesque tile patterns (Kahera; 2006: 57) (Photo by Susman, M, 2007 [Part b])

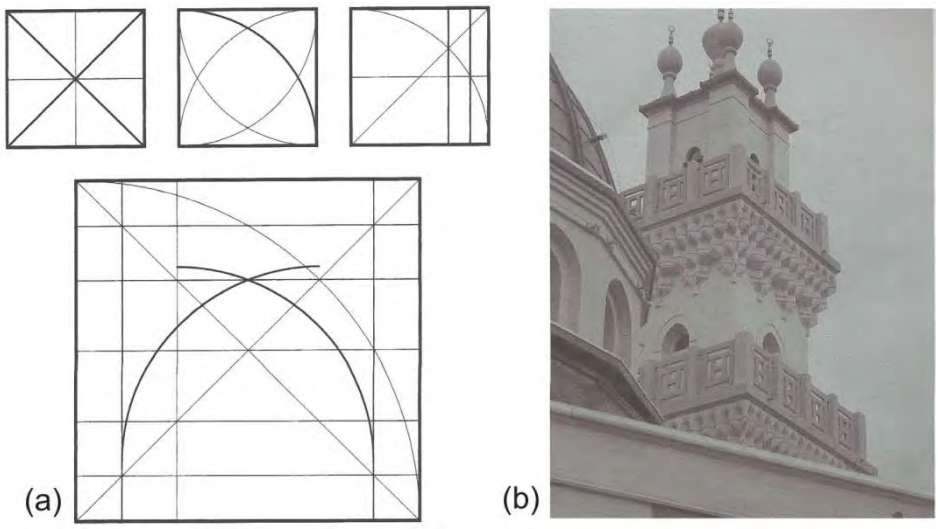


Figure 47(a) Design using geometric patterns based on the 'root-2' mosque. (b) Design using geometric patterns (*murqanas*), Oxford Centre for Islamic Studies at Oxford University (Kahera; 2006: 55) (Photo by Anz. C, 2008 [Part b])

The principles from which Islamic art and architecture are derived are universal and not specific to Islamic religious buildings, much like the ritual of orientation in Hindu Temples (pg. 47). They are mainly derived from mathematical principles such as The Golden Ratio and Fractal geometry. It is imperative to understand these principles when designing a sacred Islamic building.

The Golden Ratio

The Golden Ratio is a ratio that is often expressed with the phi symbol (φ) and is equal to 1.618:1. **(**Boussora, K and Mazouz, S. 2004). It is the proportion of a line divided into segments *a* and *b* (Figure 48) whereby the ratio of the complete length to segment *a* is the same as the ratio of segment *a* to segment *b* and is represented by the following mathematical equation:

$$\frac{ab}{a} = \frac{a}{b}$$

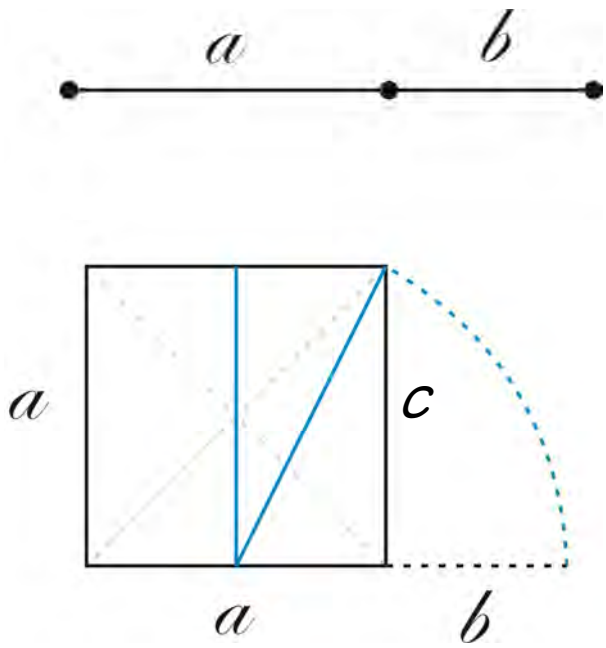


Figure 48, Golden section and construction of the Golden Rectangle (Author, 2011)

The manner in which the Golden Ratio is used to proportion architectural elements is highly dependent on the construction of the Golden Rectangle as shown in the above figure 48. If *a* were the shorter side of the rectangle, then to attain the longer side of the rectangle equivalent to the Golden Ratio, a square would have to be drawn with all four sides equal to *a*. The square would then have to be divided into two equal rectangles of which any opposite corners of one rectangle may be joined to produce line *c*. An arc should then be drawn using the mid-point of line *a* as the centre, with line *c* as the radius to form line *b*. Line *ab* is the longer side of the rectangle.

The Golden Ratio has been used in numerous pieces of art and architecture, namely Le Corbusier's United Nations building, Greek Temples and Theatres, The Mona Lisa by Da Vinci and The Great Mosque of Kairouan (Figure 49). While it has been used extensively in historical art and architecture, the existence of the Golden Ratio prevailed in the proportion of many natural entities; one of the most prominent being the human body itself (www.mlahanas.de). Other natural phenomena which express mathematical proportion are: clouds, river networks, fault lines, mountain ranges, craters, snowflakes, crystals, lightning, cauliflower or broccoli, and systems of blood vessels and pulmonary vessels, and ocean waves;all of which are expressive of the mathematical principle of Fractals geometry (www.webecoist.com). Foster (2004) reinforces this by stating that 'the very structure of Creation lies within geometry and numbers'.

Figure 49, The Great Mosque of Kairouan was built by Uqba ibn Nafi in 670 A.D. in modern day Tunisia. The plan of the building is not a perfect square due to urban constraints, but the proportioning system of the spaces in plan and some other parts of the building measurements coincides with the Golden Ratio. The placement of the Prayer hall, minaret and court, all represent the proportions of the golden ratio. (Boussora, K and Mazouz, S.2004& image source: http://wapedia.mobi)

Fractals

Fractal geometry is based on the repetition of 'rough or fragmented geometric shapes', which are 'self –*similar'* but at varying scales, forming a comprehensive whole (Mandelbrot,1983). The figure below (Figure 50) illustrates Fractal geometry; the repetitions of the original form at different scales contribute to a comprehensive whole and a highly ordered geometry.

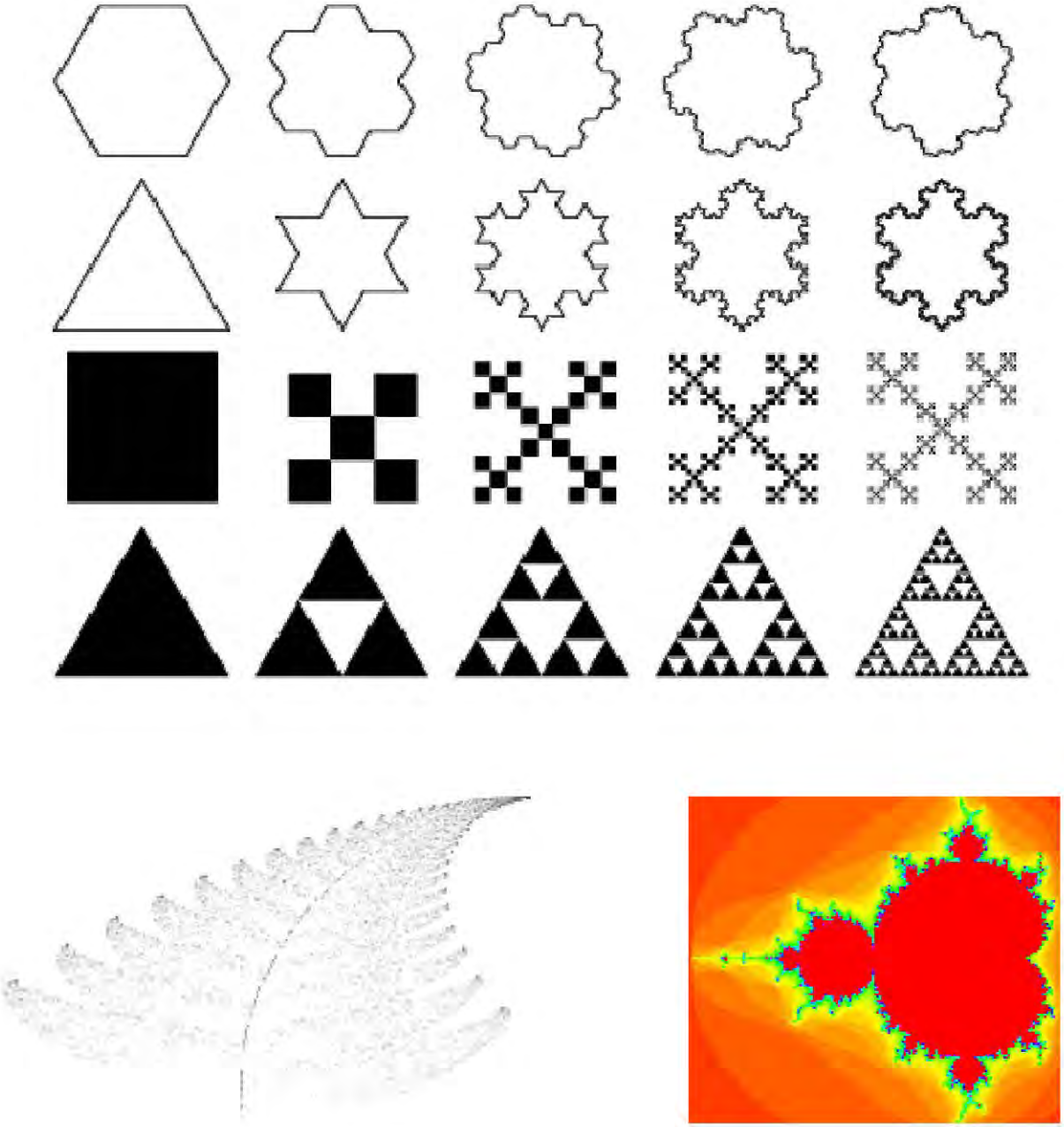


Figure 50,The above images represent fractals known as the *Gosper island, Koch snowflake, box fractal, Sierpiński sieve, Barnsley's fern, and Mandelbrot set.*(Weisstein, E. W.)

The use of fractals in Islamic architecture is manifested in Masjid Negara in Malaysia, where the repetition of a simple geometric form and pattern that exists in nature, is used to create a form as well a system of patterns as seen in figure 51*(*www.masjidnegara.gov.my*)*.

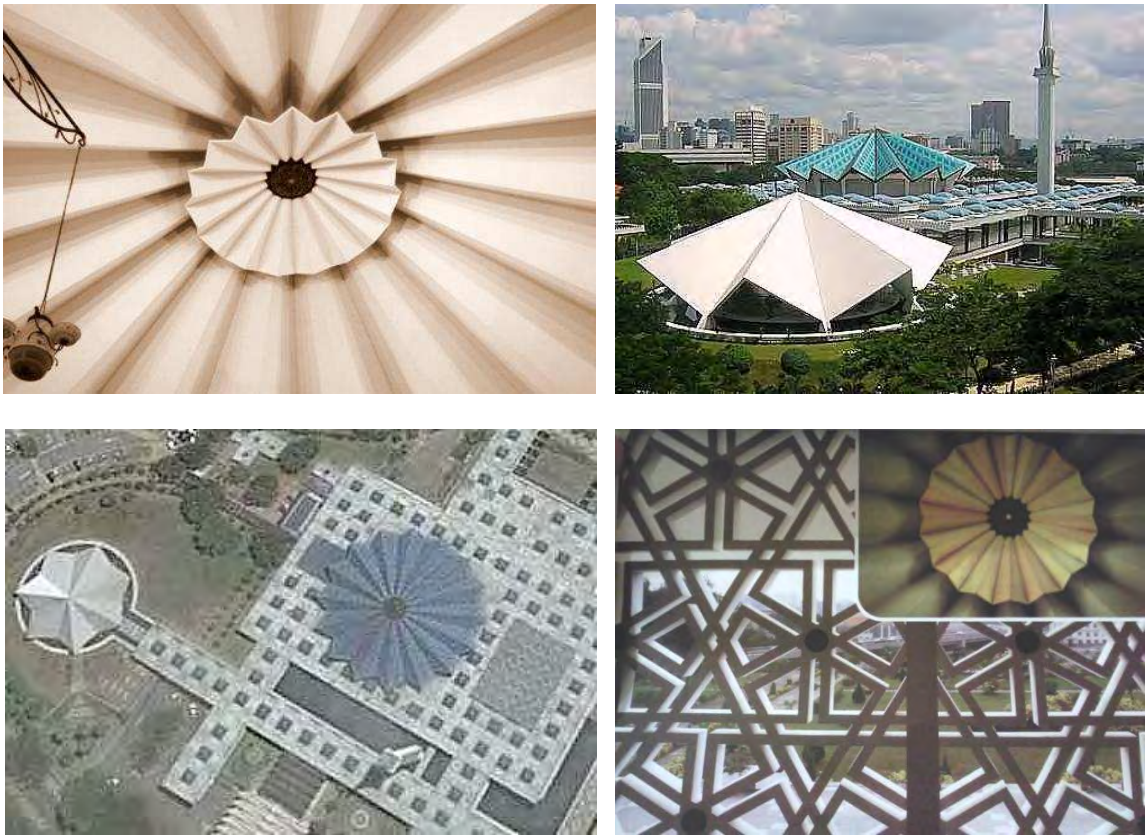


Figure 51, The use of Fractals in Masjid Negara, Malaysia: The top left image is of the rosette in the roof of the prayer hall, it is a replica of the centre piece in the principle dome of the Sultan Ahmet (Blue) Mosque in Istanbul. This rosette has been repeated on various scales from the structure of the roof to the pattern used in the concrete grillwork. (www.masjidnegara.gov.my)

When looking at the use of fractals in architecture it may be viewed as a type of ordered chaos within which a tension is created. Rubinowitz (2000) states that; 'chaos is the opposite of geometric order'; he further states, 'it is relatively easy to distinguish geometric order from chaos in architectural compositions, but the definition of these concepts is difficult'. Marchant (2008), in his book *The Essential structure of geometry in Nature*, promotes the manifestation of 'dynamic symmetry' in nature and more specifically plants and flowers, which is captured by Kahera (2006: 53):

> "flower of *NymphaeIba* (the lotus flower); the leaves of *Oxalidacae* which show the division four into eight, indicating the possibility of square and octagonal polygons; the *Euphorbia maritime* (the seedpod of spurge) which shows the three-fold and six-fold segmentation of the intersecting circular chambers; the flower of *Papaveerorientalis* reflects the diminishing scale of the Root Three and the controlling central radial

patterns of twelve-fold division; the flower of *Allium christophii* which shows the repetition of six florets whose buds move out from the centre of the flower head to make a continuous array of shapes, much like the primary ridge of the equilateral triangle."

Kahera (2006) goes on to say that, the above excerpt portrays the connections between lines, ratios and geometry that are relevant to the structural and aesthetic composition of a mosque (as seen in Figures 46, 47, 52). On the other hand, geometric patterns that are extracted from 'natural forms' and the 'laws of the universe', express the principle of 'unity in multiplicity' and 'embody spiritual intuition and beauty' (Kahera, 2006: 54).

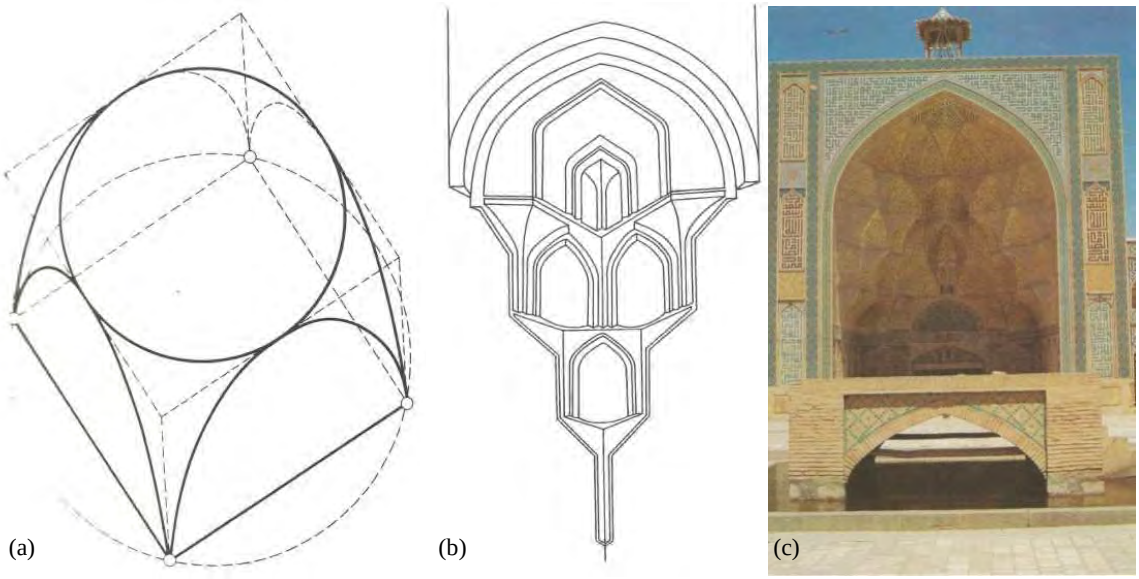


Figure 52, The development of the Muqarna. (a) Concept of synthesis of a sphere and cube. (b) Murqanas as squinch of a cupola (c) South west *iwan*in Masjid- i-Jami (Friday Mosque) in Isfahan, Persia (Burckhardt, 1976:70-73) (Photo by Michaud, R. 1976 [Part c])

The development of the *murqanas* (Figure 52) is a good example as it is a geometric pattern derived from the 'laws of the universe'. A murqana is likened to that of a '*stalactite'* involving the synthesis of the sphere and the cube that results in a honeycomb shape supported by a cupola in the form of recurring niches. Murqanas have a 'static and rhythmical character' expressive of heaven- owing to its 'indefinite circular movement', and earth – 'by its polarization', hence communicating a 'coagulation of cosmic motion' (Burckhardt, 1976:70-73).

Geometry and unity are both concepts informed by the first pillar of Islam (monotheism). As Kahera (2006) explains, 'the unity of universe is controlled by God' and the Divine names of God are reflective of this unity. Geometry is a simple way of ordering as well as decorating space and

together, unity and geometry effectively express the concept of monotheism with the absence of iconography in mosques (Kahera, 2006: 57).

Multiplicity in Unity

Multiplicity and *Unity* are concepts or themes that are expressed in the Holy Scripture of the Quran. "It establishes and legislates principles and regulations for the practical and ethical duties of the human being and for the ordering and administration of society." (http://www.al-islam.org). Foster (2004) expresses how the concept of *Multiplicity as Unity* should be consciously perceived as the relationship between 'everything and Everything' in order to reform peoples' perceptions of humanity and the world.

Unity itself is a major principle of Islamic art and architecture and even though the rectangle and square have perfect portions, the 'circle is the ultimate expression of unity' as eloquently explained by Foster (2004:5): "The circle contains polygons, both containing and underlying it. It produces triangles, squares and hexagons. In Islamic symbology, devolved from Egyptian, Indian and Greek geometry, the square is equated with the earth, or materialism, the triangle with human consciousness, and the hexagon or circle with creation."

Foster (2004) states that all Islamic patterns begin with the circle. By achieving a repetitive pattern, the circle is repeated and is then able to produce any conceivable symmetry. If identical circles are replicated and placed next to each other with their circumferences touching, they are able to maintain their individual identity while generating different geometries with their centres as well as with points where their circumferences meet. This can be seen in figure 53(a), where the centres of three 'united circles' are joined to form an equilateral triangle.

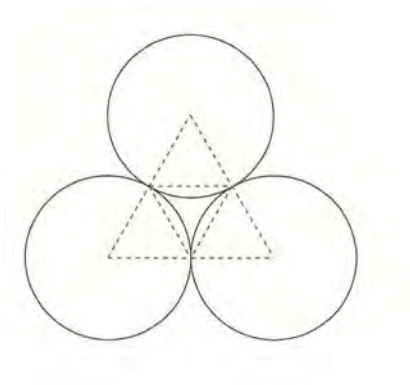


Figure 53 (a), Concept of Unity in Multiplicity: The formation of an equilateral triangle with the unity of three identical circles (Foster, 2004: 5).

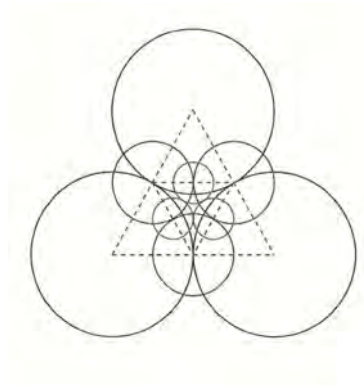


Figure 53 (b), The repetition of the whole at varying scales, almost representing Fractal geometry (Foster, 2004: 5).

If further circles are drawn at half the ratio of the original circles at points where the original circles touch, which may be seen as fractals in figure 53(b), the geometry begins to express a 'complexity in symmetry'. This is how the patterns in Islamic art and architecture were developed and became infinitely replicated as shown in figure 54 (Foster, 2004).

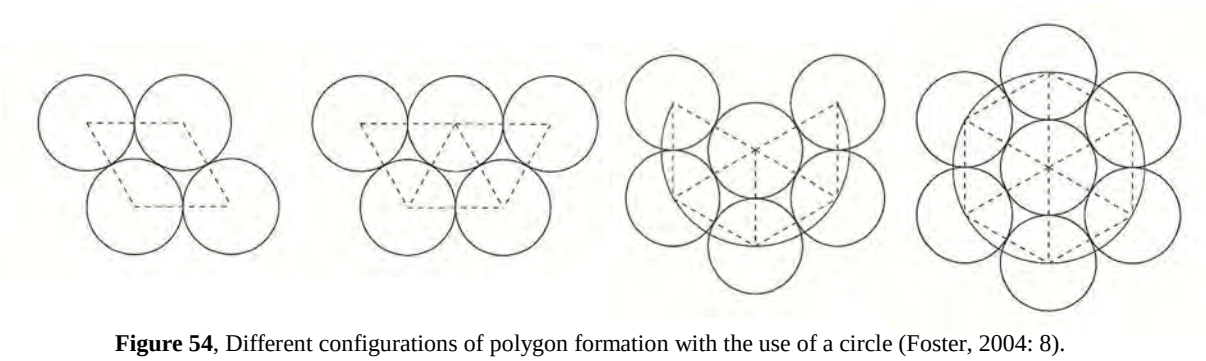


Figure 54, Different configurations of polygon formation with the use of a circle (Foster, 2004: 8).

The most significant configuration of circles is the unity of seven identical circles where six circles are huddled around the seventh circle, almost to form a bigger circle as seen in figure 55.

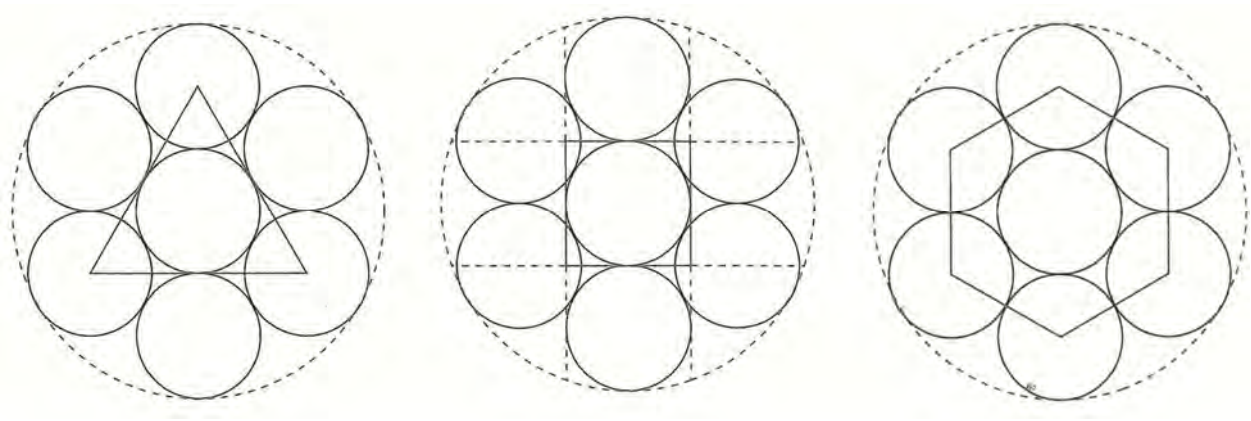


Figure 55, The most significant configuration of circles which generate the equilateral triangle, the hexagon and the square. (Foster, 2004: 9-10).

Foster (2004) explains that the concept of unity in multiplicity is expressed in all forms of Islamic art as seen in figure 56 and architecture, as seen in the geometric planning of the Taj Mahal in figure 57 and is fundamentally expressive of the unity of all people in their diversities. Being derived from eastern culture, Islamic architecture uses *abstraction* to relate the physical to the Divine.

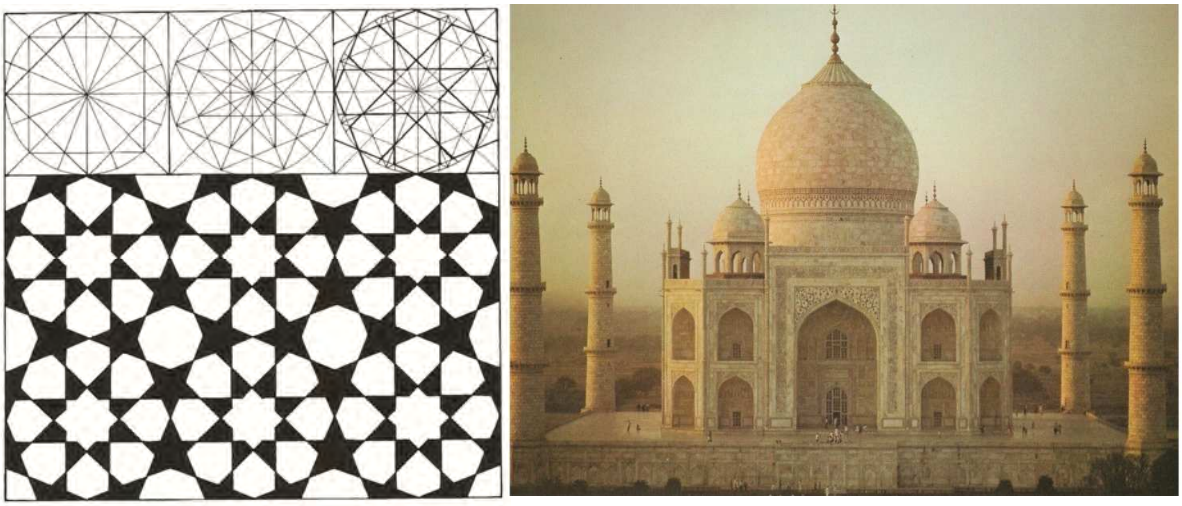


Figure 56, The generation of an eight-sided star using a circle. By replicating the pattern and infilling certain areas with a different colour, a geometric pattern is formed that is good enough for tiling. This is typically how an Islamic pattern is formed from a circle (Jones, 1995: 169).

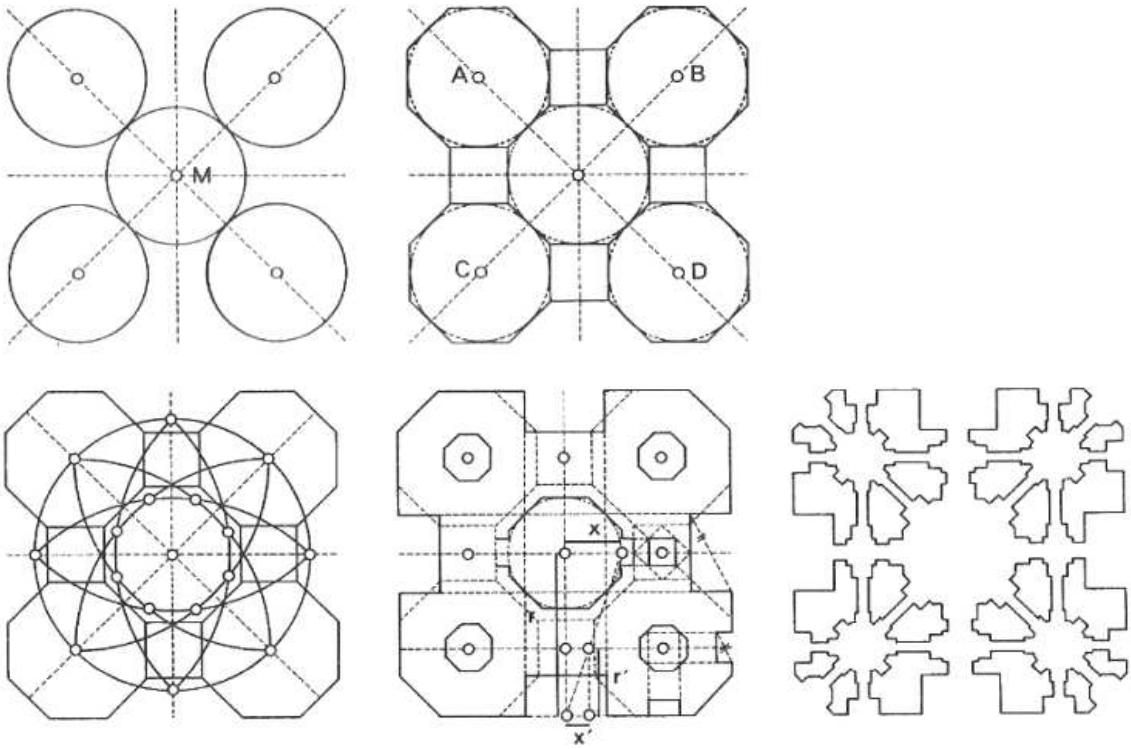


Figure 57, Geometric analysis of the Plan of the Taj Mahal, built between the years 1632-48 (Burckhardt, 1976: 175-9). The Plan uses the Multiplicity in Unity concept; whereby circles are used to derive the plan of the building.

3.3.3. Elements of Mosque Architecture

The components that make up a mosque are essential knowledge when it comes to the design of such an Islamic sacred building. Pereira (1994), for example, compares for emphasis the six significant constituents of a mosque to that of the five pillars of Islam. They are, according to his literature, *'the hypostyle hall, the arcaded hall, the dome, the minaret, the courtyard and the portal'*. This comparison, however, is not as comprehensive as that of Dickie (1995), who chose to classify the specific types of a mosque into two distinctive ways; one being the external features while the other the internal features. These comprise eternal features acquired through Islamic beliefs and customs. In order to understand such features, it is crucial to have a visual knowledge of their placement.

Furthermore, understanding the parts of a mosque allows one to become familiar with and to identify any mosque wherever in the world, as a sacred place (Kahera, 2006: 3).

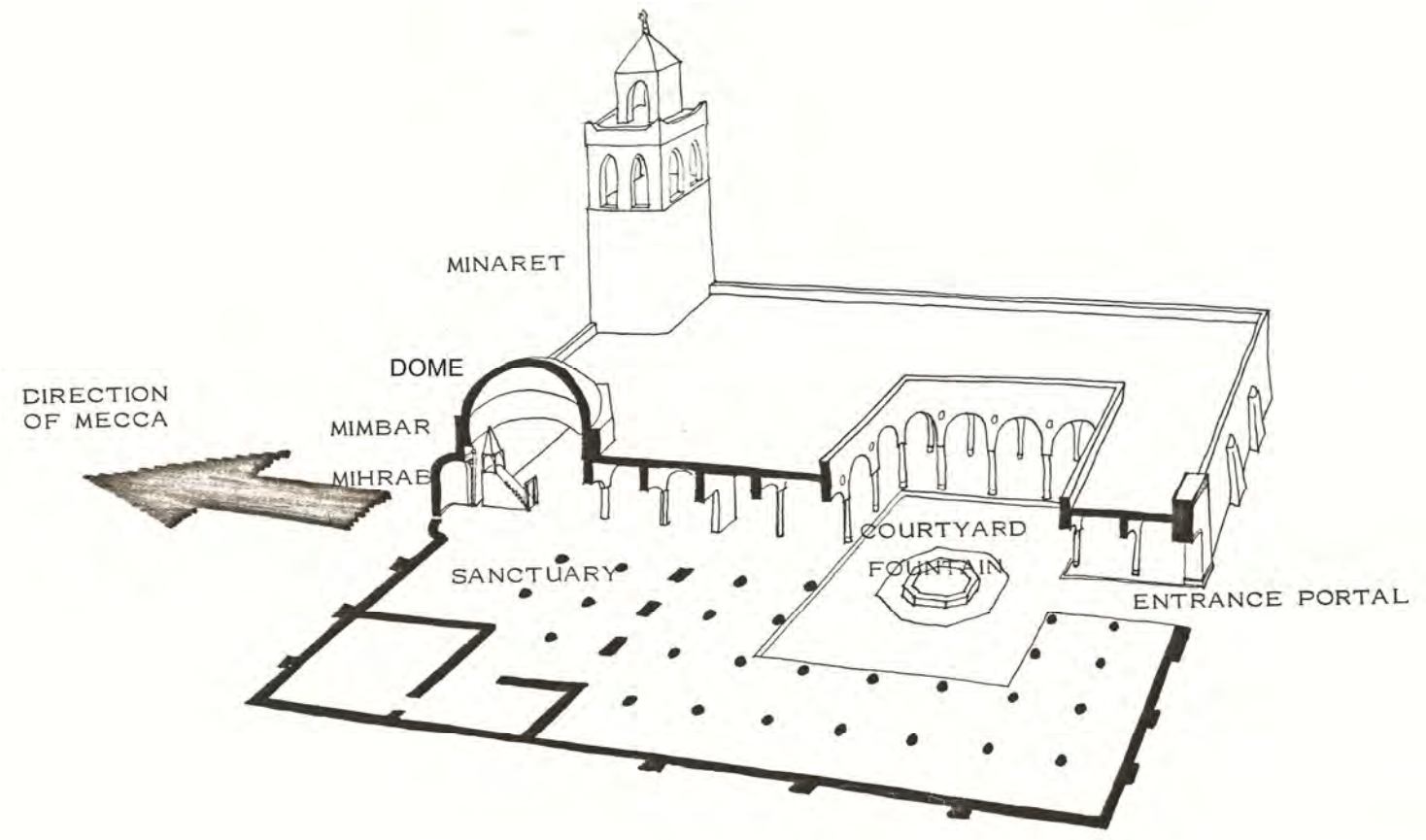


Figure 58, Diagram demonstrating the different elements of a mosque. (Harber,1965: 16)

This diagram (Figure 58) expresses a very simplistic placement of external features in relation to internal features. While figure 58 represents the qualities of one of the earlier mosques, figures 59 and 60 represent a modern planning system. This comprehensive, generic way of planning a

mosque has evolved with the addition of classrooms, libraries, kitchens and so forth reinforcing that 'The mosque is a spiritual, political, educational, military and social centre of the community' (Harber, 1965: 16) and thus becomes the 'communal centre of gravity'.

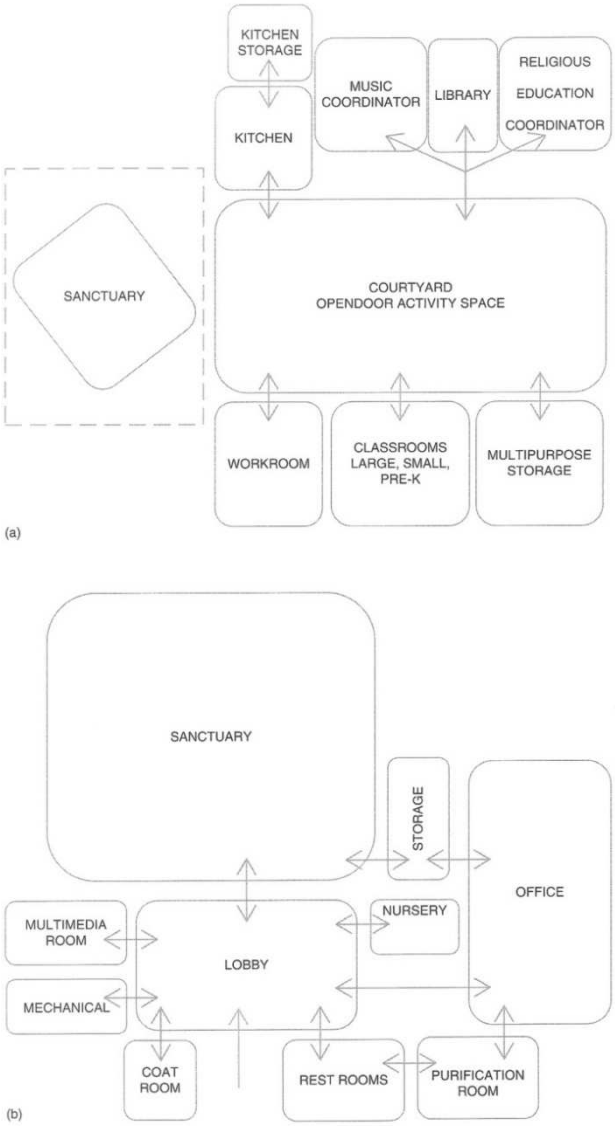


Figure 59, Diagram of the location of ancillary spaces in relation to the main sanctuary. (Diagram by Brown, E,) (Kahera, 2006: 22)

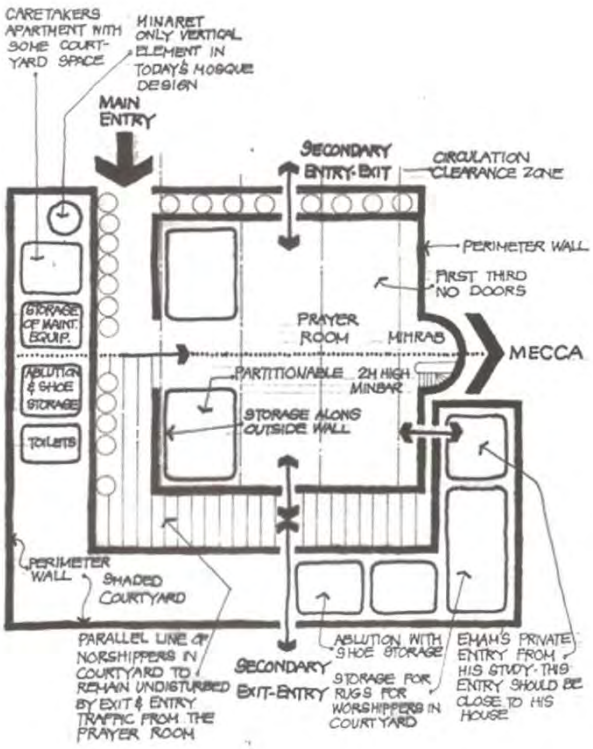


Figure 60, Generic Plan for an urban mosque showing various typical interrelated functions and their placement. (Kahera, 2006: 56)

3.3.3.1. External features of a Mosque

While it is important to highlight the external features of a mosque before moving to the interior spaces, Dickie (1995) points out that all principle features of Islamic architecture are distributed according to the axis of Qiblah as established in sub-section 3.2.3. The primary external features consist of a *minaret, dome and an ablution fountain* (which is an intermediate feature between the inside and the outside).

Minaret

The towering minaret is one of the most identifiable features of a mosque. It soars above the mosque in all its beauty and grace linking the mosque to the sky visually as well to the surrounding areas. The word *minaret* is derived from the Arabic word *manara* which translates literally as 'a place where the fire burns' (Harber, 1965: 17) and was used to describe a lighthouse and therefore, analogy to a mosque tower.

When Islam was consolidated in Medinah, the Prophet Muhammed (p.b.u.h.) needed some way of calling people to the Friday congregation prayer (Jummah) which is obligatory to all adult males and optional for females to attend. After seeing the Jews use a horn and the Christians use clappers, the Prophet (p.b.u.h.) looked for a method that was unique to Muslims. It was through a dream that the Prophet (p.b.u.h.) ordered Bilal (who was known for his sweet melodious voice): "*Mount up, Bilal and call the people to prayer."* Bilal then became the first muezzin in Islam, one who chanted the call to payer from the highest rooftops. This was the motivation behind the development of the minaret, as height became a necessity (Dickie, 1995: 34).

The idea of a tower as a minaret developed when an area of Damascus was conquered. The Muslims took over the Church of St John the Baptist, which had corner towers around the temenos. The Syrian church was then converted into the Great Umayyad Mosque (Figure 61). The towers built for churches were sturdy and bulky as they were designed to accommodate the heavy weight of bells; later they were adapted in slender and graceful form better to serve the purpose of the mosque. The initial reference to minarets in Islamic history, as indicated by Harber (1965) came in 58 A.H. when the Mosque of Amr was being renovated. The ruler of Damascus, Khalif Muawiya, ordered the governor of Egypt to construct four towers around the *'sacred enclosure'*, which adopted the square plan and tapered stone walls of the Christian Church; this can be seen in the Great Mosque of Kairouan, Tunisia (Figure 62) (Harber, 1965: 17).

Figure 61, The vast Umayyad Mosque, or Grand Mosque, in the centre of Damascus showing the towers. (www.reflectionseurope.com)

In earlier mosques, the minaret was where the muezzin chanted the call to prayer (azaan) to the four cardinal points; the higher the minaret, the greater the area coverage of the azaan. The minaret is usually situated in such a way that it overlooks the busiest area of the vicinity of the mosque and provides an external link to the city. The size and decoration of the minaret is determined by the importance of the mosque.

Figure 62, Great Mosque of Kairouan (also known as Kirwan, Al Qayrawan), is the capital of the Kairouan Governorate in Tunisia. Referred to as the Islamic Cultural Capital, it is a UNESCO World Heritage site. The city was founded by the Arabsaround 670. In the period of Caliph Mu'awiya, it became an important center for Islamic and Quranic learning, and thus attracting a large number of Muslims from various parts of the world, next only to Mecca and Medina. (www.zonafri.com)

Figure 63, Minaret of Moroccan Mosque - Hassan the 2nd (www.123rf.com)

Minarets have evolved over the years, according to culture (Figure 63), region or technology. Today, loud speakers replace the minaret as the muezzin recites the call to prayer into a microphone in the main sanctuary of the mosque. There is much controversy over the minaret in Islamic architecture, as the earliest-designed mosque by the Prophet did not have one (see pg. 66). One may argue that its existence may be futile in today's age, however, it was an element of Islamic architecture that was commonly adopted for the muezzin to call the azaan and as a landmark for a building of faith. This becomes an architectural feature derived from a *belief* (the dream of the Prophet) resulting in *identification* and thus *allurement* of the Muslim community in which the azaan then becomes the *invitation of participation.*

The Dome

The dome forms part of the trinity of Islamic architecture, which is 'the column, the arch and the dome'. The dome, however, earns the title of the *'crowning glory of Islamic art'.* Even though the dome is a 'cosmic symbol' in numerous religious traditions, in Islam it is a representation of the 'vault of heaven' (Dickie, 1995: 34).

Initially the dome was a small part of the mosque as this structure was meant only to highlight the direction of the Qiblah and provide light in the area of the imam of the main sanctuary (as seen in elements of a mosque, pg. 82). Later, from the peripheral regions of the mosque, the dome was moved to a more central position, making it a more prominent feature and thus increasing its volume over the main sanctuary. Later on, the dome was used over the mortuary chamber of the founder's body. Dickie (1995) describes how this shift in size and position lost the ethereal impression of the dome, which is noted in the Mosque of Cordoba (Figure 64).

Nonetheless, the interior visibility of the imam is still preserved in both cases with a slight difference as described by Dickie (1995); in earlier mosques the imam was highlighted as he stood against a dark interior, while in later mosques his presence was not as prominent, which allowed the rest of the congregation to perform prayer in comfort. The dome is the most recognizable feature of a mosque.

Figure 64, Great Mosque of Cordoba, Spain (www.zonafri.com)

Figure 66, Jerusalem Old City Dome of the Rock interior view (Isacher, 2000).

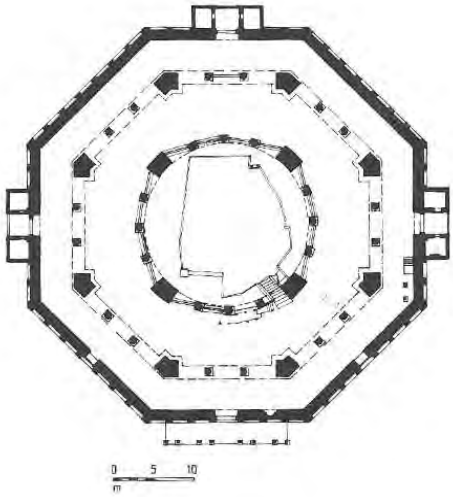


Figure 65(a) Dome of the Rock, Jerusalem (www.photos8.com). (b) Plan of the Dome of the Rock constructed in the Umayyad period 690-2 (Warren, 1995: 236)

As the dome symbolically represents heaven, the tree of paradise as an interior surface decoration appears to be appropriate. This can be seen in the Dome of the Rock (Figure 65) which contains a 'highly stylized Cosmological Tree which ...grows upside down' (Dickie, 1995: 34). From the highest point of the dome, the tree reaches out and grows downward as it embraces all stages of heaven and spreads out until the foot of the dome is reached, as seen in figure 66. Ahadeeth quoted earlier mentions, however, that the Prophet (p.b.u.h.) was not commanded to decorate mosques. On the contrary, there is a hadeeth that states that: *"Allah is beautiful and Allah loves beauty."*

The Ablution Fountain

Much mentioned in the Quran is the phrase *'gardens beneath which rivers flow'* (Harber, 1965: 20). Water in Islam has a sacramental status, as it is one of the purest organic substances provided to man by God with which to purify himself prior to prayer, as mentioned in sub-section 3.3.4.

The ablution fountain was established in earlier mosques, where it provided an intermediate space between the internal and external features (Figure 67). In addition to a courtyard fountain, some mosques offered an internal ablution facility in the shape of a 'colossal marble jar', while other mosques provided a wide-eave wooden shelter above the courtyard fountain as seen in the Ottoman Mosque (Figure 68) (Harber, 1965: 20). The ritual of ablution (Whudu) is performed with running water provided from these amenities. Taps on the fountain supply lukewarm water, while stools built into a raised platform provide seating while one undertakes the ritual (Figure 69) (Dickie, 1995: 35).

Figure 67, Fountain in the courtyard of Sultan Selim Mosque in Edine. (Burckhardt, 1976:160)

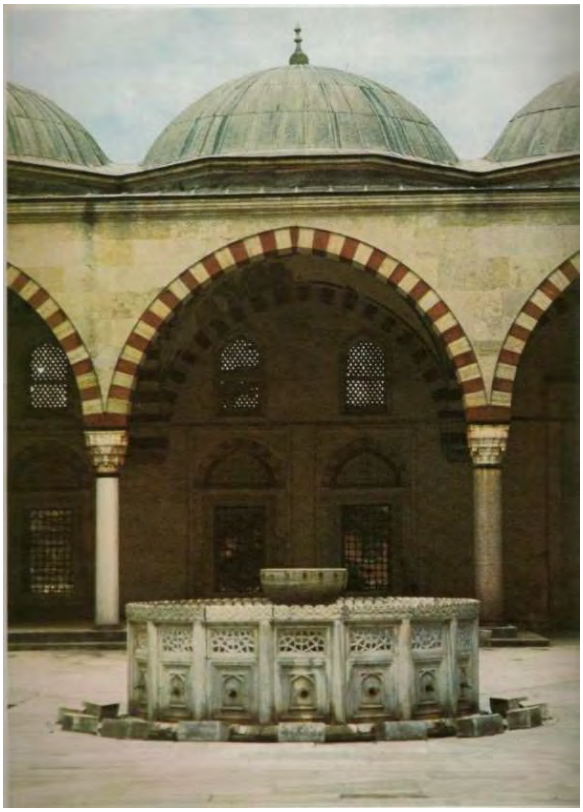


Figure 68, The Ottoman Ablution Fountain: Fountain of Sultan Ahmet III This seventeenth century fountain sits inside the courtyard of St Sophia as a reminder of the building's service as a mosque. (Markham, 2005)

Figure 69, A person making whudu in an indoor contemporary ablution facility; sitting on a stool on a raised platform. (www.alshurafa.net).

Such facilities are always kept separate from the main sanctuary of prayer. They may be situated adjacent to it but they have to be defined in some way as the ablution area operates to cleanse the impure and the main sanctuary is a place of worship which needs to be kept clean and pure (Dickie, 1995: 35).

Figure 70, Minaret of the Great Mosque of Kairouan, Kairouan, Tunisia.(Burckhardt, 1976: 123).

Apart from these three primary features (minaret, dome, ablution) there are other features of a secondary nature worth mentioning. These include 'the courtyard, the entrance portal and the gardens'. The courtyard or *sahn* (Figure 70) is a tradition in Arabian architecture or domestic Islamic architecture. It is an element used as a retreat from the harsh countryside. It usually has some sort of water feature and garden in a domestic setting, whereas an ablution fountain is found in the sahn of a mosque. It becomes a transition between the hustle and bustle of the city and the tranquillity of the masjid, while providing a place of relaxation, sunshine, refreshment and socialising. Water fountains provided for drinking from, are located in the peripheral walls of the sahn. The proportion of a courtyard is determined by the regional climate (Harber, 1965: 17).

The entrance portal (Figure 71) in all its grandness was an element added later to the features of a mosque. The Mosque of Ahmed ibn Tulun in Cairo is one of the earliest congregational mosques that had a simple and rectangular street entrance. This was the ideal simplistic approach of earlier mosques when the mosque was the centre of social, religious, political and military issues, as encouraged by the Prophet Muhammed (p.b.u.h.). As the mosque began to evolve into monuments and specialized centres, the requirement of an entrance became deliberate and ornate (Harber, 1965).

Figure 71, Entrance Portal of The Sultan Qaboos Grand Mosque, Muscat.(White, 2008).

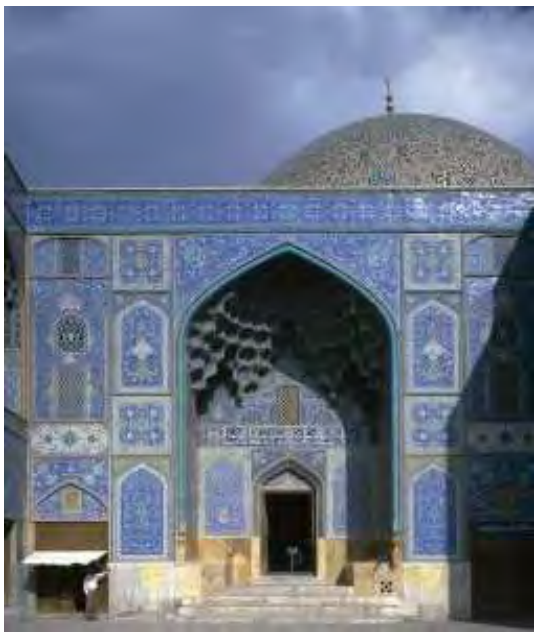


Figure 72, The Lutfullah Mosque, Isfahan, 1603 - 1619, Entrance Portal Featuring Muquarnas Vaulting and Arabic Calligraphy (www.concerttee.com).

These entrances were usually decorated in Arabic calligraphy (Figure 72) and more specifically in words that translated into: *"There is no God but Allah and Mohammed is his messenger."* This is the first pillar of Islam, which is followed by prayer as the second pillar. The portal is a transitional element that is proportionate to the building while allowing a starting and ending point to environments of a different nature (Harber, 1965).

> *"Monumental entrances are a salient feature of Muslim architecture in India. They are achieved by combining a semi-circular apse on plan for the doorways with a lofty four-centred arch of Tudor type, which encloses an ornate semi-dome, all set in a massive rectangular frame with elaborate panelling."* - Harber, 1965, 18

A garden in Islam is symbolic of the gardens of paradise as described by the Quran (S 9:72): *"God has promised to the believing men and the believing women gardens, beneath which rivers flow, to abide in them, and goodly dwellings in gardens of perpetual abode; the best of all is Allah's goodly pleasure; that is the grand achievement."* In the tradition of Islamic Architecture, a garden is a place of contemplation and rejuvenation as it is reminiscent of paradise. Renowned Islamic gardens include: the Taj Mahal in India (Figure 73) which is based on the Persian concept of *'chaharbagh'* or the *'four garden'* layout where symmetry is the most important design factor (www.agraonline.co.in), the Palacio de Generalife or Gineralife (*Jennat al Arif*, *'Garden of Arif'*, or *'Garden of the Architect'*) (www.newworldencyclopedia.org) in Alhambra in Spain

(Figure 74) which has a long pool flanked by flowerbeds, fountains, colonnades and pavilions. To provide appropriately restorative properties, the Islamic Garden contains water, plenty of shade and seating areas, as the climate of its original regions was hot and arid (www.gardenvisit.com).

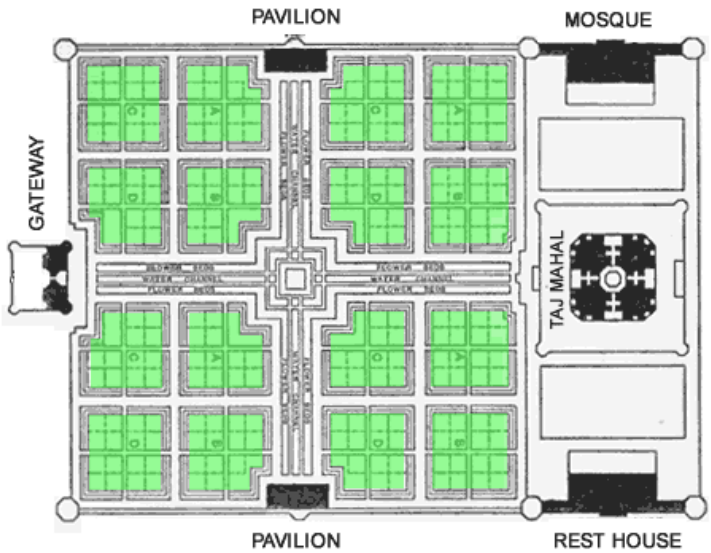


Figure 73, Garden layout of the Taj Mahal, Agra, India; 'CharBagh' or 'Four garden' layout divided into 16 flowerbeds (www.agraonline.co.in)

Figure 74, The Gardens of the Generalife, at the Alhambra, Grenada, Spain (www.en.wikipedia.org)

Not all of the above features were part of the initial design of a mosque as built by the Prophet Muhammad (P.b.u.h.), however, they were adapted from different cultures as Islam spread throughout the world. Each culture interpreted these elements in their own way, developing a beautiful, timeless architecture.

3.3.3.2. Internal Features of a Mosque

The internal features of a mosque are designed to accommodate the different types of prayer that occur in a masjid. The official way a Muslim prays as taught by the Prophet Muhammad (p.b.u.h.) involves a repetitive sequence of 'standing, bowing, prostration and genuflection' (Figure 75). It is a type of prayer that allows the involvement of the entire being; mentally, physically and verbally. Muslims stand in rows that face toward the Qiblah. Harber (1965) refers to a hadeeth which is the source of such an order of *musallees* (those who pray in congregation)and to an imam of which the authenticity is unknown. The three fundamental spatial requirements of the interior, to carry out the prayer, are the *musallah* (The main sanctuary), the *mihrab*(central niche) and the *mimbar* (pulpit).

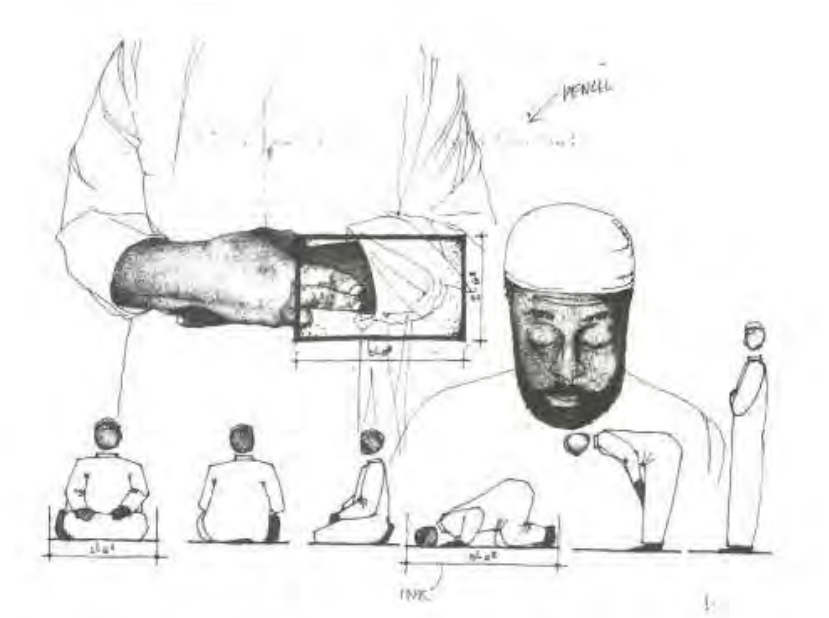


Figure 75, The postures of Prayer, Drawing by Latif Abdulmalik (Kahera, 2006: 59)

Musallah

The most important space of the mosque is the main sanctuary referred to in numerous other places of this research and is called *musallah.* When the Prophet (p.b.u.h.) prayed, he used a mat of palm leaves (Harber, 1965). This set the example for the rest of mankind; carpets or prayer rugs (musallahs) are still used for prayer and meditation. The main sanctuary is known as musallah as it is a large, open space that is comfortable and tranquil. The floor of this sanctuary is usually a carpet which has a 'series of parallel lines' demarcating the prayer rows which are perpendicular to the direction of Qiblah (Kahera, 2006: 45). Kahera (2006) mentions that the spatial requirement of such a sanctuary needs to be 'equal and integrated' as a sacred space, after the example of the Prophet (p.b.u.h.) when he built his first mosque in Medinah. The primary function of the musallah is everyday communal worship for men and women as well as 'social

inclusion'. Kahera (2006) further states, "A well-designed plan can enhance the harmony, scale, balance and composition of the musallah."

The character of the musallah is largely determined by structure and scale. Kahera (2006) goes on to say that a space with few or no columns is 'sensitive to the performance of worship' allowing great structural spans. The provision of more usable space, vaults and other structural elements are seen in the Suleiman Mosque, Istanbul (Figure 76a & b). On the other hand, hypostyle halls and multi-columnar halls are more significant in such spaces; the first sanctuaries were built using a 'forest of pillars' in which the spans of the pillars were determined by the spacing of date palms or other available timber as in Samarra (Figure 77a & b) (Harber, 1965). Not only do hypostyle halls add character, they also enhance the aesthetics, as demonstrated in the Great hall at Karnak where the hypostyle hall dictates the spatial formation of the courtyards, while giving direction (Kahera, 2006).

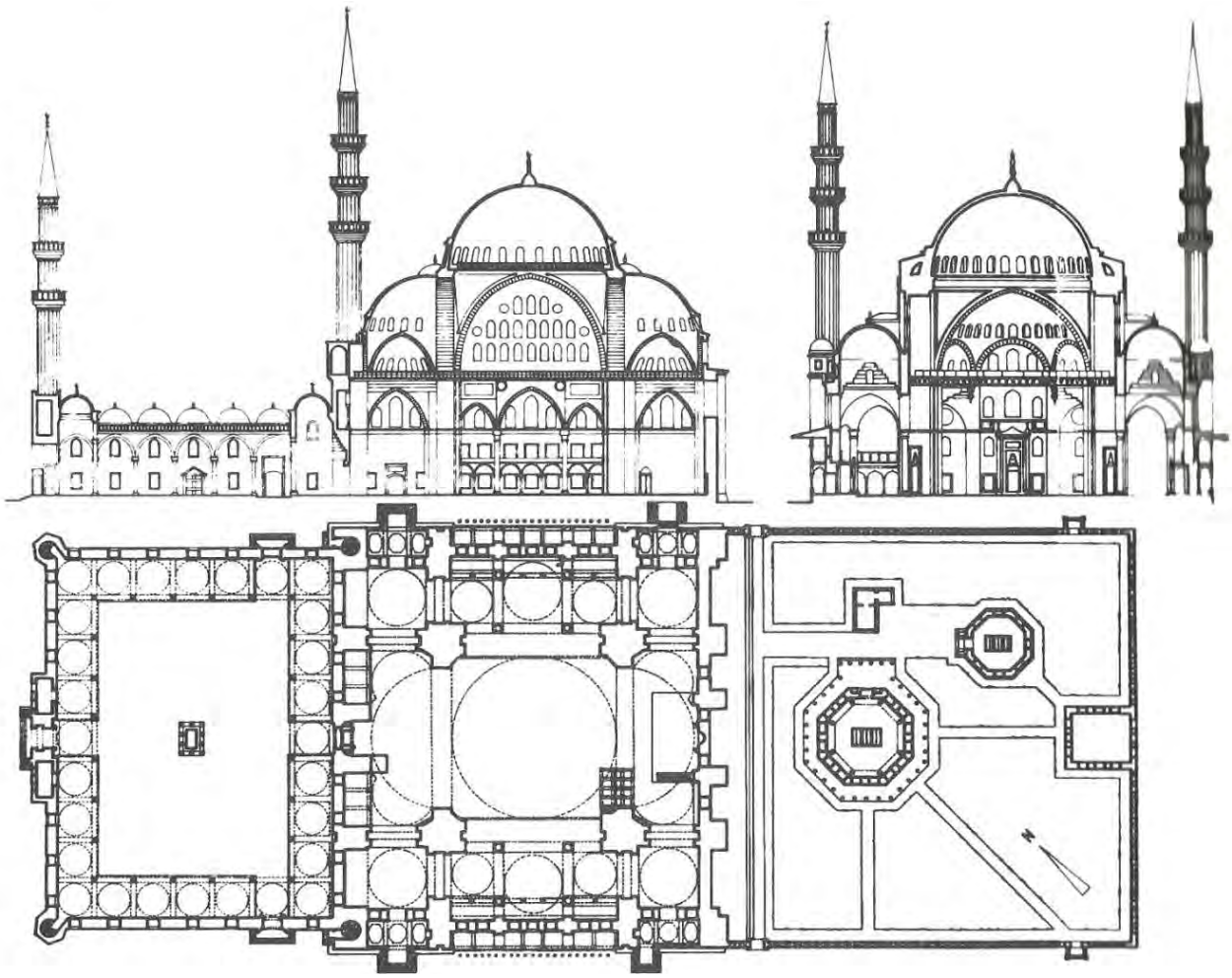


Figure 76 (a) Plan and Main sections of Suleiman Mosque, Istanbul (Burckhardt, 1976: 148).

Figure 76 (b) An open plan Musallah of Suleiman Mosque, Istanbul (www.sacred-destinations.com)

Figure 77 (a) A hypostyle hall of the Great Mosque of Cordova, Spain (Burckhardt, 1976: 126).

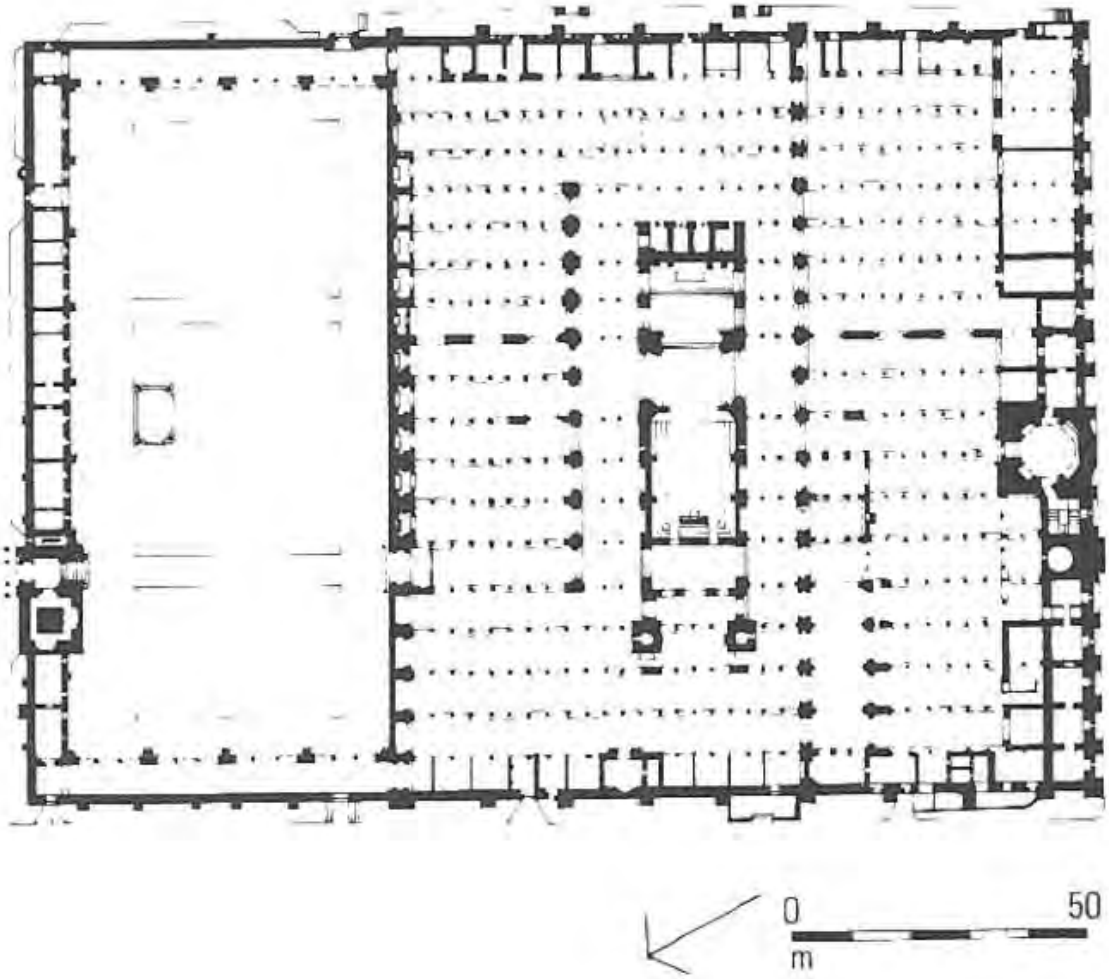


Figure 77(b) Plan of the Great Mosque of Cordoba built in the Umayyad period 756-1031 (King, 1978: 212)

Fundamentally, the musallah must provide a communal prayer area in the direction of the Qiblah, for both men and women with the imam (one who leads the prayer) in focus.

Mihrab

The mihrab (Figure 78) is a central niche in the front wall of the main sanctuary. It is used to highlight the imam at the time of fard (compulsory) prayer as it is situated where he generally stands. Harber (1965) postulates the origin of the mihrab by comparing it with 'saints niches in churches that were converted into mosques or Bhudda niches in shrines'; this resulted at first in a controversial outcry, however, mihrabs began to gain respect and as mosques became sanctified, the mihrab was further ornamented while gaining importance (Harber, 1965).

The mihrab is usually expressed with a cupola over it, for example, the Mosque of Ibn Tulun which, after four hundred years, had a timber cupola built over the mihrab (Harber, 1965). Harber (1965) further expresses quite precisely: "The arch of the mihrab has been adopted as an unconscious symbol of the faith - it is seen in the bow of the dhow, woven into prayer mats and traced into the sand...The mihrab is a directional symbol."

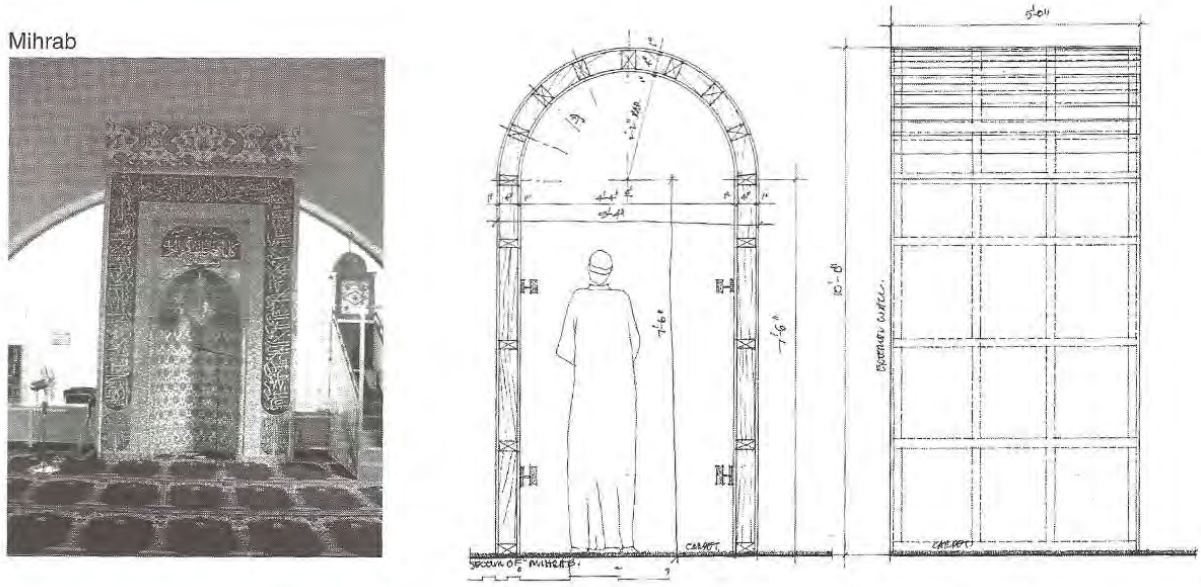


Figure 78, Details of a Mihrab (Drawing by Abdulmalik, L.) (Kahera, 2006: 58)

Mimbar

Mimbar (also known as minbar) (Figure 79),is directly translated into English as seat or saddle. A raised seat in the Arab tradition connotes the seat of a ruler in order that he is seen by all his followers. The Prophet (p.b.u.h.) first addressed the people on a camel saddle and later on a *pulpit* (mimbar) in Medinah. This is the origin of the first mimbar which had six steps and was used by the rulers (Khaliphs) who succeeded the Prophet (p.b.u.h.) (Harber, 1965: 23).

Nowadays the imam uses the mimbar from which to address the congregation. Earlier sermons were more political in content compared with the dogmatic ones of today (Dickie, 1995:36). In many countries, the mimbar became 'architecture on its own' being made of wood that had been carved and encrusted with nacre and ivory. Some mimbars were made of marble and limestone and in some cases, iron was used (Harber, 1965: 23).

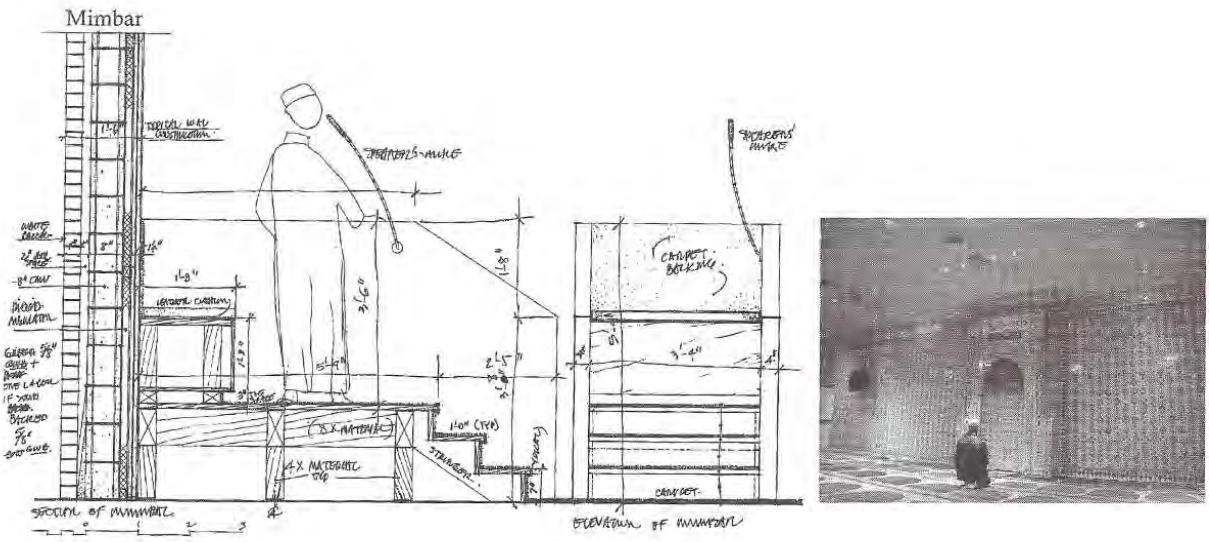


Figure 79, Details of a Mimbar (Drawing by Abdulmalik, L.) (Kahera, 2006)

3.3.4. Elements of Decoration

Decoration is one of the unifying elements of Islamic art and architecture throughout the thirteen centuries of its existence. Artists and architects in Islam perfected the surface decoration, which has become as important as the architectural form of the building. These decorations are done on separate panels, usually of a different material and are used to clad the structure of the building. The decorations used are not specific to building typologies but they are decorative principles that may be applied to various buildings at any time (Jones, 1995).

Six different decorative elements are universally used in Islamic architecture. They are '*geometric pattern, calligraphy, foliation, arabesque, light and water'* (Jones, 1995).

Geometric pattern (Figure 80) is a major art form established with the rise of Islamic architecture in the east. It involves the usage of the circle as the foundation of pattern formation and applies the principles of symmetry, repetition and varying scales to generate an effect of multiplicity (Jones, 1995).

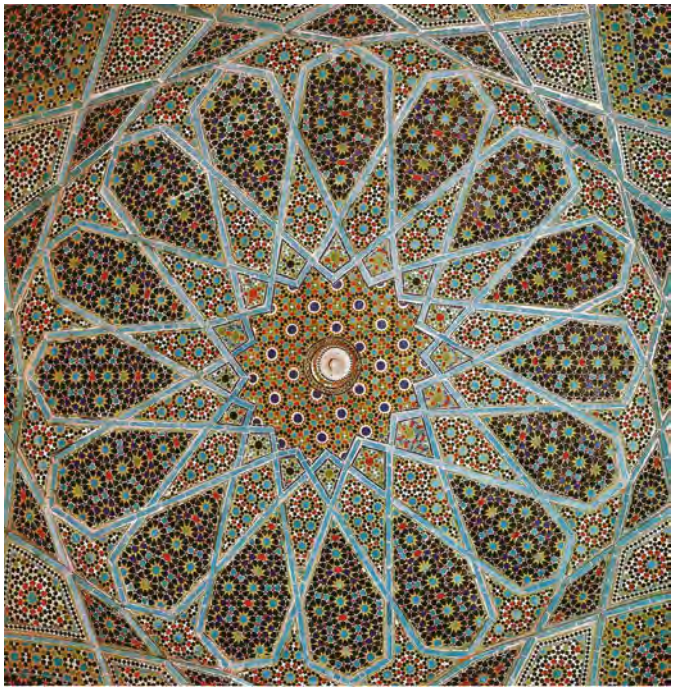


Figure 80, The ceiling of the tomb of Hafiz at Shiraz is decorated with one of the most important geometric patterns in Islamic architecture; The STAR. This pattern can be used in two-dimension or three-dimension. (Jones, 1995: 149).

Arabic calligraphy (Figure 81), a stylized way of writing Arabic inscriptions, may vary from the *naskhi* and *thuluth* ('a flowing cursive style') to the *kufi* ('angular style'). The woven words of Arabic calligraphy become part of the patterns on mosques and are used to adorn the surroundings as well as the interior spaces (Mann, 1997). These inscriptions are usually verses from the Quran which are 'read, recited and understood' and is a 'constant sign of the Divine Revelation to the faithful' (Kahera, 2006).

Figure 81, Arabic calligraphy in Brunei and ARAMCO Mosques (http://www.arabicfonts.com)

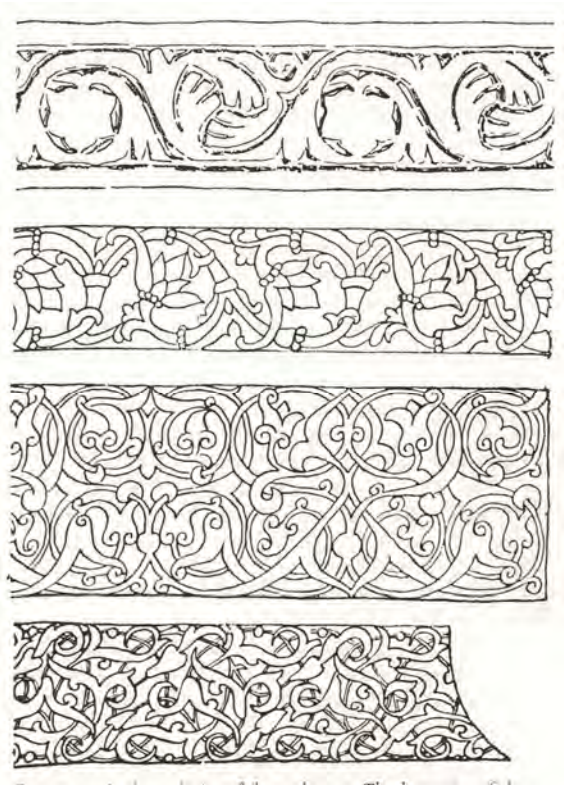


Figure 82, The evolutionary stages of the Arabesque from Classical in the mosque of 'Amar at Fustat (top) to overlapping complexity at Granada (bottom) (Jones, 1995: 171)

Foliation provided the stepping-stone for Islamic art and architecture in terms of the development of arabesque. Arabesque (Figure 82) is derived from the 'classical vine and scroll motifs' of foliation and is used in a variety of ways. It is widespread in the decoration of mosques (Jones, 1995).

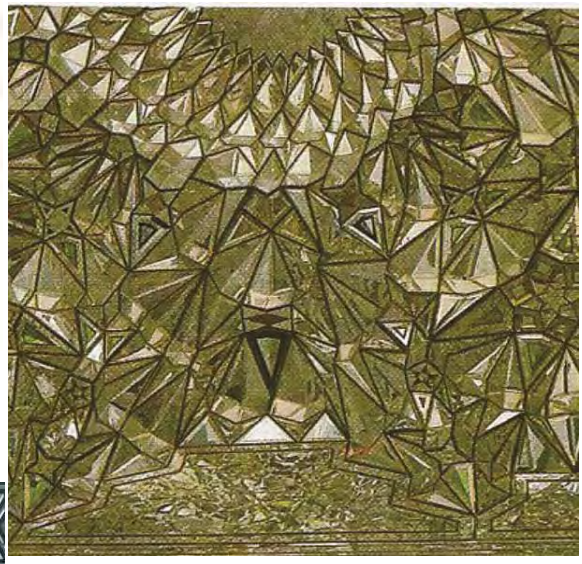


Figure 84, Shah-Humza Ali mausoleum at Shiraz expressing the use of mirror within the murqanas to reflect light (Jones, 1995: 152)

Figure 83, 'Jean Nouvel'sArab World Institute (1987) in Paris uses an operable screen of camera-type apertures to control sunlight.' (www.throughtheoculus.blogspot.com)

Light is used in two different ways in Islamic architecture: penetration and reflection. Beautifully detailed screens and windows are used for light penetration (Figure 83). The projection of the patterns of the screens and windows on an already patterned floor blurs the distinction between inside and outside, and between solid and void. The development of murqanas is said to be used to reflect and refract light. Some murqanas have even been clad with reflective ceramic tiles and mirrors as seen in figure 84 (Jones, 1995: 152). Reflective properties are also seen in the use of water (Figure 85).

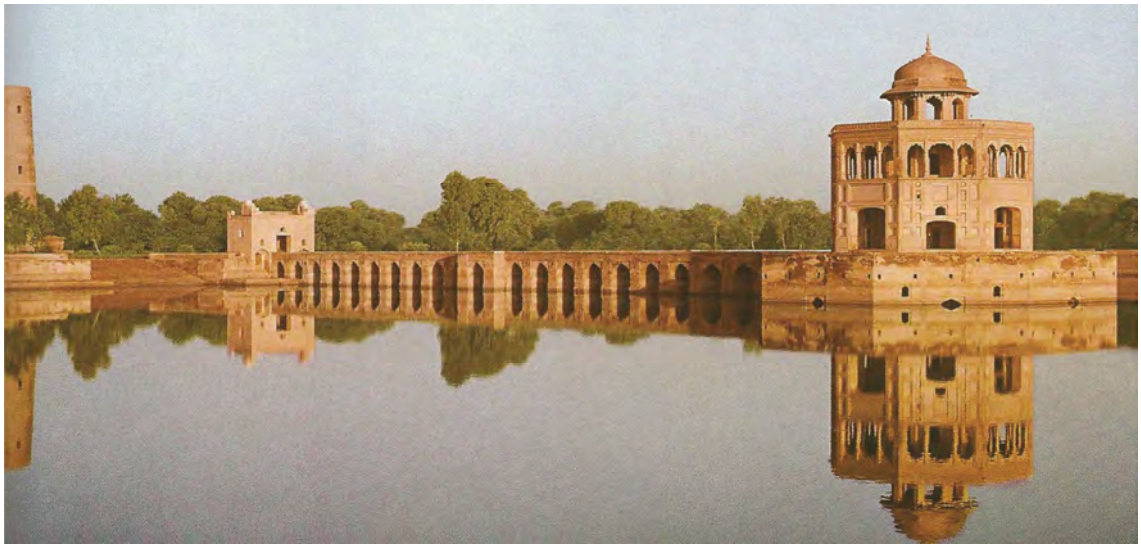


Figure 85, Harun Minar near Lahore; the sheet of water mirrors the image of the building extending it beyond the physical realms while giving it a sense of monumentality. This use of water can be in an open or confined setting and still be effective (Jones, 1995: 157)

Water, as explained earlier, is very important in Sacred Islamic architecture and is one of the key components in gardens. Originally, water channels and pools were established for irrigation and ablution purposes from natural water sources, but now they are exploited for their 'visual beauty' and used elaborately in Islamic architecture (Figures 86, 87).

Figure 86, Court of Myrtles at Alhambra in Granada; The pool of water is used in a formal sense to open up an enclosed courtyard (Jones, 1995: 157)

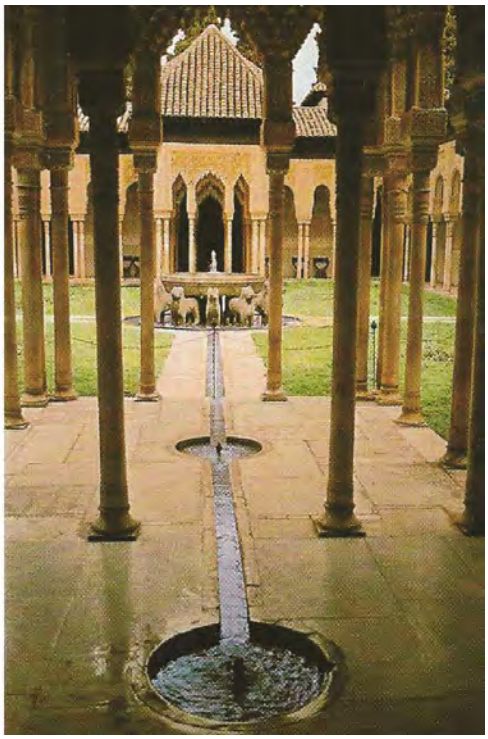


Figure 87, Court of the Lions, Alhambra; here water is used to emphasize the axis of the building while creating a linkage between spaces (Jones, 1995: 157)

Even though some of the decoration may repeat itself in a number of buildings, all of them lead toward 'continuous and decorative spaces' typical of Islamic architecture. Decoration is used to achieve continuity. Furniture is also used as decorative elements in Islamic architecture. Objects such as carpets and cushions often reflect the decorative schemes of the building, creating a spatial fluidity between floor and ceiling (Figure 88).

Figure 88, 'The Moroccan home is a unique blend of African, Berber, and Islamic aesthetics. Plush cushions in richly textured fabrics are set upon carved ebony-stained pine and cedar moucharabi furniture. Casting the afternoon sunlight in abstract patterns are pierced metal and brass lamps standing on tables or hanging overhead. Seating, tables, and accessories throughout the home are patterned and shaped by beautifully crafted hexagonal, octagonal and arched forms. '(www.searchwarp.com)

Decorative elements are certainly an important part of Islamic architecture as this is what contributes significantly to its identity.

3.3.5. Architecture of a Woman's Space

The spatial design and location of the woman's space in a mosque is a sensitive issue as 'there is no legally accepted consensus or an *ideal* spatial configuration for the female congregants' (Kahera, 2006: 73). The Prophet (p.b.u.h.) has said: *do not prohibit the female servants of Allah from entering Allah's mosques*. There are varieties of perspectives on this issue, which may be grouped according to three different standpoints. The first group is the one that is comfortable with segregated spaces. The second group considers the spatial segregation as uncomfortable and repressive; the Quran boasts of equal rights between men and women; the third group adopts the idea of a built-in flexible screen, which spatially segregates the men and women while allowing them to pray adjacent to one another (Kahera, 2006: 73-74). The space of a woman varies according to culture and preference.

In South Africa it is an accepted cultural norm for women to have a separate space, however, Kahera (2006) points out that often when a community decides to erect a new mosque, the women are not involved in the design and planning process. In many instances, 'makeshift prayer spaces' such as leftover hallways, ante-rooms, balconies and basements make many women feel uncomfortable and isolated. This problem can be addressed in several ways; there are numerous configurations (Figures 89 -90) that can be used to design a woman's space as shown in figures 90-91; ultimately, however, the women of the community need to be involved in this decision. The Islamic Centre in New York breaks down 'spatial stereotypes' by redefining the position of a woman's space in a mosque (Kahera, 2006: 81).

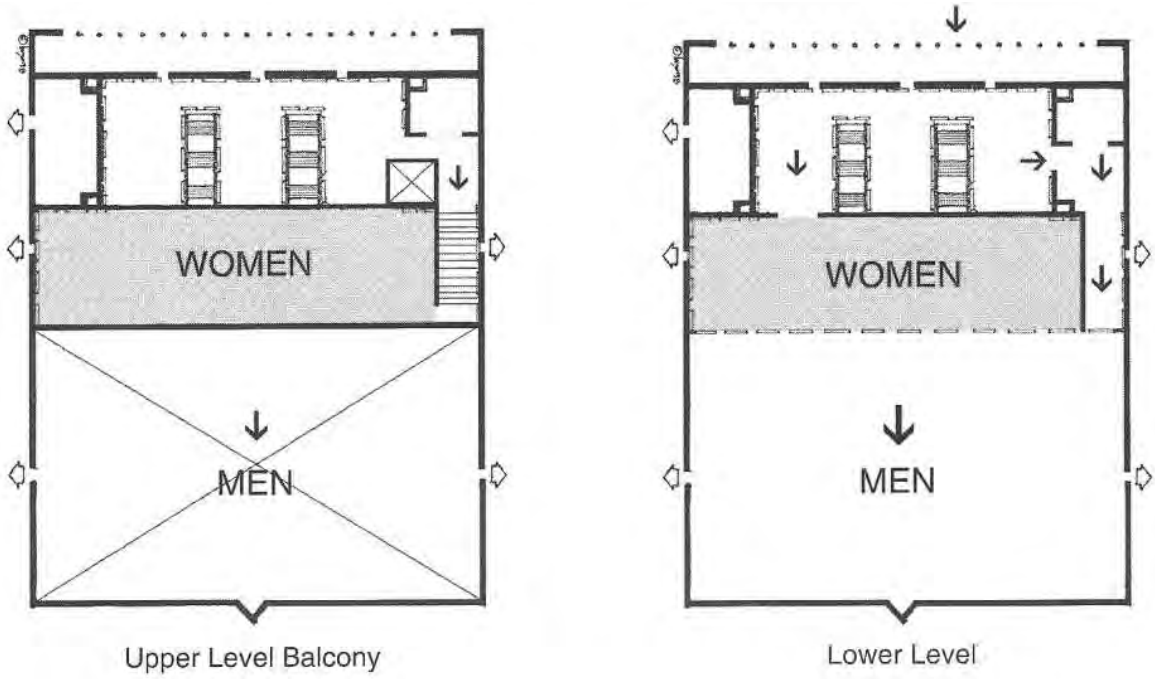


Figure 89, Two Configurations of women's space (Drawing by Abdulmalik, L.) (Kahera; 2006: 75)

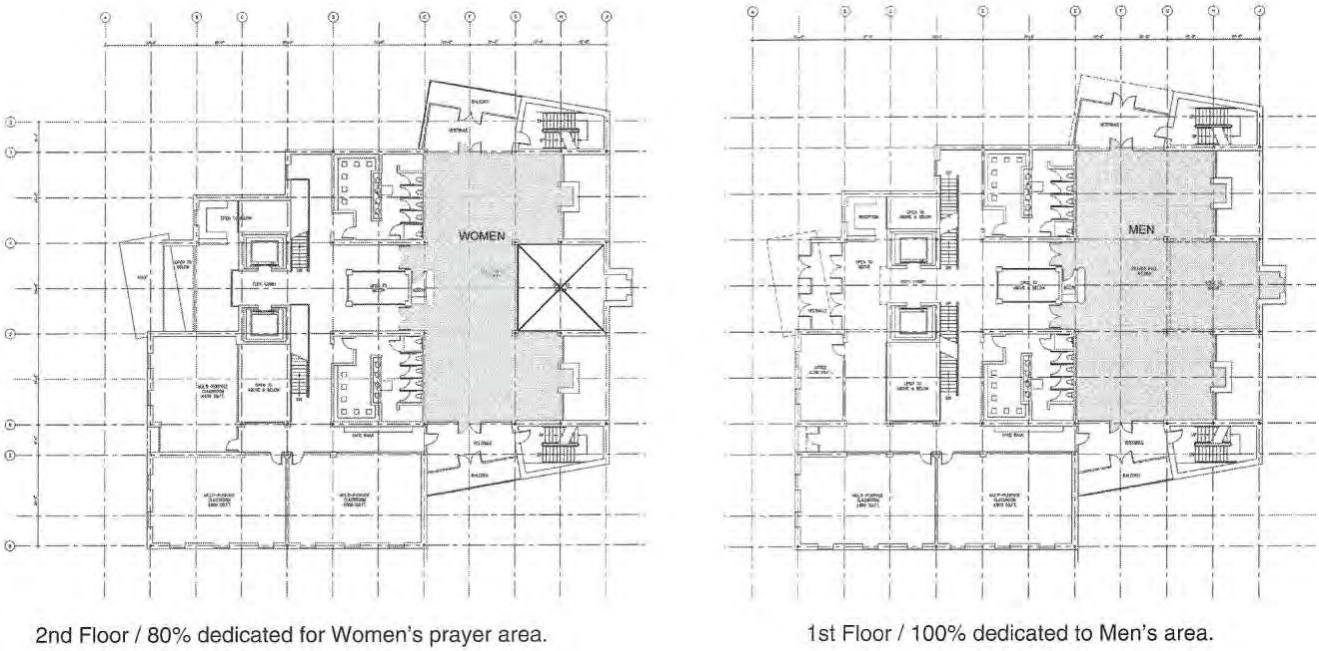


Figure 90, Configurations of women's and men's space (Design by Integrated Metropolis (Akel Kahera, Craig Anz and Lein Kerr); graphics by Raheel Ahmad) (Kahera; 2006: 76)

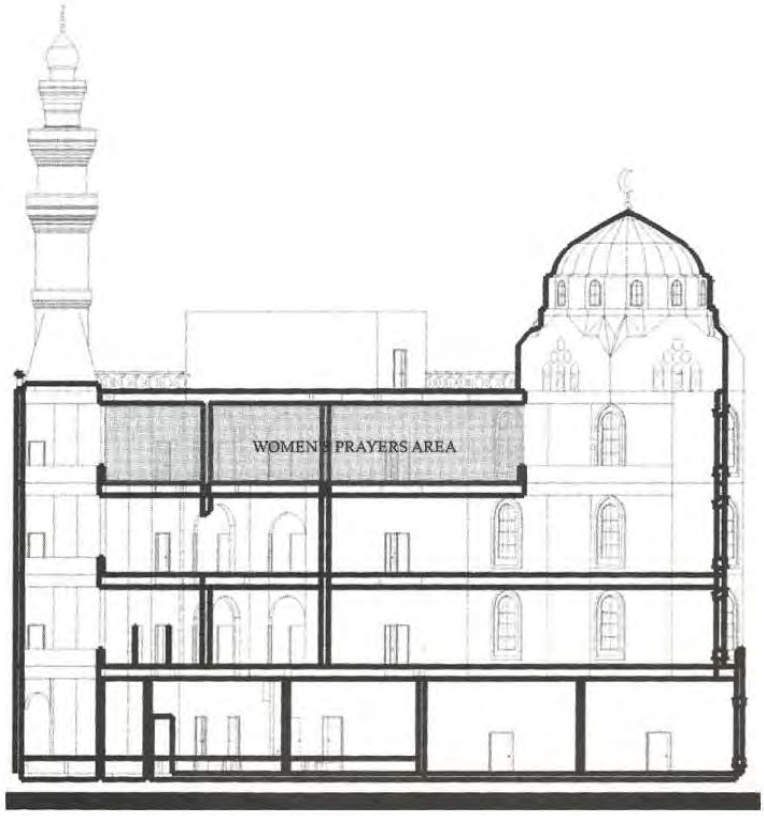


Figure 91, Building Section showing the women's balcony (Design by Akel Kahera) (Kahera; 2006: 76)

3.3.6. Conclusion

The sub-chapter centred on sacred Islamic architecture using belief systems as the basis of its foundation. It has been established that even though Islamic architecture is named after a religious group, many of the elements were derived from other cultures or communities, for example, the dome stems from Roman architecture. Whatever the case may be, this sub-chapter has highlighted the fundamental elements, which give strength to the term Islamic architecture, by means of analysing a building of worship – the mosque. These fundamental elements provide a global identification combined with orientation for Muslim people: the minaret may be used as a location marker for the nearest mosque as well as for a cosmological link to the universe. As a result, the importance of such elements in the design of a mosque becomes apparent.

As this research deals with timelessness, it is evident that various aspects of architecture evolve or change over time, however, one aspect attached to the architecture that does not age is the belief that had materialized into the physical domain on earth. This reinforces the identity of such elements and of the sense of place which is expressed in this sub-chapter; the influence of nature on geometry and space. Mathematical geometry proliferates in Islamic architecture, leading to a quality that is ordered and easily identifiable - as is seen in the Taj Mahal. This sense of order and geometry is used to articulate spaces within the building. The various spaces are seen in the internal elements of a mosque; special attention is given to architecture of women's space. It has been concluded here that women of different cultural backgrounds have varying ideas on modes of separation; some prefer none at all. It is also important to include the women of the community in the design of a space which they will occupy.

The utilization of space within spatial design depends greatly on the quality of space required by a particular group of people. In South Africa not much attention is paid to sacred built form, however, the concept of a mosque evolving into an entire communal centre is beginning to arise with the growing needs of people. Durban, in particular has many mosques and many historic ones as well, however, these cater mostly for worship and not for communal integration. The community centres provided by Durban are ineffective or effective to an inadequate degree in terms of bringing people together; an example is the NMJ Islamic centre in Overport, Durban, mainly used as a community hall. Durban lacks communal integration.

3.4. CONCLUSION AND ANALYSIS OF CHAPTER

This chapter aimed at expressing the timeless qualities of sacred Islamic architecture based on the findings of the previous chapter and using international concepts and building studies. Supported by this study, the spiritual element of the three-way triangle of the timeless design philosophy, at the tip of the apex is the most important aspect. This means that the spiritual aspect of the Islamic faith is the core determinant of the timelessness in sacred Islamic architecture. The idea of religious and spiritual belief, therefore, covers sacredness.

The spiritual belief of Islam focuses intensely on the idea of central, personal and communal development. According to the belief systems, a standard of orientation has been established, where the Ka'bah becomes the central focus; everything converges in its direction from all parts of the world. Even the annual pilgrimage to the Ka'bah, of Muslims from around the world reinforces the idea of centre when masses of people literally move toward the holy city of Makkah at the same time and circumambulate around the Ka'bah emphasizing its centrality. This idea of centre can be linked to the spiritual centre of a person, thus relating the rituals that focus on the Ka'bah to that of personal spiritual development. In addition to this, the study of the five pillars of Islam strongly focuses on the communal development and sustainability of the religion while remaining focused on selflessness. A link between personal and communal development that originates at the *centre* of one's spiritual focus can be seen. This provides an understanding of the identity of the people for whom the architecture is intended, where communal integration is achieved by focusing on one’s spiritual and physical centre.

This idea is translated into sacred identity in terms of architecture and personal perception. Multiplicity in Unity is a concept derived from the holy scriptures of the Quran. It promotes the integration of people and not just Muslim people, on a global scale. It is also a concept that materialized into a design philosophy of Islamic architecture, entailing a simple design concept involving a circle, or multiple circles of the same nature of which the *centres* are projected from one circle to the centre of the next in a coherent manner, to create form or pattern. This is used to produce any conceivable symmetry that can be used in all facets of Islamic design. If looked at in terms of the spiritual and physical centre mentioned above, the circles can be likened to different types of people that are brought together when their spiritual centres are projected outward to influence and touch others, creating a community as seen in figure 92.

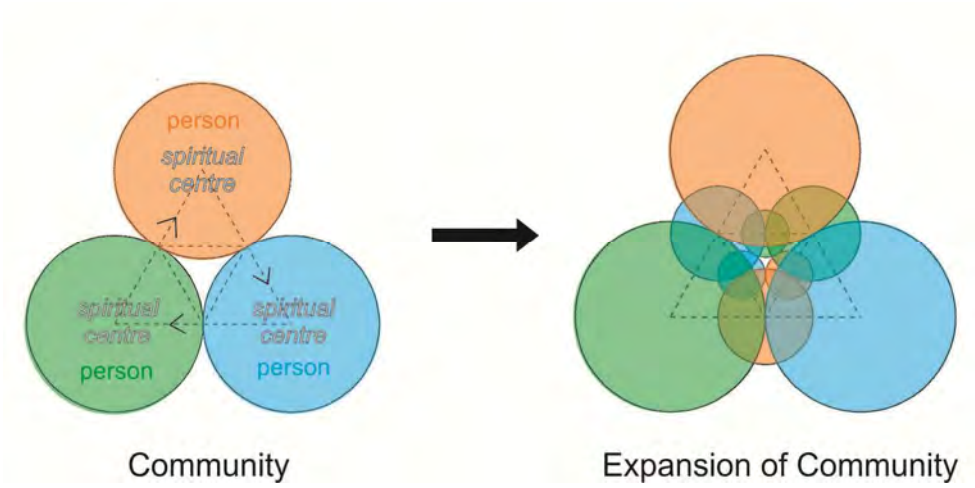


Figure 92, Diagram representing the expansion of a community using the multiplicity in unity concept. When people, represented by circles, reach out and touch other people from their spiritual core or centre, they create a community. This effect can be multiplied to create a global unification of people. (Author, 2011)

If the spiritual aspect of the three-way timeless design philosophy is meant to be expressed with physical and or cosmological aspects, then the idea of centre derived from spiritual belief is successfully conveyed in Islamic art and architecture that use the multiplicity in unity concept. This concept then becomes a major process in which to achieve timeless qualities in sacred Islamic architecture. Effectively, the translation of belief into architecture has been demonstrated here. Other aspects identified as timeless include:

i. patterns and proportions derived from nature
ii. water and its reflective properties
iii. geometry derived from mathematics
iv. light and its reflective and penetrative properties
v. the use of cosmological architectural elements such as the dome, the minaret, arch, etc.
vi. orientation of building toward the physical centre of the Ka'bah
vii. symbols such as the moon and stars and the colour green

All of the above become symbolic representations of timeless qualities in sacred architecture and have been identified using the philosophical triangulation of timeless design.

CHAPTER 4:

SACRED ISLAMIC ARCHITECTURE IN A SOUTH AFRICAN CONTEXT

4.1. INTRODUCTION

Respected spiritual leader Mahomed Ebrahim Soofie (Soofie Saheb) first introduced Islamic architecture in South Africa, KwaZulu Natal. He arrived at Durban harbour on a ship called S.S. Hoosen in the mid 1890's by instruction of his Sheikh (Religious Leader) to provide specialised work for the Muslims in South Africa. He then built twelve masjids, twelve madressa's, orphanages and religious centres to carry out the work of Islam in a span of fourteen years in the surrounding areas of Durban, including Riverside (1896), Westville (1904) and Sherwood (1905) (www.soofie.saheb.org.za). Being a citizen of India, many, if not all of the masjids that were built by him in KwaZulu Natal were designed using Mogul style architecture, creating a historic Islamic identity in the province as a whole.

Today, numerous developments of contemporary mosques look toward architectural innovativeness and practicality of orientation. Thus, the Islamic architecture of KwaZulu Natal is no longer purely Mogul. However, the history and identity associated with the Soofie Mosques is unparalleled, many of which have become national heritage sites.

The cases studied in this chapter each deal with specific issues: the history and identity of a historic Soofie masjid is captured and the evolution of practicality of function of a masjid is captured with a contemporary composition of an Islamic centre. Each centre is analysed according to the same theoretical criteria where positives and negatives of the centres are identified.

4.2. THE ASSOCIATION OF HISTORY AND SACRED IDENTITY WITHTIMELESS ARCHITECTURE: A Case Study of Ladysmith Soofie Mosque

Sacred Islamic Place of Worship, 1910- 1969

Figure 93, Ladysmith Soofie Mosque (Photo taken by author, 2010)

4.2.1. Introduction

Ladysmith's Soofie Mosque (Figure 93) is a South African national monument. It is considered one of the most beautiful mosques in the southern hemisphere. It was built as an extension of an existing mosque, without definite plans, by a well-known Muslim saint, Hazrat Soofi Saheb. The completion of construction was during the year 1969 at an approximate cost of R70 000 (www.wheretostay.co.za). It is located on the banks of Ladysmith's Klip River with a beautiful mountainous backdrop with a bridge that links it to the other side of the river. The mosque is currently used as a place of worship. It is a historic building that is beautifully decorated; it functions effectively today.

4.2.2. Justification for Study

The image or identity portrayed by this building is relevant to this study as it uses architectural elements, geometry and superb detailing. By studying the use of Islamic architecture and archetypes here, one arrives at a better understanding of how the identity of a sacred Islamic building is achieved in South Africa. Not only is the building locally alluring; it is also globally alluring across the boundaries of culture and religion. In this way, it has become one of the best-portrayed identities of Islamic architecture in South Africa today. It contains many of the historic elements of Islamic architecture that modern mosques lack.

4.2.3. Setting

Location

Ladysmith is a small city in Kwa-Zulu Natal, north-west of Durban. The city has a substantial food-processing, textile and tyre production industry. Most of the city is structured around the Klip River (Figure 94).

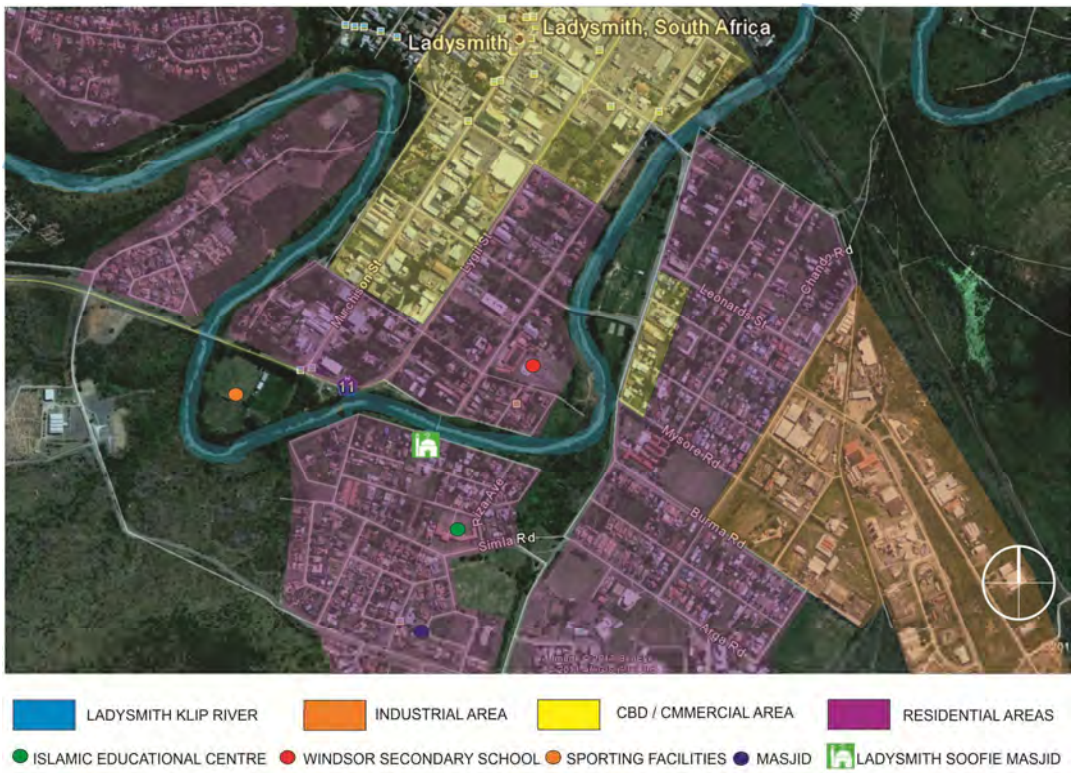


Figure 94, Zoning of areas (Author, 2011)

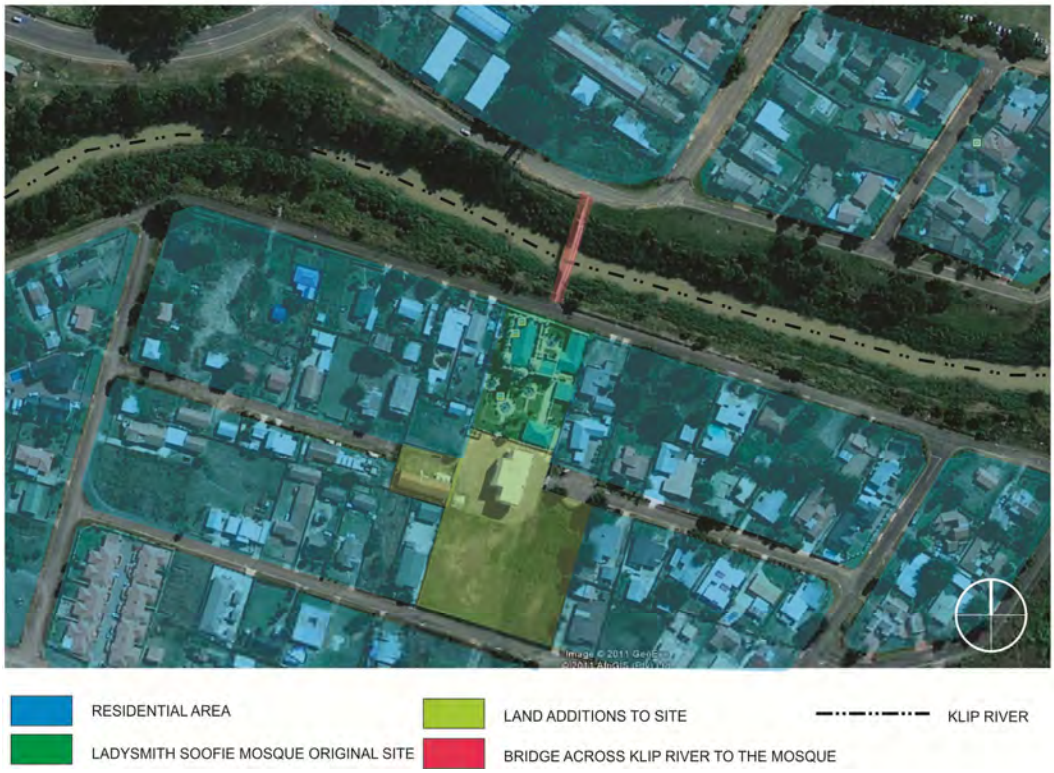


Figure 95, Zoning of areas around the masjid (Author, 2011)

The Ladysmith Soofie Mosque site is located in a valley with a beautiful mountainous backdrop. Most of the land in that area is fairly even, including that of the site, which is broken up into various components, the first being the original site of the Soofie mosque as seen in figure 95; the second is the site which contains the madressa building and the field; the third component of the site is the plot of land where the Imam's residence is situated.

Site accessibility is limited yet abundant. There are three pedestrian entrances: one next to the river and two from the madressa building site (Figure 96); one for males and one for females.

Orientation

The site is situated within a residential area, not too far from the CBD. One of the easiest ways to locate the building when entering Ladysmith is from across the river. The minarets of the building are visible from the main access road to the town and can easily be followed, however, by following the minarets, one is led to the road across the river. In that way, many tourists access the building by parking their cars across the river, which is an inadequate parking facility, having to cross the bridge to the back entrance of the site [Appendix III]. The river also serves as a landmark for orientation and can be followed to get to the building. The main entrance of the building is a bit more difficult to locate as it emerges from the residential area on the southern side of the river and through the madressa building site.

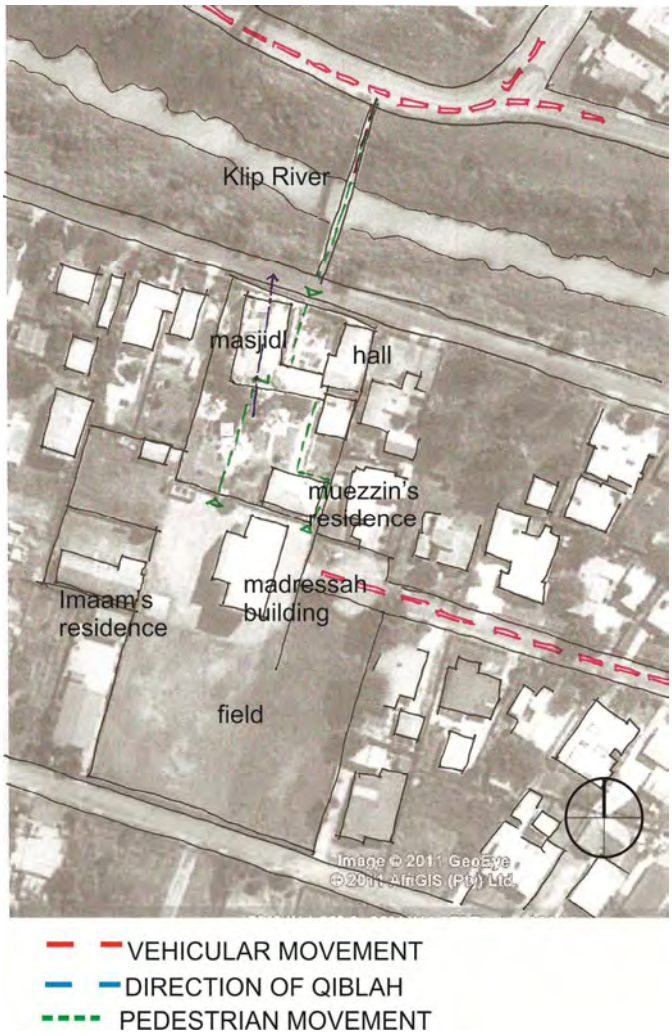


Figure 96, Site, showing what is in and around it, as well as the various entrances (Author, 2011)

Another vital aspect of orientation is the direction of Qiblah in Natal, which is 10.456878 degrees from North clockwise (www.islamicfinder.org) and can be seen in figure 96. Qiblah is used to determine the direction of any Islamic prayer facility worldwide.

4.2.4. Identity

History and Social Context

The original mosque that was built on the site was a small building in a farm area. It was built sometime between 1895 and 1910 (Anon. 2009). The main purpose of it was to provide a place of worship for the people in that area, while the central masjid was used for everyone in the town. The size of its musallah was half the size of the current masjid and could accommodate half the amount of musallees. Directly in front of the entrance was an ablution pond that was used to make whudu as seen in figure 97.

Figure 97, The original Mosque (Photo taken of a frame in the masjid by author, 2011)

In the 1960's, the building was extended quite substantially (Anon. 2009) by the Soofie family (Figure 98). The Soofie family is well known in Natal for the propagation and spread of Islam in Natal. Hazrat Soofie Saheb was the first member of the family to arrive in Natal; he was responsible for the construction of numerous religious buildings within Natal.

Figure 98, The Ladysmith Soofie Mosque (Photo taken of a frame in the masjid by author, 2011)

The first extension of the mosque took place without specific plans (www.wheretostay.co.za) and was completed in 1966 under the declaration of Muslim canon law. This law allowed only the construction of mosques on the site of an older mosque. The extension involved the removal of the whudu pond to incorporate a modern whudu facility with piped water. A hall with female prayer facilities was also introduced with toilets and an imam's residence, as seen in figure 98.

As the community grew and the town developed, there was a need for a second minor addition and alteration to be made to increase the number of people the masjid could accommodate for prayer. This resulted in an addition of a structure between the mosque and the hall, which connected the two. This structure did not greatly affect the main structure and was made into a whudu area, while the main sanctuary was extended.

The mosque is, now one of 'the most notable structures in Ladysmith' (Anon. 2009) and is 'regarded as one of the most beautiful mosques in the southern hemisphere, displaying skilfully-constructed minarets, turrets, filigree stonework and scalloped archways' (www.wheretostay.co.za). It has also attracted a large Muslim community to the current residential development, which was once a farm.

Sacred Setting

A welcoming Islamic garden (Figure 99) is situated outside the main entrance of the building. The site itself is set on a flood plain, therefore vegetation thrives in the area. The abundant use of plants and trees inside (Figure 100) and outside of the building gives it a more natural feel [Appendix III]. This garden is a place of contemplation and rejuvenation as it is reminiscent of the gardens of paradise, which have a highly sacred and heavenly connotation.

Figure 99, Garden before main Entrance of building (Photo taken by Z. Paruk, 2011)

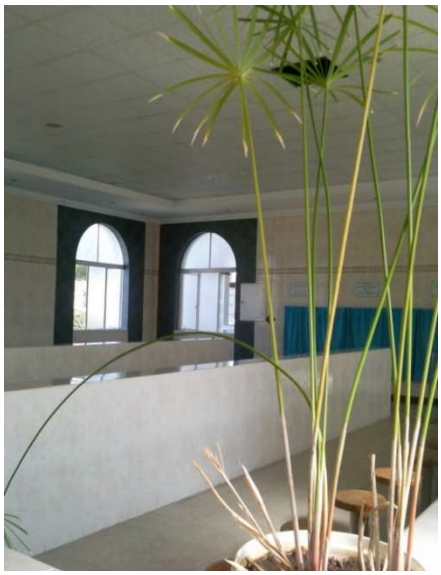


Figure 100, Showing the use of plants on the inside of the building in the ablution area (Photo taken by author, 2010)

Other aspects that add to the sacredness of the building are the direction of Qiblah and the minarets. The Qiblah is a representation of the desired connection to the Divine Being on earth, while the minarets represent a desired connection to the Divine Being in the Heavens. The east-west facing masjid is conveniently directed at right angles toward the river to achieve orientation toward Qiblah. Additionally, the well-detailed minarets (Figure 101) are skilfully articulated to imitate the mountainous backdrops with its varying heights.

Figure 101, The beautiful minarets of the Ladysmith Soofie Mosque, showing the varying heights and detailing (Photo taken by author, 2011)

The placements of the various minarets also create a geometric pattern (Figure 102) where the large minarets almost indicate the cardinal axes, representative of a sacred archetype in the intersection of time and space. Domes, the ultimate cosmic symbols, are used to crown the minarets. Furthermore, the colour of the building adds to the spirituality of the building as white is associated with purity, with which God is associated, God being the purest of all beings.

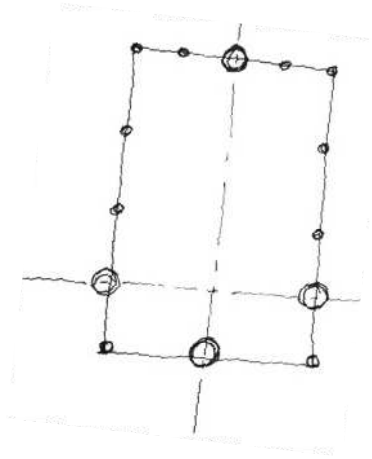


Figure 102, When the points of the minarets are joined (Author, 2011)

Art and Architecture

Essentially the functions of the site were accommodated for, in separate buildings. All buildings were rectangular and placed on the site separately until the third alteration linked them (Figure 103). This linkage creates an unintentional kind of three-sided courtyard enclosure that overlooks the river. In terms of primary external features, the mosque has minarets, domes. It previously accommodated an ablution pond. An important aspect of the building's architectural identity is its historical evolution.

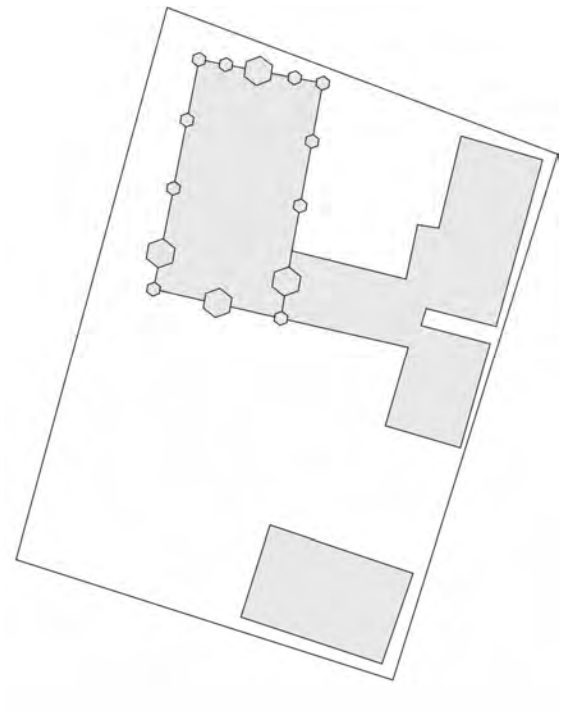


Figure 103,Basic footprint of the buildings on the original site showing the placement of minarets (Author, 2011)

Figure 104, Minaret at the main entrance of the masjid (Photo taken by author, 2011)

The minarets of this mosque are extremely detailed; the tallest minaret (Figure 104) at the main entrance was designed to be functional, with an ascending staircase for the muezzin to mount when he calls out the azaan. It also marks the main entrance of the masjid. There is a series of different sizes and heights of minarets, in total fourteen, which were used to demarcate the masjid area. The second tallest minaret is at the centre of the wall of the masjid closest to the river (Figure 103), after that come the two large but short minarets placed on the east and the west; lastly the smaller minarets which fill the gaps. There are little balconies incorporated into the design of the tall minarets on various levels and all of them are crowned with domes.

The entire building is designed with arcades and arched windows; a prominent Islamic architectural feature used in the real sense (Figure 105). There are arched windows used throughout the building as seen in figures 105-106. This creates a rhythm throughout the building, tying the different spaces together to make a unified whole. The scale of the arches is appropriate to the human and creates a sense of grandness.

Figure 105, Arcaded Corridor/ verandah on the western side of the building (Photo taken by Z. Paruk, 2011)

Figure 106, Ablution facility of the masjid (Photo taken by Z. Paruk, 2011)

The ablution facility (Figure 106 -107) is somewhat contemporary as it was the latest addition to the building. This simple open-plan interior space seats approximately thirty people; three rows of ten.

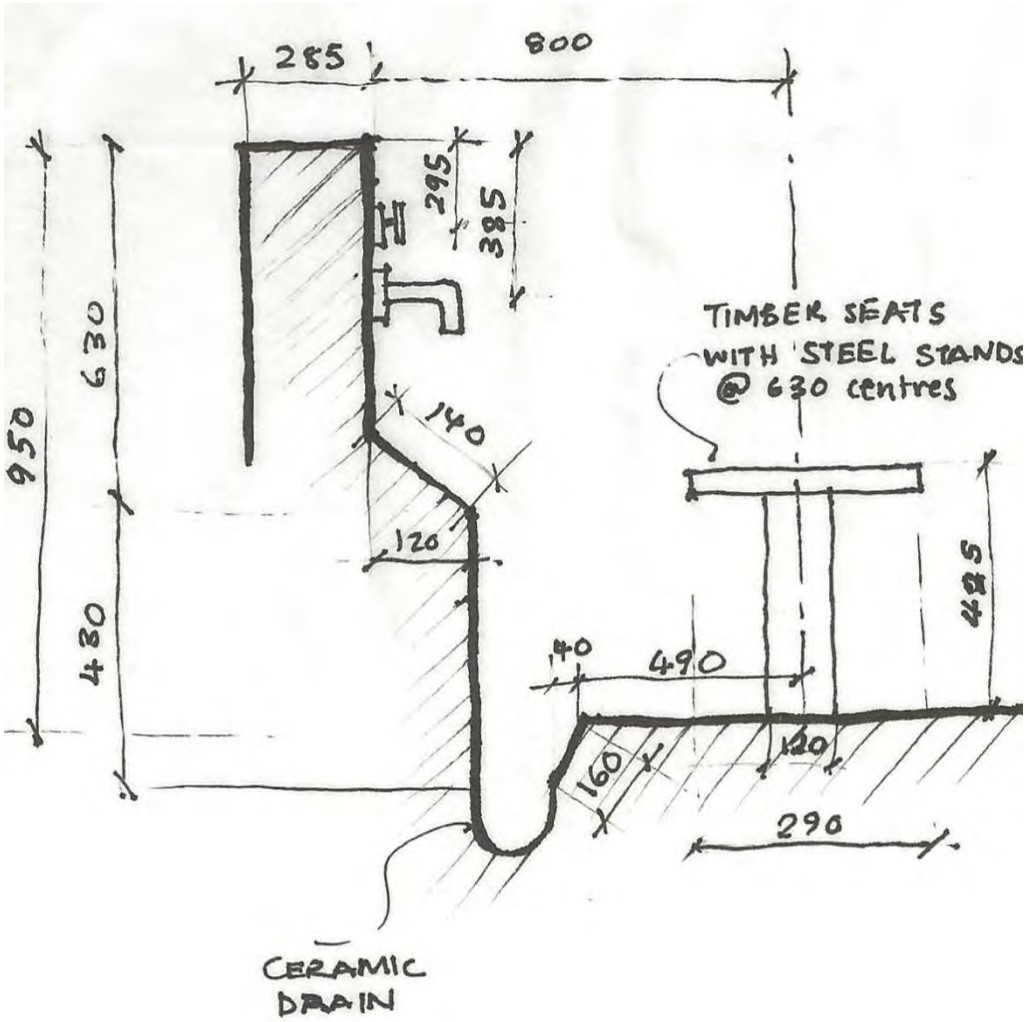


Figure 107, Section of a single whudu area (Author, 2011)

No shoes are allowed in this space; however, you may walk from one door to the next in a designated area that allows the usage of shoes. The whudu area is raised off the ground by a single step, which creates a boundary between a pure space where shoes are not permissible and an impure space where shoes are permissible. There are also a few plants placed around the area together with ample natural light. Drinking fountains are also found at the entrance foyer.

After the first extension of the mosque, entrance portals (Figures 108-109) were introduced, suggesting a transformation. The entrance portals are elaborate, yet not too outstanding and are proportionate to the building. They are transitional elements, providing a starting and ending point to environments of differing natures.

Figure 108, Main Entrance on the southern side of the site (Photo taken by author, 2011)

Figure 109,Secondary Entrance on the northern side of the site (Photo taken by author, 2011)

The southern main entrance leads into a beautiful garden courtyard, creating a journey from the entrance to the main sanctuary. The layout is based to a certain degree on geometric principles and symmetry (Figure 110). Being a garden of restoration, this Islamic garden contains beautiful water fountains, indigenous plant life as well as seating areas. The fountains, however, are now non-functional and are simply used as ornaments (Figure 111).

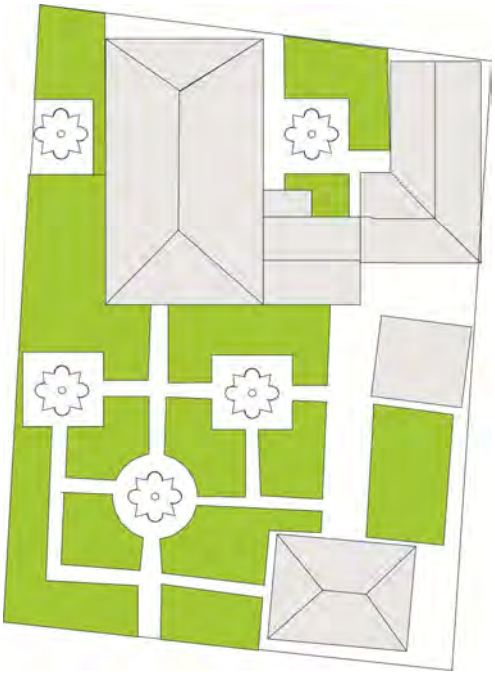


Figure 110, Approximate Layout of the garden and fountains in the site and around the buildings (Author, 2011)

Figure 111, The central fountain, showing part of the garden with seating and the main entrance portal at the back (Photo taken by Z. Paruk, 2011)

The internal features of a mosque also create an Islamic identity with which one can relate. The musallah (Figure 112-113) for instance, has a great spiritual ambiance and is a comfortable, spacious and tranquil space. It is very ornamental on the interior, sporting much plasterwork. There is also a series of frames on the uppermost area of the walls which somewhat hinders the connection between the floor and ceiling and confines one's spiritual self. Additionally, much gold is used in the room, which is also associated with heaven. The area of the room is not affected by any structural elements and the roof that spans across the musallah is a hipped roof. The masjid is separated into two different parts: the musallah at the front and the sahn at the back. It may accommodate approximately four hundred people with thirteen rows of twenty musallahs in the front and seven rows of twenty at the back. For the Morning Prayer, approximately thirty people come to the mosque, and for the other four salaahs there are approximately sixty people at the masjid. The Friday prayer attracts a full crowd [Appendix III].

Figure 112, The main sanctuary of worship (Photo taken by Z. Paruk, 2011)

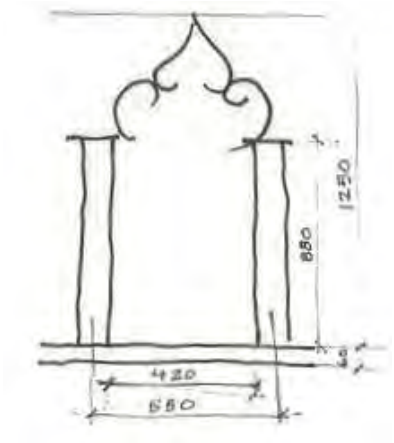


Figure 113, Plan of a single musallah (Author, 2011)

The mihrab and the mimbar (Figures 114-116) are both very elaborate in terms of detailing with decoration and gold trimmings. They are placed next to each other in a prominent postion at the centre of the front wall of the masjid, where the Imam stands. The mihrab is presented in the form of a niche in the wall and the mimbar here has five steps.

Figure 114, The mihrab and mimbar of Ladysmith Soofie Mosque (Photo taken by Z. Paruk, 2011)

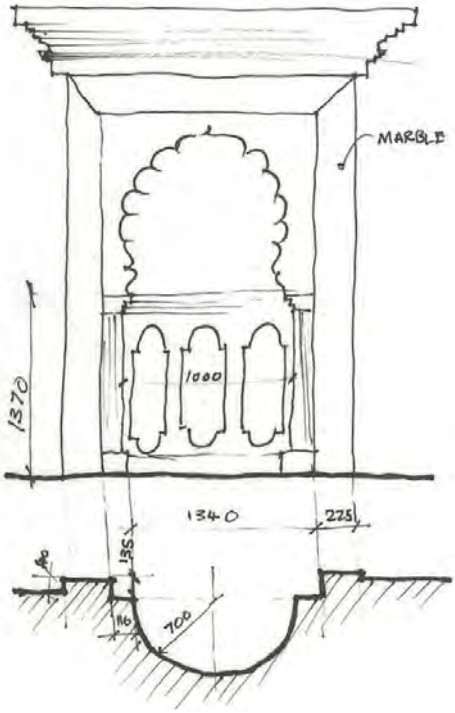


Figure 115, Plan and elevation of the mihrab (Author, 2011)

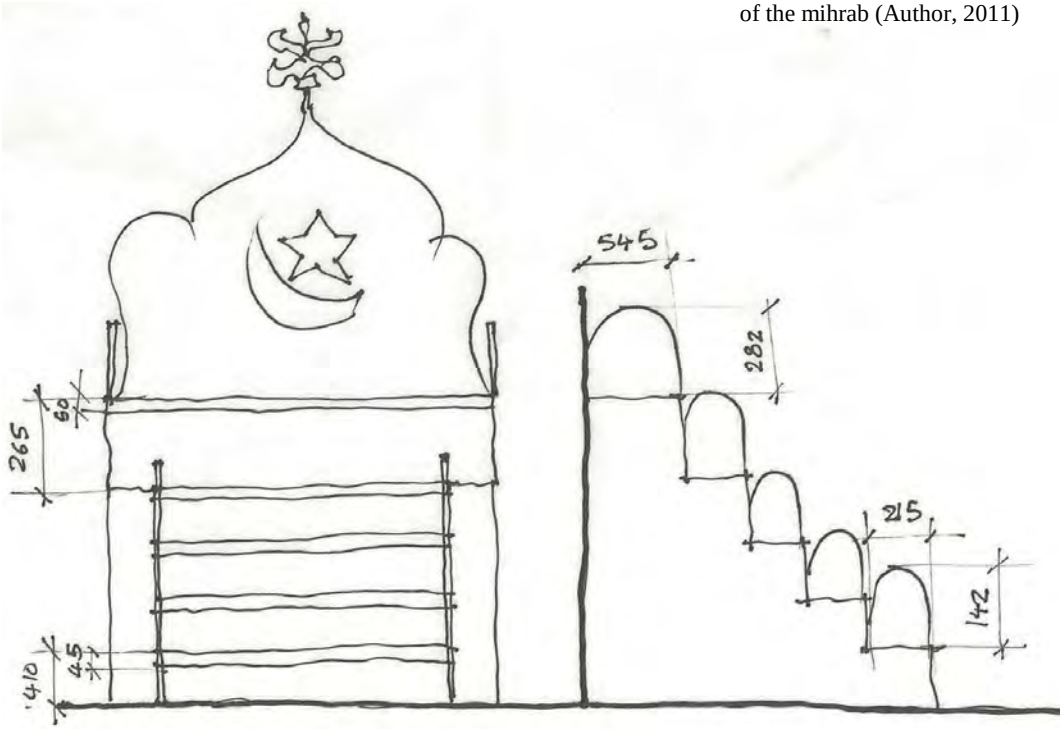


Figure 116, Front and side elevation of the mimbar (Author, 2011)

Other decorative elements include screened balustrades, edging details, plasterwork, patterned tiles and iron details, all of which can be seen in a palette of patterns used in the building (Figure 117) that was put together by the author. Most of the patterns are derived from natural elements and reflect their natural beauty outwards, however, the unifying element of an Islamic building involves pattern on varying scales, somewhat lost owing to the inconsistency of pattern.

The actual geometric make-up of the mosque is unknown, as there were no plans prepared for the building. Nevertheless, by perception one is able to notice the great geometry used in the design of the building. Figure 118 is a simple representation of the proportions and layout of the minaret.

Screen used in fence and as balustrades for corridors.

Screen used in the balustrades of the balconies of the minaret

Edging details of arches, doors, windows and entrance portals

Various tile patterns in of the tile in the garden

Iron detail at main entrance

Plasterwork details on the walls

Figure 117, Palette of different patterns used throughout the mosque (Author, 2011)

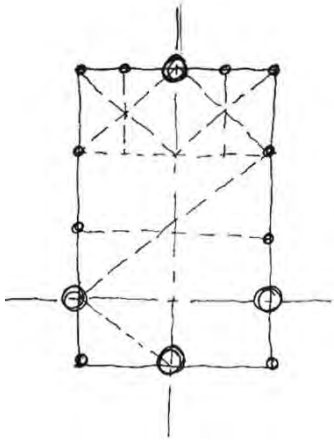


Figure 118, Geometric diagram showing the placement of the minarets (Author, 2011)

4.2.5. Planning

Initially planned as mosque, the Ladysmith Soofie masjid has grown and expanded with its historical evolution and is no longer a simple mosque for its original intended purpose. The author presents her understanding of the existing layout of the original masjid site in figure 119.

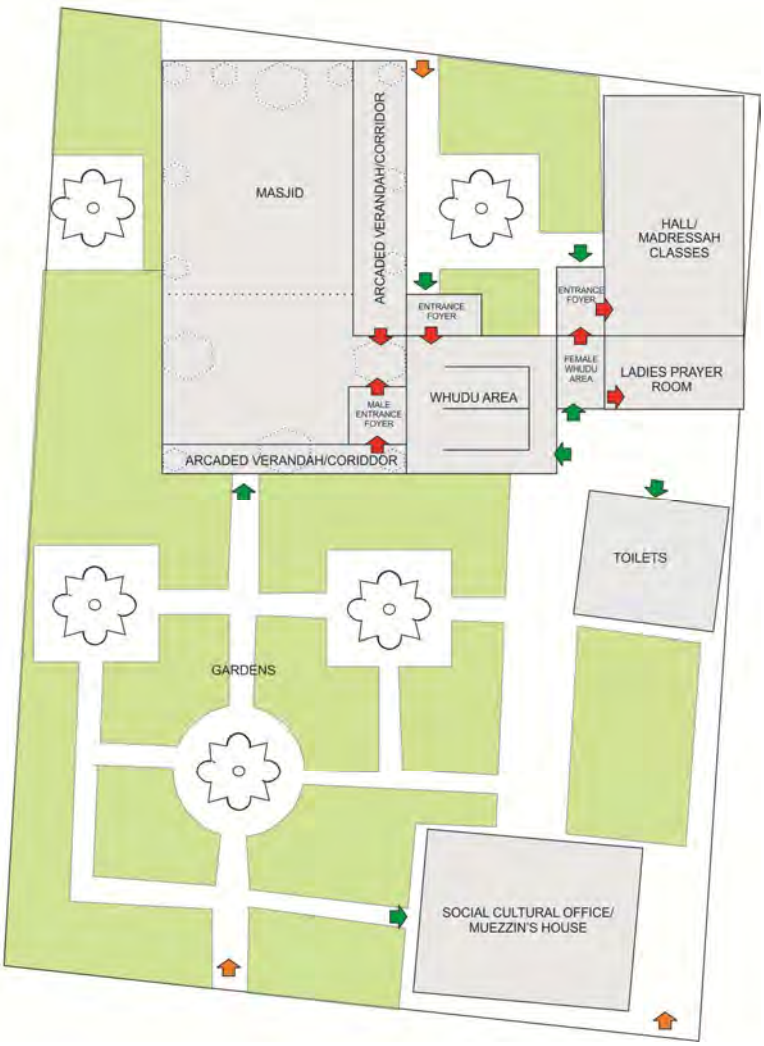


Figure 119, Layout plan of the building showing different spaces and various entrances (Author, 2011)

Figure 120, Advertisement and notification board at main entrance for the male sanctuary (Photo taken by Z. Paruk, 2011)

Currently, the building contains numerous entrances as seen in figure 119, where the orange arrows represent site entrances, green arrows represent primary entrances and the red arrows represent auxiliary entrances. This may not be the ideal situation, however, each primary entrance is to a specific function and each auxiliary entrance demarcates spaces of different qualities.

Main entrances to the masjid area are used for advertising and notifications (Figure 120) which are common practice in masjids today, in both male and female entrance foyers. Usually the shoe racks are also located within this area, where one removes shoes and proceeds to the whudu area. The whudu area is separate from the main sanctuary, linking the adjacent buildings.

The main sanctuary or masjid has two arcaded corridors, one on the western side of the building and one on the southern side of the building, where the two main entrances to the masjid are located. They create a visual and noise buffer between the inside and outside of the building, where the largest number of people is expected to be present or the areas of the site that will be frequently used.

Within the masjid area, at the two corners of the back wall are curtain rails (Figure 121). These spaces demarcate areas for the ritual of i'tikaaf during the last ten days of Ramadaan. They provide separate, individual spaces for the ritual to be carried out.

The site also accommodates a Community Hall (Figure 122) that doubles up as a madressa facility, with a ladies' prayer facility (Figure 123) at the back. The ladies' prayer facility maintains the identity of Islamic architecture with its detailing, while the hall loses this identity and is harsh and unwelcoming.

Figure 121, Photo of rails that demarcate space in the musallah for the ritual of i'tikaaf (Photo taken by Z. Paruk, 2011)

Figure 122, Interior view of the Community hall (Photo taken by author, 2011)

Figure 123, Interior view of Ladies Jamaatkhana (Photo taken by author, 2011)

Next to this is a block of toilets, very awkwardly placed on the eastern side of the site. This facility is separate from all others, yet serves all other facilities on site including the masjid, hall, madressa and ladies' prayer facility. At the entrance, there is a gate planned in such a way that it resembles the entrance to a prison cell.

At the southern end of the site is a provision of an Imam's quarters. Currently, the function of these quarters has changed and it is now a tourism and information centre where the muezzin lives. He provides tourists with tours and information about the building. The Imam's residence has now been relocated to the site close to the masjid.

4.2.6. Conclusion

This sub- chapter explored the setting, identity and planning of the Ladysmith Soofie Mosque. It was analysed to determine its place in the community, deciding how effective the design of the building is in terms of spiritual, physical and cosmological expression (spirit-earth-universe philosophy). Many of both the strengths and shortcomings of the building are identified here in order to provide recommendations in sub-chapter 3.4.

The setting of the building places emphasis on factors of orientation and identity. As one drives into the town of Ladysmith, one sees the masjid minarets against a serene backdrop. The viewer is then captivated by the expression of the cultural and regional aspects of the town and may be tempted to proceed toward the alluring minarets, in which case, the minarets and Klip River become landmarks of orientation as well as identification for the building. This was not thought of at the time of the original setting of the building, which was in a farm area; the result now is that there is difficulty in locating the main entrance. The site has always nevertheless always been used for the purpose of religious worship and has, over the years, been associated with that activity on a psychic level, be it in a farm area or in a residential area. Additionally, the proximity of the Klip River to the building expresses how the unique landscape of the region is incorporated into the image of the building. As the town developed, it growth contributed to the urban identity of the building.

The sacred identity of the building is conveyed in various ways. Firstly, the historical evolution of the building creates an emotional attachment and a universal allure as it is in continuity with the town's history and future. The physical elements of the building are also important in terms of identity, as their association with sacredness and spirituality was achieved over time; the historical significance of the soaring minarets (where they were used to call the azaan) spiritually uplifts the human spirit. The relationship of the building to nature reinforces man’s connection with earth in a spiritual way, bringing about a sense of self-identification. The Islamic garden is strongly attached to the gardens of heaven in Islamic culture. Owing to the strong emotional influence of the site and building on a person drawn there by sacred identity, the building becomes monumentally alluring through personal perception; set in context, it becomes timeless.

The historical evolution of the building, which gives it so much character, has resulted in impractical functionality for its users. Owing to the numerous additions and alterations to the building, the building’s form, function and aesthetic uniformity appears to be disjointed. There are numerous entrances, of which the main entrance is the most difficult to locate. The most

easily-located entrance across the bridge has insecure and insufficient parking facilities. The building composition on the site is not practical in terms of user orientation. The patterns and geometries used among the different buildings do not read as a single uniform entity. As a result, the building becomes an appropriate historical monument, yet provides inadequate communal facility from an architectural standpoint.

4.3. CONTEMPORARY PORTRAYAL OF SACRED IDENTITY IN ARCHITECTURE: A Case Study of Umhlanga Islamic Society

Islamic Centre of Worship and Education, 2002

Figure 124, Umhlanga Islamic Society (Photo taken by author, 2011)

4.3.1. Introduction

Umhlanga Islamic Society (U.I.S) (Figure 124) is named after the society that it accommodates. The need for the society and building arose with the community's need of an Islamic ethos in the area. Located in the suburb of Somerset Park, the fairly new building was designed by an architect in Tongaat, Mr. Ghani [Appendix III] and constructed by 2002. It offers a variety of communal facilities based on religious practices including a mosque, a madressa (a school of advanced Islamic studies), a school and offers da'wah work (missionary work for Islam) (www.umhlangaislamic.co.za). U. I. S. is one of the few communal buildings in KwaZulu Natal that accommodate a fully-fledged mosque as well as the numerous functions mentioned within a contained building. A contemporary building meets the needs of a contemporary religious society and maintains symbolic design principles.

4.3.2. Justification for Study

It is important to look at this building as the intent of it is to serve the community on different levels and not just as a place of worship. By looking at the way the building functions internally, externally as well as the internal reflection on the external, a better understanding of a contextual religious centre may be attained. Furthermore, the study may be used to better existing facilities by identifying strengths and shortcomings of contemporary design, leading to the improvement of the Islamic Community Centre design in Durban.

4.3.3. Setting

Location

Umhlanga in general accommodates an elite society of people. It began to thrive when Gateway shopping mall was built; this led to further development of the area. Umhlanga Rocks, Somerset Park, as well as the other suburbs of the area, all have unique characteristics. The coastline of Umhlanga is one of the main attractions.

Figure 125, Zoning of areas in and around Umhlanga (Author, 2011)

Umhlanga Islamic Society is strategically placed at the bow of Somerset Park (Figure 125) with a physical address of 2 Bruton Close, Somerset Park, Umhlanga Rocks, KwaZulu Natal, South Africa. Not only is the building on the outskirts of a residential area, but it is also on the outskirts of a business district allowing both districts full benefit of the worship centre. Men and women from Umhlanga's commercial and business district enjoy the convenience of the masjid for their daily prayers and the Muslim families from the residential area have a convenient Islamic education centre.

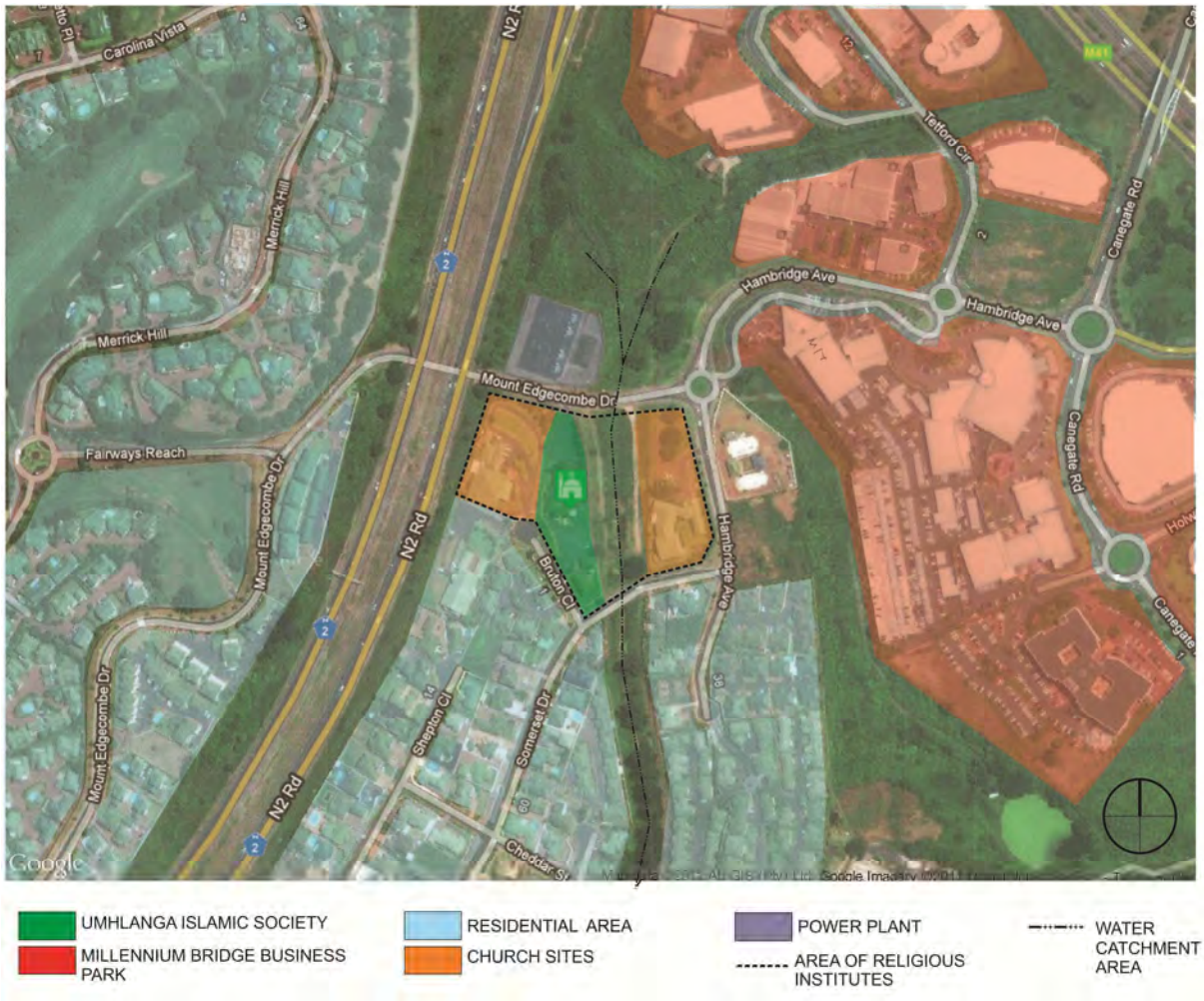


Figure 126, Zoning of areas in and around Umhlanga Islamic Society (Author, 2011)

The Islamic Centre is flanked by churches on either side (Figure 126); the area is referred to as a religious institute area [Appendix III]. These churches are shown in figures 127 and 128. The Umhlanga Islamic Society site is about 5250 square metres and is easily accessible, with two entrances, one off Mount Edgecombe Drive from the commercial area and the other off Bruton Close from the residential area. Within the site, is a plot of land allocated to the residence of the Imam and the muezzin who administer the building functions during the day.

Figure 127, Church on the western site of Umhlanga Islamic Society (Photo taken by author, 2011)

Figure 128, Church on the eastern site of Umhlanga Islamic Society, showing the water channel between the Umhlanga Islamic Society property and the church property (Photo taken by author, 2011)

Orientation

The site is situated next to a catchment area on the eastern side of the site (Figure 128-129), which aids in the dispersal of storm water from the hills above (Figure 126). As a result, the building is on an inclined site whereon cut and fill techniques have been applied [Appendix I]. The site is relatively low, compared with the surrounding sites, with the minaret of the building providing the only indication of its existence from the major N2 vehicular highway.

The orientation (Figure 129) of the building is east-west facing and the determining factors of orientation were site restrictions, separate entrances for males and females and the direction of Qiblah which is 10.456878 degrees from north clockwise (www.islamicfinder.org).

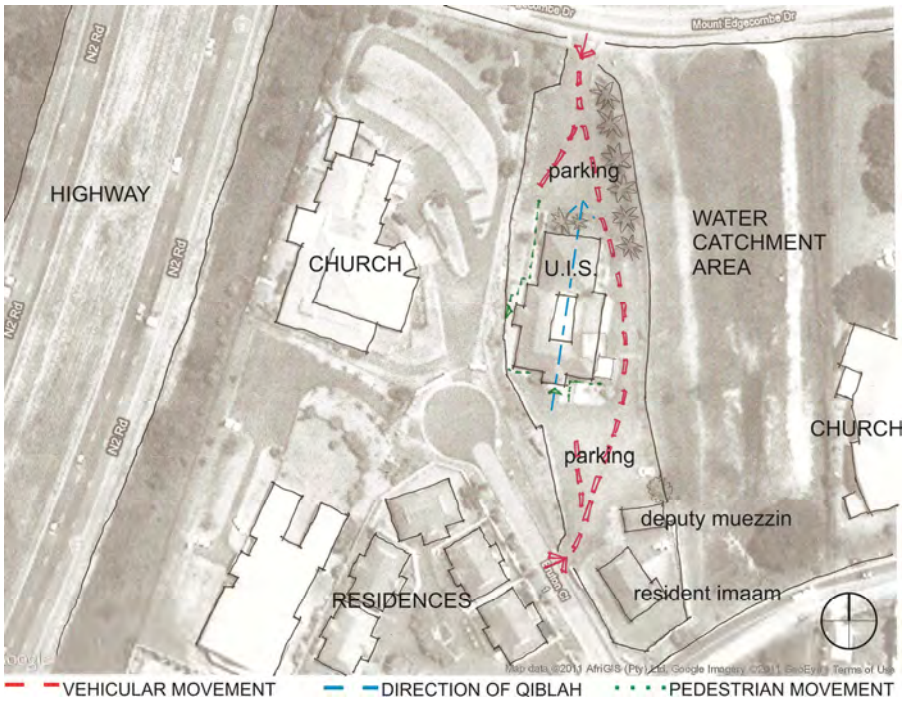


Figure 129, Diagram showing what is in and around the site as well as the various entrances (Author, 2011)

4.3.4. Identity

Historical and Social Context

Umhlanga Islamic society was established in the year 2000 to facilitate an Islamic centre for the approximately thirty Muslim families that resided in Umhlanga at that time. These families then approached the local council for land allocation but were told that the land zoned for worship had already been allocated to churches, however, land in Somerset Park was available through a land management and property development company; it came with a few conditions. (www.umhlangaislamic.co.za).

Owing to the residential zoning of the property, the Society had to facilitate the re-zoning of the site from a residential to a worship site, the amplification of the call of azaan would not be allowed by the masjid and the building was not allowed to have a minaret and dome. Many non-Muslim residents objected to the re-zoning of the area; however, the Society persevered and 'successfully negotiated a relaxation of the conditions relating to the non-construction of a minaret and a dome' (www.umhlangaislamic.co.za). As a result, the vision of the Umhlanga Islamic Society materialized.

The construction of the building began mid-year 2001 being completed by October 2002. The property now houses a communal masjid with prayer facilities for women, madressa classrooms, a hall and a burial society as well as accommodation for the resident Imam and resident deputy Imam (muezzin) (www.umhlangaislamic.co.za). The resident Imam is Moulana Mohammad Vanker, a learned scholar from MadressaInaamiyya, Camperdown, South Africa; the muezzin is Muhammed and there are three other trustees which administer the masjid; Mahomed Haroon Essa, Farhad Khan and Yosuf Ally. All of which make up the Umhlanga Islamic Society (www.umhlangaislamic.co.za).

The vision of the resident Imam is to continue providing for the community in various ways. He wishes to establish a primary, secondary and tertiary institute as well as a communal Islamic library within the site (www.umhlangaislamic.co.za).

'The Masjid is a House of Allah (S.W.T), a nucleus in the lives of Muslims in the area and surrounds, and has been and will increasingly continue to be a binding force of the Umhlanga Islamic and extra Islamic Communities.' - www.umhlangaislamic.co.za

Sacred Setting

The area is rich in vegetation which has been incorporated into the site layout. Groundcover plants, shrubs and palm trees are used to soften the perimeters of the site and building to create an interesting entrance to the masjid (Figure 130). In addition, the windows provide a visual link from the inside to the outside that allows you to experience nature [Appendix III], while allowing sufficient natural light to enter the building.

Figure 130, Western edge of building leading to the entrance (Photo taken by author, 2011)

The sahn (Figure 132) of this masjid is roofed with translucent sheeting, which adds to the spiritual ambience of the building; it is used as a prayer space (musallah). The connection between the divine and the worshipper is felt most strongly here. The main sanctuary and ablution area have high volume ceilings and large windows on the exterior walls allowing natural light to filter through the leaves of the trees (Figure 133). These spaces bring about a feeling of spiritual grandeur. Being a place of worship, the masjid will always have a subconscious, inexplicable connection to the user and to God [Appendix III].

Apart from the influence of nature on the sacred setting, the architecture of the building provides the cosmological link. The single minaret (Figure 131) that is placed more or less centrally on the site soars above everything else, visually linking the building to the sky. It is crowned with the ultimate 'cosmic symbol' of the dome. Even though the site is quite low, the minaret is visible from the highway, allowing the mosque to be an easily located traveller's prayer destination.

Figure 131, Soaring minaret, linking the site to the sky (Photo taken by author, 2011)

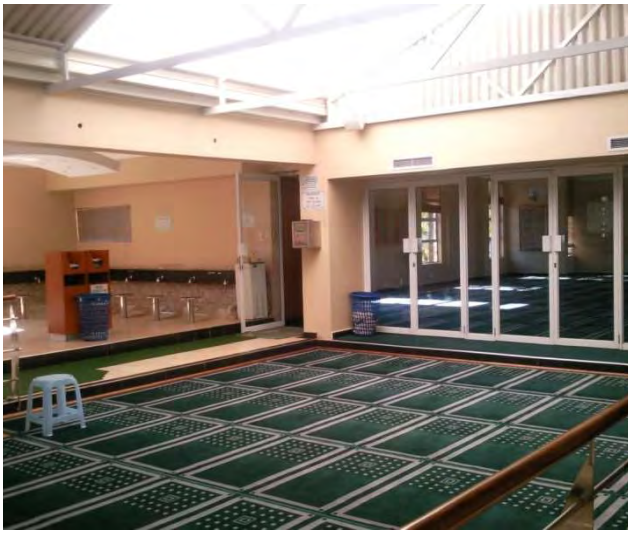


Figure 132, The sahn of the masjid with a skylight connecting the interior to the Divine (Photo taken by author, 2011)

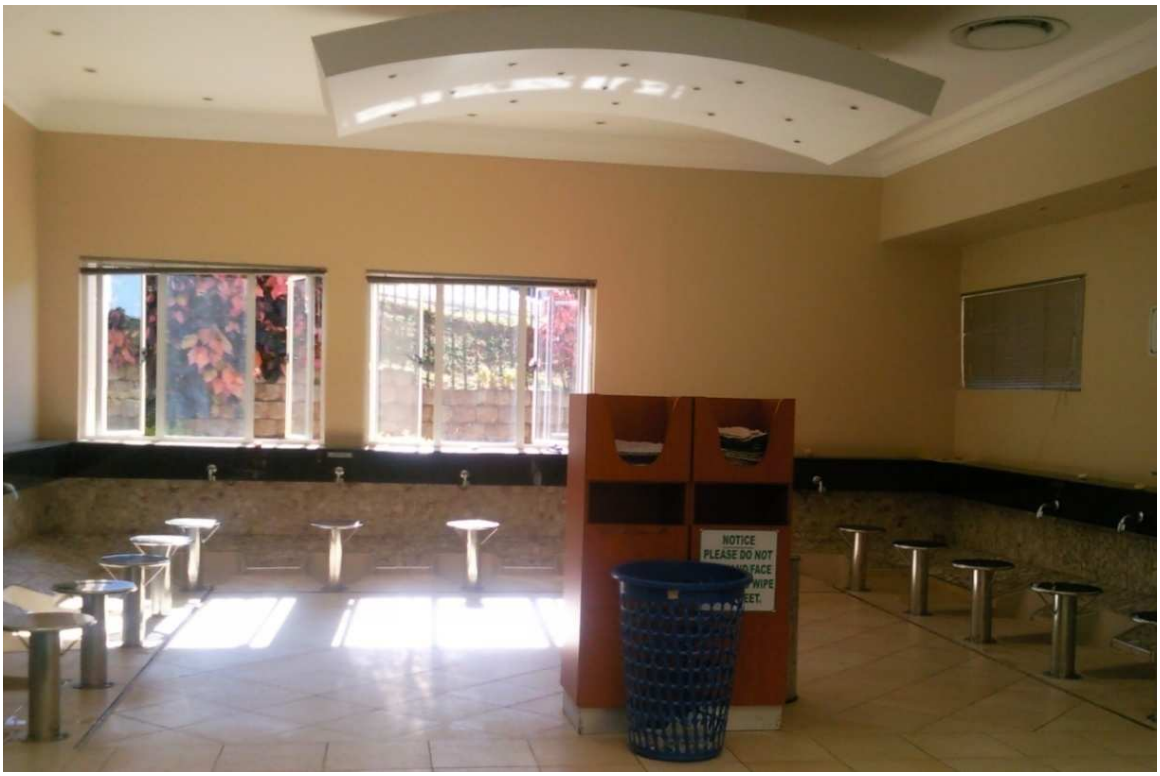


Figure 133, The filtering of light through the large windows of the ablution area, giving it a mystical feeling (Photo taken by author, 2011)

Art and Architecture

The building form is based on a simple proportionate rectangular layout (Figure 134), with a central courtyard space that has been enclosed and used as an auxiliary musallah space as seen in Figure 132. Displaying the primary external features of a mosque, Umhlanga Islamic Society consists of a minaret crowned by a dome. There are no ablution fountains, as many modern mosques prefer to use instead an ablution area with piped water.

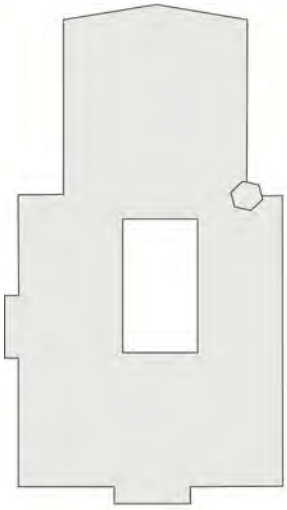


Figure 134, Basic footprint of the Centre (Author, 2011)

Figure 135, Northern facade from the parking lot (Photo taken by author, 2011)

The minaret is simple and slender, having no particular function other than to express the identity of the building as a symbol of mosque architecture (Figure 131). It is situated on the eastern side of the building near the corner of the main sanctuary. It is also quite central to the site and is crowned with a small symbolic green dome complete with a moon and star. The colour green and the symbol of the moon and star are both sacred archetypes in the religion of Islam. The minaret is the most striking feature of this mosque.

Figure 136, Eastern facade of main sanctuary (Photo taken by author, 2011)

The elevations of the building represent another important aspect of Islamic architecture, the pointed arch (Figure 136). These arches are purely aesthetic with no real function other than as identification of symbolic Islamic architecture. The facade follows a rhythm of depressed face brick walls with large windows and protruding patterned walls with

pointed arches, which are tiled in two different colours to accentuate the arches. The arches are scaled according to the building and not the user .One can, therefore, feel out of scale when standing next to the building; this may have been a deliberate way of accentuating the verticality of the building.

The whudu area (see figure 133 and 137) is strikingly modern and easy to use. An interior open plan area is separated from the prayer area to form the whudu area. No shoes are allowed beyond this point as the space represents the purity associated with water. The floor is covered with non-slip tile and the U-Shape seating arrangement makes it a simple and practical space to use. Very often in modern ablution areas, there are shelves provided above the taps on which to place personal belongings such as jewellery and watches while the musallee is making whudu (Figure 137). Fresh drinking water is also always available for worshippers.

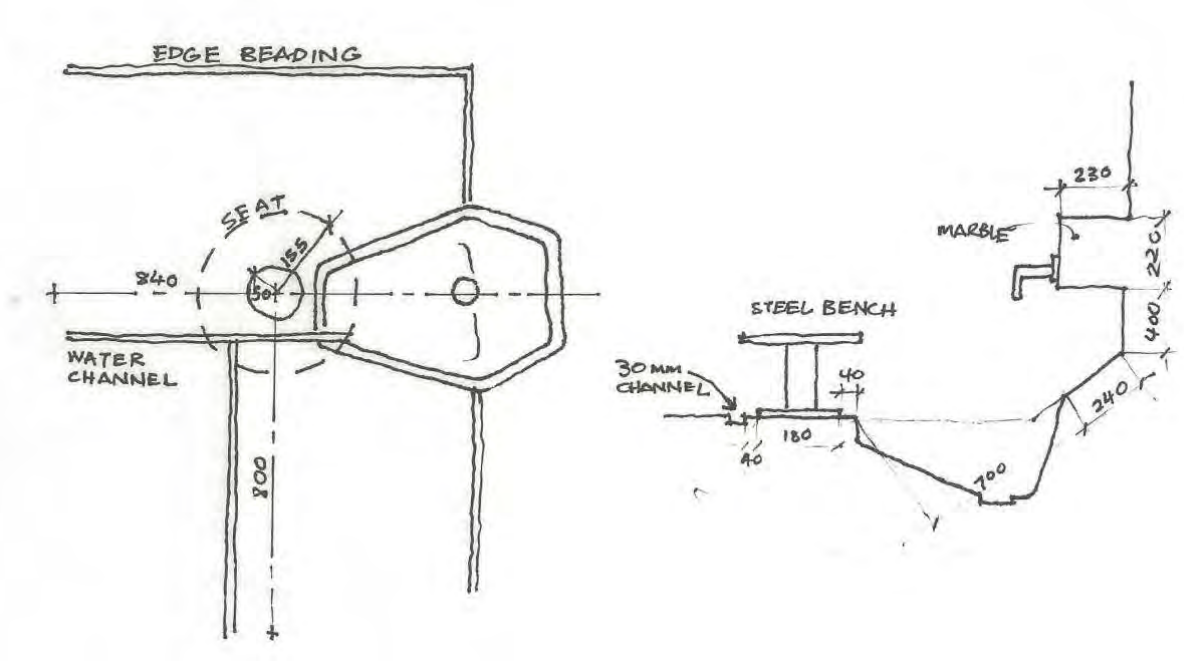


Figure 137, Plan and section of a single ablution tap with seat and shelve (Author, 2011)

The entrances are simple, with no elaborate detailing. They are simple sliding doors that lead to an entrance foyer where provisions are made for shoes to be stored and where notice boards are placed. There are two separate-sex protruding entrances. The male entrance (Figure 138) is tucked away on the west side of the building and the female entrance (Figure 139) is more prominent on the south side as it is used as the madressa entrance as well.

Figure 138, Western Male Entrance (Photo taken by author, 2011)

Figure 139, Southern Female Entrance (Photo taken by author, 2011)

The male entrance on the western side of the building has a piece of garden (as seen in figure 130) which one must walk through to arrive at the main door. The building does not have a designated Islamic garden, however, this miniature garden may pass as one with its concrete benches on which to sit.

Figure 140, The main sanctuary of worship (Photo taken by Z. Paruk, 2011)

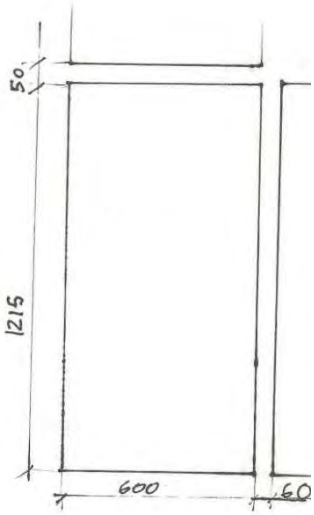


Figure 141, Plan of a single musallah (Author, 2011)

When looking at the interior of the building, the masjid or musallah area is the most prominent space (Figure 140). It is a large, rectangular space with no columns in between; it sports a two-way pitched roof. The room has a great ambience [Appendix III] with its high ceiling, large windows and ornaments. There are nineteen parallel rows each of which having ten musallahs (Figure 141). On Fridays, when the mosque is full, the masjid can accommodate approximately two hundred and fifty musallees, while the sahn allows for another fifty and the hall and other

classrooms allow for another five hundred musallees (www.umhlangaislamic.co.za). From the exterior of the building, the direction of Qiblah is indicated with an arrow in plan and upward arrow in elevation, indicating a rising level of spirituality (Figure 135).(What do you mean by plan?)

The mihrab and the mimbar (Figure 142-143) are placed side by side at the front wall where the imam carries out the prayer. They are both simple and tiled in stone. The Arabic calligraphy above the mimbar and mihrab is the only form of decoration that is part of the mosque and translates as "There is no God but Allah and Muhammad is his messenger". Other forms of decorations are frames that are placed on the walls around the masjid.

Figure 142, The mihrab and mimbar of the main sanctuary (Photo taken by Z. Paruk, 2011)

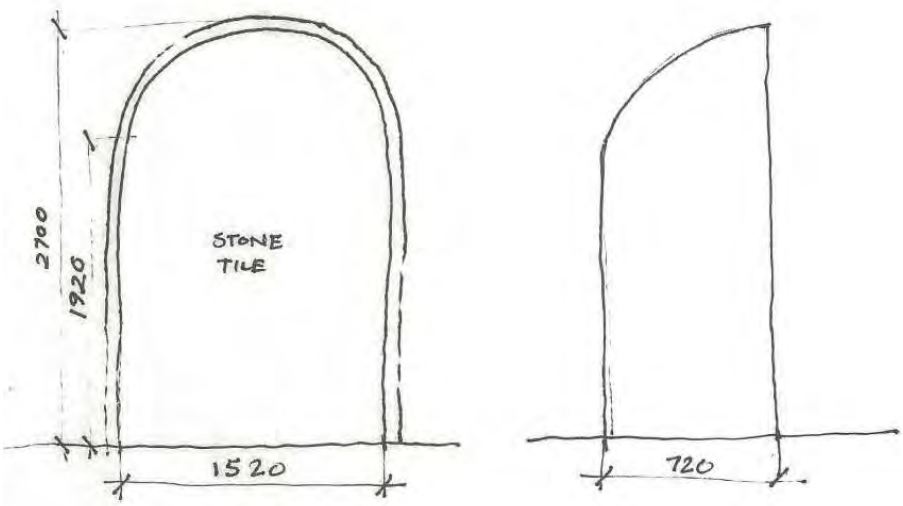


Figure 143 (a), Elevation and section of the Mihrab (Author, 2011)

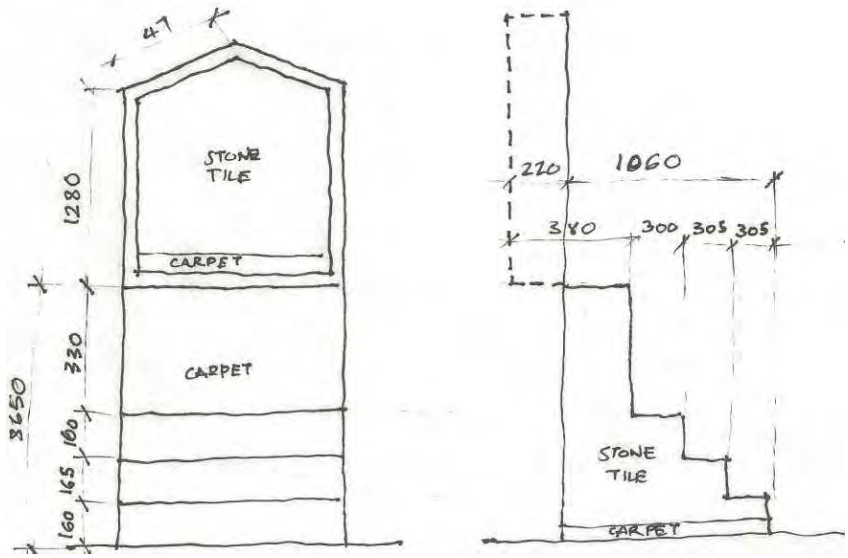


Figure 143 (b), Elevation and section of the Mimbar (Author, 2011)

4.3.5. Planning

Apart from the primary functions of the building, the centre also provides and requires additional services. The diagram provided below (Figure 144) presents the authors understanding of the layout of the building with its various functions.

Figure 144, Layout Plans of the building showing the different spaces (Author, 2011)

The male entrance foyer becomes a platform for advertising, charity and notifications of all events that happen in the community, including the names of those in the community who are ill. In this masjid, the foyer contains: a community notice board; a digital screen with salaah times; other notifications; a collection box for old unwanted Islamic literature to be given to charity; a monetary charity box for the running of the mosque, free miswaaks (pieces of bark used to brush one's teeth as done by the Prophet); shoe racks; a box for advertising or for any other pamphlets brought by musallees; and a pin-up board for Islamic literature. Similarly, the female entrance contains a place for shoe racks (Figure 145) and a notice board.

Other facilities include: a small kitchenette of the side of the sahn, used by those who observe i'tikaaf. It is in close proximity to the masjid. There is also a small female musallah area that is divided into classrooms and completely blocked off from the male musallah area; a community hall (Figure 146) on the lower level and a burial society room. Most of the rooms in this building are very versatile, providing for various functions as seen in the above diagram (Figure 144).

Figure 145, Shoe racks at the Ladies entrance foyer (Photo taken by author, 2011)

Figure 146, The lower level hall that is being used as a pre-school and a madressa class (Photo taken by author, 2011)

Figure 147, Jungle Gym outside the madressa (Photo taken by author, 2011)

Figure 148, Boys of the madressa playing soccer (Photo taken by author, 2011)

There is also the provision of a jungle gym for the children to play on after madressa classes, while waiting to be fetched (Figure 147).; the little boys prefer to play soccer (Figure 148).

People of the Muslim faith are very particular about cleanliness and there are certain spaces within a religious building where shoes are either allowed to be worn or not allowed to be worn or where they have to be worn. The diagram below (Figure 149) shows this relationship.

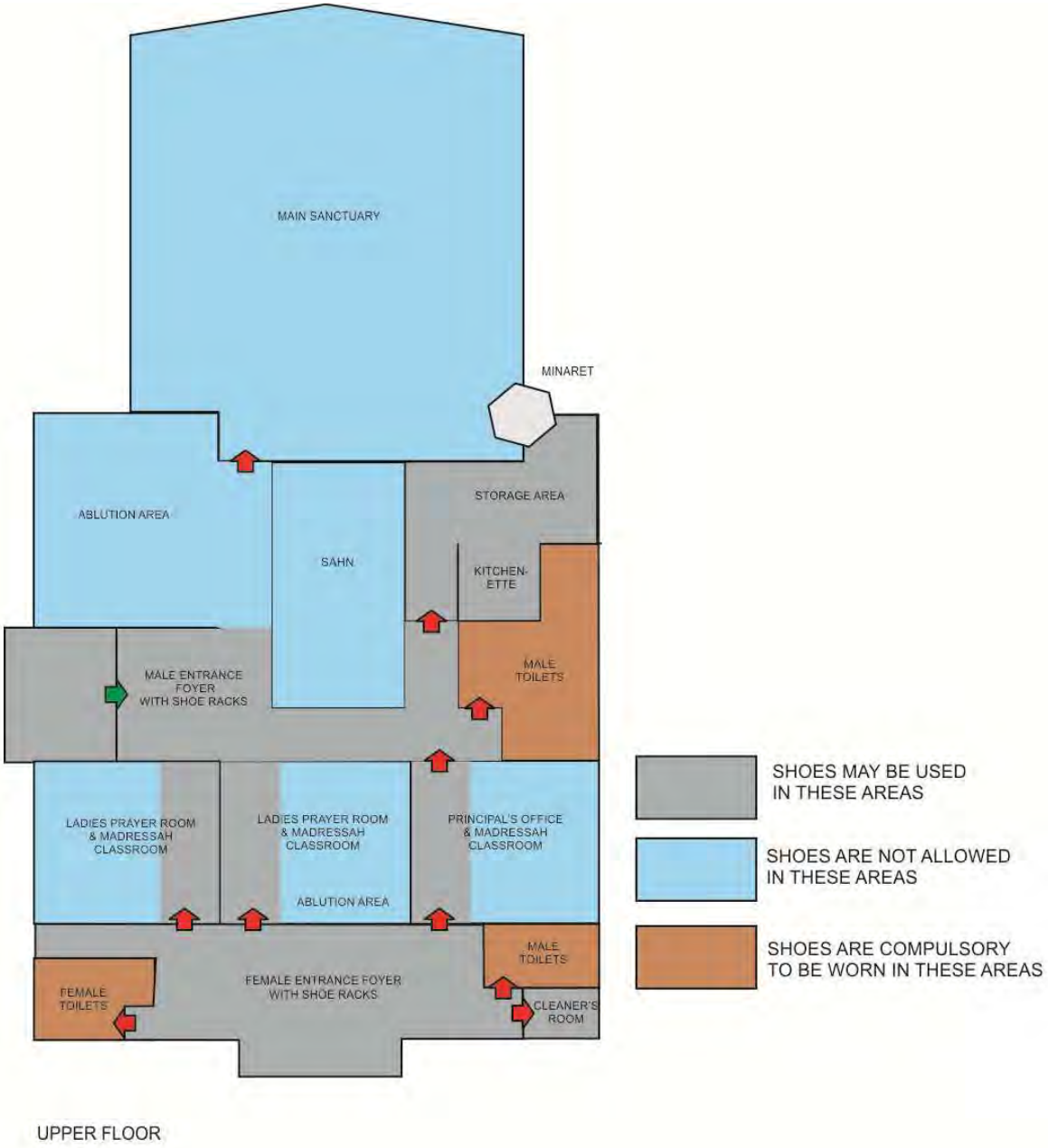


Figure 149, Diagram showing the allocation of areas to the wearing of shoes (Author, 2011)

For a Mosque to be characterized as a mosque and not a jamaatkhana, the imam and muezzin of the mosque are required to be living in close proximity to the masjid in order for the five daily prayers to be carried out. Figure 129 (pg 129) shows the placement of their houses in relation to the site and figure 150 shows the houses.

Figure 150, Southern side of the site showing the Resident Imaan's house on the right and the muezzin's house on the right (Photo taken by author, 2011)

4.3.6. Conclusion

This sub-chapter explored the setting, identity and planning of the Umhlanga Islamic Society. The mosque was studied to determine its place in the community and to ascertain how effective the design of the building is in terms of spiritual, natural and cosmological expression. Many of the strengths and shortcomings of the building are identified here in order to provide recommendations in sub-chapter 3.4.

The setting of the building focuses entirely on the practicality of orientation. The need for the building in the area had become the sole priority of the designer. As a result, the western approach to designing with nature is noted here, where the landscape is reconstructed to suit the architecture. This is very expressive of man's impact on the environment: most of the site is tarred to accommodate vehicles. The entrances are strategically well placed, one from the business district and one from the residential district; cars can drive from one entrance to the other. . Another practical aspect is that the site is situated between districts of various natures; however, regional characteristics then become unclear. The building is also visible, however so slightly, from a major transport route, the N2. The minaret is the only element that provides identification of the building from a distance. The site is low-lying, and the placement of the minaret on one of the lower parts of the site means that it loses its potential as a strong orientation landmark. The

water catchment area on the eastern side of the site creates an awkward, desolate space where the association of purity with water is lost. With the focus on practicality of orientation, the place becomes a mere relation of occurrence to context, devoid of strong cultural and human characteristics.

The sacred identity of the building is somewhat blurred and indirectly conveyed. Even though the building or site has no historical background, the building contains some physical elements of symbolic Islamic architecture such as the minaret and pointed arches on the facades. The minaret has no other function other than to convey externally that the building is an Islamic place of worship. Its height is lost by placing it on one of the lower parts of the site; its effectiveness in terms of spiritual connectivity to the divine, therefore, is also diminished. The pointed arches are devoid of meaning when one is in close proximity to the building; distance and practicality of orientation is brought to mind. The interior of the building, however, contains physical elements that add meaning and that spiritually uplift the users of the building. Even though the outside lacks identity, the inside is beautifully serene and simple, visually connecting to the strategically placed natural features on the outside. Natural light is effectively used; however, the entrance of natural light into the building could have been enhanced by the addition of geometric screens, which blur the distinction between the inside and outside. The penetrative quality of light is also used in the sahn, creating a spiritual courtyard within the rectangular layout of functions. The rectangular plan of the building is also in line with a traditional mosque plan as seen in the plan of the Great Mosque of Kairouan in sub-section 3.2.2, p 70. There is a drastic contrast between the inside and outside identity of the building. One could question the design philosophy; however, constraints of the site and conditions of the land could have restricted the design.

The function of the building in clear and well articulated. The rectangular plan accommodates various functions on different sides. The male and female facilities are completely separate, including their entrances, which have been located strategically on the site. The Hall is a multi-faceted space which can be used for madressa classes, ladies' prayer facilities, or additional male prayer facilities on days of overcrowding. The resident imam and principal of the madressa, has an office accessible to both sides of the building; the masjid and the school. The interior spaces are organized in a practical manner, making it user friendly. The building therefore serves as an adequate, practical communal facility becoming symbolic to the community; yet it lacks an external portrayal of sacred identity that will spiritually uplift the community and reinforce their understanding of themselves as being a creation, rather than the creator.

4. 4. CONCLUSION AND ANALYSIS OF CHAPTER

This chapter aimed at identifying the theoretical and practical expression of Islamic buildings in South Africa. Two major centres were selected for analysis of setting, identity and planning of the internal and external spaces and their strengths and shortcomings in achieving timelessness in sacred architecture. In the light of the above analysis of setting, identity and planning, essential recommendations and proposals for improvement of internal and external spaces are made, to enhance the sacred quality of the building, thus promoting a timeless quality.

Theoretical standing

In the case of Ladysmith Soofie Mosque, the setting and identity of the building are strong and successful, while the planning is weak. Some of the reasons contributing to its success of setting and identity include:

i. strong historical background

ii. well-expressed Islamic identity, in terms of symbolic representation

iii. natural setting of the site

The effectiveness of the setting of the Soofie mosque can be improved if accessibility to the site is made easier. An urban planning scheme is proposed for the betterment of accessibility. The identity of the building can also be improved by consistent geometric pattern and decoration. Specifications of some geometric patterned tiles and balustrades are suggested. The balustrade of the pedestrian bridge across the river should conform to the same pattern.

Umhlanga Islamic society demonstrates a weak setting and feeble sacred identity, while promoting good planning. Some of the reasons that contribute to the weak setting and identity include:

i. inadequate visual prominence

ii. external form did not represent the internal functions well enough

iii. insufficient natural environment

The setting of the building can be improved by the introduction of more plants and trees on the site to soften the tarmac parking lot. An Islamic garden or water fountain will also enhance the setting. The identity of the building can be upgraded by the introduction of more sacred and symbolic Islamic architectural elements. Three more minarets to demarcate the main sanctuary,

with an increased height compared with the existing height, will improve the identity. The introduction of arcades as walkways around the building will enhance the identity of the building

Practical standing

The study of sacred Islamic buildings assisted in identifying the realistic needs of the community. This was assessed in terms of practicality, as the community requires a centre that:

i. is easily accessible

ii. is always available

iii. has sufficient parking and prayer facilities

iv. has separate male and female entrances and facilities

v. is easily identified in the urban framework

vi. has a good circulation system

Ladysmith Islamic centre's accessibly and parking facilities require improvement with an urban scheme as previously proposed. Owing to the additions of building on site, the orientation is difficult to grasp. Umhlanga Islamic centre is successful in all aspects of practical standing, besides identification, within the urban fabric.

CHAPTER 5:

DISCUSSION AND ANALYSIS

The concepts and theories demonstrated in this research have shown how various aspects have contributed to timelessness in sacred architecture. One should bear in mind that the timeless quality of sacred architecture is based on the author's views of what timelessness is and was researched using ancient precedents, which have not aged with time. These aspects have been amalgamated to form an interpretation of timelessness in sacred architecture.

Owing to the ethereality of the concept of timelessness, as expressed before, many of the ideas attached to timeless sacred architecture, from the conducted research, have proven to be abstract in nature or based on perception. These include notions such as:

i. Belief and spirituality
ii. Quality of allurement
iii. Man's existence as creation and not creator
iv. The relationship of site to architecture based on perception
v. Architecture beyond the physical
vi. Man's place in the universe
vii. Natural sanctuaries of sacredness
viii. The intersection of time and space
ix. Hierophanies

These abstractions, however, were identified using architecture, therefore have a physical boundary. These boundaries have been identified as:

i. Symbols
ii. Water, hills, mountains and stone
iii. Methods of orientation and positioning of elements using the sun, moon, stars, other celestial bodies or physical elements
iv. Circles
v. Patterns and art
vi. Mathematic proportion and geometry
vii. Domes and towers or any vertical or circular physical element

All of the above fall under three main subjects of representation as established by the author. These are the spirit, the earth and the universe (Figure 151). The identification of the above into these three categories is a complex task, as all elements interrelate on various levels, even on levels beyond the scope of this research.

Nevertheless, this philosophy has been established using the history and identity of ancient man. Therefore, sacred architecture needs to use history and create identity of a particular people based on this philosophy of physical and abstract, to achieve a timeless quality.

Figure 151, Diagram representing the timeless design philosophy. (Author, 2011)

This interpretation was then applied specifically to sacred Islamic architecture for the purpose of this study and to determine the symbolic representations of timeless elements. The following has been determined:

i. Gardens

Islamic gardens with water fountains represent the gardens and rivers of heaven and are based on geometry and symmetry creating its own natural sanctuary of sacredness.

"God has promised to the believing men and the believing women gardens, beneath which rivers flow, to abide in them, and goodly dwellings in gardens of perpetual abode; the best of all is Allah's goodly pleasure; that is the grand achievement." - Quran (S 9:72)

ii. Patterns

Screen, balustrade and tile patterns representing the beauty of natural entities and derived from proportioning systems that can be seen in nature, such as the Golden Mean and Fractals. This enhances the relationship of the architecture to the natural site while affecting the structural and aesthetic composition of a building.

According to the holy book The Quran, God has created the earth and the seven heavens. Within the earth are layers and beings of higher existence that are invisible to the human eye alone. Such beliefs form the basis of Islamic art and architecture. It presents the universe as a figure of contemplation and thus contrives an image that reflects God. As a result, Islamic art and architecture explores all aspects of the universe including numeric symbolism,

alphabets, cosmology, biology, physical and spiritual sciences. Maths and cosmology however form an integral part of Islamic tradition as the purity of mathematical models and diagrams translate into the purity of God and Islam as a simple way of life. It is then interpreted and converted into three-dimensional architectural forms. This can be seen in the holy shrine of Makkah, The Ka'bah. "The magic of numbers contain the message that God is One, and the numbers are therefore a direct route to this revelation." (Mann, 1993: 122). Numerology thus bestows sequences and proportions that are studied and utilized in Islamic art and architecture which combines objects of nature with that of man-made to form patterns that are widespread in the layout of tiles, carpets and ornaments in mosques and other Islamic buildings. - Sub-section 2.3.5., Pg 50

iii. Water

The celebration of water as a natural cleansing component of the Islamic faith with its reflective properties used visually to beautify and enhance the quality of spaces in the form of water fountains, ponds, ablution fountains and other water features. The mirroring effect of water is able to extend the architecture beyond the physical.

iv. Vertical elements and their symbolic attachment

Domes are the ultimate cosmic symbols of the universe, representing the vault of heaven here on earth.

Minarets were used in earlier mosques, to call the azaan to the four cardinal points at a significant height, for wider area coverage. The azaan was called five times a day based on the position of the sun, to notify people of prayer. Minarets go beyond the physical by visually and spiritually connecting man's place on earth to the universe.

Arches are usually used to represent the mihrab at the centre of the front wall of mosques where the imam stands to lead the prayer. The arch has now become a universal symbol of the direction of Ka'bah.

v. Texture

Light as a natural element is used for its penetrative and reflective properties. In Islam, the angels are believed to have been created from light, hence the association of purity and angelic qualities with light. The penetration of light, through patterned screens and windows projected onto floors creating texture, blurs the distinction between the inside and the outside, creating architecture beyond the physical. The properties of light can be used in such diverse ways that they are seen by the author, as one of the main timeless elements of Islamic architecture.

vi. Orientation

Orientation in Islam is toward the Ka'bah in Makkah. This physical and spiritual centre represents a concentric circular effect on a global scale, which is bound on earth by human prayer yet infiltrates into the heavens and universe by way of the afterlife. This spiritual and cosmological direction is physically represented by architectural elements in buildings of worship. This centre reinforces man's existence as a creation.

vii. Symbols

Sacred archetypes are present in all forms of sacred architecture and even though they may not have a religious significance, they have a religious connotation. In Islamic architecture, it is the moon and the star symbol that has no religious background, yet is universally accepted as a symbol of Islam, similarly, the colour green is used as a symbol of Islam. These symbols affect the perception of people and become alluring on a spiritual level.

With these elements and descriptions of timeless sacred Islamic architecture, one is able to recognize the complex interrelationship between the spirit, earth and universe. The Ladysmith Soofie mosque has a good theoretical background in terms of these elements; it is portrayed as a sacred Islamic identity of the community, based heavily on its historical context. This has placed further emphasis on the historical context of timeless sacred architecture which attracts a multiplicity of people.

Furthermore, Umhlanga Islamic Society helped to understand the people for which the architecture is intended and what is important to them from a practical point of view. It has been established that a sacred Islamic place of worship should:

i. be easily accessible
ii. be available always
iii. have sufficient parking and prayer facilities
iv. have separate male and female entrances and facilities
v. be easily identified in the urban framework
vi. have a good circulation system

Umhlanga Islamic society does not, however, express the timeless elements of Islamic architecture well enough; it has lost its ability to be timeless.

CHAPTER 6:

CONCLUSION AND RECOMMENDATIONS

In conclusion, the sacred identity of man, independent of time, is based purely on spiritual or religious belief. Such beliefs have been identified and categorized as abstract qualities of sacred architecture. These are the qualities of 'ultimate human value', where conflicting beliefs based on religion do not affect the 'collective human experience'. Humanity's need for expression and identity has led to the formation of physical methods and forms to portray beliefs or spirituality. As a result, the analysis of the expression of belief in physical methods and forms has led to a timeless design philosophy, based on history and the identity of people; it involves the relationship between earth, spirit and universe, all of which are infinite in nature. This is what defines timelessness in sacred architecture.

When applied to sacred Islamic architecture, the philosophy reveals a complexity of elements relating to timeless design. These include the Islamic garden, patterns, water, vertical elements, texture, orientation and symbols. Not only do these elements portray a sacred identity, they also portray the abstract expression of 'ultimate human value', which all of humanity can relate to; this is the essence of timelessness. As an expression of 'ultimate human value', sacred Islamic identity in architecture can be used to express abstract qualities of spirituality, affecting the 'collective human experience'. This creates a sense of community among people of different religion and ethnicity. By stimulating the spiritual identity of people that all can relate to from their spiritual centre, architecture can be used to encourage the acceptance, appreciation and celebration of human diversity.

An Islamic Centre for Durban is the proposed facility that will represent the belief of a particular community, religion and ethnicity apart. The centre will support the belief of communal integration; it will be open to all. The abstract aspects of sacred architecture will form the foundation of the building, a spiritual backdrop serving as a foil to the building in the foreground. This research has postulated an Islamic centre for Durban with the aim of unity in multiplicity, leading to the development of a design brief.

The broad scope of this research has left many opportunities for future research; the eastern and western influence on timeless architecture was mentioned briefly in sub-section 2.2.3. A detailed analysis that clearly states the association between either eastern or western influences on sacred architecture can be the subject of future research. Elements of timeless design were established using history and identity. Other aspects that influence sacred Islamic architecture are culture and tradition, which can also be analysed. The philosophy of timeless design, which comprises this study, can be used to determine the sacred and timeless elements of other types of sacred architecture. Future research should be conducted on finding the links and complex interrelationships among the three timeless design qualities established in this research.

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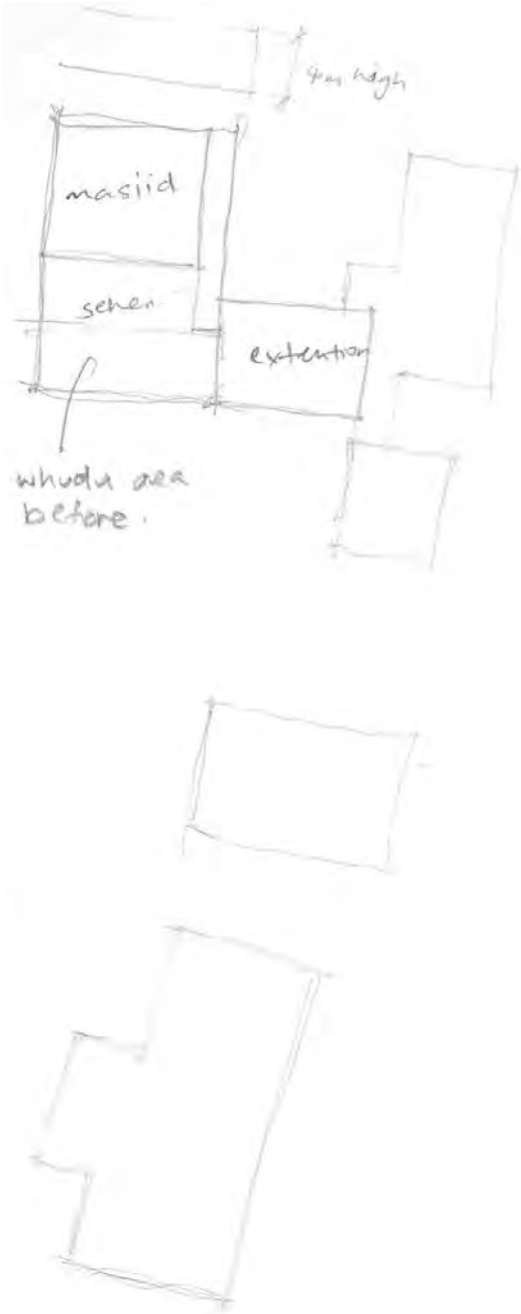
APPENDIX I: OBSERVATION STUDY

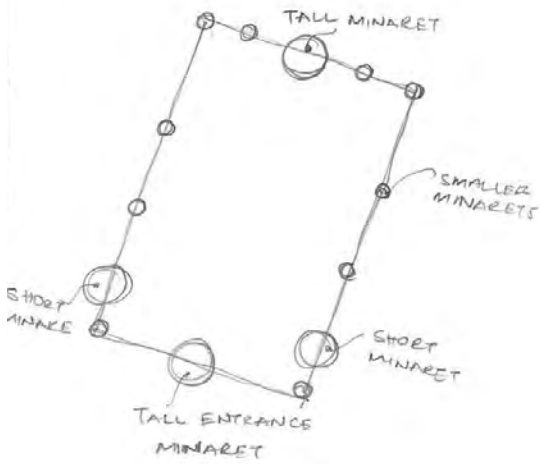
LADYSMITH SOOFIE MOSQUE

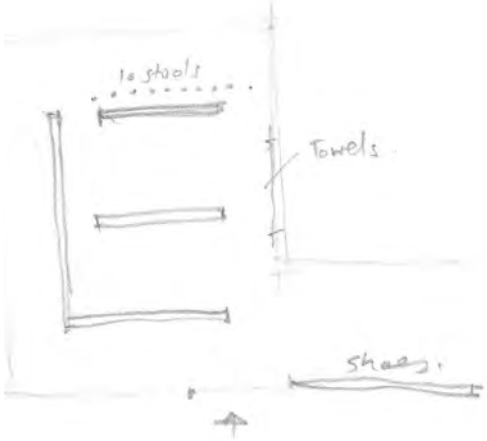
OBSERVATIONS



COMMENTS

- Rails for curtains for i'tikaaf
- Lots of clocks around
- ornaments





madressa girls + boys afternoon classes

social + cultural office

field for mad children + public

fren

minister secondary school

sporting facilities

masjid

Islamic educational centre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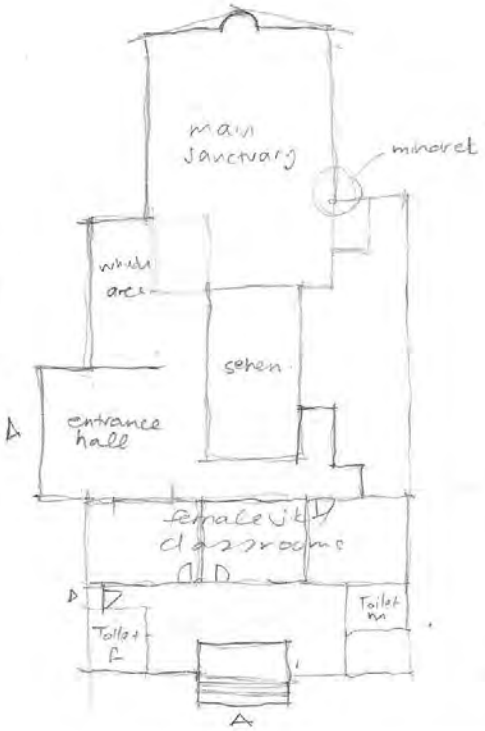
UMHLANGA ISLAMIC SOCIETY

OBSERVATIONS

mosque is on an incline

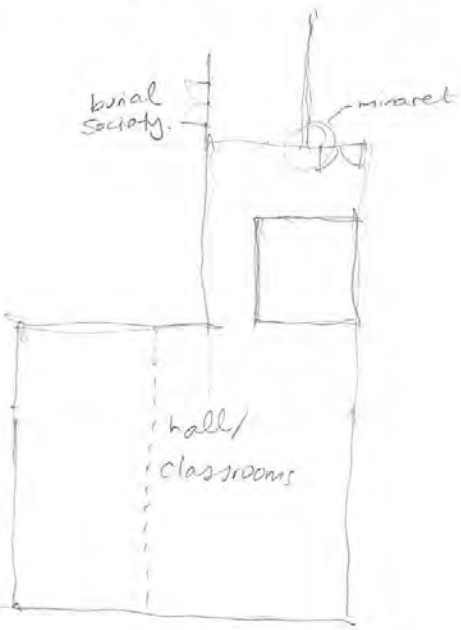
lots of level changes

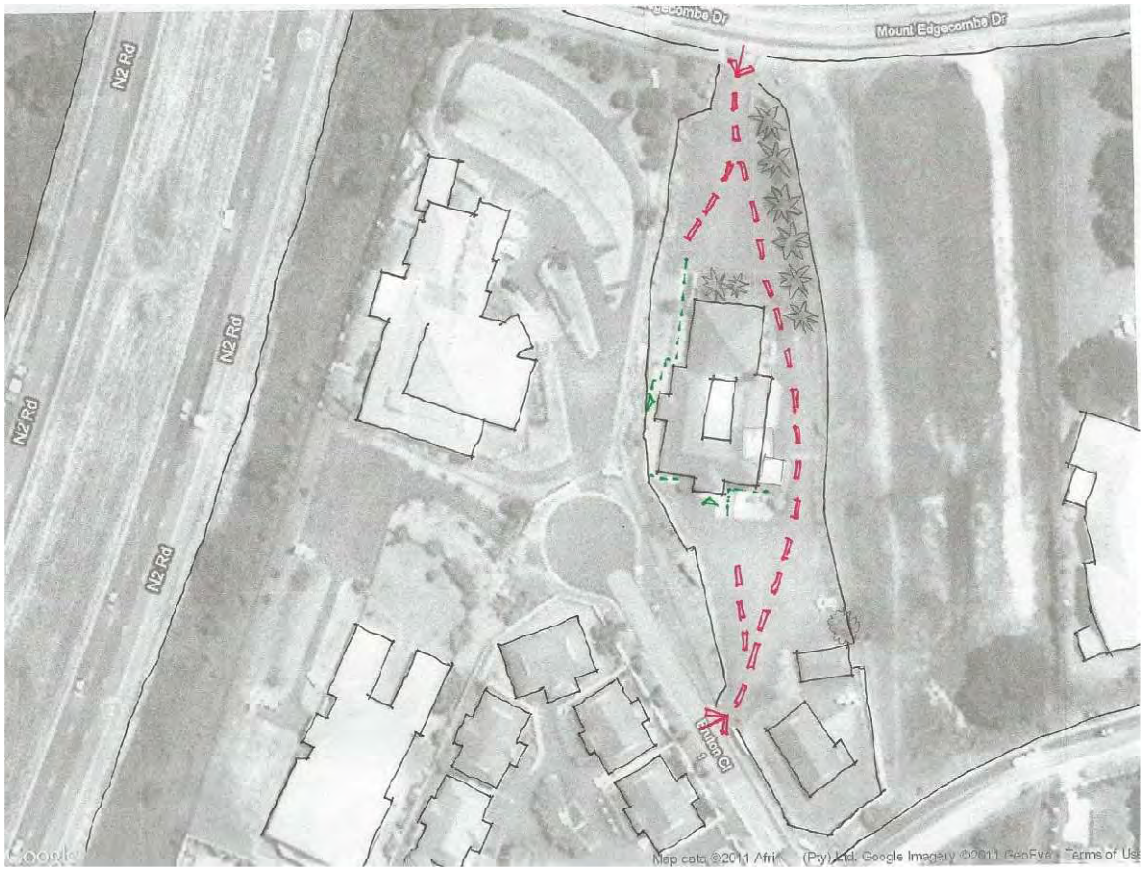


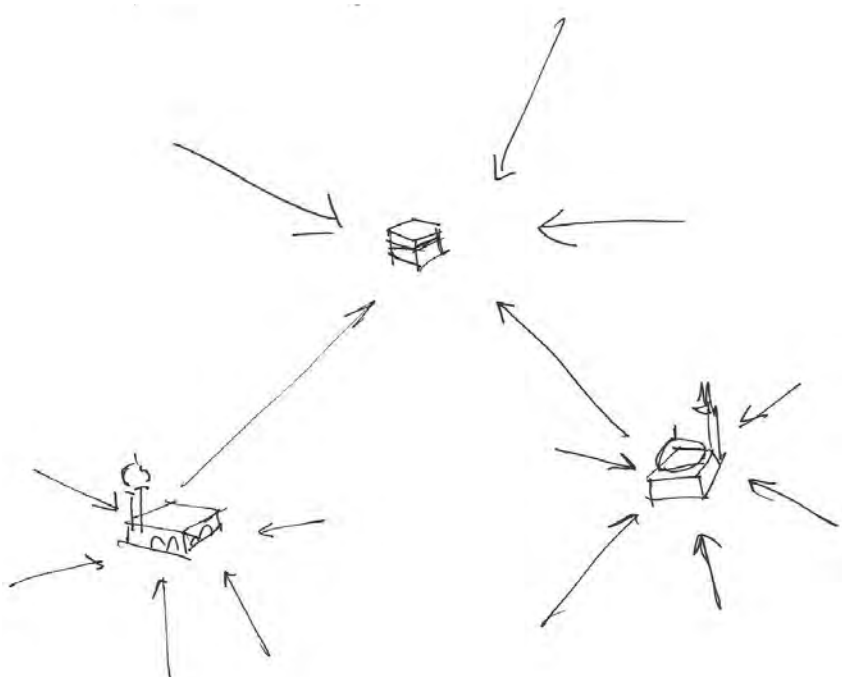
entrances were exagerated
functions were flexible

COMMENTS

- Religious Institute area
- Attracts people from offices due to its proximity to the umhlanga commercial precinct
- Jungle gym used by kids after madressah classes
- Juzdans (school bags) are kept on wall (a space should be provded for them while kids wait to be fetched)
- Kids play soccer and other games while waiting for their teachers to arrive
- People stop by from time to time to perform their prayer




Mount Edgecombe Dr
N2 Rd
N2 Rd
N2 Rd
N2 Rd
Map data ©2011 AfriGIS (Pty) Ltd, Google Imagery ©2011 GeoEye - Terms of Use

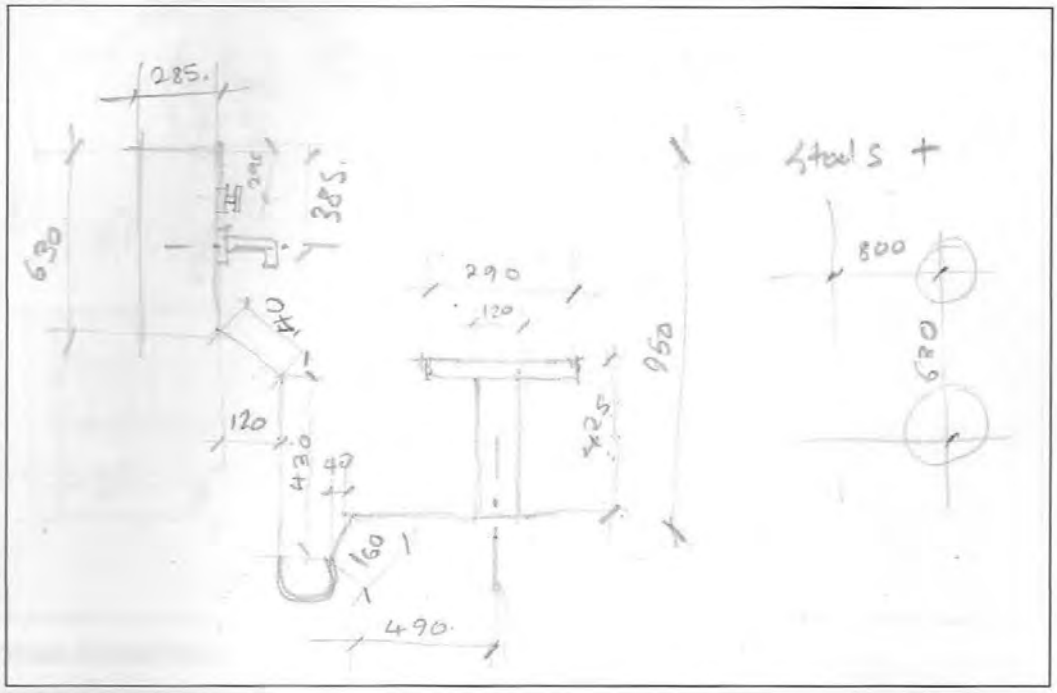


APPENDIX II : MEASUREMENTS, GEOMETRY AND PROPORTION

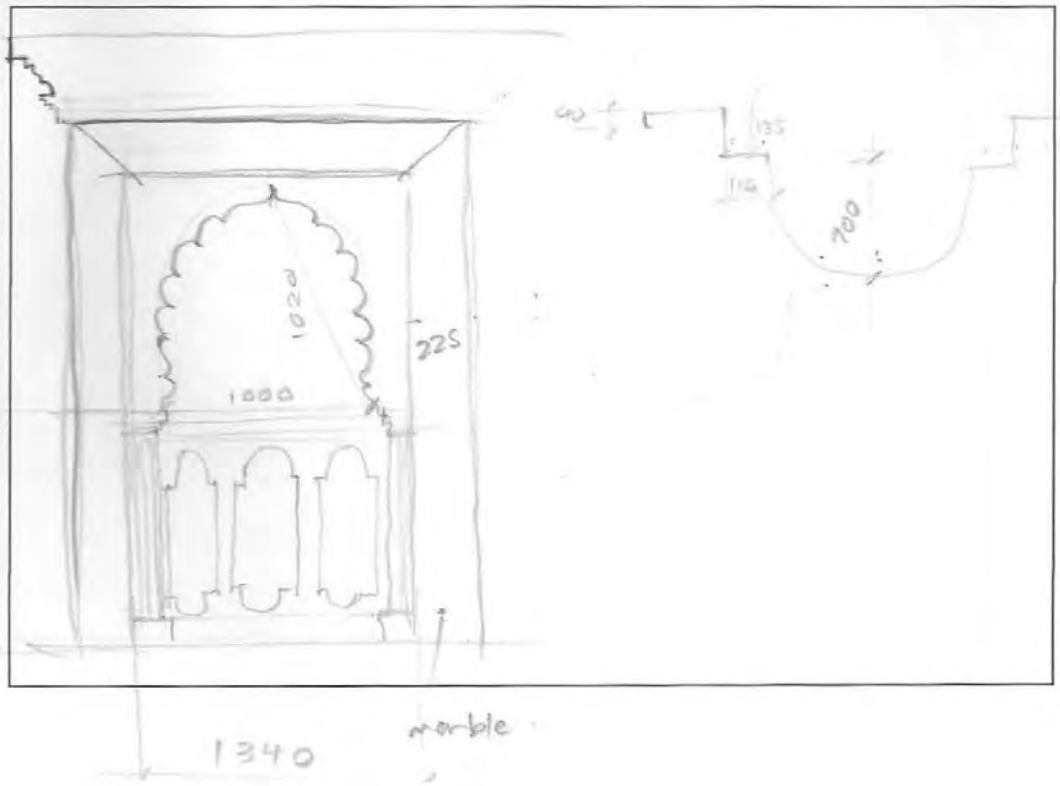
LADYSMITH SOOFIE MOSQUE

MEASREMENTS / GEOMETRY / PROPORTION

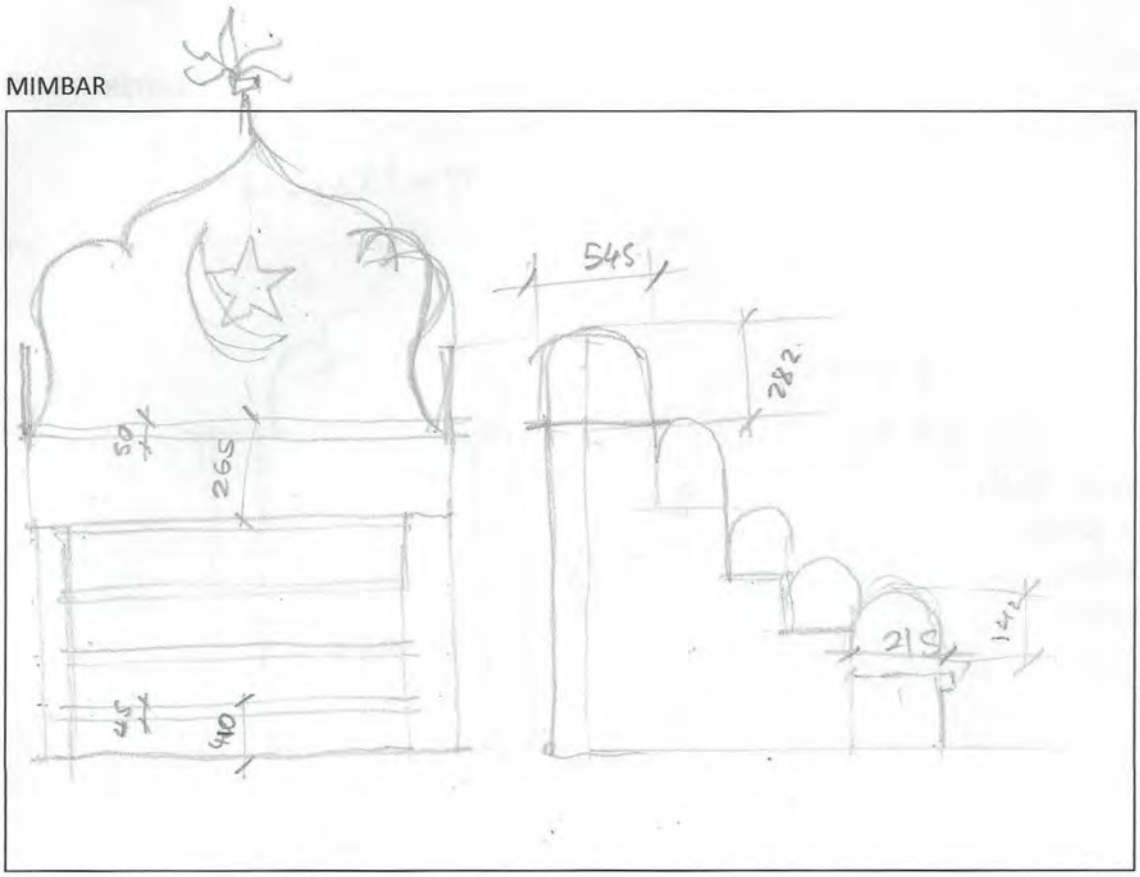
WHUDU AREA



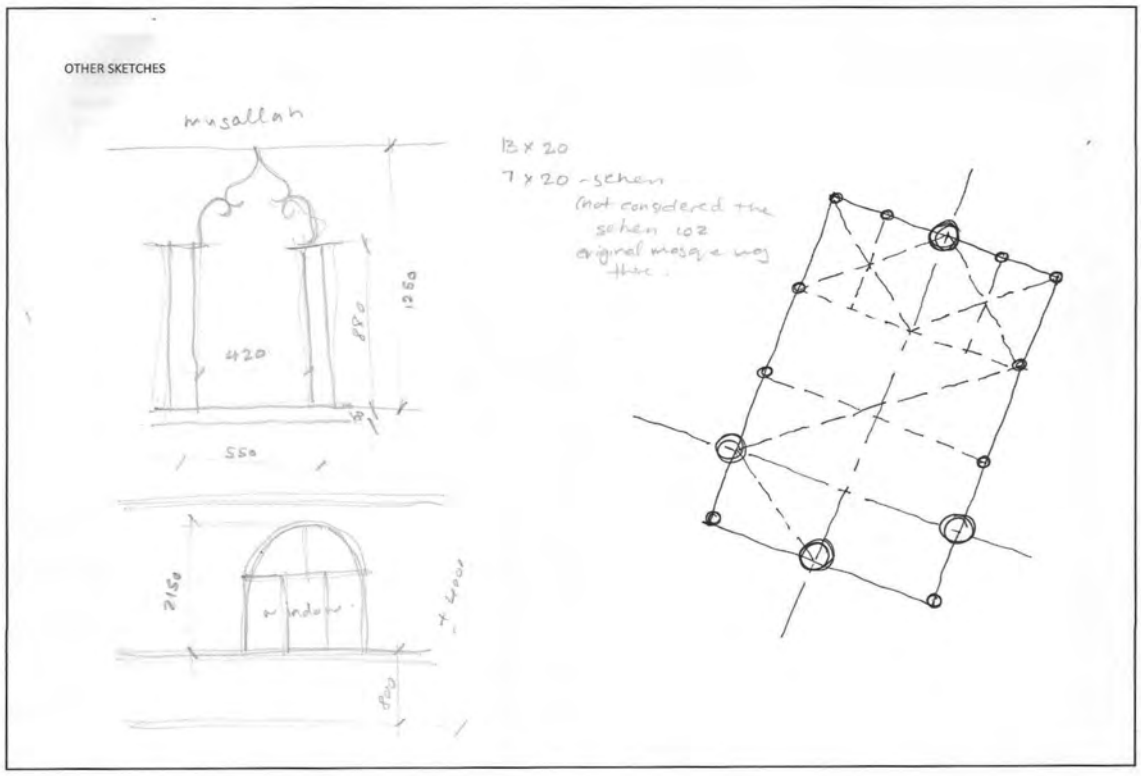
MIHRAB



MIMBAR



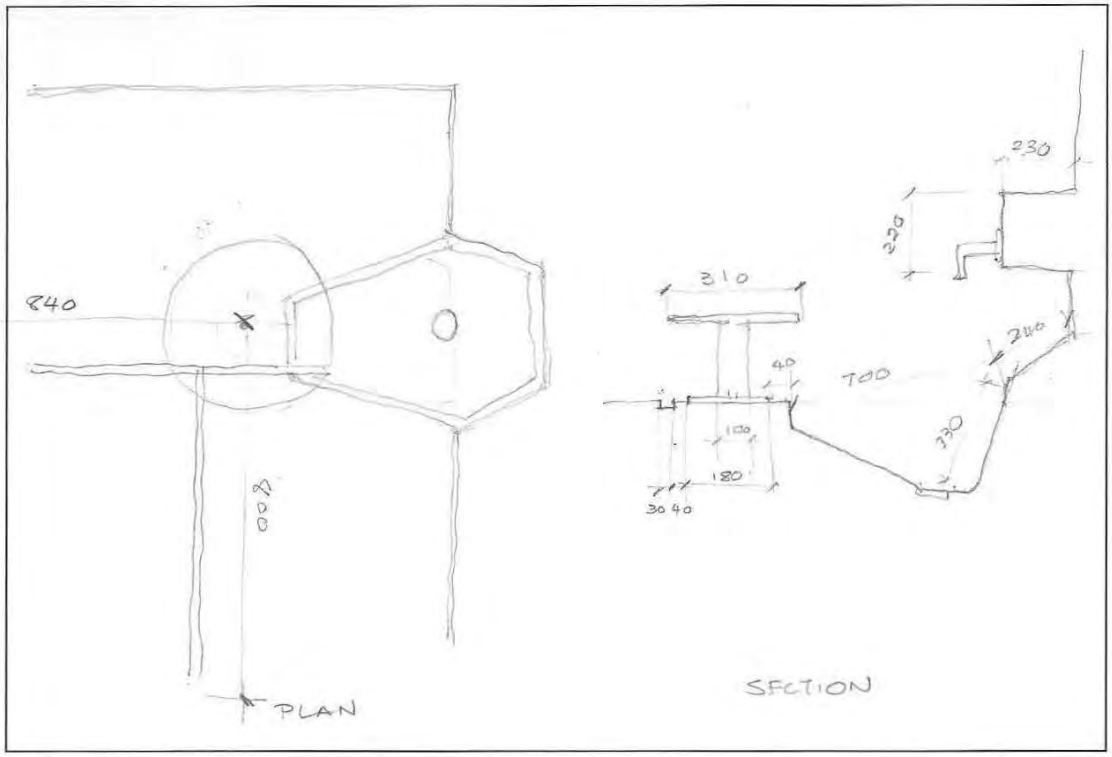
OTHER DECORATIONS



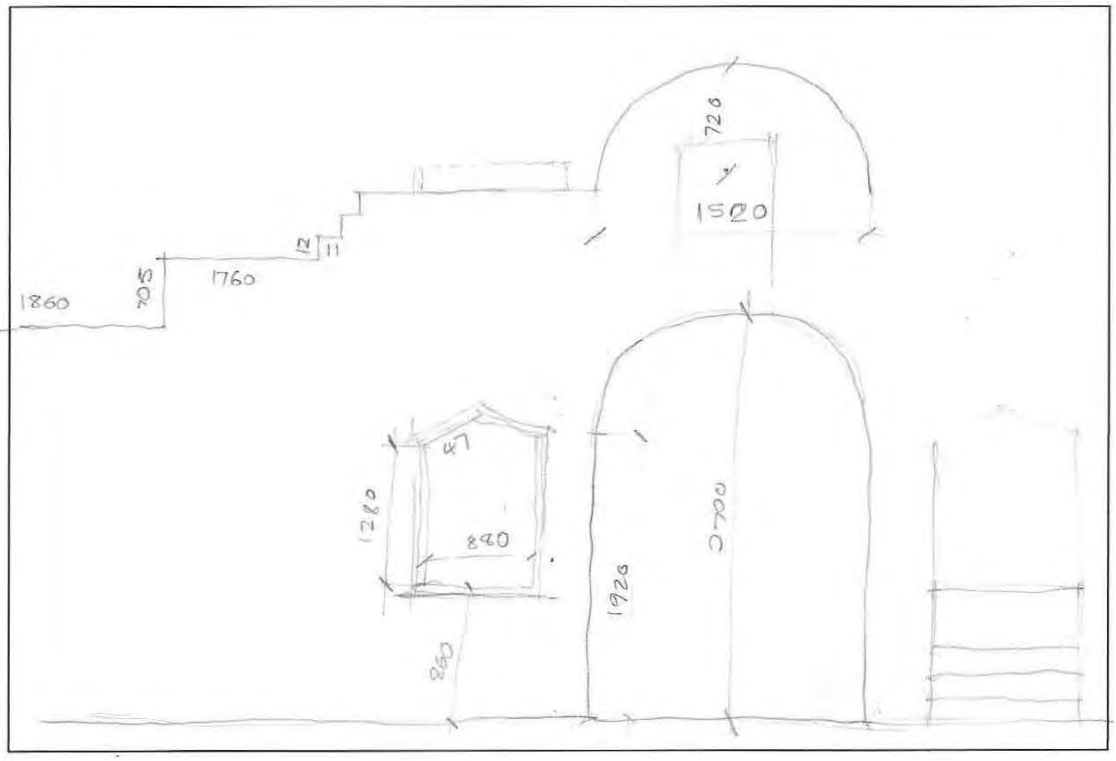
UMHLANGA ISLAMIC SOCIETY

MEASREMENTS / GEOMETRY / PROPORTION

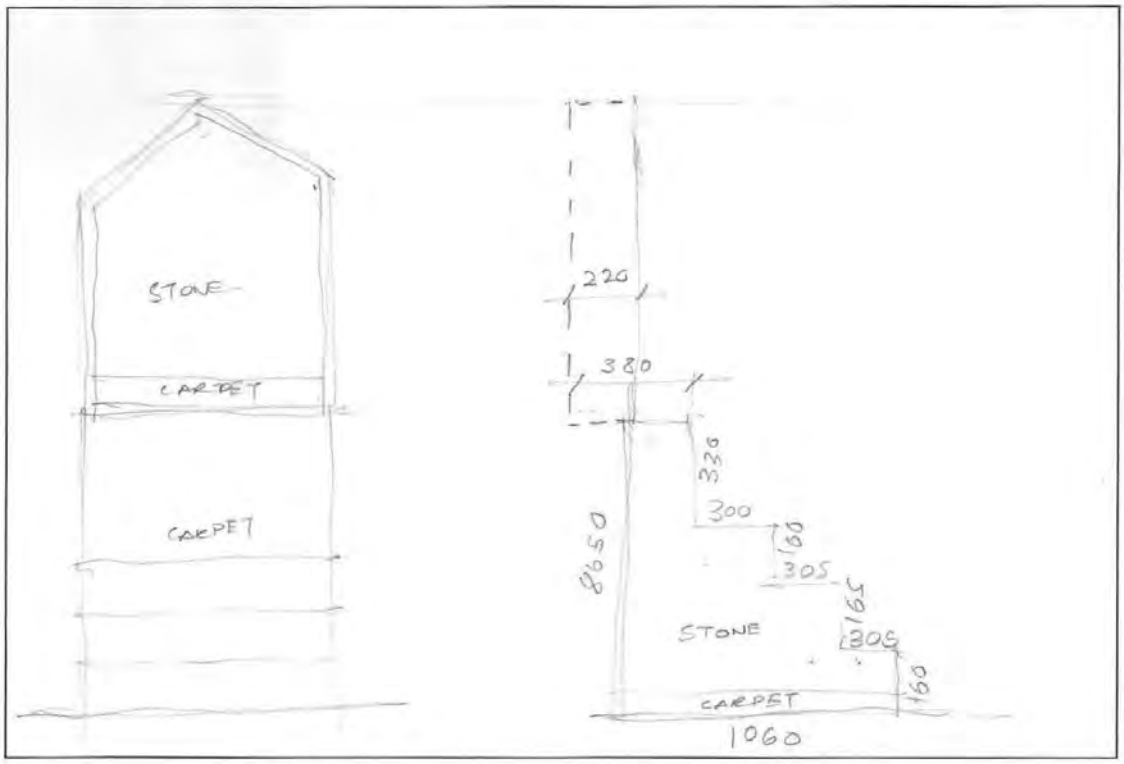
WHUDU AREA



MIHRAB

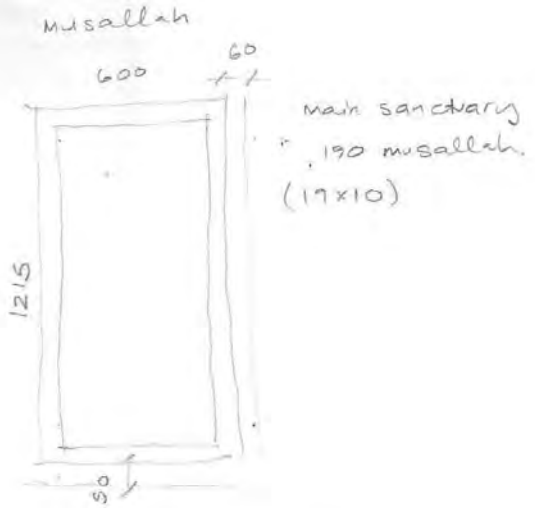


MIMBAR



OTHER DECORATIONS

OTHER SKETCHES



APPENDIX III : INTERVIEW

University of Kwa-Zulu Natal

Faculty of Humanities, Development and Social Sciences

School of Architecture, Planning and Housing

Research Supervisor: Dr. Mohammad Shariff Zami

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zami@ukzn.ac.za

Research Student: Rozana Mullah

Project Title: An Interpretation of timelessness in sacred architecture: An Islamic centre for Durban

INTERVIEW

Age:_____ _____Male/Female:_____ _____

Occupation: _____ _____

1. Is it fairly easy to locate this building and make YOUR way toward it? Why?

   _____
   _____
   _____
   _____
   _____

2. Is it easy to find YOUR way around it? Why?

   _____
   _____
   _____
   _____

3. Do YOU think this is the appropriate site for this building? Why? (consider what's around it)

   _____
   _____
   _____
   _____
   _____

4. What is the main attraction of this building? (Give approximate statistics-weekend, weekday)

   _____
   _____
   _____
   _____

5. What other functions does it provide for the community? (during the week and weekends) Do you think it is doing enough for the Muslim community? If yes, how so? If not, how so?

6. Is this an effective building? (Visually, functionally?)

7. What makes this building meaningful/symbolic to YOU? (It could be a past experience, a ritual experience, the function of the building, the design of the building or anything else? Choose something specific.)

8. How does the use of nature influence YOUR experience of the space? (This could be the use of plants, trees, flowers, vegetation, water, natural stone, natural light all in the form of gardens, ponds, fountains, courtyards etc.)

9. What is Islamic architecture to YOU? How does this building fit that description?

10. Is there anything specific that stands out about this building in YOUR mind? What is it?

11. Does the building, as a religious building, achieve a spiritual connection between YOU and God? If yes, how? If not, why not?

12. (If new building) If you had to step into a historic mosque (take Grey street mosque as an example), how would the experience of that differ to the experience of this mosque?

13. (If old building) If you had to step into a modern mosque (take Hilaal mosque as an example), how would the experience of that differ to the experience of this mosque?

14. What is you view of timeless architecture? Would you say that this building is timeless?

15. Do you know who the architect of the building was? Do you have his information?

Additional questions to someone of authority/architect

16. Were you involved in the setting of the building? Is there any specific way of choosing a site for the mosque? How was the layout determined? (Was it determined by orientation, Qiblah, functions?)

17. Were there any SPECIAL requirements for this building? (anything specific that the client wanted or the architect suggested)

18. What are the primary functions of the building and how do they fit into the planning of the building?

INTERVIEW 1 (Ladysmith Soofie Mosque)

Age:_____late twenties_____	Male/Female:_____male_____
Occupation: _____muezzin of the mosque_____	

1. Is it fairly easy to locate this building and make YOUR way *toward* it?

   Due to the structure of the town, it is easier to locate the mosque from across the river, so most visitors park across the river and take the bridge to the mosque instead of using the main entrance through the gardens on the other side which is a bit difficult to get to. The minarets however help as location markers and people usually just drive toward them.

2. Is it easy to find YOUR way *around* it? Why?

   Fairly easy

3. Do YOU think this is the appropriate site for this building? Why? (consider what's around it)
   Yes. It's close to a residential area. The river next to it however, used to flood a lot before and be quite problematic. Now the water is being controlled.

4. What is the main attraction of this building? (Give approximate statistics-weekend, weekday)
   The masjid. For the morning prayer, there are approx. 30 worshippers and from the noon prayer to the night prayer plus-minus 60 worshippers each prayer. The Friday prayer attracts the largest crowd, when the entire masjid is full.

5. What other functions does it provide for the community? (during the week and weekends) Do you think it is doing enough for the Muslim community? If yes, how so? If not, how so?

   Afternoon madressa classes, a small community hall for functions and a sports field. Future development involves computer literacy classes as well as sewing classes for the upliftment of ex-madressah students (Those that are at home, with nothing else to do)

6. Is this an effective building? (Visually, functionally?)
   Yes. The masjid looks good and the functions work effectively in terms of placement.

7. What makes this building meaningful/symbolic to YOU? (It could be a past experience, a ritual experience, the function of the building, the design of the building or anything else? Choose something specific.)
   The way people are attracted to the masjid-the spiritual ambience of the place.

8. How does the use of nature influence YOUR experience of the space? (This could be the use of plants, trees, flowers, vegetation, water, natural stone, natural light all in the form of gardens, ponds, fountains, courtyards etc.)
   Makes the site look more natural.

9. What is Islamic architecture to YOU? How does this building fit that description?
   (interviewee did not have an idea)

10. Is there anything specific that stands out about this building in YOUR mind? What is it?
    The design is unique, more specifically; the minarets.

11. Does the building, as a religious building, achieve a spiritual connection between YOU and God? If yes, how? If not, why not?
    (interviewee did not have an idea)

12. If you had to step into a modern mosque (take Hilaal mosque as an example), how would the experience of that differ to the experience of this mosque?
    Modern masjids do not have that 'humbling factor' that this mosque has. The interiors of modern masjids are too flashy and try hard to impress. The simpler the better.

13. What is your view of timeless architecture? Would you say that this building is timeless?
    (interviewee did not have an idea)

14. Do you know who the architect of the building was? Do you have his information?
    No.

INTERVIEW 2 (Umhlanga Islamic Society)

Age:_____thirties_____	Male/Female:_____male_____
Occupation: ___Moulana of the mosque_____	Date: ____01/03/2011_____

1. Is it fairly easy to locate this building and make YOUR way *toward* it?

   Yes. You'll find directions on the website as well.

2. Is it easy to find YOUR way *around* it? Why?

   Yes extremely, all entrances for the variuos functions are from the outside, which you can drive around as well.

3. Do YOU think this is the appropriate site for this building? Why? (consider what's around it)

   Yes. It's in close proximity to Gateway shopping mall and other offices. Other worship sites are around the area as well, making it an ideal site.

4. What is the main attraction of this building? (Give approximate statistics-weekend, weekday)

   There isn't anything specific. People are attracted to the building as a place of worship.

   The afternoon madressah attracts 90 students from the area.

   The pre-school attracts 50 students

   The masjid attracts aprox. 250 worshippers a day: Fajr - ±30, Zohr - ±55, Asr - ±15, Maghrib - ±30 and Esha - ±50. Jumah Prayer - ±800 when the downstairs and the madressah classrooms are used as well.

5. What other functions does it provide for the community? (during the week and weekends) Do you think it is doing enough for the Muslim community? If yes, how so? If not, how so?

   Afternoon madressah classes, a pre-school, a burial society and religious programmes for the adults.

6. Is this an effective building? (Visually, functionally?)

   Yes. It serves as an institute where people benefit and gain proximity to God.

7. What is Islamic architecture to YOU? How does this building fit that description?

   Yes it has a minaret.

8. Is there anything specific that stands out about this building in YOUR mind? What is it?

   The ambiance of the musallah

9. Do you know who the architect of the building was? Do you have his information?

   Mr. Ghani from Tongaat. No.

Additional questions to someone of authority/architect

10. Were you involved in the setting of the building? Is there any specific way of choosing a site for the mosque? How was the layout determined? (Was it determined by orientation, Qiblah, functions?)

    No.Qiblah is always important.

11. Were there any SPECIAL requirements for this building? (anything specific that the client wanted or the architect suggested)

    The separate entrances and the minaret.

12. What are the primary functions of the building and how do they fit into the planning of the building?

    N/A

INTERVIEW 3 (Umhlanga Islamic Society)

Age: 23	Male/Female: male
Occupation: Student	Date: 01/03/2011

19. Is it fairly easy to locate this building and make YOUR way *toward* it?

    Yes.

20. Is it easy to find YOUR way *around* it? Why?

    Yes. It's in the middle of a big paved plot of land.

21. Do YOU think this is the appropriate site for this building? Why? (consider what's around it)
    I do. It happens to be close to gateway, close to a fairly large industrial park and also somehow in a residential area all at the same time. The only slight problem is parking at Juma time. But every mosque has that problem.

22. What is the main attraction of this building? (Give approximate statistics-weekend, weekday)
    It's a mosque. People want to pray. It happens to be in an area where there are no other mosques and a fairly large and new muslim community. It's easy to get to. If it's convenient to use, people will use it.

23. What other functions does it provide for the community? (during the week and weekends) Do you think it is doing enough for the Muslim community? If yes, how so? If not, how so?

    It provides a madressah, pre-school and small community hall for functions. They are also planning a small library. I think they are doing a good amount, but it could be improved. But that would mean a big extension to the place. I think the main focus for places like this should be to invite people to learn more about their religion. It accomplishes this with children, but I do not know what programs they hold for adults.

24. Is this an effective building? (Visually, functionally?)
    Yes. It's easily identified as a mosque and the layout is not cumbersome. They could have provided more entrance space, space for shoes etc. Once you are inside it works and is attractive.

25. What makes this building meaningful/symbolic to YOU? (It could be a past experience, a ritual experience, the function of the building, the design of the building or anything else? Choose something specific.)
    The fact that it is so well used for prayer. I did not expect so many people to use the facilities.

26. How does the use of nature influence YOUR experience of the space? (This could be the use of plants, trees, flowers, vegetation, water, natural stone, natural light all in the form of gardens, ponds, fountains, courtyards etc.)
    The big tarred area is a bit jarring, but inside the mosque is appealing enough. There are no plants inside, but one can see them outside through the windows and that helps to soften the feel of the place. Outside, even though the tarred area is big, the place is flanked on one side by a wall with those grey bricks that are able to support plants growing in them; on the other side is a big grassy area. Together they take away the harshness of the bricks and tar. A water feature would have completed the look I think.

27. What is Islamic architecture to YOU? How does this building fit that description?

When I think Islamic architecture, I think patterns and buildings with arches and out of the ordinary designs. The building does not fit my description of Islamic architecture (the campus jk does), but it does resemble and assimilate with many other mosques in this country.

28. Is there anything specific that stands out about this building in YOUR mind? What is it?
    No not really.

29. Does the building, as a religious building, achieve a spiritual connection between YOU and God? If yes, how? If not, why not?
    Yes. Inside, the musjid is very much like any other musjid that I am used to, and every time I am inside, it helps put me into spiritual mode.

30. If you had to step into a historic mosque (take Grey street mosque as an example), how would the experience of that differ to the experience of this mosque?
    Grey Street mosque is far bigger in size, so immediately you experience a sense of awe. It is also in a more run down condition (especially the carpets). But knowing that it has great historical significance makes a difference to the experience.

31. What is your view of timeless architecture? Would you say that this building is timeless?
    Timeless architecture to me is architecture that does not age, buildings that in 50 years time will still be looked at and appreciated and no one will feel the need to demolish due to them not fitting in with their surroundings. I think this building is not timeless, but it will last a long time.

32. Do you know who the architect of the building was? Do you have his information?

    Some guy from Tongaat. No.

APPENDIX IV : QUESTIONNAIRE

University of Kwa-Zulu Natal

Faculty of Humanities, Development and Social Sciences

School of Architecture, Planning and Housing

Research Supervisor: Dr. Mohammad Shariff Zami
031 260 1415
zami@ukzn.ac.za

Research Student: Rozana Mullah

Project Title: An Interpretation of timelessness in sacred architecture: An Islamic centre for Durban

QUESTIONNAIRE

Age: _____Male/Female:_____

Occupation: _____

Please answer the following questions as briefly and precisely as possible:

1. Do you know of any functional Islamic centres in South Africa?
2. What makes them successful or unsuccessful?
3. Do you think there is a need for an efficient Islamic integrative centre in Durban?
4. What type of facilities do you think would be relevant for such a centre?
5. Do you have any hobbies? If yes, what are they, and how often do you practise them?
6. Would you find it useful if your hobbies could be practised at the community centre?
7. Would you find it easy to practise your interests with people of different ages?
8. Is prayer/worship an important part of your life?
9. What does prayer mean to you?
10. What does God mean to you?
11. Do you visit the communal masjid often? If no, why not?
12. Which is the most striking architectural feature of any mosque?
13. Do you think traditional architectural elements of a mosque are important in the design of mosques today? (Elements such as minarets, domes and water fountains)
14. What makes religious buildings sacred in your mind?

QUESTIONNAIRE 1

Age: _____50_____Male/Female:_____Female_____

Occupation: __Home Executive_____

Please answer the following questions as briefly and precisely as possible:

1. Do you know of any functional Islamic centres in South Africa?

   No

2. What makes them successful or unsuccessful?

   N/A

3. Do you think there is a need for an efficient Islamic integrative centre in Durban?

   YES

4. What type of facilities do you think would be relevant for such a centre?

   Sporting facilities, library, community hall, conference hall/rooms, Specific eg. Kitchen for cooking lessons etc.

5. Do you have any hobbies? If yes, what are they, and how often do you practise them?

   Reading, would have pursued others if offered in the community/area I live in

6. Would you find it useful if your hobbies could be practised at the community centre?

   YES

7. Would you find it easy to practise your interests with people of different ages?

   Yes, but similar cultural background

8. Is prayer/worship an important part of your life?

   Yes

9. What does prayer mean to you?

   Connecting with God – time alone to reflect

10. What does God mean to you?

    Creator and sustainers of man and universe

11. Do you visit the communal masjid often? If no, why not?

    No – Pray at home –recommended for females

12. Which is the most striking architectural feature of any mosque?

    Minarets and water fountains

13. Do you think traditional architectural elements of a mosque are important in the design of mosques today? (Elements such as minarets, domes and water fountains)

    Yes

14. What makes religious buildings sacred in your mind?

    Place of worship and a place to learn/ enhance your spiritual side – also meaning place of people for of same religion.

QUESTIONNAIRE 2

Age: _____22_____Male/Female:_____Female_____

Occupation: __Master's Student_____

Please answer the following questions as briefly and precisely as possible:

1. Do you know of any functional Islamic centres in South Africa?

   No

2. What makes them successful or unsuccessful?

   -

3. Do you think there is a need for an efficient Islamic integrative centre in Durban?

   YES

4. What type of facilities do you think would be relevant for such a centre?

   Madressa, Prayer facilities

5. Do you have any hobbies? If yes, what are they, and how often do you practise them?

   Yes

   Zumba –Daily activity

6. Would you find it useful if your hobbies could be practised at the community centre?

   YES

7. Would you find it easy to practise your interests with people of different ages?

   Yes

8. Is prayer/worship an important part of your life?

   Yes

9. What does prayer mean to you?

   Centering yourself, acknowledging the higher being

10. What does God mean to you?

    Everything- Life is centred on God

11. Do you visit the communal masjid often? If no, why not?

    No, Not many allocations for ladies

12. Which is the most striking architectural feature of any mosque?

    Dome, arched windows, minarets, calligraphy

13. Do you think traditional architectural elements of a mosque are important in the design of mosques today? (Elements such as minarets, domes and water fountains)

    Yes

14. What makes religious buildings sacred in your mind?

    The attachment to religion, its signs and symbols

QUESTIONNAIRE 3

Age:_____16_____	Male/Female:_____Female_____
Occupation: __Scholar_____	

Please answer the following questions as briefly and precisely as possible:

1. Do you know of any functional Islamic centres in South Africa?

   Yes

2. What makes them successful or unsuccessful?

   Well known as it is well-used, provides useful facilities, available to the public for use

3. Do you think there is a need for an efficient Islamic integrative centre in Durban?

   YES

4. What type of facilities do you think would be relevant for such a centre?

   Private and large rooms for Islamic classes or gatherings, area for both men and women to pray, room with Islamic teachings and guidance (books), Community area that is always open to Muslims for access.

5. Do you have any hobbies? If yes, what are they, and how often do you practise them?

   No

6. Would you find it useful if your hobbies could be practised at the community centre?

   YES

7. Would you find it easy to practise your interests with people of different ages?

   Yes- would be nice to interact with Muslims of different ages

8. Is prayer/worship an important part of your life?

   Yes

9. What does prayer mean to you?

   Thanking God for all that he has done for you and asking him for guidance in our daily lives

10. What does God mean to you?

    The figure I can rely onto help me in times of need and guide me, thus I should pray and thank him as he has provided me with so much in life.

11. Do you visit the communal masjid often? If no, why not?

    No – not appropriate for woman and not many masjids allow women to visit and pray

12. Which is the most striking architectural feature of any mosque?

    Minarets

13. Do you think traditional architectural elements of a mosque are important in the design of mosques today? (Elements such as minarets, domes and water fountains)

    Yes- they had great aesthetic beauty and it will feel as if tradition is continuing

14. What makes religious buildings sacred in your mind?

A place where all people can gather and feel united when praying to or partaking in activities remembers and appreciates God. Everyone should always feel welcome and it is a place, which everyone acknowledges.

QUESTIONNAIRE 4

Age: _____52_____Male/Female:_____Male_____
Occupation: __Chartered Accountant_____

Please answer the following questions as briefly and precisely as possible:

1. Do you know of any functional Islamic centres in South Africa?

   No

2. What makes them successful or unsuccessful?

   N/A

3. Do you think there is a need for an efficient Islamic integrative centre in Durban?

   YES

4. What type of facilities do you think would be relevant for such a centre?

   Mosque, Madressa, Lecture rooms, Media and Research Room, Sports centre, Hall, Sports fields, canteen and dining facilities, Residential quarters, medical facilities.

5. Do you have any hobbies? If yes, what are they, and how often do you practise them?

   Reading –Daily

   D.I.Y. - Monthly

6. Would you find it useful if your hobbies could be practised at the community centre?

   YES

7. Would you find it easy to practise your interests with people of different ages?

   Yes

8. Is prayer/worship an important part of your life?

   Yes

9. What does prayer mean to you?

   The ability to communicate with God in solitude

10. What does God mean to you?

    An all powerful and all embracing superior power who provides for me consantly.

11. Do you visit the communal masjid often? If no, why not?

    Yes

12. Which is the most striking architectural feature of any mosque?

    Minarets, Domes, Arches, Prayer mats, Water fountains, mouldings, lightings.

13. Do you think traditional architectural elements of a mosque are important in the design of mosques today? (Elements such as minarets, domes and water fountains)

    Yes

14. What makes religious buildings sacred in your mind?

    Their appearance

QUESTIONNAIRE 6

Age:_____21_____Male/Female:_____ ___F
Occupation: _____Nurse

Please answer the following questions as briefly and precisely as possible:

1. Do you know of any functional Islamic centres in South Africa?

   No. Maybe Sanzaf.

2. What makes them successful or unsuccessful?

   I don't know of any.

3. Do you think there is a need for an efficient Islamic integrative centre in Durban?

   No. But I think there is a need for an Islamic Centre in Durban.

4. What type of facilities do you think would be relevant for such a centre?

   Library.Workshops.Skill building.Gym (especially ladies).Debate/Forum type facility.Musjid.Community hall.Classrooms.

5. Do you have any hobbies? If yes, what are they, and how often do you practise them?

   Bonsai (daily).Internet (hourly).Reading (daily).Training (bi-weekly). Diving (tbd).

6. Would you find it useful if your hobbies could be practised at the community centre?

   Yes

7. Would you find it easy to practise your interests with people of different ages?

   Yes.

8. Is prayer/worship an important part of your life?

   Yes.

9. What does prayer mean to you?

   It means worship, a means of peace, feeding the soul, to me.

10. What does God mean to you?

    God is God.

11. Do you visit the communal masjid often? If no, why not?

    Depends on how you define often.

12. Which is the most striking architectural feature of any mosque?

    Minaret.Easily identified as a mosque and visible from afar.

13. Do you think traditional architectural elements of a mosque are important in the design of mosques today? (Elements such as minarets, domes and water fountains)

    Yes. Identifies them as mosques.

14. What makes religious buildings sacred in your mind?

    They are places of peace. Everyone is respectful in a religious building. They at least try to maintain an order of dignity and keep the nonsense for outside.

AN INTERPRETATION OF TIMELESSNESS IN SACRED ARCHITECTURE:

AN ISLAMIC CENTRE FOR DURBAN

Rozana Mullah

Design Report

School of Architecture, Planning and Housing,
University of KwaZulu-Natal,
Durban, South Africa

October, 2011

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PART TWO

DESIGN REPORT

CHAPTER 1:

INTRODUCTION

1.1. Introduction

Sacred Islamic architecture is a spiritual architecture initiated by religious belief (Özkan, 2004). It was later influenced by a diversity of different aspects such as culture, locality and climate. Foster (2004: 6) states that 'Islam succeeded in unifying the sacred and the secular'. Sacred geometries and pure mathematical proportions were used in sacred Islamic architecture to express its unity with the 'various orders of reality' (Foster, 2004).

Islamic architecture is one of the most well-known sacred architectural forms. Most of the architectural elements have a spiritual connotation, which awakens the soul. Cultural, traditional and secular influences are present; however, the bulk of this research deals with spirituality and not architectural evolution. Islamic architecture represents the Islamic culture, but it is a universally appealing architecture with an air of practicality. The religion of Islam and its influences are deconstructed to find the association of sacred architecture and timeless design.

1.2. Theoretical foundation

The principal theories that were dealt with in the primary research of this project are:

Spirit of Place

Genuis Loci

- Norberg-Schulz (1979)

City Image

- Kevin Lynch (1960)

Place Theory -Trancik (1943)

Designing with Nature

Transparent Logic and Abstraction

- Ando cited in Nesbitt (1996)

Negation and Reconciliation - Abraham cited in Nesbitt (1996)

Quality of Allurement

Self-identification

- Jones (2000)

Perception - Freedberg (1989)

Homecoming

- Van de Leeu (1976)

Symbolism

Sacred Archetypes

- Jung (1964)

A summary of this research findings have been based strongly on the above theories and have been graphically presented in the diagram below.

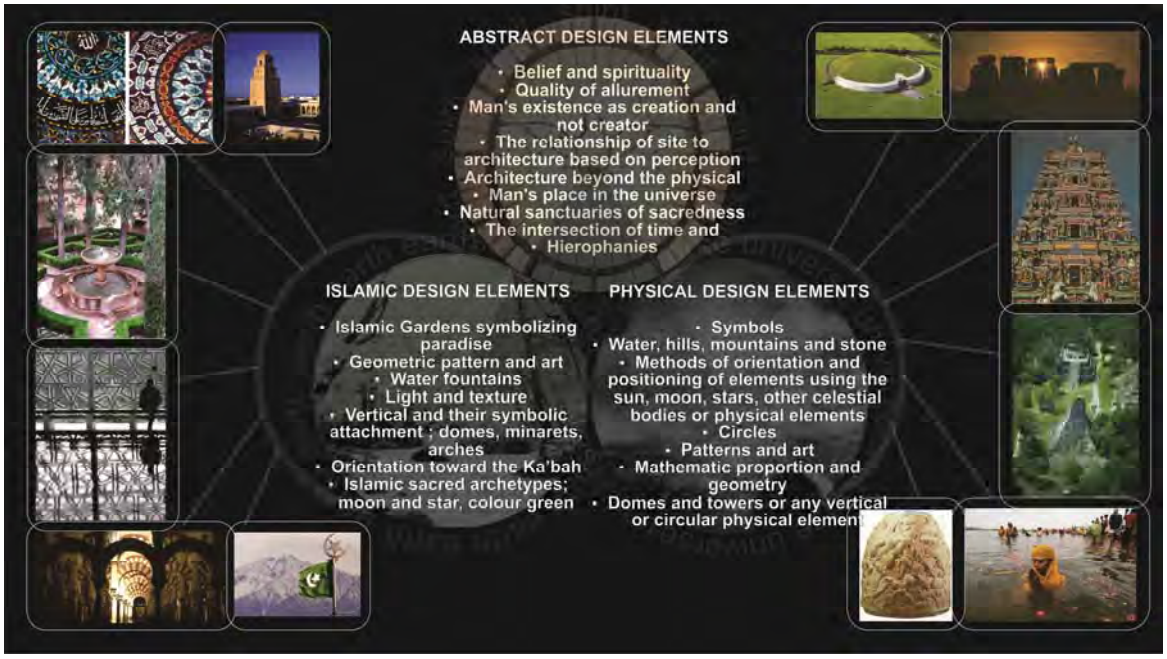


Figure 1, Summary of research findings (Author, 2011)

1.3. Project description

The Islamic Center for Durban is a Community Centre Project that aims to adopt timeless design principles of sacred Islamic architecture as well as Islamic design guidelines to establish a Center that becomes an exhibition of Islamic culture in Durban. It is a building that is open to both South African and International cultures, breaking social, religious and cultural boundaries using qualities of ‘ultimate human value'.

The Center will also be the new home of an Islamic organization that deals with numerous projects to uplift the Durban Muslim Community.

1.4. The Notional Client

The Al-Ansaar Foundation is a non-profit Islamic organization that was founded by a group of businessmen in Durban, South Africa in the year 1993 in an attempt to restore Islamic values and practices. The vision of the foundation is to:

"Promote Islamic education and guidance at all levels of the Islamic society in order to develop practicing Muslims who are fully equipped to meet the challenges facing modern society and the transformations taking place in the African continent." (Al-Ansar Foundation)

1.4.1. The Client's Requirements

The client requires an administrative building for the Al-Ansaar foundation, which is a community based foundation. The facility has to house the offices and facilitate the various projects and activities that the foundation administers including a community radio station, community newspaper and other various services that meet the need of the community and that are open to all.

Due to insufficient functional and spatial requirements of the existing Al'Ansaar foundation offices, the client is looking to expand their offices and facilities for themselves as well as for the community which it serves.

1.4.2. The Client's Organization

The Al-Ansaar foundation is a non-profit organization that requires a new building to accommodate their growing needs and various communal projects. Of which involves the participation of various cultures and promote communal integration. The current building does not have enough space for their staff and isn't aesthetically appealing. Projects administered by the foundation:

- eTazkiyya Centre of Learning
- Mariam Bee Sultan Nursery and Pre-School
- Al-Ansaar Media Division
- The Bursary Fund
- Ibn Masud School of Excellence
- The Al-Ansaar Outreach Programme
- Conferences and seminars
- Annual Souk - Trade Fair

1.4.3. Detailed Accommodation Schedule

The client's foundation has been in existence for almost 18 years. Over the years of its existence, it has established numerous successful foundations that are in need of proper administrative facilities. Apart from the functional requirements, the client also requires that the religious aspects of the building be dealt with appropriately. Overall, the facility requires three different spatial zonings: the public, the spiritual and the administrative.

The public facilities

The public facilities include spaces that uplift the human mind and body, and include spaces such a library, gym, conference centre and so forth. These spaces are primarily recreational facilities, major circulation routes and other facilities that are required by a community at large. Despite the amenities being principally for people of a specific faith, the public zones are accessible to all, be it through different entrances or specific time allocations for males and females.

The spiritual facilities

The spiritual zones comprise of spaces for people of the Muslim faith and include prayer zones, Islamic education zones and zones to carry out spiritual rituals such as the cleansing, meditation and so forth. These facilities will be designed in accordance to Islamic guidelines and access to these spaces will be thoroughly controlled.

- **The Jamaat Khana Requirements**

  - Requires private and separate male and female entrances
  - Entrances should allow spaces for display of communal affairs, such as a notice board, charity bins, educational information and community pamphlets.
  - A large enough shoe rack should be provided at entrances for shoes, both at male and female entrances
  - A drinking water fountain should be available at entrance or whudu area
  - Adequate toilet facilities should be provided for both male and female with a paraplegic facility each.
  - Spaces where shoes are allowed should be well differentiated with a different type of flooring (e.g. tiles) from spaces where shoes are not allowed (carpets).
  - Seating areas should be provided for **female**s who are not in a state of prayer (max 10)

-The **male** sanctuary should allow for 225 (0.660 x1.255 = 0.8sqm ea) safs for males [300 (0.5 x 1.255= 0.6sqm ea.) males max. at high density]

-The **female** sanctuary should allow for 125 (0.660 x1.255 = 0.8sqm ea) safs for females [166 (0.5 x 1.255= 0.6sqm ea.) females max. at high density]

-Requires a storage facility for prayer garbs

-Requires a small kitchenette

- Whudu facilities

-Ratio of ablution seats to number of people is 1:26.

- Total number of **male** ablutions: 11 units (0.6 sqm ea) plus 1 paraplegic unit (1 sqm)

- Total number of **female** ablutions: 9 units (0.6 sqm ea) plus 1 paraplegic unit (1 sqm)

-Toilet facilities

-Toilet facilities according to PART P of SABS 0400 where urinals are replaced with water closets due to religious reasons

- Total number of **male** toilet facilities: 2WC (0.9 x 1.8=1.62 sqm ea. min) , 4WC, 2 WHB (0.8x 1.6 = 1.28 sqm ea. min) plus 1 paraplegic unit (1.6 x 1.8 = 2.88 sqm min.)

- Total number of **female** toilet facilities: 7 WC, 4 WHB plus 1 paraplegic unit (1.6 x 1.8 = 2.88 sqm min.)

- **The Education facility Requirements**

- Nursery school, Afternoon Madressa Classes and weekend Specialty Classes

- Requires a distinctive entrance with a reception area and lobby

-Entrance should be in close proximity to the hall, so that the hall may be used by the school as a prayer facility as well

-Hall should also be close to jamaat khana so that it may be doubled up as a prayer facility.

- Principal and admin offices

- A day-care facility should be incorporated

The administrative zones

All of the above zones have to be carefully designed as to promote humanity as a creation

Accommodation	No. of units	No. of occupants	Area (m²)	Natural Light >10% of floor area or 0.2 m²	Natural Vent >5% of floor area or 0.2m²
Public Facilities					
Main Entrance and foyer	1	2	100	10	5
Male toilets	6wcs, 2whbs	-	10	1	0.5
Toilets	7wcs, 4whbs	-	17	1.7	6.5
Paraplegic toilet	1	1	2.88	0.2	0.1
TOTAL		**+-**	**129.88 m²**	**m²**	**m²**
Library	1	80	100	17	8.5
Book Issue desk	1	3	6	0.6	0.3
Staff Offices	3	1	5.5(2.2x2.5)	0.5	0.25
Media Centre	1	45	60	6	3
Staff office	1	1	5.5(2.2x2.5)	0.5	0.25
Lounge	2	20	30	3	0.5
Store	2	-	4.4 (2 x2.2)	-	-
TOTAL		**+-150 ppl**	**265.8 m²**	**27.6 m²**	**13.8 m²**
Gym	1	100	250	25	12.5
Entrance lobby and control	1	25	18	1.8	0.6
Admin Offices	3	1	5.5(2.2x2.5)	0.5	0.25
Staff Change facilities	5wc, 2whbs, 2shwr	7	13	1.3	0.65
Change rooms and ablutions (Male)	10wc, 5whbs, 6shwr	25	50	5	2.5
Change rooms and ablutions (Female)	10wc, 5whbs, 6shwr	25	50	5	2.5
Paraplegic toilet	1	1	2.88	0.2	0.1
First Aid	1	3	20	2	1
Equipment Store	1	-	10	-	-

Utility Room	1	-	4	-	-
TOTAL			**438m²**		
Bookshop and coffee shops	1	30	**40 m²**	4	2
Restaurants and cafes	4		**380 m²**		
Training Rooms	3	+-30 ea	**90 m²**	0.9	0.45
Sacred Facilities (Semi-Private)					
Jamaat Khana (male)	1	225-300	180	18	9
Entrance lobby	1	80	50	5	2.5
Whudu (male)	1	12	15	1.5	7.5
Store	1	-	1.2 (0.6x2)	-	-
Kitchenette	1	2	8 (2x4)	0.8	0.4
Toilets	6wcs, 2whbs	-	10	1	0.5
Utility Room	1	-	2	-	-
Paraplegic toilet	1	1	2.88	0.2	0.1
TOTAL			**269.08 m²**		
Mezzanine (Female)	1	125-166	100	10	5
Entrance Lobby	1	40	25	2.5	1.25
Whudu (Female)	1	10	10	1	0.5
Store	1	-	1.2 (0.6x2)	-	-
Toilets	7wcs, 4whbs	-	17	1.7	6.5
Paraplegic toilet	1	1	2.88	0.2	0.1
TOTAL			**156.08 m²**		
Daycare					
Reception, lobby and waiting	1	5	20	2	1
First Aid Room	1	2	10	1	0.5
Playroom (Daycare)	1	17(2.3sqm ea)	40	4	2

Play Equipment Store (Daycare)	1	-	5	-	-
Toilets	2wcs, 2whbs	2	5	0.5	0.25
TOTAL			**80 m²**		
Hall	1	500	520		
Entrance lobby	2	15	10	1	0.5
Male Toilets	10wcs, 5whbs	-	24	2.4	1.2
Whudu (male)	1	19	15	1.5	7.5
Female Toilets	12wcs, 6whbs	-	27	2.7	1.35
TOTAL			**596 m²**		
Administrative facilities					
Reception and control	1	2	15	1.5	0.75
Print Media Room	1	-	7	0.7	0.35
Boardroom	1	10	15	1.5	0.75
Meeting room 1	1	5	8	0.8	0.4
Meeting room 2	1	5	8	0.8	0.4
Male toilets	5wcs, 3whbs	-	23	2.3	1.15
Female toilets	5wcs, 3whbs	-	23	2.3	1.15
Paraplegic toilet	1	1	2.88	0.2	0.1
Kitchenette	1	2	8 (2x4)	0.8	0.4
Storage	1	-	5	-	-
Management offices	3	3	7	0.7	0.35
Marketing offices	3	3	5	0.5	0.25
Souk department office	1	3	5	0.5	0.25
Al-Ummah editor office	1	1	10	1	0.5
Graphic designer office	1	1	7	0.7	0.35
Presenter and guest	1	10	20	2	1

lounge					
Broadcast Studio	1	5	20	2	1
Technical Room	1	2	10	1	0.5
Production Studio	1	5	20	2	1
Recording Studio	1	3	15	1.5	0.75
Editing Suite	1	2	10	1	0.5
Equipment Store	1	-	10	1	0.5
TOTAL			**277.8 m²**		
SUB - TOTAL INDOOR AREA			**2724.64 m²**		
+ 15% CIRCULATION			**408.7 m²**		
TOTAL INDOOR FLOOR AREA			**3133.33 m²**		
Outdoor facilities					
Outdoor trading space for the foundation and circulation space			**5000 m²**	-	-
Outdoor recreational spaces			**700 m²**		
Outdoor play area for nursery school	1	17	**300 m²**	-	-
Services and deliveries			**300 m²**		
Centre parking		400	**5280 m²**		
Parking for foundation staff		25	**500 m²**		
Parking for al-ansaar guests		10	**200 m²**		
TOTAL OUTDOOR FLOOR AREA			**12280 m²**		

1.5. Conclusion

An Islamic centre for Durban is a centre that is open to all and exhibits the Islamic culture. The centre appeals to ones inner spiritual being while facilitating the functions of the Al-Ansaar Foundation. The functions of the centre have been broken down into two components, namely the public and sacred facilities. The admin building is one of the buildings that would successfully unite these two components. The role of the hall is important for public functions, but it is more importantly directly related to the functions that occur as part of the aim of the foundation and that is for seminars and fairs.

To establish such a centre, it is imperative that the correct site be chosen for its development, not only does the centre have to relate to the history and identity of the people; it also has to be appropriate in terms of its greater urban context.

CHAPTER 2:

CONTEXT SELECTION PROCESS AND JUSTIFICATION

2.1. Introduction

The selection of an appropriate site for any building is quite an in-depth process as various factors are required to be carefully considered. These factors vary in scale; from urban, regional to site specific and are strongly theoretically based. These factors are then used to develop a particular type of environment or atmosphere one wishes to create which is dependent on the building typology and its purpose.

The atmosphere created by a sacred building is the crux of this research and the implementation of such an environment is vitally dependent on the selected site. Not only should the choice of sites necessitate a strong theoretical-base; such as setting and identity and so forth, but it should also consider empirical data; such as religious rituals and so forth. The aim of this chapter is to sift out the broader factors from the theoretical research while integrating the more specific factors from empirical and factual data with the aid of further contextual research in order to select a site which is deeply suited for the building typology and has great potential.

2.2. Macro Context

2.2.1. Background of Durban City

Setting of Durban City

Durban, a coastal city on the East Coast of South Africa, has an altitude of 8 meters with a latitude of 30°57' South and longitude of 29°58' East. This coastal region lies west of the warm Indian Ocean which attracts visitors all year round. The geographical setting of the land is extremely mountainous with its main environmental features being the naturally formed harbour along the east coast of Africa which has now become one of the busiest ports in Africa (www.durban-venues.co.za) and the Umgeni River which runs all the way from Pietermaritzburg (Figure 1). Many of the Soofie mosques were built along the Umgeni River due to easy accessibility to running water for ablutions. The city also enjoys a luscious vegetation with many evergreen trees and a warm tropical climate.

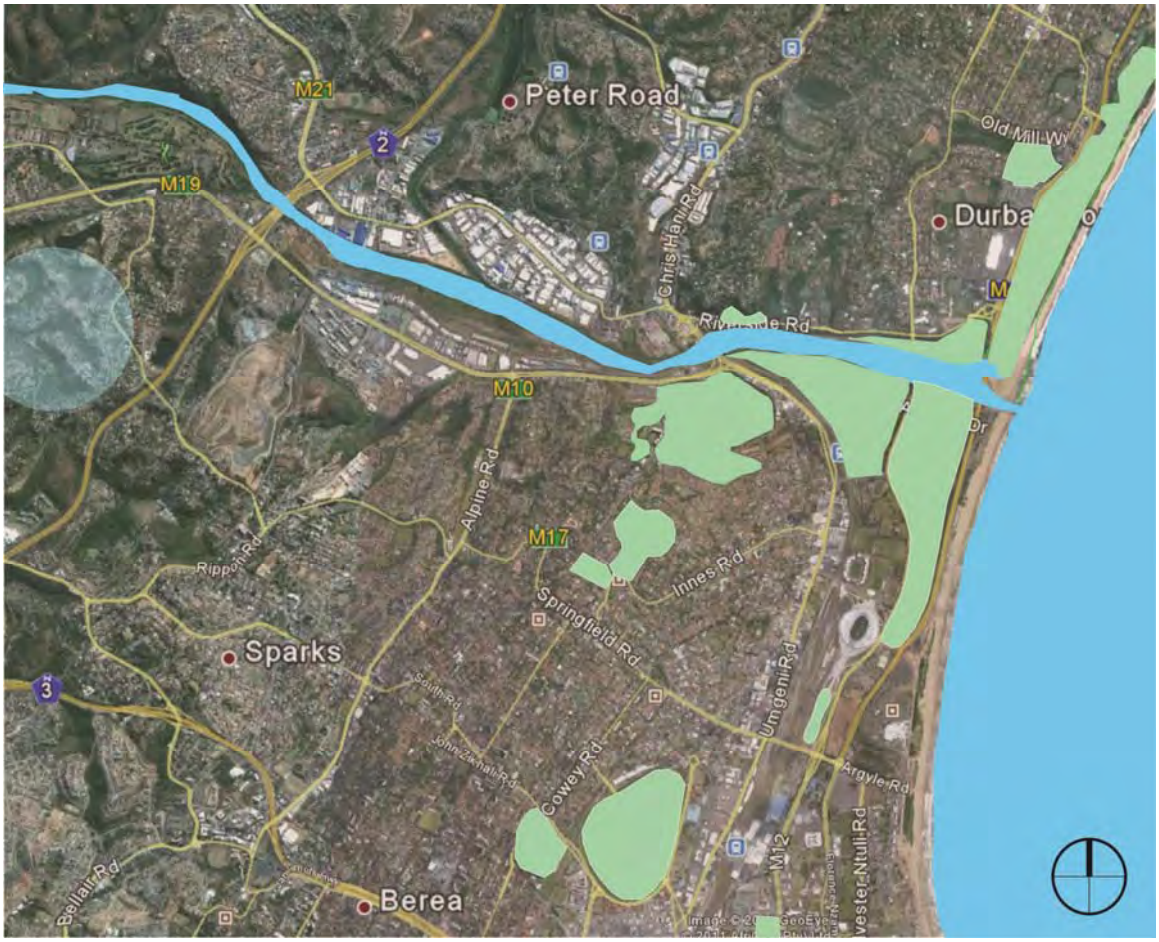
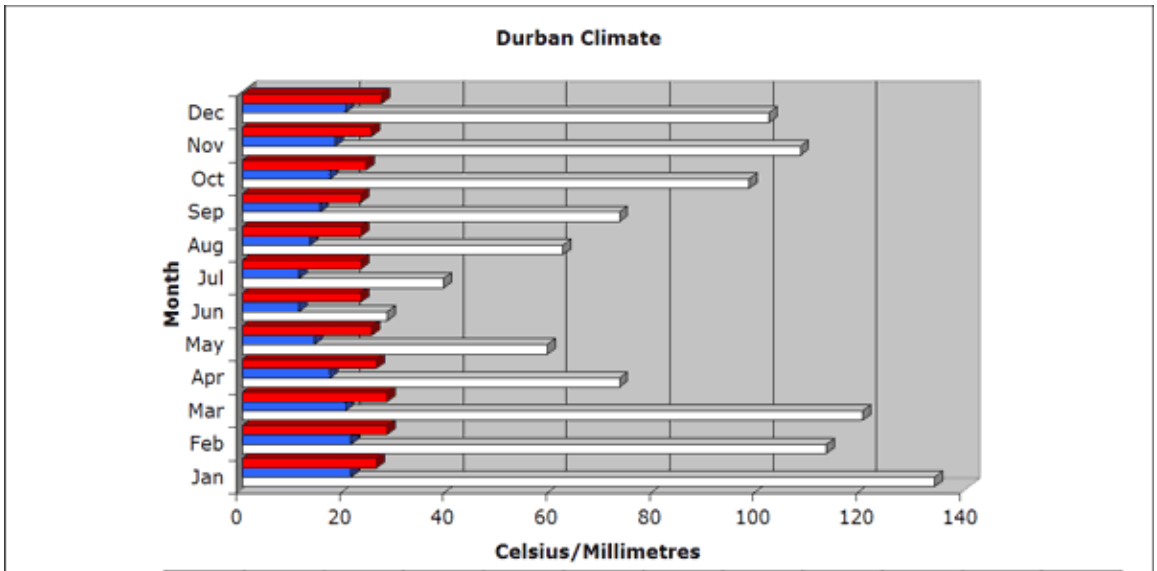


Figure 1, Map of Durban showing the Natural Setting of Durban City (Author, 2011)

The climatic conditions enjoyed by Durban are among the best in South Africa. The city experiences an average of 320 days of sunshine with light rainfall throughout the year and uncomfortably high humidity levels. The wettest season in the year is summer which is also hot and humid and the winters are usually warm and sunny. One of the best times during the year for tourists to visit the city is between autumn and spring when the temperatures are lower and the humidity is less (see Figure 2) (www.safarinow.com).



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Temp	26	28	28	26	25	23	23	23	23	24	25	27
Min Temp	21	21	20	17	14	11	11	13	15	17	18	20
Precipitation	134	113	120	73	59	28	39	62	73	98	108	102

Figure 2, Average temperatures for the city of Durban (www.safarinow.com).

Mid-winter temperatures - 16°C - 23°C

Mid-summer temperatures - 28°C -33°C

The people of Durban originate from a diversity of religions, cultures and backgrounds and altogether they make up the second largest population of a city in South Africa with 3.2 million people according to the 2001 population census (www.durban-venues.co.za). The largest racial community are the Indian South Africans who are descendants of Indian settlers who arrived as indentured labourers and traders who in Durban. The majority of these settlers were Hindus and Moslems from the Madras area, however 'the colony also attracted Gujarati traders from Bombay (Mumbai) who established thriving businesses' (www.accomsa.com).

Arrival of Muslims in Port Natal

1860: The Arrival of Indians at Port Natal

Indians first arrived in Port Natal as indentured labourers in 1860. These labourers were transported specifically by the British from India to work on the sugar cane plane plantations. In 1870, further Indians arrived in Port Natal by paying their own fees to be shipped there. This batch consisted mainly of small traders and merchants of which the Muslims were a large component of. Both labourers and traders arrived in Natal under the condition that no interference with their religious practices shall take place as Islam was already unbanned in South Africa in 1804. As a result, the British Government permitted the construction of religion-based buildings which consisted of places of worships, schools, colleges and so forth. This lead to a quick progression of Islamic religious buildings in and around Natal.

The Hindu and Muslim communities of Natal co-existed peacefully and often fought for the same goals and objectives considering that they often arrived under similar circumstances. Both communities also fought against the registration laws of the colonial government in a campaign led by Mahatma Ghandi during the passive resistance movement. This sense of community between the two religions resulted in the construction of many communal facilities that were a joint venture with the Indian community at large.

In 1948, the local Zulus began to rampage the Indian trader shops and caused an uproar. However, both Muslim and Hindu persevered in their endeavours and did not give up. It was in 1961 that the Indians finally became a part of the population and the government then established a Ministry of Indian Affairs to administer the affairs of the Indian population nationwide.

Of the Muslim community that arrived in Port Natal, there were several individuals who made a significant contribution to the religion of Islam. One of the most noted among them is that of Mohammed Ebrahim Soofie or Soofie Saheb who arrived at Port Natal on 17 March 1896 and built approximately thirteen mosques and madressas with Imam's quarters. These included the Soofie mosque of Riverside (1896), Westville (1904) and Sherwood (1905). He was also responsible for the establishment of a masjid complex and orphanage in Athlone, CA in 1901 and several other masjid complexes in the surrounding areas of Durban such as Tongaat, Verulem, Pietermaritzburg, Colenso, LadySmith and Lesotho. All of which occurred between the years of 1907 and 1910 which was the year of his demise. Another prominent individual who contributed to the development of Islam in Natal was Hazrath Badsha Peer from Madras. He arrived in Port Natal in 1860 among the indentured labourers and it is assumed that he preached Islam among the them. Both individuals are held in high

esteem till today with Soofie Saheb's mausoleum at his Riverside Mosque and Hazrath Badsha Peer's mausoleum at the Brooke Street Cemetery in central Durban(Paruk, Z., 2011).

1873: Arrival of Zanzibaris at Port Natal

The year 1873 marked the arrival of the "Zanibaris". These predominantly Muslim slaves were freed and came to Port Natal between 1873-1880 from the East Coast of Africa which was also known as the "Swahili Coast". They originated mainly from Northern Mozambique, Tanzania, Comoros, Zanzibar, Malawi, and possibly Somalia and settled in Kings Rest in the suburb of Bluff near Durban. They were classified as "other Asians" in the Population Registration Act and the Group Areas Act forcibly relocated them to the outlying area of Chatsworth which was reserved for the Asian/Indian population. In Kings Rest in Bluff, they built a mosque in conjunction with the Indian Muslims who settled in Durban.

2011: Muslims in Durban

According to the population census 2001(Figure 3and Figure 4).Durban has the second highest Muslim population in South Africa which stands at 100 158 people with the majority being female. There are numerous organisation and foundations which support the people of the city. Some of which include; the Al-Ansaar foundation, SANZAF (South African National Zakaat fund), the Al-Imdaad foundation and so forth.

Table 1: Census 2001 by municipality	
1. City of Cape Town	
Islam	281 507
2. Durban: Ethekwini	
Islam	100 158
3. City of Johannesburg Metro	
Islam	98 423
4. Pretoria: City of Tshwane Metro	
Islam	20 195
5. East Rand: Ekurhuleni Metro	
Islam	18 253
6. Port Elizabeth: Nelson Mandela	
Islam	14 987
7. KZ225: Msunduzi	
Islam	14 021
8. GT421: Emfuleni	
Islam	6 261
9. GT411: Mogale City	
Islam	6 050
10. MP322: Mbombela	
Islam	5 001

Figure 3, Population Census 2001, Muslim Population in the cities of South Africa (www.statssa.gov.za)

Table 2: Census 2001 by municipality, gender, religion and population group					
	Black African	Coloured	Indian/Asian	White	
Durban: Ethekwini					Total
Male					
Islam	5 003	2 289	41 231	343	48 866
Female					
Islam	4 197	2 476	44 324	295	51 292
Total	9200	4765	85 555	638	
Footnote:					
Universe for all persons					
Figures greater than 0 and less than 4 are randomised to preserve confidentiality Report of the Census Sub-Committee to the					
South African Statistics Council on Census 2001					
reproduced on http://www.statssa.gov.za/extract.htm					

Figure 4, Population Census 2001, Muslim gender and ethnic population in South Africa (www. statssa.gov.za)

There are over ten masjids in and around the immediate vicinity of Durban with a concentration of them in the central suburbs of Overport, Asherville and Sherwood (Figure 5 and Figure 6). There are two major religious ideologies among the Durban Muslims, they are the Sunni Jamaat and the Tablighi Jamaat. Each mosque is administered by either one.

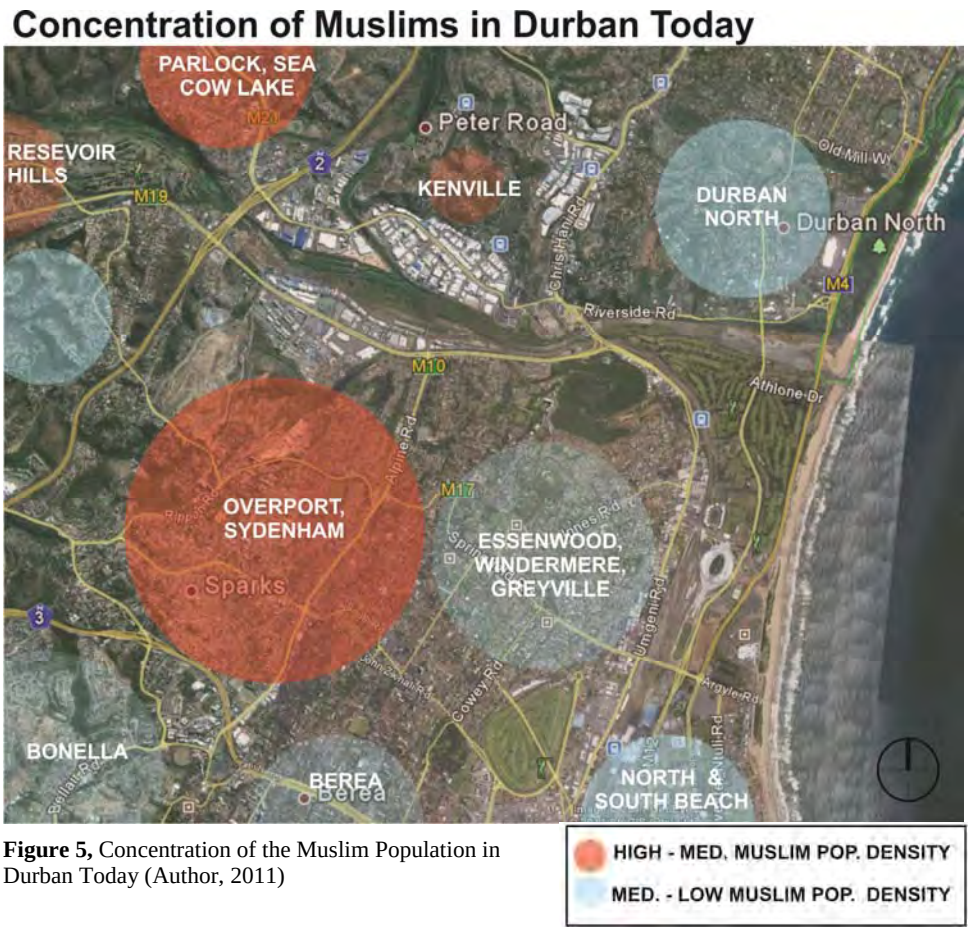


Figure 5, Concentration of the Muslim Population in Durban Today (Author, 2011)

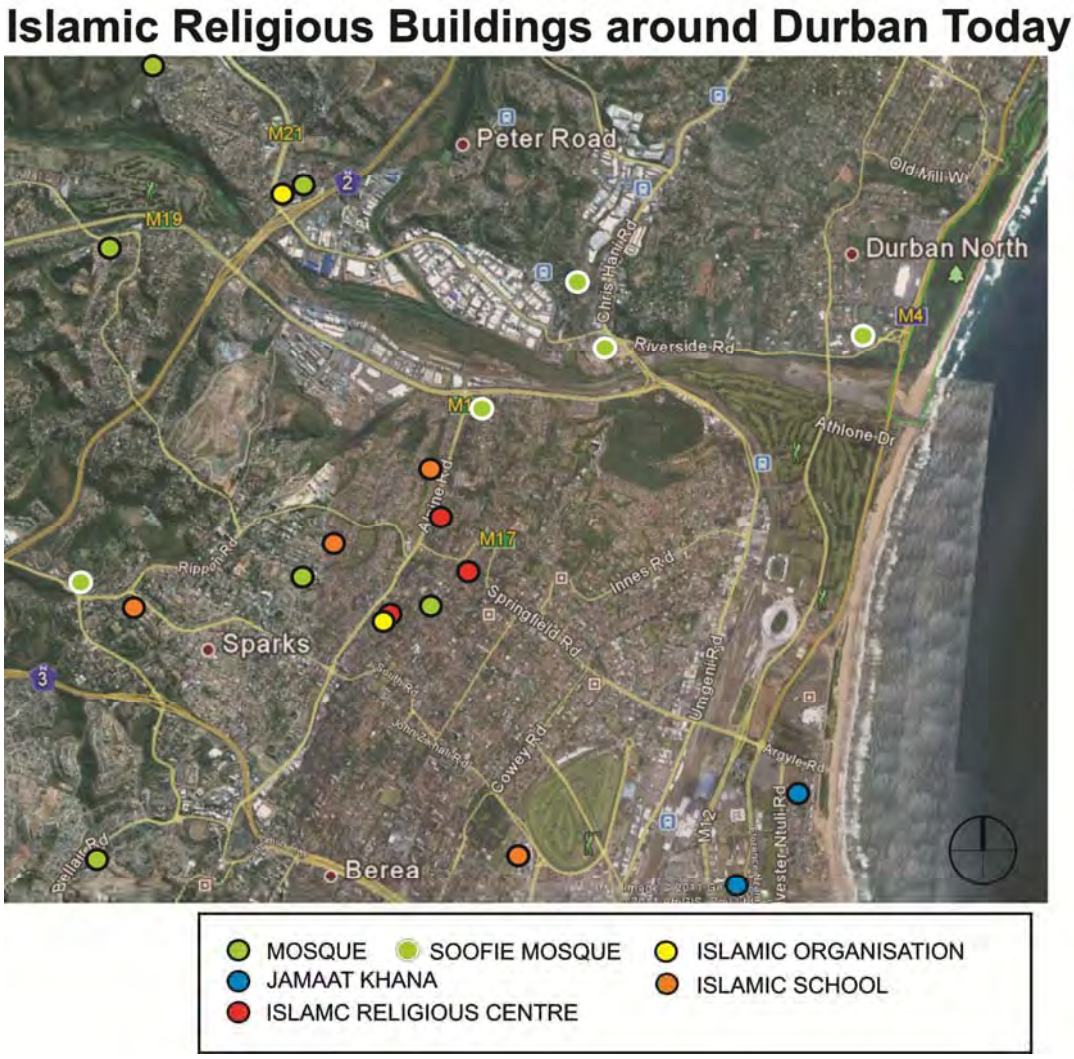


Figure 6, Concentration of Religious Islamic buildings in Durban Today (Author, 2011)

2.2.2. Brownfield verse Greenfield sites

It was not until the site selection process that the issue of brownfield and greenfield sites had arose. When faced with the decision of selecting an urban/rural site, the site could either be a brownfield or greenfield site both which has their positives and negatives which will be discussed in this chapter.

A brownfield site as the name suggests is an old site which has some sort of building structure on it already. These site are 'normally associated with urban areas'. A greenfield site is the opposite of a brownfield site where no building structure has been built on the site before. These could be areas surrounding the urban area and rural areas (Bamford).

Brownfield positives

- The redevelopments on brownfield sites are more sustainable as it relieves the pressure of development on greenfield sites.
- When brownfield sites are developed, it provides employment opportunities.
- A new development on the site could enhance the quality of life in that area. A new housing development for example would allow the area to become more affluent and trendy while decreasing crime rates.
- Public Transport to the site is a lot more accessible in brownfield sites which are in urban areas where the population density is higher and transport networks are more efficient as investments are focussed in the central areas(Bamford).

Brownfield negatives

- With the redevelopment of brownfield urban sites, people will be encouraged back into the urban area. There is then a possibility that local people may not be able to afford the houses and the government will be faced with the problem of providing for them (Bamford).

Greenfield positives

- The development of greenfield sites may result in a more pleasant environment which may have better access, less congestion and more room to expand.
- Out of town greenfield sites are often favoured by light industry and projects like science parks and so do their employees who are happier to live away from urban areas.
- Greenfield sites are easier to build on as there is no previous land use remains to be cleared and allows for a fresh start. These kinds of sites are favoured by housing developers, retail parks another similar projects.

Greenfield negatives

- For greenfield sites which are out of urban areas, there would be a need for new infrastructure such as drainage, electricity, roads and other services, whereas in urban areas infrastructure already exists.

- Building on greenfield sites decentralises cities which draws people away from the city centre. This has a negative impact on the city centre which would cause it to 'decay' while local businesses suffer.
- Constructing buildings on a greenfield site is not sustainable.

2.2.3. Theoretically based selection criteria

In order to judge the potential of a context, a criteria had to be established. Even though there are numerous criteria which may be extracted from the research, the ones chosen here are the most relevant for the purpose of context and site selection. They have been selected according to the psychological effects of these conditions for the desired experience of the site. Ultimately, all of the below criteria are based on the "character of a homecoming, a reunion with oneself and one's character" which creates that initial draw (Jones, 2000: 76).

- *Historical Significance*

In terms of place theory (Lynch, 1960), the historical background of a place significantly influences its future development, therefore no new things can happen without the old. Lynch (1960) explains that every region should have continuity with its recent history and near future, allowing every place to have the potential to be something greater.
When looking at allurement (Jones, 2000), history has a decisive role in the perception of people throughout generations, cultures, class and so forth. Additionally, the history of art and architecture may lead to a subconscious allurement through one's "personal pre-understanding" of it.

- *Natural Setting*

The relationship of natural environments with urban societies have now dwindled to fragmented portions which diminishes mans ability of identification and the feeling of being 'at home'. Designing with nature contributes to the understanding of existential space, where the use of culture or religion gives man a stable image of his environment, 'imago mundi' (Norberg-Schulz, 1979). Architects represent nature in design which contribute to the man-place relationship.

- *Socio-cultural Significance*

Culture is significantly linked to history, as history provides a cultural context of some sort. According to Trancik (1943), place theory lies in the understanding of cultural and human characteristics and their connection to physical form and not a mere relation of occurrence to context

and environment. Trancik (1943) argues that “space” is devoid of meaning and will only become a “place” when the cultural and regional aspects derived from the context add meaning and significance to the space. The terms “space” and “place” are analogous to the words “house” and “home”. Additionally, people require a stable system of recognisable places that can be used, for example, to orientate themselves within a city and develop their social and cultural lives (Trancik, 1943).

Man gathers experienced meanings to construct an imago mundi or micro cosmos which solidifies his natural world (Norberg-Schulz, 1979).

- *Traditional Significance*

Tradition is a significant part of people's lives and as Jones (2000) explains; the continuity of tradition results in a self identification of which enhances the experience of a place or building and adds meaning to the experience. The role of tradition can be very alluring, as a result the spectator of such architecture should be considered carefully as the components of tradition used should be identifiable, not necessarily on a conscious level, but in a conservative, specific and stabilising way.

The above theoretical criteria form the basis of the selection process as it is based purely on factual and empirical information and fall under the category of primary criteria. From this, it can then be concluded that these aspects assessed in terms of the macro and micro context is what should lead to the greatly coveted attachment of meaning, identity and appeal of sacred architecture. Trancik (1943) clarifies this by describing that “space” is devoid of meaning and will only become a “place” when the cultural and regional aspects derived from the context add meaning and significance to the space.

Mentioned below is two other criteria which holds lesser weight and is categorised as secondary criteria. These criteria may be seen in a very subjective way according to the author and even though it may be significant when it comes to site selection, it is purely based on perception.

- Context should be potentially meaningful to the community. *Norberg-Schulz (1979) states that the existential purpose of architecture is to uncover the meanings potentially present in an environment in order to make a site a place and a place can be seen as a totality of experiences consisting of aspects of space and character that contribute toward a 'structured world'* .

- Context should appeal to one's religious senses. *"Hierophanies" is the term Eliade (1958) uses to describe such sites which emanate Divine power (site specific) or energy.*

Now that the criteria have been selected in the order of preference from most significant to least significant, they will be used to analyse the micro context using surveys and secondary resources.

2.2.4. Conclusion

The context of Durban city has been chosen as a good city for the project. One of the most prominent features of Durban is in fact the coastline. The coastline is also a major tourist attraction of the city. As a coastal city, water plays an important role in the context of the building. Not only does city have a coastal edge, but it also has the Umgeni River which has religious and historical significance to the Muslim people of Durban.

Durban generally has good weather, with minor to none natural disasters. Is also geographically suited as there are lots of natural elements and green zones within the city. The city itself is multicultural which allows for maximum cultural exposure as well as foreign exposure due to the city being a tourist destination. There is also a large population of Muslim people with a majority of females.

2.3. Choice of Three Sites in Context

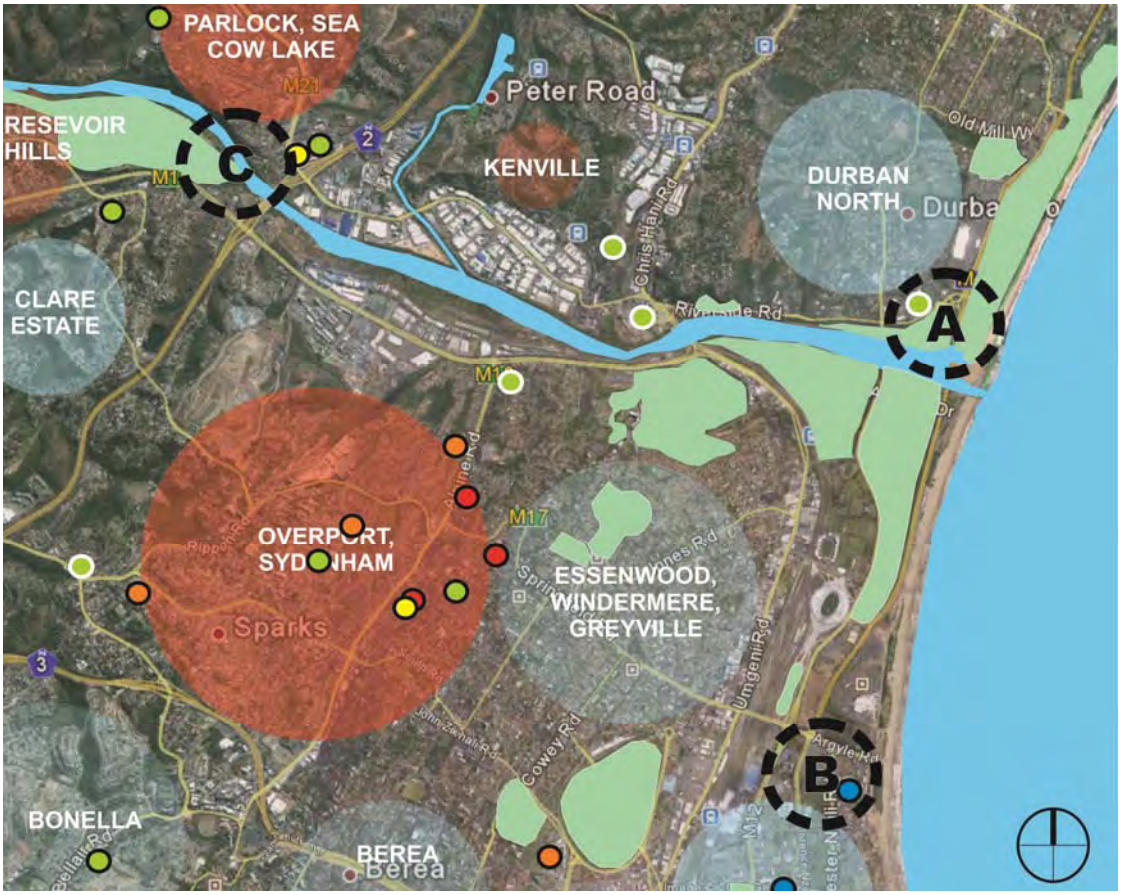


Figure 7, The choice of three sites in Context (Author, 2011)

2.3.1. Site A - Umgeni River East - Northern Bank

Figure 8, SITE A Aerial view (Author, 2011)

Existing Site Conditions

Site A is located directly adjacent to the Umgeni River and offers a uniquely natural setting which allows a direct connection to the river water and is surrounded by luscious vegetation. Access to the site would be from Riverside Road by vehicle and foot on the Northern end of the site and from the Umgeni River by boat or canoe on the Southern end of the site. Each boundary may deal with its respective parking facilities.

The site is zoned as Public Open Space and is protected by D'MOSS (Durban Metropolitan Open Space System). It is currently an all natural site which accommodates nothing but earth, water and vegetation. The Umgeni River which is a crucial geographical feature of the site, is used for numerous sporting activities such as the annual Duzy River Race, fishing, canoeing and so forth. The site is also culturally situated in close proximity to the Riverside Soofie Mosque and Mausoleum which is a great historical site as well and popular religious destination for tourists.

Opportunities

- The site radiates a powerful energy as it is located along the flood plain of the Umgeni River. It is away from the flood plain so development is possible.
- The surrounding areas also emanates a kind of divine energy. The hill to the north, river to the south, ocean and mangroves to the east all emit a sense of tranquillity.
- The site is flanked by two arched bridges which have the potential to compliment the arches of the Islamic Centre.
- The Umgeni River has a cultural and historical significance in Durban. The numerous Soofie mosques in and around Durban were all built close to the River water for ablution purposes.
- The site is dominantly situated and has visual prominence from all directions.
- On the Southern side of the Umgeni River is a picnic area and Blue Lagoon rejuvenation park which attracts both tourists and locals weekly.
- The sporting activities which occur at the Umgeni River provides opportunities for viewing platforms from the building.
- The site is situated between two major vehicular highways - the M4 and the M12 (These are the bridges which flank the site)

Constraints

- With the proximity of the site to the River, there is a possibility of flooding.
- The site is within an environmentally protected area.
- The Riverside Soofie Mosque is very close to the site.
- The area has no need for another mosque as the Riverside Soofie mosque has recently been renovated to accommodate the current Muslim population of the area.
- Accessibility to the site is limiting.
- Blue lagoon is a high activity zone which turns into a alcohol, music and fornication festival on most Saturday and Sunday nights.
- The activities which occur around the site does not compliment the proposal of an Islamic Community centre in the area.
- The site is not centrally situated.

2.3.2. Site B - North Beach

Figure 9, SITE B, Aerial View (Author, 2011)

Existing Site Conditions

This site is located in the North beach area behind a block of flats and next to the George Campbell school. Previously, the site used to be the Durban Drive-Inn site which used to be a fully grassed site and has evolved substantially over the years. Due to its prominent position, scale and multi-faceted surroundings, the site was often used as a temporary grounds for circuses and car auctions. The site is also very accessible as three of the four edges of the site are vehicular roads with enough area to provide parking. The site is currently screeded with concrete and fenced off. It was used for shuttle busses to Moses Mabhida Stadium during the 2010 FIFA Soccer World Cup and is now a desolate concrete island.

The site is currently zoned as residential and has no natural features beside the three trees toward the north of the site which had been preserved and the site is fairly flat site as well. One of the main geographical features around the site is the Indian Ocean which attracts hundreds of people. The beach promenade is quite a popular feature as well which has become a platform for social and cultural events. Other sacred buildings around the precinct of the site include the Durban Hindu Temple on Sometsu Road which has been in existence for roughly 120 years (Diesel & Maxwell, 1993) and the Jewish Centre on K E Masinga Road.

Opportunities

- The surrounding areas exudes a type of energy that the site itself lacks due to desolation which has resulted in a vast open space which is lost in the urban fabric. This site has huge potential to bring back or infiltrate divine energy from the surroundings into the site.
- One of the major sources of divine energy in the area is that of the Indian Ocean which has a potential link to the site.
- The site is situated in a prominent location. People travelling from the Northern and central regions often use Sandile Thusi Road (Argyle Road) to access the beaches. The scale of the site also adds to its prominence.
- Due to the city being close to the coastline, it has become tradition for Durbanites to visit the beaches on weekends for numerous reasons such as recreation, sport, socialising and many others. Due to the tropical weather and warm Indian Ocean, the beaches are used all year round and attracts abundant visitors yearly.
- The site is also close to the Kingsmead commercial district. There is a need for a mosque in the area as the Jamaat Khana that is provided by Al Baraka bank in the area cannot accommodate the number of people that require a facility for worship.
- The location of a beach close to the mosque is also appropriate as there are no mosques in this region, with the closest mosque being the Grey Street Mosque.
- Development on this site provides an opportunity to utilise an under-used space and introduce more green into the city.
- Transport to site is easily available.

Constraints

- The cultural location of the site in not appropriate.
- The site is completely stripped of any natural ground cover and is now a completely covered in concrete with three trees left on site untouched.
- the traffic around the site creates a lot of noise.
- The site doesn't have any direct link to a natural body of water.
- The site has no religious significance to Muslim people.

2.3.3. Site C - Umgeni River West -Southern Bank

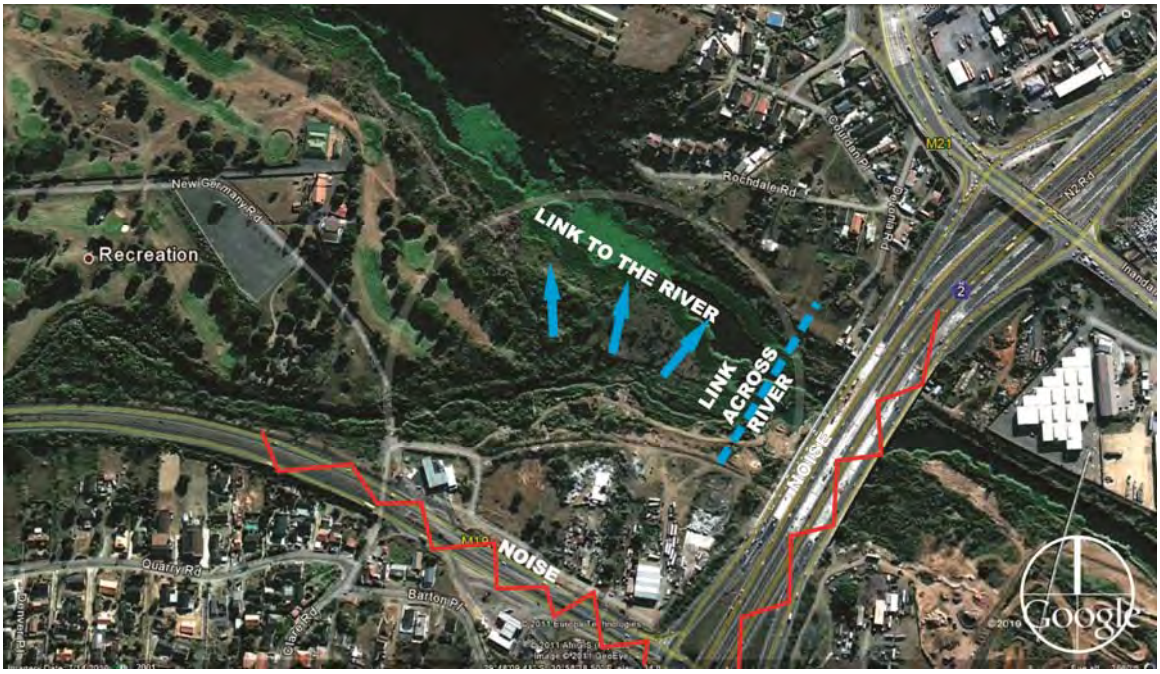


Figure 10, SITE C, Aerial View (Author, 2011)

Existing Site Conditions

This site, like site A, is located directly adjacent to the Umgeni River and offers a uniquely natural setting which allows a direct connection to the river water. The site is bordered by the M19 freeway and the N2 interchange onramp with a river and golf course bordering the other two sides. at the corner of the M19 and N2 interchange is a light industrial company called Boreen Blocks (McLoughlin, 2004). Access to the site would be from the M19 east bound and parking would have to provided for on that edge.

The area used to have an informal settlement which was removed and relocated to the Quarry Heights settlement. The river is the main geographical feature here which accommodates numerous waters sport as mentioned in Site A. Additionally, the site is closely related to suburb of Parlock which is across the River and Parlock is a suburb with one of the highest Muslim populations.

Opportunities:

- The site is close to the Umgeni river and radiates divine energy yet, away from the flood plain.
- The site is also appropriately situated with a hill to the far North and lots of vegetation around and lovely views of the river.
- The suburb of Parlock has a large Muslim community that would benefit greatly from such a project. The site will also be close to the Resevoir Hills suburb which also has a high Muslim population.
- The Umgeni River has a cultural and historical significance in Durban. The numerous Soofie mosques in and around Durban were all built close to the River water for ablution purposes.
- The site is visually prominent from the N2 interchange onramp.
- The site is situated in a very busy area that has noisy roads which may not be fitting for a sacred building however, this could be an opportunity to create a contrast between the noisy exterior and tranquil interior of a sacred building (McLoughlin, 2004)
- The site is publicly accessible as it is along a transport route (McLoughlin, 2004).
- The site is currently under-developed and has the opportunity to be something greater by linking to Parlock across the River.

Constraints:

- The site is framed by very noisy roads
- Within the site is a concrete block industry
- The only road that has access to the site is the M19 which is East bound and restrictive.
- The site is very low in relation to everything else around it.
- The atmosphere of the site may be tarnished with the history of the site; it was previously home to informal settlers and now it is allocated for industry.

2.3.4. Conclusion

Based on the theoretical Criteria, each of the chosen sites were rated out of 3 in the following Diagram:

Theoretical Criteria	**Site A**	**Site B**	**Site C**
1.Historical Significance	3	1	1
2.Natural setting	3	1	3
3.Socio-cultural setting	3	2	2
4.Traditional setting	1	1	1
5.Religious appeal and meaning of site	3	1	2
Total	**13**	**6**	**9**

2.4. Micro Context

2.4.1. Urban Design Intentions

Urban Design Intentions

The criteria has lead to a site that is on the outskirts of the urban areas and in a suburb. The area has a balance between the flow of people and nature.

The urban intentions however, will use Trancik's (1943) determinants of city character: Landscape, Function of time and Material and Form Constituents; Lynch's (1960) factors of a city's image: Legibility, Structure and Identity and Imageability; as well as Norberg-Schulz's (1979) aspects of man and nature relationships: Visualisation, Complementation and Symbolisation.

- Building should be easily identifiable within the city's urban fabric.
- Orientation toward and within the building should be fairly easy. This can be done using Lynch's (1960) 'node', 'path and 'district' on various scales to contribute to an environmental image and emotional security (Norberg-Schulz, 1979: 19).
- Design should be coherent with the pattern of the city:
    - City form which is primarily the relationship between built form and space and the relationship of nature to them.
    - Infrastructure which refers to means of transportation and their networks throughout the city as well as services.
- Design should be meaningful in context and enhance the quality of life in a particular area and to do this, multiple layers of the context has to be analysed in terms of:
    - Social and cultural issues
    - Built form
    - Environmental issues
    - Climate
    - Economic issues
    - Political issues
- Design should contribute to the development of the community's cultural and social lives:
    - The physical form of the building should connect to cultural and human characteristics.

- The design should be an interpretation of a belief system of a community that will be powerfully alluring and create a strong emotional attachment. "*In every instant of art we receive a persuasive invitation...to participate more closely." Stokes (1965)*
- The architecture needs to capture and image of the Muslim Community of the area of choice.
- A continuity of tradition in Islamic architecture may result in the 'self identification' of Muslim people. (Components of tradition then become identity on a conscious or subconscious way.)
- Design should reflect the activities that occur within.

- Design should preserve and integrate as much of the natural environment as possible, manifesting man's understanding of nature. *"Where nature suggests a delimiting space, he builds an enclosure, where nature indicates a direction, he makes a path." (Norberg-Schulz, 1979: 17)*
  - The building environment should be harmoniously created with the natural environment.
  - Natural character should be adopted and translated into built form.

2.4.2. Existing Site Conditions

The Umgeni River 100-year Flood Plain

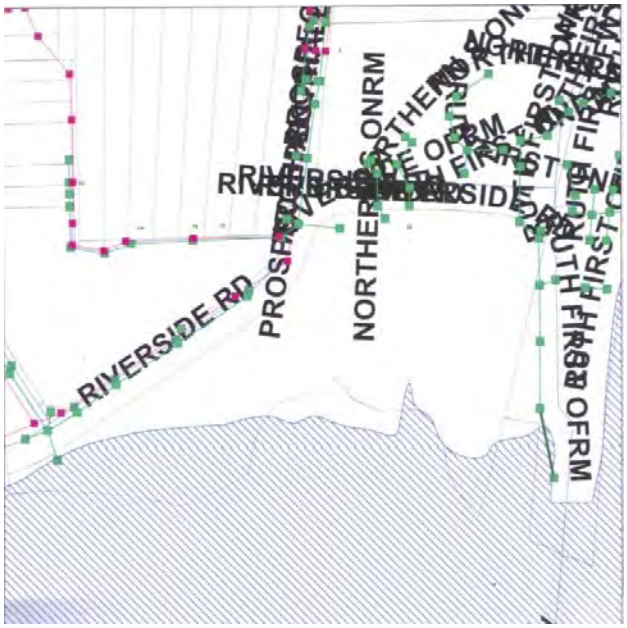


Figure 11, Diagram of site showing flood plain with a blue hatch (eThekwini Council, 2011)

A *100-year flood plain* is a term given to the predicted flood plain of a river which has a one-in-hundred (or 1%) chance of flooding during a particular year. However, due to heavy rainfall and or the melting of snow a river may flood more that once during that year (http://geography.about.com/library). It has been established that the city of Durban experiences an average of 320 days of sunshine with light rainfall throughout the year and uncomfortably high humidity levels. Additionally the city does not experience snowfall and the most recent year of flooding of the Umgeni River was the year 1987 (www.dwa.gov.za), twenty-four years ago. Even though the chances of flooding are slim, it should not be taken for granted that the Umgeni River will not flood again.

Healthy rivers within a city's fabric have enormous social, economic and environmental benefits for a city (www.acfonline.org.au). However, according to primary and secondary research conducted, the 100-year flood plain has retarded the development along the Umgeni River with the establishment of an industrial area along the Umgeni River banks. This development, known as the Springfield Industrial Park, was approved and incorporated into the urban fabric of the eThekwini municipality due to the high-risk zoning of the banks of the River and has negatively affected the social and environmental character that is potentially present in this area (Drainage and Coastal engineering sited in Seepersad, 2005). T he Umgeni River is fully enclosed by Springfield Industrial Park, prohibiting any social activity along the river and blocking off scenic views of the River from the residential communities (Seepersad, 2005). Additionally, fertile farmland along the River has been consumed by the industrial developments, which have also not considered proper storm water management by creating water barriers that 'increase surface run off and increases the danger of flooding' (Seepersad, 2005). This project aims at dealing with these issues and somewhat reviving the Umgeni River's social, economic and environmental status in the city of Durban.

Durban Metropolitan Open Space System (D'MOSS)

Figure 12, Diagram of site showing the protected areas (eThekwini Council, 2011)

Durban Metropolitan Open Space System, previously referred to as eThekwini Environmental Services Management Plan (EEMP), is effectively a spatial layer implemented by a Council Policy. Once D'MOSS areas had been decided to be integrated into the city's planning schemes as 'controlled areas', much deliberation between public and council occurred, and this was successfully achieved in December 2010. Now, 'D'MOSS controlled areas' are depicted as a switchable layer on the Councils Geographic Information System (G.I.S.) (Roberts, 2011). According to research conducted by Seerpersad (2005), the open space planning system began approximately twenty-six ago and includes spaces such as conservation nodes, active and passive recreation facilities as well as picnic sites. The main aims of the system are (Seerpersad, 2005: 33):

- ***Amenity***

  - To add to the quality of life.

  - To contribute to the visual attractiveness of the city by providing scenic variety and visual relief.

- ***Economy***

  - To promote Durban as a desirable place to work, live and as a holiday destination.

  - To optimize resource utilization by the rationalization of open space development and maintenance.

- *To reduce capital costs by developing natural solutions for storm water management.*

- ***Conservation***

  - *To protect endangered species and their habitats.*

  - *To help maintain the ecological balance in nature and by promoting the wider dissemination of indigenous species.*

- ***Recreation***

  - *To meet human and social needs.*

- ***Communication***

  - *To increase awareness of the need for conservation and the important role of nature.*

  - *To educate the public through direct contact with nature within the urban environment.*

  - *To promote the use of the open space system.*

These *'D'MOSS controlled areas'*, indicated with a green hatch on the G.I.S. Maps (Figure 12) are protected areas for reasons of topography, flora and fauna, natural biodiversity, or environmental goods and services provided. Hence, development on such areas either limited, prohibited or permitted with certain conditions. The development controls and limitations imposed on D'MOSS controlled areas according to the town-planning scheme, extracted from Clause 10, are (Roberts, 2011):

(3) *(a) No person shall, within a D'MOSS controlled area (as defined in clause 1) develop any land, or excavate or level any site, or remove any natural vegetation from, or erect any structure of any nature whatsoever, dump on or in or carry out any work upon such site without having first obtained the prior approval of the Council in terms of this sub-clause.*

(b) No such approval shall be given unless the Head: Development Planning Environment and Management, after due examination, and subject to such conditions as he/she may specify, is satisfied that any such development, erection or other work referred to in paragraph (a) hereof can be carried out without materially and/or temporarily degrading, destroying, or negatively impacting on the integrity of the biodiversity and/or environmental goods and services found or generated within the said area.

(c) For the purpose of any examination referred to in paragraph (b), the applicant shall, where required by the Head: Development Planning Environment and Management submit such plans or other supporting documentation as the Head: Development Planning

Environment and Management may require. Without affecting the generality of the aforegoing, such plans and supporting documentation may be required by the Head: Development Planning Environment and Management to be certified as being correct by an appropriately recognised/registered Environmental Consultant.

(d) The conditions referred to in paragraph (b) hereof may be such as to: -

(i) restrict the form or nature of the building or structure;

(ii) limit the size and/or shape of the building or structure;

(iii) prescribe or restrict the materials of which the building or structure is to be constructed;

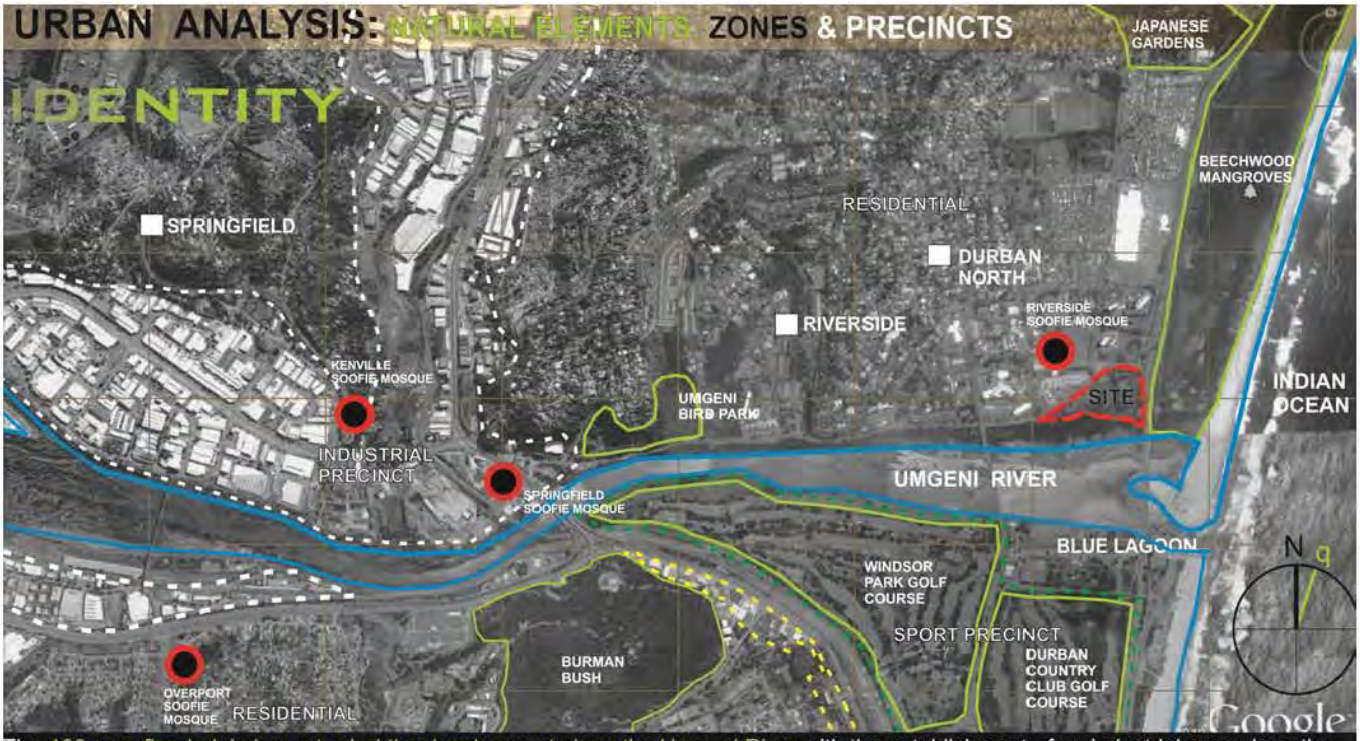
(iv) determine the siting of any building or structure and of any soakpits or other drainage works; (vi) prohibit or control any excavation on the site, the construction of any roadways, paths and other garden features;

(vii) prohibit or control the removal of any natural vegetation;

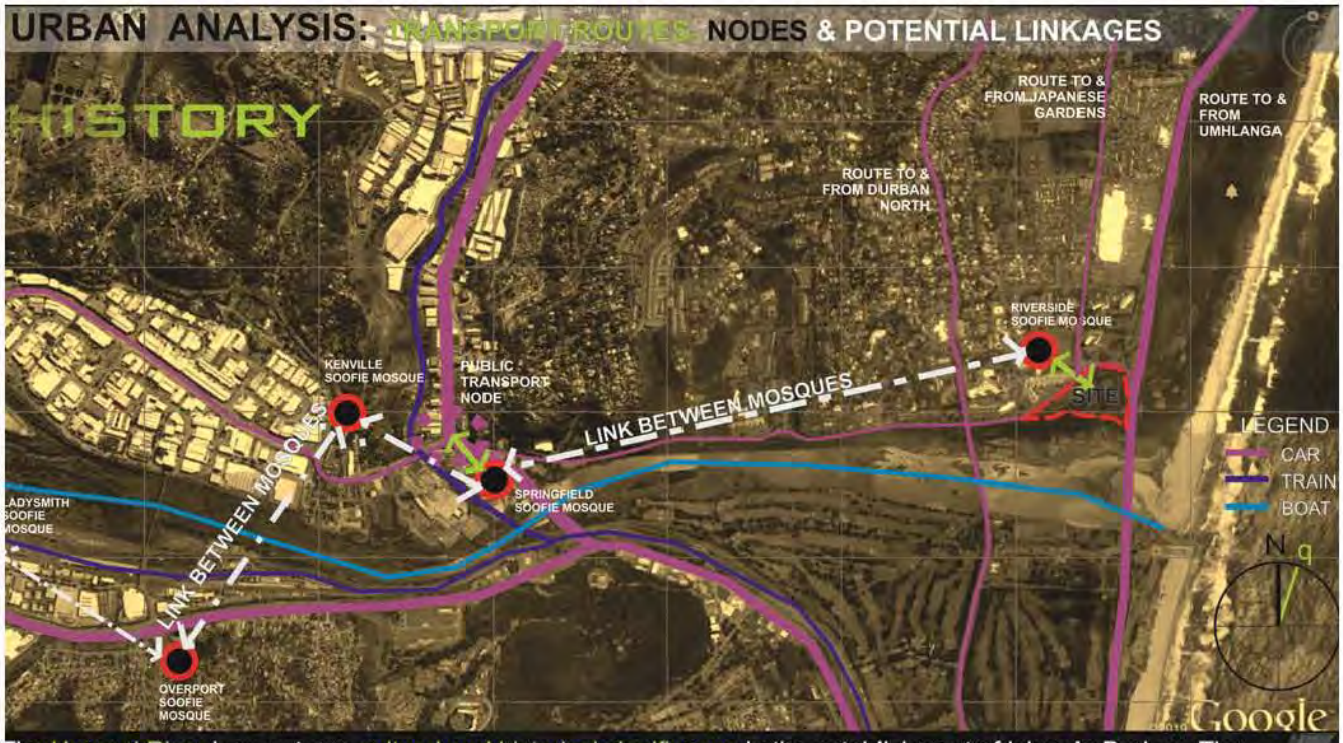
(viii) control any other aspects which the Head: Development Planning Environment and Management considers to be desirable.

(e) In any approval or any conditions as may be specified by the Head: Development Planning Environment and Management above, the applicant shall enjoy a right of appeal to the KwaZulu-Natal Planning and Development Appeal Tribunal1 as established in terms of Section 100(1) of the KwaZulu-Natal Planning and Development Act No 6 of 2008.

2.4.3. Urban Analysis

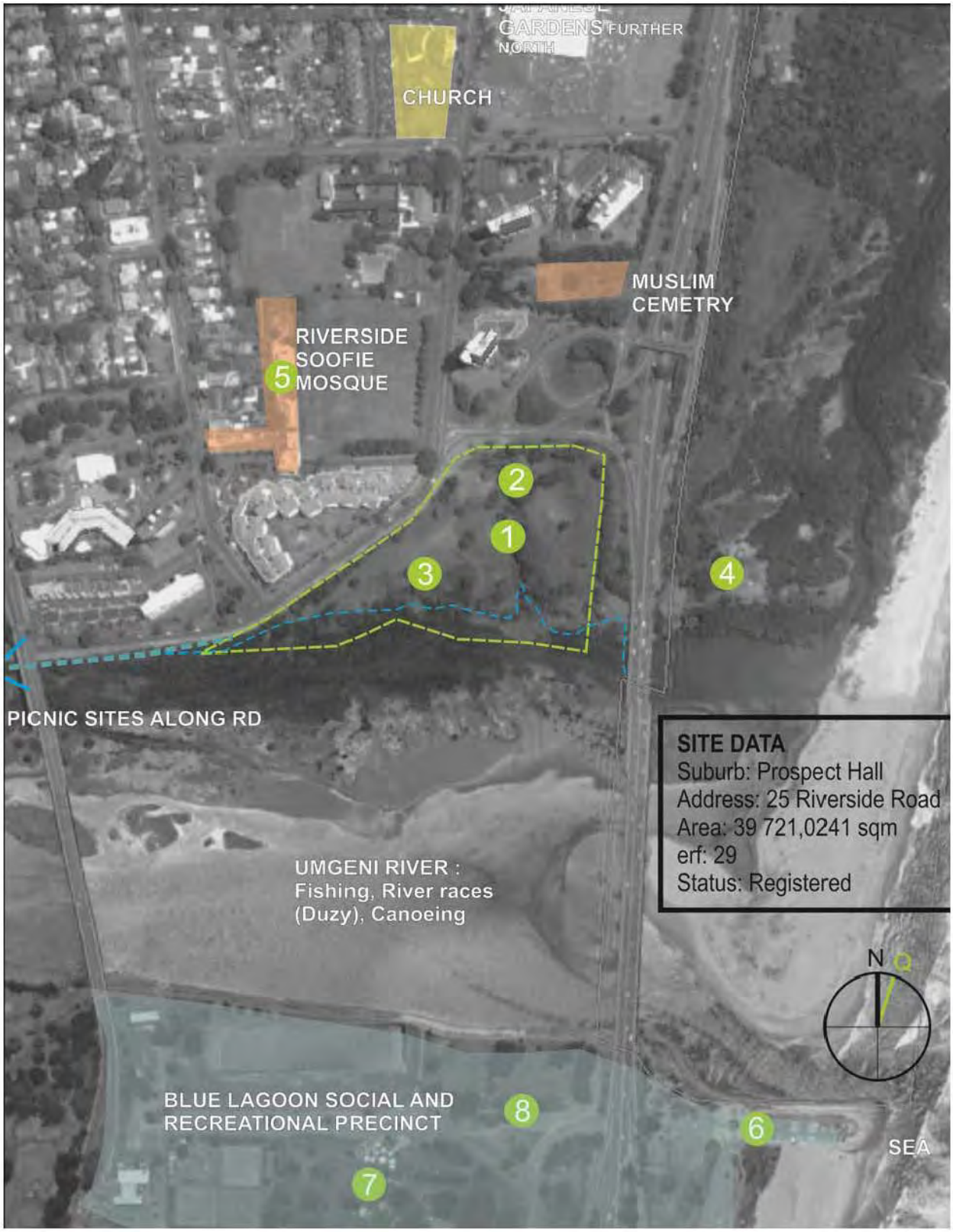


The 100-year flood plain has retarded the development along the Umgeni River with the establishment of an industrial area along the Umgeni River banks. The Umgeni River is fully enclosed by Springfield Industrial Park, prohibiting any social activity along the river and blocking off scenic views of the River from the residential communities (Seepersad, 2005). Additionally, fertile farmland along the River has been consumed by the industrial developments, which have also not considered proper storm water management by creating wate barriers that 'increase surface run off and increases the danger of flooding' (Seepersad, 2005).



The Umgeni River has a strong cultural and historical significance in the establishment of Islam in Durban. The numerous Soofie mosques (indicated above) in and around Durban (like the Ladysmith Soofie Mosque) were all built close to the River water for ablution purposes.

2.4.4. Site Analysis




1 STORM WATER CHANNEL ON SITE


2 SHEMBE CHURCH SITE


3 BRAAI AREA ON SITE


4 BEECHWOOD MANGROVES


5 RIVERSIDE SOOFIE MOSQUE


6 UMGENI RIVER MOUTH


7 COCONUT GROVE


8 BLUE LAGOON PICNIC AREA


NE WINDS
LIGHT RAINS &
SEA BREEZES
MINOR BAD
WEATHER
winter solstice 22 december
summer solstice 22 june
BEECHWOOD
MANGROVES
NATURE
RESERVE
W
E
STORM WATER
CHANNEL
100 YR FLOOD PLAIN
NOISE
POLLUTION
SW WINDS
HEAVY RAINS &
STORMS
MAJOR BAD
WEATHER
RIVER VIEWS
N
WINDSOR
PARK GOLF
COURSE
DBN YACHT
CLUB
PICNIC
AREA
INDIAN
OCEAN


PEMBROKE ROAD
PROSPECT HALL RD
WATERKANT ROAD
ROUTE TO & FROM UMHLANGA
SOOFIE SAHEB DRIVE
ROUTE TO & FROM JAPANESE GARDENS
M21
RIVERSIDE ROAD
SITE ACCESS
DIRT RD TO BEECHWOOD MANGROVES
ROUTE TO & FROM DURBAN NORTH
M14
M4
N
STEIBEL PLACE
SEA

CHAPTER 3:

THE HISTORY OF CONTEXT: A CASE STUDY OF THE SOOFIE SAHEB MOSQUE AND MAUSOLUEM IN RIVERSIDE

Figure 1, Riverside Soofie Mosque (www.soofie.saheb.org.za)

3.1. Introduction

In the 1800's, the first Indian settlement in Natal was in Riverside, according to an Indian spokesman Gopaul, 1943 (Appendix B) and Indians had been living there for more than seventy years when plans of relocating them to other areas in Durban, such as Chatsworth (www.soofie.saheb.org.za) due to Group Areas Act 1950's, were being enforced. After much protest and public attention, the Indians were forced to sell their homes and move away from an area so dear to their hearts. Due to legislations, they were forced to leave behind religious buildings that were part of their everyday spiritual rituals and seventy years of initial memories of arrival in Natal (www.soofie.saheb.org.za).

The Soofie Saheb Mosque in Riverside (**Figure 1**) was one of these religious buildings. It is also one of twelve of the oldest Islamic developments in the history of South Africa and formed part of a religious prodigy that occurred during the late 1800's and early 1900's. It began with the arrival of Mahomed Ebrahim Soofie or Soofie Saheb in Durban on 17 March 1895 by instruction of his Sheikh (Religious Leader) to provide specialised work for the Muslims in South Africa. He built twelve masjids, twelve madressas (schools based on an Islamic ethos), orphanages and centers' to carry out the work of Islam in a span of fourteen years in the surrounding areas of Durban eg. Riverside (1896), Westville (1904) and Sherwood (1905) (www.soofie.saheb.org.za).

Part of the development at Riverside, included the original Entrance arch, a masjid, a mausoleum, an orphanage with a dining hall and kitchen, the original home of Soofie Saheb, a madressa, a dispensary, a residential home and two cemeteries, almost forming an Islamic centre. Today, however, due to Group Areas Act 1950's, only the masjid, mausoleum and cemetries have been preserved (www.soofie.saheb.org.za).

3.2. Justification

The rich history behind the establishment of Islam in Durban and South Africa as well as the Islamic Architectural heritage that is inherent in the story of Soofie Saheb and his life in South Africa is significant to the Indian people of Durban. The Riverside Soofie Mosque is one of the mosques which represent this history and architectural heritage. It's close proximity to the chosen site of the project and the relevance of an association between an Islamic centre for Durban and the mosque itself, which is a national heritage site, is fundamental to the project.

3.3. History

Throughout the lifespan of the Riverside development, it has evolved in many ways. The original development (**Figure 2**, **Figure 3**) , constructed **in the 1940's**, extended all the way from the existing mosque, through the current Lagoon Lodge site, to Riverside road, which was also where the original entrance arch (Buland Darwaza) (**Figure 4**) to the complex was. Along this axis, existed a pedestrian road flanked by the various building of the different functions that existed within the complex.

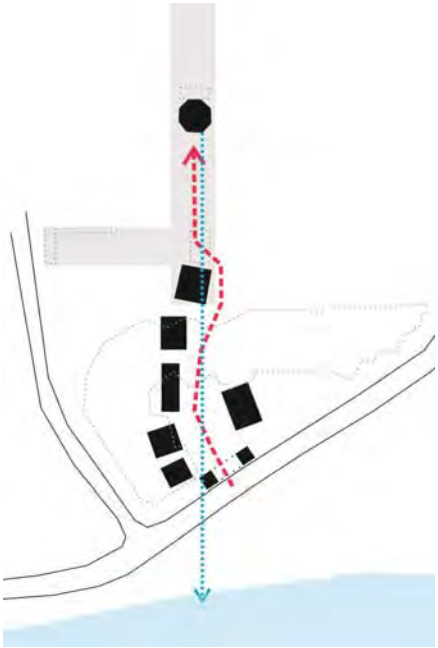


Figure 2, Diagram of the original setting, showing the current position of new buildings and their influence on the development (Author, 2011)

Figure 3, The original Soofie Saheb Complex in Riverside before the intervention of Group Areas Act (Photo taken by Author at the Museum of Soofie Saheb, 2011)

Figure 4, The original Soofie Saheb Entrance Arch (Buland Darwaza) in Riverside (Photo taken by Author at the Museum of Soofie Saheb, 2011)

The original complex that was built by Soofie Saheb had a symbolic connection to the River water as in Islam as well as universally, water represents purity and purification. A huge arch (**Figure 4**) that was the gateway to the centre, where the Muezzin gave the azaan for the five times a day prayer, marked the entrance.

Figure 5, The original Soofie Saheb Mausoleum in Riverside that was built for the burial of Soofie Saheb, who passsed away in 1910 (Photo taken by Author at the Museum of Soofie Saheb, 2011)

The original mausoleum was very simple in its architecture as seen in Figure 5.

In 1968, after more than 70 years of the existence of the Centre, Group Areas Act forced the Indians out of certain areas in Riverside to make way for the "white" population. With this came the demolishment (**Figure 6**) of part of the Mosque Complex after much protest and rebellion and only the Mausoleum, Masjid and cemeteries remain from the original complex, today.

GATEWAY TO the tomb of Saint Sufi Sahib, with building donated by Mr. Rus-omjee, and Mosque, in the background. These buildings have now been broken down.

Figure 6, A newspaper clipping found at the museum of Soofie Saheb

> *"Seventy three years of history and rich heritage, sweat and toil, dreams and visions, were left in tatters overnight."* - www.soofie.saheb.org.za

The original Entrance arch, the orphanage with a dining hall and kitchen, the original home of Soofie Saheb, the madressa, the dispensary and a residential home were all demolished. The orphans were re-located to the orphanage at the Kenville Soofie Mosque were service to community continued (www.soofie.saheb.org.za).

A timeline of events that has taken place ever since, is as follows (www.soofie.saheb.org.za):

1970 - The mosque roof, ceilings and old electric wiring completely replaced.

1973 - Windows, doors and floorings were replaced and new carpets laid. Car park tarred for the first time.

1979- The Mosque/Mazaar complex was declared a National Monument. Thereafter the following renovations, extensions and constructions were made:-

1980 - Mosque was renovated and extended

1985 - Mazaar Shareef was renovated and the Dome was constructed and installed **(**Figure 7)

Figure 7, The placement of the Dome on the mausoleum of Soofie Saheb, 7th August 1985 (Photo taken by Author at the Museum of Soofie Saheb, 2011)

1986 - Further renovations and extensions to the Mosque

1992 - Building to house Archives, Library and Museum constructed

1994 - A hall for Madressa and a residence constructed

1995 - An adjoining land bought and the car park extended.

1999 - Addition of extra floor and alterations to Mosque.

3.4. Setting

Location

Riverside Soofie Mosque is located in the suburb of Riverside, in close proximity to the Umgeni River as well as the Indian Ocean (**Figure 8**). The Riverside area is on the periphery of Durban CBD area. It is currently an upmarket area with a medium number of Muslim people in the area, especially along Soofie Saheb Drive (Appendix A)

Figure 8: The Riverside Soofie Mosque in relation to the chosen site (Author, 2011)

Figure 9: The ordering of buildings on site, the connections to water and the Muslim cemetery in plan (Author, 2011)

The plot of land that is allocated for the buildings is very narrow, yet high in altitude compared to the eastern side of the site and perpendicular in relation to the Umgeni River. This gives the buildings prominence in terms of height above sea level (**Figure 9**, **Figure 10**). It also has great views of the Indian Ocean (**Figure 11**), but the view and connection to the Umgeni River is lost (**Figure 9**).

Figure 10, An elevation of the site and the buildings on site (Author, 2011)

Figure 11, The view from the mausoleum to the Indian Ocean (Author, 2011)

Orientation

When approaching the site from the eastern roads, the building is highly prominent with its height and statue above the road levels; however, one has to travel around the building to get to it as the main vehicular entrance which is off Soofie Saheb Drive as seen in **Figure 8**. When travelling from the west toward the building, there is no inclination of the building with only a signage board indicating the presence of this national heritage site at the corner of Riverside Road and Soofie Saheb Drive.

There is a secondary entrance off Prospect Hall Road, through a service vehicle road, which is not very pleasant and is mainly used by the workers on site (**Figure 12**).

The minarets, which are meant to be location markers for travellers, are barely noticeable within the urban fabric from the western side of the site.

Another vital aspect of orientation is the direction of Qiblah in Natal, which is 10.456878 degrees from North clockwise (www.islamicfinder.org) and can be seen in **Figure 12**. Qiblah is used to determine the direction of any Islamic prayer facility worldwide.

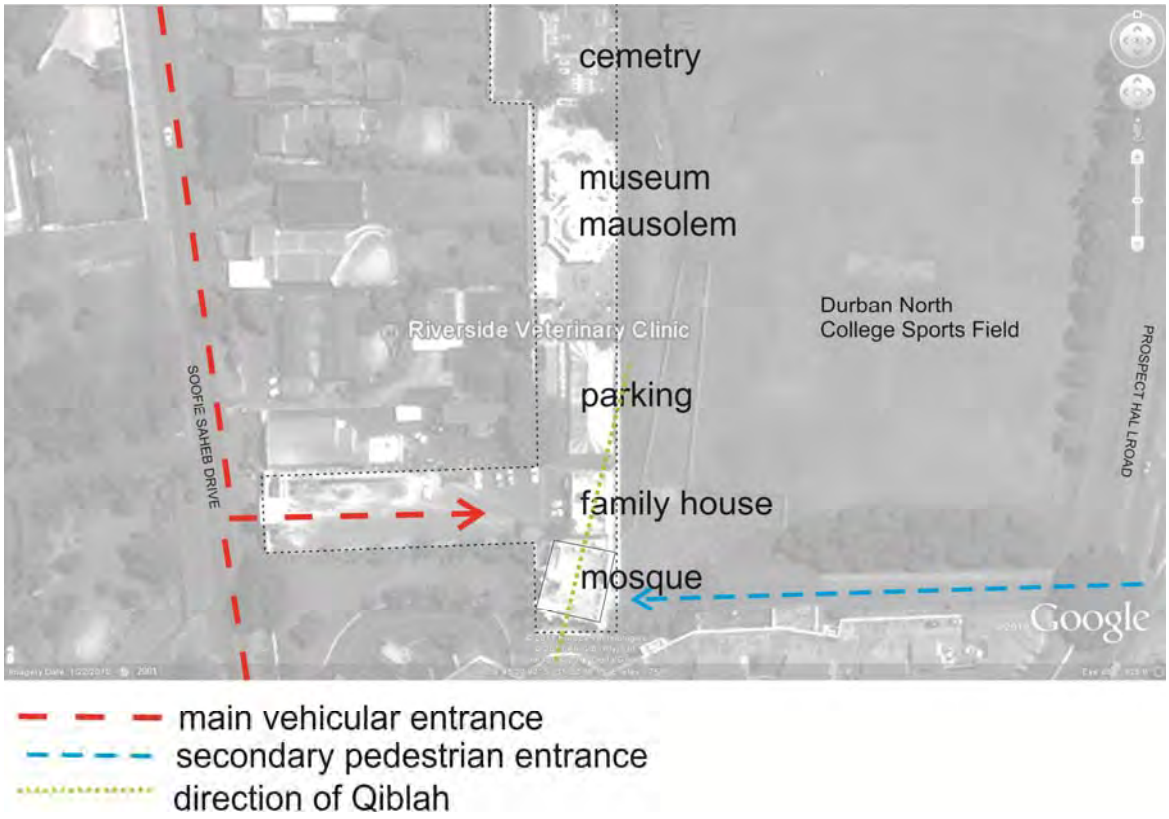


Figure 12, Site, showing the entrances to it

3.5. Sacred Identity

The architectural style that was used in all Soofie buildings was that of Mogul style architecture. This style was brought to South Africa by the Indians and expressed in their mosques.

Figure 13, The elevation of the Soofie Mausoleum expressing its aesthetic qualities (Author, 2011)

Mogul architecture at the Riverside complex has a lot of plasterwork detailing (Figure 13), emphasizing the vertical elements, such as arches, minarets and corner articulation and dome bases. The plasterwork and detailing enrich the architecture allowing for a play of light and shadow on every facade and creating texture.

Arches and arcades (**Figure 13**) are used here to provide walkways around a building or an internal periphery walkway in the case of the mausoluem, where the arches are converted into windows allowing for an abundance of light to filter through. The arch in Islam is a universal symbol of the mihrab which is the direction of Qiblah. The gateway to the complex itself is three huge arches indicating a change in mindset and atmosphere.

The entrance of the mausoleum is accompanied by a water fountain (**Figure 14**) just outside it and some trees, which are symbolic of paradise. However, there aren't many green spaces and gardens as all of the leftover land has been tarred and used for parking facilities.

Figure 14, The water fountain just outside the entrance of the mausoleum

The corners of the buildings (**Figure 15**) are almost always articulated with a vertical element, spiritually connecting man to the universe and almost pointing upward. Variations in heights articulate the elevations and vertical expression accordingly. The buildings almost look like they are floating due to this.

The domes are all pointed at the top as is the style of Mogul architecture and in the case of the mausoleum, the dome is ribbed to lighten the aesthetics of it. The dome is also terminated with the moon which is a sacred archetype of Islamic architecture. Some of the buildings also have pointed arches, but not all of them due to extensions and the variation of artisans throughout the decades.

Figure 15, The vertical articulation of the corners of the Soofie masjid gives it an appearance of floating

3.6. Conclusion

The historic link of the Soofie complex to the water has been destroyed due to Group Areas Act,. It is a complex that is embedded in the recent past of the Muslim population as well as the entire Durban population due to the uproar that it has created. To create this continuity with recent history and near future, as explained by Lynch (1960) in theory of place, the project will establish a cultural context and create meaningful space for the people of Durban and re-affirming their identity which was somewhat stolen from them in the form of architectural heritage.

By establishing architectural identity by means of physical elements, historical context and natural context and personal identity or self-identification, people will develop an emotional attachment to architecture. Once the identity of the building has been strengthened in this way, orientation toward the building has to be improved and the entrances reinforced. It has been found that the main entrance of the building is tucked away in the opposite side of the site from which is visible to

majority of the people that travel in that area. Additionally, a location marker needs to be put in place so that it may be easier for people to find their way toward the building by following it.

It can be established form the author's research of Soofie Mosque buildings, that the connection to the river is important, as most mosques were built along the river and their main pedestrian entrances were toward the river. Due to urban growth and vehicular intervention, the entrances of the buildings have been mirrored and the experience of the building's entrances has drastically been altered. The spirituality of the entrance and connection to nature has been lost.

Qiblah determines the direction of a prayer facility, and here it can be seen that the rest of the building on site are orientated according to contextual factors and only the mosques direction is different, which allows one to identify that, that particular building is a mosque.

The arch is a strong directional symbol in Islamic architecture as it marks gateways and entrances to buildings and complexes. Also, it can be seen that the architectural form of the buildings are very simplistic, however, the detailing is very stylistic. The building doesn't make use variation in manners of texture, as the play of light can be achieved using a variety of elements.

CHAPTER 4:
THE IDENTITY OF CONTEXT AND ISLAMIC ARCHITECTURE

4.1. Introduction

The identity of context is specifically related to the special features of the context and a particular site. In this case, the site is environmentally protected and is close to a large body of water. The identity of Islamic architecture is the principals derived from other buildings that will influence the architecture and design of the building. The aim of this chapter is to lay out some of the most influential precedent studies that deal directly with the design of Durban Islamic Centre.

4.2. History and Meaning

Taj Mahal Cultural heritage District and National park

Figure 1, Context plan showing the Taj Mahal and Moonlight Gardens in relation to the sacred Yamuna River (Bellafoire, 2003)

The Taj Mahal (Figure 1) was built by the fifth Mogul emperor for his deceased wife as a splendid mausoleum in her honour. It was designed by a Persian architect who had a work man force of 20 000 craftsmen and labourers that worked on the building for 12 years, finishing it in 1643 (Bellafoire, 2003). The cultural heritage district was proposed to develop new parkland around the Taj mahal as the concerns of air pollution in the area and it damaging the marble of the Taj Mahal, grew intensely.

The relevance of this cultural district to Durban Islamic centre is the way the development connects itself to the water and the landscaping (Figure 3 and Figure 2). The landscape around the district area is very varied as there are a number of different things happening along the river, from medieval urban enclaves to 19th century abandoned factories, agricultural sites and green areas.

The proposal is meant to promote ecological balance, wider landscapes around the Agra Fort and Taj Mahal while conserving the river and emphasizes more on natural preservation rather than the colonial emphasis on "monuments"(Bellafoire, 2003).

Similar to the Umgeni River adjacent to the site, the Taj mahal has the River Yamuna (Figure 1). From ancient time to modern day, the Yamuna River exudes a cultural heritage district which includes the Taj Mahal and the context thereof. The major circulation was the conversion of a railroad into a streetcar road to get across the river. River docks were also built on both sides of the river for boat and canoe access, making the Taj National Park a pedestrian only area. The Taj Mahal and the Moonlight Gardens (Figure 4) on the opposite side of the River, both use the river to irrigate the gardens and to supply water to the reflective pools (Bellafoire, 2003).

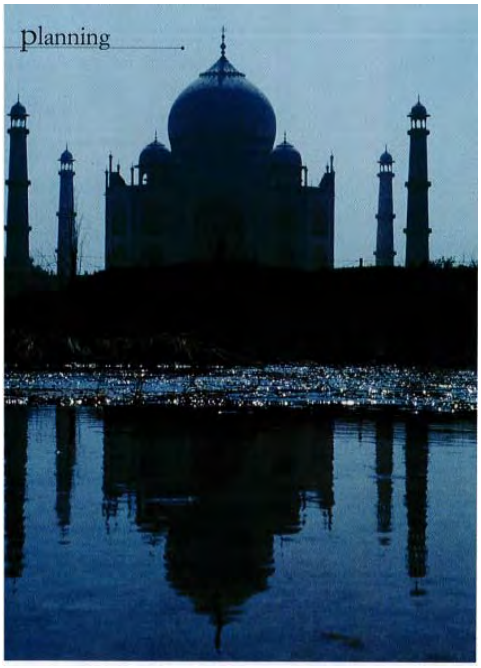


Figure 3, The view of the Taj Mahal from the River Yamuna (Bellafoire, 2003)

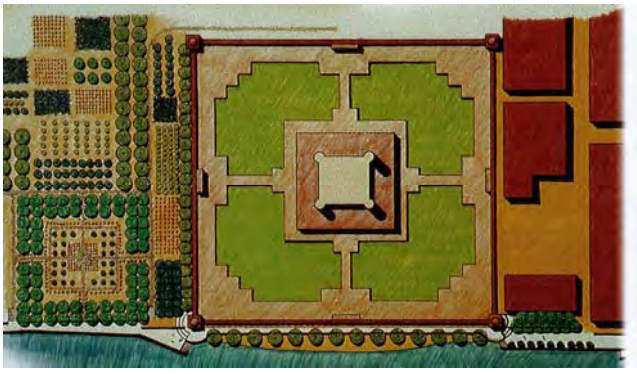


Figure 2, The Yamuna Promenade at Itmad-ud-daulah's tomb

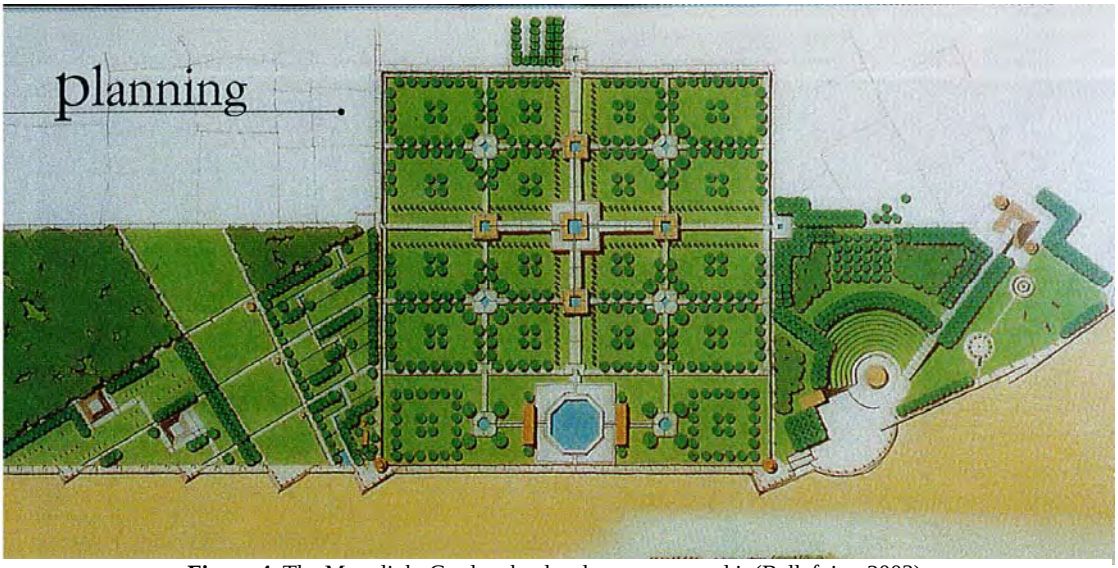


Figure 4, The Moonlight Garden the development around it (Bellafoire, 2003)

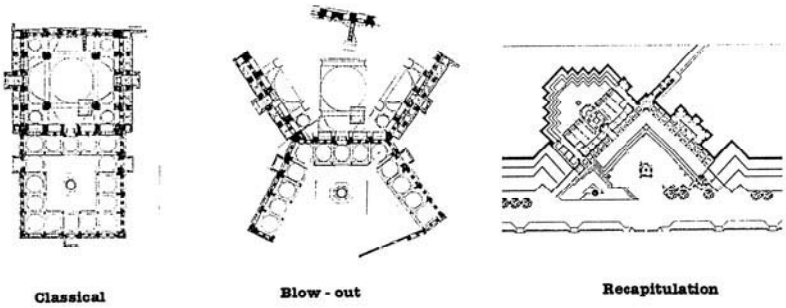
Grand National Assembly Mosque, Ankara, Turkey 1989

The Grand National Assembly Mosque is part of a Parliamentary complex in Turkey (Figure 5 Figure 7). The Mosque is meant for the ministerial and administrative staff and is located at the tip of the complex. It has a very distinctive triangular forecourt allowing for a change in direction for Qiblah. This makes the prayer facility very prominent in plan (see Figure 7) (https://archnet.org/).

Figure 5, Grand National Assembly mosque, Recipient of the Aga Khan Award for Architecture, 1995 (https://archnet.org)

Another interesting aspect of the design is that it challenges the classical layout of a courtyard which so internalised and recreates it to develop a more contemporary setting in plan (Figure 6). This in turn gives it a special character of appeal and identity.

The traditional typology of the centralised and enclosed courtyard protecting the inner sanctum is opened up to the outside world via the triangular forecourt in the same way that the traditionally centralized and inward oriented prayer hall is flattened out and extraverted through openings in walls ; reaching out into the landscaped terraces and gardens. With such spatial characteristics, the solution can be regarded as an "exploded" version of the traditional Classical Schema.



Although, at times, the design of the building may be reminiscent of the flat, columnar early Islamic mosque architecture predating the dome - such as in the linearity of the main prayer hall and of the classical Ottoman mosque architecture in its "Kulliye" like general layout, such formal similarities are only coincidental and what may seem to be **historical references are not deliberate.**

Figure 6, Evolution of the classical plan of a mosque (https://archnet.org)

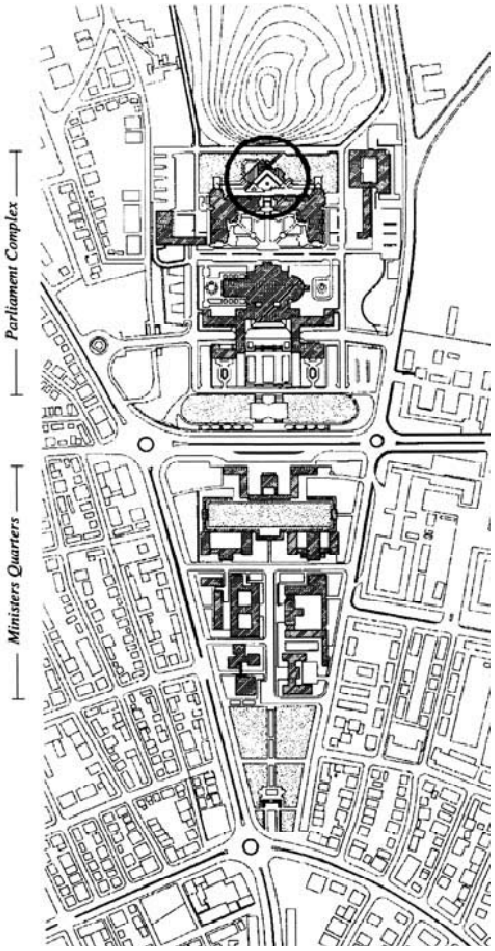


Figure 7, Plan of the Parliamentary development of the Complex with the mosque as the pinnacle. (https://archnet.org)

Arches

The use of arches independent of a plane as a gateway in the Sultan Qaboos Grand Mosque (Figure 8). Arches are also used to add character to an interior space using a rhythmic pattern and grand scales (Figure 9).

Figure 8, The use of independent grand scale arches as gateways (http://www.fotolibra.com/)

Figure 9, The original Mosque of 'Amr in Cairo (Michell, 1995)

4.3. River Restoration

The creek restoration Project, California

This Santa Rosa water way was long neglected, before citizen activists, in 1989, became concerned about the condition of the creek and decided to take action. The creek, which was a continuous concrete channel had become a "dumping ground and an eyesore" to the city (Figure 11). One of the reasons for it being encased in a large concrete channel was the fear of flooding downtown areas. This ruined the aesthetic appeal of the creek and affected the indigenous fish population one of which was the steel head trout (Viani, L. O. 2003).

With the complaints of the citizens, the city designed a master plan (Figure 12) which was put into effect. The plan included the restoration of the natural bottom of the creek for the local fish, the grading back of the banks, and the use of more vegetation (Figure 11). All of which lead to the ecological betterment of the creek and city as a whole (Viani, L. O. 2003).

"The project received an award of excellence from the California Park and Recreation Society." - Viani, L. O. 2003

Figure 11, The original creek with its concrete channel (Viani, 2003)

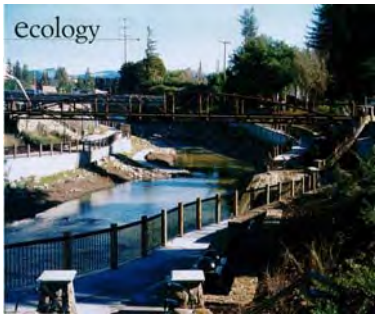


Figure 10, The creek after the city's restoration plan (Viani, 2003)

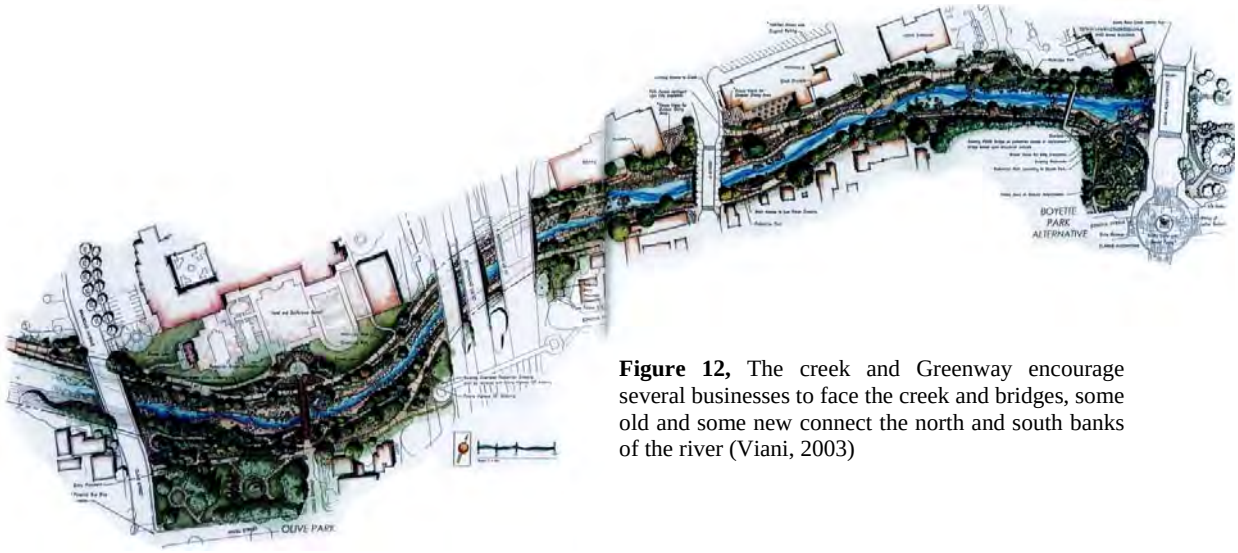


Figure 12, The creek and Greenway encourage several businesses to face the creek and bridges, some old and some new connect the north and south banks of the river (Viani, 2003)

Even though Umgeni has little ecological issues, there is a problem of it being cut off from the city with no social integration of the people. The river can be revitalised so that there is a better connection with the people of the city and not just as a backdrop of the industrial city of Durban. Rivers play an important role in a city's image as established in 2.4.3.

4.4. Contextual elements of earth and water

The Alhambra: Generalife

The Alhambra (Figure 13) gardens are located in Granada, Spain. These gardens are Islamic gardens and the word Generalife translates into "the gardens of paradise". The Alhambra complex is made of four parts (www.virtualtourist.com):

"1. Generalife gardens with all the waterfalls, buildings, plantations, etc
2. The Carlos V Palace (a modern, though incomplete addition)
3. The Alcazar (fort & gunnery)
4. Nasrid Palaces"

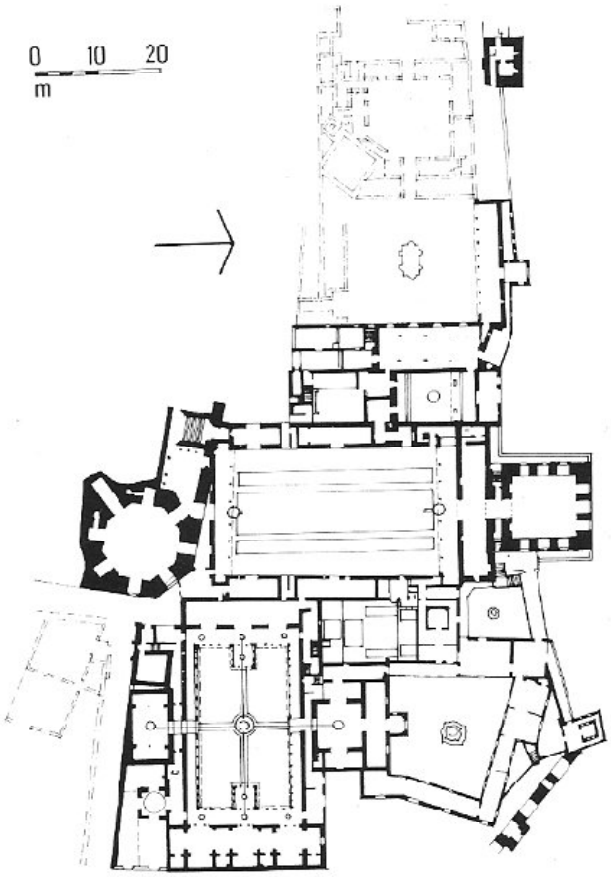


Figure 13, Plan of the Alhambra (Michell, 1995)

For the purpose of this project, the gardens will be the focus, as the context of the project is tropical much like the context of Alhambra with lots of vegetation and natural elements of water and plants.

Figure 14, The Court of The Lions, Alhambra, Granada (http://imranwrites.blogspot.com/2010_01_01_archive.html)

There are various different courtyards within the Alhambra and each of them has a distinctive and special character as seen in Figure 14, Figure 15 and Figure 16. However, there are certain common elements among them all.

Figure 15, Garden Court of Linderaja (Boudoir of the Sultana), Alhambra, Granada (http://en.wikipedia.org/wiki/File:Alhambra_Garden.JPG)

Figure 16, The Court Of The Myrtles, Alhambra, Granada (http://www.panoramio.com/photo/5407318)

The different types of courtyards at the Alhambra are inspirational. They create a distinctive Islamic atmosphere with a tropical background. The different courtyards provide experiential qualities which add to the allurement of the exterior spaces of the building. The spaces around the buildings also add to the quality as the scale and proportion of the building exteriors, which in turn allows for excellent human interaction while fading the distinction between the inside and outside.

4.5. Conclusion

There are various different ways in which a site as that of Durban Islamic Centre can be dealt with. The sacredness of the Yamuna River can be related to the traditional significance of the Umgeni River. The river is important here as the Soofie mosques have all been developed along the river and the Umgeni River is the common link between them all. The water itself is universally symbolic of purity.

To create emphasis and bring about a timely feel to the building it is important to consider the classical elements that were the driving force behind the original Islamic buildings. The Grand assembly mosque relates the importance of the prayer area to a complex well, with a change in direction as emphasis as well as the recapitulation of the classical plan.

Arches and courtyards are distinctively Islamic in character and the various precedents dealt with in this chapter give light to the kind of the spaces that should and can be created in the design of

Durban Islamic Centre. With the above anchoring precedents and the study of various other precedents, an entire Islamic environmental character can be achieved.

CHAPTER 5:
DESIGN DEVELOPMENT AND RESOLUTION

5.1. Conceptual and Theoretical Issues

5.1.1. Concept: Multiplicity in Unity

Multiplicity and *Unity* are concepts or themes that are expressed in the Holy Scripture of the Quran. "It establishes and legislates principles and regulations for the practical and ethical duties of the human being and for the ordering and administration of society." (http://www.al-islam.org). Foster (2004) expresses how the concept of *Multiplicity as Unity* should be consciously perceived as the relationship between 'everything and Everything' in order to reform peoples' perceptions of humanity and the world.

Unity itself is a major principle of Islamic art and architecture and even though the rectangle and square have perfect portions, the 'circle is the ultimate expression of unity' as eloquently explained by Foster (2004:5): "The circle contains polygons, both containing and underlying it. It produces triangles, squares and hexagons. In Islamic symbology, devolved from Egyptian, Indian and Greek geometry, the square is equated with the earth, or materialism, the triangle with human consciousness, and the hexagon or circle with creation."

Foster (2004) states that all Islamic patterns begin with the circle. By achieving a repetitive pattern, the circle is repeated and is then able to produce any conceivable symmetry. If identical circles are replicated and placed next to each other with their circumferences touching, they are able to maintain their individual identity while generating different geometries with their centres as well as with points where their circumferences meet. This can be seen in figure 53(a), where the centres of three 'united circles' are joined to form an equilateral triangle.

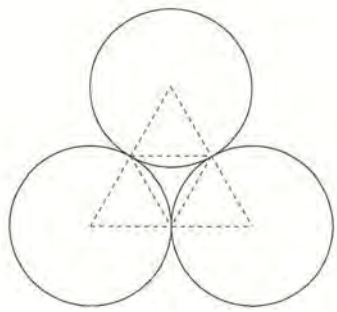


Figure 53 (a), Concept of Unity in Multiplicity: The formation of an equilateral triangle with the unity of three identical circles (Foster, 2004: 5).

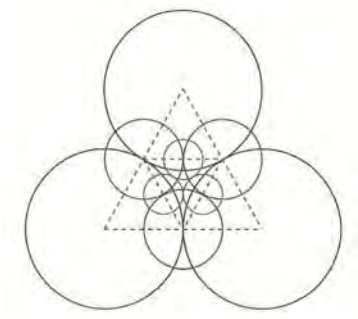


Figure 53 (b), The repetition of the whole at varying scales, almost representing Fractal geometry (Foster, 2004: 5).

If further circles are drawn at half the ratio of the original circles at points where the original circles touch, which may be seen as fractals in figure 53(b), the geometry begins to express a 'complexity in symmetry'. This is how the patterns in Islamic art and architecture were developed and became infinitely replicated as shown in figure 54 (Foster, 2004).

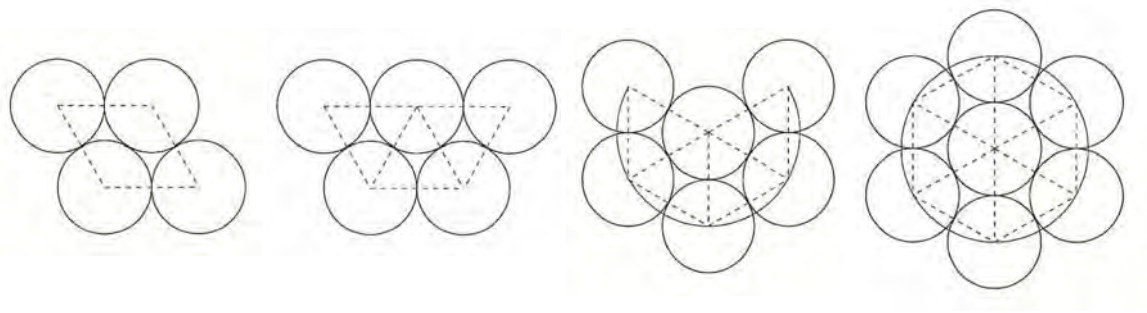


Figure 54, Different configurations of polygon formation with the use of a circle (Foster, 2004: 8).

The most significant configuration of circles is the unity of seven identical circles where six circles are huddled around the seventh circle, almost to form a bigger circle as seen in figure 55.

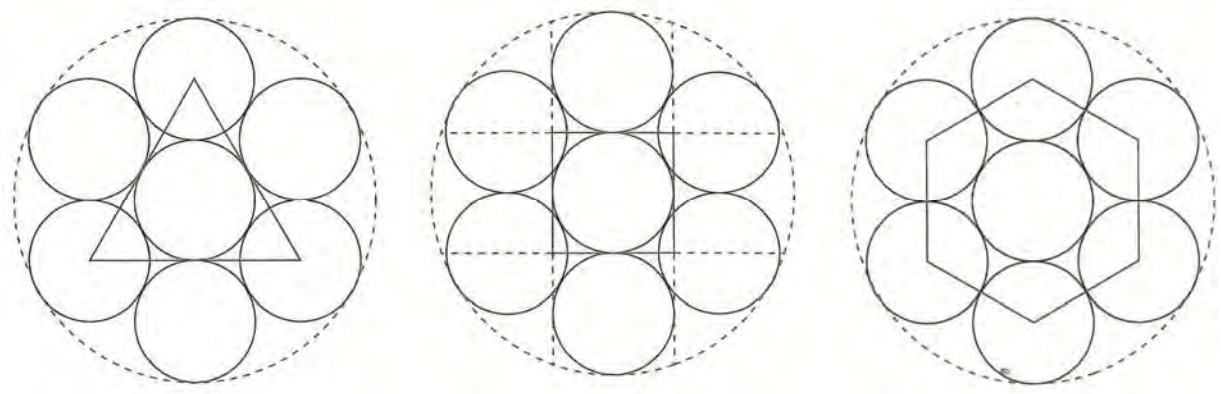


Figure 55, The most significant configuration of circles which generate the equilateral triangle, the hexagon and the square. (Foster, 2004: 9-10).

Foster (2004) explains that the concept of unity in multiplicity is expressed in all forms of Islamic art as seen in figure 56 and architecture, as seen in the geometric planning of the Taj Mahal in figure 57 and is fundamentally expressive of the unity of all people in their diversities. Being derived from eastern culture, Islamic architecture uses *abstraction* to relate the physical to the Divine.

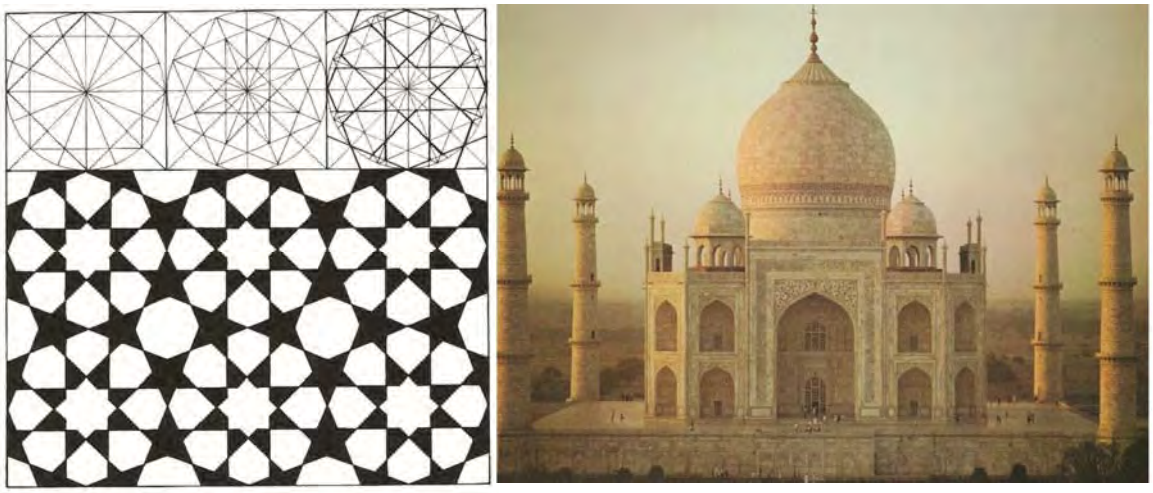


Figure 56, The generation of an eight-sided star using a circle. By replicating the pattern and infilling certain areas with a different colour, a geometric pattern is formed that is good enough for tiling. This is typically how an Islamic

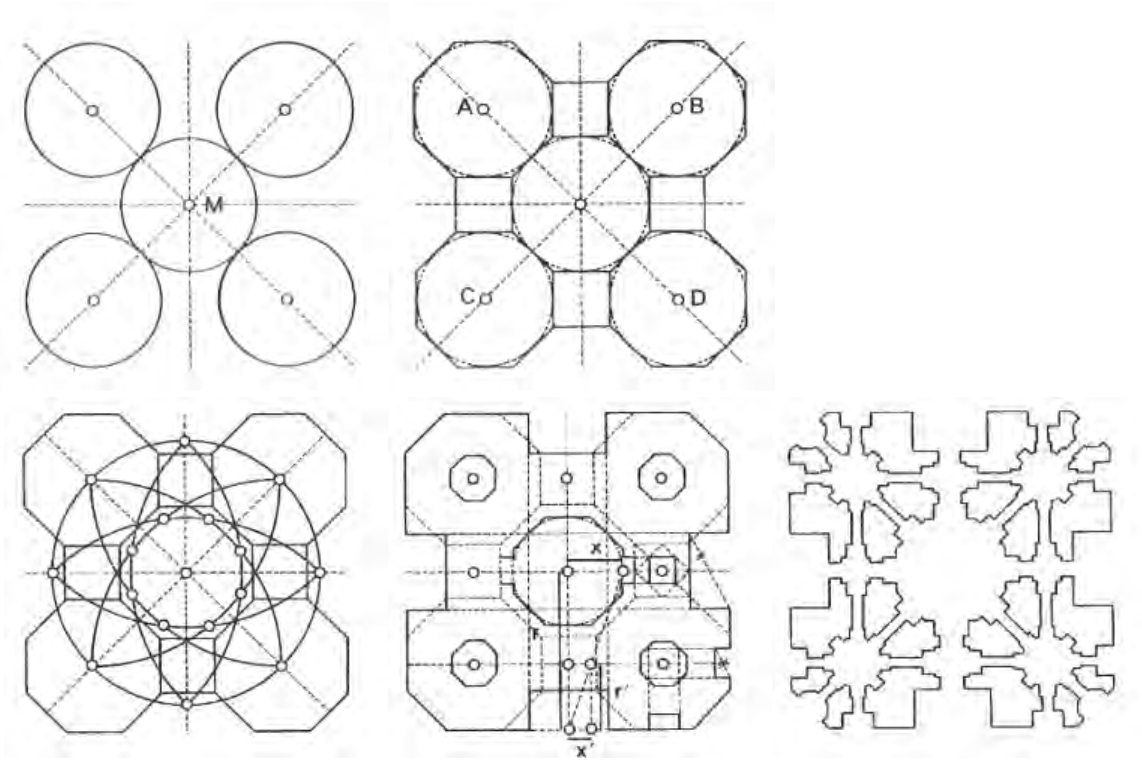
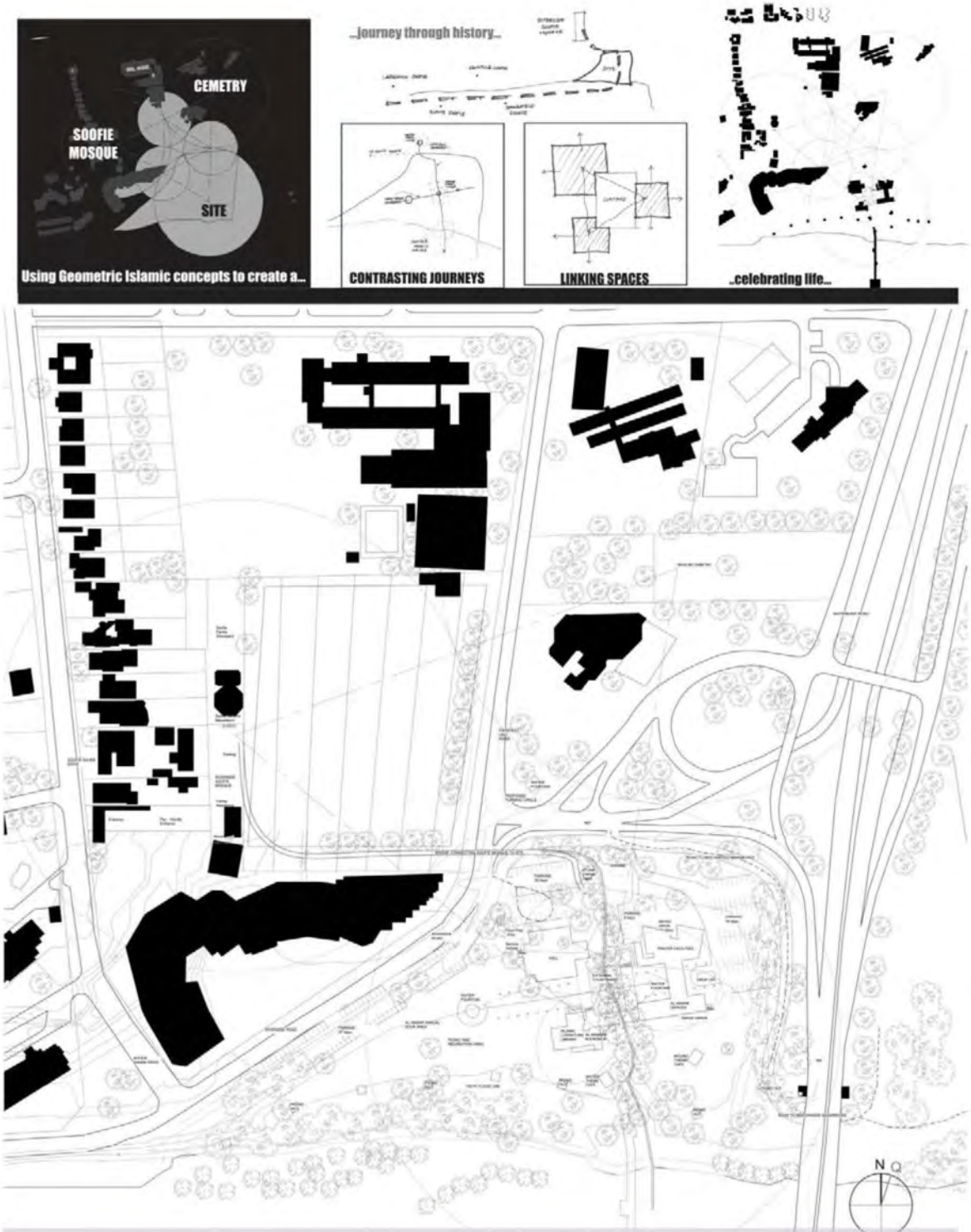


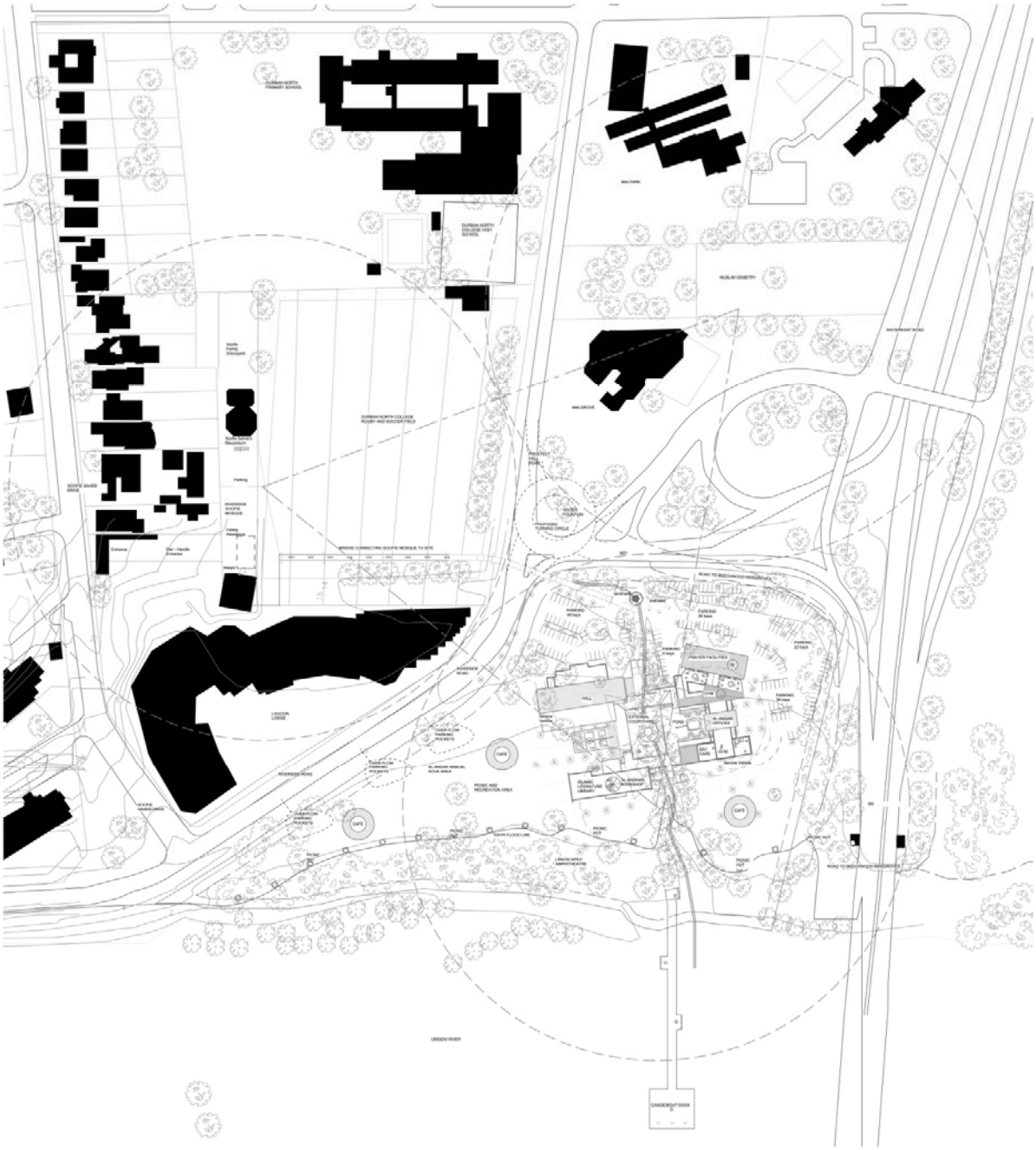
Figure 57, Geometric analysis of the Plan of the Taj Mahal, built between the years 1632-48 (Burckhardt, 1976: 175-9). The Plan uses the Multiplicity in Unity concept; whereby circles are used to derive the plan of the building.

5.1.2. Urban Design Resolution



Prelim Presentation:

- Link to the Soofie mosque not strong enough
- Look at the flood plain and how it needs to be treated
- Parking too formalised



Mock Jury Presentation:

- Link to the Soofie mosque still not strong enough
- Symbolic landmark not powerful enough
- Termination of journey at the jetty needs to be emphasized

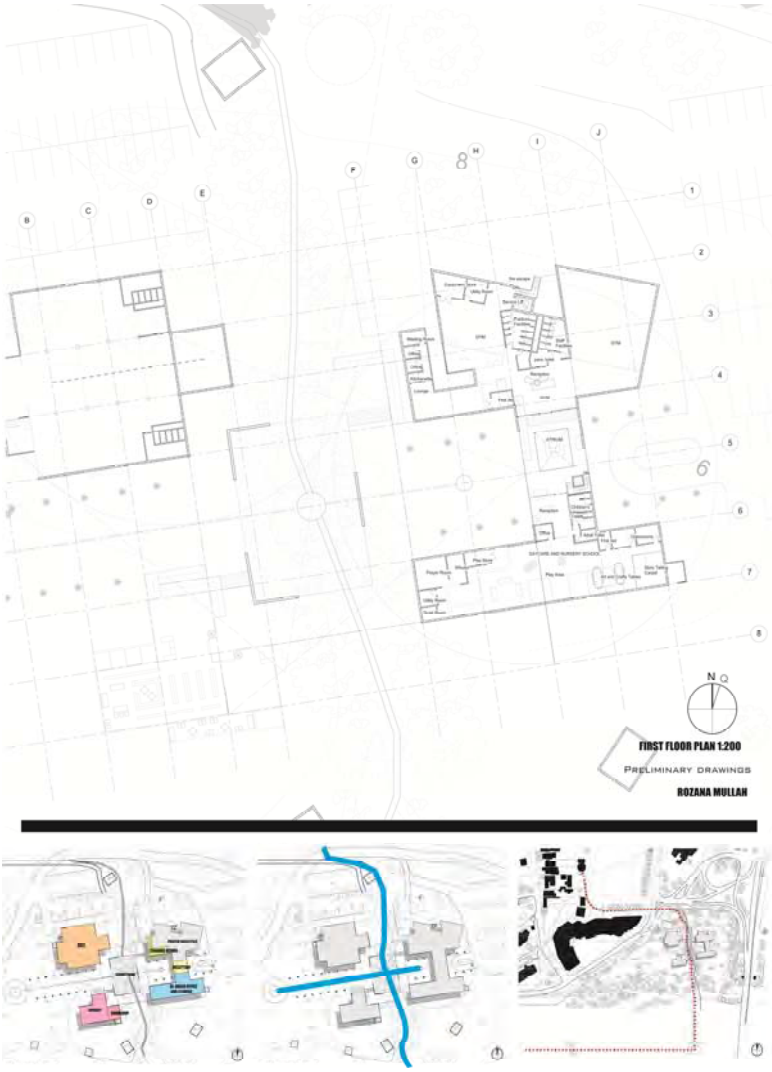
5.1.3. Design Resolution

Ground Floor Plan Prelim Presentation:

- Security access to buildings need to be controlled
- Boulevard to park to strong
- Path to Prayer Facility not celebrated
- Hall entrance not strong enough
- Scale of spaces between building too grand

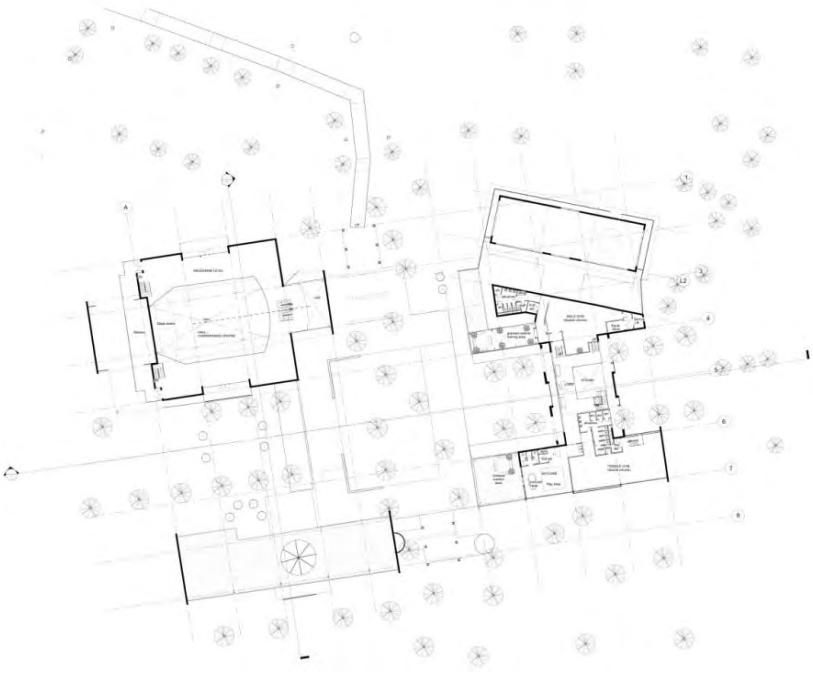
Ground Floor Plan Mock Jury Presentation:

- Hall to internalised, open out more to courtyard
- Library and hall too closed off to the park
- Exploit the Alhambra garden feel
- Use ramps for universal access
- Entrances- how do you deal with the average person?



First Floor Plan Prelim Presentation:

- The Prayer facility has an odd shape; Islamic architecture is geometry that is more pure.



First Floor Plan Mock Jury Presentation:

- Should the whole building face Qiblah?

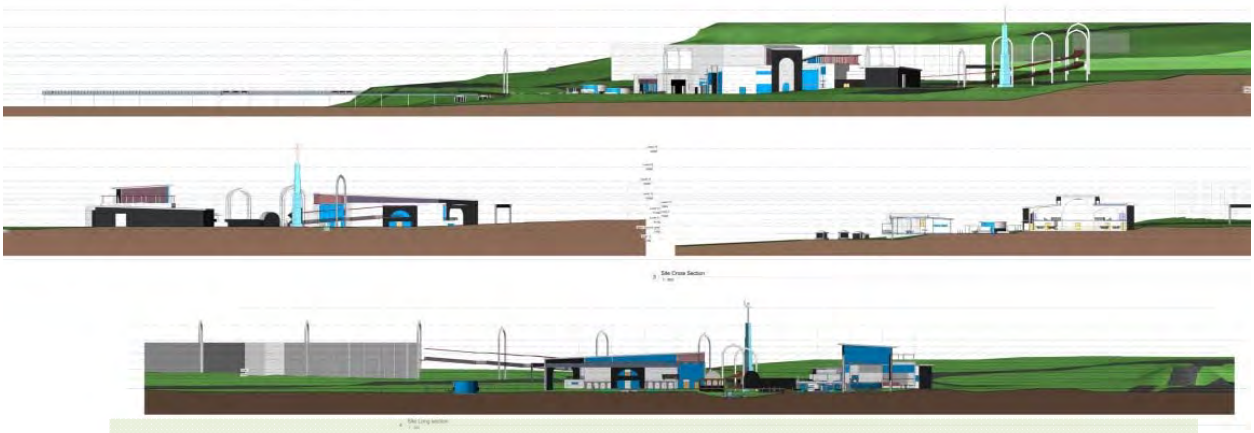
5.1.4. Form Resolution

Prelim Presentation:

- Not integrated into the landscape, has an arid feel
- Site is sensitive, deal with that aspect
- Boulevard to park too strong
- Geometry and control not communicated in 3D

Mock Jury Presentation:

- Arches are scaled very high and too far apart
- Not enough detailing and ornamentation
- Reinforce the link to the Soofie mosque



Mock Jury Presentation elevations

Mock Jury Presentation 3Ds of courtyard outside the admin building and entrance gateway.

5.2. Final Design Proposal

5.3. Technical Details

5.2. Final Design Proposal

DEFINING THE RESEARCH

Sacred Islamic architecture is a spiritual architecture initiated by religious belief (Özkan, 2004). It was later influenced by a diversity of different aspects such as culture, locality and climate. Foster (2004: 6) states that 'Islam succeeded in unifying the sacred and the secular'. Sacred geometries and pure mathematical proportions were used in sacred Islamic architecture to express its unity with the 'various orders of reality' (Foster, 2004).

Islamic architecture is one of the most well-known sacred architectural forms. Most of the architectural elements have a spiritual connotation, which awakens the soul. Cultural, traditional and secular influences are present; however, the bulk of this research deals with spirituality and not architectural evolution. Islamic architecture represents the Islamic culture, but it is a universally appealing architecture with an air of practicality. The religion of Islam and its influences are deconstructed to find the association of sacred architecture and timeless design.

PRINCIPLE THEORIES

Spirit of Place

Genuis Loci
- Norberg-Schulz (1979)

City Image
- Kevin Lynch (1960)

Place Theory -Trancik (1943)

Designing with Nature

Transparent Logic and Abstraction
- Ando cited in Nesbitt (1996)

Negation and Reconciliation - Abraham cited in Nesbitt (1996)

Quality of Allurement

Self-identification
- Jones (2000)

Perception - Freedberg (1989)

Homecoming
- Van de Leeu (1976)

Symbolism

Sacred Archetypes
- Jung (1964)

RESEARCH FINDINGS

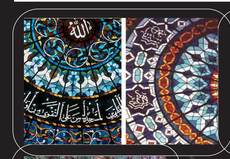
Timeless identity in sacred architecture is created using history or tradition of a place or people

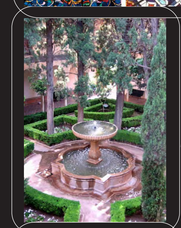
It is captured by embodying the abstract elements of design into the physical elements of design

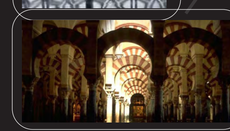
These abstract elements are the qualities of 'ultimate human value', where conflicting beliefs based on religion do not affect the 'collective human experience'.

This creates a sense of community among people of different religion and ethnicity. By stimulating a spiritual identity in people they, can relate to each other from their spiritual centre. As a result, architecture can be used to encourage the acceptance, appreciation and celebration of human diversity.

GRAPHIC SUMMARY OF RESEARCH








ABSTRACT DESIGN ELEMENTS

- Belief and spirituality
- Quality of allurement
- Man's existence as creation and not creator
- The relationship of site to architecture based on perception
- Architecture beyond the physical
- Man's place in the universe
- Natural sanctuaries of sacredness
- The intersection of time and
- Hierophanies

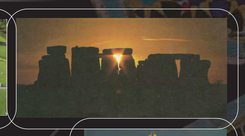
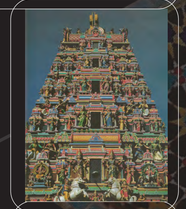
ISLAMIC DESIGN ELEMENTS

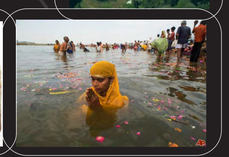
- Islamic Gardens symbolizing paradise
- Geometric pattern and art
- Water fountains
- Light and texture
- Vertical elements and their symbolic attachment ; domes, minarets, arches
- Orientation toward the Ka'bah
- Islamic sacred archetypes; moon and star, colour green

PHYSICAL DESIGN ELEMENTS

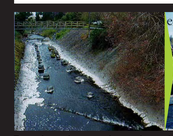
- Symbols
- Water, hills, mountains and stone
- Methods of orientation and positioning of elements using the sun, moon, stars, other celestial bodies or physical elements
- Circles
- Patterns and art
- Mathematic proportion and geometry
- Domes and towers or any vertical or circular physical element

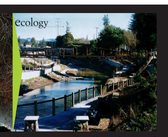
Every place should have the potential to be something greater ...

URBAN PRECEDENT : A CREEK RESTORATION PROJECT, CALIFORNIA


Previously a dumping ground and an eyesore



Now revitalized and restored, inspired by citizen activists

The redevelopment of the creek sparked the redevelopment of other buildings along it. this improved the overall character of the city.

Spirit of Place

Project received an award of excellence form the California Park and Recreation Society

Schulz (1979), determinants of city character:

i. Landscape (barren, fertile, natural, threatening)
ii. Function of time (changes in seasons, weather, light)
iii. Material and form constitutions (spatial articulation, definition of boundaries, building construction, connection of the building to land and sky, fenestration, facade modulation, motifs and all other aspects that contribute to the urban environment)

Kevin Lynch (1960) , Image of a city

i. continuity with its recent history and near future (which will give it a cultural context- no new things can happen without the old)
ii. Every place should have the potential to be something greater
iii. Legibility, Structure and Imageability

CONTEXTUAL PRECEDENT : TAJ MAHAL, AGRA,

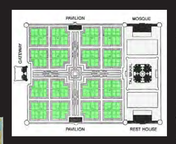
Located South of the Yamuna River, the Taj Mahal is the ultimate expression of identity in architecture. It uses the natural landscape in the design by drawing water from the Yamuna River using an aqueduct, to cool the building and supply the fountains and irrigate the gardens.

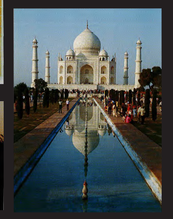
To set the Taj Mahal in context of its landscape, a long series of gardens are set along the River.

The building also lies downstream from the Agra Fort.

Plan showing the symmetry, geometry and order of Islamic gardens







Places constructed by man will always have a relationship with nature and can be read in conjunction with Norberg-Schulz' (1979) and Lynch's (1960) determinants of city character. The three aspects of this relationship are (Schulz, 1979: 17):

i. Visualization
This is a manifestation of man's idea or understanding of nature with the use of familiar construction methods to attain precision of natural structure.

ii. Complementation
This involves the harmonization of an environment with the addition of what man thinks is lacking.

iii. Symbolization
A symbolic representation of man's understanding of nature and where he fits in: this is done by adopting a natural character and translating the atmosphere into a building. As a result this develops into a portrayal of natural character, extracted from nature and transformed into the properties or elements of a man-made building (Norberg-Schulz, 1979: 17)

The above-mentioned relationships demonstrate how man gathers experienced meanings to construct an 'imago mundi' or 'micro cosmos' that solidifies his natural world.

OTHER PRECEDENTS

Alhambra, Granada, Spain

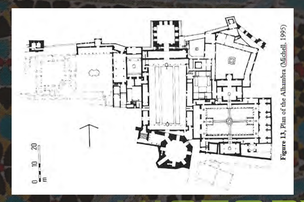


Figure 13. Plan of the Alhambra (Melladi, 1993)

HISTORY


Alhambra in Spain are a series of palaces and forts on one the highest, most visible points in Granada.It represents power by using beauty in architecture. The different types of courtyards at the Alhambra are inspirational. They create a distinctive Islamic atmosphere with a tropical background. The different courtyards provide experiential qualities which add to the allurement of the exterior spaces of the building. The spaces around the buildings also add to the quality as the scale and proportion of the building exteriors, which in turn allows for excellent human interaction while fading the distinction between the inside and outside.

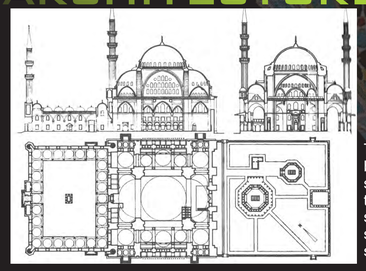
Hassan II Mosque, Casablanca

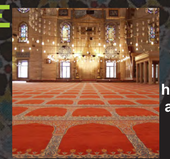
IDENTITY

The minaret was an element of Islamic architecture that was commonly adopted for the muezzin to call the azaan and as a landmark for a building of faith. This becomes an architectural feature derived from a belief (the dream of the Prophet) resulting in identification and thus allurement of the Muslim community in which the azaan then becomes the invitation of participation.

Suleiman Mosque, Istanbul

ARCHITECTURE





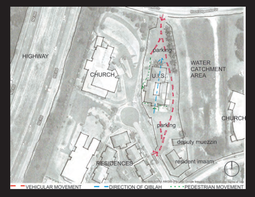
"A well-designed plan can enhance the harmony, scale, balance and composition of the musallah."

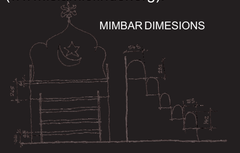
The character of the musallah is largely determined by structure and scale. Kahera (2006) goes on to say that a space with few or no columns is 'sensitive to the performance of worship' allowing great structural spans. The provision of more usable space, vaults and other structural elements are seen in the Suleiman Mosque, Istanbul

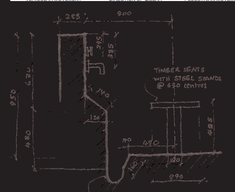
CASE STUDY: UMHLANGA ISLAMIC CENTER, KZN

LOCAL CASE STUDIES WERE LOOKED AT MAINLY FOR PLANNING, DUE TO REGIONAL AND CULTURAL DIFFERENCES IN PLANNING. THEY WERE CRITICALLY ANALYSED IN ORDER TO ENHANCE THE PROPOSED FACILITY.

The orientation of the building is east-west facing and the determining factors of orientation were site restrictions, separate entrances for males and females and the direction of Qiblah which is 10.456878 degrees from north clockwise (www.islamicfinder.org).




MIMBAR DIMESIONS



SINGLE WHUDU SEAT

The whudu area is strikingly modern and easy to use. An interior open plan area is separated from the prayer area to form the whudu area. No shoes are allowed beyond this point as the space represents the purity associated with water. The floor is covered with non-slip tile and the U-Shape seating arrangement makes it a simple and practical space to use

ROZANA MULLAH

AN ISLAMIC CENTER FOR DURBAN

PROJECT DESCRIPTION

The Islamic Center for Durban is a project that aims to adopt timeless design principles of sacred Islamic architecture as well as Islamic design guidelines to establish a Center that becomes an exhibition of Islamic culture in Durban. It is a building that is open to both South African and International cultures, breaking social, religious and cultural boundaries using qualities of 'ultimate human value'.

The Center will also be the new home of an Islamic organization that deals with numerous projects to uplift the Durban Muslim Community.

CLIENT

The Al-Ansaar foundation is a non-profit organization that requires a new building to accommodate their growing needs and various communal projects. Of which involves the participation of various cultures and promote communal integration. The current building does not have enough space for their staff and isn't aesthetically appealing. Projects administered by the foundation:

- eTazkiyya Centre of Learning
- Mariam Bee Sultan Nursery and Pre-School
- Al-Ansaar Media Division
- The Bursary Fund
- Ibn Masud School of Excellence
- The Al-Ansaar Outreach Programme
- Conferences and seminars
- Annual Souk - Trade Fair

BRIEF

The objective of the project is to design an Islamic Center for Durban that primarily include communal facilities such as:

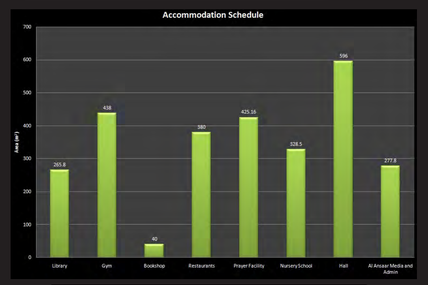
- outdoor social and recreational spaces
- restaurants and cafes
- a library and media center
- a bookshop
- a gym and
- a hall

To promote social, cultural and religious integration

Secondary facilities are those that accommodate the Al-Ansaar organization:

- Nursery school
- Radio Station
- Administration
- Outdoor Trade areas and
- Prayer facilities

ACCOMMODATION SCHEDULE



Outdoor facilities					
Outdoor trading space for the foundation and circulation space			5000 m²	-	-
Outdoor recreational spaces			700 m²		
Outdoor play area for nursery school	1	17	300 m²	-	-
Services and deliveries			300 m²		
Centre parking		400	5280 m²		
Parking for foundation staff		25	500 m²		
Parking for al-ansaar guests		10	200 m²		
TOTAL OUTDOOR FLOOR AREA			12280 m²		

SITE SELECTION PROCESS

SURVEY

LEGEND

MOSQUE	ISLAMIC ORGANISATION
JAMAAT KHANA	ISLAMIC SCHOOL
ISLAMC RELIGIOUS CENTRE	SOOFIE MOSQUE
HIGH - MED. MUSLIM POP. DENS TY	NATURAL WATER SOURCES
MED. - LOW MUSLIM POP. DENS TY	NATURAL VEGETATION

SELECTED SITE : North Eastern Bank of the Umgeni River, Durban

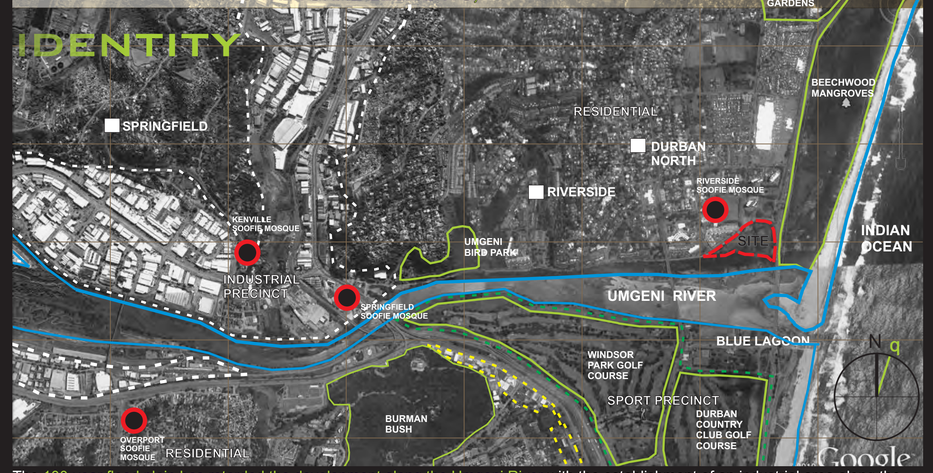
Location: Riverside, Durban North
Type: Greenfield Site
Energy Radiation: Excellent
Natural Setting: Along the Umgeni River with lots of greenery. Also close to the ocean.
Historical Significance: The River is symbolic as many Soofie mosques were built close to Rivers or fresh running water.
Cultural Context: Site close to the Riverside Soofie mosque and mausoleum which is a cultural heritage site.
Appropriateness of context: Too close to an existing mosque. Site protected by D'MOSS. Nicely positioned in terms of natural and urban setting. Good accessibility. Good visual prominence from all directions
Potential: Linkage to the existing Soofie mosque. Access by boat or canoe.

URBANDESIGN INTENTIONS

- Building should be easily identifiable within the city's urban fabric.
- Orientation toward and within the building should be fairly easy. This can be done using Lynch's (1960) 'node', 'path and 'district' on various scales to contribute to an environmental image and emotional security (Norberg-Schulz, 1979: 19).
- Design should be coherent with the pattern of the city:
- City form which is primarily the relationship between built form and space and the relationship of nature to them.
- Infrastructure which refers to means of transportation and their networks throughout the city as well as services.
- Design should be meaningful in context and enhance the quality of life in a particular area and to do this, multiple layers of the context has to be analysed in terms of:
- Social and cultural issues
- Built form
- Environmental issues
- Climate
- Economic issues
- Political issues

URBAN ANALYSIS: NATURAL ELEMENTS, ZONES & PRECINCTS

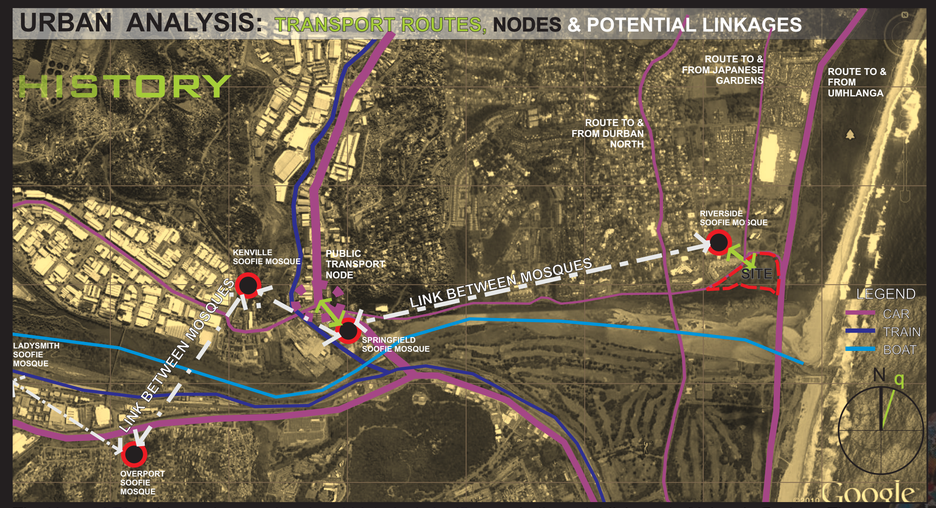
IDENTITY



The 100-year flood plain has retarded the development along the Umgeni River with the establishment of an industrial area along the Umgeni River banks. The Umgeni River is fully enclosed by Springfield Industrial Park, prohibiting any social activity along the river and blocking off scenic views of the River from the residential communities (Seepersad, 2005). Additionally, fertile farmland along the River has been consumed by the industrial developments, which have also not considered proper storm water management by creating water barriers that 'increase surface run off and increases the danger of flooding' (Seepersad, 2005).

URBAN ANALYSIS: TRANSPORT ROUTES, NODES & POTENTIAL LINKAGES

HISTORY



The Umgeni River has a strong cultural and historical significance in the establishment of Islam in Durban. The numerous Soofie mosques (indicated above) in and around Durban (like the Ladysmith Soofie Mosque) were all built close to the River water for ablution purposes.

URBAN PROPOSAL: REVITALIZATION OF THE RIVER'S EDGE

TIMELESSNESS

Healthy rivers within a city's fabric have enormous social, economic and environmental benefits for a city (www.acfonline.org.au). This project aims at dealing with these issues and somewhat reviving the Umgeni River's social, economic and environmental status in the city of Durban.

CONTEXTUAL ANALYSIS

MEANING

SITE DATA
Suburb: Prospect Hall
Address: 25 Riverside Road
Area: 39 721,0241 sqm
erf: 29
Status: Registered

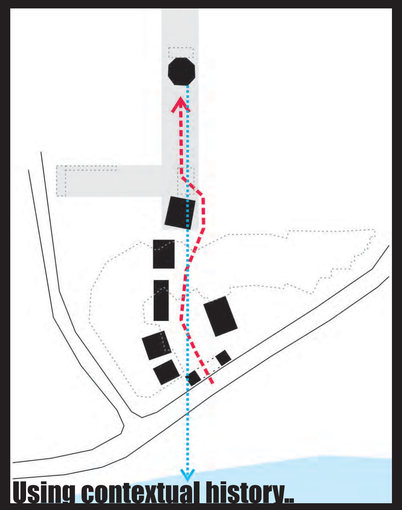
ENVIRONMENTAL STUDY

TRANSPORT & ACCESS

ROZANA MULLAH

AN ISLAMIC CENTER FOR DURBAN

THE HISTORY OF THE SOOFIE SAHEB MOSQUE AND MAUSOLEUM IN RIVERSIDE



Using contextual history..

•In the 1800's, the first Indian settlement in Natal was in Riverside

• Indians had been living there for more than seventy years when plans of relocating them to other areas in Durban, such as Chatsworth (www.soofie.saheb.org.za) due to Group Areas Act 1950's, were being enforced.

• Due to legislations, they were forced to leave behind religious buildings that were part of their everyday spiritual rituals and seventy years of initial memories of arrival in Natal (www.soofie.saheb.org.za).

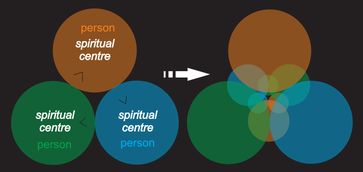
•The Soofie Saheb Mosque in Riverside was one of these religious buildings. It is also one of twelve of the oldest Islamic developments in the history of South Africa and formed part of a religious prodigy that occurred during the late 1800's and early 1900's.

•The original development , constructed in the 1940's, was on axis with the umgeni river, running through the current Lagoon Lodge site, to Riverside road, which was also where the original entrance arch (Buland Darwaza) to the complex was. Along this axis, existed a pedestrian road flanked by the various building of the different functions that existed within the complex.

• The connection of this development to the water was very strong.

• Until the government demolished the adjoining buildings.

CONCEPTUAL DEVELOPMENT



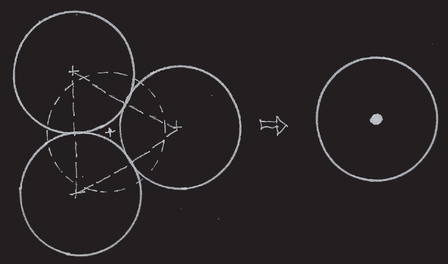
Creating Community

Expansion of Community

CONCEPT — MULTIPLICITY IN UNITY

Multiplicity and Unity are concepts that are expressed in the Holy Scripture of the Quran. "It establishes and legislates principles and regulations for the practical and ethical duties of the human being and for the ordering and administration of society."(http://www.al-islam.org). Foster (2004) expresses how the concept of Multiplicity as Unity should be consciously perceived as the relationship between 'everything and Everything' in order to reform peoples' perceptions of humanity and the world.

Foster (2004) states that all Islamic patterns begin with the circle. By achieving a repetitive pattern, the circle is repeated and is then able to produce any conceivable symmetry. If identical circles are replicated and placed next to each other with their circumferences touching, they are able to maintain their individual identity while generating different geometries with their centres as well as with points where their circumferences meet.



CONCEPT: MULTIPLICITY IN UNITY

DEFINING A CENTRAL SPACE

...and Geometric Islamic concepts to create a...

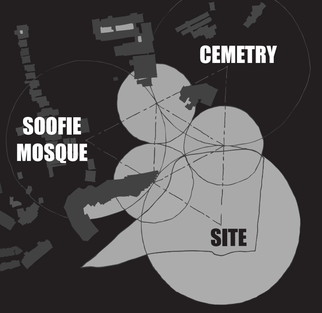
FOOTPRINT DEVELOPMENT

RESULT: EXPLODED COURTYARD SPATIAL TYPE

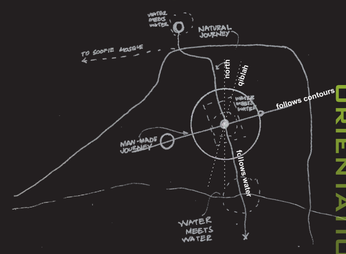
APPLICATION OF THEY TO SPATIAL ARCHETYPE

COURTYARD SPATIAL ARCHETYPE - VERY INTERNALISED

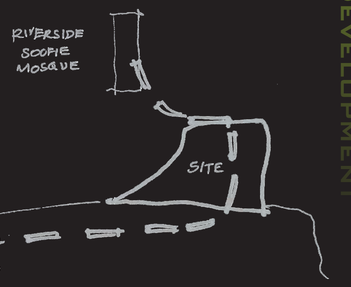
SITE RESPONSE



URBAN RESPONSE



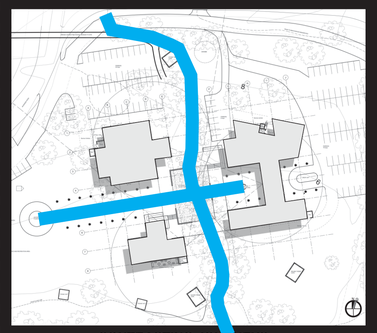
USING NATURAL FEATURES OF THE SITE TO EMPHASIZE PATHS



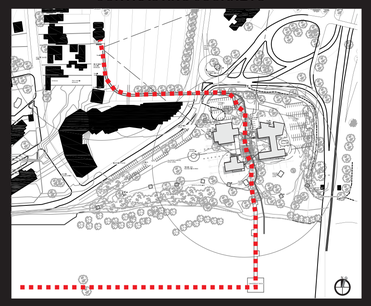
RECONNECTING THE SOOFIE MOSQUE TO THE WATER

...journey through history...

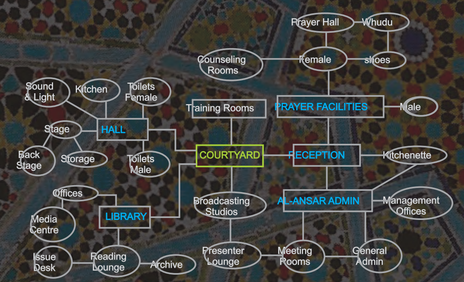
ORIENTATION DEVELOPMENT

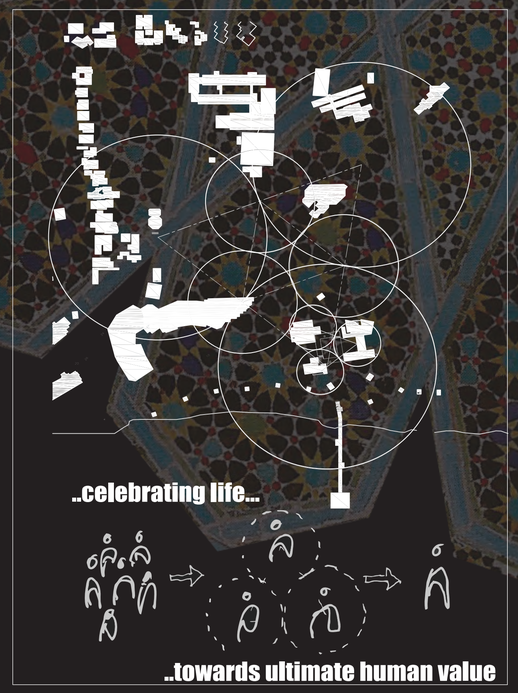


CONTRASTING JOURNEYS

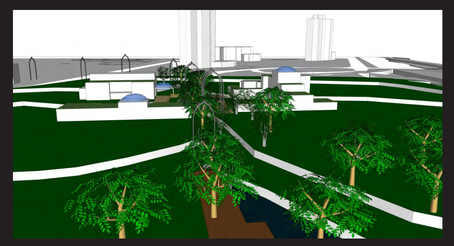


SPATIAL RELATIONSHIPS





MASSING

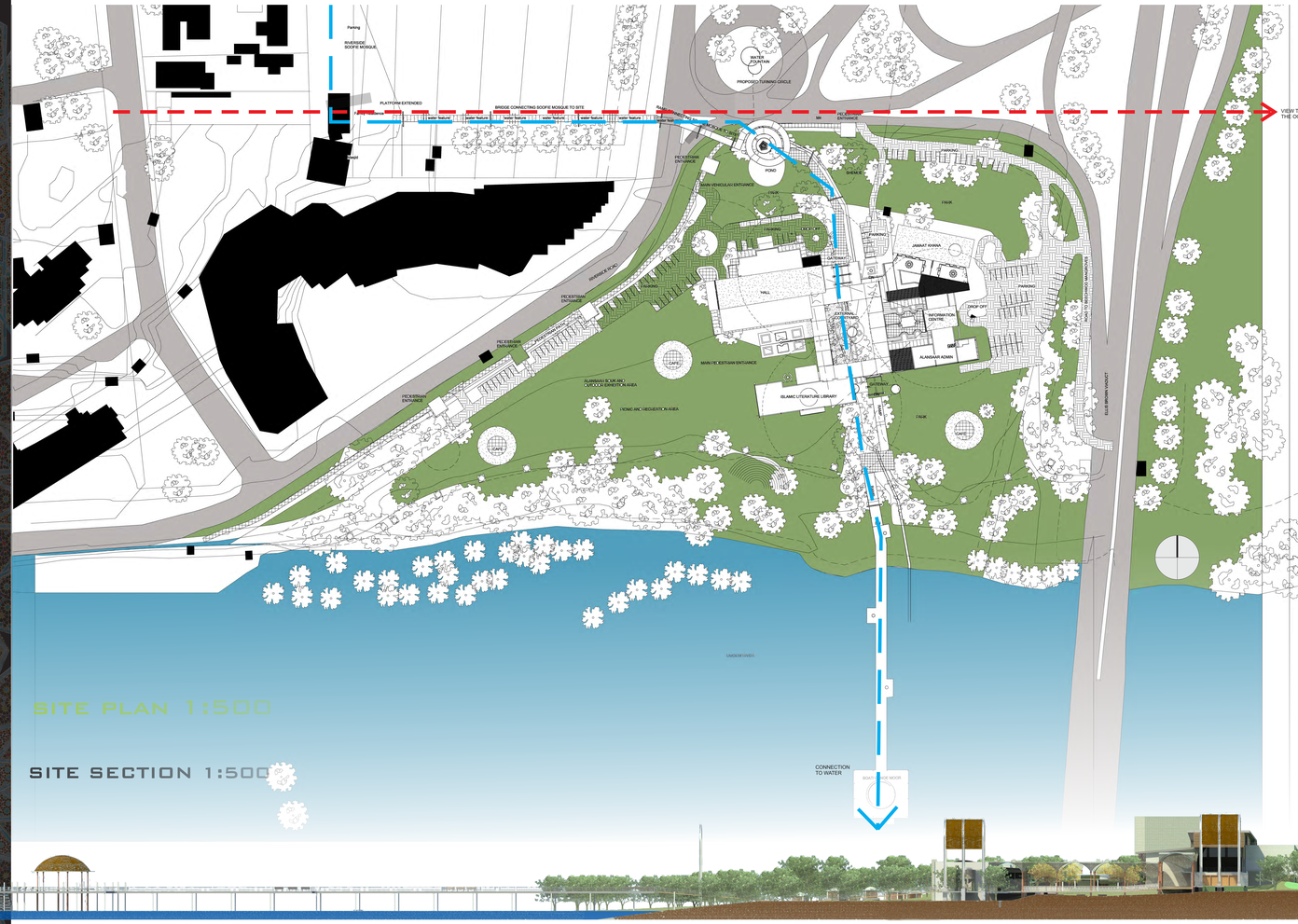


DESIGN INTENTIONS

- Design should contribute to the development of the community's cultural and social lives:
- The physical form of the building should connect to cultural and human characteristics.
- The design should be an interpretation of a belief system of a community that will be powerfully alluring and create a strong emotional attachment. "In every instant of art we receive a persuasive invitation...to participate more closely." Stokes (1965)
- The architecture needs to capture and image of the Muslim Community of the area of choice.
- A continuity of tradition in Islamic architecture may result in the 'self identification' of Muslim people. (components of tradition then become identity on a conscious or subconscious way.)
- Design should reflect the activities which occur within.
- Design should preserve and integrate as much of the natural environment as possible, manifesting man's understanding of nature. "Where nature suggests a delimiting space, he builds an enclosure, where nature indicates a direction, he makes a path." (Norberg-Schulz, 1979: 17)
- The building environment should be harmoniously created with the natural environment. Natural character should be adopted and translated into built form.

ROZANA MULLAH

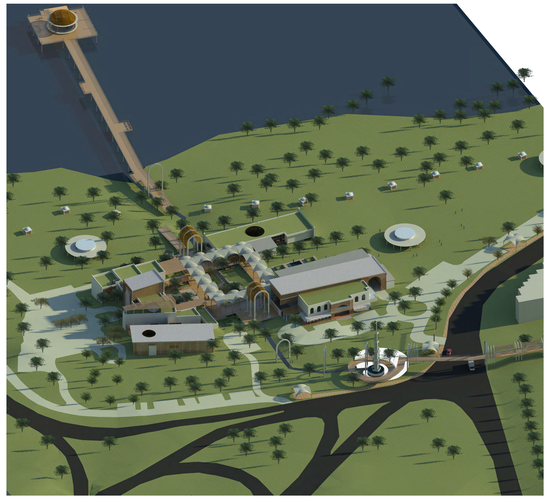
AN ISLAMIC CENTER FOR DURBAN



SITE PLAN 1:500

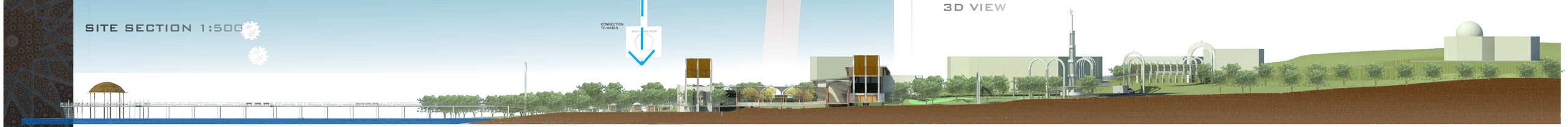
SITE SECTION 1:500

URBAN DESIGN PLAN 1:2000



3D VIEW

3D VIEW



URBAN DESIGN PROPOSAL 1:500

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AN ISLAMIC CENTER FOR DURBAN

GROUND FLOOR PLAN 1:200

FIRST FLOOR PLAN 1:200

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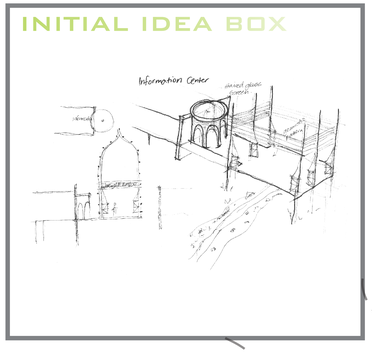
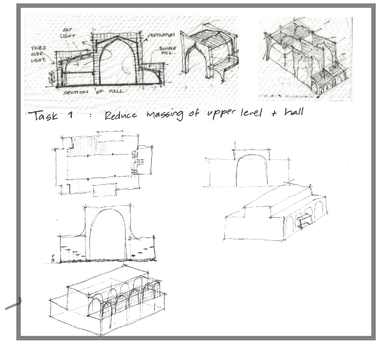
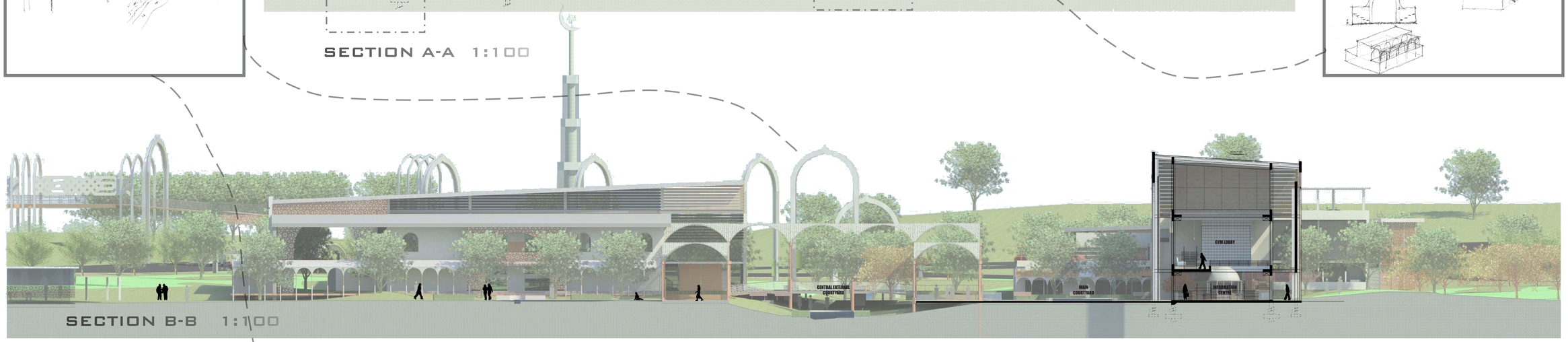
AN ISLAMIC CENTER FOR DURBAN

INITIAL IDEA BOX

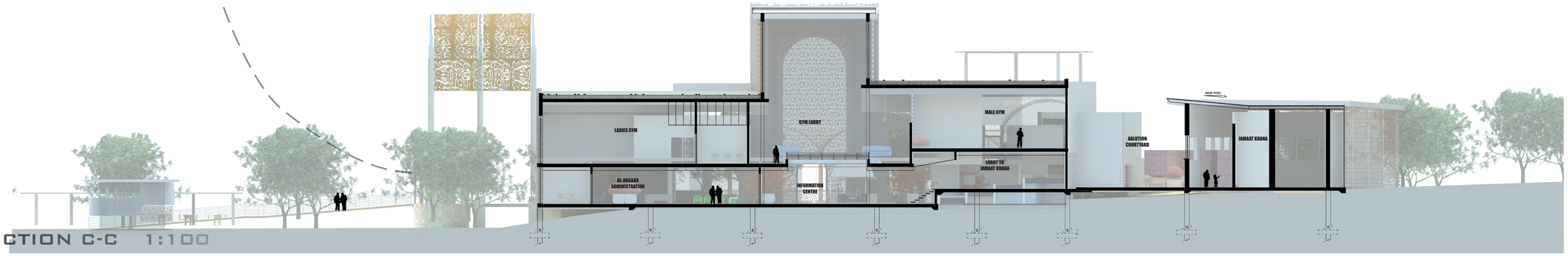


SECTION A-A 1:100





SECTION B-B 1:100

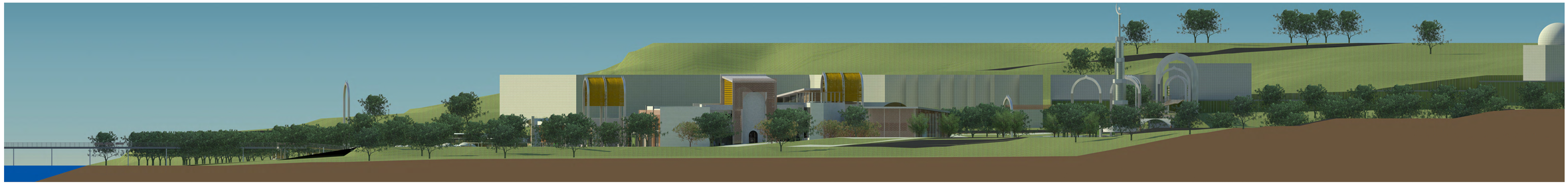


SECTION C-C 1:100

SECTIONS 1:100

ROZANA MULLAH

AN ISLAMIC CENTER FOR DURBAN



EAST ELEVATION 1:200

SOUTH ELEVATION 1:200

WEST ELEVATION 1:200

NORTH ELEVATION 1:200

VIEW OF CENTRAL EXTERIOR COURTYARD

ELEVATIONS 1:200

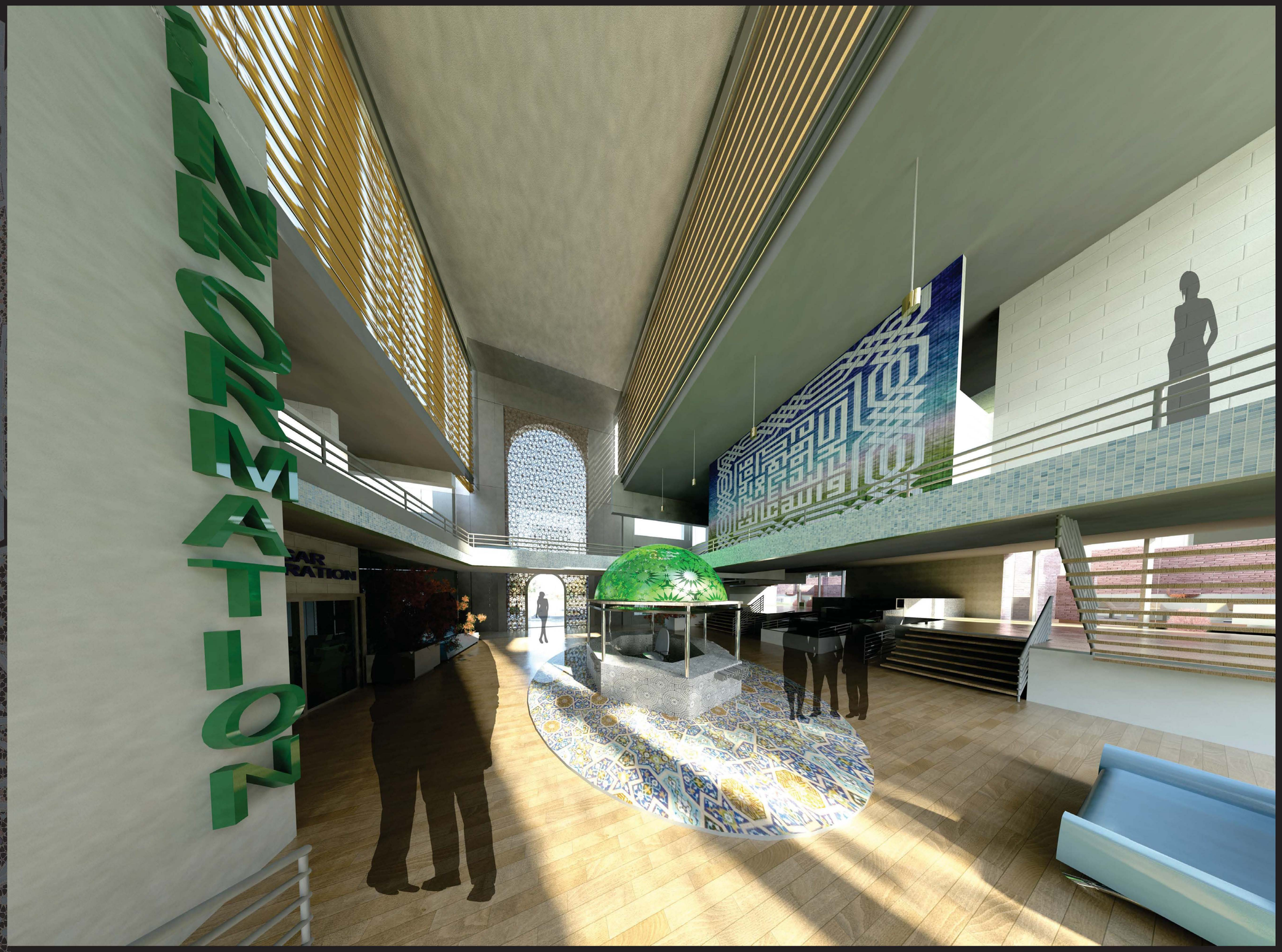
ROZANA MULLAH

AN ISLAMIC CENTER FOR DURBAN

3D of main courtyard

Rozana Mullah

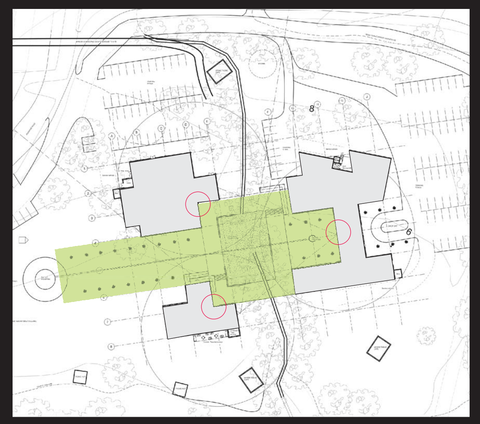
An Islamic Center for Durban

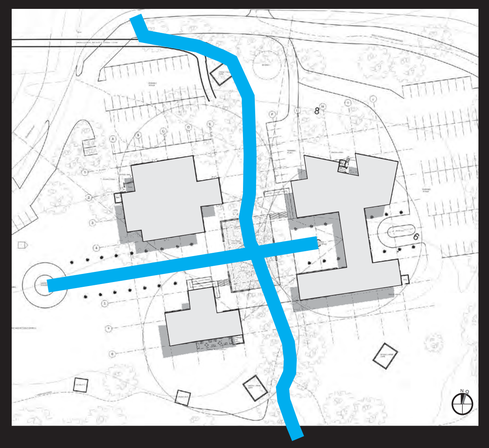


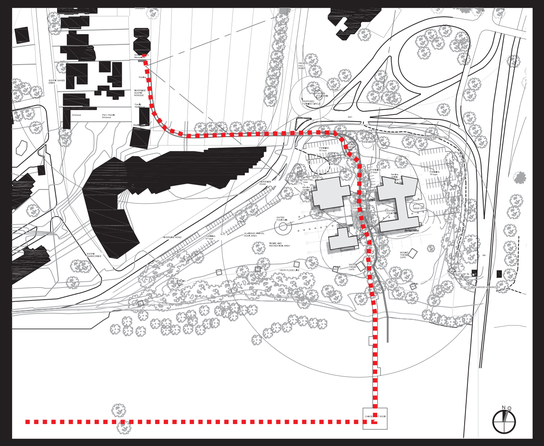
INTERIOR VIEW OF INFORMATION CENTRE

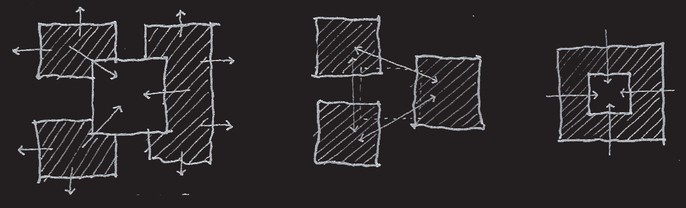
ROZANA MULLAH

AN ISLAMIC CENTER FOR DURBAN







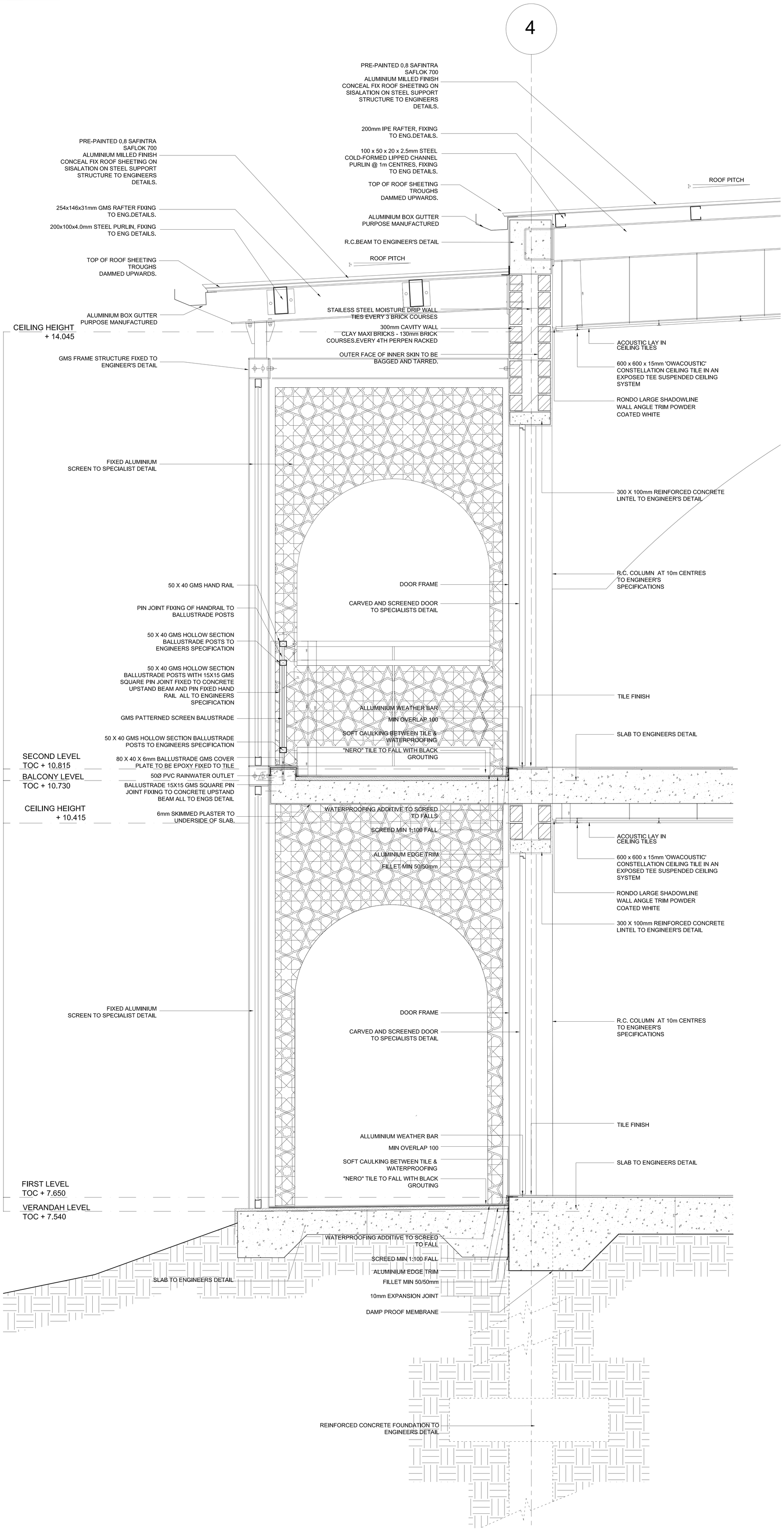


3D OF URBAN DESIGN

ROZANA MULLAH

AN ISLAMIC CENTER FOR DURBAN

5.3. Technical Details



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KITCHEN : KITCHEN TO COMPLY WITH FOOD BYLAWS.

LAYOUT TO BE UNDER SEPERATE APPLICATION PROVIDE ARTIFICIAL LIGHTING AND MECHANICAL VENTILATION TO ALL ROOMS SHOWN WITHOUT WINDOWS TO COMPLY WITH PARTS TT43 OF SABS 0400-1990

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ALL GLAZING TO COMPLY WITH PART N OF SABS 0400-1990
GLASS THICKNESS TO COMPLY WITH NN2 OF SABS 0400
SAFETY GLASS TO COMPLY WITH NN3 OF SABS 0400

REV	DATE	REVISION DESCRIPTION	DRAWN

CLIENT
AL-ANSAAR FOUNDATION
CLIENT SIGNATURE

ARCHITECTS
ROZANA MULLAH ARCHITECTS
ARCHITECT SIGNATURE SACAP NO.:

PROJECT DESCRIPTION
DURBAN ISLAMIC CENTRE

PROJECT
PROPOSED CENTRE FOR THE AL-ANSAAR FOUNDATION ON ERF 29, PROSPECT HALL, RIVERSIDE, DURBAN

DISCIPLINE
ARCHITECTURAL

DRAWING TITLE
PART HALL SECTION

	RESPONSIBLE PERSON	DATE	PERSONAL	SHEET SIZE
DESIGNED	ROZANA MULLAH	28.06.2011		A0
DRAWN	ROZANA MULLAH	28.11.2011	–	SCALE
CHECKED				1 : 10
APPROVED				

AAC DRAWING NUMBER

FS PROJ. No	SUB NUMBER	DISCIPLINE	DRAWING NUMBER	STATUS	REVISION
0901	RMA	ARCH	312	C	02

DRAWING STATUS CODES :
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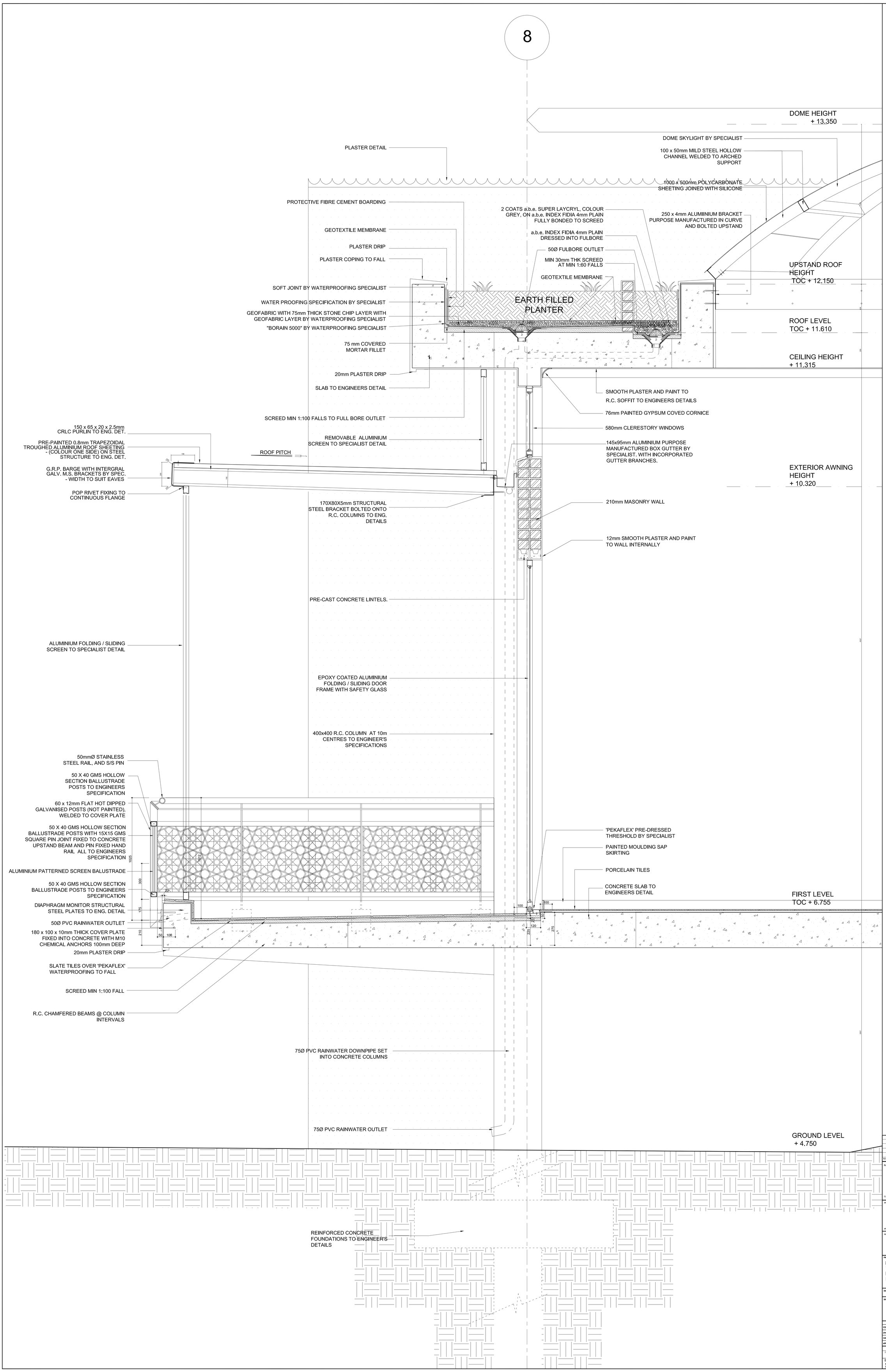
D = DRAFT P = PRELIMINARY A = AS BUILT



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GLASS THICKNESS TO COMPLY WITH NN2 OF SABS 0400
SAFETY GLASS TO COMPLY WITH NN3 OF SABS 0400

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CLIENT
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CLIENT SIGNATURE

ARCHITECTS
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ARCHITECTURAL

DRAWING TITLE
PART LIBRARY SECTION

	RESPONSIBLE PERSON	DATE	PERSONAL	SHEET SIZE
DESIGNED	ROZANA MULLAH	28.06.2011		A0
DRAWN	ROZANA MULLAH	28.11.2011	–	SCALE
CHECKED				1 : 10
APPROVED				

AAC DRAWING NUMBER

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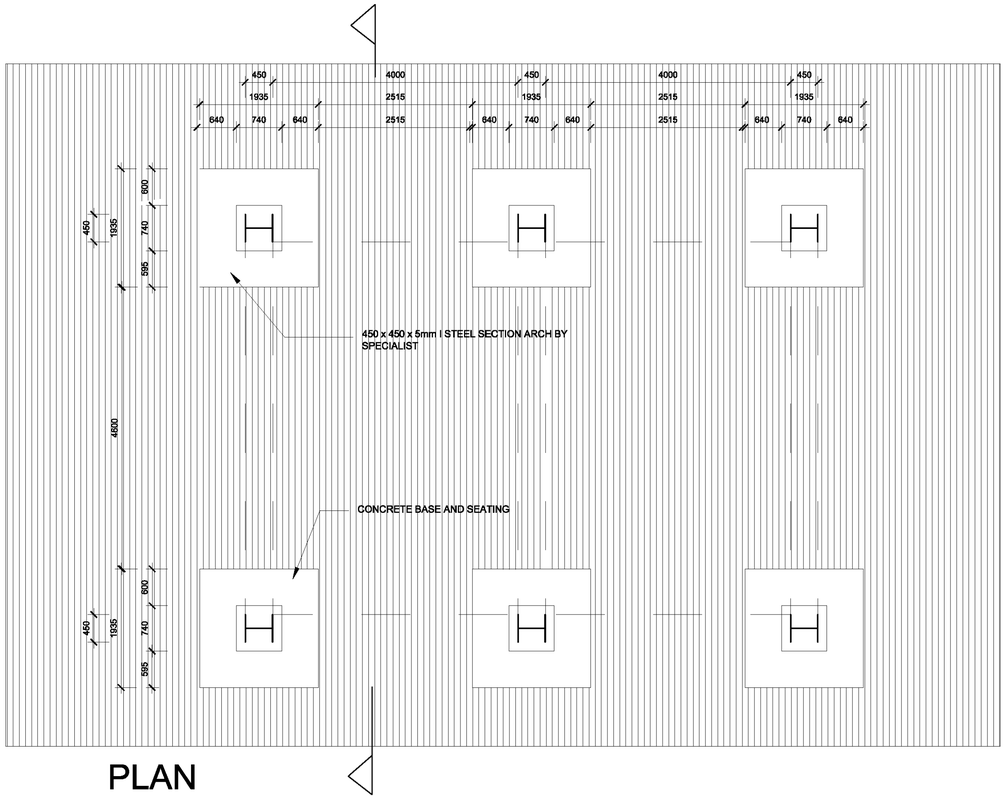
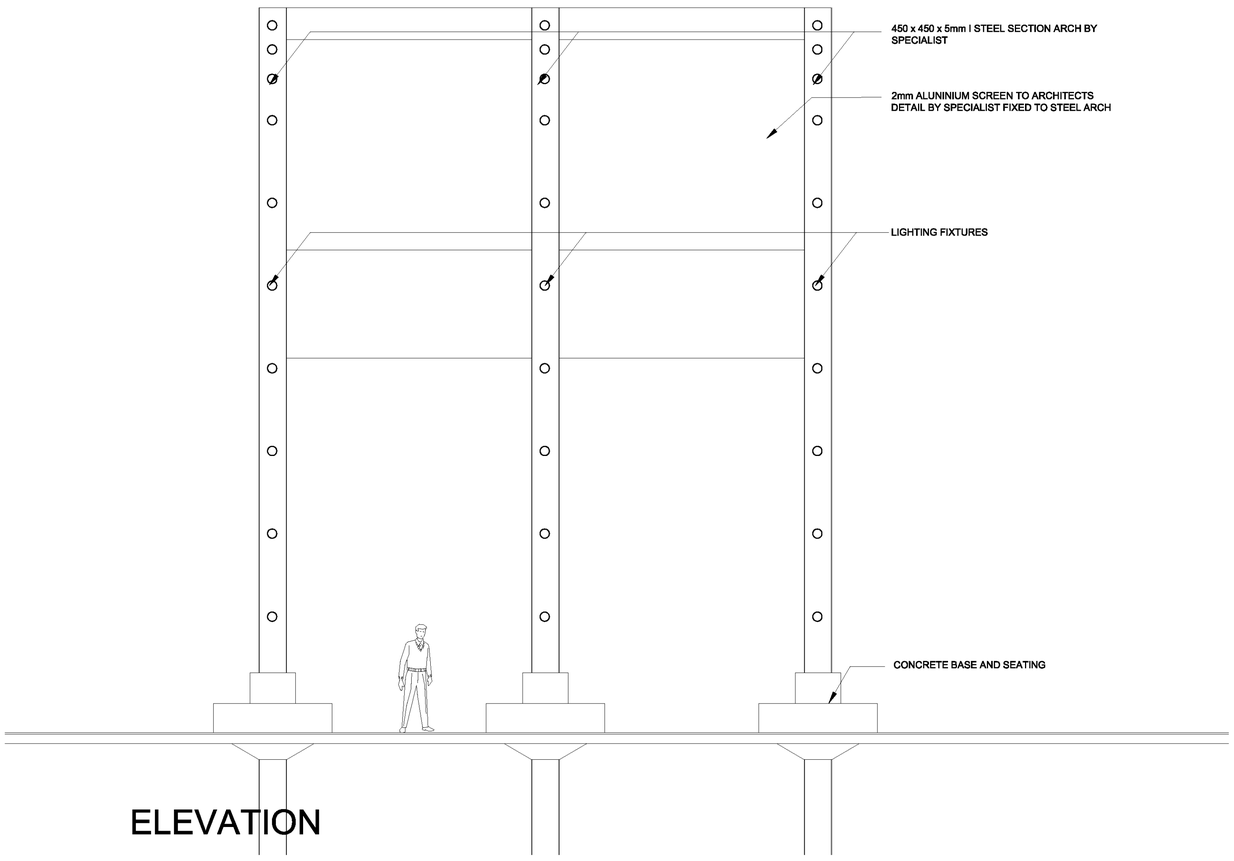


PLAN



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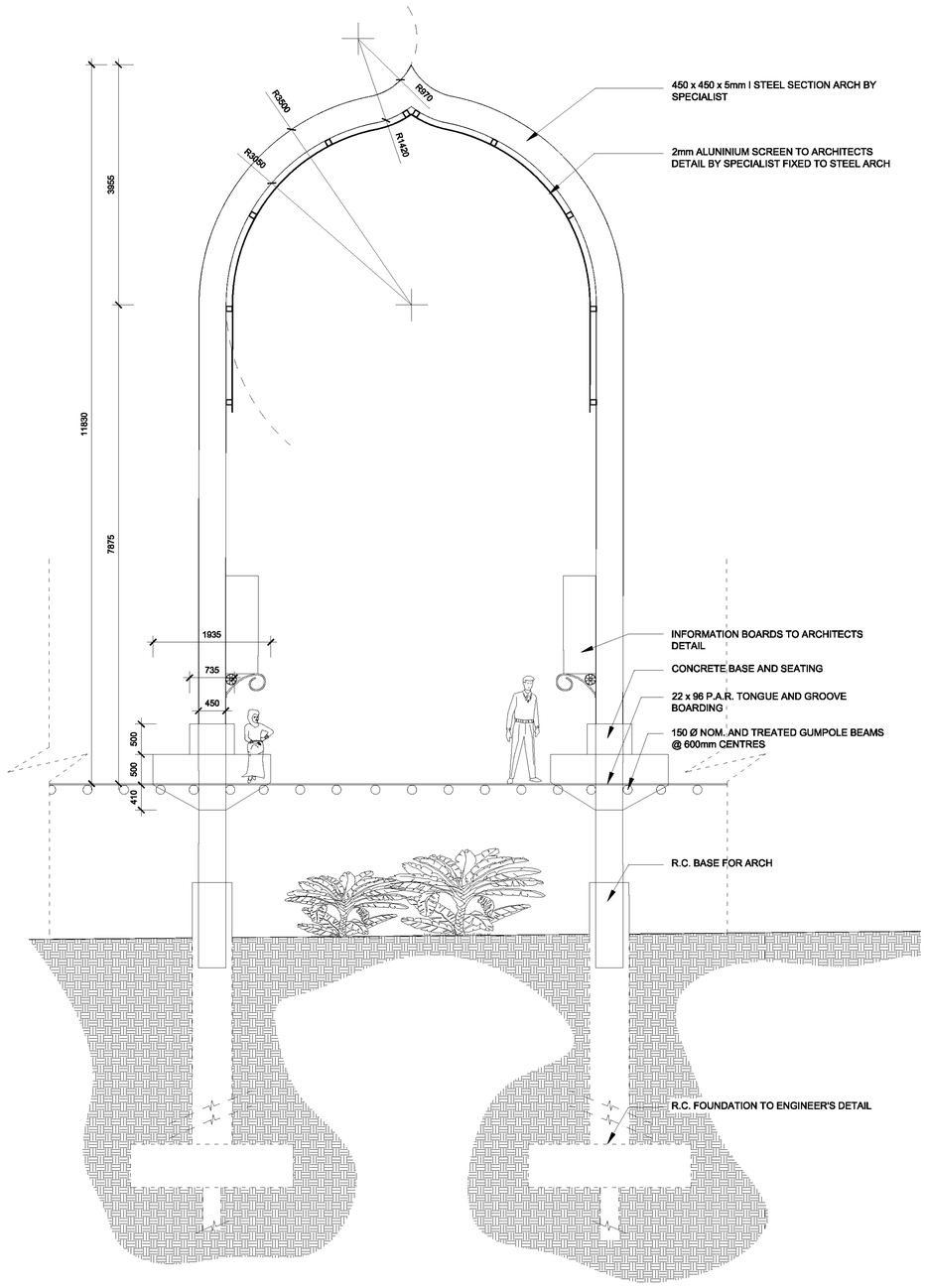

SECTION

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GLASS THICKNESS TO COMPLY WITH NN2 OF SABS 0400
SAFETY GLASS TO COMPLY WITH NN3 OF SABS 0400

REV	DATE	REVISION DESCRIPTION	SIGNAT.

CLIENT

AL-ANSAAR FOUNDATION

CLIENT SIGNATURE

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ARCHITECT SIGNATURE SACAP NO.:

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DISCIPLINE ARCHITECTURAL

DRAWING TITLE

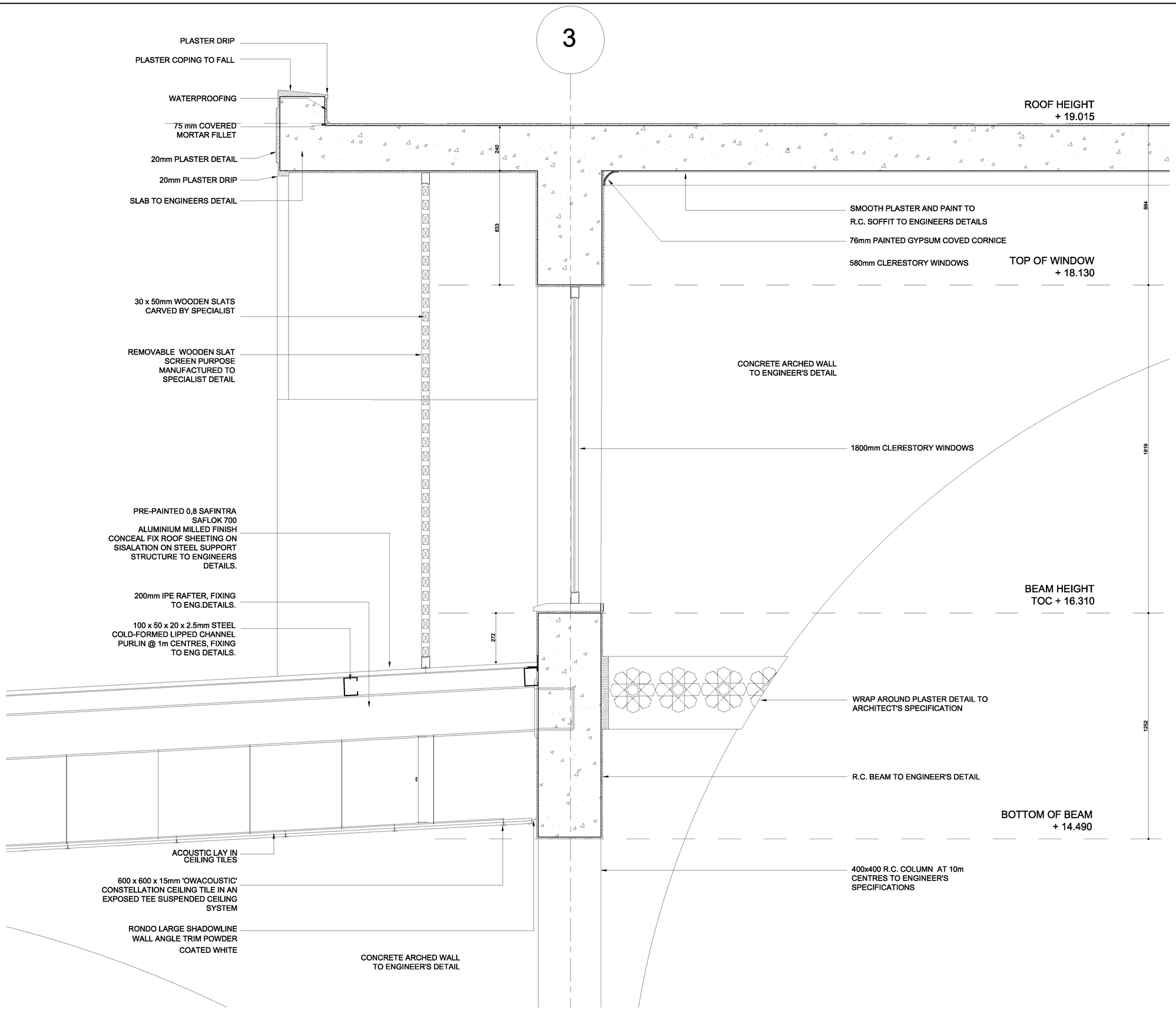
INFORMATION GATEWAY ARCH DETAIL

	RESPONSIBLE PERSON		DATE	PERSONAL	SHEET SIZE
DESIGNED	ROZANA MULLAH		28.08.2011		A1
DRAWN	ROZANA MULLAH		28.11.2011	–	SCALE
CHECKED					1 : 50
APPROVED					

AAC DRAWING NUMBER

FS PROJ. No	SUB NUMBER	DISCIPLINE	DRAWING NUMBER	STATUS	REVISION
0901	RMA	ARCH	312	C	02

DRAWING STATUS CODES :
X = REPORT T = TENDER C = CONSTRUCTION S = SUBMISSION
D = DRAFT R = PRELIMINARY A = AS BUILT



GENERAL NOTES :

SETTING OUT OF BUILDINGS TO BE DONE BY SURVEYOR USING CO ORDINATES ALL LEVELS & DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING ANY WORK. DISCREPANCIES ARE TO BE VERIFIED WITH THE ARCHITECT IMMEDIATELY, PRIOR TO COMMENCEMENT OF WORK ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED ALL WRITTEN DIMENSIONS TO TAKE PREFERENCE OVER SCALE ALL WORK TO BE IN ACCORDANCE WITH THE NATIONAL BUILDING REGULATIONS AND RELEVANT LOCAL AUTHORITY BY-LAWS SEWERS, STORMWATER DISPOSAL ,

WATER RETICULATION AND DRIVEWAYS TO CIVILS ENGINEERS DETAILS ALL SLABS,

COLUMNS AND REINFORCED STRUCTURES TO STRUCTURAL ENGINEERS DETAILS

THESE DRAWINGS MUST BE READ IN CONJUCTION WITH STRUCTURAL, CIVILS, MECHANICAL, AND ELECTRICAL DRAWINGS SEWERS, STORMWATER DISPOSAL , WATER RETICULATION AND DRIVEWAYS TO CIVILS ENGINEERS DETAILS FREE STANDING WALLS TO COMPLY WITH TABLE 5 OF PART K. K. 11 OF SABS 0400 - 1990

ALL BALUSTRADES ARE TO COMPLY WITH DD2 OF SABS 0400- 1990

DRAINAGE PIPES TO BE LAID UNDER BUILDINGS ARE TO BE HD PVC & TO BE ENCASED IN CONCRETE 110 Ø SEWER PIPES TO FALL MINIMUM 1:60 FACILITIES FOR DISABLED PERSONS TO COMPLY WITH PART S OF SABS 0400 DOOR TO DISABLE TOILETS TO COMPLY WITH SS4 OF SABS 0400 - 1990

KITCHEN : KITCHEN TO COMPLY WITH FOOD BYLAWS.

LAYOUT TO BE UNDER SEPERATE APPLICATION PROVIDE ARTIFICIAL LIGHTING AND MECHANICAL VENTILATION TO ALL ROOMS SHOWN WITHOUT WINDOWS TO COMPLY WITH PARTS TT43 OF SABS 0400-1990

MECHANICAL VENTILATION : HABITABLE AREA, (EXCLUDES KITCHEN) FRESH AIR TO BE SUPPLIED AT A RATE OF 7.5 L/S/PERSON. AIR TO BE EVENLY DISTRIBUTED THROUGHOUT ALL HABITABLE AREAS AND VELOCITY IS NOT TO EXCEED 0.5 m/s KITCHEN FRESH AIR TO BE SUPPLIED AT A RATE OF 17/5 L/S/PERSON WATER CLOSET FRESH AIR TO BE EXTRACTED TO EXTERNAL AT A RATE OF 20 L/S PER FITMENT ARTIFICIAL LIGHTING - 160 LUX MINIMUM SIGNAGE UNDER SEPERATE APPLICATION

FIRE NOTE : FIRE HOSE REELS TO COMPLY TO PART TT 34 PORTABLE EXTINGUISHERS TO COMPLY TO PART TT 37 MECH VENTILATION TO COMPLY WITH PART TT43 FIRE SIGNAGE TO COMPLY WITH PART TT32 WATER RETICULATION FOR FIRE FIGHTING TO COMPLY WITH PART 33 INTERNAL WALLS AND PARTITIONS TO COMPLY WITH PART TT 9 CEILINGS TO COMPLY WITH PART TT13 STAIRWAYS ALONG ESCAPE ROUTES TO COMPLY WITH TT28

ALL GLAZING TO COMPLY WITH PART N OF SABS 0400-1990
GLASS THICKNESS TO COMPLY WITH NN2 OF SABS 0400
SAFETY GLASS TO COMPLY WITH NN3 OF SABS 0400

REV	DATE	REVISION DESCRIPTION	DRAWN

CLIENT
AL-ANSAAR FOUNDATION
CLIENT SIGNATURE

ARCHITECTS
ROZANA MULLAH ARCHITECTS
ARCHITECT SIGNATURE — SACAP NO :

PROJECT DESCRIPTION
DURBAN ISLAMIC CENTRE

PROJECT
PROPOSED CENTRE FOR THE AL-ANSAAR FOUNDATION ON ERF 29, PROSPECT HALL, RIVERSIDE, DURBAN

DISCIPLINE: ARCHITECTURAL

DRAWING TITLE
HALL ROOF DETAIL

	RESPONSIBLE PERSON	DATE	PERSONAL	SHEET SIZE
DESIGNED	ROZANA MULLAH	28.06.2011		A1
DRAWN	ROZANA MULLAH	28.11.2011	–	SCALE
CHECKED				1 : 10
APPROVED				

AAC DRAWING NUMBER

FS PROJ. No	SUB NUMBER	DISCIPLINE	DRAWING NUMBER	STATUS	REVISION
0901	RMA	ARCH	312	C	02

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APPENDIX A: Interviews

University of Kwa-Zulu Natal

Faculty of Humanities, Development and Social Sciences

School of Architecture, Planning and Housing

Research Supervisor: Mr. Majahamahle Nene Mthethwa

Research Student: Rozana Mullah

Project Title: An Interpretation of timelessness in sacred architecture: An Islamic centre for Durban

INTERVIEW

Name: Asiya Amod

Position: Chief Operations Officer

Name of Foundation: Al -Ansar

1. What is the aim of the foundation? How does the foundation follow suit?

The aim of the foundation is to promote education, guidance and social and cultural development through a variety of activities and projects .

2. Does the foundation have a mission statement? May I please have a copy?

"Our aim is to promote Islamic education and guidance at all levels of Islamic society in order to develop practicing Muslims who are fully equipped to meet the challenges facing modern society and the transformations taking place in the African continent." – Mission Statement

A copy of the foundations projects and activities 2009-2010 was acquired.

3. Tell me a bit about the (New) Centre? What are the main functions of the centre?

A hall/conference centre for 500 people, a Jamaat Khana, a Gym, a Library, a bookshop and internet cafe, a coffee shop and a Training centre with: training rooms, offices, counseling facilities, empowerment classes, baking and cooking classes.

People have the assumption that the Al-Ansaar foundation offers services that they broadcast; therefore, a training centre has been introduced.

4. What other type of facilities does it contain or provide to the public?

Mariam bee Sultan Nursery and Pre-School premises are offered to the educators of the facilities. The premises are also hired for art classes and there are 6 tutors who use the classrooms in the afternoons for high school tuition. In the Al-Ansaar hall there are language classes every Tuesday nights for about 30 people.

The are plans for empowerment classes at the new centre.

5. Are there any problems with the current facilities? Or any previous problems that have been resolved? Major functional, structural or any issues?

The current facilities are too small in terms of spatial requirements for the number of staff. The management offices are small and there is not enough parking facilities. The current facilities originally were a house that was converted into the offices. The foundation started in a building on lease by the ML Sultan Trust at 222 Kenilworth Road, Overport in 1994. However due to insufficient space, the foundation re-located to West Road, Overport and converted a house into their offices. The is still not enough space.

6. Do you have/know a list of functional requirements that the existing centre has or needs?

   1 open plan management office – 2 permanent staff, 1 temporary

   1 open plan Al-Ummah and advertising office – 4 people

   1 Technical recording room – 2 temporary staff

   1 Technical Room, 1 Studio, 1 Reception area, 1 Hall, 1 Library, Jamaat Khana(male and female) with whudu and toilet facilities, kitchenette, toilets and storage.

7. If it had to have been re-designed today, how would it have been done differently? Would there have been any other additional facilities? Would any of the functions have been removed?

It's hard to say because the new facilities have not been used yet.

8. If the centre were open to people of different cultures, just as an exhibition of Islam and Islamic culture, how would that have been dealt with in the centre?

He centre is open to people of different faiths, even though it is an Islamic centre, as long as they do not propagate their faith. There is a gym in the new centre that is open to exclusively to ladies (of all faiths) and a time frame will be dedicated to males as well. Additionally, when the foundation donates wheelchairs to the needy, all cultures are considered when applications are sent and the most deserving receive the wheel chairs irrespective of race, religion or culture.

9. How is/was the centre funded?

The centre was mainly funded by donations of organizations and public funding. The directors go on fund raising drives all the time

10. Who was the architect?

Essop Ghani

University of Kwa-Zulu Natal

Faculty of Humanities, Development and Social Sciences

School of Architecture, Planning and Housing

Research Supervisor: Mr. Majahamahle Nene Mthethwa

Research Student: Rozana Mullah

Project Title: An Interpretation of timelessness in sacred architecture: An Islamic centre for Durban

INTERVIEW 2

Date: 27/09/2011
Name: Mrs. M. Höebel
Position: Principal of Durban North College (Opposite the site)
Topics of discussion:

1. The Sport fields and their role in the school
2. The surrounding areas
3. Muslim population around the area

1. The Sport fields and their role in the school

The ones to the south are for the secondary school and the ones on the west are for the primary school. There are two secondary school sports grounds, the one on the far end is for hockey and the one next to that is for rugby and soccer. The tennis courts are also used for netball. Mrs. Höebel mentioned that sport is an important part of the learners curriculum and that at many times during the year are the sports fields used. Sometimes, all three sports fields are used at the same time. When the learners play cricket, both the hockey and rugby fields are used as one big field.

2. The surrounding areas

Along the hockey field, on the furthest end of the school, is an access road that is used currently for grass cutters and ambulance access to the fields. It also leads to a small part of the field that is fenced of, when queried about this plot of land, Mrs. Höebel stated that Toyota car dealership requested the land to park their cars before the recession struck. They fenced of the land and no longer used it to park their cars. She also mentioned that there are plans to remove the fencing and utilize the land as part of the field once again. The access road mentioned earlier lays approx. 4 meters below the level of the sports field and leads directly into lot 29. The trees along that road on the actual field are flanked by a row of unused concrete pipes. There are plans to introduce seating facilities for parents during sport matches. The Sports fields are directly adjacent to Riverside Soofie Saheb Mosque, which is elevated approx. 8 meters above the site. There is a cemetery along the site of the mosque and there is no boundary between the cemetry and the fields. There are plans to create this boundary using the precast fencing form the toyota parking area.

The school itself has two entrances, one off Pembroke road, in which area there are a few old age homes. This is where the entrance to the primary school is. The other entrance is off Prospect Hall Road, which

as an extremely busy road with no or very little parking facilities. Mrs. Höebel also mentioned that there were accidents along that road and for that reason, council was approached for the intorduction of speed bumps along the road. However, due to the access of delivery trucks to Pick 'n Pay further down, this did not materialse and learners and parents are now encouraged to enter and exit the school of Pembroke Road. This also serves as a problem as there are not enough parking facilities for parents to park when fetching their kids and bollards along the road elevate the situation.

Mrs. Höebel also mentioned the plan of the city to introduce a cycle lane along Riverside road. She presented a copy of this route that is attached to this document.

3. Muslim population around the area

She mentioned that the area has many Muslim families as to her knowledge thereof and that many of the families live along Soofie Saheb Drive. There are currently 16 Muslim children in the school of which 2 are girls.

N

Legend

- Proposed Cycle Track
- Rivers
- Roads

Data Source:	
Scale 1:13,483	
Projection: TM	Datum: HH94
Central Meridian/Zone: Lo31	
Date: 14/09/2011	Compiled by: MURA
Project No. 440010	Fig No. 1

srk consulting

RIVERSIDE ROAD CYCLE TRACK

Topographic map showing the proposed site location

Path: G:\440010_RIVERSIDE_CYCLE_BA\8GIS\GISPROJ\MXD\440010_F1_Riverside_Cycle_Track_Locality_A4L_14092011.mxd

Revision: A Date: 14 09 2011

APPENDIX B: Newspaper articles from the Soofie Museum

Natal Mercury
13 July 1943

INDIAN PROTEST

Strong protest against the Durban City Council's proposed plans for clearing certain areas of Riverside of its Indian population was made before the Provincial Post-War Planning Commission yesterday when a deputation from the Riverside-Briardene and District Indian Ratepayers' Association gave evidence.

Mr. N. Gopaul, spokesman of a deputation of four Indians, said that Riverside was the first Indian settlement in Natal, and that Indians had been living there for more than 70 years. Descendants of the original families still occupied the land.

Mr. Gopaul pointed out that in any housing scheme it was clearly provided that no settled community could be ejected unless other suitable land was not available. The Association could prove that other land in the vicinity of Riverside was vacant and available for use.

The Riverside land presently occupied by the Indians was of considerable value to them. He admitted that the area had its limitations of slums, roads and sanitation, but maintained that the chief reason was the neglect of the City Council, despite the fact that residents had been paying full rates for a number of years.

The Association had written to the Municipality on this subject but had received no reply. The Association would be completely agreeable to any reasonable scheme for improvements which the Municipality might devise.

The Council, he said, had originally proposed that the whole of the Riverside area be cleared for European use.

In its present proposals the land between the Connaught and Athlone Bridges, excluding Mount Argus, was to be replanned and reserved for sale by public auction without restrictions.

The land between Athlone Bridge and the sea was to be set aside exclusively for Europeans save for that now occupied by a mosque and a priest's residence.

13/7/43.