ABSTRACT

Title of Thesis:	**CONVERGING IDENTITIES: ISLAMIC ARCHITECTURE IN DETROIT**
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Degree and Year:	**Master of Architecture, 2007**
Directed By:	**Visiting Associate Professor Ronit Eisenbach, School of Architecture, Planning and Preservation**

The development of identity and place within the Detroit Muslim community is explored in this thesis through the creation of an Islamic Center and research library in downtown Detroit. The Islamic Center will strive to simultaneously work on multiple levels by establishing connections to Islam within a global context, the local community, and a place for individual development.

The investigation will explore how an immigrant culture establishes community through the built environment and represent their culture within the local community. Part of the study will reflect on how building styles and type reflect the cultural characteristics that the community is trying to preserve compared to American and western influences that are incorporated into the design? How do the architectural traditions, typologies and climate of the Detroit area get incorporated into the built identity? Specific focus will be given to the use of precedent and typology in modern Islamic design, mosques and cultural institutions as identity shapers both for the internal and external audiences. Light, color, pattern, spatial division based on gender, and symbolism are areas of inquiry.

CONVERGING IDENTITIES:
ISLAMIC ARCHITECTRUE IN DETROIT

By

Najahyia L. Chinchilla

Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Master of Architecture
2007

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Acknowledgements

This project has benefited from the love and support of the following people:

My mother, grandmother, mentor and friend Ronit Eisenbach, guest committee member Professor William Bechhoefer, committee members Michael Ambrose and Lindley Vann, studio mates: Debbie Bauer, Mike Binder, Jenny Castronuovo, John Cazayou, Brian Carroll, Huijun Shang, Nick Rivetti, Maureen Vosmek, Matt Newburn, Devin Kimmel, Ali Hernandez and Jef Zaborski.

I would like to thank all of the people that helped with the production of my final presentation:
Erin Carlisle, Brittany Williams, Kim Singleton, Corey Powell, Mike Talbot, Mike Fisher, Mason, Anat, Lauren, Laura, Smirtie, Martha Binder, David Whitehill, Sedef Altun, Ross Galloway and Brian Semanski.

Over the 2006 summer I was awarded a thesis travel grant to study Islamic architecture in Egypt. I would like to thank the school for granting me that opportunity.

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Introduction

Islamic Architecture in the Contemporary Age

> *"The task of Architecture:*
>
> *The timeless task of architecture is to create embodied existential metaphors that concretize and structure man's being in the world. Images of architecture reflect and externalize ideas and images of life: architecture materializes our images of ideal life. Buildings and towns enable us to structure, understand, and remember the shapeless flow of reality and, ultimately, to recognize and remember who we are. Architecture enables us to place ourselves in the continuum of culture."*[1]
>
> ----Pallasmaa

Let us make an ideological leap and say that architecture does more than protect people from the elements and consider the idea that "architecture enables us to place our selves in the continuum of culture."[2] This powerful idea suggests a fixed variable, place, and two fluid variables, time and culture. Frequently, when we are studying architecture we fix the place and time to learn about the culture: Italian Renaissance architecture, Roman architecture, Greek architecture. Each of these examples has a fixed time and place associated within its definition. In order for architecture to "structure man's being in the world" an understanding of buildings, in relationship to each other, must occur.

Now what about Islamic architecture? Where are the geographic and temporal boundaries placed? Is Islamic architecture relegated to following, one historical framework, the dynastic sequence of Islamic empires, stretching from Spain to China, under one flag and one religion? During the great Islamic empires of the Samanid, Hamdanid, Buyid, Ikshid, Shii Fatmid, Ghaznavic, Mamluk and Ottoman dynasties the religious, intellectual, military and civic developments of the time were shared through

[1] Pallasmaa, "An architecture of the seven senses," Questions of Perception, pg 37
[2] Pallasmaa, "An architecture of the seven senses," Questions of Perception, pg 37

the institutions of the empire providing a unifying cord to transmit cultural developments. Associating Islamic architecture with the ruling dynasties again fixes time and place to produce a systematic culture and reference point for architecture. However, architectural developments did not coincide with the beginning and end dates of the dynasties and could overlap multiple dynasties or develop during the middle of a dynasty. "Other decisive forces- such as massive population movements, lingering national and tribal pride and spiritual breakthroughs, not to speak of artistic, structural and technological innovations- had a more profound effect on architecture in Islamic history than mere dynastic change."[3] Are geographic and temporal limitations even applicable? The term "Islamic architecture" places religion as the primary characteristic. During the Islamic dynasties there is an overlap between political and social elements of society but then what happens after 1918, at the end of the First World War, when the allies occupy the defeated Ottoman Empire, the disposition of the last Ottoman sultan in 1922 and the fall of the Qajar dynasty in Iran in 1924? These events mark discrete breaks in the once cohesive cultural elements of Islamic society. National identities rise, some continue to model political systems within the framework of Islamic law while other follow western models and separate the civic and religious realms. Places once connected by a political, military and cultural empire are tied to each other by fewer variables and focus on their own unique cultural features. In the 20th century religious identity moved from associations with large geographical areas to closer associations with individual and community identities.

Today the spread of Islam is no longer a military venture but the result of immigration. Economic and political instability in the Middle East over the past century

[3] Rabbat, pg 20

has lead people to immigrate west, creating a large Muslim Diaspora with 50.9 million Muslims in Europe, 600,000 in Australia, 6.78 million in North America and 3.07 million in South America. [4] Today over 20 million Muslims live in the west and are building structures that are distinctly Islamic and responding to the climate and cultures of their new homes.

In the last forty years the discourse asking 'What is Islamic Architecture?' has found a formal forum through the seminars and publications surrounding the Aga Kahn Award for Architecture. Since 1977 His Highness The Aga Kahn has sponsored a multidisciplinary discussion about architecture and the built environment of Muslims, culminating in a prestigious award for recent projects. The first cycle of the award focused on "what, within contemporary architecture in Muslim countries can legitimately be considered Islamic.[5]" Over ten cycles the award has established a very inclusive platform to discuss what Islamic architecture is in Muslim areas, considering works by Muslim architects and non- Islamic architects. The Aga Khan Development Network describes the mission of the award as follows; "the award seeks to identify and encourage building concepts that successfully address the needs and aspirations of societies in which Muslims have a significant presence."[6] The work of the Aga Khan Network has broadened the definition of Islamic architecture and focused on the great diversity that exist in this broad term. Up to this point the focus of the Aga Khan Award for Architecture and academic studies of Islamic architecture has revolved around the Middle East, North Africa, southern Spain, and South Asia. The study of Islamic architecture in

[4] http://www.islamicpopulation.com/world_islam.html
[5] Graber, architecture as symbol and self identity, page 2
[6] Aga Khan Award for Architecture, Ninth Award Cycle, 2002-2004, Aga Khan Development Network http://www.akdn.org/agency/aktc_akaa-2004.html

western countries is just beginning to become the subject of academic and institutional discussions, primarily because there has been limited construction of buildings with Islamic identities. "Of nearly 1000 mosques and Islamic centers in the United States survyed in the mid-1900s, fewer than 100 had originally been designed to be mosques and, of those, the older ones had not been designed by architects."[7] *The Institut du Monde Arabe* is the first, and only project in a western country, Paris, to win an Aga Khan Award, 1989.

One of the first issues that immigrant Muslims face when building is to develop an attitude about traditional building techniques and modern western building techniques. The pre-industrial traditions brought from the middle east and asia may not be adaptable to colder or humid climates. Non-western cultures are still absorbing the influence of modern architecture and western building practices in the buildings within their own countries. Islamic culture itself is undergoing a transformation. "Oil wealth, along with social and political change, have threatened Islamic culture and traditions. This identity crisis is readily apparent in architectural design."[8] But in the 20th century, the Islamic concepts of unity, harmony and continuity often are forgotten in the rush for industrial development. Three directions for contemporary Islamic architecture are outlined by Garry Martin.

1. One approach is to completely ignore the past and produce Western-oriented architecture that ignores the Islamic spirit and undermines traditional culture.

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[7] Khalid, 26
[8] Garry Martin, *"Building in the Middle East Today -- in Search of a Direction."* http://www.islamicart.com/main/architecture/future.html

2. The opposite approach involves a retreat, at least superficially, to the Islamic architectural past. This can result in hybrid buildings where traditional facades of arches and domes are grafted onto modern high-rises.
3. A third approach, Martin notes, is to understand the essence of Islamic architecture and to allow modern building technology to be a tool in the expression of this essence. Writes Martin, "Architects working today can take advantage of opportunities that new materials and mass production techniques offer. They have an opportunity to explore and transform the possibilities of the machine age for the enrichment of architecture in the same way that craftsmen explored the nature of geometrical and arabesque patterns..."

The forms that would evolve from this approach, adds Martin, would have a regional identity, a stylistic evolution and a relevance to the eternal principles of Islam.

The third approach appears to be the best of both worlds but does not yet take into account the global nature of modern day culture and the feedback loops that exist between non-western cultures and the west as a result of cheaper communication and increased immigration with frequent returns back to the homelands. The solutions to these questions and how to incorporate cultural evolution into design will not be answered in the immediate future, but the questions will be raised in this thesis.

Regional and Local Significance of Detroit

> ***"If you want to know about Islam in America, you've to know it started right here [in Detroit]."***[9]
>
> ***-Imam Saleem Rahman***

Detroit was chosen as the site for this thesis for its diverse Arab and Muslim population. The identity of Muslim Americans is not formulated implicitly by their religion, national identity or ethnic heritage but by a combination of these elements. The diversity of the Muslim population in Detroit is one of the challenges to creating architecture identifiable to the whole community. Architectural language, symbolism, form and programmatic elements recognizable and symbolic to the population will vary with regional and cultural differences.

The first step in understanding the site is learning about the Muslim community within Metropolitan Detroit. Metro Detroit is a culturally and ethnically diverse region that attracted immigrants from around the world with its robust economy in the early 20th century. Many people immigrated to the city during the boom of the automobile industry and lucrative opportunities such as the "$5 a day" campaign by Henry Ford that offered high paying blue collar jobs to untrained laborers. Arab immigrants, between the 1880s and 1920s, were the first Muslims to settle in Detroit. Historian Arthur Woodford once said Detroit "has the largest Arabic-speaking population outside of the Middle East," although that statement is no longer true it demonstrates the impact the Arab community has had on the region and emphasizes the long history of Arabs and Muslims in the city. Detroit is currently thought to be the second largest Muslim population in the United States, following New York City. Currently, accurate statistical data on the size of the

[9] Shyrock, Muslims in Detroit, 3

Muslim population in America does not exist, estimates range from 2 to 7 million[10]. The total Muslim population in Detroit is estimated between 125,000-200,000.[11]

Muslim Population in Detroit

"The idea that Muslims of diverse backgrounds belong (or ought to belong) to a single community is widely accepted in Detroit."[12]

Two major surveys of the Muslim community conducted post 9/11 are The Detroit Mosque Study, conducted by Ihsan Bagby and funded by the Institute for Social Policy, and The Detroit Arab American Study, funded by the Russell Sage Foundation. "The Detroit Arab American Study does not focus specifically on Muslims but it produced the first large-scale, quantitative portrait of Arab Muslims, who represent 42% of the 1016 people it surveyed."[13] These two studies and the work of Andrew Shryock, an anthropologist from the University of Michigan, paint a portrait of a diverse Muslim population with individuals from: Bosnia, Yemen, Pakistan, India, Lebanon, Syria, West Africa, Bangladesh, Iraq, Egypt, Palestine and African American. Participants of the Detroit Mosque Study represented 42 countries. The majority of the participants were South Asian and Arab.

[10] http://www.adherents.com/largecom/com_islam_usa.html
[11] Bagby, 11
[12] Shylock, Muslims in Detroit, 3
[13] Shylock, Muslims in Detroit, 2

Ethnicity of Mosque Participants[14] (N= 1043)	
South Asians (Pakistan, India, Bangladesh and Afghanistan)	41%
Arab	36%
African American	11%
Other ethnicities	11%

Figure 1: Ethnicity of Mosque Participants

Most mosques in the area tend to be dominated by one ethnic group, "Of the 33 Detroit mosques, 11 (33%) are attended largely by South Asians, 10 (30%) are Arab, 6 (18%) are attended by African Americans, 2 (6%) are evenly mixed between Arab and South Asian, and 4 (12%) are a mixture of various ethnic groups."[15] Detroit Muslims are both Shi'ite and Sunni. Twenty-seven of the 33 Detroit mosques are Sunni; however Shi'ite mosques have a larger total number of people associated with their mosques.

Although the Detroit Muslim community has a long history in the area the current community is relatively new. Immigration has been the greatest factor in the growth of the Muslim community in Detroit and is expected to continue at similar rates.

> "Almost two-thirds of the mosque participants are first generation immigrants.
>
> Over half of the immigrants in the mosque participant survey came to America since 1990. Only 15% of the immigrants arrived before 1980.

[14] Igby, 23
[15] Igby, 11

> About one-third of the immigrants in the mosque participant survey who arrived in America before 1990 want to return to their homeland, and about 60% who immigrated after 1990 want to return. "[16]

The high percentage of first generation immigrants and the strong desire to return to their homelands are indicative of the global nature of this project. The culture and community that mosque-goers belong to and participate in extend beyond the local metropolitan region. These individuals are constantly transmitting culture between their homeland and the Detroit area, creating a feedback loop that works in both directions.

Identity Issues

Identity is often very closely tied to nomenclature. In Detroit the distinction between Arab-American and Muslim-American has been blurred since the 1970s when dominant public identity discourse focused on unifying the community under the title "Arab-American" and downplaying religious and national identities. The 2000 Census indicates that Dearborn, Michigan a suburb of Detroit has the second largest population of the 1.2 million Arabs and Arab-Americans in the United States. Forty-two percent of that population is Muslim.[3]

The problem seems to be a desire to coin one name, "xxx-American," to describe a group with multiple identities. The Detroit Arab American Study found that the term "Arab-American" is welcomed by 82 percent of the Muslim Arabs surveyed; comparatively only 61 percent of Christian Arabs thought the term accurately described them. The study also found that compared to Arab Americans nationwide Arabs in Detroit are more likely to be Muslim. The new public identity discourse needs address

[16] Igby, 12

the distinctions between ethnic, cultural, and religious identity within the Muslim and Arab communities and how individuals can be a part of multiple groups.

Non-profit and community organizations formed with Arab American identities have institutionalized, over the past 40 years, the "Arab-American" identity and play pivotal roles in the representation of the community nationally and locally. "Moreover , the secular, ethnic character of Arabness made it easier for state and federal agencies to provide financial support to organizations that called themselves "Arab" (as opposed to groups that were exclusively Muslim or Christian)." [17] Since 9/11 millions of dollars devoted to funding educational programs and increasing an understanding of Islam have gone to established Arab American community groups that are managed and operated by non-Muslims. The accumulated political and financial resources allow non-Muslims to dominate the public representation of Islam in Detroit to the dismay of Muslim leaders. A need exist to create a place, both physical and institutional, for Muslim leaders to cultivate the identity of the Muslim community in Detroit.

[17] Shylock, Muslims in Detroit, 1

Islamic Architecture: Forms, Function and Meaning

As a non-Muslim architect, the first step of my design process is to submerse myself in the traditions of Islamic architecture. Authenticity is an issue when addressing cultural representation and identity in any medium. Authenticity is strived for within this thesis through research and engagement.

……

Mosques

Mosques are quite simply an oriented and enclosed space set aside for prayer. *Salat*, one of the five pillars of Islam, requires each Muslim to worship five times a day and in congregation at noon on Fridays. Congregational Prayer is lead by an *Imam* (prayer leader) that delivers the *khutba* (sermon) and leads the congregation in synchronized prayer with prescribed movements. The *Salat* is performed facing Mecca and consist of specific ritual stances (bowing, genuflection, prostration) and speaking the worship liturgy. The physical movements of the *salat* require a minimum space of 1 x 2 meters for each worshipper and a clear view of the Imam to facilitate precise timing. Worshippers form relatively few and long rows parallel to the *qibla* (direction of prayer*)*, to help facilitate visibility and thus synchronized timing in the prayer movements. The short rows and depth of Christian basilicas made them impractical for Muslim worship and were rejected as an inspiration for mosque design early on pushing Islamic architects to develop a unique typology.

The house of Muhammad, in Medina (622 A.D.) is the model for mosque design. Muhammad's house served dual purposes: a home for Muhammad's family and a center for the new Islamic community; thereby being both a place for spiritual and secular life.

The house was a mudbrick structure with a large courtyard at its center and nine rooms for the Prophet's family. "Along the inner wall facing the *quibla* was the *zulla*, or shaded place, a double row of palm trunks carrying a roof of palm leaves plastered with mud. This feature was not part of the original design but was added within a year because some of the Companions (*sahaba*) of the Prophet complained of the discomfort of which the sun had caused them during prayer." [18] The outer wall around the house demarks the holy ground from the secular world outside. The nine rooms of the Prophet's family are outside of the wall. The House of Muhammad sets a precedent for the use of axial relationships within a mosque. The main entrance and the *mihrab* are on axis with each other and are centered in their respective walls. The openings that form the cross axis are not centered on their respective walls. The prominence of the *zulla* compared to the *suffa*, an area used by the most impoverished followers of the Prophet, establish a bipartite division within the mosque.

[18] Hillenbrand, 40

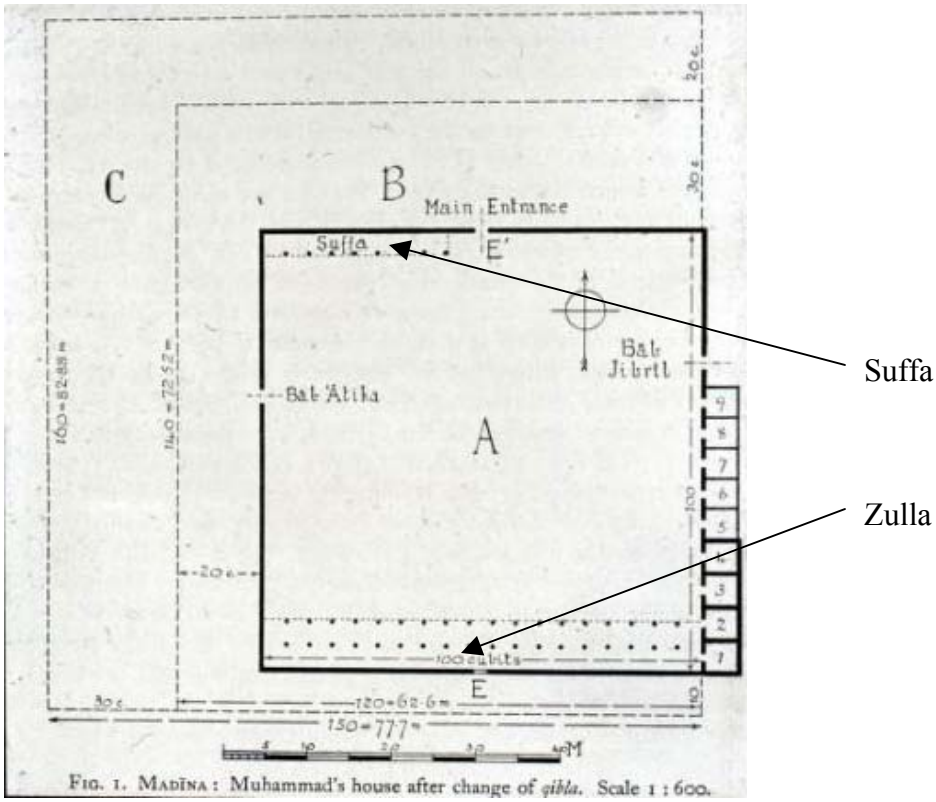

Figure 2 - House of Muhammad[19]

The Muslim liturgy does not require any man-made structures, however through the course of history a number of components have become characteristic of mosque design. The components vary in importance and may not all be present in the same building.

The quibla wall and mihrab

As mentioned earlier the *quibla* is the direction of prayer. In 624, Muhammad changed the direction of prayer from Jerusalem towards the Ka'ba in Mecca, asserting independence from Christianity and Judaism. The quibla wall is perpendicular to an imaginary line drawn towards Mecca, the geographical and spiritual center of the

[19] http://www.arthistory.upenn.edu/smr04/101910/Slide10.3.jpg

Islam. The *Ka'ba,* in Mecca, is a cube structure oriented with its corners facing the four cardinal points. The *Ka'b*a predates Islam as a holy site is said to have been built by Adam and rebuilt by Abraham and Ishmael[20]. By turning towards the *Ka'ba* Islam reverted back to a pure monotheism of Abraham before the revelations of the Torah and the Gospel. "It is the primordial symbol of the intersection between the vertical axis of the spirit and the horizontal plane of phenomenal existence."[21] Within a mosque the *mihrāb*, a niche in the center of the quibla wall marks the direction of Mecca. Symbolically all of the mosques are connected by imaginary spokes radiating from Mecca. It should be noted that the mihrāb itself is not sacred but the direction it expresses is sacred. In Muhammad's house the direction was marked with a stone.

The concave *mihrāb* was first introduced when the Mosque of the Prophet was rebuilt in 705-709 A.D. The *mihrāb* has Greco-Roman and Christian influences, recessed niches were used in Greek and Roman architecture to hold statues and as altars in Christian churches. The concave *mihrāb* was used as an acoustical device by the Imam who stood within the niche to lead the congregation in prayer. The shape of the niche bounced sound back and magnified it at the same time. The *mihrāb* is usually one of the most highly decorated areas within the mosque.

[20] Armstrong, page 17
[21] Michell, 16

The minbar

The minbar is a pulpit positioned to the right of the *mihrāb*[22] to help make the *Imam* visible to all the worshippers. Many sources trace the *minbar* to the House of Muhammad as either a raised chair or series of steps that he stood on to address his growing congregation. *Minbars* since then are a series of steps at a right angle to the wall. Minbars are almost always found in large Friday mosques, *jami*, and may be absent in smaller, *masjid*, mosques. There are strong similarities between *minbars* and the Christian *ambo*, a lectern and pulpit in early medieval churches and the bishop's throne in Byzantine churches.

Figure 3 - The quibla and iwan in the Mosque of Sultan al-Nasir Muhammad, Cairo (718-35). Mihrab decorated with marble, minbar made of wood.

[22] "In Umayyad times the mihrab was positioned within the *mihrāb* itself," Hillenbrand, pg 46.

Figure 4- Minbar in the Mosque of Sultan Hasan, Cairo

The dome

Domes provide interior light and define the sacred space on the exterior. Muslim architects were familiar with honorific domes used in Roman and Byzantine architecture and elaborated on the technology with geometric solutions. Squinces and pendentives support round domes over rectilinear plans. A squince transforms a square into an octagon, or hexagon as in the Sokollu Mehmet Paşa Mosque in Istanbul (1572), on which the dome is placed. A pendentive is a triangular segment of a sphere that tapers at the bottom and opens at the top to form a continuous base for the dome. Ribs and muqarnas are geometric decorations that can also be structural. The 10th century mosque of Cordoba features "eight intersecting ribs which create intricate geometric patterns of eight-pointed stars and polygons, including squares and octagons."[23]

[23] Frishman,65

Madrasas

"Education is closely connected to worship and from the beginning mosques have been used for both prayer and instruction."[24] *Madrasas* are collegiate mosques and contained live in quarters for students. Lessons took place outdoors under the *īwān*, a covered porch, in the center of each wing. A *madrasa* has many of the same features as a mosque but also has the more specific function of housing students and professors. The Sultan Hassan *madrasa* also has a funerary element. The Sultan's tomb, a domed structure, behind the largest iwan.

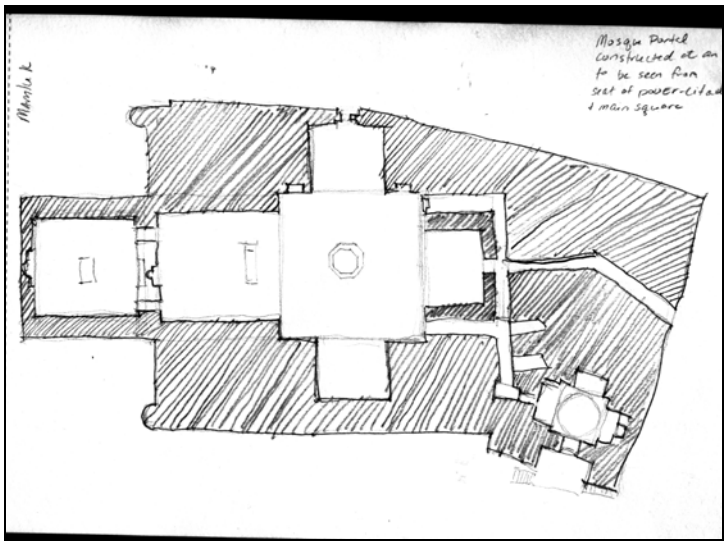

Figure 5- Plan of Sultan Hassan Madrasa, Cairo

[24] Michelle, 24
[25] Michell, 24

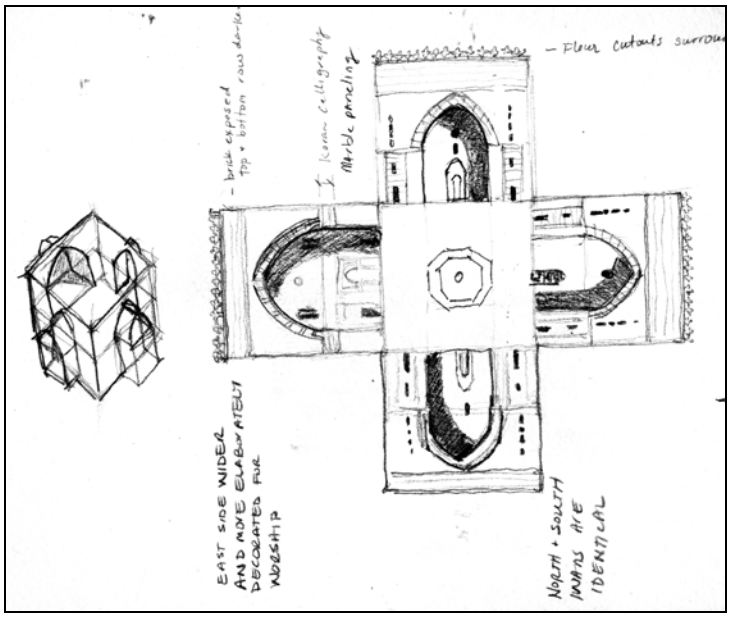

Figure 6 –Elevations of the four courtyard facades and volumetric study of the courtyard. Sultan Hassan Madrasa, Cairo

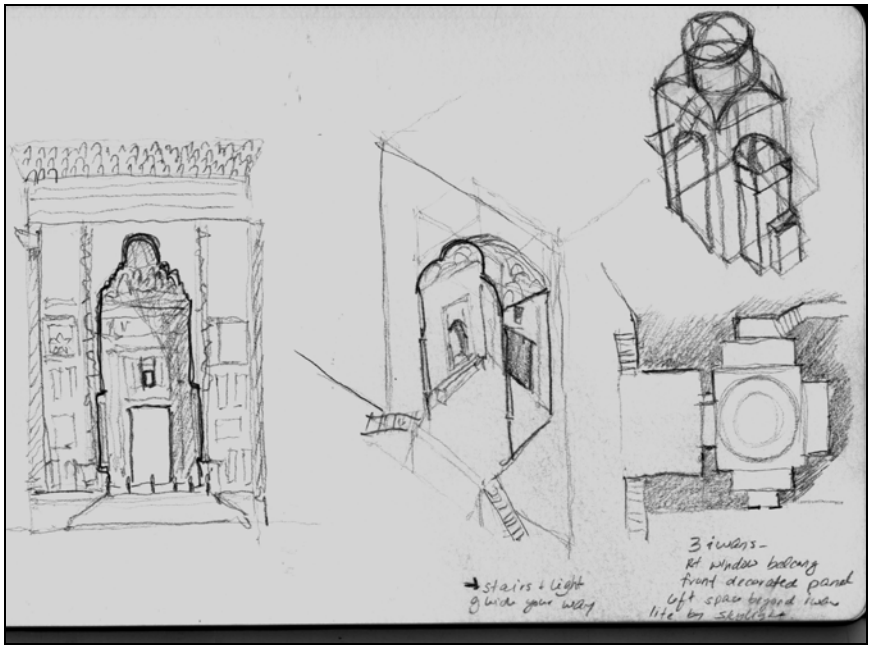

Figure 7– Diagrams of the entry portal to Sultan Hassan Madrasa, Cairo.

Surface, Pattern and Light

Surface decoration and its relationship to light are integral to the overall composition of Islamic buildings. Decoration is not a superficial element added after the design is complete but is used critically to help define space. The extreme variation within Islamic architecture to create rich and supple surfaces shall be explored with an eye towards innovative materials and the adaptation of local materials. Surface decoration in Islamic architecture includes: muqarnas, calligraphy,geometric patterns, floral motifs and arabesques. In this study we are going to focus on calligraphy and geometric patterns for their symbolic significance. Floral motifs can also be symbolic in their reference to the paradise garden but will have fewer applications in this design.

Decoration is not restricted to any one aspect of the building and often overlaps in scale and materials to help define and transform space. Decoration is often used to dissolve structure and mass. "Surfaces are fluid: decoration helps to make the transition, imperceptibly, from one plane to another. No sharp divisions are allowed. Light is filtered, water reflects, unifies and cools."[26]

Muqarnas

Muqarnas, a uniquely Islamic invention, are three-dimensional wedge forms that are combined into intricate designs to create honeycomb patterns on walls, portals, vaults, and domes. "Most muqarnas volumes are made of combinations of seven shapes, which in section are rectangular or triangular; from a small number of basic units with at least

[26] George Michell, ed. *Architecture of the Islamic World: Its History and Social Meaning*. (London: Thames and Hudson,1978), 163

one surface area in common, many different interlocking arrangements could be developed." [27]

Figure 8 - Muqurnas in the portal to Sultan Hasan madrasa

Figure 9 – Muqurna building elements

[27] Frishman, 66

Calligraphy

Calligraphy means "beautiful handwriting" and in Arabic tongue it also means "the geometry of the spirit." [28]

The intricate textures and mesmerizing surfaces created with calligraphy in Islamic architecture are beautiful and powerful. "The particular importance accredited to writing found its roots in the fact that Arabic is booth: the language of God's revelation to his Prophet Muhammad and subsequently the script in which it was written."[29] Adding to the predominance of calligraphy as a decorative art within mosques are the restrictions on the depicting human and animal forms in sacred spaces. Aniconism is prohibited within Islam to prevent the worship of idols and false gods. Calligraphy also addresses the tension within Islamic art between representation and abstraction, providing identifiable content in abstract patterns.[30]

The presence of calligraphy on and in the mosque provides the viewer with a message and focus of meditation. Most text found in mosques are from the Qur'an but can also include quotations from the *hadith*. The Qur'anic inscriptions are valuable in their existence regardless of the content of the quotation because "it serves as a visible representation of supernatural reality. In the case of quotations from the Qur'an, God's word is revealed in the guise of human speech."[32] The symbolic nature of the script explains how in many mosques the text may be difficult to read either because it is too far away or intertwined and can not be immediately recognized.

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[28] Ali, Rasha. "Islamic Architecture and Digital Datatbases," presented at ASCAAD 2006, 314
[29] Rasha, 314
[30] Michelle, 169
[31] A hadith is a narration about the life of the Prophet or what he approved.
[32] Martin Frishman and Hasan-Uddin Khan, *The Mosque: History, Architectural Development and Regional Diversity* (London: Thames and Hudson, 1994)

> "In the pre-modern period it would have been assumed that anyone who was literate enough to care to read what was scribed on a mosque wall would have memorized the entire Qur'an during the course of his elementary education, and recognition of a single word or phrase would have instantly evoked the memory of the rest of the passage quoted." [33]

Multiple script types are used congruently to create balanced compositions with symmetry and variation. Scripts are arranged to maximize their individual compositional qualities. Thuluth script is monumental with exaggerated/ elongated verticals and is combined with Kufic, which is compressed and more orthogonal, to create a continuous datum. Calligraphy is often arranged in linear or geometric arrangements and used as a compositional element.

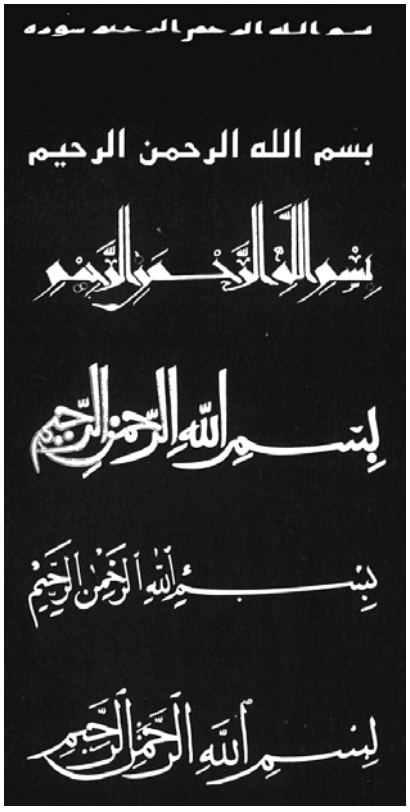


Figure 10 - A Comparison of the bismillah- 'In the name of Allah, the Merciful, the Compassionate' Scripts from top down: Mashq, Square Kufic, Eastern Kufic, Thuluth, Naskhi, Muhaqqaq

[33] Frishman and Khan, 45

Epigraphic texts vary greatly and are not prescribed based on their location. The only exception is in the mihrab. "Many mihrabs contain one of two Qur'anic quotations containing the word mihrab, either 3:37 ('when he stood praying in the mihrab') or 3:39 ('while he stood praying in the mihrab')."[34] A data base, Sadepig, is currently being developed to document the epigraphy and written texts of buildings from the Sa'diean period in Morocco (1527-1660). [36] A comprehensive data base may disclose additional patterns and trends about the messages conveyed through mosque calligraphy.

Calligraphy patterns in historical structures are achieved through carved stone work, ceramics, and inlaid marble. New materials such as Ductal, an ultra-high performance concrete, offer unprecedented opportunities to create delicate and thin surfaces without conventional steel reinforcement. The exhibit Liquid Stone at the National Building Museum, 2004-2005 featured a museum project, *Mucem*, using this technology.

[34] Frishman and Khan, 47
[35] Rasha, 318
[36] Rasha, 318

Project: MUCEM
Musée des civilizations de l'Europe et da la Méditerranée

Rudy Ricciotti with RCT Architects
Marseille, France
Projected Completion: 2009

"The intricate concrete web has a somewhat biomorphic character, but also evokes the complex geometric patterns of Islamic decorative motifs. The Architect describes the proposed building as a 'vertical casbah'- a modern, multistory reinterpretation of the traditional north African citadel."[37]

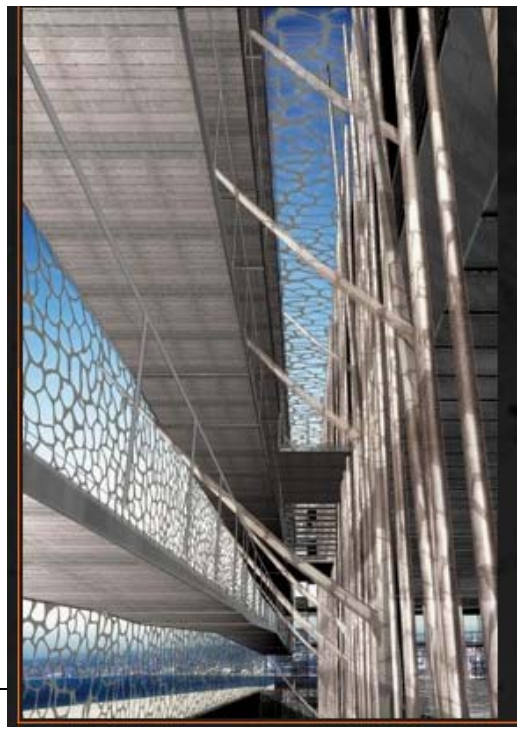
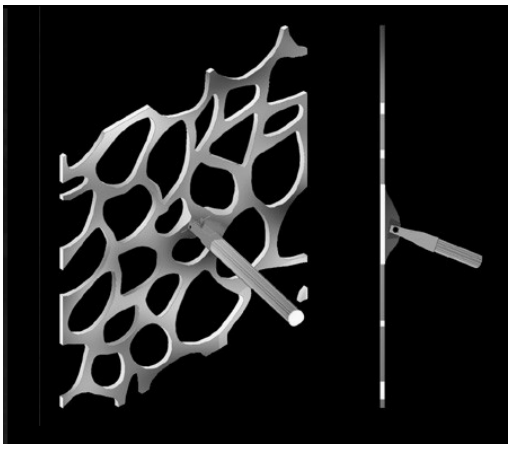


Fig. 11 - MUCEM Perspective
(Source: National Building Museum)

Fig. 12 - Detail of Ductal Screen Wall
(Source: National Building Museum)



[37] "Liquid Stone: New Architecture in Concrete/ The Future of Concrete," National Building Museum, http://www.nbm.org/liquid_stone/home.html (accessed March 10, 2006).

The recent (2002) Bibliotheca Alexandrina takes inspiration from the calligraphy traditions within Islam and features carved Aswan granite carved with symbols and text representing the world civilizations. In this project the text and symbols are evenly applied to the wall surface without forming any geometric patterns.

Figure 13 - Bibliotheca Alexandrina, Alexandrina, Egypt

Figure 14– Public Theater, NY, Paula Scher[38]

As we discuss calligraphy and architecture I would like to introduce the work of Paula Scher, an American designer, who uses typography in architectural compositions. Her design for the Public Theater, in New York, maintains consistent letter spacing and changes the size of the letters to make text fit specified areas. This style is inspired by Dada posters and the Apollo Theater posters[39]. Scher describes her work as "defining personality" or identity-related. Spatial areas are delineated by the size and orientation of the text. Directionality changes based on the orientation of the text, each word has an obvious top and bottom but the left to right movement occurs when text is flipped so that two pieces of vertical text are either: pushing away from each other, facing the same direction or facing inwards towards each other.

[38] Lupton
[39] Lupton

Geometry

Islamic pattern and geometry are products of the sacred science: "an objective view of the 'created order' that embraces a theocentric perspective, that is, a Creation with a Creator."[40] Fundamental to the Islamic faith is a belief in the unity of God, and since the material world is a creation of god, it also comprises a unity. Islamic scholarship, heavily influenced by Plato and Socrates, searched for fundamental patterns that showed the universe was systematically arranged by the Creator and not an accident, a cosmic order exists. Once patterns have been found their use in decoration serve as a reminder of theological, anthropological and cosmological meaning.

> "Islamic artist saw the way of achieving four levels of meaning in one artistic effort: first the significant common language of geometry; secondly, the integral patterns of the heavenly rhythms of the cosmos (the 12 houses of the zodiac – the number symbolism of all the planetary rhythms); thirdly, the achievement of the delight in the harmony of symmetry together with decorative colored effects to lift the spirits; and fourthly, the achievement of patterns of cosmic meaning that integrated different symmetries." [41]

Decorative pattern reminds the faithful of fundamental beliefs and express the complex order of the cosmos.

[40] Dr. Keith Critchlow, "The Use of Geometry in Islamic Lands," *Architectural Design*, 74, no. 6 (Nov/Dec 2004), pg 73
[41] Critchlow,77

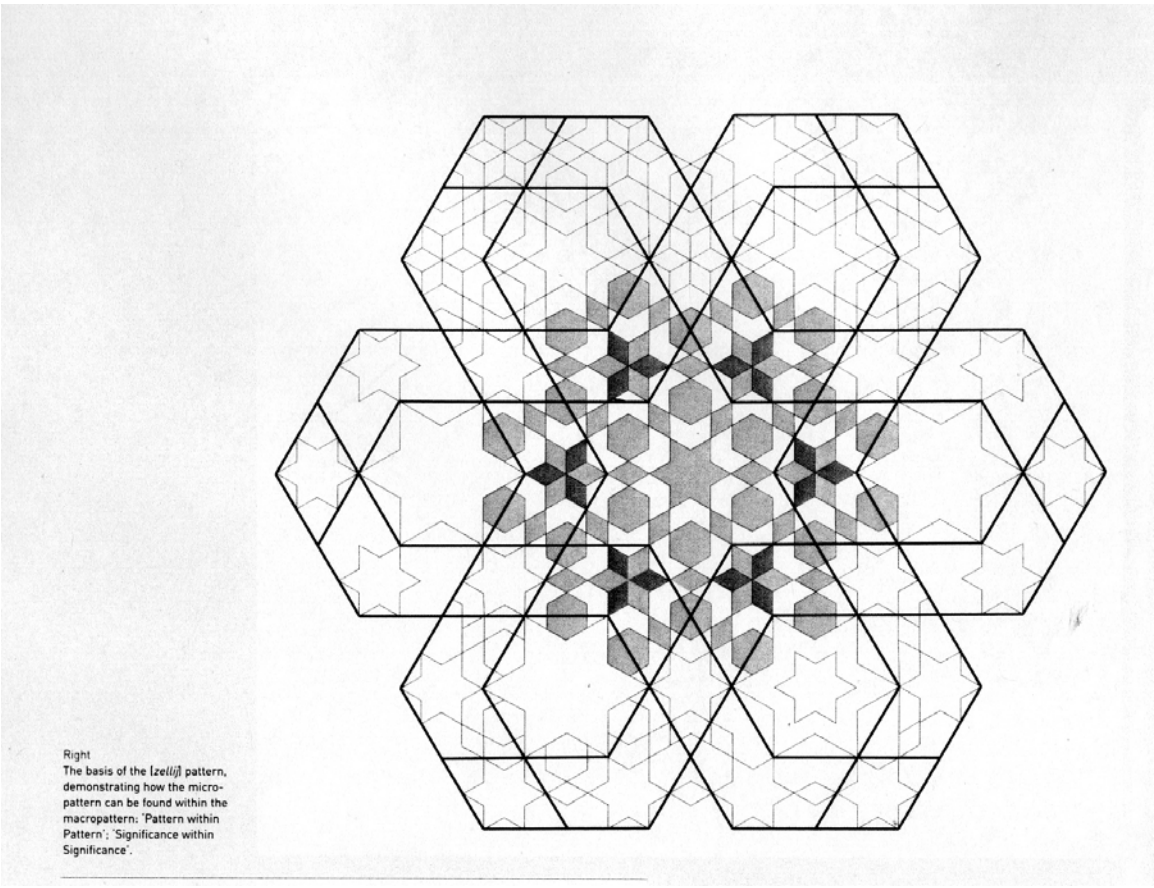


Figure 15 - Basis of the *zellij* pattern- 'Pattern within Pattern'[42]

[42] Critchlow, 74

Precedent Studies

Contemporary Precedents

According to the Mosque Study Report, in the year 2000 there were 1209 mosques in the United States, showing a growth of 25% since 1994.[43] Fewer than 10% of mosques are housed in buildings designed for their specific purpose. The majority are in buildings converted from other uses. The first custom-designed mosque was built in Cedar Rapids, Iowa in 1934, "a simple rectangular building of white clapboard on a cinder-block foundation, with a dome over the front door." [44]Dr. Omar Khalidi of the Aga Khan Program at MIT has outlined three basic categories for mosques built in the United States: imported traditional design, a reinterpretation/ adaptation of tradition, and entirely innovative designs. In this chapter I am going to explore one precedent from each of these categories. After discussing mosques from each category Dr. Khalidi suggest that the movement of Islamic architecture in the United States may be tipped towards the innovative.

> "Attachment to traditional design principles is, however by and large restricted to first-generation immigrant Muslims. Their descendants and American converts to Islam, who will eventually constitute the majority of the US Muslim population, will probably tip-the scales in favor of more innovative architecture. Many Muslims of all backgrounds may even see this as responding to a prime Islamic imperative: to live in harmony with the total natural and historical environment of a place."

Dr. Omar Khalidi's observation is interested in relationship to the high number of immigrants in the Detroit Muslim community, which will be discussed in more depth in the next chapter.

---

[43] Bagby, Pg 6
[44] Innovate adapt import

Islamic Center, Washington, D.C

The Islamic Center of Washington, D.C. (built in 1957) is an example of an imported traditional design deriving its inspiration from the Mamluk architecture of Cairo. The mosque designed by Mario Rossi, an Italian architect practicing in Cairo, is now a protected historical building. The influence of Cairo architecture is dually influenced by the architect and the president of the Washington Mosque Foundation at the time of construction, the Ambassador of Egypt.

The plan is a relatively simple courtyard structure with a continuous façade facing the street. Innovative solutions were adapted to adjust for the difference between the angle of the street and angle of the prayer hall. The first regularizing device is the continuous façade, with a tri-party organization. Masonry walls with punched openings flank the central bay which features five horse shoe arches that lead into the courtyard. From the street the skewed prayer hall is visible behind the façade and becomes the base of the minaret. The façade simultaneously extends horizontal and vertical.

In the courtyard the irregularities are mitigated by maintaining the same horse-shoe arch on all sides of the courtyard and maintaining the same number of columns on each side even though the south elevation is almost 33% shorter. On the south elevation columns are paired to support three arches and single columns support five arches on the north and west. The eastern façade of the courtyard is a solid wall with a projecting bay that is the main entrance to the mosque.

Another innovative solution is the sequence for worshippers through a side entrance to access the wash rooms. Both men and women enter the same door from the

courtyard and descend a flight of stairs to reach washrooms. The stair well has a large landing on level with the prayer hall and shoe storage

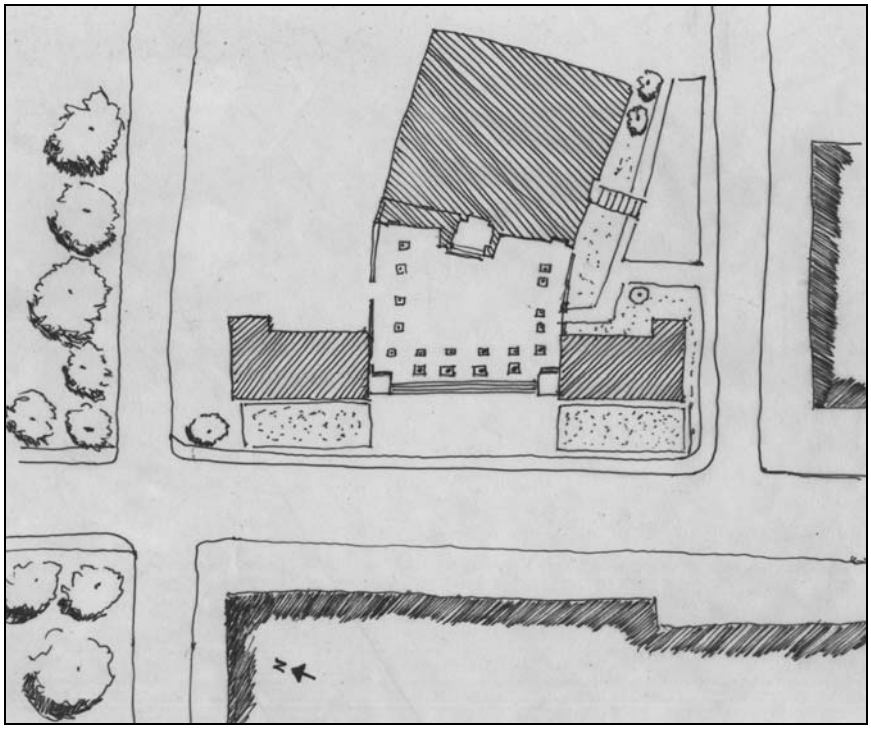


Figure 16 – Site Plan, Islamic Center, Washington D.C

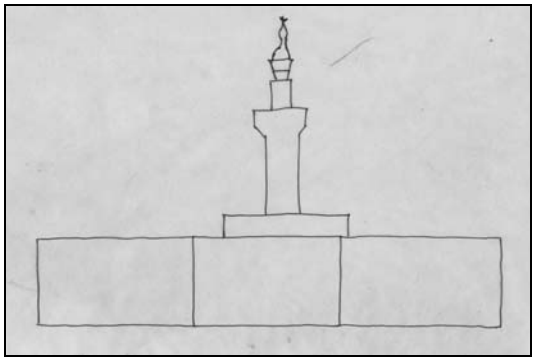


Figure 17 – Façade Diagram, Islamic Center, Washington, D.C.

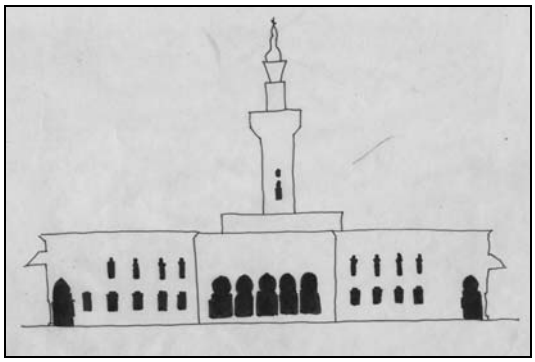


Figure 18 - Solid Void Diagram, Islamic Center, Washington, D.C.

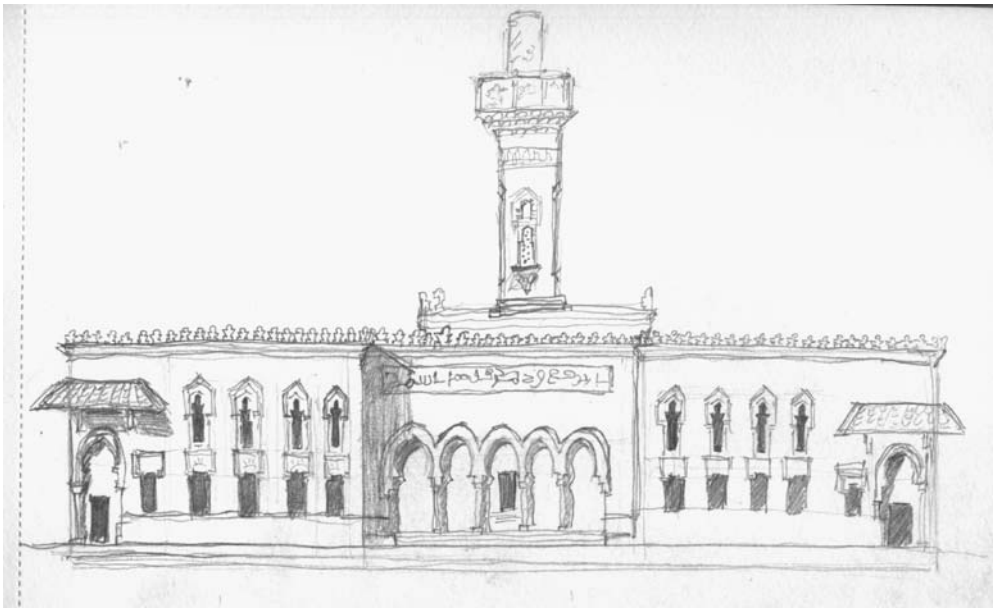


Figure 19 – Façade, Islamic Center, Washington, D.C.

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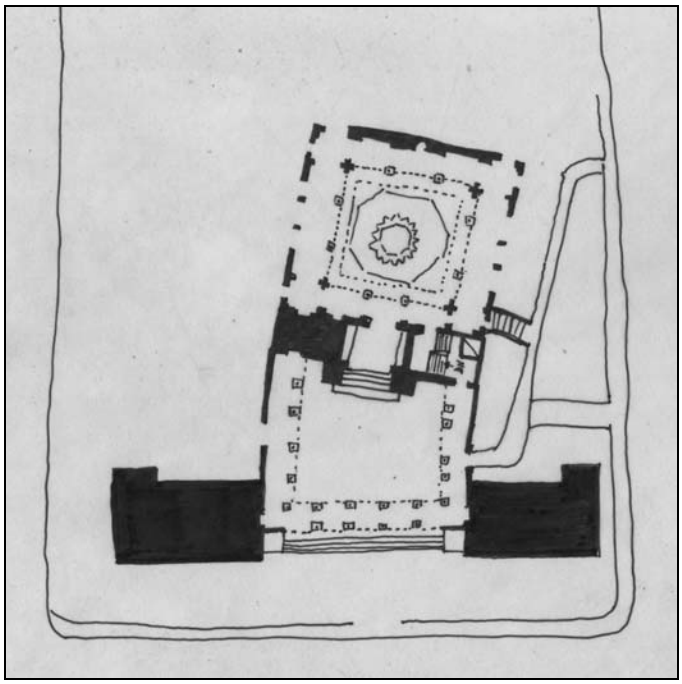

Figure 20 – Plan of Courtyard and Prayer Hall

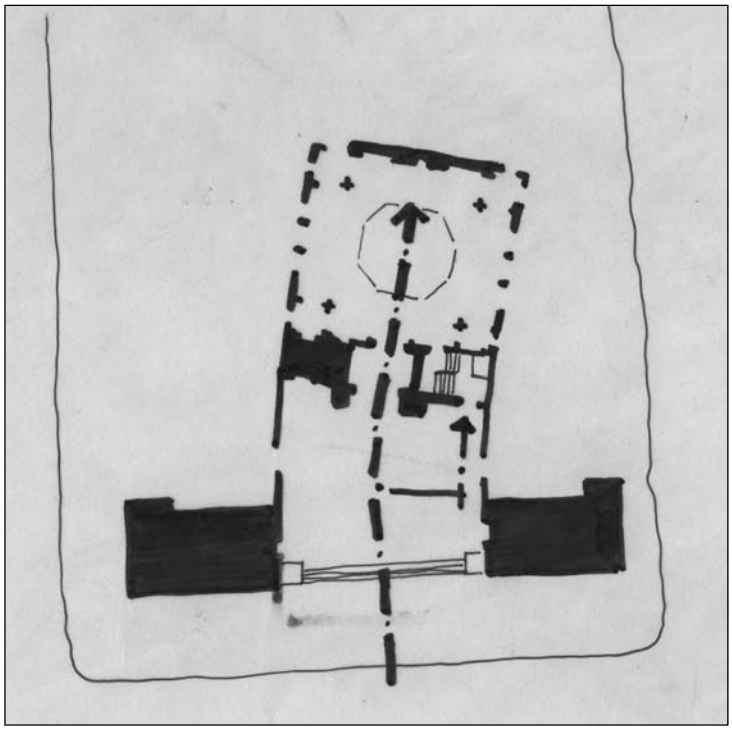

Figure 21 – Main entrance on center and secondary entrance with direct access to washrooms to the right.

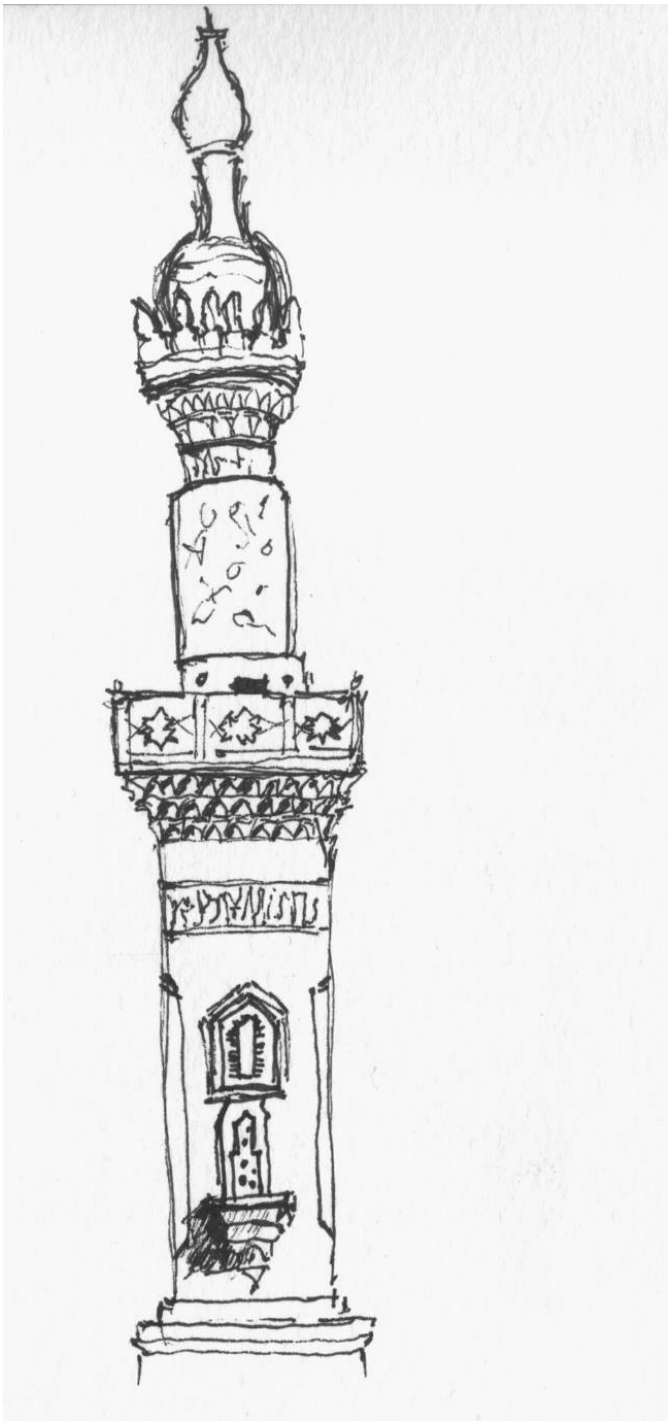

Figure 22 – Minaret, Islamic Center, Washington, D.C.

Figure 23 – South courtyard elevation, note paired columns.
Islamic Center, Washington, D.C.

Figure 24 –North courtyard elevation, note single columns.
Islamic Center, Washington, D.C.

Islamic Cultural Center, New York, NY

The Islamic Cultural Center in New York (ICCNY) built in 1991, is an example of a design adapted from tradition. Skidmore, Owings & Merrill designed the building with the assistance of two advisory committees, one composed43 of architects, mostly non-Muslims, and the other of prominent members of the Muslim community in New York. "The architects- some practitioners, some scholars- wanted a "mosque that belonged to the 21st century." The Muslims wanted the designers to reproduce the style of a traditional mosque with literal versions of historic motifs."[45] The resulting building is modern and features a concrete dome over a 90' clear span structure and a minaret.

The first thing that you notice when you approach the ICCNY is that the front entrance, on 3rd Avenue, is not in use. After walking around to 97th Street you slip under a dark canopy into the basement of the building. The iron fence sitting on a pink granite knee wall does not wrap around the entire lot and ends before you reach the 97th street entrance, which is lined with a chain link fence. The basement level houses a large multi-functional room, offices, classrooms and a store. Stairs take you up to a floor with washrooms and then up to the grand prayer hall. Once inside the prayer hall you realize why the 3rd Avenue entrance is closed. The tree-lined walkway and outdoor terrace enter into a small vestibule and then straight into the grand prayer hall. This procession is typical of Catholic churches but does not give an opportunity for abolitions or removing shoes. The front green space, so unique in New York, is made completely inaccessible by closing off the ceremonial procession.

[45] Page 29 innovate novermber/December 2001

The interior of the prayer space is bright and the dome is impressive, both emphasize the cube volume. However, the austerity of the space and simplicity of the geometry starkly contrast the rich complexity that is associated with Islamic architecture and lack the color and patterns that are found on the lower level in the educational spaces. The dome is the most expressive element in the room. It is supported on concrete ribs. A revel lets light in along the bottom rim and creates the illusion, common to Islamic domes, of floating.

Figure 25 – Interior view of Dome, Islamic Cultural Center, New York

Figure 26 - Interior view of grand prayer hall.
Islamic Cultural Center, New York

The minaret is a successful element of the ICCNY. It is a simple form that bridges between obelisks and minarets. It is completely detached from the building and soars over the dome and surrounding trees, marking the place of prayer from outside the complex. The design is abstract by clearly identifiable as a minaret.

Figure 27 – Minaret and Dome
Islamic Cultural Center, New York

Islamic Students of North America Islamic Center, Plainfield, Indiana

The ICNA was commissioned in 1979 by the then Muslim Student Association and completed in 1983. The architect is Gulzar Haider, is a professor of architecture in Ontario. The building is a modernist approach to Islamic design. "The plan and three-dimensional spatial arrangement are derived from geometric principles associated with the square, octagon and circle. The octagon of the mosque is covered by a dome. Its abstract geometry and the use of light and shade achieved by high openings are reminiscent of the approach to modern design adopted by Louis Kahn."[46] The building sits on a 64 acre site and buffered from the street by open space and parking. The programmatic elements include a prayer hall, library and administrative offices for the Student Association. The dome of the mosque is not visible from the exterior. Women enter an ablution room on grade with the men then climb an internal stair that reaches a balcony level over the mosque. The design of the center, with an internal circulation spine and interior atrium space surrounded by offices, responds to the harsh climate of the Midwest by creating spaces that are useable and connected year round. This precedent has a very similar program to this project of this thesis including the library and administrative spaces but does not connect with an urban context. The project is internally focused and concentrates on the relationship of the elements of the building to themselves. Surprisingly the symbolic relationship of the mosque and library are not paired on an axis, instead the offices with a larger volumetric presence are cross axis to the mosque.

[46] Holod and Khan, page 220

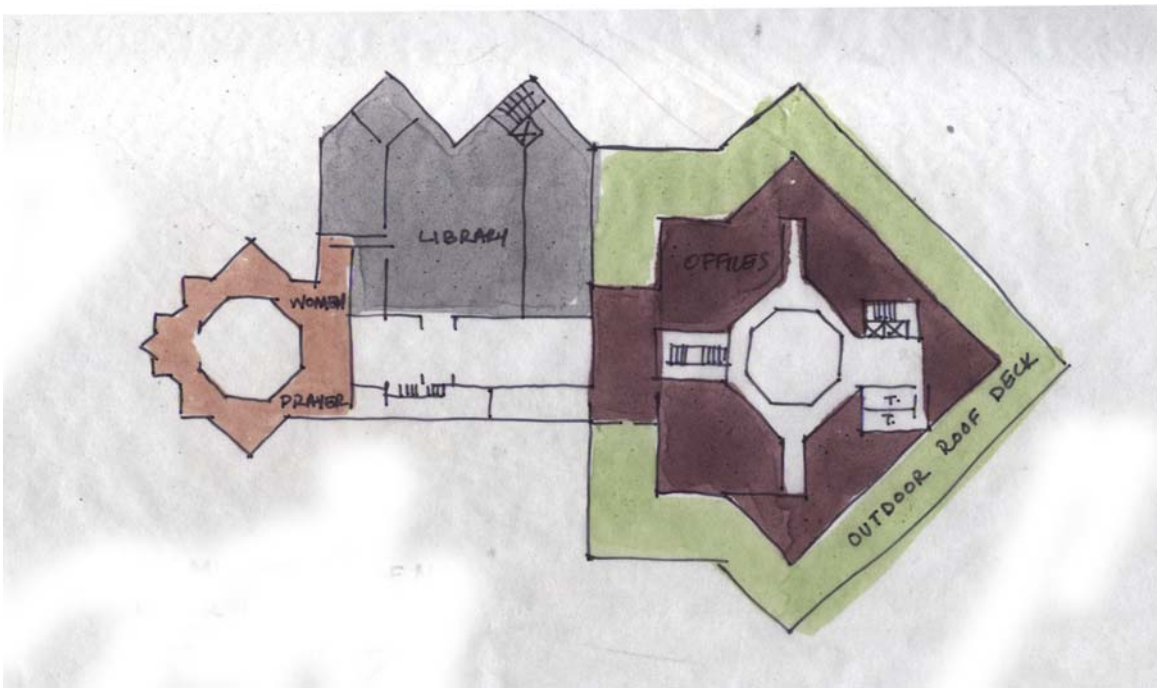

Figure28 Islamic Center or North America Upper Level Plan

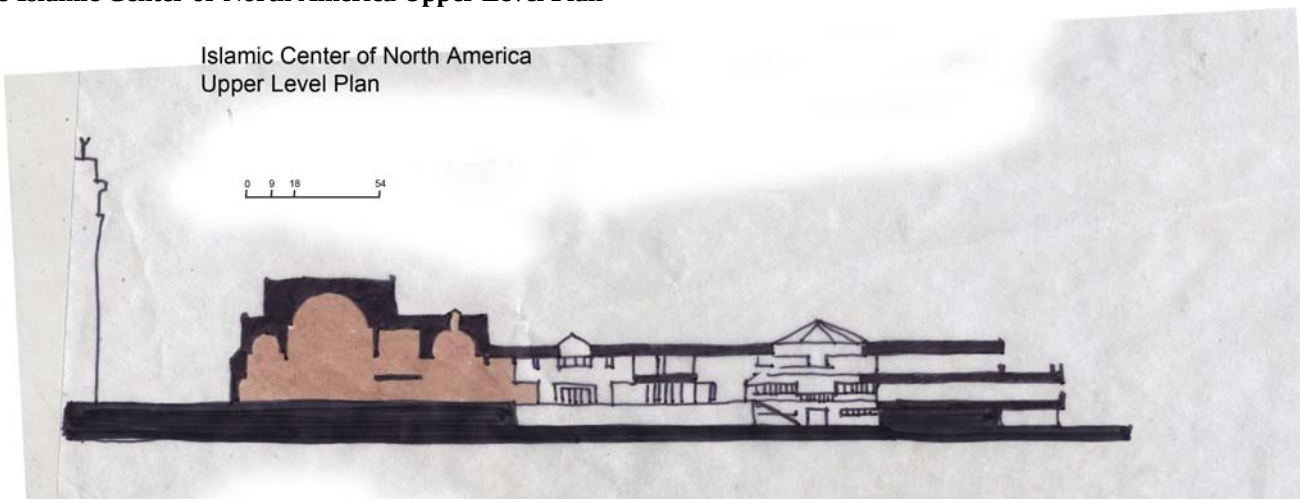

Figure 4 Islamic Center or North America Section

Site and Context

Site Selection

The intention of this project is to create a mosque and research facility that will be a resource for the diverse Muslim population of the metropolitan area, as well as for non-Muslims interested in learning about the religion. The site selection was considered with the following criteria: regional prestige, central location in relationship to existing mosques and concentrated Muslim communities, and proximity to similar cultural amenities. The first criteria, regional prestige, suggested that the site should be on an important street or boulevard, giving the project physical and symbolic visibility. The second criteria considered the relationship of this project to existing mosques. In 2003, the Detroit Mosque Study found 33 mosques in Metropolitan Detroit. Seventy percent of those mosques were located within the city of Detroit borders (figure 24 shows the distribution of the mosques in relationship to each other). Clusters exist on the east side around Hamtramck and on the west side close to the Dearborn –Detroit boarder. The concentration of mosques within the city limits and relative distribution east -west suggest the ideal placement of an umbrella institution would be within the city and centralized. The third criteria considered the library element of this project, suggesting that it should be sited close to other research facilities. The combination of these criteria lead to the selection of a site on Woodward Avenue and within the Cultural Center district.

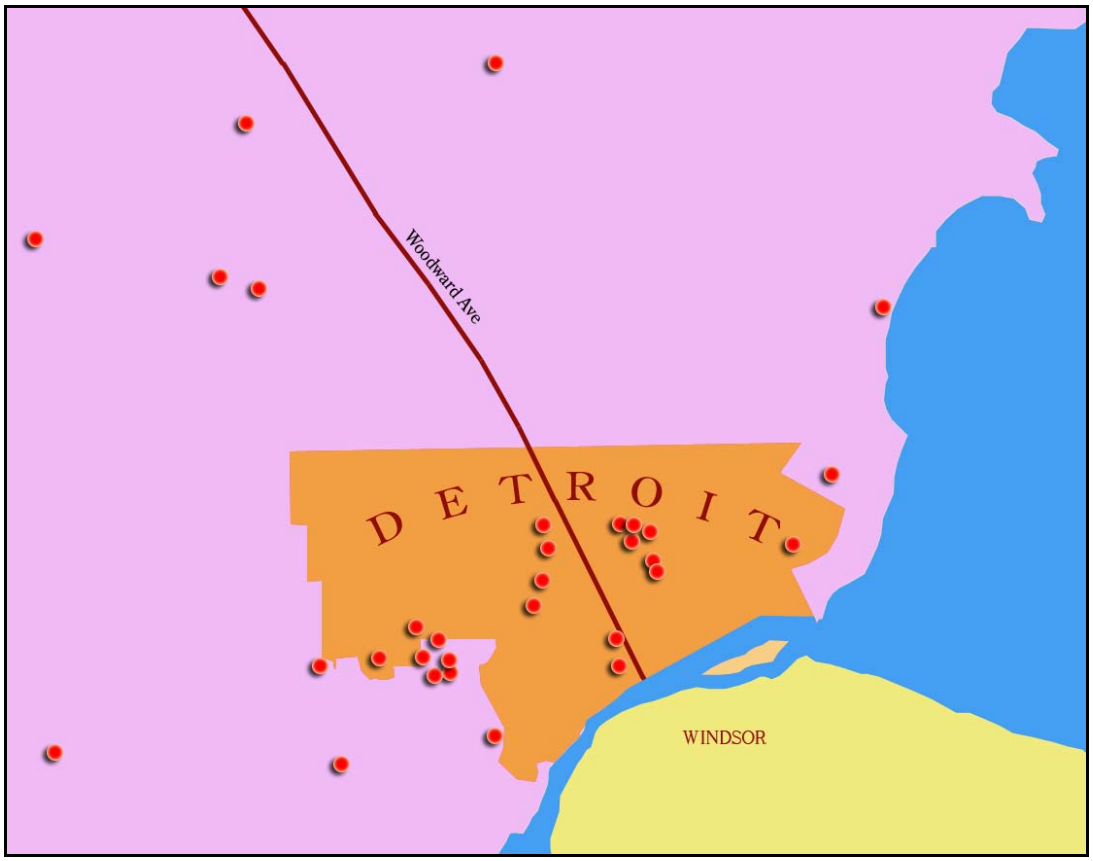

Figure 30– Mosque Distribution in Metropolitan Detroit

Woodward Avenue

Woodward Avenue is the main street in Metro Detroit dating back to Augustus B. Woodward's adaptation of L'Enfant's radial plan for Washington, D.C. Woodward, the main artery of the radial plan, begins at the base of the Detroit River, bisects the city, and continues into the suburbs. Woodward Avenue is an organizing corridor for the city and the region, districts and townships are arranged along the avenue like a series of pearls on a chain. Between Detroit and Pontiac, Woodward "cruises past 250 historical buildings, 30 historic districts, and six nation landmarks."[47] Although the original intention was to have a radial city like Washington, D.C. the space between districts and nodes are much greater in Detroit and the organization is more linear.

The prestige associated with the avenue is illustrated by the numerous important building with addresses on Woodward such as: The Detroit Institute of Arts, main public library, the Coleman A. Young Municipal Center, the newly constructed Comcast Center, Comerica Park, and the Fox Theater. Placing a cultural institution on this prominent street demonstrates its significance to the community. The proposed site for this project is surrounded by the Cultural Center, Wayne State University, and the Medical Center. The proximity of the site to these concentrated areas and the placement on Woodard Avenue provide an opportunity for foot traffic through and around the site.

[47] Cruising Woodward, Michigan Land Institute Bulletin, issue 19, Summer 2004

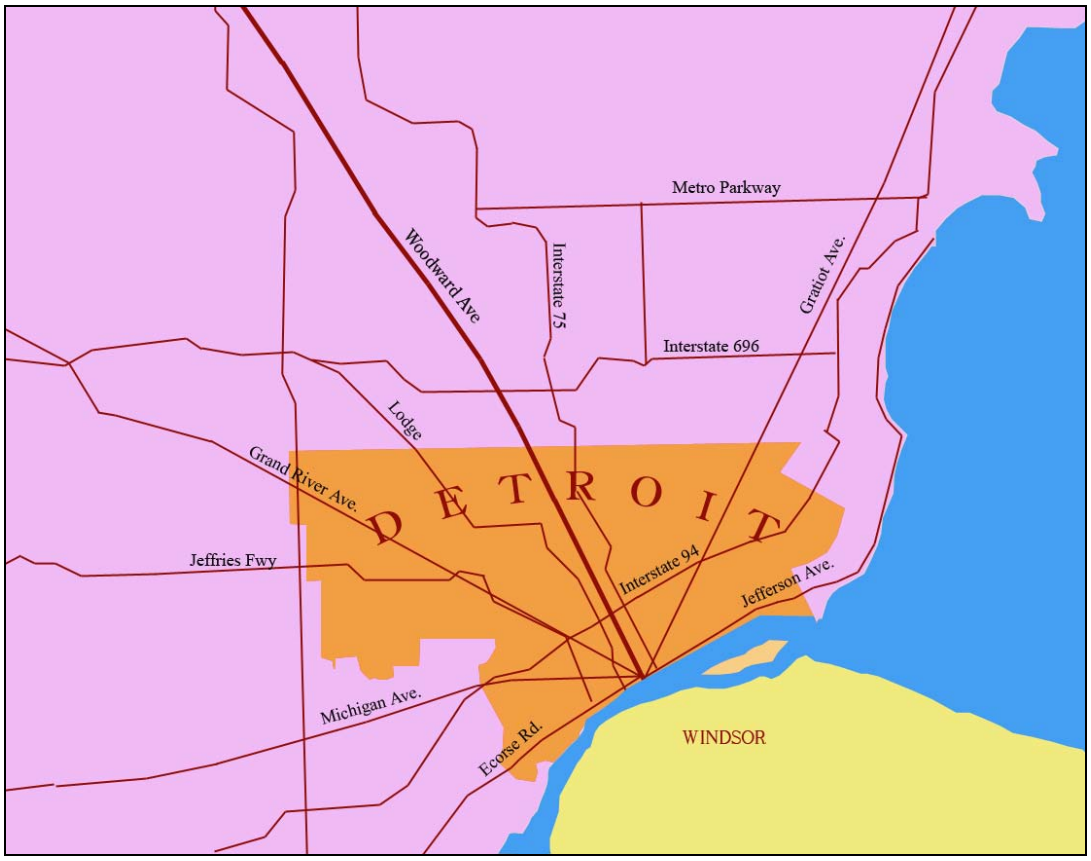

Figure 30 – Woodward Ave, Radial Arteries and Interstates

Figure 31 –Site in relationship to Woodward Avenue and various districts.

Figure 32 – Districts and townships organized along Woodward Avenue

Districts along Woodward Avenue:

Central Business District – Historical downtown with concentration of high rise structures, Along the waterfront is a public park, Hart Plaza, designed by Isamu Noguchi. Cobo Hall the regional convention center is located here as well as the newly renovated GM headquarters.

Entertainment District- Fox Theater, State Theater, Second City, Comerica Park (home of the Detroit Tigers), Gem Theater, Detroit Athletic Club, and Opera House.

Cultural Center- Museum District, Wayne State University, Center for Creative Studies, and Main Public Library.

New Center- Significant buildings include the Fisher Theater and former GM headquarters designed by Albert Kahn, currently used as a State of Michigan office building.

Boston-Edison Historic District- Mansions from the late 1800s and early 1900s

Palmer Woods- Planned residential community with houses designed by Frank Lloyd Wright, Minoru Yamasaki, and Maginnis & Walsh.

Figure 33 – Existing Land Uses

Street Character

Over its lifetime Woodward Avenue has been widened at least 18 times bringing it to its current width of about 120' to each property line. Each of the six car lanes are approximately 13' wide, the middle turn lane and sidewalks are approximately 14' wide. The street, once brick, is now covered with asphalt, the brick is still visible next to the curb. Street trees are planted in large concrete containers that sit on the sidewalk. The size of the containers prevent root growth and the concrete absorbs moisture, limiting the overall growth of the trees and plants.

Figure 34 – View looking north, Woodward Avenue.

The section of Woodward from New Center to the Central Business district is currently being considered as part of a Commuter Rail Transit system connecting Ann Arbor to Downtown Detroit. The proposal, by the Southeast Michigan Council of Goverments (SEMCOG), suggests a commuter train from Ann Arbor, with a stop in Dearborn, and a stop on Woodward in New Center, then a light rail in the median of Woodward, connecting New Center to downtown (see figure 28). Below are a series of studies examining how the street character can be improved with the addition of the new light rail train.

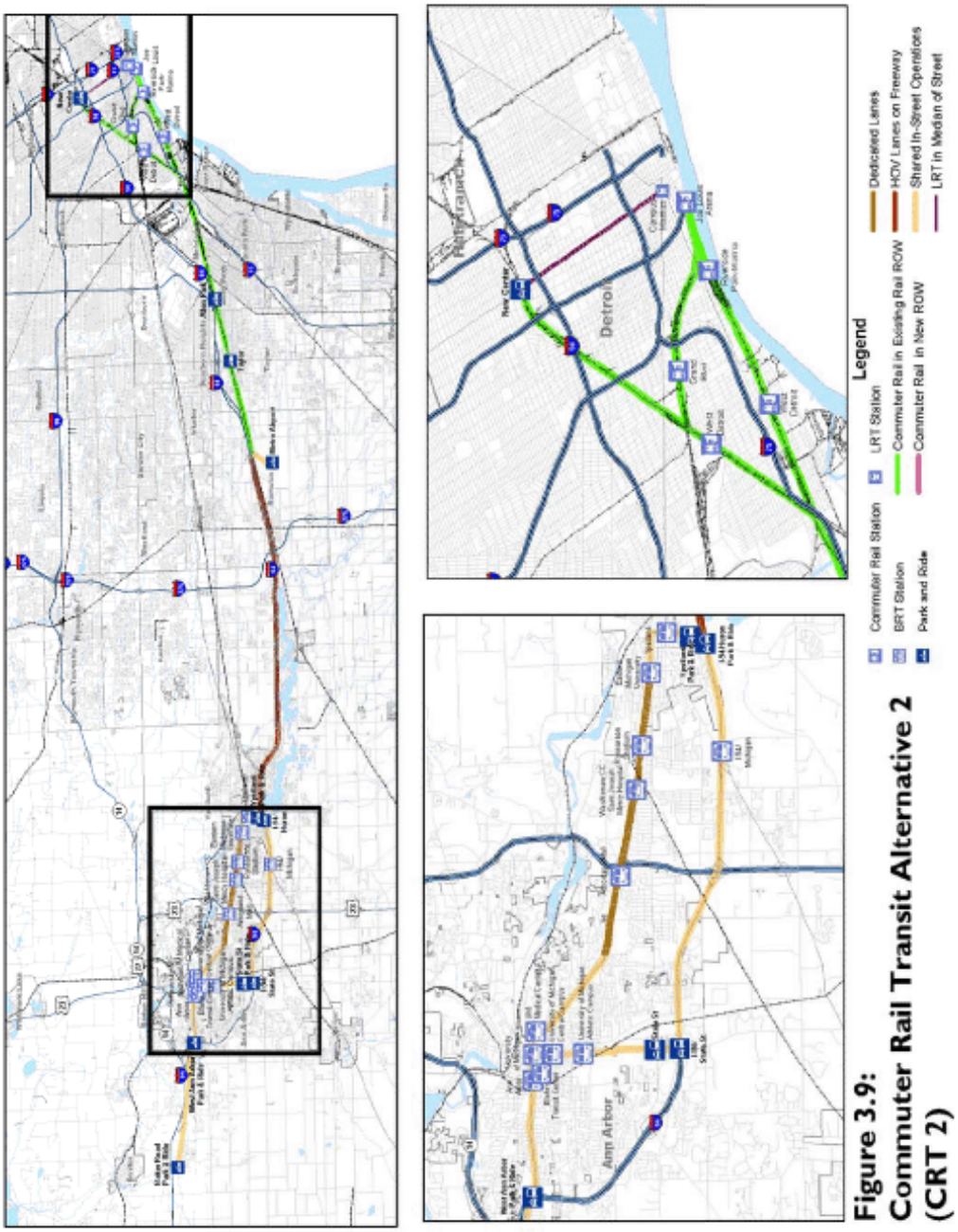

Figure 35 – SEMCOG proposal for Commuter Rail Transit from Ann Arbor to Downtown Detroit. Plan includes proposal for light rail train in the median of Woodward Ave.[48]

[48]Ann Arbor-Downtown Detroit Alternatives Analysis / Draft Environmental Impact Statement /Transit Study / Detailed Definition of Alternatives, Prepared by Parsons Corporation, for Southeast Michigan Council of Governments, June 2006, pg 46

Detroit Cultural Center District

The project will be located within the Cultural Center of Detroit. The site emphasizes the social significance of the program by its spatial association to similar cultural resources. The Cultural Center is home to the Detroit Institute of Arts, Detroit Science Center, Charles H. Wright African American Museum, Detroit Historical Museum and Children's Museum. The district is also home to research centers and libraries including: the Great Lakes Patent and Trademark Center, the Burton Historical Collection at the Detroit Public Library, the Rare Book Collection, and the National Automotive History Collection and the Walter P. Reuther Library which houses the Archives of Labor and Urban Affairs, the Douglas Fraser Center for Workplace Issues, and the Wayne State University Archives. The Cultural Center also neighbors Wayne State University and The Center for Creative Studies.

The entrances to most of the museums are located on Woodward Avenue, the primary thoroughfare of the city, or within 2 blocks from Woodward. The site orientation will have a significant impact on the circulation and procession through the spaces of the project.

Figure 36 –Midtown Detroit Cultural Center[49]

[49] University Cultural Center Association homepage: http://www.detroitmidtown.com/05/image_lib/midtownmap.jpg

4501 Woodward Ave.

The site, situated at the intersection of Woodward and Forest Avenue, shares a block with a Wayne State dormitory and the historic Whitney restaurant. The site is a composite of three parcels The site is only a few blocks from two freeways giving it considerable vehicular accessibility. Public bus transportation is accessible along Woodward Avenue and Warren Avenue.

Figure 37 – Site in relationship to Woodward Ave., Wayne State University and the Medical Center.

Figure 38 – Site in relationship to immediate context.

Figure 39 – View across Forest Ave., directly adjacent to site.

Figure 40 – Historic Whitney Mansion,view from Woodward Ave.

Figure 41 – Gardens on South side of Whitney Mansion

Figure 42 – Entry Fountain and Stairs

Figure 43 – South facing window

Figure 44 – Wayne State Dormitory as seen from Woodward Ave.

Figure 45- Cathedral Church of St. Paul. 4800 Woodward Ave.

Figure 46 –First Congregational Church of Detroit, located on the North East corner of Forest and Woodward.

Zoning

Figure 47 - Zoning Map 5 of the Detroit Zoning Ordinance[50]

[50] Detroit Zoning Ordinance, (06 Dec 2005), Page 635

The proposed site sits on parcels zoned General Business District (B4) and General Services District (B6). Both zoning districts permit religious institution, libraries, museams, schools, and child care as *By-right public, civic and institutional uses.*

Figure 48 – Site Limitations for B4 and B6 zoned properties.

Use	Minimum Lot Dimensions		Minimum Set Backs (feet)			Max. Height (feet)	Max. Lot Coverage (%)	Max FAR
	Area (sq ft)	Width (feet)	Front	Side	Rear			
Sec. 61-13-25 B4.								
Religious institutions	10000	70	20	Formula B	30	35	No Min.	No Min.
Libraries or museums	10000	70	20	Formula B	30	35	No Min.	No Min.
Sec. 61-13-27 B6.								
All other by-right uses	No minimum requirements.							

Formula B = Length (feet) + 2 (height) / 6

Properties in B4 districts are allowed[51] to exceed the thirty-five foot height limitation if they are on a street eighty feet or more in width that is designated by the Master Plan as a major or secondary thoroughfare, and where the outermost point of the proposed building on said zoning lot is forty feet or more from the nearest point of the lot line of all R1, R2 and R3 districts. This property meets these criteria and is therefore able to increase one foot for each one foot of street width greater than eighty feet. Woodward Avenue is one hundred and twenty feet (120 ft) and as such the new maximum height for this project is seventy five (75) feet.

Intervention

After studying the site and experimenting with several parti variations I found the current placement of the Wayne State dormitories disruptive to the urban fabric. The block on which the site sits was formally a convention center that spanned from Woodward to Cass. The unique and public use of the convention center justified the joining of two blocks to form a mega block. However, today the size of the block seems disproportionate compared to the surrounding blocks, especially with the fragmented building arrangement. My intervention proposes reconnecting Prentis Avenue across Woodward and through the site. This will divide the current site into two blocks, one of which will contain my proposal and the other will be redeveloped with a mixed use proposal that includes housing for the university.

[51] Sec. 61-13-33 of the Detroit Zoning Code

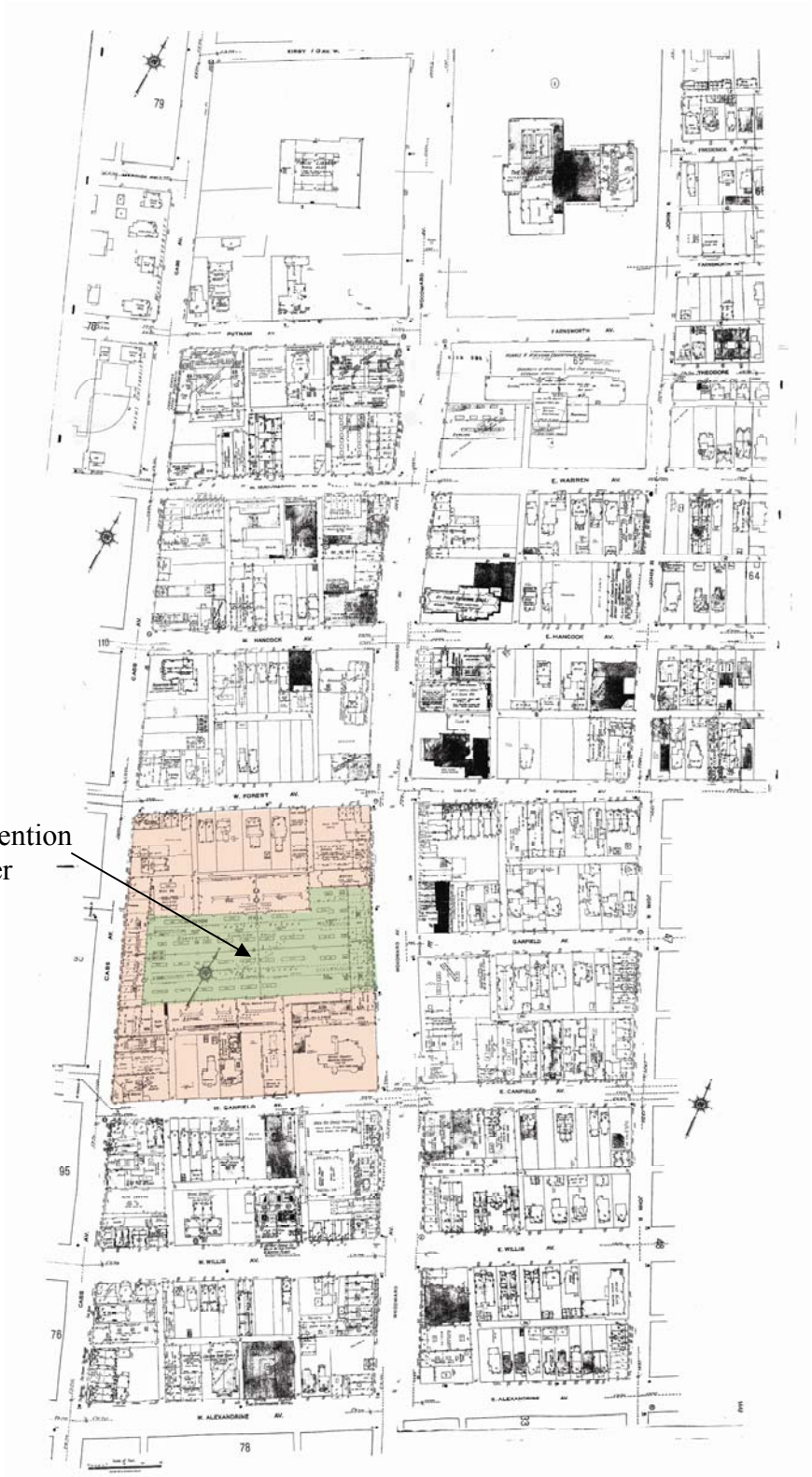

Figure 49 - Convention Center located on site. Sandborn Map 1951

Functional Considerations and Program

Program

- Public Plaza and Garden Spaces
  (with accommodations for weekend market and holiday festivals)
- Reception Desk 100 sq. ft
- Lobby 500 sq. ft minimum
- Cafeteria and Bakery 1,000 sq. ft
- Commercial Kitchen 750 sq. ft
- Gift Shop 500 sq. ft
- Permanent Exhibit Gallery 750 sq. ft
- Temporary Exhibit Gallery 500 sq. ft
- (2) Classrooms for Pre-School 900-1300 sq. ft/ each
- (4) General Classrooms/Discussion 400 sq. ft/each
- Masjid, Prayer Hall 15,000 sq. ft
- Main Reading Room 3,000 sq. ft
- Stacks 1,500 sq. ft
- (2) Specialist Libraries 750 sq ft./ each
- Lecture Hall 1,500 sq. ft
- Offices
  (5) Individual Offices 100- 150 sq. ft/ each
  Conference Room 250 sq. ft
- Residential Apartments (6) 1000 sq. ft/ each

Total Area without service spaces or circulation: 17, 000 sq ft

Mechanical Systems 5,000 sq ft
Restrooms 1,000 sq ft
30% for circulation 7,000 sq ft

Estimated Total Area: 50,000-50,500 sq ft

Program Elements

In choosing the elements of the program consideration was given to the Mosque priorities given by participants of the Detroit Mosque Study[52].

Priority	Percentage of mosque participants giving this as one of their priorities
1. Islamic Education (Islamic studies, learning Islam, lectures Reading the Qur'an)	29%
2. Youth/Schools (Youth activities, children's education, Islamic School, attract young Muslims, involve youth, Camping for youth, recreation, girls swimming)	22%
3. Unity/Community (Bring Muslims together, social gatherings, group discussions, involvement, community interaction, involve sisters)	17%
4. Spiritual/ Ritual Focus (Five prayers, practice of Islam, spiritual training, build character, increase faith, ethics)	12%
5. Inviting Others to Islam/Converts (*Dawah*, interfaith, spread Islam, help converts, classes for converts)	7%
6. Improve Facilities/Finances/Organization (Cleanliness, extend mosque, fund-raising, good Imam, new restrooms, new mosque)	5%
7. Service for Muslims (Social services, career network, discuss problems facing Muslims, professional human development, babysitting, child care, business, economic counseling)	4%
8. Involvement in General Community (Political involvement, mosque make a difference in community, community activism)	3%

[52] Babgy, A Portrait of Detroit Mosques: Muslim Views on Policy, Politics and Religion. 2004

Islamic education and youth involvement are the top two priorities of the Detroit Mosque community. The inclusion of a research library, lecture hall, classrooms and a pre-school directly address these priorities. A section of the library will be dedicated to young scholars. The library is intended to be a prestigious research facility to draw regional academics and augment the resources within the cultural center and the broader community. The permanent and temporary galleries will also add to the resources of the cultural center and provide a space to exhibit contemporary art from the Middle East and Muslim countries. Visiting Imams and academics will be able to hold discussions and lectures within the lecture halls, equipped with audio visual technologies.

The public plaza will be designed to accommodate weekend and holiday markets. Open markets are a tradition of Islam and Detroit. Eastern Market, a Detroit tradition since 1804 is located between Mack Avenue and Gratiot Avenue Eastern Market is primarily a farmers market but also features antique stores, restaurants, bakeries, and specialty food shops. The close proximity of the proposed Mosque and Eastern Market create an opportunity for a symbiotic relationship between the two entities. The open market will also be a way to engage non-Muslim members of the community.

The program is designed to provide activity on the site throughout the day and night. The activities of the galleries, daycare and shops will provide activity in the courtyard spaces and along the streets during the day. The prayer hall, restaurant and banquet facilities will be the primary functions utilized during the evening. By including activites that occur at various times there will be increased safety on the site. A series of apartments for visiting scholars and fellows will also animate the site and provide security in the Jane Jacobs tradition.

Functional Considerations

Liturgical Orientation

The directionality of quibla wall towards Mecca will require the design to take a specific attitude regarding when the orientation will be visible. The Islamic Cultural Center in New York chose to orient the entire building in the direction of Mecca and off the street grid. The Islamic Center in Washington, D.C. places a bar building parallel to the street and allows the masjid to turn behind the courtyard.

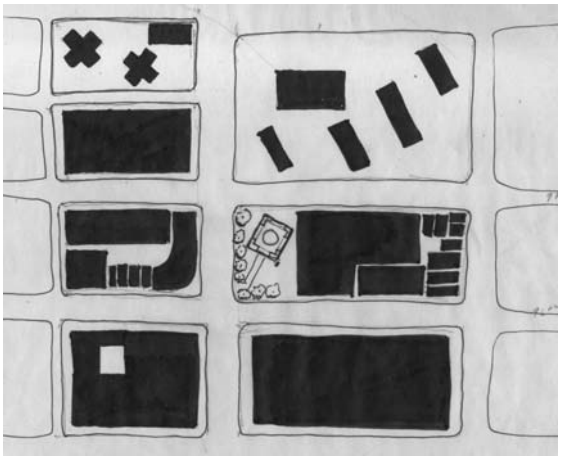

Figure 50 - Islamic Cultural Center, NY, turned 45 degrees to street grid

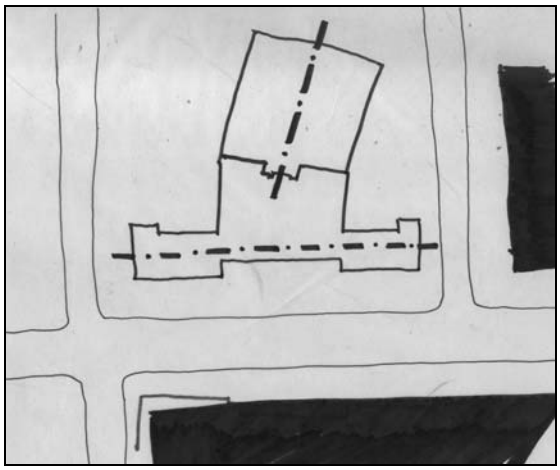

Figure 51 - Islamic Center, D.C.
Two axis: one parallel to the street and one oriented towards Mecca.

The distance and direction of Mecca was calculated using the Great Circle method to determine the shortest path along the surface of the earth. The direction of Mecca from Detroit is 52 degrees.

Abolitions

Prior to entering the prayer space worshipers purify themselves by cleaning specific areas of their bodies. The cleansing ritual can take place within a fountain in the courtyard space or in a bathroom. Women would not use a fountain in a courtyard because it would require them to reveal more of their body than socially acceptable. Women can share a bathing space with men if private stalls are provided for them. When bathrooms are provided for ablutions a courtyard fountain may provide drinking water.

Women and Spatial Divisions

Within the *Masjid*, prayer hall, women are customarily spatially separated from male worshippers. The separation can be a physical barrier in the form of a wall, curtain or partition or simply the seating arrangement. The original Prophet's Mosque in Medina featured one open space for men and women to worship together, men formed the first row behind the Prophet, then children and then women. It has been informally explained to me that it would be inappropriate for men to sit behind women as they kneel in prayer because it allows males to view a ladies derriere. The spatial separation has evolved to take many forms based on the culture of the area. In Egypt a curtain or screen delineates the space for female worshippers, in which they can not be seen while they are praying; however, women are allowed to freely circulate around the main spaces to reach their

[53] Michell, 16

destination. Turkish customs continue to require women to sit in the rear of the prayer space. Within the courtyard of the University of Tehran women sit to the right, and men to the left, separated by a circulation aisle. Mezzanines dedicated for the use of women are a spatial technique utilized in many Islamic cultures and are featured in Mosques throughout Metro Detroit, including the Islamic Center of America in Dearborn. After researching the topic of female separation in Mosques I have decided not to include any physical barriers that may lead to the segregation of women. "An Islamic Bill of Rights for Women in Mosques" by Asra Nomani has inspired me to believe that women will not be segregated in the near future and will sit with the men as equal members of the community. The bill of rights states the following:

> "Women have an Islamic right to enter a mosque.
>
> Women have an Islamic right to enter through the main door.
>
> Women have an Islamic right to visual and auditory access to the musalla (main sanctuary).
>
> Women have an Islamic right to pray in the musalla without being separated by barrier, including in the front and in mixed gender congregational lines.
>
> Women have an Islamic right to address any and all members of the congregation.
>
> Women have an Islamic right to hold leadership positions, including positions as prayer leaders, or imams, and as members of boards of directors and management committees.
>
> Women have an Islamic right to be full participants in all congregational activities.
>
> Women have an Islamic right to lead and participate in meetings, study sessions, and other community activities without being separated by barrier.
>
> Women have an Islamic right to be greeted and addressed cordially.

> Women have an Islamic right to respectful treatment and exemption from gossip and slander."[54]

Spatial Relationships

An analysis of the program elements and their relationships to each other will influence the location of elements within the final design. The program contains a combination of sacred and secular elements. One analysis of the program compares the sacred to secular relationship to the private and public relationships. The prayer hall is the most sacred element in the complex but is also a very public space. It requires a procession that includes the ablutions but will be in a central location and highly visable. The organization of elements considers the proximity to street frontage and open space as well of the relationship of elements to each other.

[54] Abdul-Ghafur, pg. 153

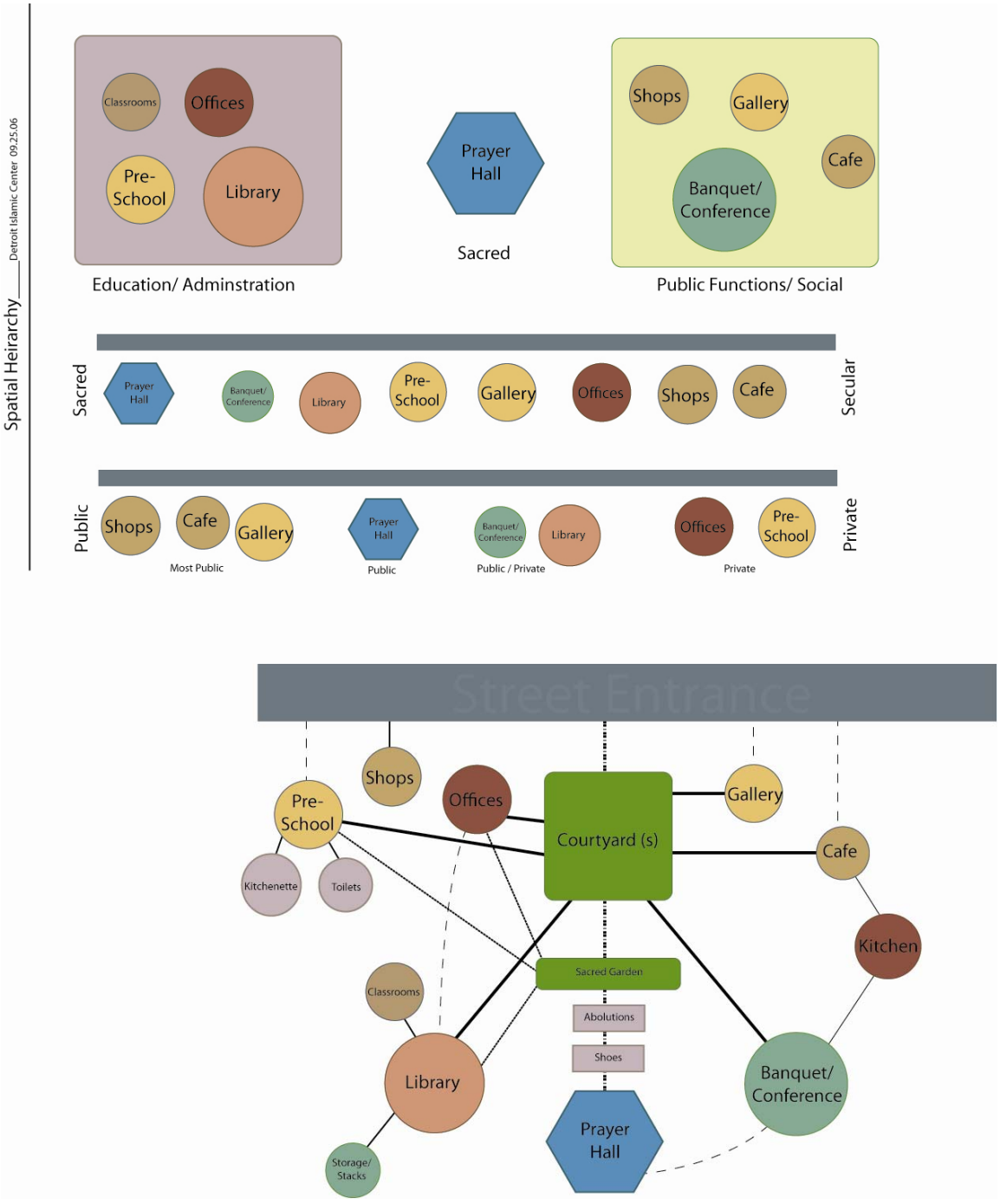

Figure 52 Spatial Relationship Diagrams

Pre - Conceptual Design Strategies

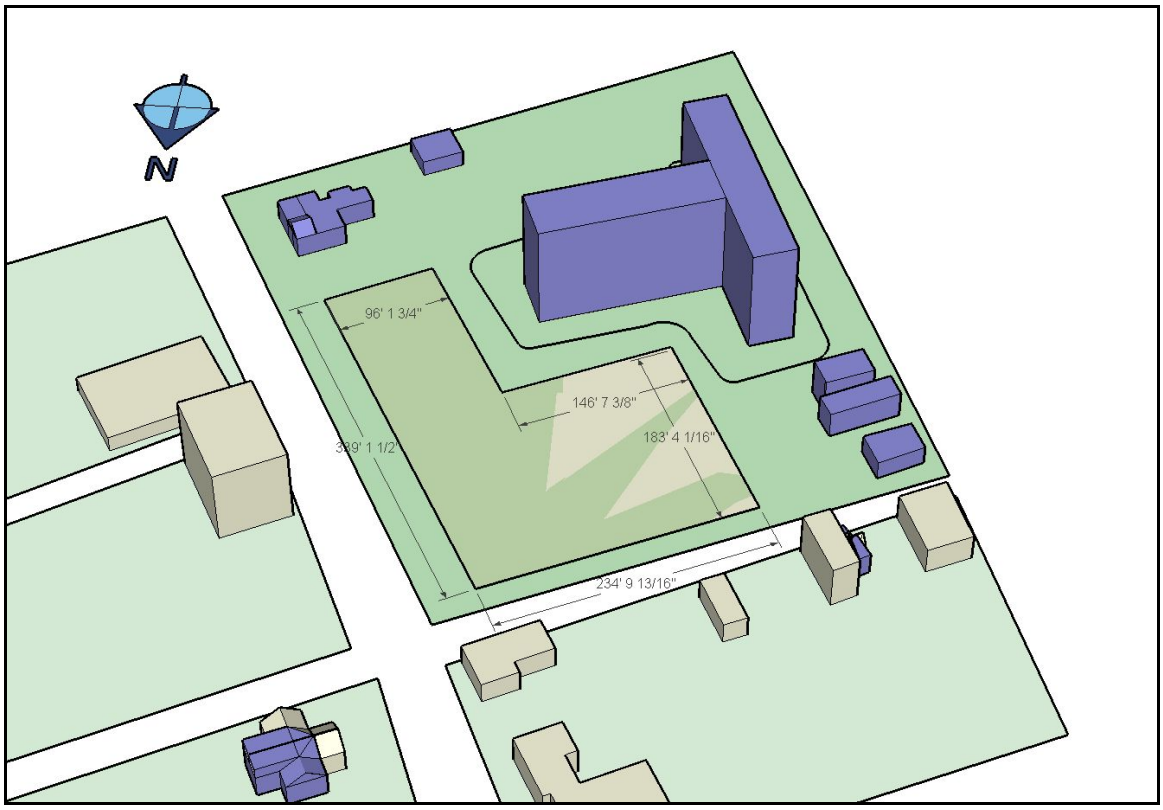

Figure 53 – Diagram of site dimensions.

Version 1

The first pre-schematic approach began with an idea of having two courtyards, one for the prayer hall and part of the ceremonial profession and a second more private courtyard for the offices and library. The smaller courtyard would also organize the circulation to the library and office section of the building. In the massing model a tension develops between the expressed volume of the prayer hall and reading rooms compared to the voids of the courtyards.

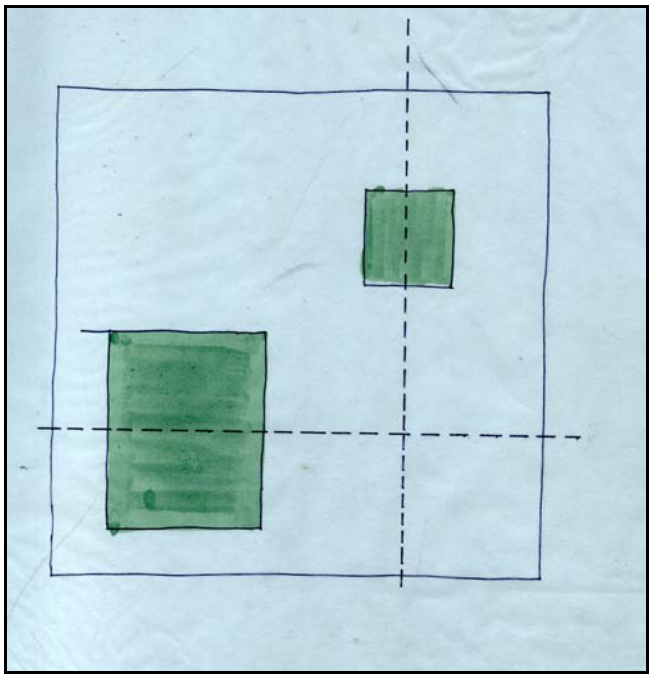

Figure 54 – Diagram of rectangular plan with two courtyards.

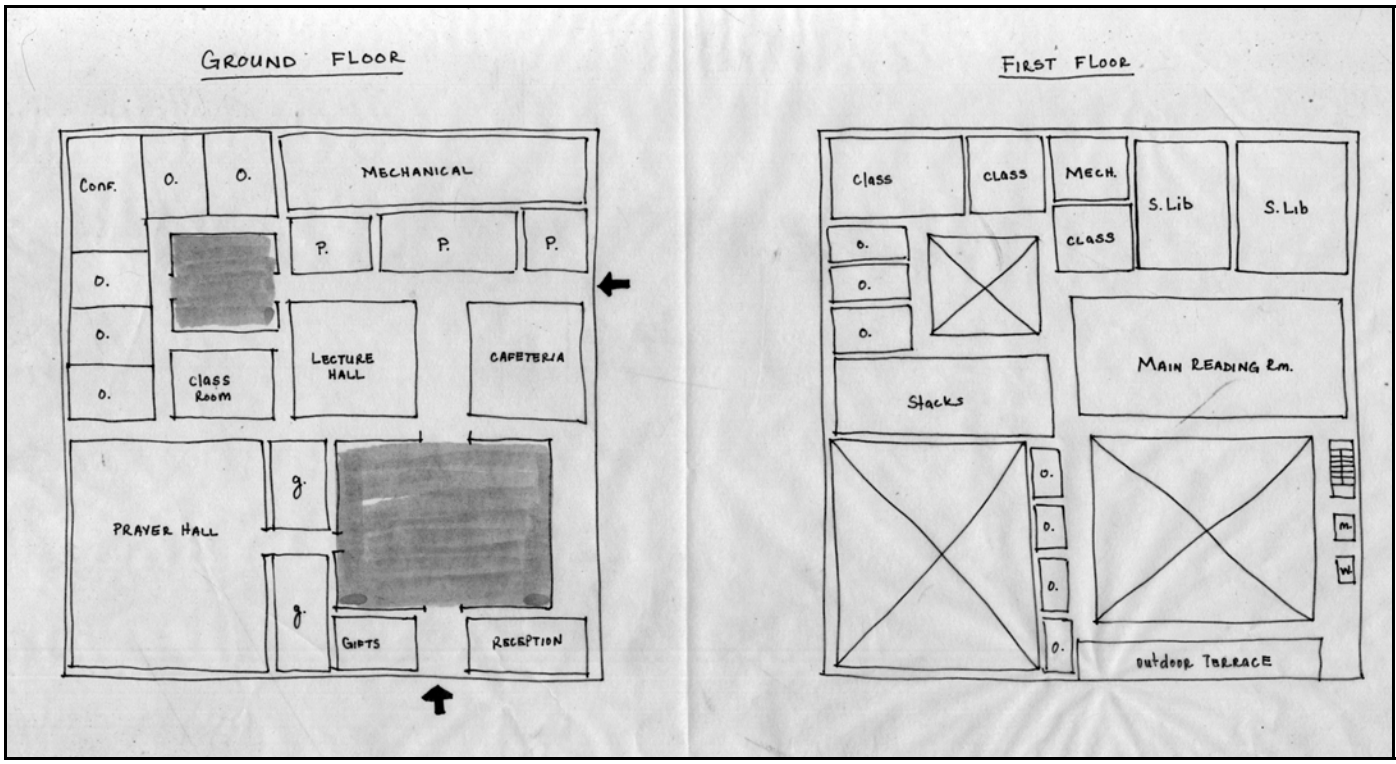

Figure 55 –Pre- Schematic Floor Plans, version 1

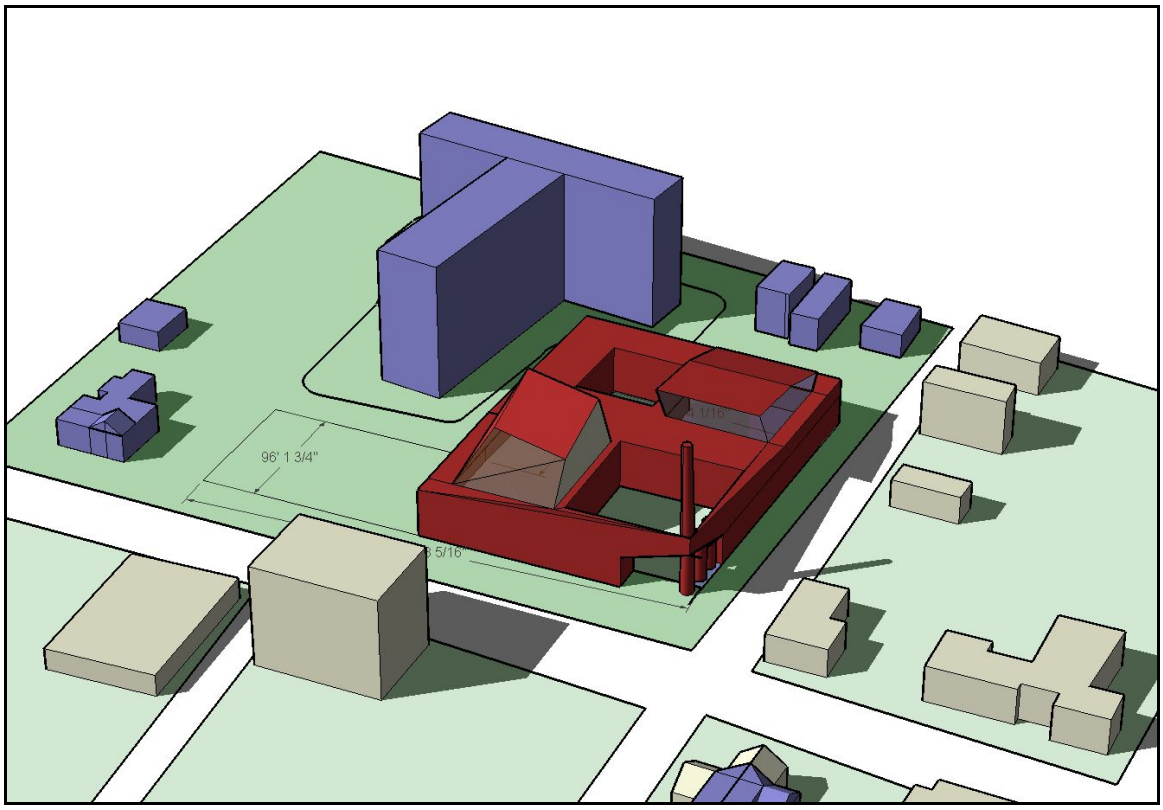

Figure 56 – Conceptual Massing Model, version 1

Version 2

The parti here is a simple bar building with emphasis on a continuous façade along Woodward Avenue. The courtyard mediates between the prayer hall and library sections of the building.

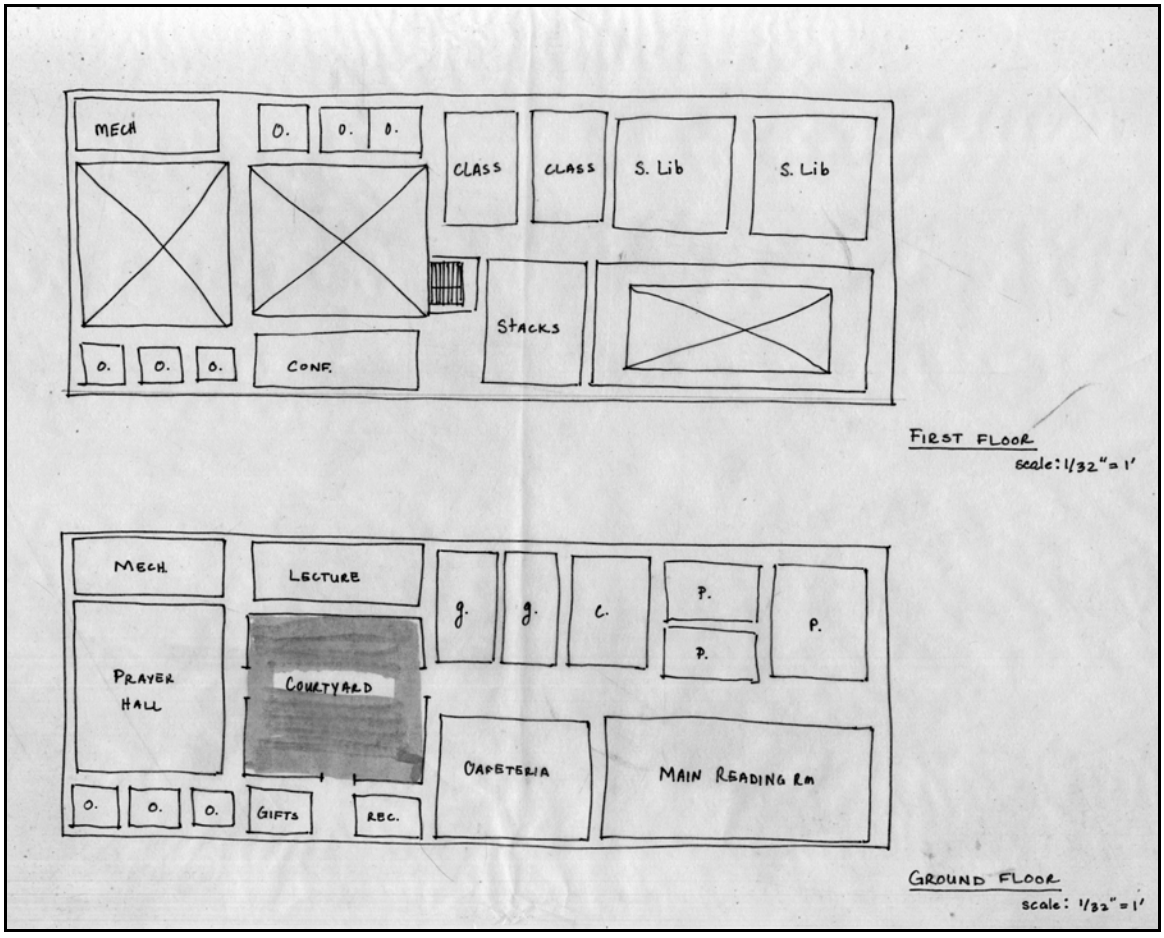

Figure 57 – Pre- Schematic Floor Plans, version 2

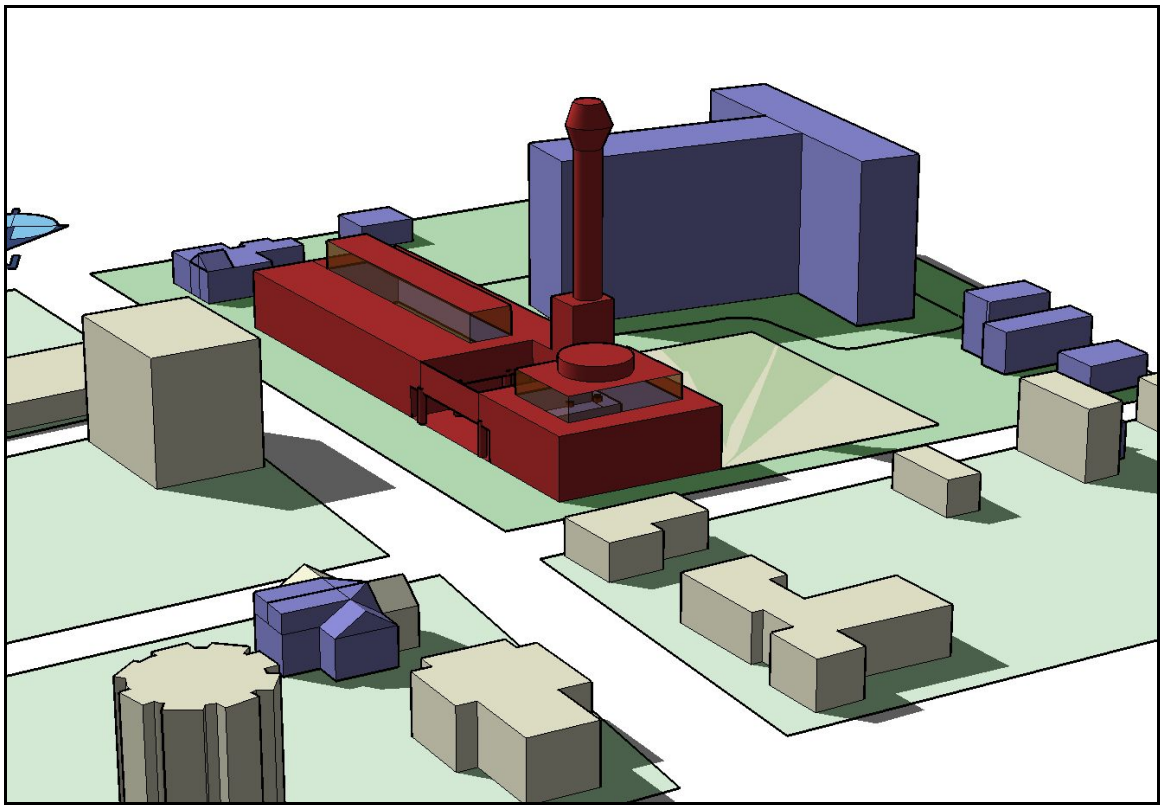

Figure 58- Massing Model, version 2

Version 3

The third schematic design is adapted from the Madrasa of Sultan Qala'un plan in Cairo. The primary organizational principal is a long narrow corridor that separates the prayer space from the other activities. In the proposed plan I propose a courtyard along the side of the corridor and prayer space beyond it. In the Madrasa of Sultan Qala'un there is no courtyard and a funerary tomb in the space I have placed the prayer hall. In the massing model I have considered the possibility that the courtyard is roofed.

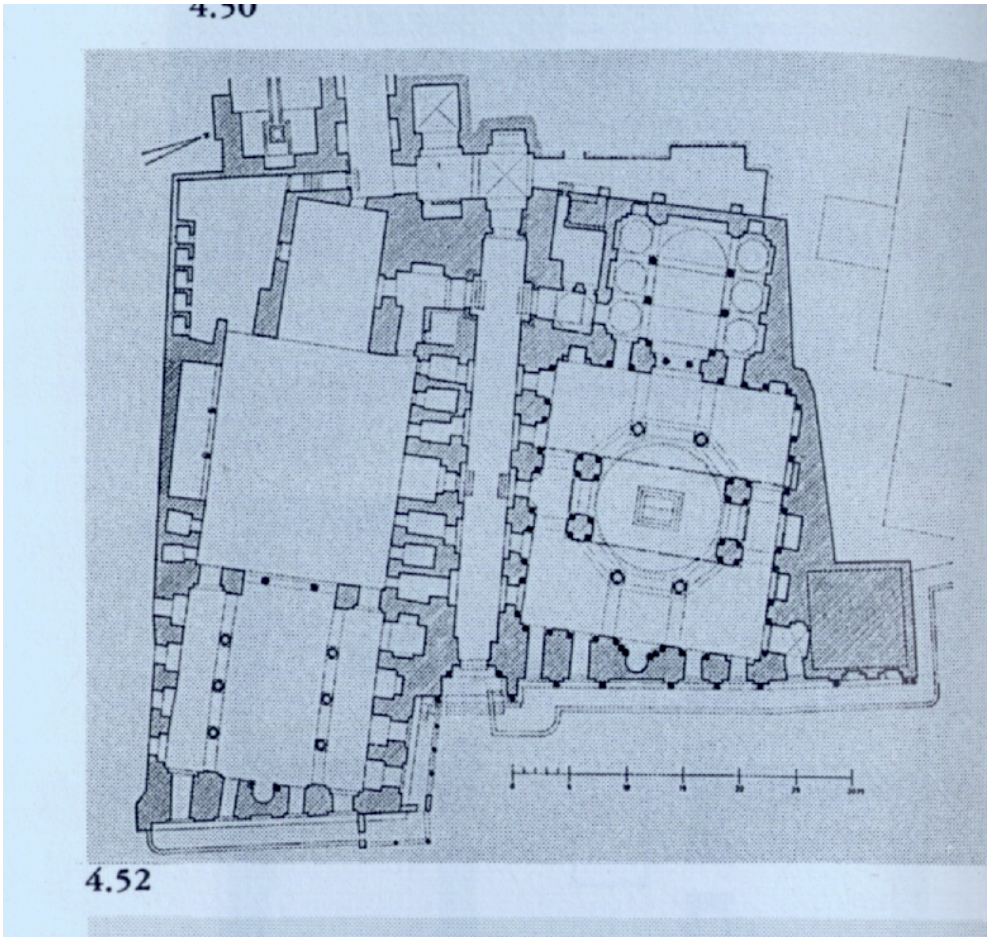

Figure 59– Madrasa of Sultan Qala'an [55]

[55] Hillenbrand, 512

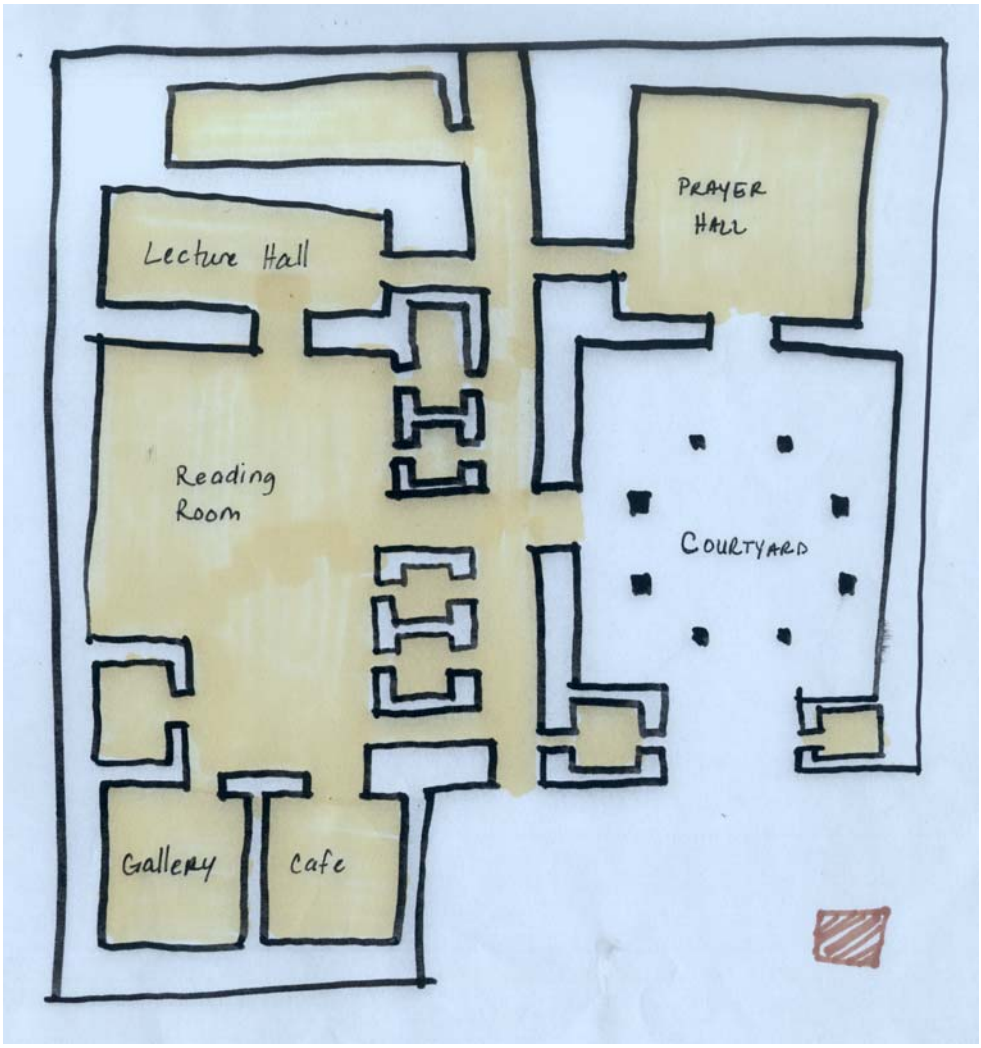

Figure 60 – Pre-Schematic Floor Plans, version 3

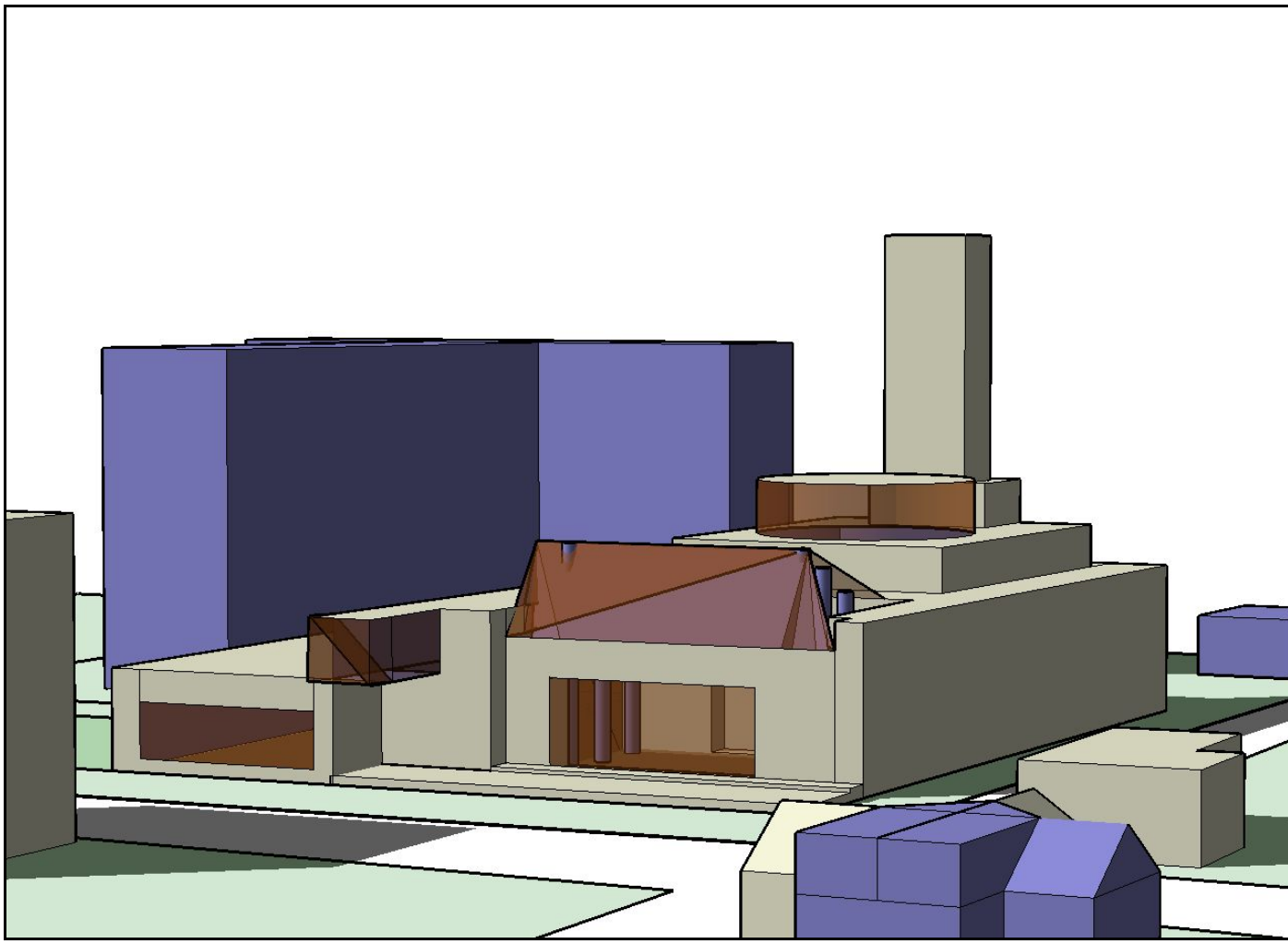

Figure 61 - Massing Model, version 3

Chapter 5

Design Conclusions

The design intentions for this project focus on two major objectives: to create a symbolic sacred space for the Detroit Islamic community and to create an urban complex that will invigorate the surrounding neighborhood. As a symbol the project has a responsibility to be identifiable to members of the community and to exhibit qualities emblematic of the community to the greater society. The program includes commercial, residential, institutional and sacred elements and allows for the complex to be used by many sub-groups both Muslim and non-Muslim. The design philosophy is one that embraces Islamic and Western building traditions and considers modern building technology a tool of expression. I have attempted to focus on core Islamic values, such as Unity in order to reach people of diverse cultural traditions. By considering how Unity has been expressed traditionally I have been able to pick out patterns and typologies that are repeated throughout Islamic tradition.

The project considers urban renewal from the onset of choosing a site to the placement of shops and restaurants along the street. The proximity to the university and museums reinforce the projects cultural significance and adds to the richness of the neighborhood. The organization of the site is based on a series of courtyards with varying levels of privacy and scale. Courtyards are used to evoke ideas of a paradise garden, which transcend regional traditions and can be appreciated by all Muslims. The main courtyard is faces the mosque when oriented towards mecca. The space is designed to be used as a prayer space as well as a community space. An outdoor ablutions fountain is a focal point. The edges of the space are created with covered walkways that connect the diverse functional elements of the complex. Secondary courtyards are more

private and for specific uses such as play areas for the daycare and reception spaces for the banquet hall.

The circle is used to create the form of the main prayer hall. Circles are the ultimate expression of unity is Islamic symbology. The square is equated with earth and materiality, the triangle with human consciousness and the hexagon or circle with creation. The procession into the prayer hall circumambulates the main space and is referential to the ritual of circumambulating the Kaba in Mecca. A series of studies exploring the affects of light at different times of day shaped the design of the roof in the Mosque and the placement of skylights within that volume. Consideration was given to how light would enter the space during the five prayer times and during the different seasons.

The main decorative element on the library is a screen wall that is referential to traditional screens but is built at a larger scale and with a unique graphic pattern also reminiscent of the work of Herzog and DeMeuron. The library faces the main courtyard and features a double height reading room. The screen filters and controls the light that enters the space and also creates a backdrop for the activities in the courtyard.

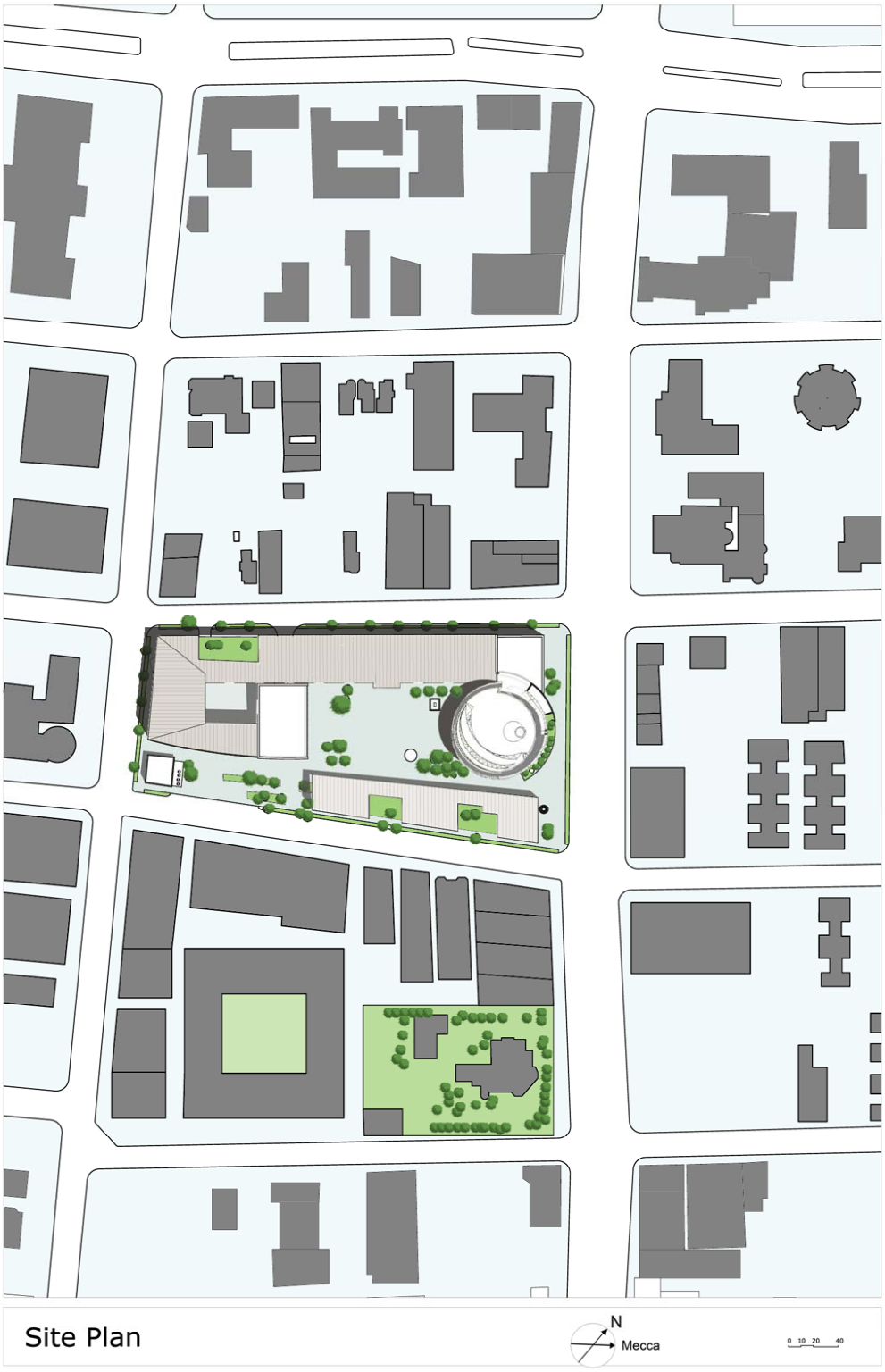

Figure 62 – Site Plan

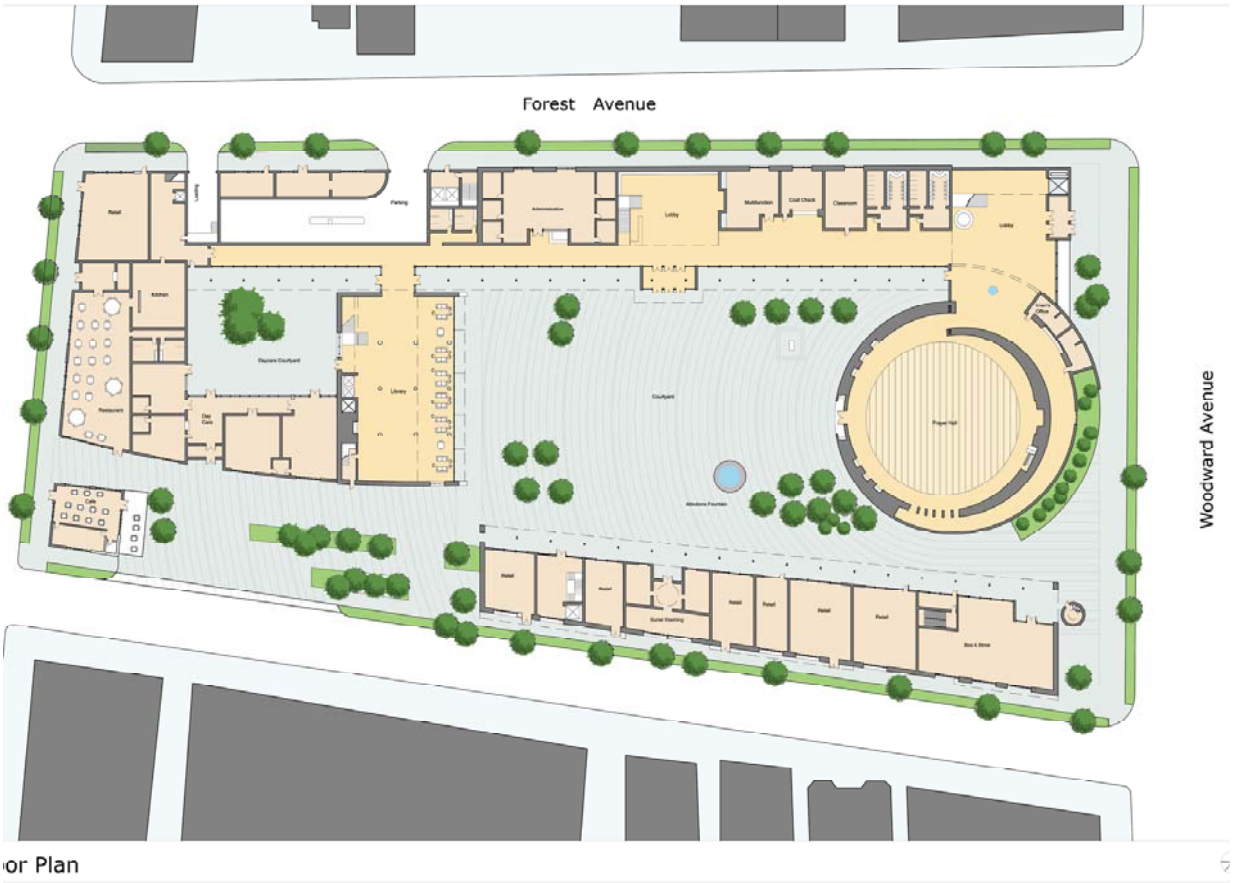

Figure 63 – Ground Floor Plan

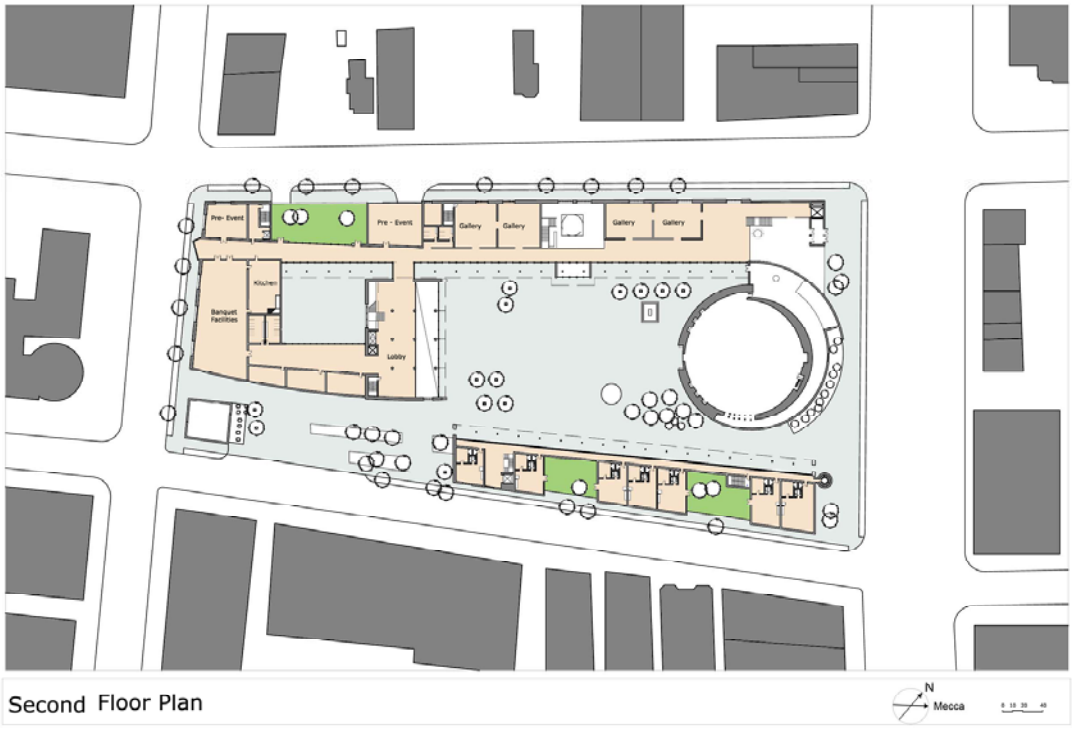

Figure 64 – Second Floor Plan

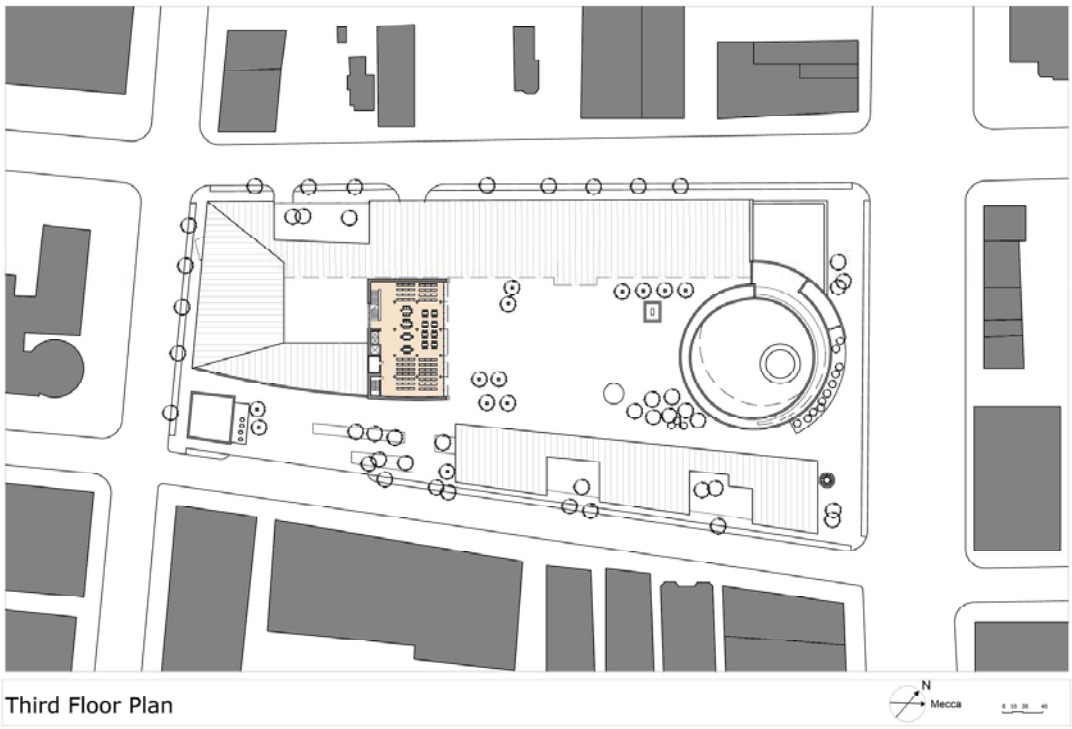

Figure 65 – Third Floor Plan

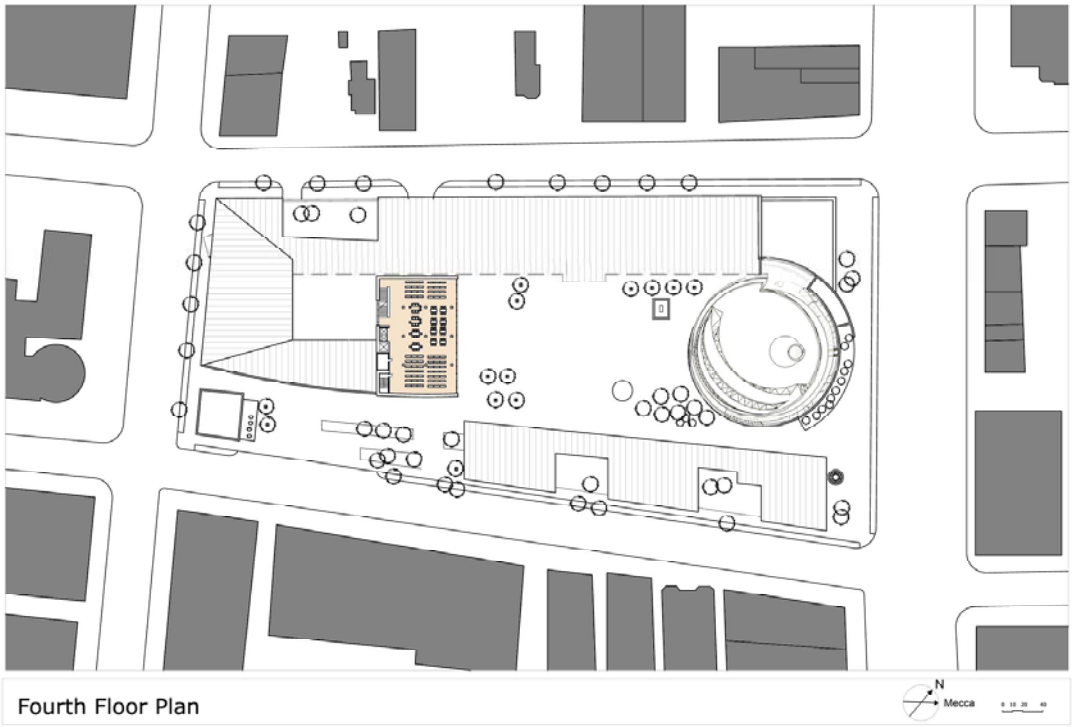

Figure 66 – Fourth Floor Plan

Figure 67– Transverse Section BB

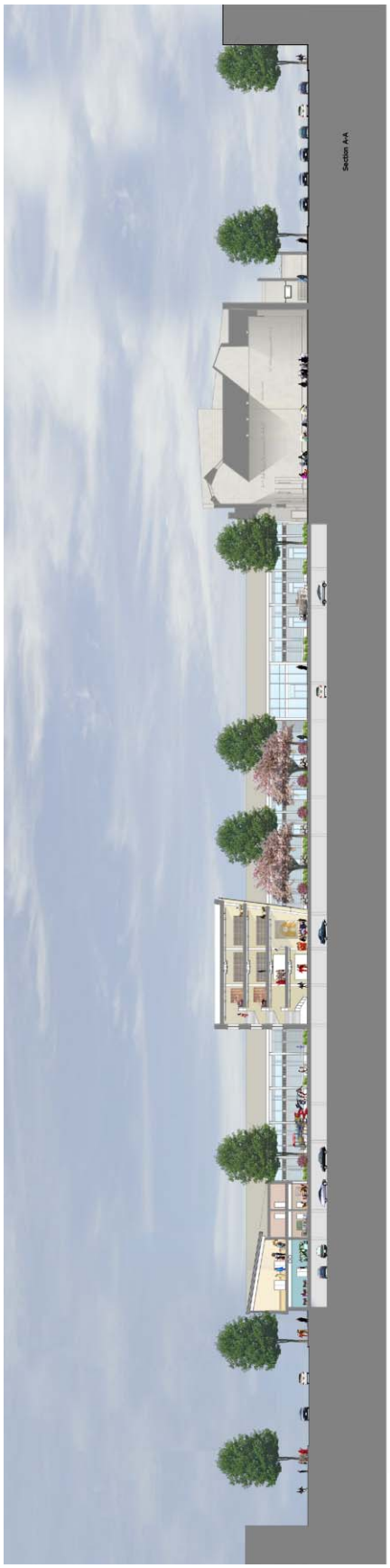

Figure 68 – Perspective of Courtyard facing Mosque

Figure 69 – Perspective Woodward Facade
Figure 70 – Longitudinal Section AA

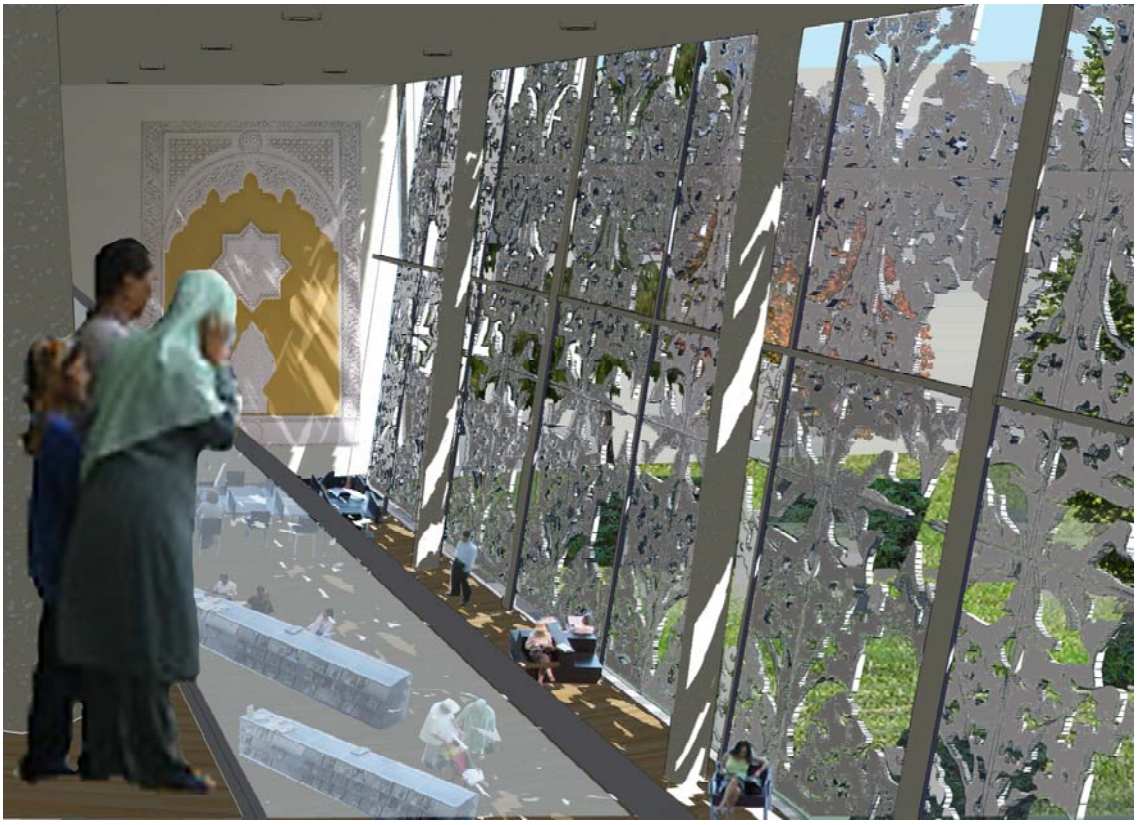

Figure 71 – Perspective of Library from Mezzanine

Figure 72 – Perspective of Library Main Reading Room

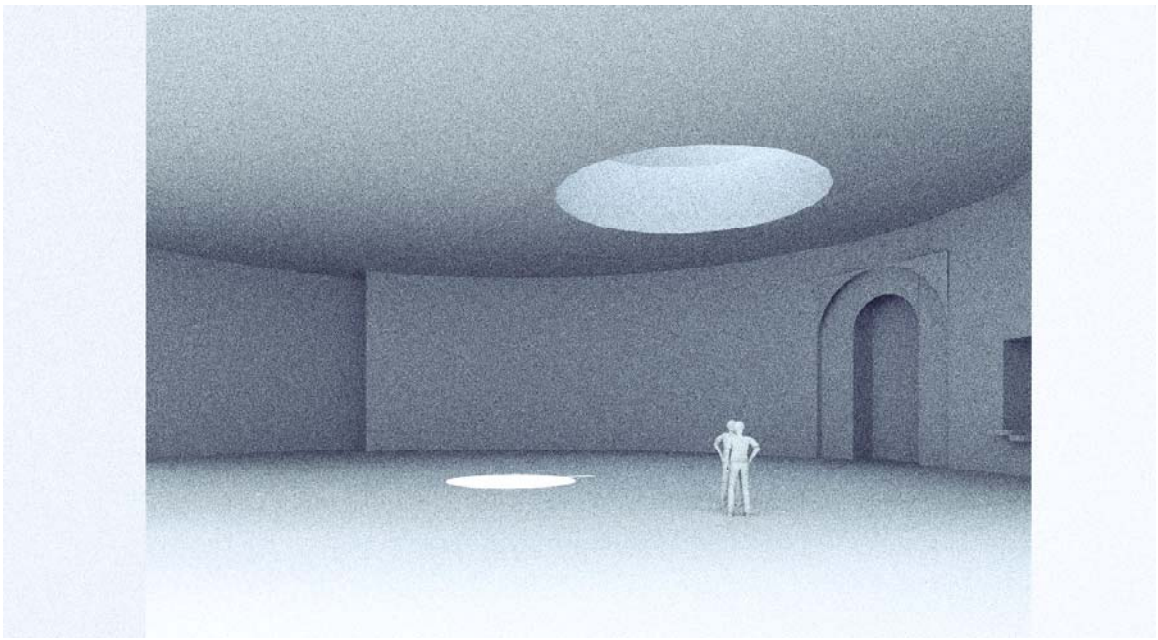

Figure 73 – Light Study of Interior of Mosque

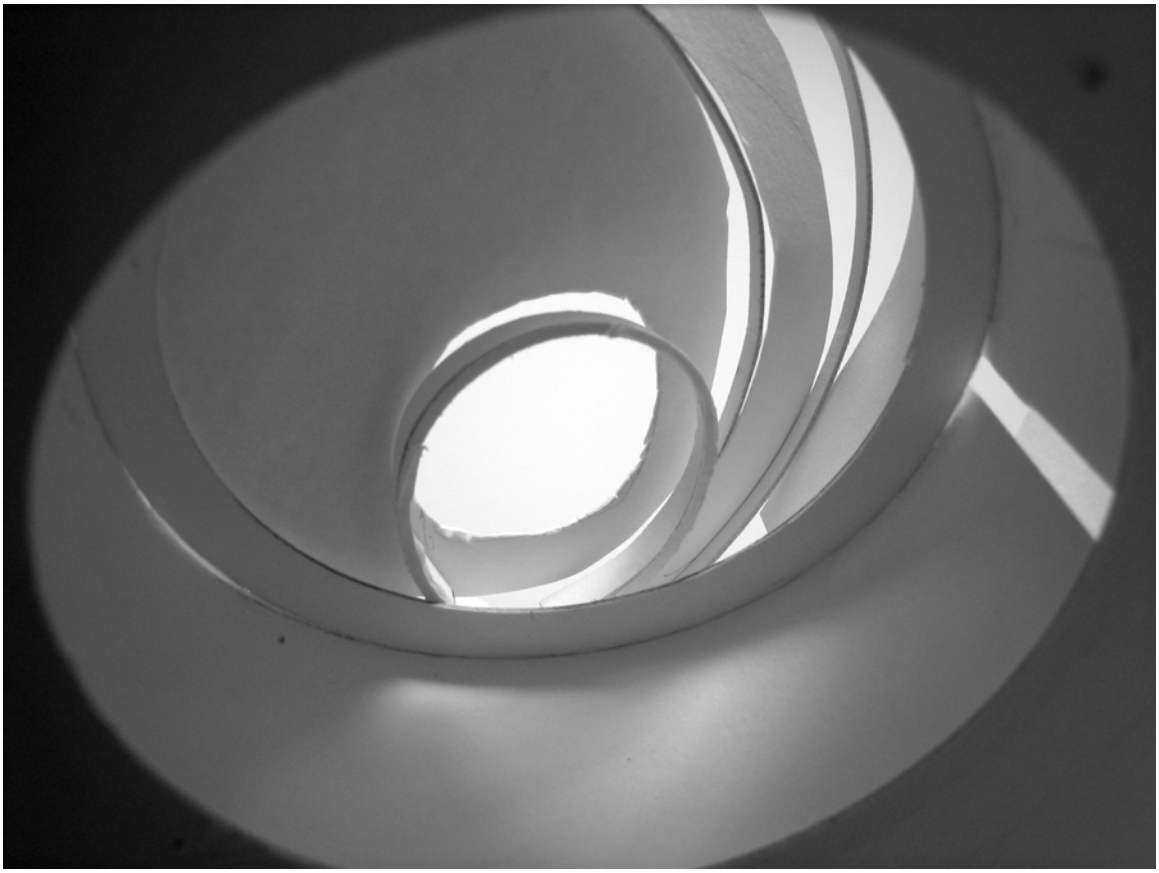

Figure 74 Study Model of Mosque Ceiling and Skylights

Figure 75 Site Model

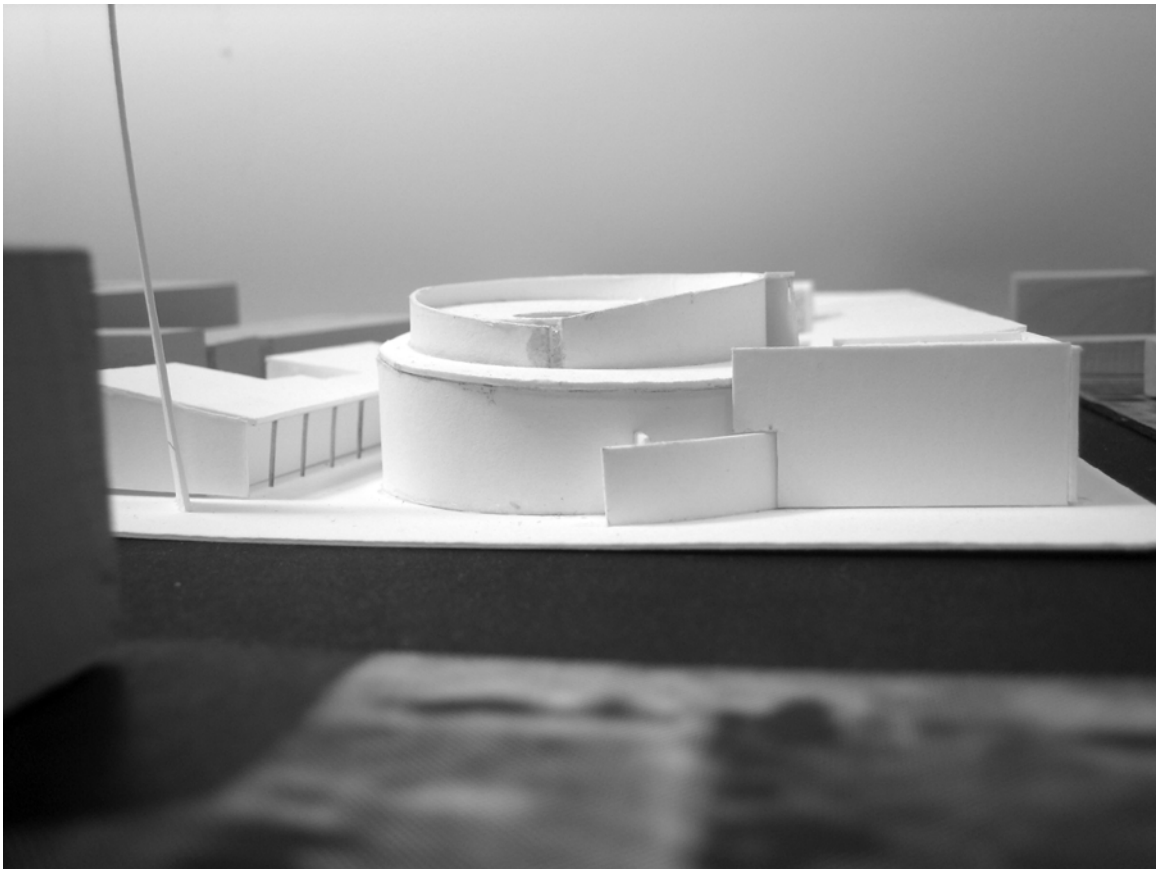

Figure 76 Model, Woodward Facade

Glossary of Terms:

Imam- spiritual leader; prayer leader

Jammi- communal Friday mosque, from the Arabic root meaning 'to assemble'

Khutba-sermon delivered either before the Friday Salah and after the Eid Salat. The person who performs the khutba is called a *khateeb,* and is usually an Imam but can be any male who has attained the age of puberty. The sermon often contains political content. In some Muslim countries such as Pakistan and Saudi Arabia the khutba is regulated by the government.

Masjids- smaller mosques intended for individual prayer, derived from the root sajada 'to prostrate oneself'

Qibla- direction of prayer

Salat- worship/prayer, especially at the five canonical times of day, one of the five pillars of Islam

Zulla-shaded area in a mosque

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