A Church and Family Housing For Berkland Baptist Church (BBC)

Joong Won Lee

Bachelor of Science in Architecture
Sung Kyun Kwan University, Seoul, Korea - February 1995

Submitted to the Department of Architecture in Partial Fulfillment of the Requirements for the Degree of Master of Architecture at the Massachusetts Institute of Technology, February 2001

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abstract

Creating a sound church is totally different from designing a fabulous poetic space. Major problem of current built form of a church is that it is built mostly in a liturgical form to serve sacred ordinances that does not address the importance of activities among the members. Church has turned into a liturgical space only to serve once-a-week spiritual purgation.

This causes serious problems to Christians. There is a big dichotomy between their actual life and religious life. It is a constant struggle for Christians to figure out on what values -Christian or Daily- to make decision to perform their life. A church is a body of Christ where one not only finds the eternal life by faith, but also gathers to lead a life based on Christian values. Therefore, a church has to be a part of actual living.

Berkland Baptist Church (BBC) is one of the leading churches that address to return to the spirit of early churches where religious life and daily life are fully integrated.

This thesis, thus, explores a new concept of what a built form of a church would be. The final product has informed that a church is not a single building with well contrived light to arouse spiritual excitement, but an assemblage of functions - church & housing - that invigorate communal activities among the faithful.

Thesis Advisor:

Andrew Scott

Associate Professor of Architecture

contents

preface

I was born Christian. I never questioned how to live when I was a boy. Christianity guided my life. However, as I became older, I have realized there are two different sets of values in my life. First was the Christian value, which taught me humbleness, love-of-God, and love-of-others. Second was the worldly value that taught me ambition, obsession, success, and self-love. It was constant struggle to select on which values to depend whenever confronted with judgmental issues on how to perform. Unfortunately, I depended on the latter in most cases as I got older. Initial guilty feeling evaded as it was getting more accustomed to. Coming to a church once a week became one of my habits. I was becoming less religious person.

I came to Cambridge in August, 1998. I met Berkland Baptist Church (BBC) here. This church was somehow different from other churches I had attended. It was much more involving, caring, sharing, and loving. I began to change. At first, I didn't know what the differences between this church and other churches were. After I accepted Jesus Christ as my personal savior on May. 11. 1999, I realized while I was in BBC my life no longer had to be in dual condition of selecting values. My daily and religious lives were integrated. My daily life was becoming an extension of my religious life: I was happy.

While I was preparing for thesis, I acknowledged that the uniqueness of BBC lied in its organization. All the members of the church were divided into several cells – eight members in each cell - and the cells actually functioned as a church during weekdays. Cells

gathered around the dining room of a cell leaders to do sharing and bible study. Moreover, every month cells would go out for picnic or retreat to do communal activities. I envisioned how wonderful a Christian's life could be in BBC. I found the relationship between my cell leader and among members mutually responsible and caring.

My thesis is seeking a new built form of a church based on BBC. Program-wise, it is a church and family housing – however, from BBC's point of view, a church and housing are together one church – for BBC.

The spirit of BBC lies in the early Christian church where a church is not defined as a place, but as a group of Christians. The founders of BBC – Pastor Paul Kim and his wife Chaplain Rebekah Kim – critique existing churches for being formal, lack of involving, and a wrong investment. My thesis, hence, is an irony when the leaders of BBC critique empty pews of existing churches for wrong investment on buildings instead of on people (ministry), yet, it is a personal dedication to that spirit of BBC.

biblical concept of church:
from tabernacle to church

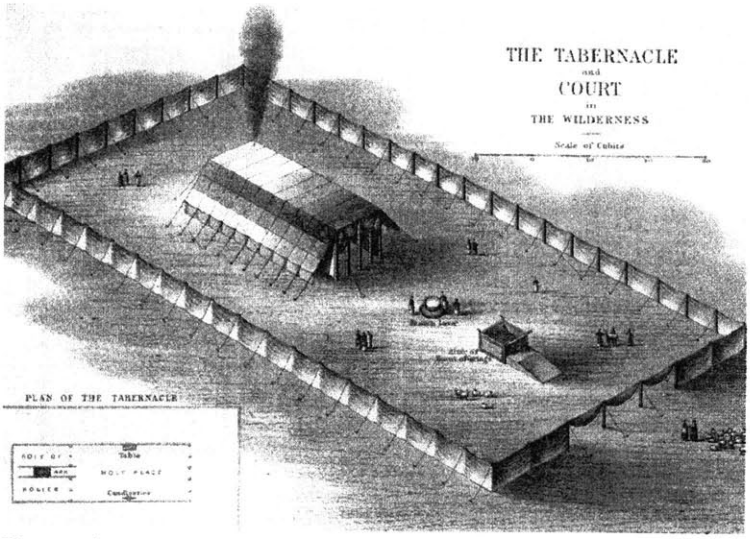


Fig. 1 19th century reconstruction of the Tabernacle in the wilderness

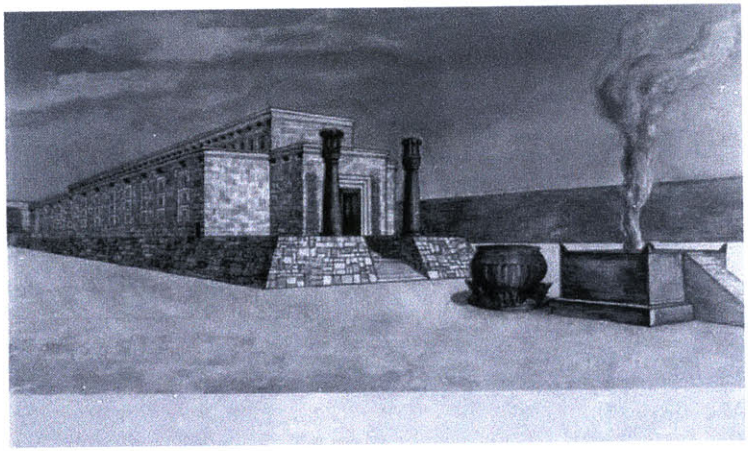
One of the earliest sacred spaces, distinct from the profane, is recorded in the Book of Exodus. In the Book of Exodus, God spoke to Moses to make a tabernacle (Fig. 1) for Him. It was His first residence on earth. Tabernacle was a portable tent that enabled high mobility while children of Israel dwelt in wilderness. Inside the tabernacle, spaces were divided into two; peripheral space was the Holy Place and the inner space was the Most Holy Place. A curtain divided these two rooms and high priest encountered God in the Most Holy Place. This configuration, based on rituals, was to become a prototype for all the later temples.

In the Book of Hebrews, the Most Holy Place had the golden altar of incense and the gold-covered ark of covenant. Only the high priest was allowed to enter into this room once a year, never without blood, which he offered for himself and for the sins the people had committed in ignorance.

Another significant temple recorded in the bible would be Temple of King Solomon (Fig.2). In the Book of Samuel, King David wanted to make a Temple for the Lord after he had settled. However, the message from God to Nathan the prophet was different from King David's expectation.

Samuel 7:6-7,

I have not dwelt in a house from the day I brought the Israelites up out of Egypt to this day.



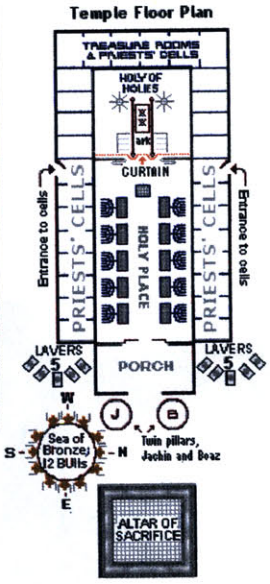


Fig. 2 Temple of King Solomon

I have been moving from place to place with a tent as my dwelling. Wherever I have moved with all the Israelites, did I ever say to any of their rulers whom commanded to shepherd my people Israel, " Why have you not built me a house of cedar?"

As can be seen in these verses, God is not actually interested in an actual physicality or elaboration of a building. He is more interested in active spirit people had towards God.

King Solomon built a Temple. Unlike the tabernacle, it was a settled structure. It is recognized as the first recorded temple in Judaism. The size of the building was a twice of a tabernacle. Two pillars supported the portico of this temple. The pillar to the south was named Jakin (He will establish) and the one to the north Boaz (In him is strength) When King Solomon had donated this temple to the Lord, God replied in verses 6:11-12

Kings 6:11-12

The word of the Lord came to Solomon: As for this temple you are building, if you follow my decrees, carry out my regulations and keep all my commands and obey them, I will fulfill through you the promise I gave to David your father. And I will live among the Israelites and will not abandon my people Israel.

God, similar to the response to King David, did not mention anything on the actual building of a temple, instead, God replied King Solomon that He would be with him as long as he obeyed His words. God was not interested in the formality of structures since the birth

of temples. God was interested in the content and the spirit that the temples had implied.

Most significant ritual held in a temple was seeking God's forgiveness for the sins people had committed in ignorance. Therefore, in New Testament era, due to the crucifixion of Jesus Christ, the establishment of the tabernacle and temple became unnecessary.

Hebrews verses 9:11-12
When Christ came as high priest of the good things that are already here, he went through the greater and more perfect tabernacle that is not man-made, that is to say, not a part of this creation. He did not enter by means of the blood of goats and calves; but he entered the Most Holy Place once for all by his own blood, having obtained eternal redemption.

Original term for Temple derived from Bethel; meaning house (Beth) of God (el). It was given to Jacob, later Israel, when he was dreaming. Interestingly, the same word Beth can be translated as 'family. Therefore, from the very beginning, House of God was intended for dual functions. First was the worshipping God –later, Jesus referred it to Love of God- and second was the bonding among people – Jesus also referred it as Love of Brethren.

The new concept of House of God emerged after the death of Christ: church. The most significant difference of church from temple was that people no longer had to sacrifice

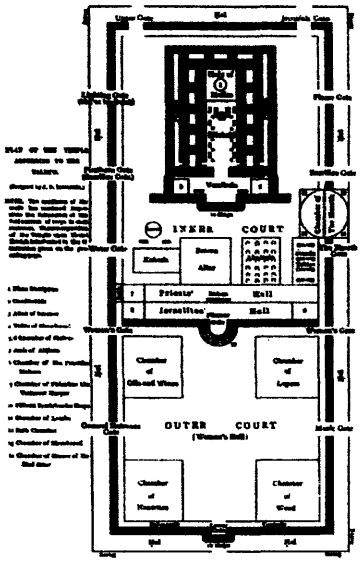


Fig. 3 Plan of Herod's Temple

another blood for salvation of their sins. From the very beginning of the Christianity, church was defined as group of disciples who were trying to live by the Christ's assertion whereas initiation of a temple was to perform sacrificing ritual.

Apostle Paul states,

Ephesians (2:21-22)

In him the whole building is joined together and rises to become a holy temple in the Lord. And in him you too are being built together to become a dwelling in which God lives by his Spirit.

The church, the community of people living their lives based on the examples of Christ, was not originally an institution identifiable with any specific structures. The beginnings of a specific church form actually occurred several hundred years after the conception of church.

architectural adaptation of church:
historical development &
critique

After the Announcement of Constantine (ruler of the Roman Empire) in 313 A.D. as acknowledging Christianity as a legitimate religion for the Roman establishment, church reformulated into an orderly hierarchical organization that lodged in the larger body of the state. Christianity became more wide spread, and as the initial fear of persecution and alienation decreased, the desire and need for gathering space for the congregation arose.

Basically two types of building were selected as prototype for church: the basilica (Fig.4) and the mausoleum (Fig.5). Both of them were from Roman tradition. Basilica (a rectangular meeting space for civic assembly) formalized churches into longitudinal shape. Circular shape of mausoleum (a grave for Roman emperor) made centralized types of churches known as martyrium.

This seemingly positive move –becoming as a state religion and establishing formal structures- actually brought about regrettable consequences to the church. As the classification and symbolism over time in Judaism had led formal relationship between God and His people, conversion of Constantine to Christianity was the emergence of two deplorable outcomes.

First, the widespread of conversion were executed without understanding the most fundamental meanings of Christianity. Second, even more harmful than mass conversion, was the initiation of the corruption among church leaders.

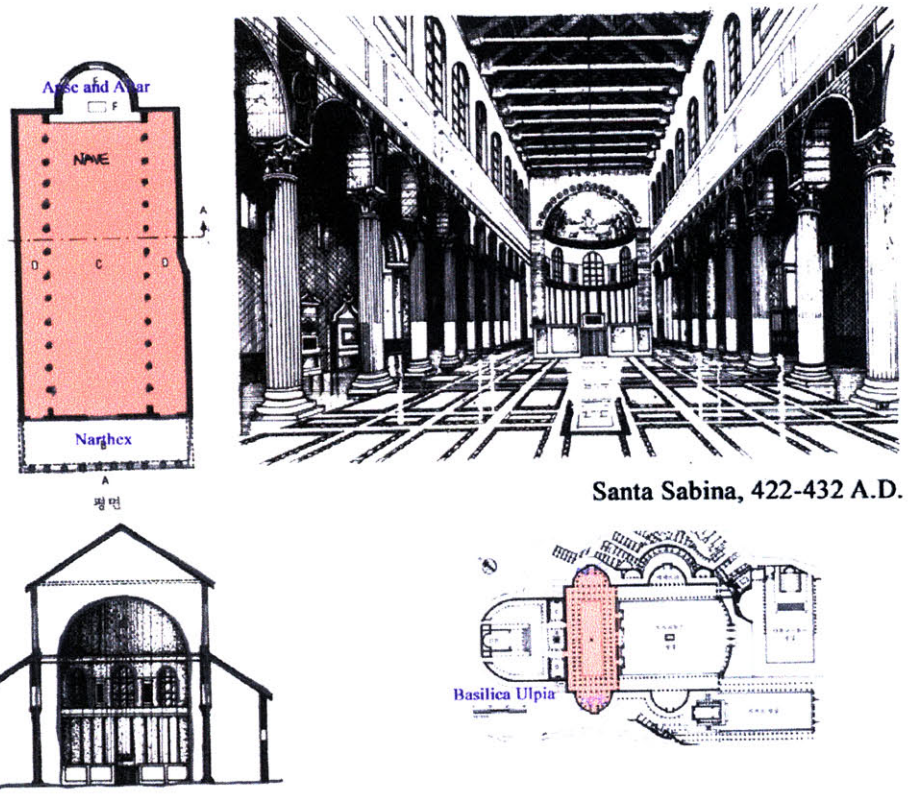
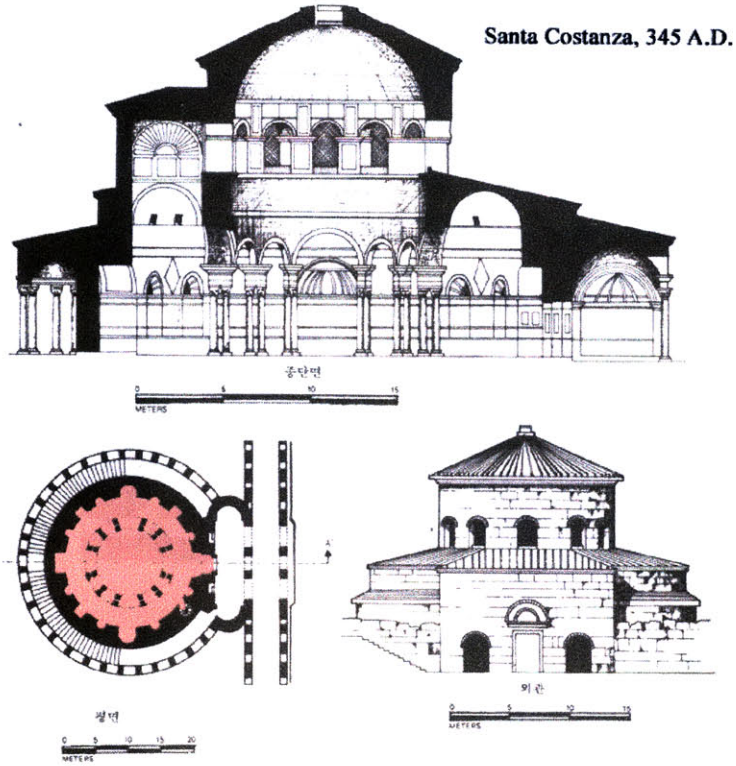
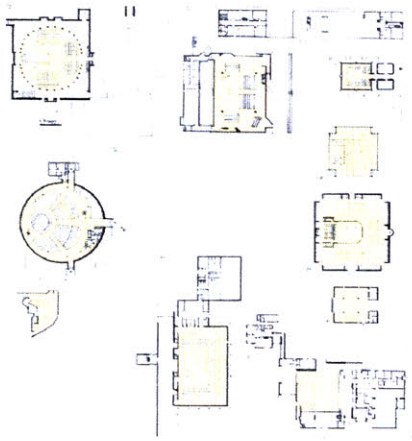


Fig. 4 Longitudinal Type of Churches: Origin and Examples of '70s





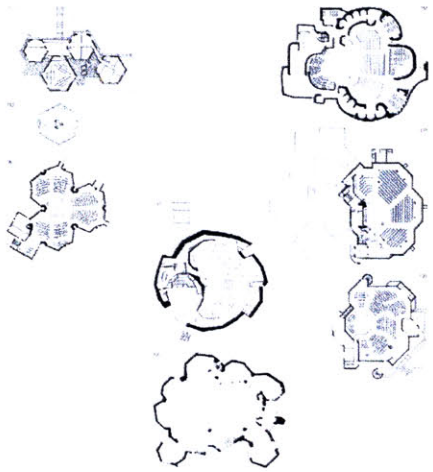
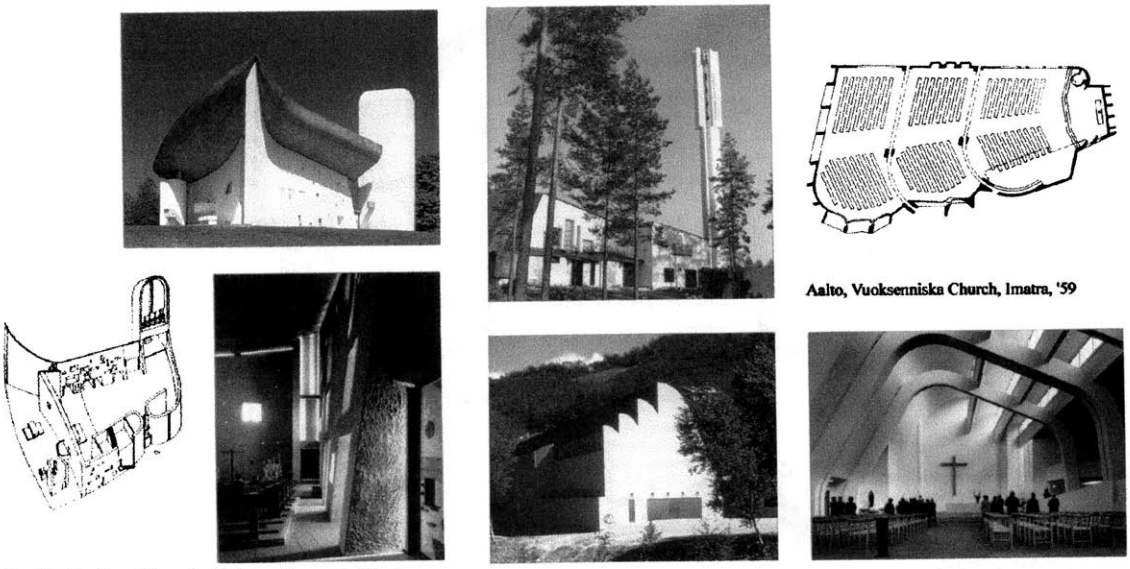


Fig. 5 Centralized Type of Churches:
Origin and Examples of '70s



Aalto, Vuoksenniska Church, Imatra, '59

Le Corbusier, Chapel of Notre Dame du Haut, Ronchamp, '55

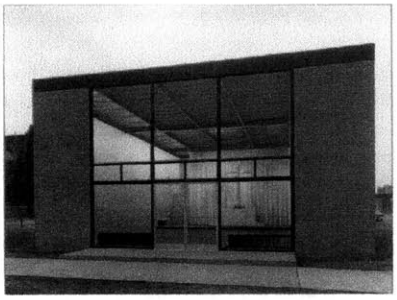
Fig. 6 Contemporary Churches by Top Architects

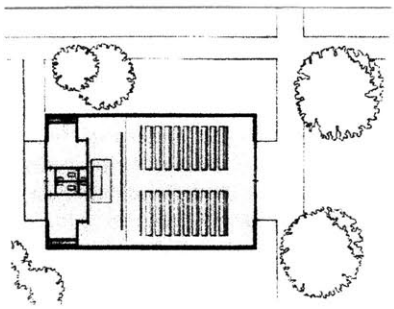
State offered much power to clergy, and the church became political pawn. The creation of specific and often spectacular church forms began to achieve the level of royal participation. Symbolism, formalism, and classification increased more and more as misconception of church from secular rulers were imposed on. The dual function of church – Love of God and Love of Brethren- was narrowed down into sole function of ritualistic services by reducing other spaces arranged for communal activities.

Unfortunately, without a historical critique on what had caused the past built form of a church, formality and its imposed contents from the secular rulers became tradition in church architecture. Such environment accelerated the lack of mutual responsibility among members. Only the once-a-week service and its formality became major function of a church for most Christians.

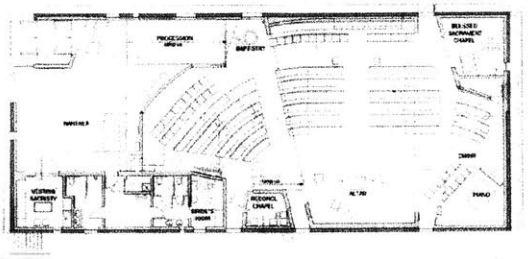
Even the major churches built in 1960-1970 (below Fig. 4 and 5, respectively) reflect this tradition and induce that sole function. The most contemporary churches designed by top architects (Fig 6.) can all be characterizes as creating symbolic spaces in poetic manner to arouse ritualistic formality. Manipulation of dramatic light in simple geometric volume plays major role.

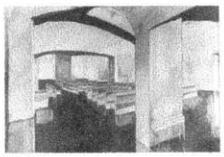
People came to church once a week for their spiritual purgation only. They went back and led a life based on non-religious values after the service. It became difficult to place

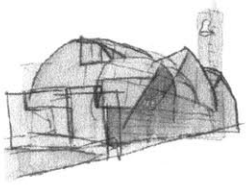


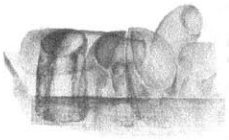


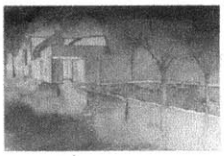
Mies, IIT Chapel, '52





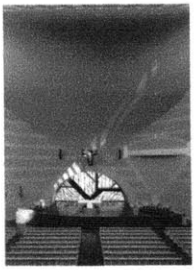


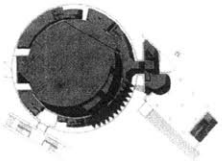


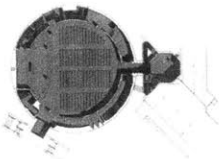


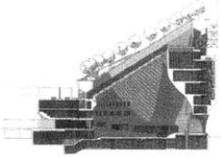
Steve Holl, Chapel of St Ignatius' 97

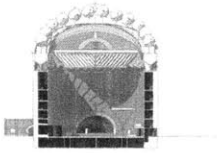
M. Botta, Cathedral of Evry, '95

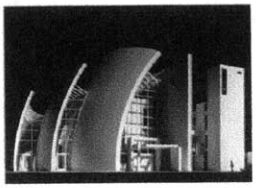


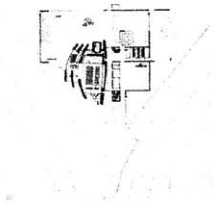


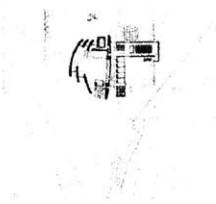




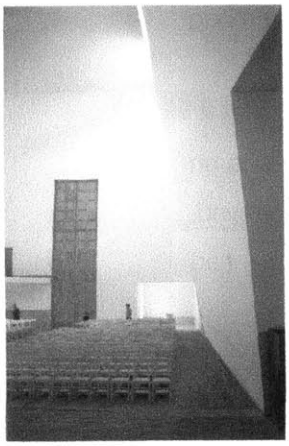


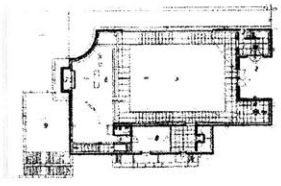




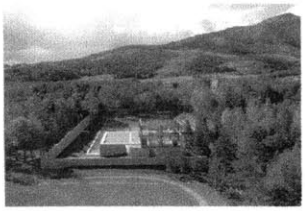


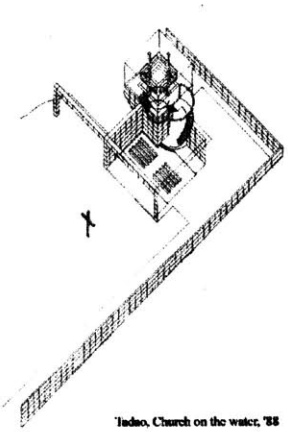
R. Meier, Church of the 2000





A. Siza, Church at Marco de Canavezes, 96





Tadao, Church on the water, '88

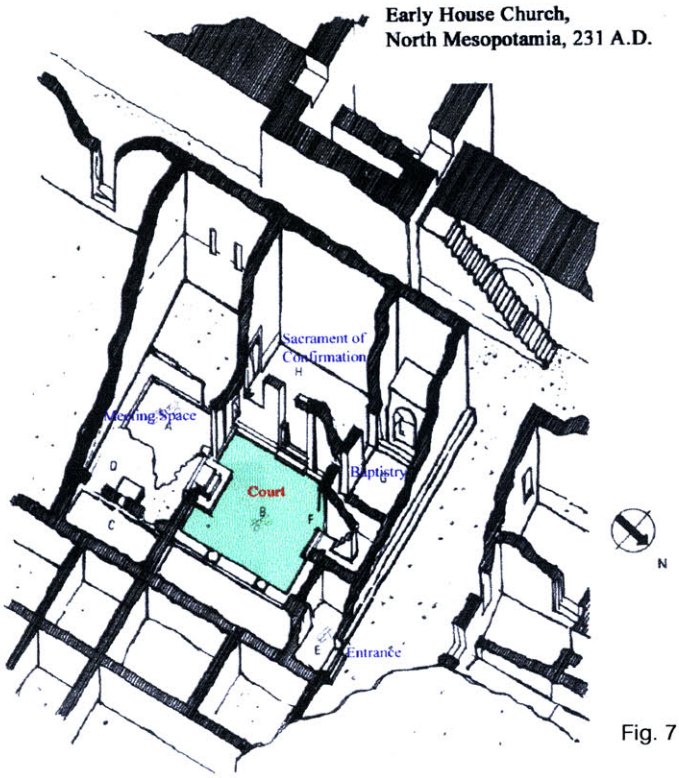


Fig. 7 Early House Church (231 A.D.)

oneself into the biblical concept of Christian lives in these existing environments. There was a big separation between their actual life and their religious life.

How does one then create a church that solve these critical dichotomy involved in Christianity? Since the concept of a church has been redefined in the New Testament as members of Christianity, the form of a church should be established in such a way to invigorate the Christian communal activities. Moreover, it should be situated to confront other nonreligious communities.

Initially, since the gathering of the followers of Christ focused on Eucharist, the remembrance of Last Supper occurred in the house of one of Christians (Fig. 7), typically in the dining room of the family. The distinction of daily life and religious beliefs simply did not exist, either in doctrine or in practice. Moreover, there was a stronger bonding among members due to the small size of groups.

In the Medieval monasteries – Benedictine (Fig.8) and Cistercian (Fig.9)- there was an integration of religious life and daily life. The spirit of early Christian church was revived. However, as was critiqued by St. Francis of Assisi, these monasteries hardly influenced others due to their alienation from cities.

The uniqueness or invaluable merit of Berkland Baptist Church therefore lies in here. Its

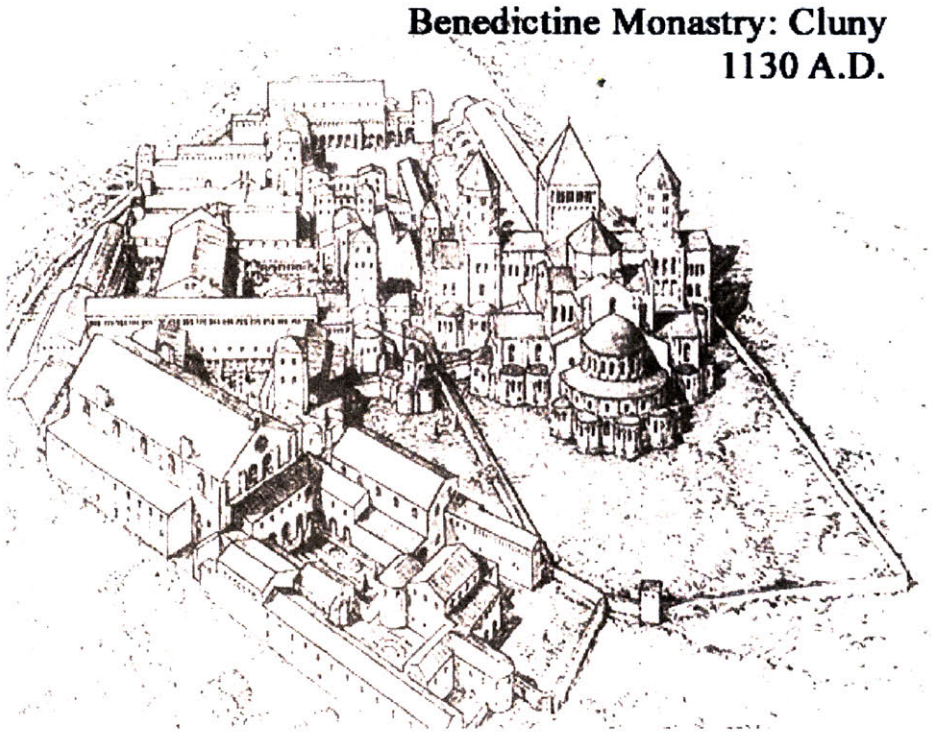


Fig. 7 Benedictine Monastery: Cluny

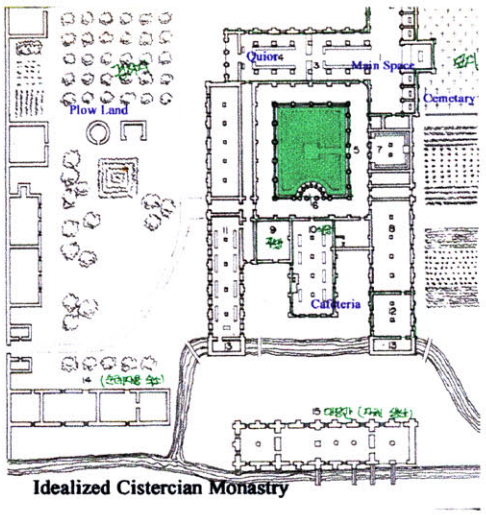


Fig. 8 Idealized Cistercian Monastery

goal and organization solves both problems mentioned above. The goal of BBC's ministry lies in campus ministry, hence the church has to be situated in urban context to influence other surrounding communities, and it does its ministry in cell organization to revive mutual bonding that early Christians had. Early Christian's 'house church' (Fig. 6) became its model as a manifestation of how a church should be situated, organized, and structured.

Berkland Baptist Church (BBC):
uniqueness of organization

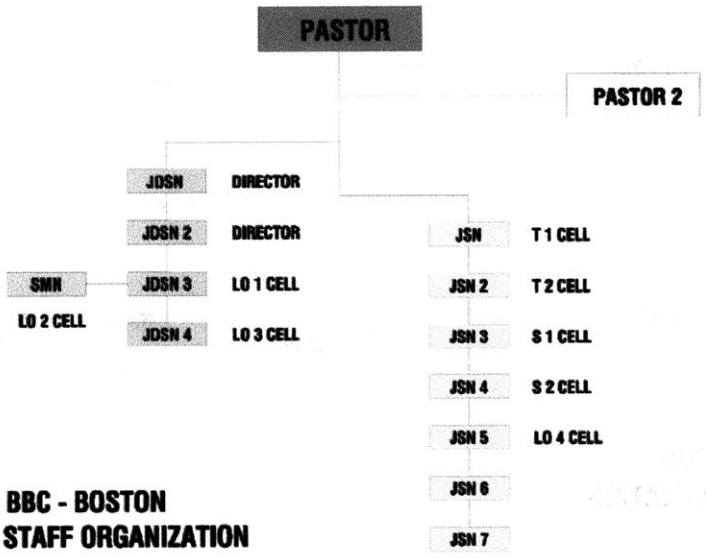


Fig. 9 **BBC - BOSTON STAFF ORGANIZATION**

Berkland Baptist Church(BBC) was founded by Pastor Paul Kim and, his wife, Minister Rebekah Kim near the border of Berkeley and Oakland, hence the name, Berkland. BBC initiated with the vision to live out Jesus's Greatest Commandments - to love God and love one another and join in His Great Commission - to make disciples of all nations. Since 1981, BBC has grown into fifteen churches located around the world in Berkeley, Boston, New York, Los Angeles (two), San Leandro, Silicon Valley, Seattle, Davis, Seoul (Korea, five), Tokyo (Japan), Tashkent (Uzbekistan), and Almaty (Kazakstan).

In this thesis, the BBC Boston will be taken as an example to seek a new built form of a church. The success of mission by BBC lies in its unique organization (Fig.9 & Fig.10) and its right investment. BBC-Boston consists of seventy people. They are divided into several zones and each zone has two to four cells (Fig.9).

Eight to twelve people organize a cell. A cell is the smallest unit that functions as a church with a leader and two interns. Cells meet every Friday to dine and study bible together. Cells are regarded as churches during the weekdays (Fig. 11) to the members. Cell members together are striving to be the kind of church described in the Bible, with relevant teaching, heart-felt worship, honest friendships, constant prayer, and compassionate care for those in need.

Biblical reference of organizing cells would be:

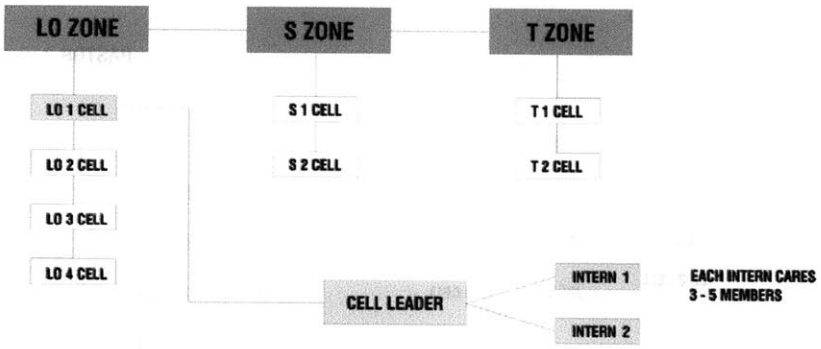


Fig. 10

BBC - BOSTON
CELL ORGANIZATION

Hebrews 3:12-13

See to it, brothers, that none of you has a sinful, unbelieving heart that turns away from the living God. But encourage one another daily, as long as it is called Today, so that none of you may be hardened by sin's deceitfulness.

Hebrews 10:24-25

And let us consider how we may spur one another on toward love and good deeds. Let us not give up meeting together, as some are in the habit of doing, but let us encourage one another- and all the more as you see the Day approaching.

Cells would also gather occasionally to go to a field trip, do sports, and engage all sorts of activities. Annual schedule (Fig. 12) demonstrates all the activities held in a year. Cells gradually foster mutual responsibility and concern that other existing churches are lack of.

At a church level, BBC would meet twice a week: Wednesday and Sunday. Every Wednesday, members meet to do the prayer. Cells occasionally meet afterwards to do the fellowship. Meeting place would be Café Avec. Café Avec is a coffee shop owned by one of the members. Some portion of the profit is dedicated to the church. Café Avec also provides a space for staff bible study.

On Sundays, regular services are held. Service is organized in this order; opening prayer,

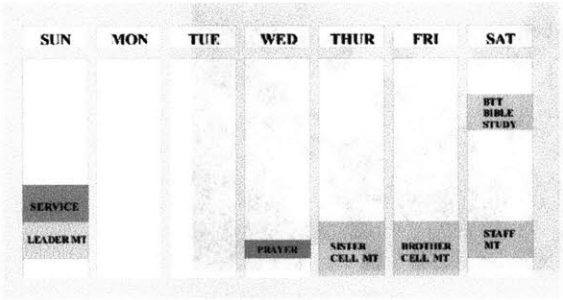


Fig. 11 Weekly Schedule for Cells

Cell Meetings

hymn, offering, choir, message, dedication, and closing prayer. Fellowship time takes place after the service. Members gather in circle to welcome new people and celebrate birthdays. Dinner is provided, prepared by different cells each week, after the circle time.

In New Testament church, such as in BBC, the characteristics of the communal activities and mutual love are beyond common understanding of intimacy. Brothers and sisters in Christ are gradually bonded to each other even more than their own physical family.

In Galatians 3:26-29,

You are all sons of God through faith in Christ Jesus, for all of you who were baptized into Christ have clothed yourselves with Christ. There is neither Jew nor Greek, slave nor free, male nor female, for you are all one in Christ Jesus. If you belong to Christ, then you are Abraham's seed, and heirs according to the promise.

Therefore, a new church for BBC will be incorporating rigorously the importance of cell ministry to invigorate communal activities among members. Architecturally, housings of cell leaders –as they function as churches during weekdays – will be part of church and flexibility of spaces will be introduced to induce communal activities. At an urban level, this thesis will raise an issue of how to embed a religious community in an existing neighborhood context.

Apple Picking (Sept.)

New York Cell Retreat (Jul.)

Inter Mural - W/ New York (Jun.)

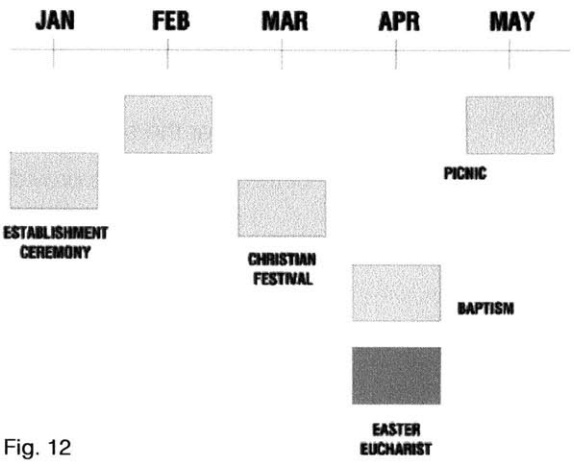


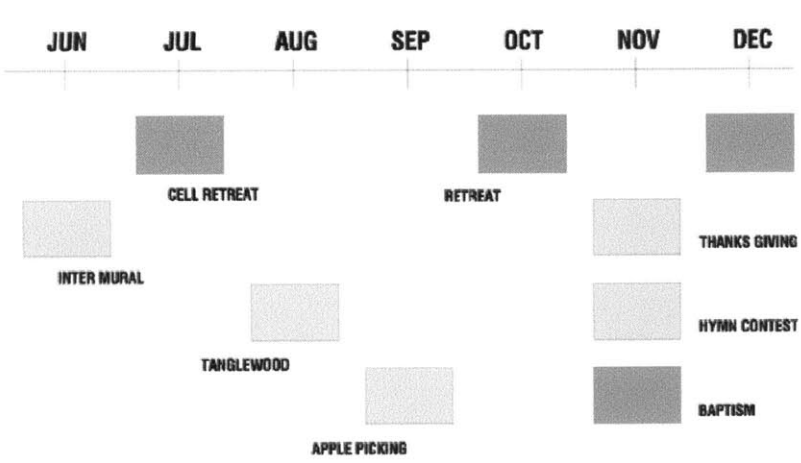
Fig. 12

BBC - BOSTON ANNUAL ACTIVITIES

Tanglewood -Boston Symphony (Aug.)

Baby Shower

Annual Retreat (Oct.)



Baptism (Nov.)

Mother's Day (May)

site:

history and characteristics

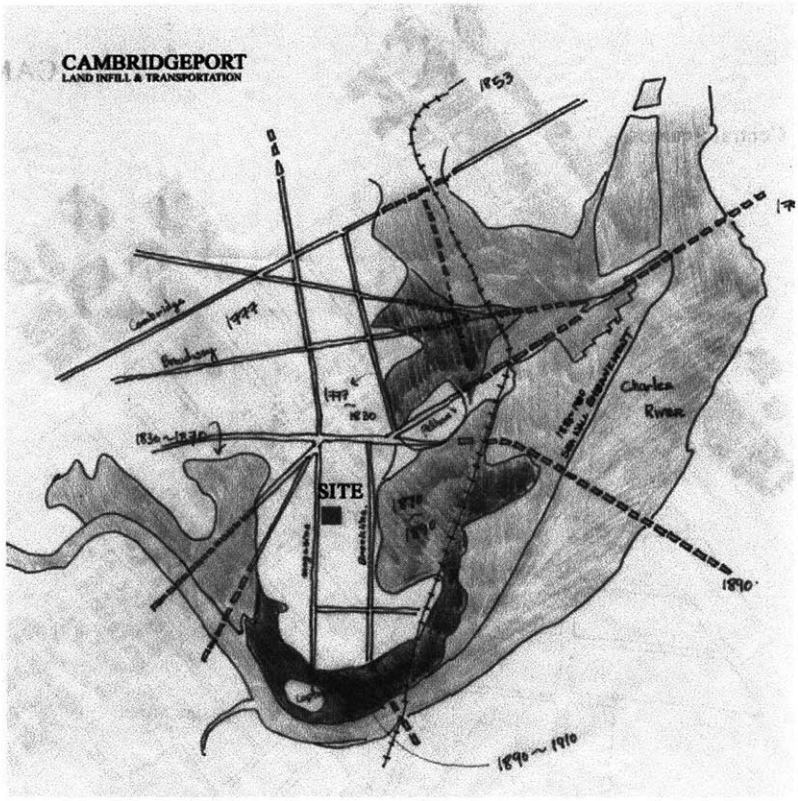


Fig. 13
Landfill and Transportation Process

Brief History

The proposed site for the new church and its family housing is on Magazine Street, Cambridge, Massachusetts. Cambridge is divided into three: Old Cambridge, East Cambridge, and Cambridgeport. Magazine Street (stretches ½ mile) is located on southern part of Cambridgeport. It extends south from Central Square to the site of old powder magazine (hence the street name) on Captain's Island. The site is situated about two hundred yards away from Central Square on Mass. Avenue. The brief history will cover characteristics of Magazine Street, Cambridgeport with specific focus on residential buildings and churches as they relate to the program of the thesis.

Basic to an understanding of residential building types is knowledge of the pattern of land division and ownership. Similar to most of 19th-century American cities, nearly all of Cambridgeport was laid out with rectangular lots, deeper than they were wide, fronting the straight streets. The fact that there was no master plan for Cambridgeport, as there was for mid-Manhattan in NY (planned 1811) or for the Back Bay in Boston (planned 1856), only reinforces the universality of this pattern of land division. So many different land speculators utilized it over so long a period of time.

There were three basic house types during the first two-thirds of the 19th century. When Cambridgeport was achieving its present character; all three – the single house, the double house, and the row house – were single-family types. The living unit and the land

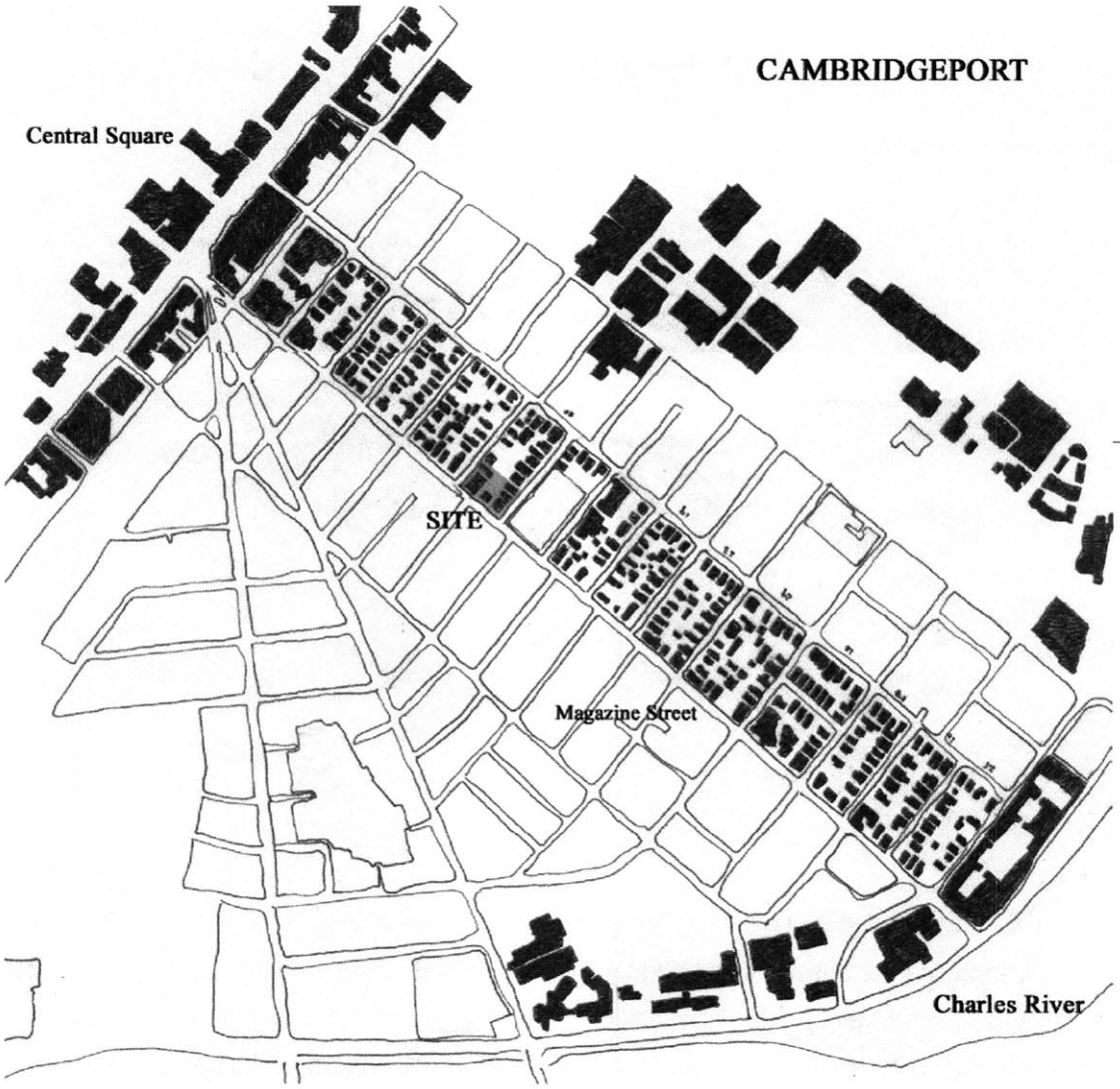


Fig. 14 Figure and Ground Map along the Magazine Street.

on which it was situated were capable of individual ownership. Later in the 19th century (after the railroad installment), still with the frontage lot system, multi-family housing types emerged.

Early multi-unit types –the two-family house, the three decker, and the tenement block- were divided horizontally instead of vertically. Initially, these multi-unit types were regarded as a single unit and were built for the most part on their own frontage lots. At a time when Cambridgeport was rapidly filling up, many later houses squeezed onto lots already occupied by earlier houses, forming current configuration (having several houses in the center) of blocks.

As many other parts of the Cambridge, by the 1840s Magazine Street was becoming important. Washington Allston (1779-1843, painter) had situated his studio at the corner

Fig. 16

Pilgrim Congregational Church,
1871, Thomas Silloway, Architect
(Oct. 2000)

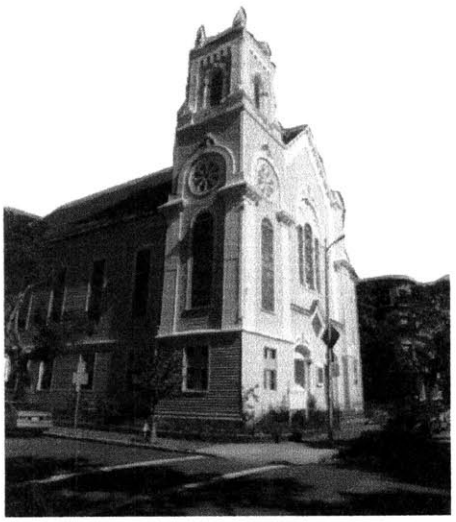


Fig. 15 Allston Terrace (Oct. 2000)

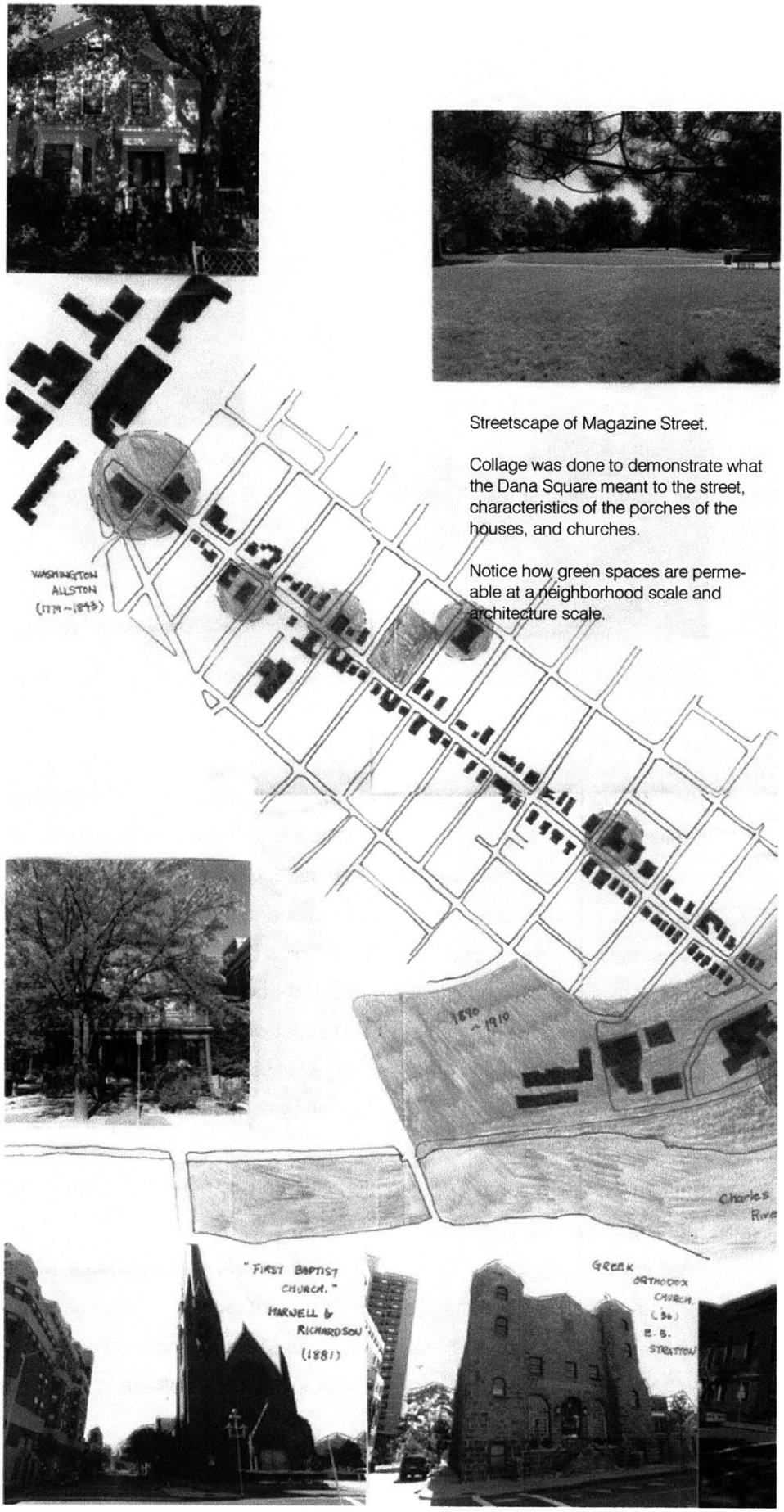
of Magazine and Auburn Streets. The site is now occupied by a brick mansard row known as Allston Terrace (Fig. 15).

The coming of railroad in 1853 (Fig. 13) had triggered the industry in Cambridgeport. Earlier small operations by long-time residents were substituted by the new industry that came to Cambridge diverged from this pattern. Cheap and plentiful land, convenience to the railroad, to ship transport, and to Boston, and the availability of a large and inexpensive supply of immigrant labor made the Port a highly desirable industrial location. Conversion to a bustling industrial suburb was accompanied by momentous changes in population and housing demand. The district where the site is situated was also to become residential area (Fig.14). The apogee of Magazine Street's fashion occurred at this time when six mansions were built for Cambridgeport businessmen.

Starting with the Pilgrim Congregation Church by Thomas Silloway in 1871, Magazine Street built four more churches.

The Pilgrim Congregation Church (Fig. 16) was built on the corner of Magazine and Cottage Streets. In its asymmetrical organization of tall corner tower set against the center façade gable and partially balanced by a slender turret on the other side. The church was built of wood with a wealth of applied wooden ornament reflection in a patchwork fashion.

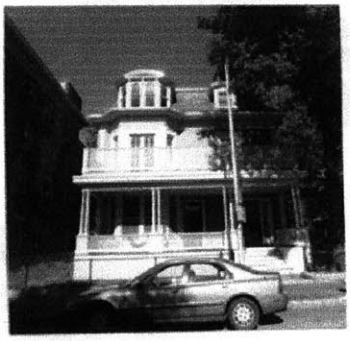
The pivotal lot at the head of Magazine Street had been occupied by a First Baptist

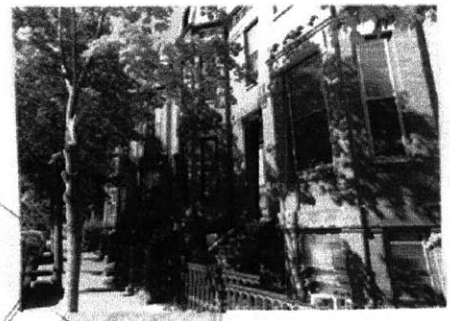


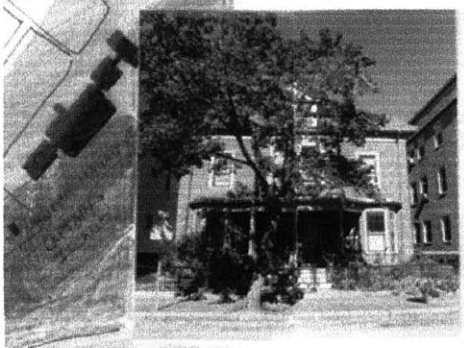
Streetscape of Magazine Street.

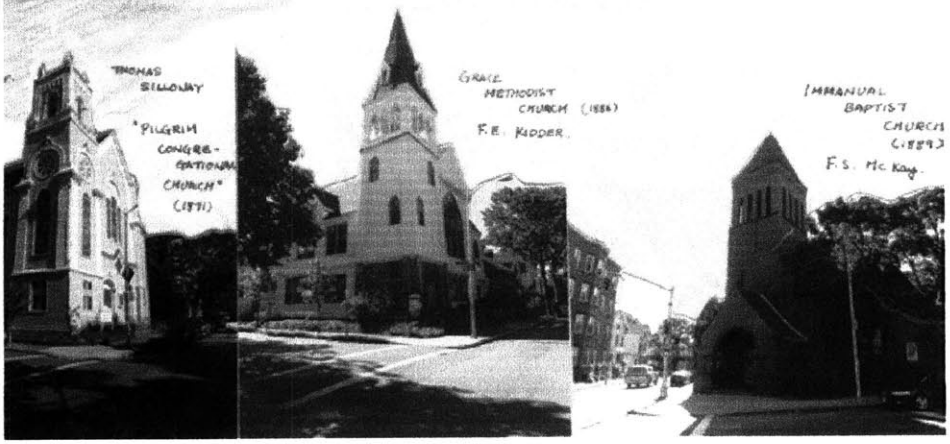
Collage was done to demonstrate what the Dana Square meant to the street, characteristics of the porches of the houses, and churches.

Notice how green spaces are permeable at a neighborhood scale and architecture scale.








THOMAS
SELLOWAY
"PILGRIM
CONGREGATIONAL
CHURCH"
(1871)
GRACE
METHODIST
CHURCH (1884)
F.E. KIDDER.
IMMANUAL
BAPTIST
CHURCH
(1889)
F.S. Mc KAY.

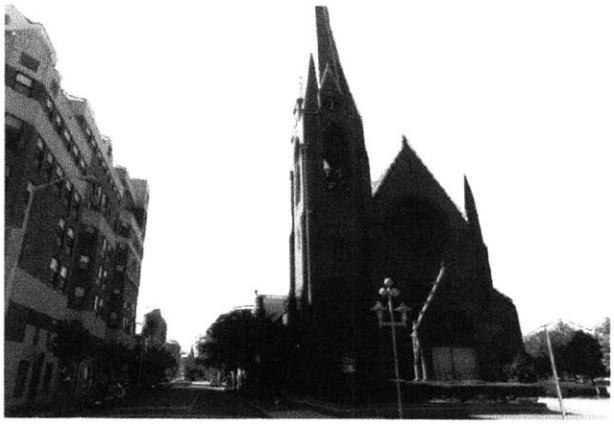


Fig. 17

First Baptist Church,
1881, Hartwell & Richardson, Architect
(Oct. 2000)

Fig. 18

Grace Methodist Church,
1886, F.E. Kidder, Architect
(Oct. 2000)

Church building since 1817 (Fig. 17). In 1881, a new Gothic Revival brick church replaced the 1886 church destroyed by the fire. Built on same foundation, the church achieved fine exterior trim. Brick basket-weave patterns, terra-cotta leaf-cluster drops and carved foliate panels over the window, rows of multi-colored slates, and reddish-brown sandstone lintels and trim throughout form a handsome combination of materials and texture.

Currently, Grace Methodist Church by F. E. Kidder in 1886 (Fig. 18) is situated on the proposed site. This church is an exuberant example of Queen Anne shingle work with Gothic detail and a Queen Anne version of a 13th-century Gothic tower. This Methodist church shares Pilgrim's basic configuration of corner tower butted against the center gable with its main stainled-glass window. Exterior richness is attained through asymmetrical placement of windows and through juxtaposition of materials – stone clapboards, and two patterns of shingles.

The last 19th century church built on Magazine street was a new and larger building for the Charles River Baptist Church (presently, Immanuel Baptist) at the corner of Putnam Avenue (Fig. 19). Built in 1889, when a number of Richardson Romanesque public buildings were going up in Cambridge, the church by H.S. McKay is a fine example of brick Romanesque with brownstone trim. It takes advantage of its corner lot in an unusual way by means of a corner entrance tower set diagonally to the side and front of the church. The plain surface treatment give the Greek church a distinctively more massive feeling.

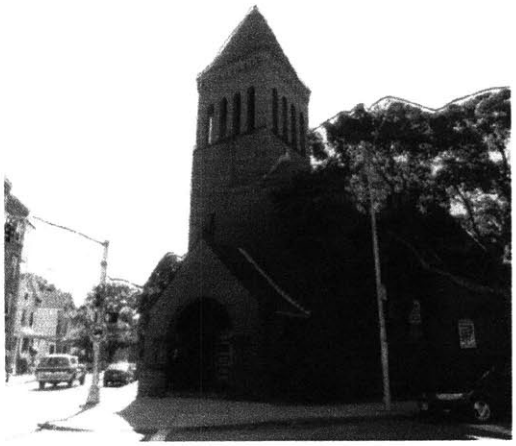


Fig. 19

Immanuel Baptist Church,
1889, H.S. McKay, Architect
(Oct. 2000)

Fig. 20

Greek Orthodox Church,
1936, E.B. Stratton, Architect
(Oct. 2000)

The last church built on Magazine Street is Greek Orthodox Church by Sts. Constantine and Helen in 1936 at Magazine and Franklin Streets (Fig. 20). This building draws appropriately on traditional Byzantine forms for its centralized plan and its domes. Two high square corner towers flanking a center gable with a recessed round-arched entrance composed the façade.

By the 1900, Magazine Street had passed its prime, as evidenced by the conversion of Sanborn Mansion at 129 into a three-decker. Further decline of Fashion is chronicled by the removal of the A.C. Sanborn and Kimball houses and the substitution of rows of duplexes between 1906 and 1927.

Furthermore, most of the churches on the Magazine St., as many other churches in New England, are in crisis of losing their members. It's not only an architectural issue; it's a theological issue. This phenomena relate to the earlier issue I raised in this thesis. Without sincerely critiquing the organization, to invigorate communal activities among the members, churches have invested their effort on establishment of buildings. Thus, all the five churches I mentioned above are great architectural achievements, however they are all bad churches.

Landscape Characteristics

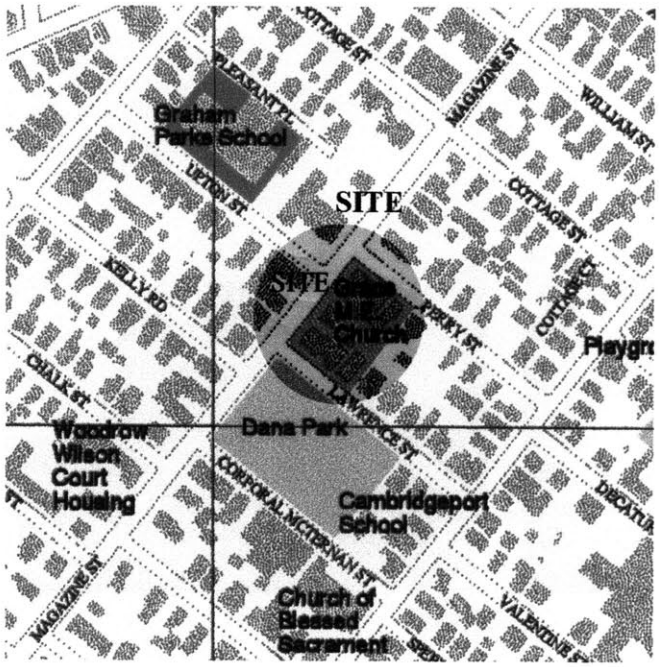


Fig. 21
Map of the Site

Fig. 22 Dana Square:
Mostly used by elementary school students

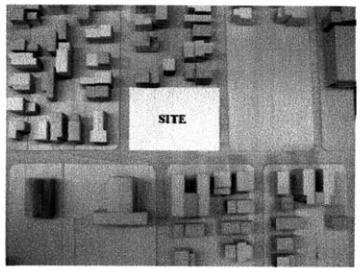


Fig. 23 Site Model

Magazine street is fifty feet wide, it is ten feet wider than Pearl and Pleasant Streets, which parallel it, and it has wider setbacks. The site is about one-third way along its course where there is a residential park: Dana Square (Fig. 21 & Fig. 22). Beginning at the relatively high level of Central Square (16ft above sea level) Magazine Street slopes almost imperceptibly to a low point (10ft) near Hamilton Street. The location of former Captain's Island (now landlocked) is between Memorial Drive and the Charles River.

An air of greater spaciousness and unity pervades this area. First impression of unity derives from the constant direction maintained by the long streets, the uniform intervals between the cross streets, and sustained setbacks. However, considerable variety and richness lie in details.

Magazine Street has no definable center of interest. The two ends of the street retain more interest than the low-lying quarter-mile middle interval. The collection of churches, apartments, and houses has little common architecturally but the overall characteristics are very similar.

Most of the houses have porches, which create frontal soft edges along the Magazine Street. Residences are located at the periphery of the blocks. Private backyards are situated at the back of the houses. Together, they comprise an area of green space in the center of the blocks. This is one of the intriguing aspects of the area. Partially visible

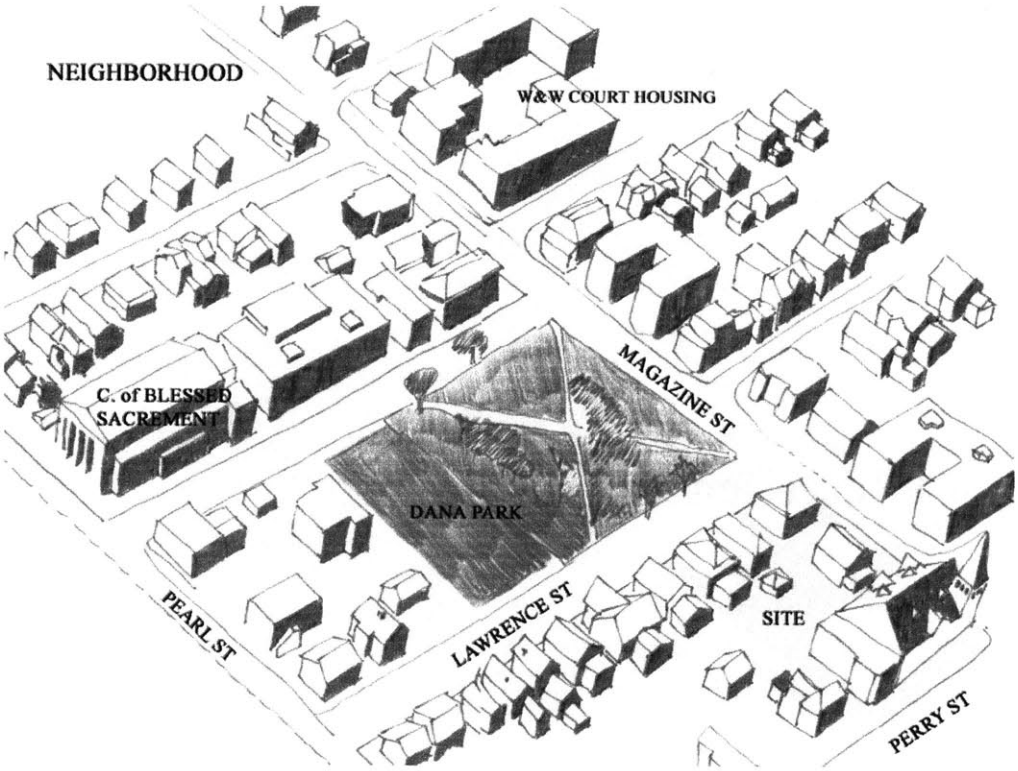


Fig. 24 Double Housing and Three-Deckers on the East side of Dana Square and the Site Condtion.

private gardens ornament the streets with the porches. (Fig. 24 & see p34-35)

The proposed site is next to Dana Square. Laid out in 1856, the square was expected to provide splendid residential core for a neighborhood of fine houses. Although half a dozen large dwellings were built on or near the square by 1873, much land remained vacant until filled with less impressive structures. The Willard School formerly stood on the east side of the square, but it has been demolished and its site added to the park, which is now almost twice its original size and looks quite empty. The double house and three-decker on the east side are not large enough to define the park's limits.

This thesis will fully integrate several characteristics from the site. First, proposal's relation to the Dana Square will be considered. Second, current corner of Magazine and Perry streets will be acknowledged as important communal threshold. Third, existing neighborhood's architectural significance – creation of soft frontal edges and partial views of green space - will be fully addressed. Natural conditions will also be integrated, such as sun orientation and wind direction to fulfill some of ecological aspects of the site.

concept development

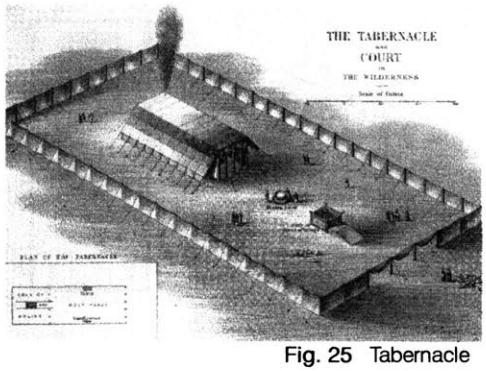


Fig. 25 Tabernacle

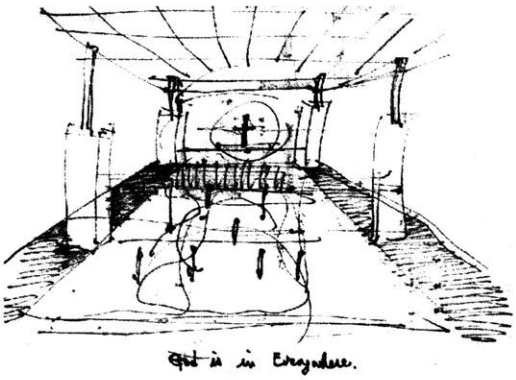
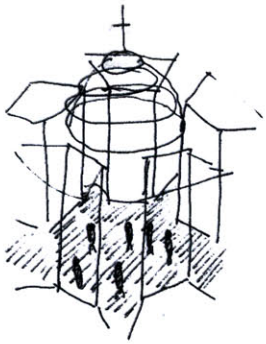


Fig. 26 First Sketch

This thesis launches from critiquing why Christians live in dual values. It answers by pointing out problems of separation of daily life from religious life caused by formality of once-a-week service. It seeks solution in BBC by their unique mission philosophy. Instead of growing a church into a huge congregation, BBC deliberately does ministry in early Christian's manner where members would do a cell-ministry. Cells are weekday churches for the members to integrate daily life to religious life. The acts of dining and sharing in cells bring about Christian thinking and activities thereby integrating dual values.

There were several images at the back of my head at an initial stage. First, early Christian's house-church (Fig. 27) was in my mind. House-church manifested in architectural format how actual living and religious living could be integrated. Everyday dining-living rooms served key liturgical functions such as Eucharist. Moreover, it also manifested that the size of a congregation had to be controllable to really be a family unit. This perfectly matched BBC's cell ministry. Second, the flexibility of a Tabernacle (Fig. 25) intrigued me. As God was interested in the hearts of worshippers than an establishment of a worshipping structure at a specific place. I thought this portable tent had that notion of building a sacred space anywhere they intended.

When I was developing a concept, BBC's unique notion of a cell leader's house being a church had to be taken into account. As early Christian's house was a church for the



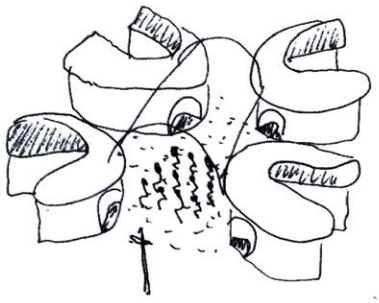


Fig. 28 Church defined by the Houses

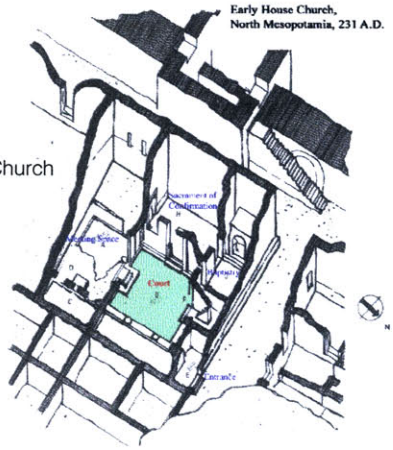


Fig. 27 House Church

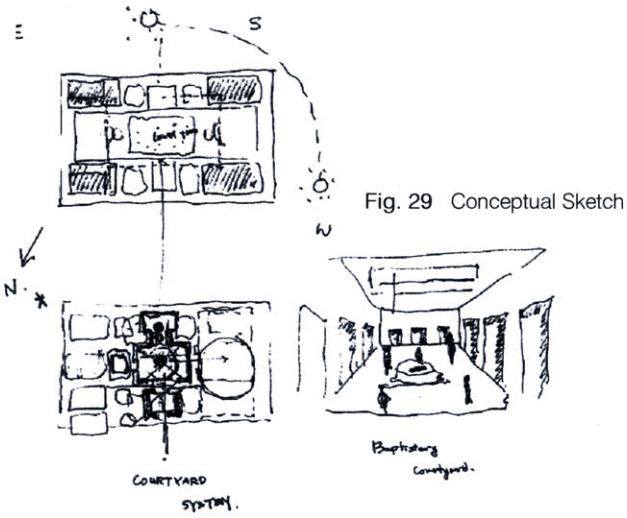


Fig. 29 Conceptual Sketch

Fig. 30 First Conceptual Model

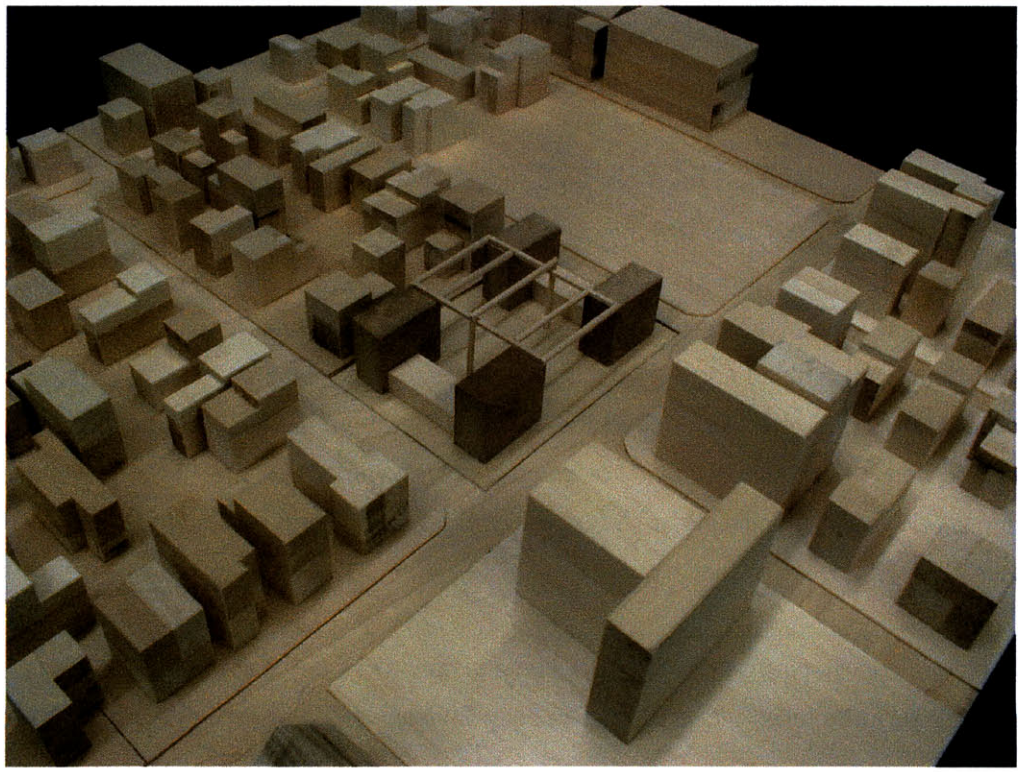


Fig. 31 Dining as a Part of Church: LO Zone Staff Meeting

members, BBC's cell ministry also recalled home (Beth=Family=House) ministry to further bond the relationship among members (Fig. 31). The idea of dining together –as early Christians gathered to do Eucharist – and sharing lives among cell members had to be fully expressed to manifest the uniqueness of BBC.

Moreover, as there were many activities involved as means of fostering mutual relationship, spaces of BBC needed to be very flexible both in size and use. As Christ mentioned love of brother is equally important as love of God, spaces of church had to be multifunctional to induce stronger relationship among members. One of my earliest sketches, therefore, indicated how a liturgical space could be transformed into other activity spaces. (Fig. 26)

Therefore, my earliest concept model demonstrated how four houses (weekday churches) support the corners of a church (weekend church). (Fig. 30) During the weekends, center congregation space served both liturgical service and communal activities. Moreover, courtyards of the housings together served courtyards of a congregation space. Thus, during summer, congregation space was flexible enough to extend out to the exterior. (Fig. 29) During weekdays, eight houses organized cell meetings in their dining-living rooms to do cell ministry.

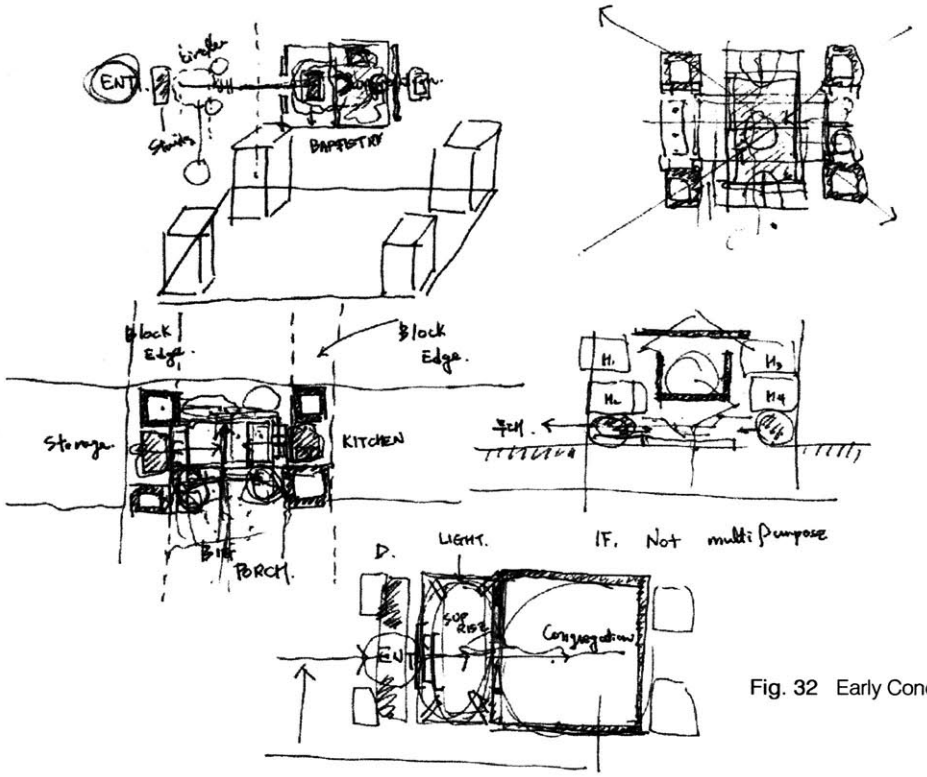


Fig. 32 Early Conceptual Sketch

Architecturally, there was other issue that constantly came up. From the very beginning, I wanted this structure to be only a roof. (Fig. 26 , 28, and 30) Idea of a shelter came up to serve many functions. Later on, this idea developed to have various programs under one 'big-roof'. This had metaphorical meaning and architectural advantages. Metaphorically, one-roof idea delivered a message that the church (a body of Christ: all the members) was united by the capstone (Christ). Architecturally, one-roof creates various edges to create depths to the structure.

one-roof precedents :
from tectonic to sustainability

Tectonically speaking, I wanted the whole complex to be perceived as a solid artificial platform with a hovering roof. Such articulation of the sectional form between terraced earthwork and (seemingly) light roof extends the domain horizontally. It establishes a territorial dwelling that invites outside to inside and provides its richness towards outside.

Nov, 2000. Joong Won

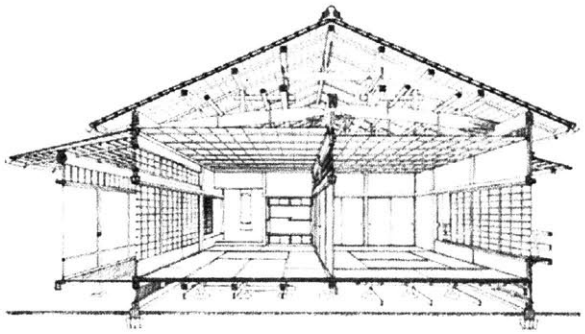
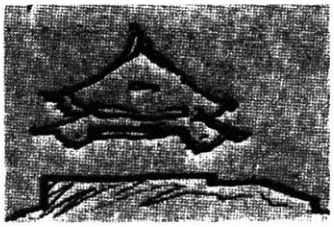


Fig. 33 Traditional Japanese House

Fig. 34 Jorn Utzon, Sketch of Japanese Architecure



Tectonic Roof

Semper's Die Vier Elemente der Baukunst (Four Elements of Architecture), published in 1851 divided architecture into four basic elements: (1) the earthwork, (2) the hearth, (3) the roof, and (4) lightweight enclosing membrane. Kenneth Frampton mentioned Semper would classify the building crafts into two fundamental procedures: the tectonics of frame and the stereotomics of the earthwork.

In my view, what is interesting about the Semperian definition of tectonic architecture is its emphasis on the framework of roof. Since the birth of modern architecture (or more precisely Schmarsow's space concept), architecture has mainly focused on movement system with finely contrived views. In tectonic architecture, as can be seen Japanese Tea House (Fig. 33), architectural experiences mainly rely on the depth of layers both in roof and partitions. Tectonic quality would be even more enhanced if the earthwork and the peripheral boundary is incorporated.

JØrn Utzon is one of the architects who focused on the tectonic roof and stereotomic earthwork. Utzon's ingenuity lies in seeking articulation of sectional quality both in roof and earthwork to extend the domain horizontally. (Fig. 34) This not only increases the apparent size of the house but also establishes the territory of the dwelling within the topography rather than meeting the required area in a freestanding object. His house in

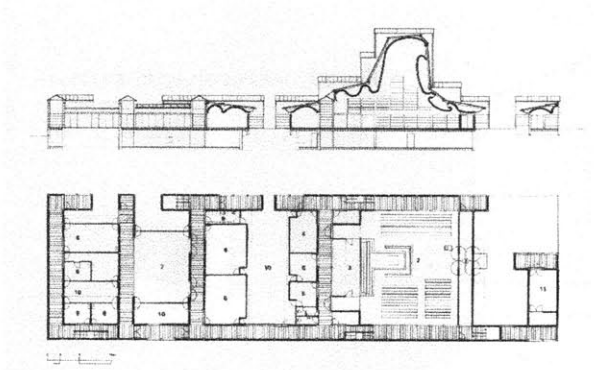


Fig. 35 Utzon, Bagsvaerd Church, Copenhagen, 1976

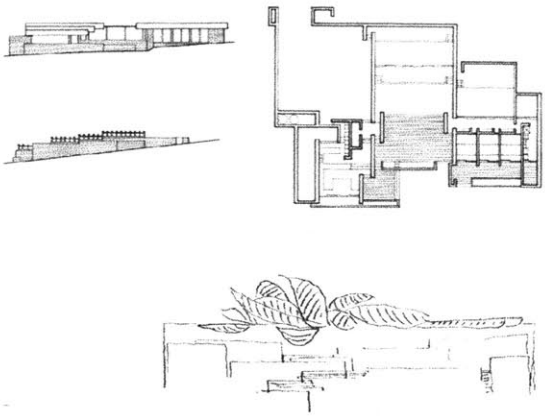


Fig. 36 Utzon, House in Bayview, 1965

Bayview (Fig. 36) and Bagsvaerd Church (Fig. 35) has a strong contrasts between the flat floor and amorphous roofing.

Louis Kahn is another architect who strives to meet the universal order with structural order in order to create tectonic roof. From a Palladian structural bay in room system, he distanced himself from free plan of modern architecture. Treton Bath House (Fig. 37) is a clear example of this.

His earlier version of Unitarian Church (Fig. 38) shows roof held in place by buttress-like, reinforced concrete members running in pairs around the periphery. His concept of keeping sanctum in the center is carried on in his later version (Fig. 39). The full spirituality of the church is expressed in the roof section, from which light enters into the four cubic corners, highlighting the flying tie beams.

In Kimbell Museum (Fig. 40), overall character of barrel vault is well integrated into its site in sublime manner. Kahn opened a new dimension towards the 'integrated' roof. Here several roles of roofs – indirect light gain, covering, mechanical system, and tectonic expression of the materials –are well integrated. More importantly, one continuous roof enabled another level of awesome sense of scale, if otherwise would have been just many coverings for same number of rooms. These paradoxical flexibility of roofs were more enhanced by the three interior courts.

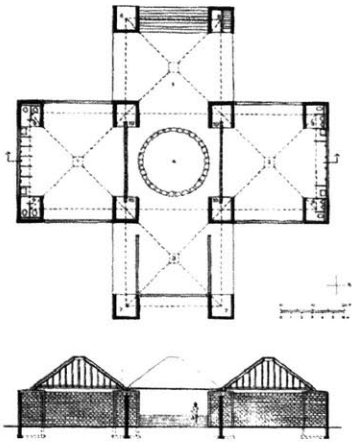
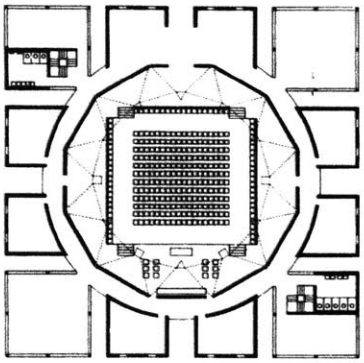
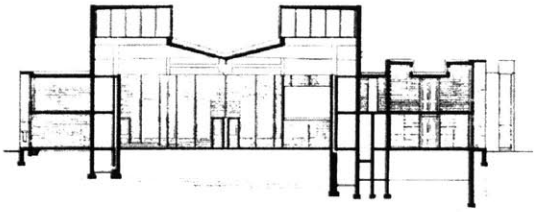


Fig. 37 Louis Kahn, Bath House, Trenton, 1956





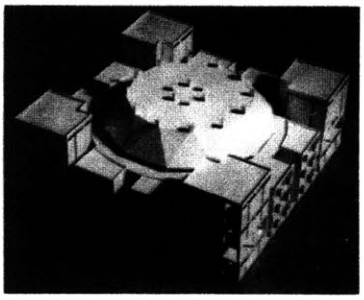


Fig. 38 Kahn, Unitarian Church, Earlier Version, 1959

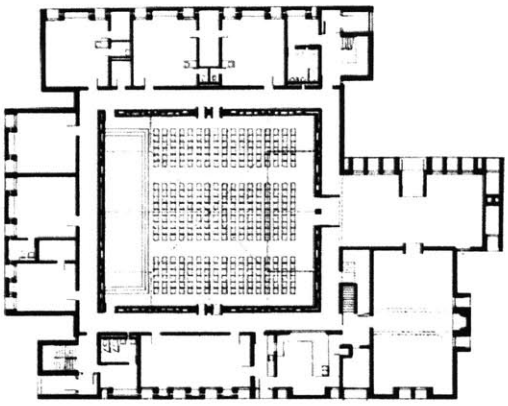


Fig. 39 Kahn, Unitarian Church, Final Version

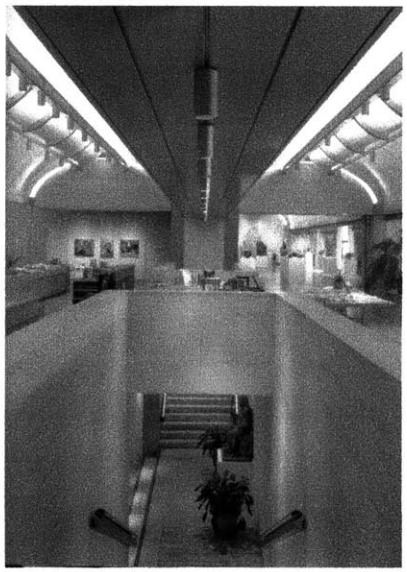


Fig. 40 Kahn, Kimbell Museum, 1972

Sustainable Roof

Roof is obviously the most complex part of a building. It requires less knowledge to build walls and partitions than to build a roof. Roof is more exposed to all kinds of influences and stresses than other parts of a building. Moreover, larger spaces to house create much more complex issues. This means that there are more issues involved, in terms of integration -'doing the most with the least'-, in roof than other parts of the building.

Current sustainable architecture has mainly focused on the roof. One big integrated roof can put together many issues. It forces structural clarity. It encourages air movement and thus facilitates natural ventilation. It provides shading from the sun and a means of directing natural light. It collects rainwater, which could then be drawn into a subterranean storage tank to be used as 'grey' water to flush lavatories, thus reducing the water demands. Lastly, it harvests energy using photovoltaic cells that convert sunlight into electrical power.

This thesis does not specifically address all the functions of the roof as mentioned above, because some of the ecological advantages can only be adapted to certain type at a certain scale of a building. The point of studying these sustainable precedents would be seeking most delight with the least architectural elements. This thesis recognizes three elements - topography, fenestration, and roof - as a generator of space.

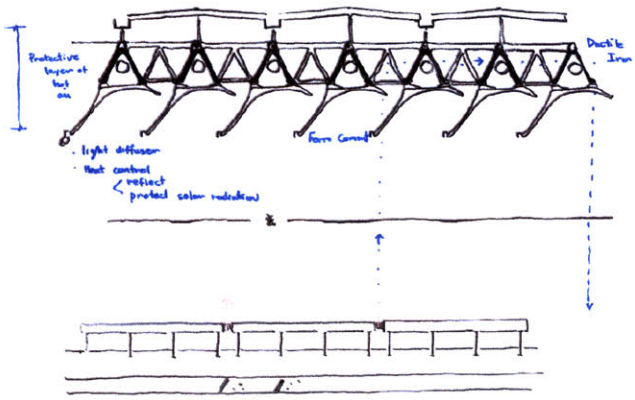


Fig. 41 Renzo Piano, De Menil Collection, 1986, My Reproduction

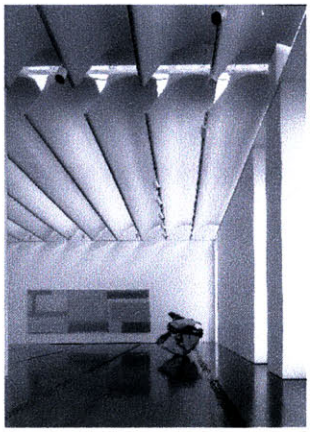


Fig. 42 Piano, De Menil Collection, 1986, Interior

In terms of architectural space, one big roof can create deep edges at various levels: e.g. at communal and architectural levels. One big roof requires repetitive structural entity to support its roof. Consequently, it creates spatial layering. In addition, if a roof is well incorporated with the topography -be it artificial or natural- roof starts to press the underneath space to extend outwards. If a roof hovers beyond the footprint of the walls, elevations no longer become dull plain surfaces. It begins to dialogue with the streets by its perceptible depth of layering.

Renzo Piano and his Building Workshop have paid immense interest on roofs. His earlier roofs were more about expression of lightness, thinking architecture as kit-of-parts, and transparency. Later on, his interests, such as finding new potentials in materials and pushing forward the frontiers of technology as well as of being involved in the very physical nature of prototyping and construction led him towards more integrated roofs.

One of his earlier roofs, The Menil Collection gallery in Houston, TX, (Fig. 41 & 42) exemplifies integration of parts in roof system. Beyond its introduction of innovative materials in automotive industry - using ductile iron, polycarbonate, and glue technology - this roof clearly manifests the integration of structure, light diffuser, and water manage system associated in the roof.

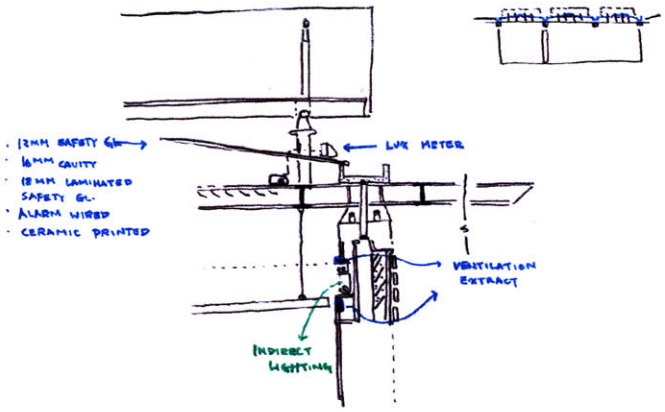


Fig. 43 Renzo Piano, Beyler Museum, Basel, My Reproduction of Key Detail

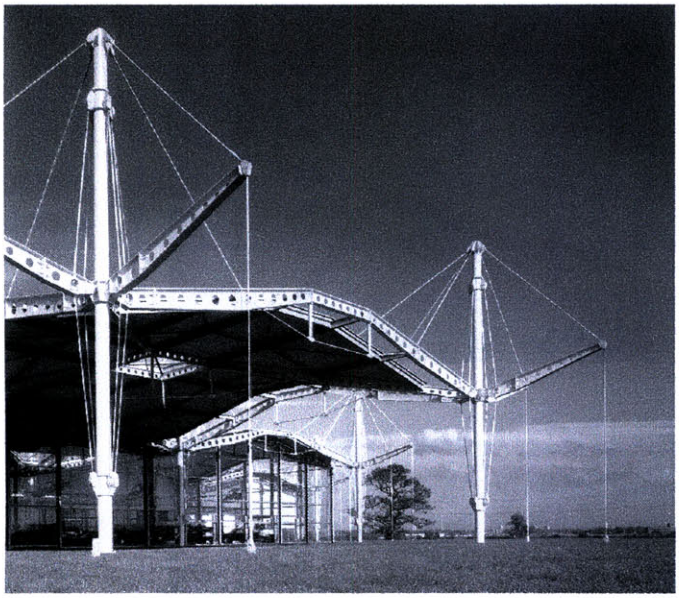
Fig. 44 Piano, Beyler Museum, Exterior

His later roof, Beyler Museum in Basel, Swiss (Fig. 43 & 44), also has same elements of integration. Unlike Menil Collection, however, light diffusers are above glazing. Lighting devices inside created beautiful rhythm outside.

In both cases, roof became the most significant piece to enhance the experience of space. As is in Louis Kahn's Kimbell Museum, holistic roof crowned somewhat simple division of space underneath and transited into something more than what it actually is. These roofs are more than just lids. They are scenic devices. Major scenic theme inside is outside nature.

Norman Foster's earlier projects such as Renault Sales Headquarters (Fig. 45)and Stansted Airport (Fig. 46)are both of them exploration of roofs. Renault Sales Headquarters is composed of 42 identical construction units. In this earlier scheme, roof was a manifestation of high-tech aesthetics. The roof is hung from 16-meter-high steel supports. Various functional areas are all united under one roof. Exterior walls were situated behind the edge supports to enhance the dynamic nature of the design.

The vast open space in Stansted is clearly articulated by the spectacular roof structure regulate the extraction of air during summer. It allows stack effect along the entire length of the building.



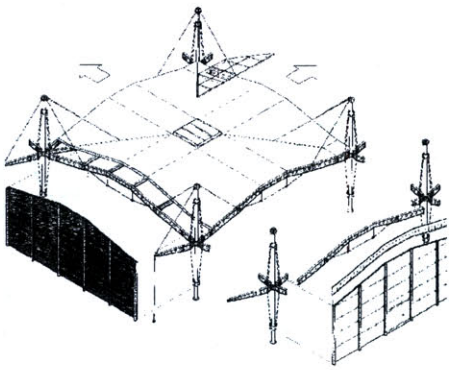
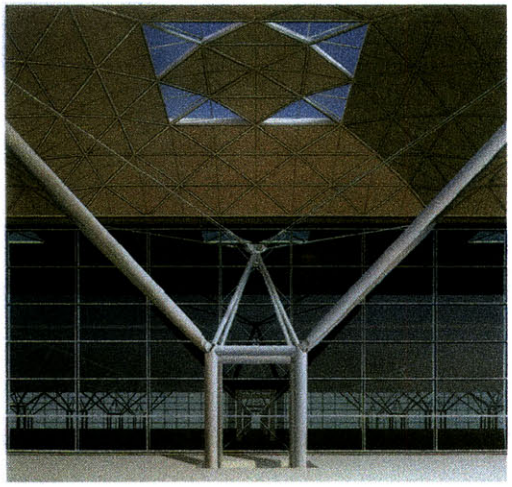
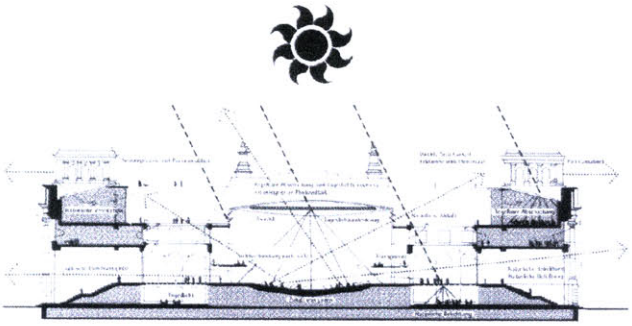
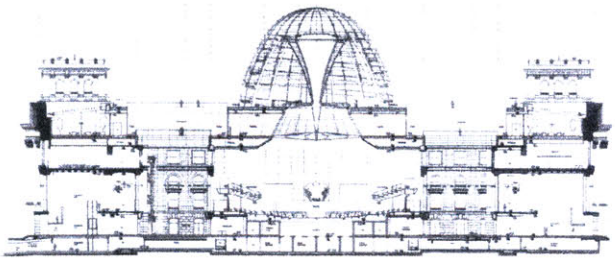


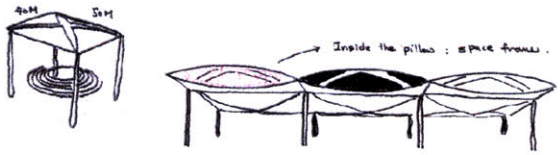
Fig. 45 Norman Foster, Renault Distribution Center, 1982

Fig. 46 Foster, Stanstead Airport, 1991,
Painting by Ben Johnson









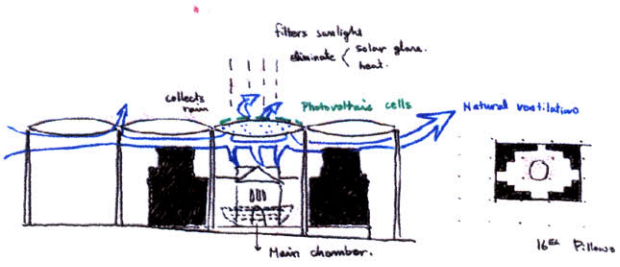


Fig. 47 Foster, German Parliment, Reichstag,
2000, Final Version

Fig. 48 Foster, German Parliment, Reichstag,
2000, Competition Version

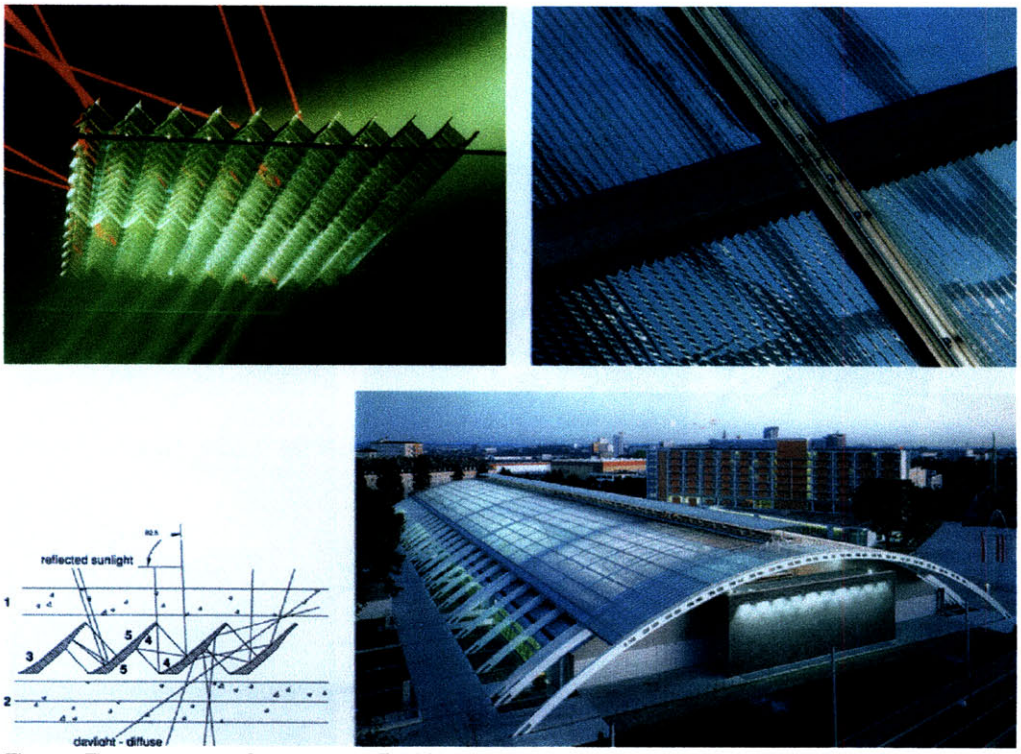


Fig. 49 Thomas Herzog, Congress and Exhibition Hall, Linz, Austria: Thin louver grids & glazing.

that floats more than 15meters above ground. A quilt of square domes is supported by a grid of 36 service trees. The white roof membrane not only filter light on grey terrazzo floor, but also act as smoke reservoirs. All air-conditioning, information and lighting services are contained in the roof support/service pods, leaving the concourse space completely free of pipes and ducts.

For the New German Parliament competition, Reichstag, Berlin (Fig. 47 & 48), Foster and Associates designed a roof to become a major public space, a symbol announcing new unified Germany. As symbolic as it is, this roof structure also serve a sustainable assembly. The roof deflects controlled daylight into the main chamber below and also scoops out air as part of the system for natural ventilation. The structure also contains an array of photovoltaic cells as a part of the energy system.

Thomas Herzog and Partners, Munich has paid interests in ecological roof. In Congress and Exhibition Hall, Linz, Austria (Fig. 49 & 50), primary consideration was to provide an out door quality of daylight into the interior of the building. A new system was incorporated into the roof. Extremely thin louver grids were inserted between the panes of the double-glazing. The louvers reflect solar radiation and only allow diffused light to the interior, thus preventing over heated summer sun and glare caused by direct light.

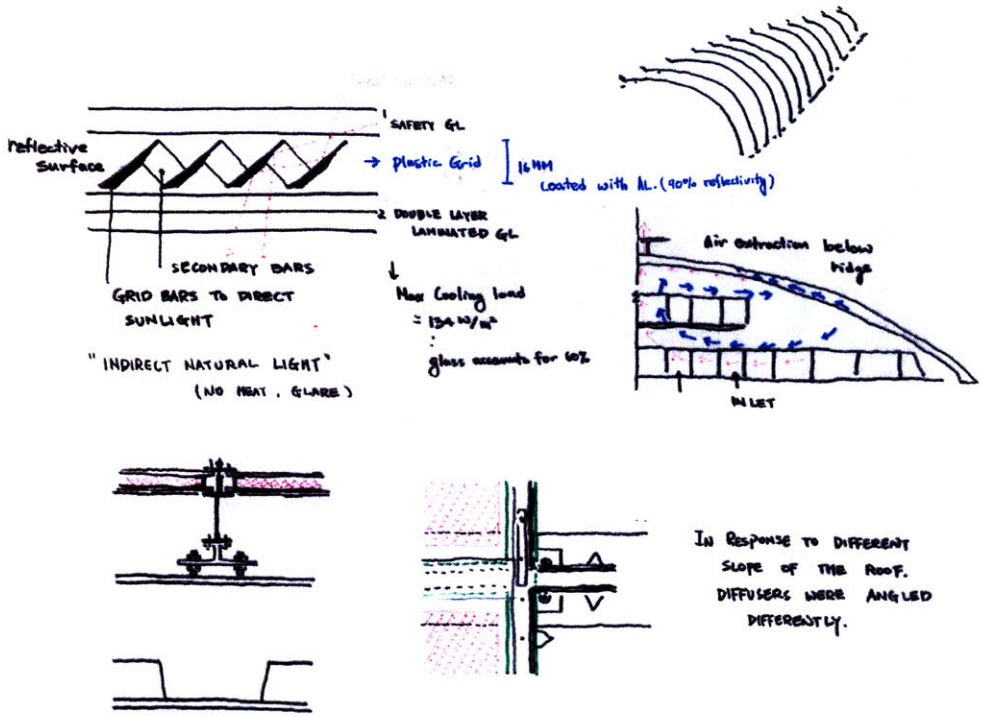


Fig. 50 Thomas Herzog, Congress and Exhibition Hall, Linz, Austria

In terms of ventilation, Fresh air is supplied via inlets in the floor of the hall and window strips which occur at the point where the plane of the roof changes. Along the crown of the roof are continuous openings with louvers to regulate the extraction of air during summer. It allows stack effect along the entire length of the building.

Thomas Herzog and his engineering partner Hanns Jorg Schrade also built a Trade Fair Pavilion, Hannover, Germany (Fig. 51 & 52). Here a suspended roof, similar to the previous example, created of high reference points for natural ventilation using thermal upcurrents. Introduction of indirect daylight was also contrived. Thus the silhouette or cross section of the building is largely derived from the formal laws imposed by the tensile construction and the demands of natural air conditioning and use of daylight.

As can be seen in these later examples, roof is a combination of complex issues. Traditionally, main roles of roof performed in three aspects. First, it had to be supported; second, resistance from excessive temperature; and third keeping the moisture out. In current integrated large roofs, there are three more devices to be incorporated. First is the passive ventilation strategy; second, passive lighting strategy; and third, mechanical devices. Including the traditional roles, sustainable roofs now have several layers of issues to be incorporated.

In current sustainable roof, the most major issue within the six categories would be

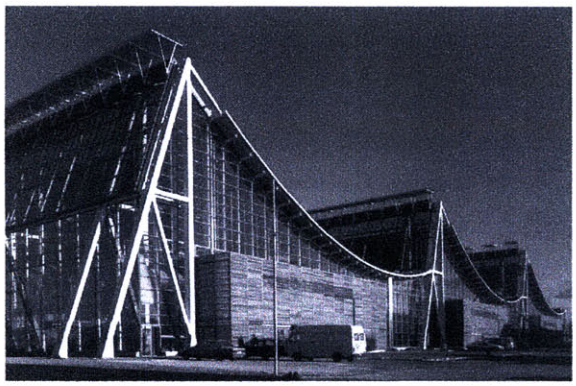


Fig. 51 Thomas Herzog, Trade Fair Pavilion, Hannover

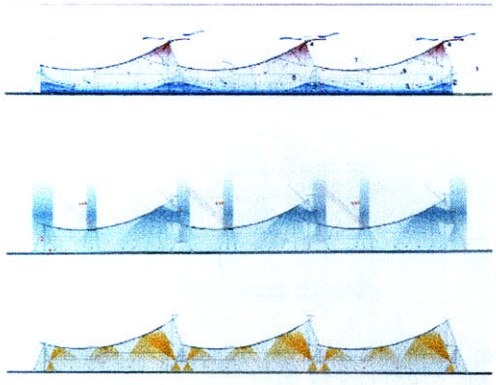


Fig. 51 Thomas Herzog, Trade Fair Pavilion, Hannover: Diagrams of what roof does to the space underneath.

creating passive ventilation. In order to create passive ventilation, one needs to make huge roof. Technology has enabled us to create various forms of trusses to house great spans. Along with the development of cladding system and invention of innovating materials we are in an era where tectonic ceiling landscape plays a major role in the experience of architecture.

design develoment

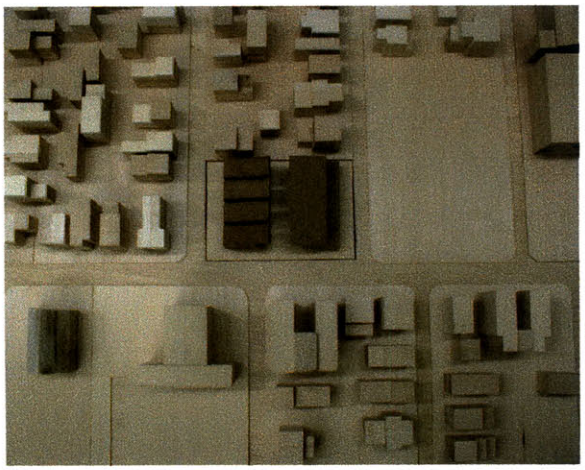


Fig. 52

One of the earliest models (Fig. 52) showing the massing of a church and housing blocks. At this stage, I wanted the structure to be ecologically responsive. Therefore, the configuration of the complex sought minimal amount of structure to achieve maximum effect. Collective roof and communal open space was in mind to induce natural light and ventilation.

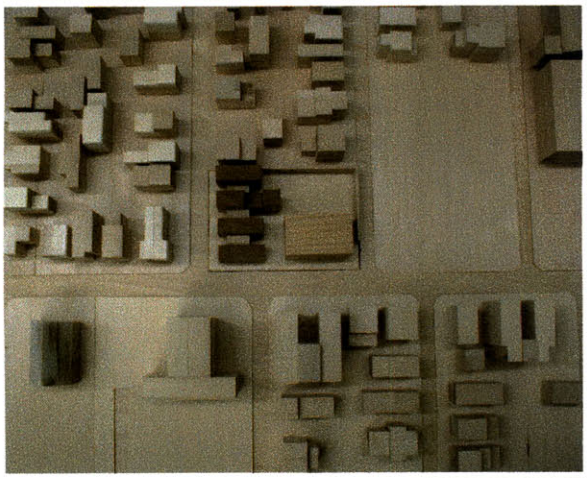


Fig. 53

Another example (Fig. 53 & 54) of how houses and church could be laid out. Conceptual model had not emerged yet. In this case, typological aspect introvertive courtyards were introduced to segragate the community from other parts of the neighborhood. Later, as the concept began to formalize, I realized this Christian community should be more publicly open.

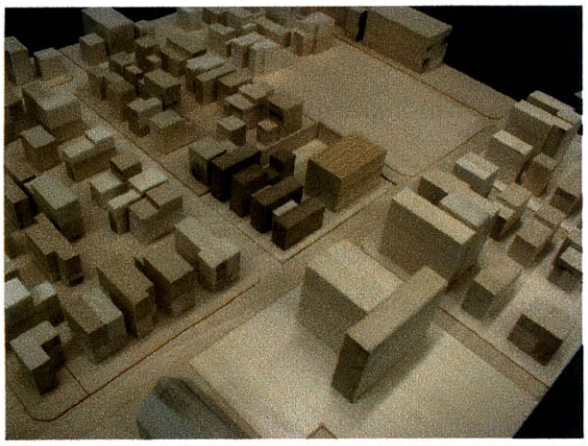


Fig. 54

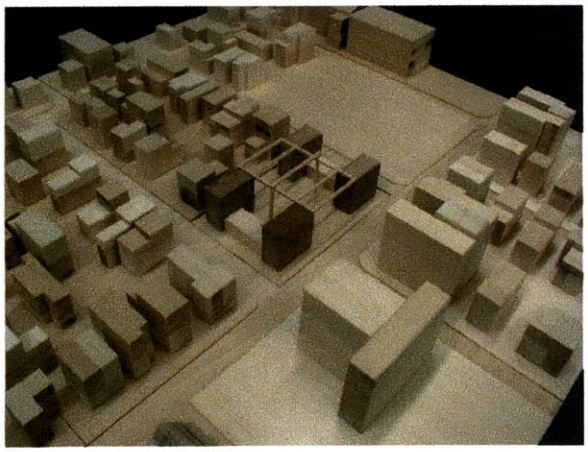


Fig. 55

After clear concept had emerged. (Refer to p 41-44 for details) In this concept model, houses and congregation space together comprises one church. It's symbolic in a sense that duality of religious and daily values are architecturally integrated.

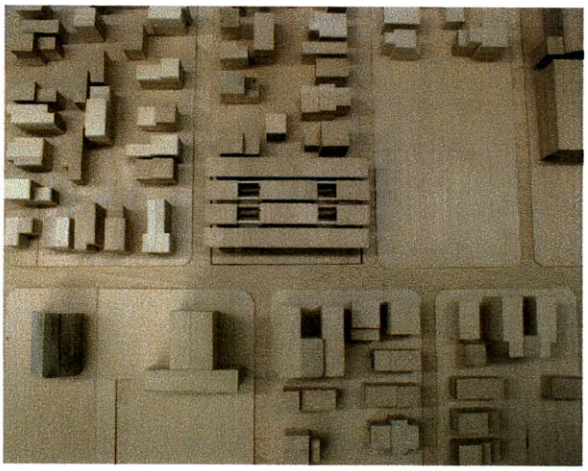


Fig. 56

I thought about putting one-roof and have it extended on top of the concept model. (Fig. 56 & 57) As can be seen in the model, the roof began to create many edges along the periphery, (Fig. 57)allowing spatial depth to the streets it faced.

Fig. 57

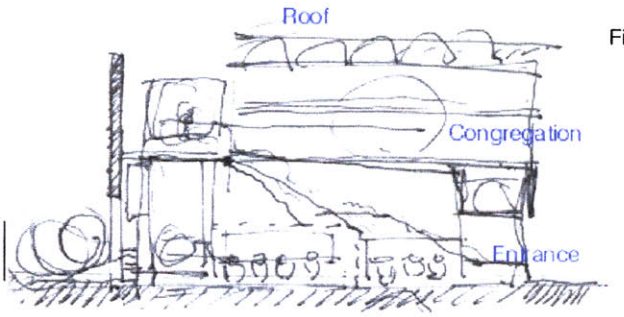


Fig. 58

Sectional movement from the entrance to congregation space. I began thinking about the sequence of the movement and the quality of sacred space where service took place. In later stage, I realized this also counter-argued what I had been adressing.

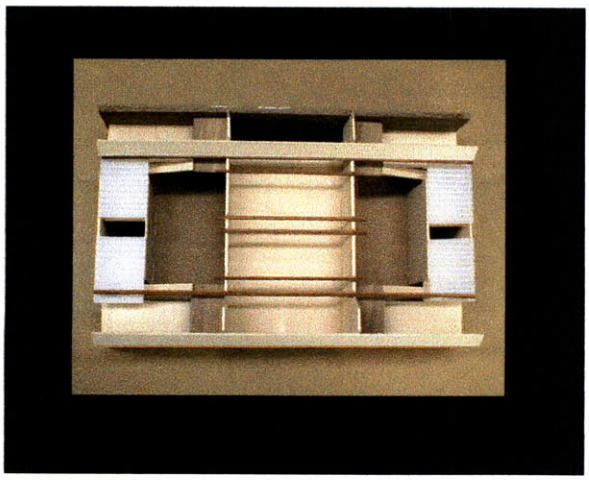


Fig. 59

Blown up concept model demonstrating how courtyards of houses at four corners could become open space for church space during Sunday. From the very beginning, I imagined houses acting as four pillars for the roof of a church.

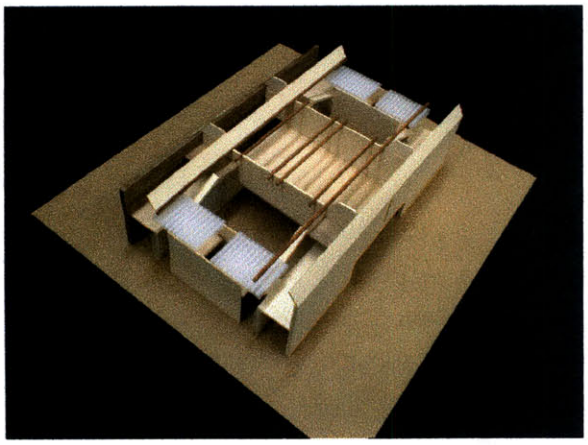


Fig. 60

Even from the early stage, creation of soft edges towards streets were considered. (Fig. 60)

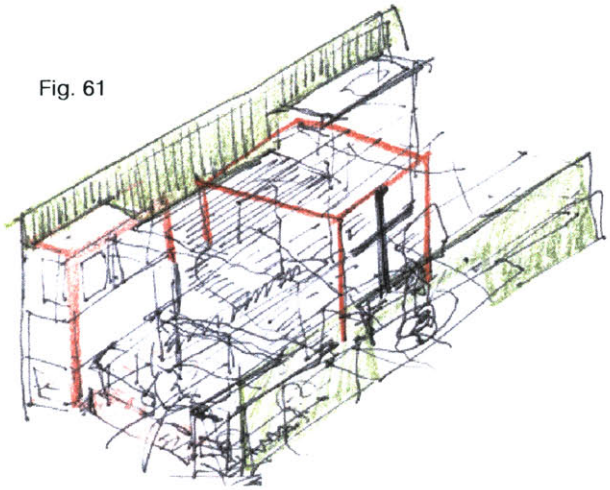
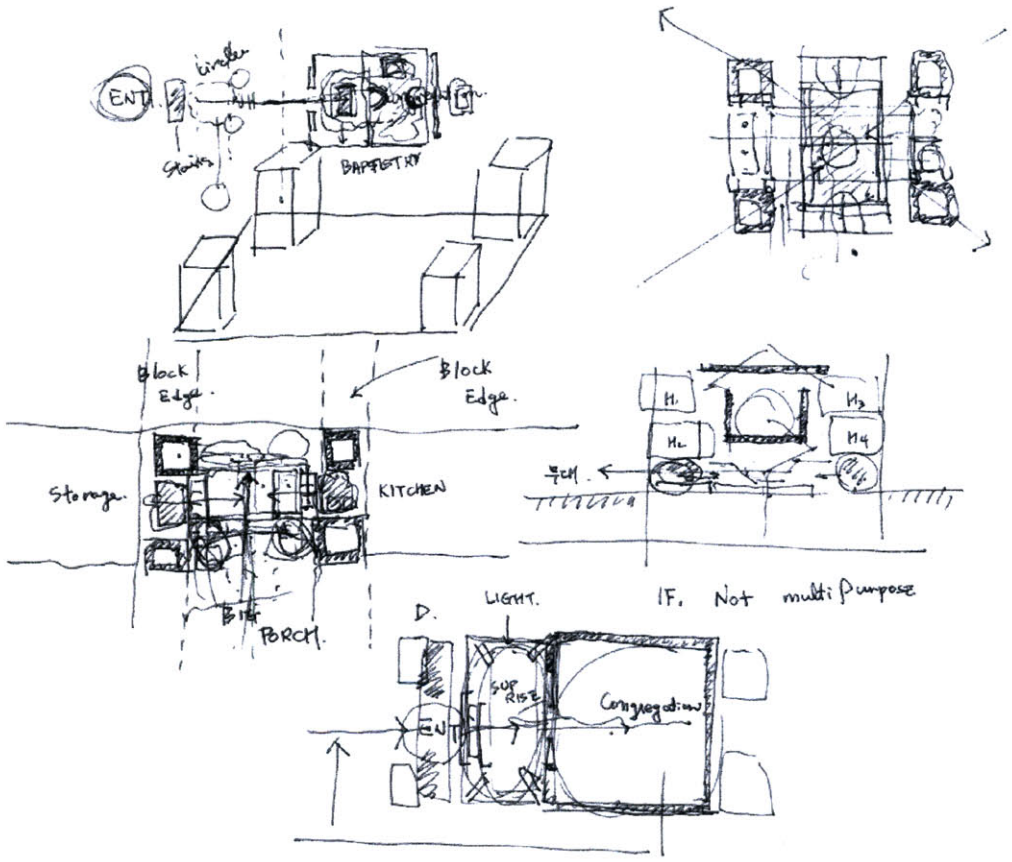


Fig. 61

Early concept sketches demonstrating the flexibility of interior spaces towards exterior courtyards. (Fig. 62) It was constant tuning of open spaces and movement, as the concept's key issue - nurturing of mutual relationship among members by communal activities - was to gain flexible spaces to accommodate various activities.

Fig. 62



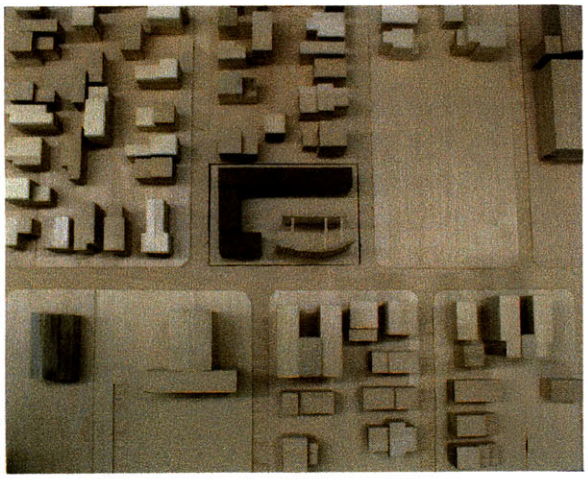


Fig. 63

Previous concept scheme changed as it respond to the site. Center congregation space is now facing Dana Square.

Fig. 64

In Fig. 65, green is for private gardens; blue is for public garden; red is main access; and, thick black represents how it should be closed to the northern part of the site.

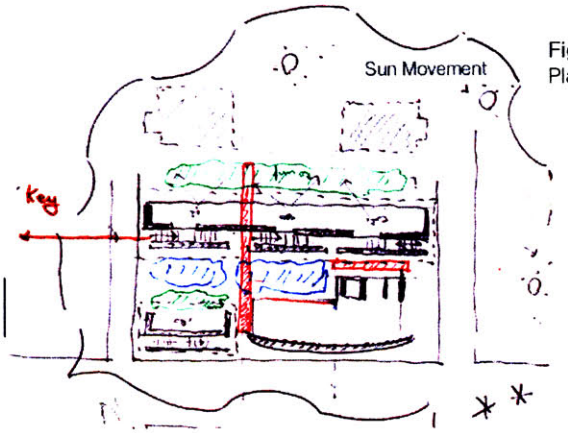


Fig. 65
Plan Diagram

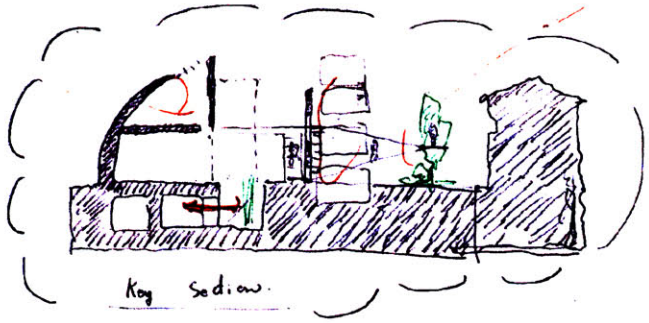


Fig. 66

Plan (Fig. 65) and section (Fig. 66) diagrams demonstrating movement and spatial arrangement. Fig. 66 informed how the distances should be arranged to be ecologically responsive.

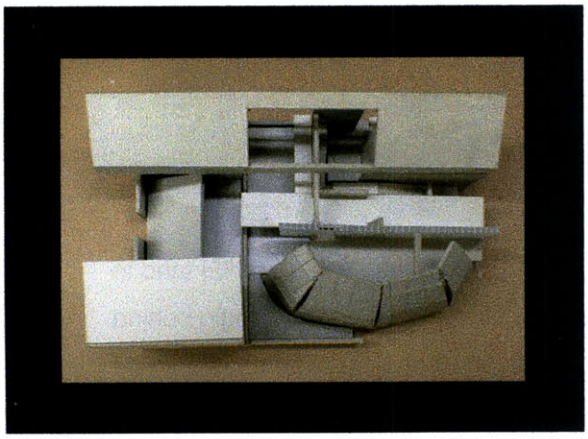


Fig. 67

Church standed out from the rest part of the complex.Parabolic form derived to provide better performances to the sacred space both acoustically and lighting-wise. Roofs of the houses were adjusted to the
south orientation.

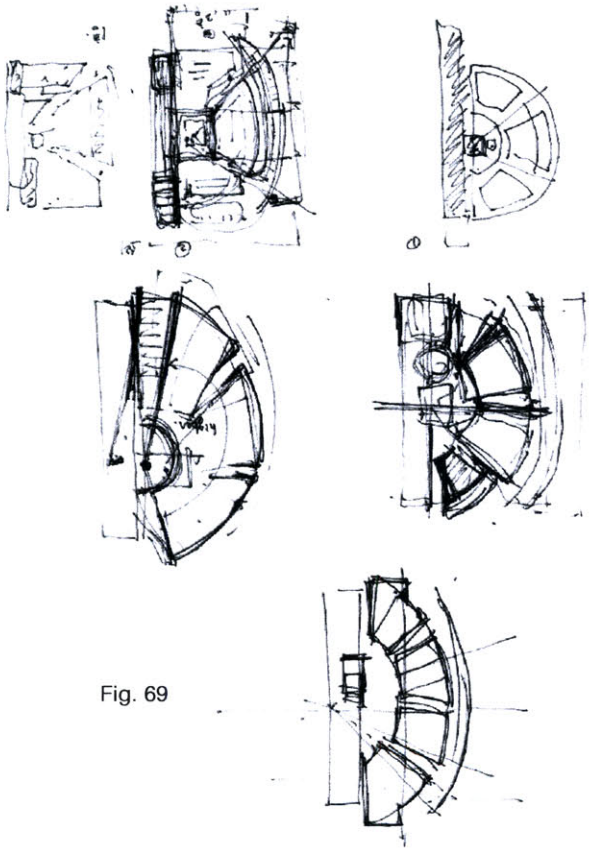


Fig. 69

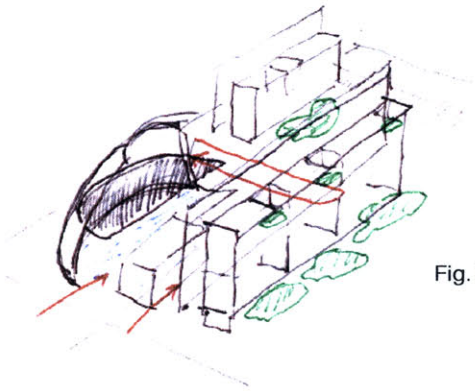


Fig. 68

Axon (Fig. 68) showing how courtyards of the church and housing should be placed in relation to orientation. Red line designates an earlier idea of how the communal threshold and public access should be arranged.

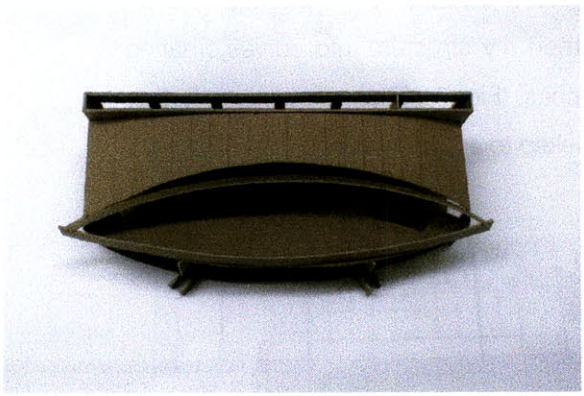
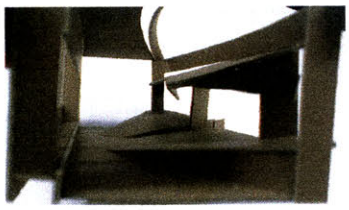


Fig. 70

I began focusing on the church part, to seek other variations. (Fig. 69) Main consideration was sound and structure.

To give equal proximity to the source of sound was a main concern.

Fig. 71



Sound (Fig. 73) and light (Fig. 72) tend to travel better in curves. Thus, logic behind this curvilinear configuration is to maximize acoustic and lighting performances.

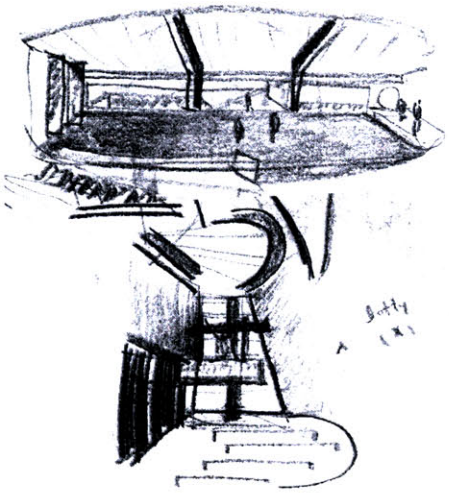


Fig. 72

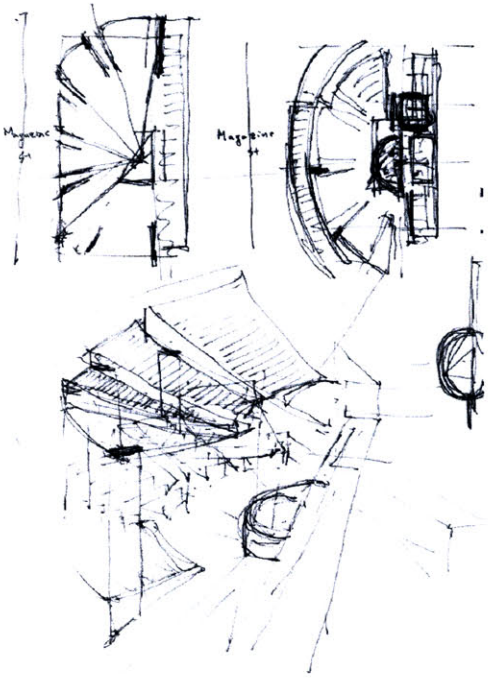


Fig. 73

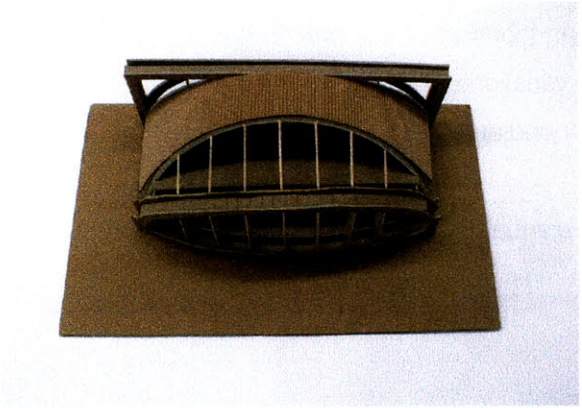


Fig. 74

To have consistent morphology, I even turned my structure into curves,creating arches. (Fig. 74) Then, my thinking further seeked to achieve minimal supports.

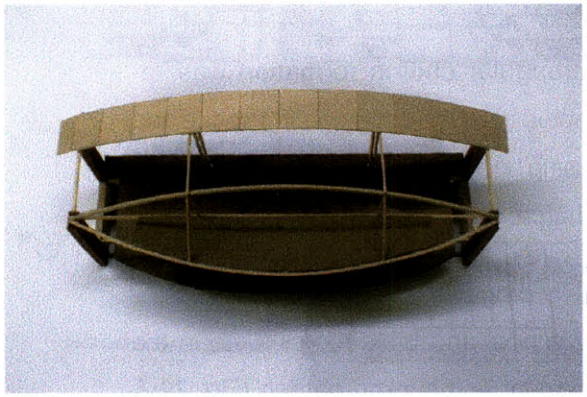
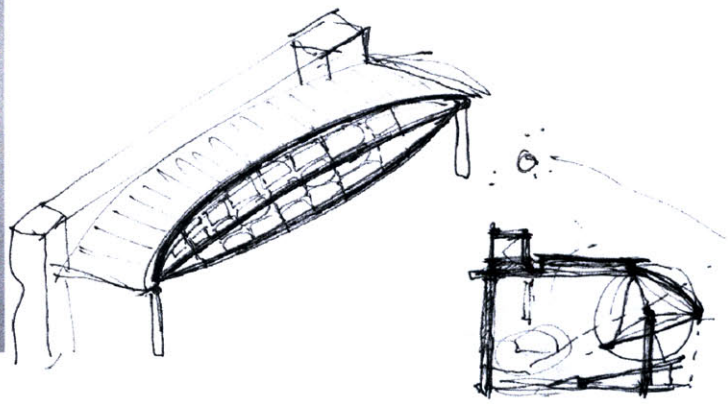
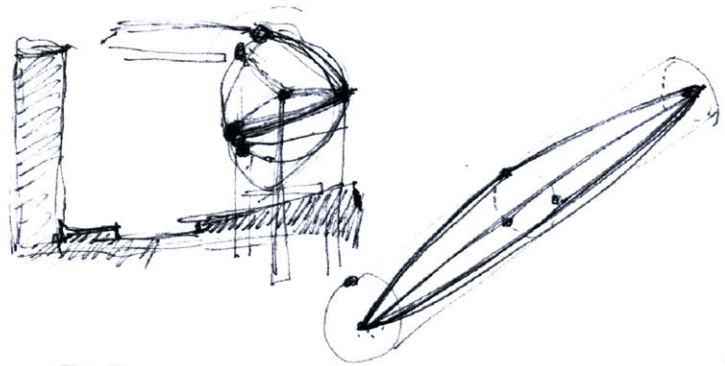


Fig. 75





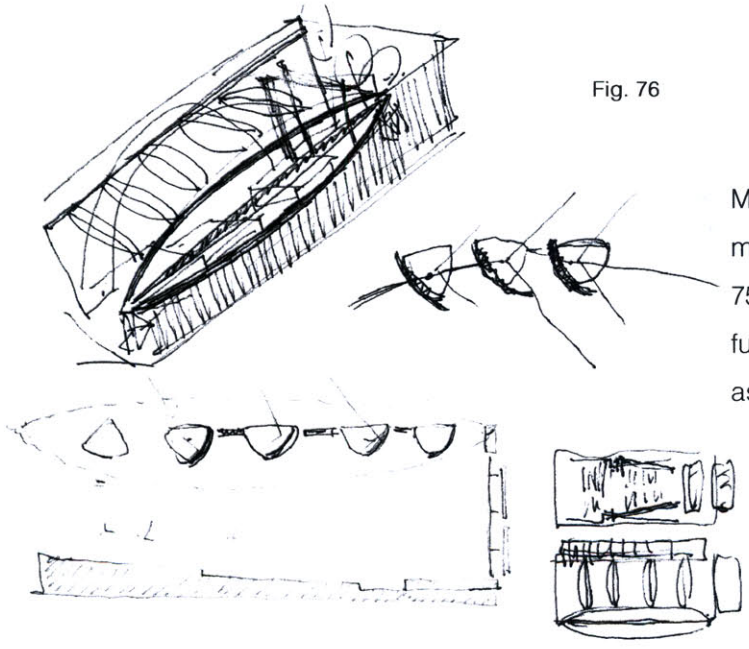


Fig. 76

My thinking further developed to Seek a minimally supported lenticular truss (Fig. 75 & 77) frame that actually function as lighting and acoustic device as well. (Fig. 76)

Fig. 77

However, I decided to abandon this symbolic and poetic formation. Because the configuration counter-argued what I believed how a church should be. A church should be more about communal activities among members than ritualistic services.

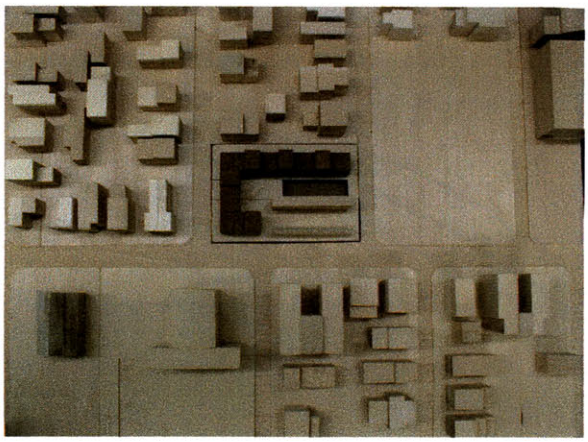


Fig. 78

Rectangular church formation was re-adapted to let the congregation space and housing be acknowledged as one structure: a church.

Initially, program-wise, study rooms for Sunday school and bible rooms were in the basement and sunken garden (Fig. 79 & 80) was organized to provide more natural light.

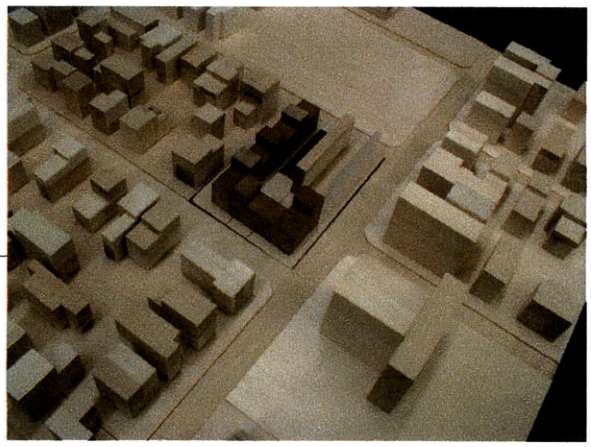


Fig. 79

Later, function of the first floor and basement exchanged to fulfill the flexible function of the communal room on the first floor. (Fig. 86) Conversely, communal activity room needs to extend out to the exterior frequently.

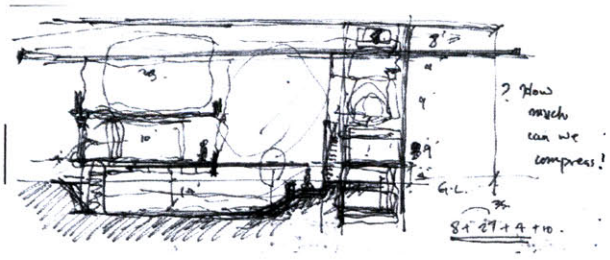


Fig. 80

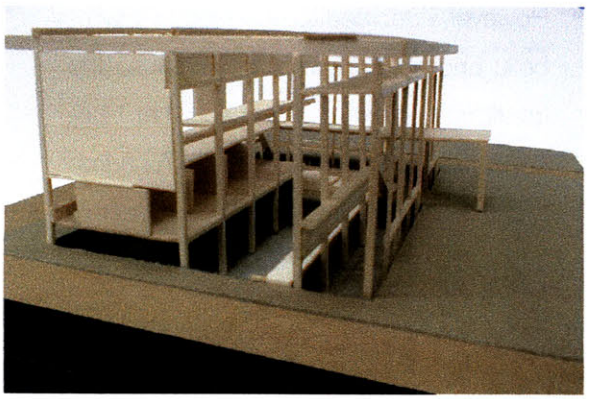


Fig. 81

At this stage, I began thinking about providing roof gardens (Fig. 79 & 80 & 81) to the housing on the upper floor.
Consequently, even the communal rooms – living and dinning rooms of the houses which this thesis regards as weekday churches – obtained flexibility in its size and use.

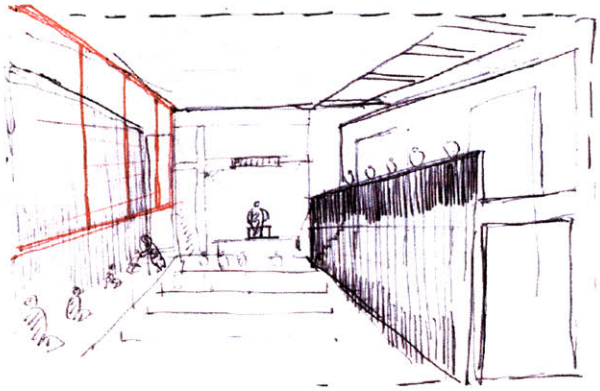


Fig. 82

Fig. 83

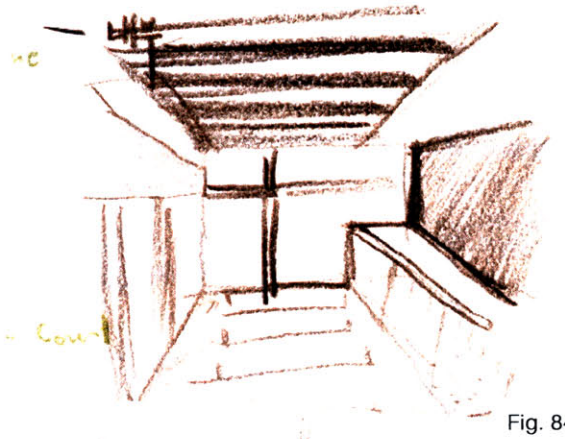


Fig. 84

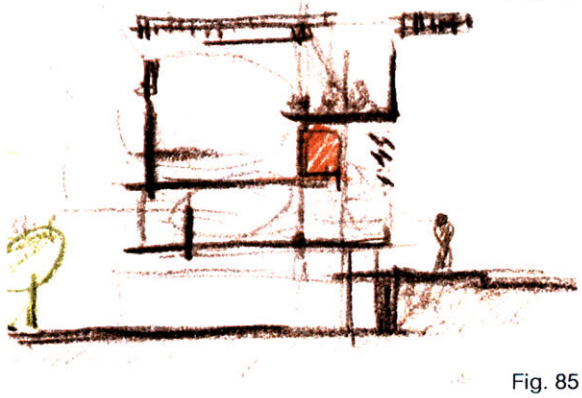


Fig. 85

Uniqueness of Sunday service at BBC lies in its invitation hour after the sermon. Members who are spiritually touched by the Words of God come out to confess his/her dedication towards God. Corridor on the left hand side in Fig. 82 is for that purpose.

I also began considering church's relation to the Magazine Street and sunken garden. (Fig. 85 and Fig. 86)

Since longest edge of the complex was going to face Magazine Street, I wanted to provide glazing to let the pedestrains fully enjoy the visual depth of space inside which otherwise would have been bleak and dull.

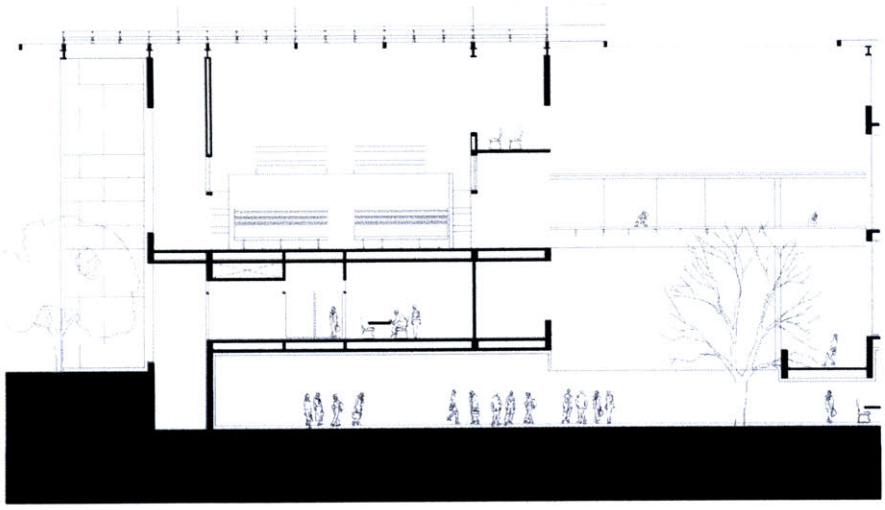


Fig. 86

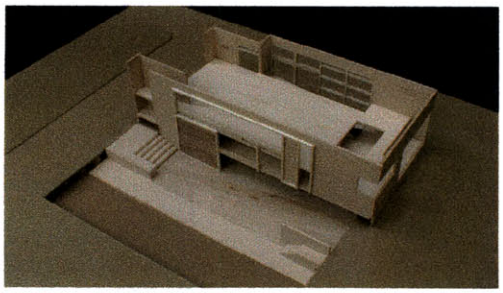


Fig. 87

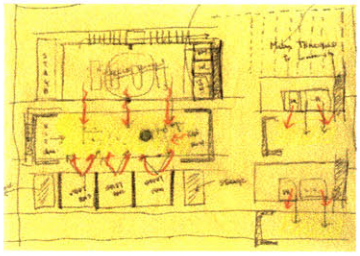


Fig. 88

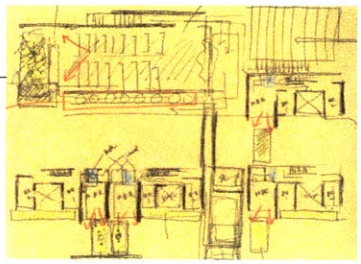


Fig. 89

Center courtyard was not only a flexible space (Fig. 87 & 88) for the communal activity room, but also a heart to the complex. From the beginning, I tried to visualize what the character of this center core would be an made a sketch. (Fig. 94)

Next consideration was the softness of edges at both ends: Dana Square and communal threshold. (Fig. 90 & 92) Final section in Fig. 92 clearly demonstrate how the layered space and trees create soft edges.

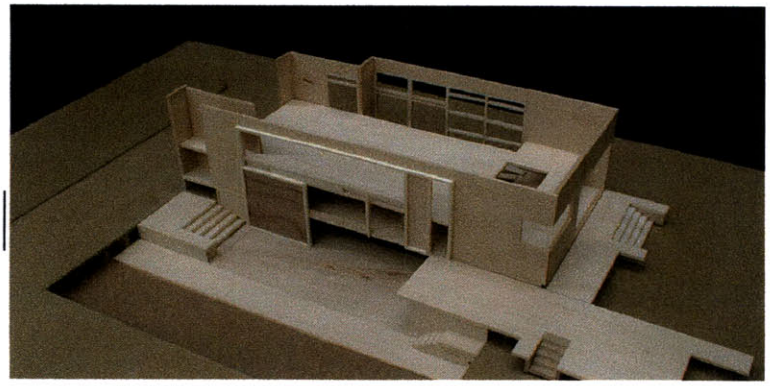


Fig. 90

Fig. 91

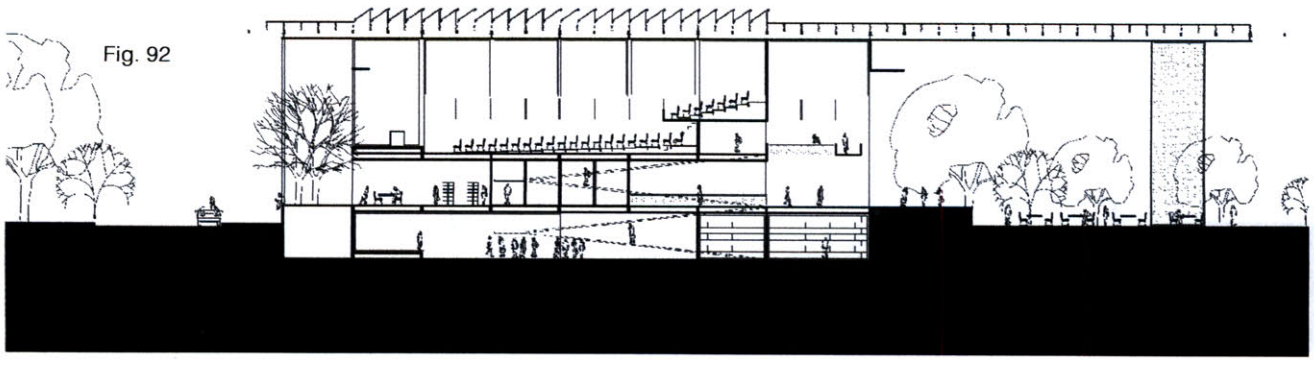
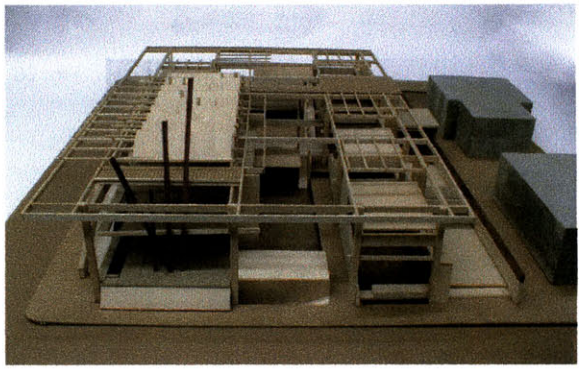


Fig. 92

Fig. 93



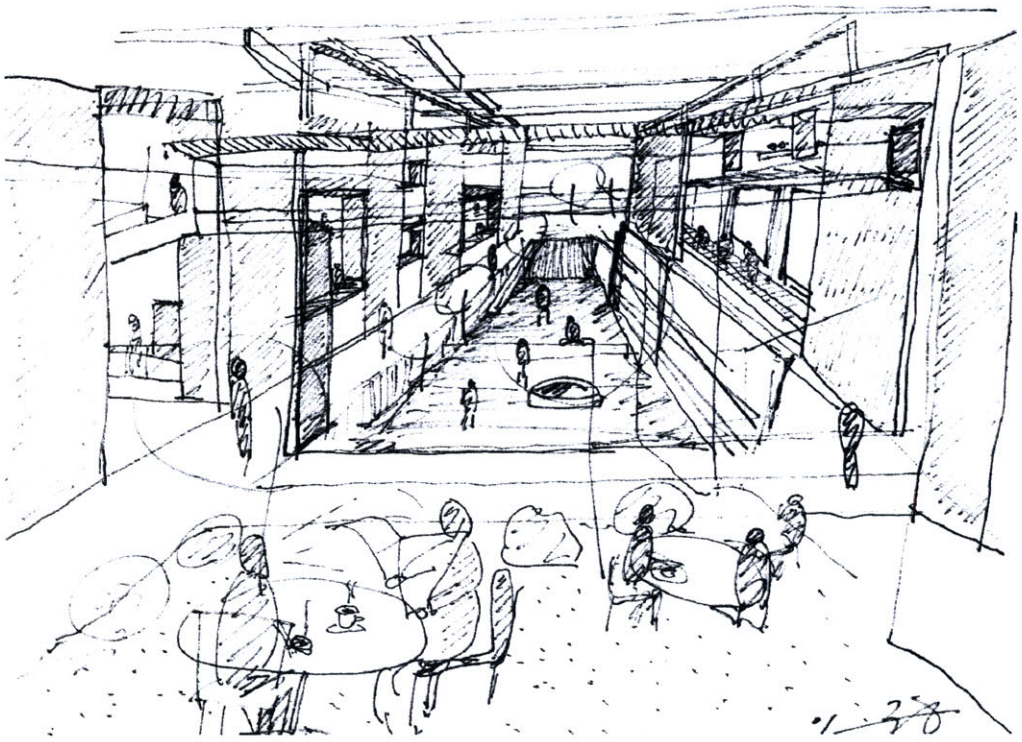


Fig. 94

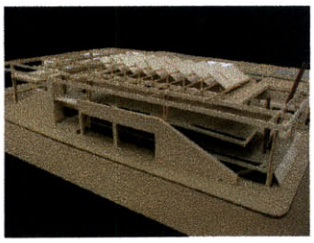


Fig. 95

Tectonically speaking, I wanted the whole complex to be perceived as a solid artificial platform with a hovering roof. Such articulation of the sectional form between terraced earthwork and (seemingly) light roof extends the domain horizontally. It establishes a territorial dwelling that invites outside and provides its richness towards outside.

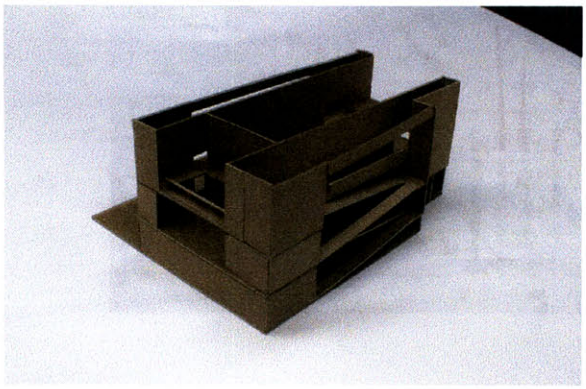


Fig. 96

Communal threshold at the corner was extremely Important as it related to the critical edges of the project: Magazine St., congregation space, sunken garden, and roof garden.

Seemingly out of scale, this communal entrance would not only be a delightful space for the members, but also after weekend service, Café Avec would be open to the neighborhood.

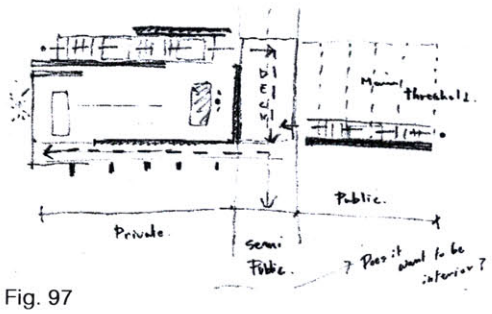


Fig. 97

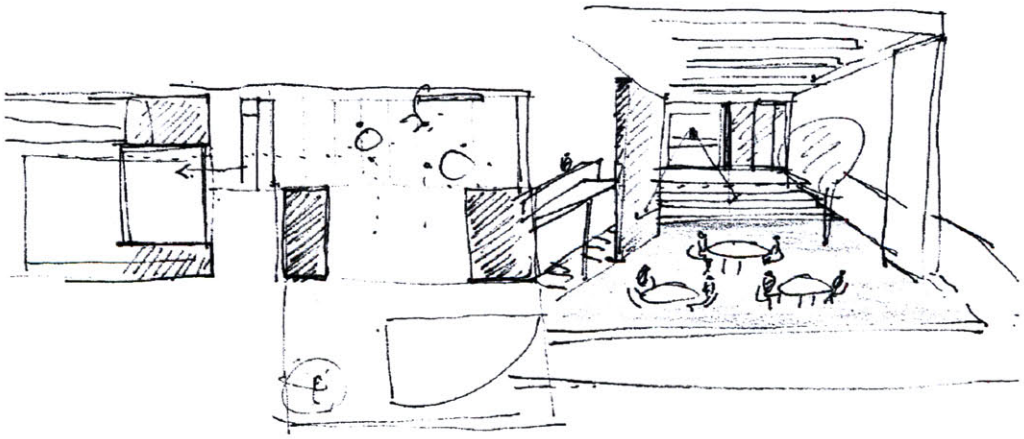


Fig. 98

Fig. 99

Fig. 100

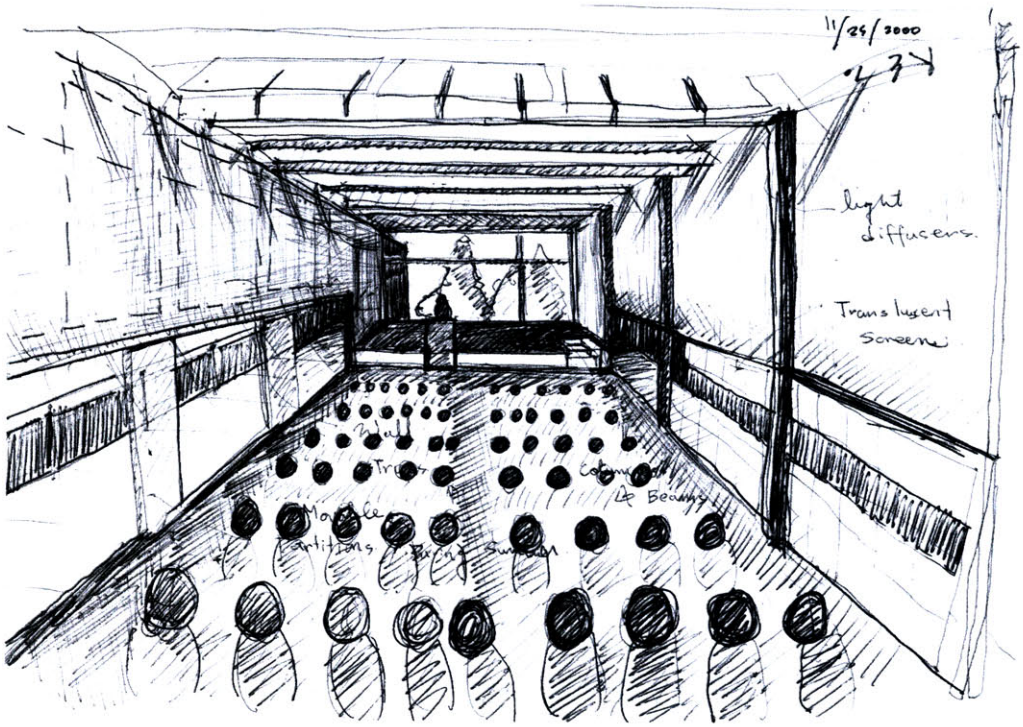
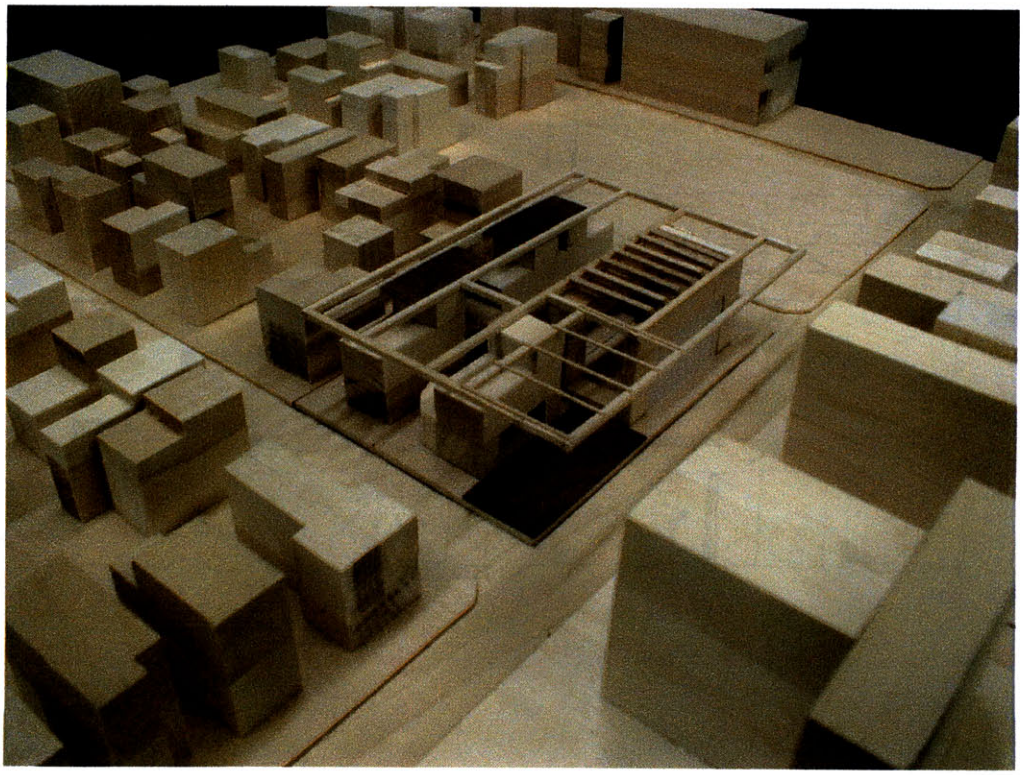
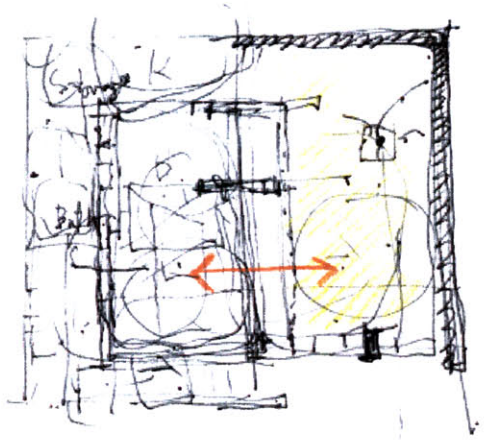


Fig. 101





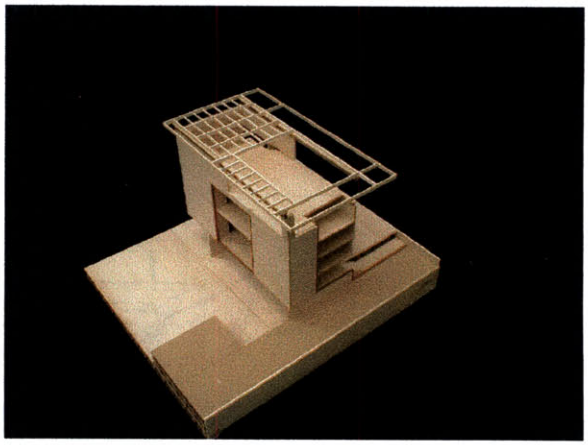


Fig. 102

In terms of housing (weekday churches), same principle applied as was in communal activity room and sunken garden. The dining and living rooms are together a weekday cell meeting place (Fig. 102), hence, the dining room and living room had to be a continuous room to organize bible study, sharing, and playing. (Fig. 105)

Moreover, when weather permits, these rooms had to extend out to the exterior to enlarge its domain to accommodate other activities.

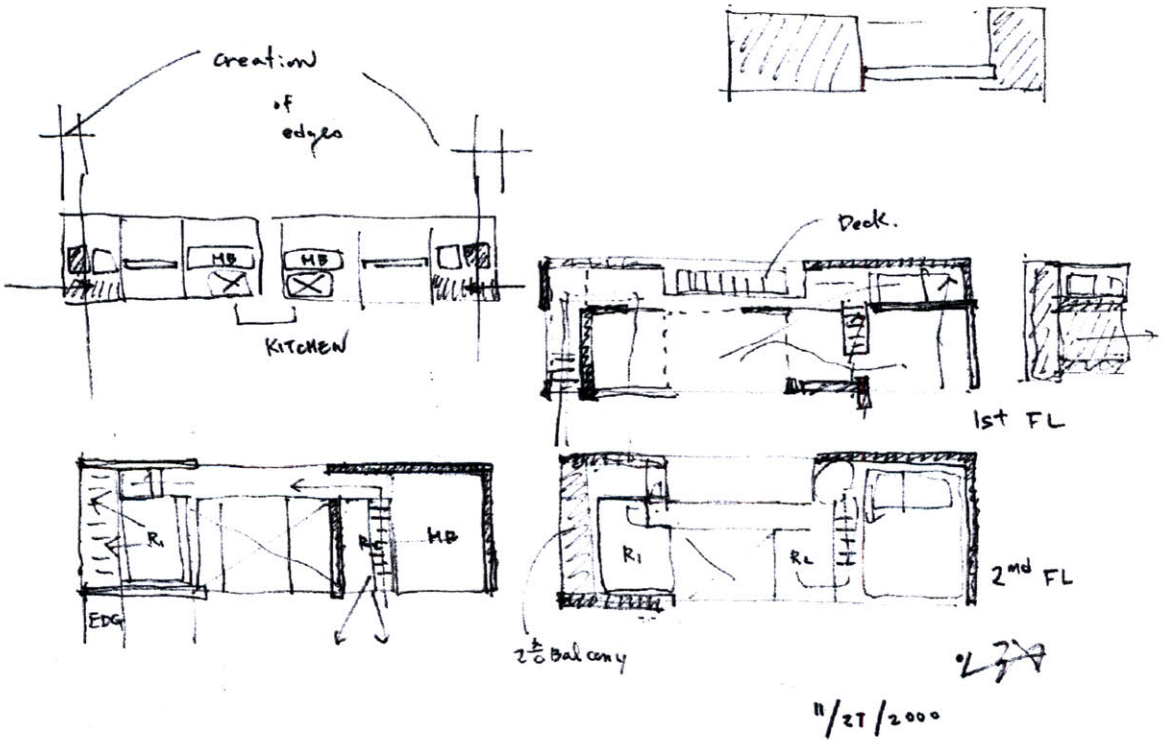
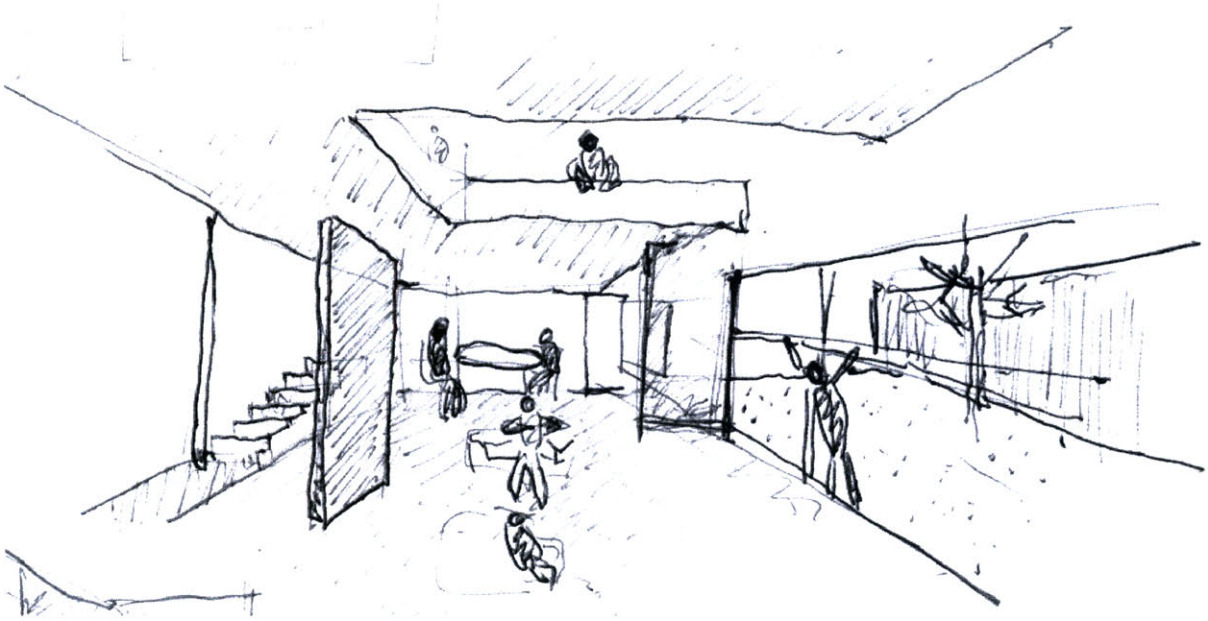
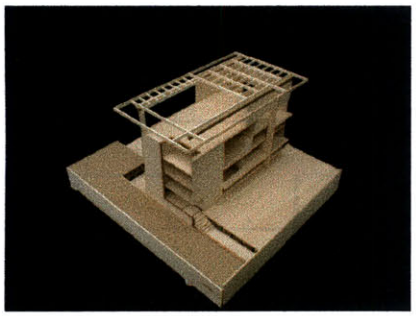


Fig. 104

Fig. 105





Entrance for the housing on the upper level had to be place on the fourth floor (Fig. 108 & 109) to have private domain on third floor and have living room on roof floor to extend out to the roof garden when necessary. (Fig. 103)

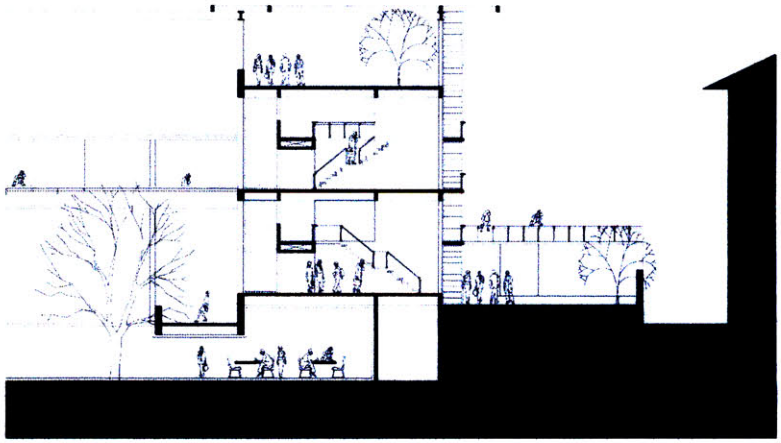


Fig. 103

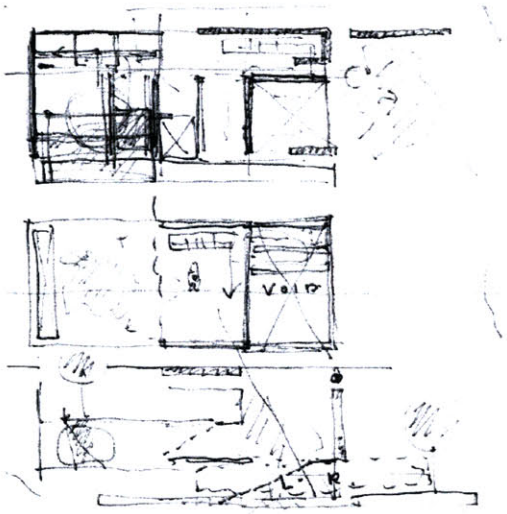


Fig. 106

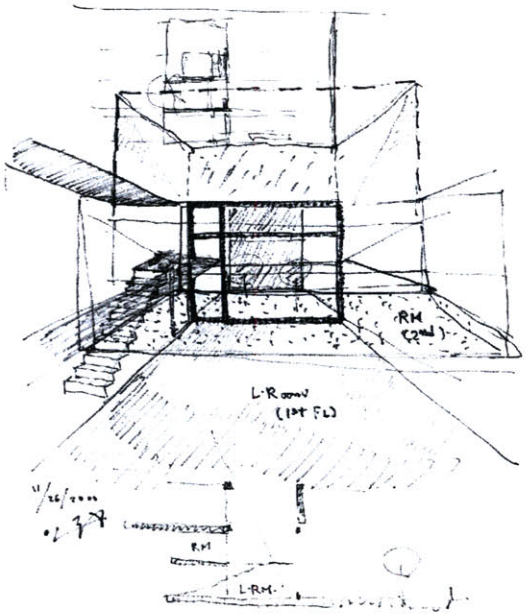
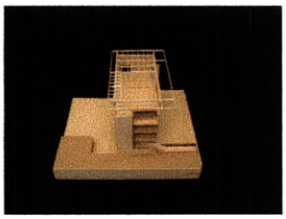


Fig. 107



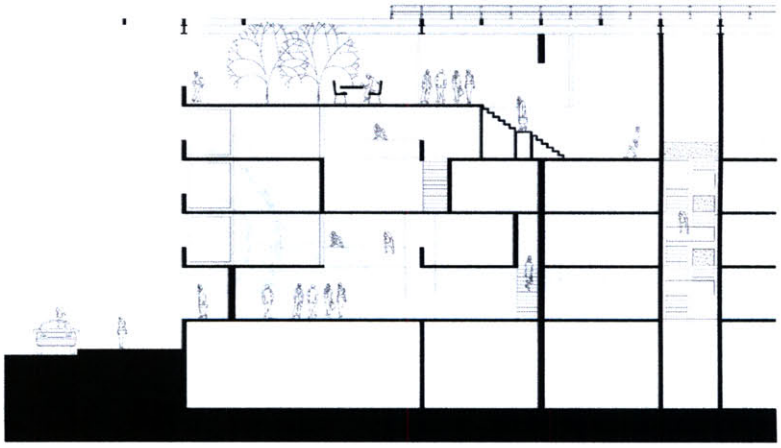


Fig. 108

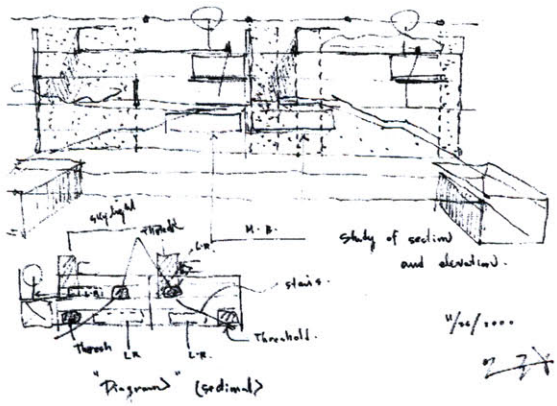


Fig. 109

I have tried to make edges of the houses soft. Recessed porch, balconies, and roof garden together constructed soft edge to the facing streets. (Fig. 108)

Fig. 110

The roof functions as shading.

The roof functions as light diffusers.

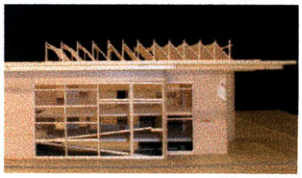


Fig. 111

The roof creates many edges.

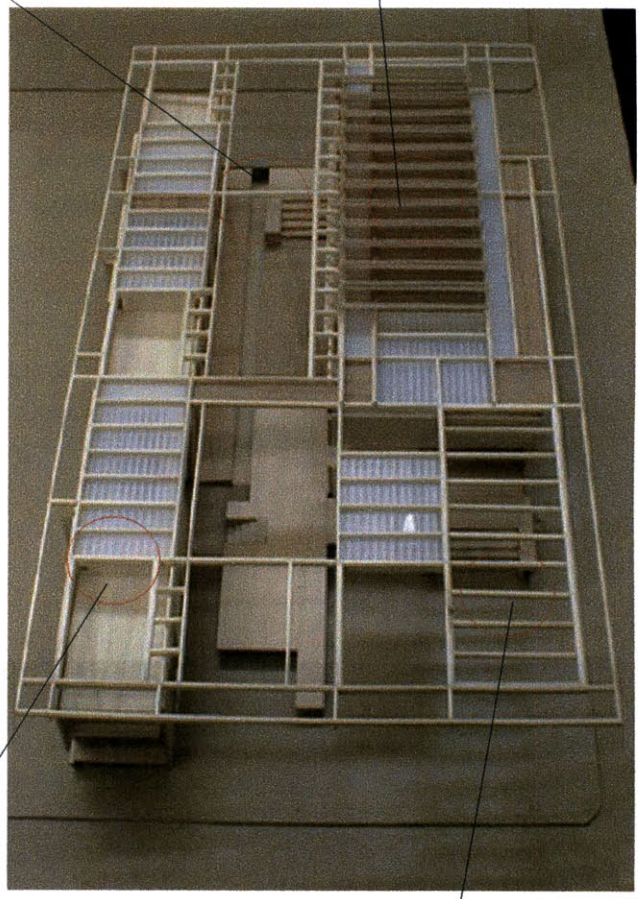


Fig. 112

There are at least more than five functions that the roof plays. It's seemingly dominant when observed top down, however, it is only at the roof garden where one actually perceives the oneness of the roof. Elsewhere, people will only experience partially feeling very pleasant. (Fig. 108)

Fig. 114

The roof functions as pergola.

The roof functions as glazing.

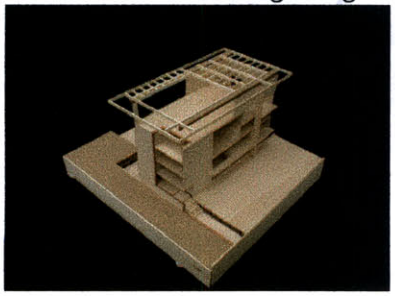
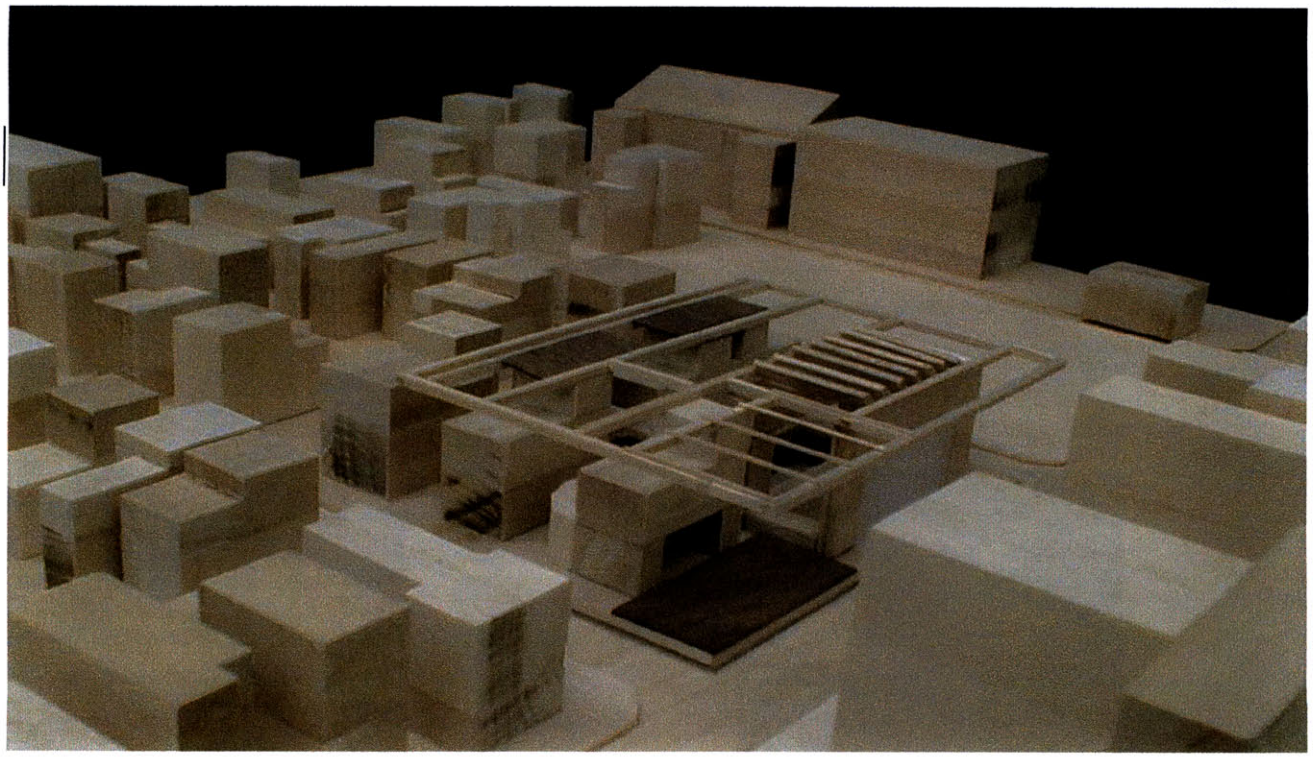


Fig. 113

final design

Fig. 115



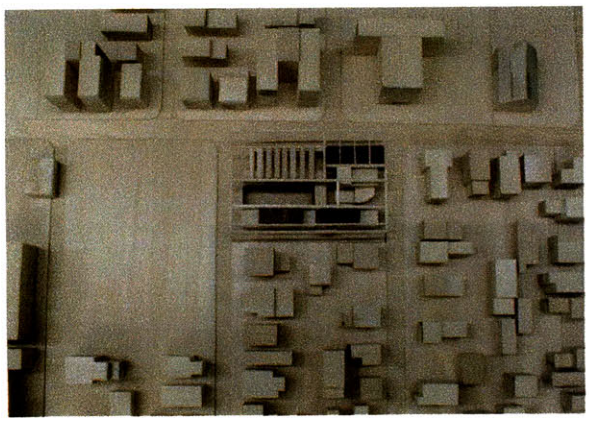


Fig. 116

From the bird's eye view, this site model is deceiving. Because the roof is seemingly dominant and misplaced. My argument, or defense, would be one will only be able to perceive the whole roof at roof gardens. As can be seen in my earlier sketches or the photographs on next page, when viewed at the ground level, this roof will provide pleasant edges and covering.

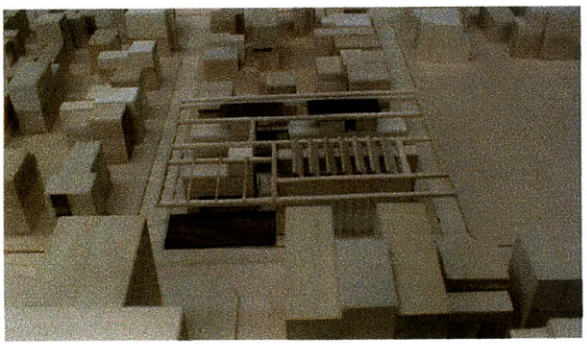


Fig. 117

Hovering lightness achieved by tectonic expression, this roof will not only invigorate communal activities among member, but also to the elementary school students who play hide and seek every recess hour in Dana Square. Moreover, during weekdays, the whole community will be open to neigborhoods providing terraced deck with strong visual attraction. Cafe Avec will act as an anchor for people in neighborhood to enjoy this place.

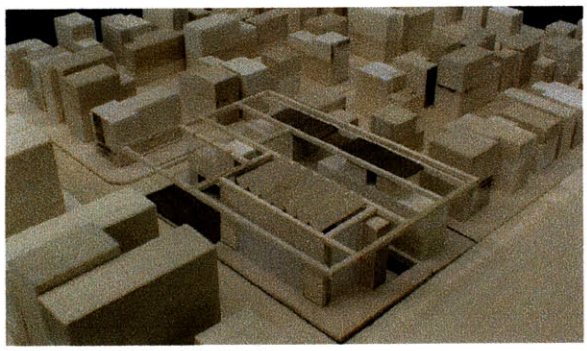


Fig. 118

Fig. 120

Fig. 119

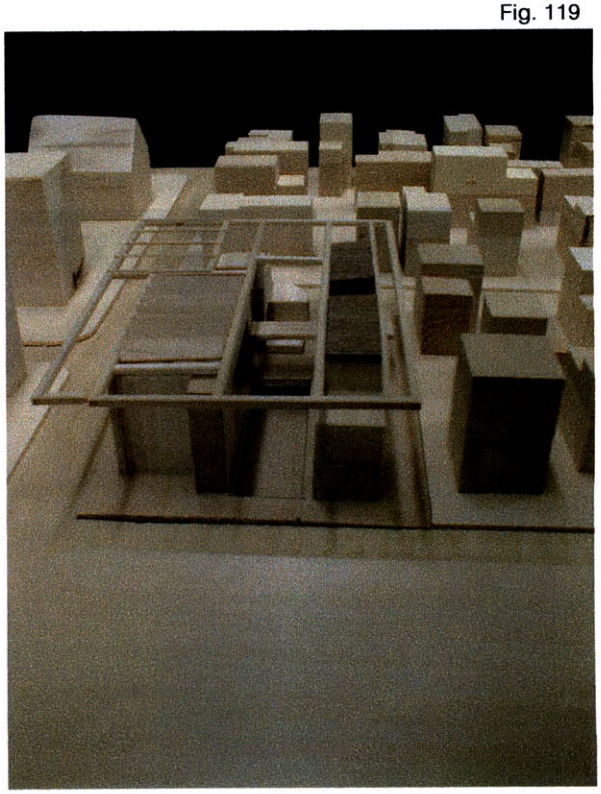
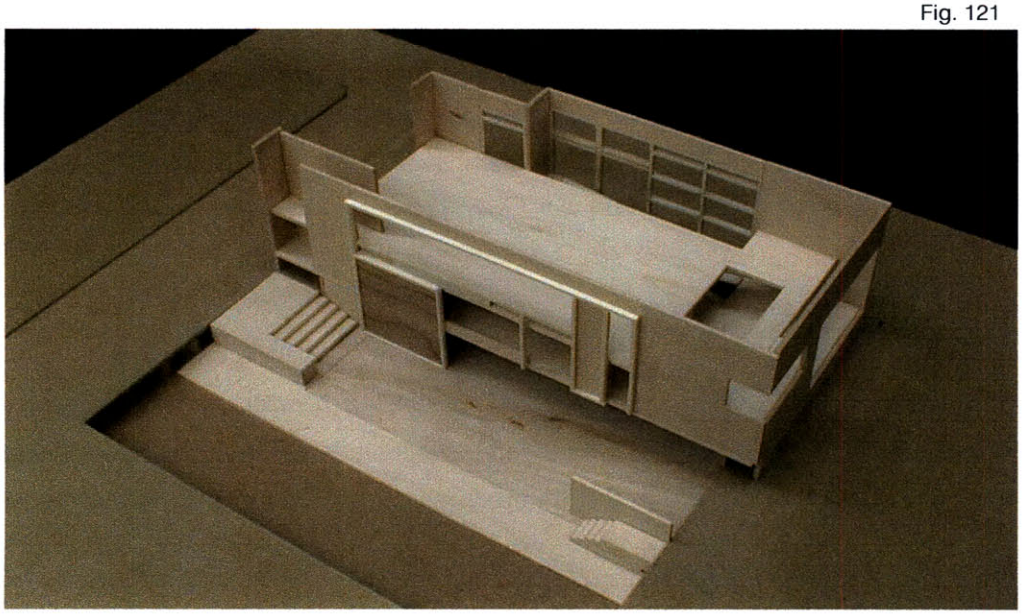


Fig. 121



These four images demonstrate critical issues involved in this thesis. Fig. 121 explains how the communal room in basement could exend out to the exterior when necessary. (The issue of flexibility) Fig. 122 is the movement system between the communal threshold and the core of the complex. This artificial deck functions as an entrance to congregation space, public acess to the complex, and a terrace for Cafe Avec.
(The issue of public access to the community)

Fig. 122

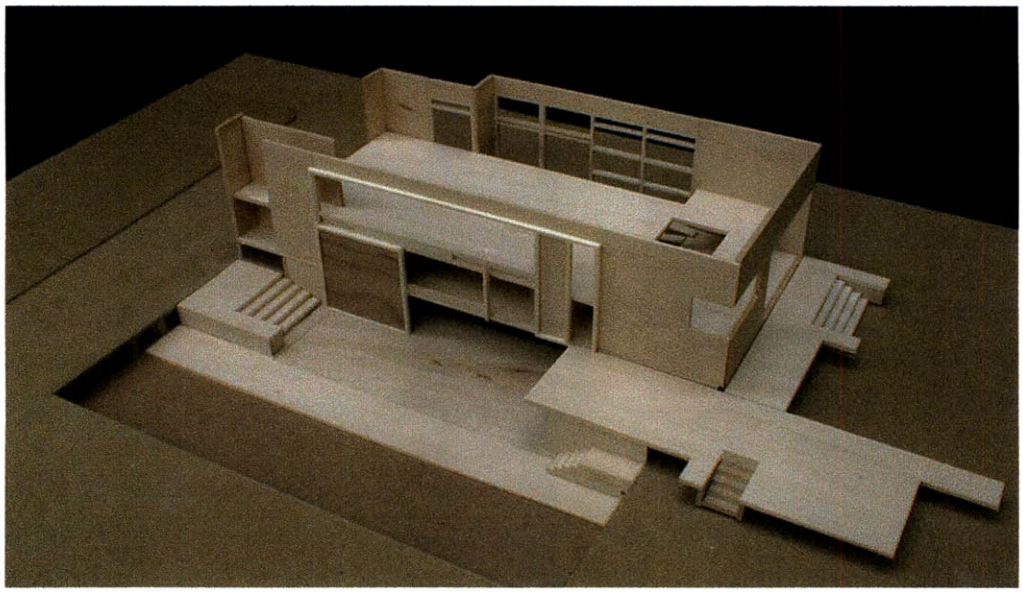


Fig. 123

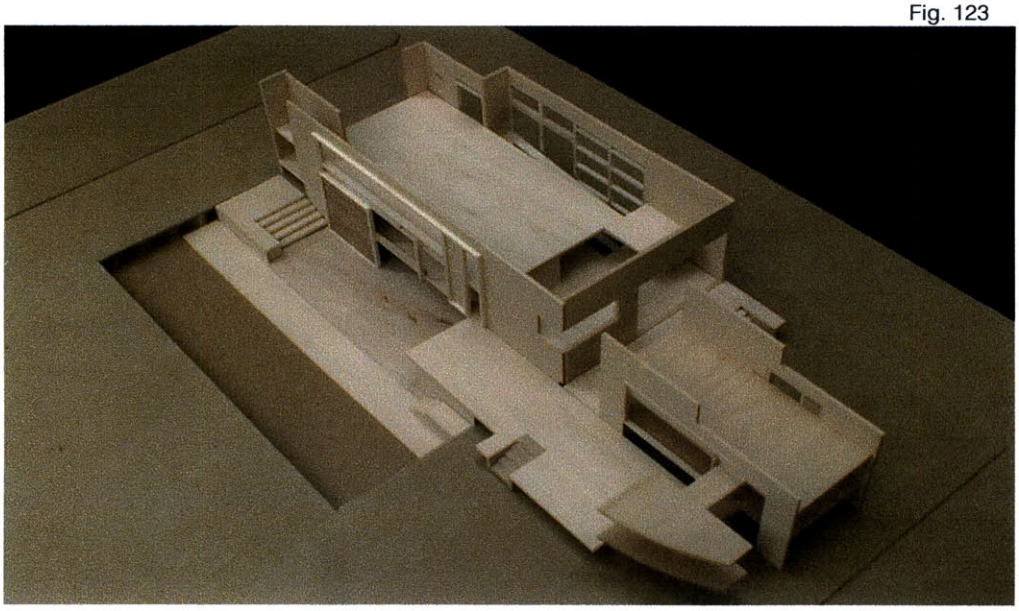
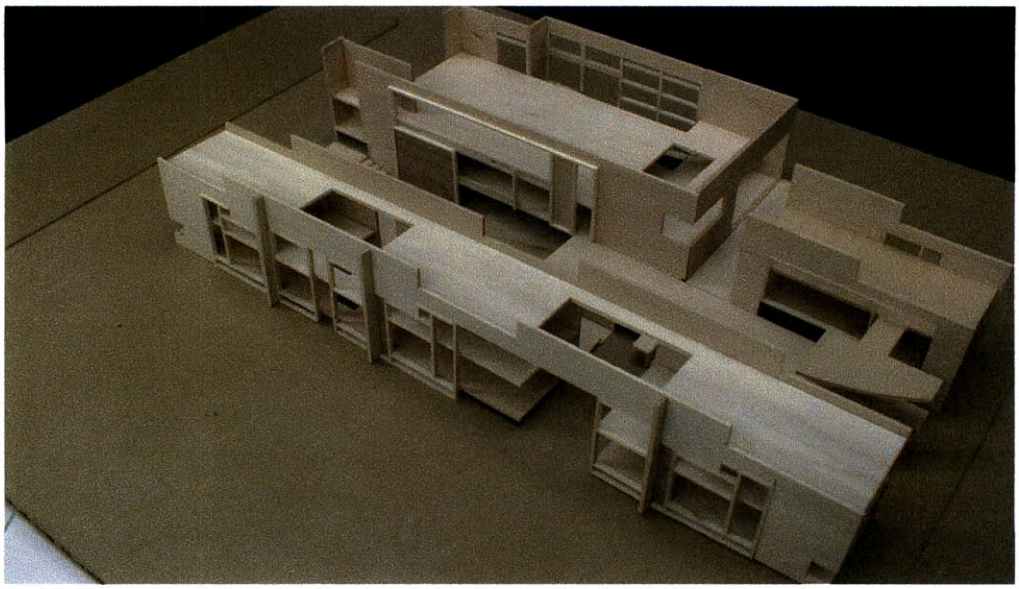


Fig. 123 and Fig. 124 demonstrates how the housing will be organized. They were carfully distanced and adjusted to meet ecological aspects. Cold winter temperature was main stressor, hence, maximizing daylighting was most critical. Every house had either a yard or a roof garden to gain flexible conditions to dining+living room which will act as week-day churches. All the roof gardens were placed to face streets to create deep edges.

Fig. 124



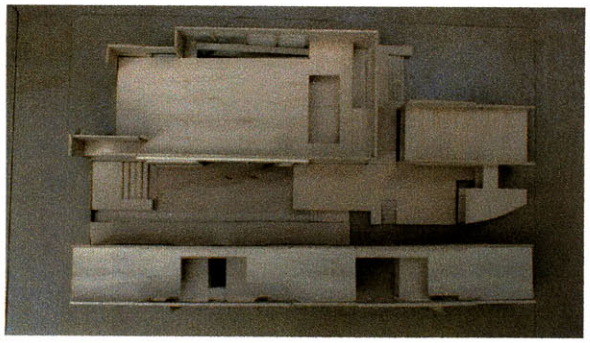


Fig. 125

Fig. 126

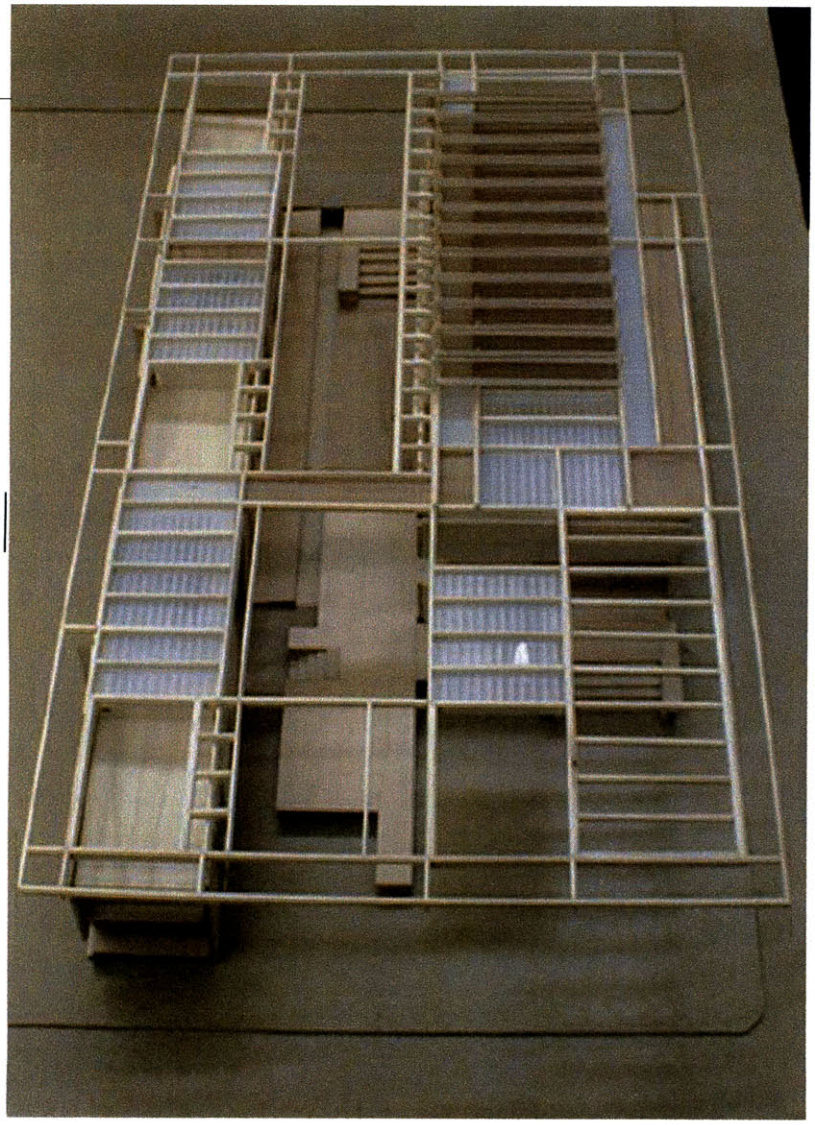


Fig. 127

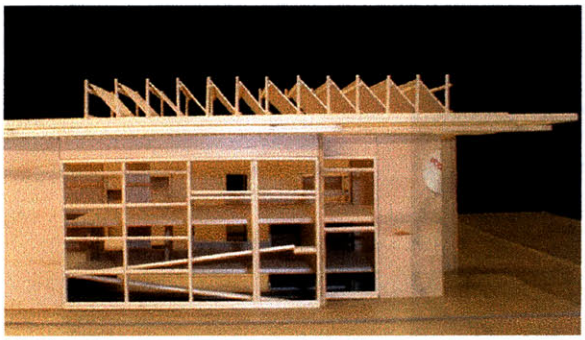


Fig. 128

Glazing and ramp were placed to allow visual depth to the Magazine St. (Fig. 128)

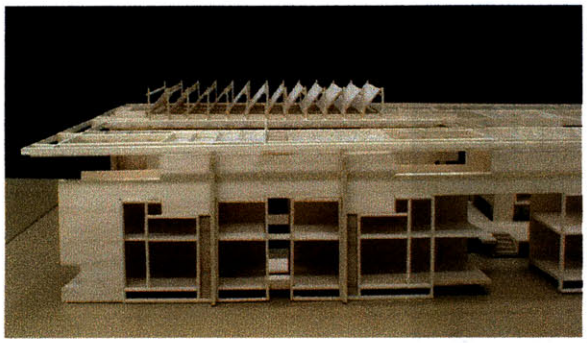
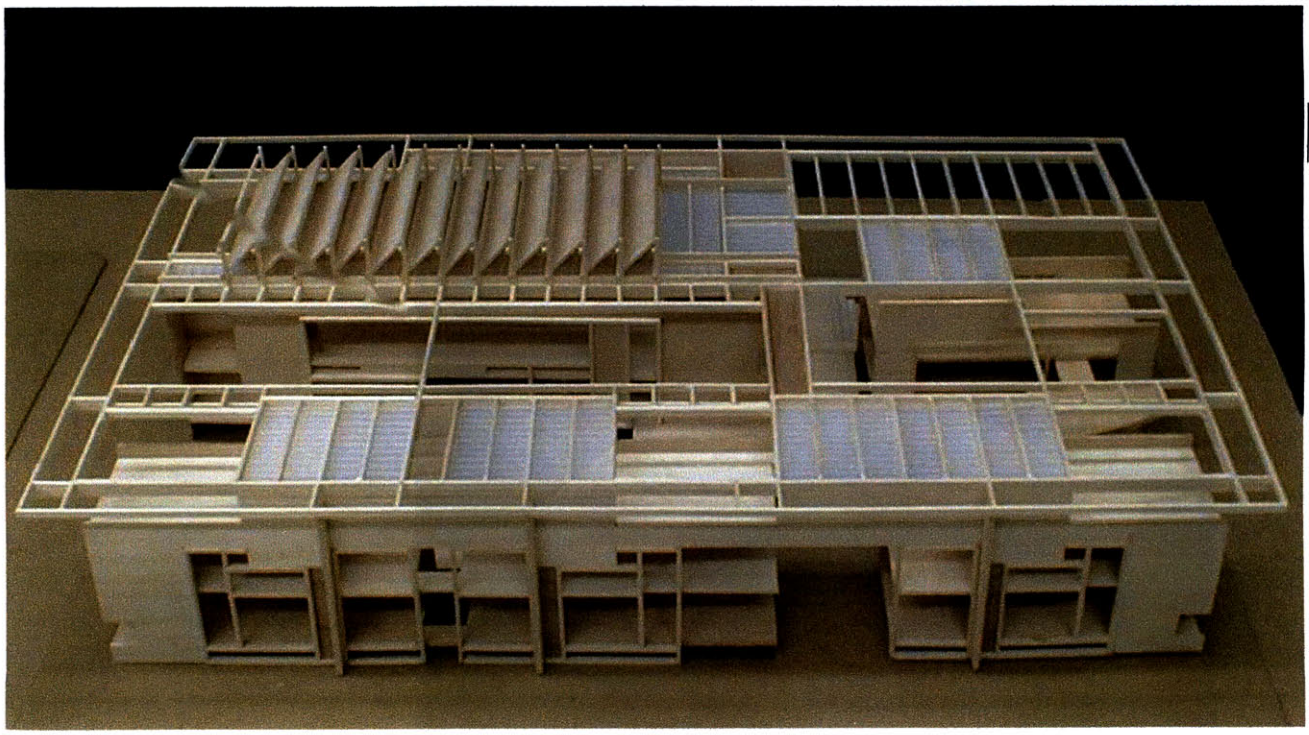


Fig. 129

Fig. 130

See how partially the roof will be perceived at ground level. (Fig. 130)

Fig. 131



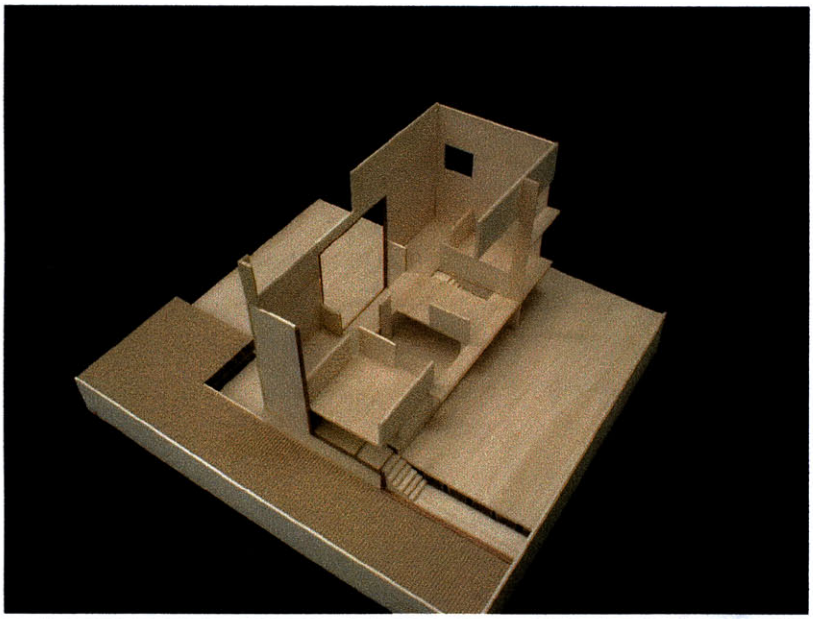


Fig. 132

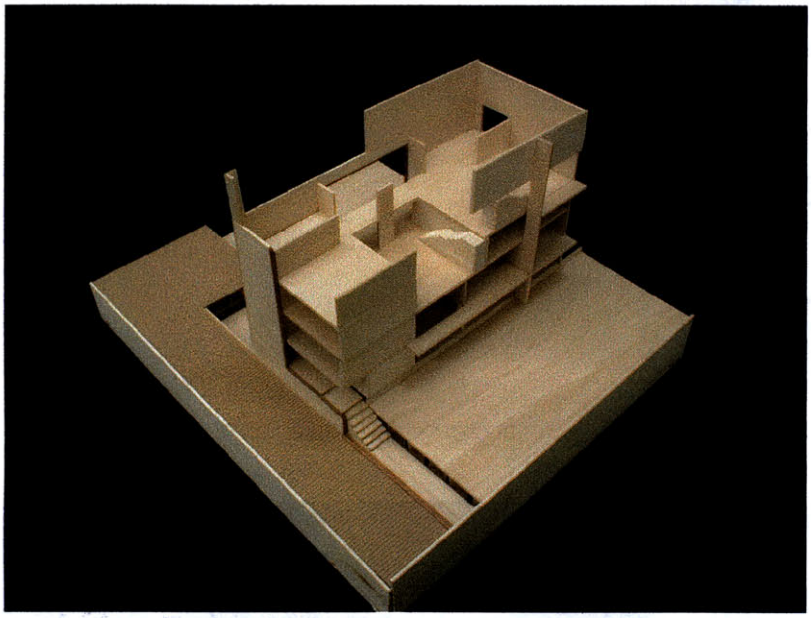


Fig. 133

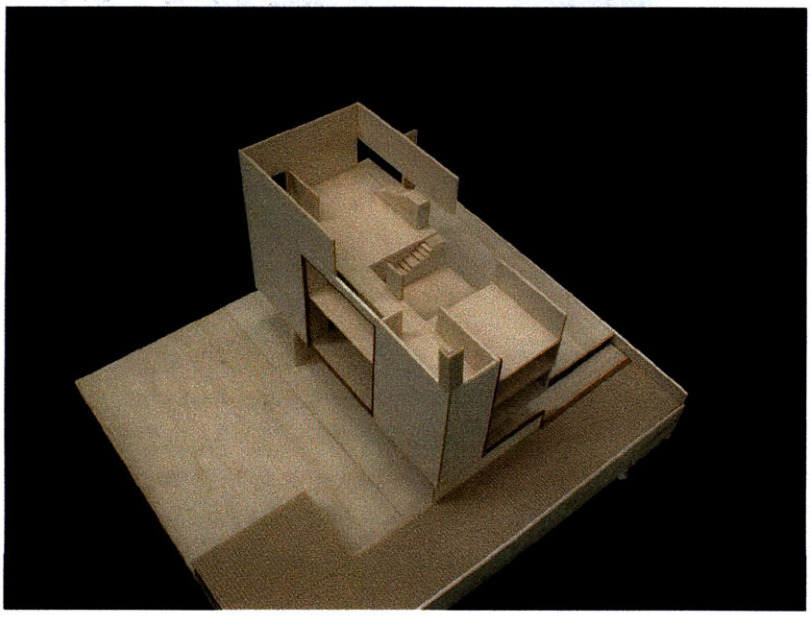


Fig. 134

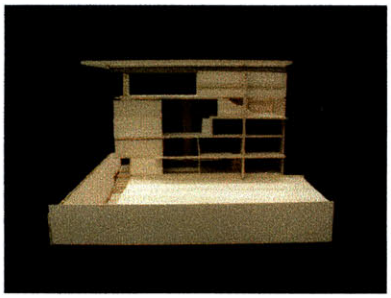


Fig. 135

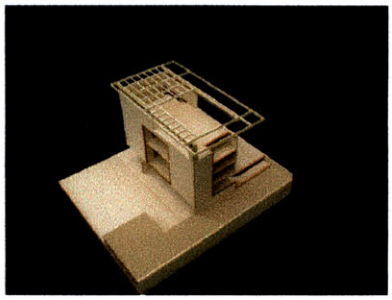


Fig. 136

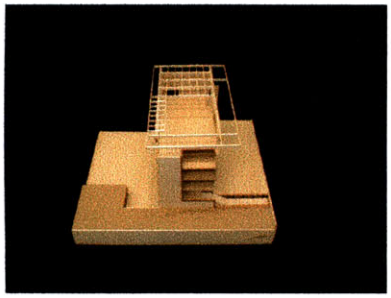


Fig. 137

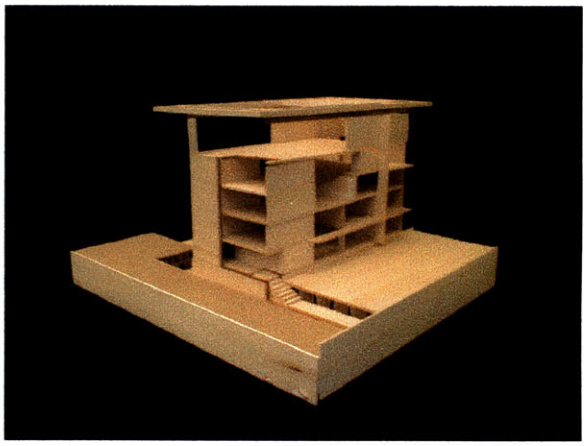
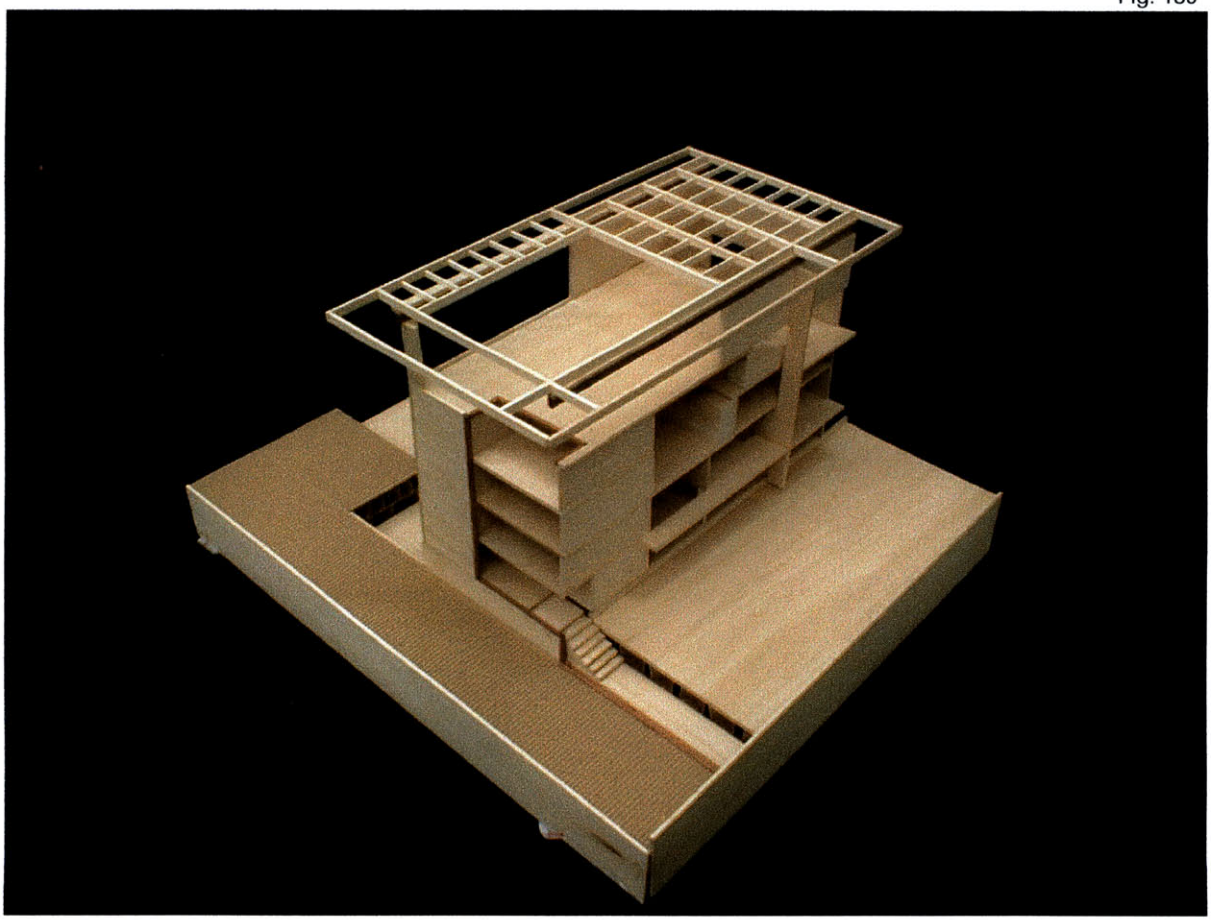


Fig. 138

Fig. 139



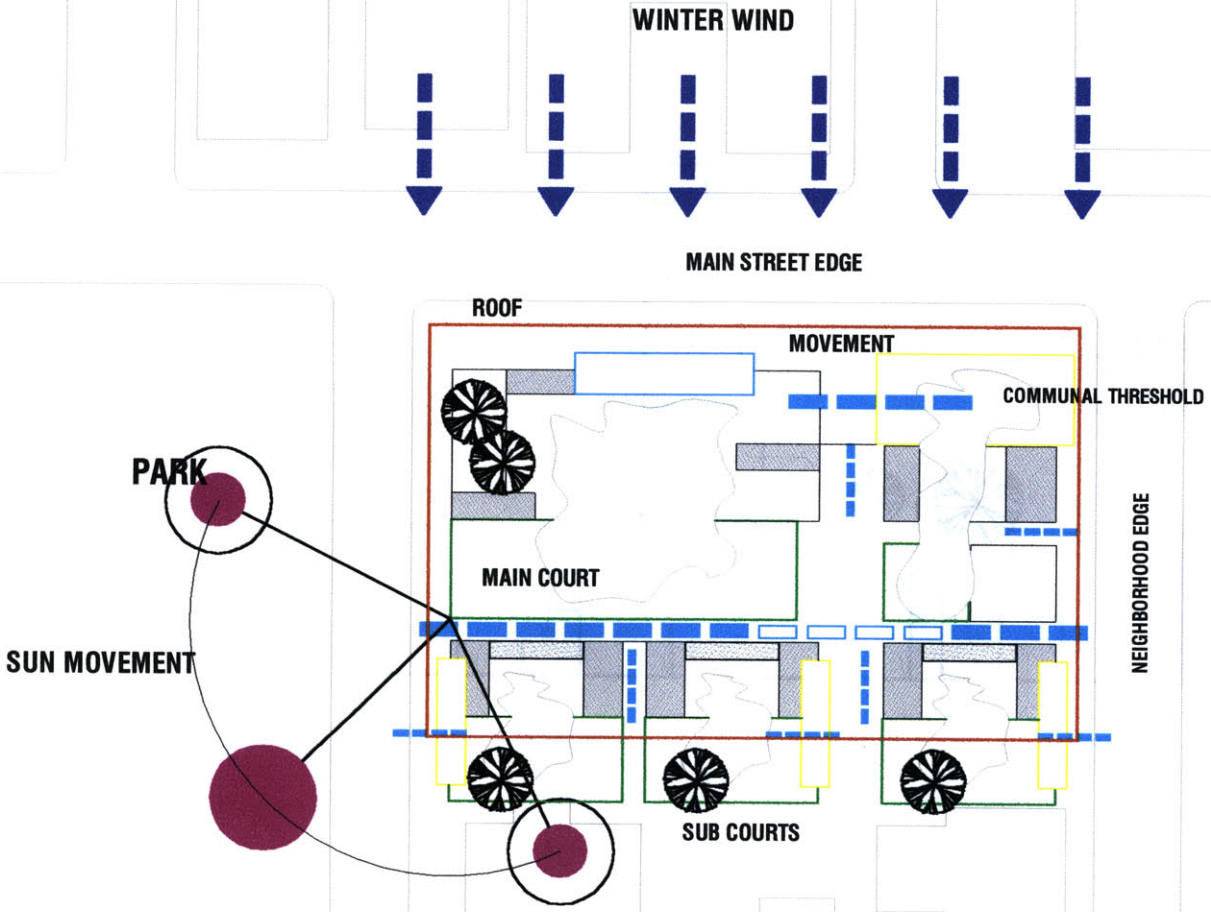
final drawings

note

This diagram was developed at the later stage of the design process. After the conceptual diagram, ecological aspect, openspaces, communal crossing, and movement sytem were considered.

Plan Diagram

NORTH , NON-SCALE



Sunken Floor

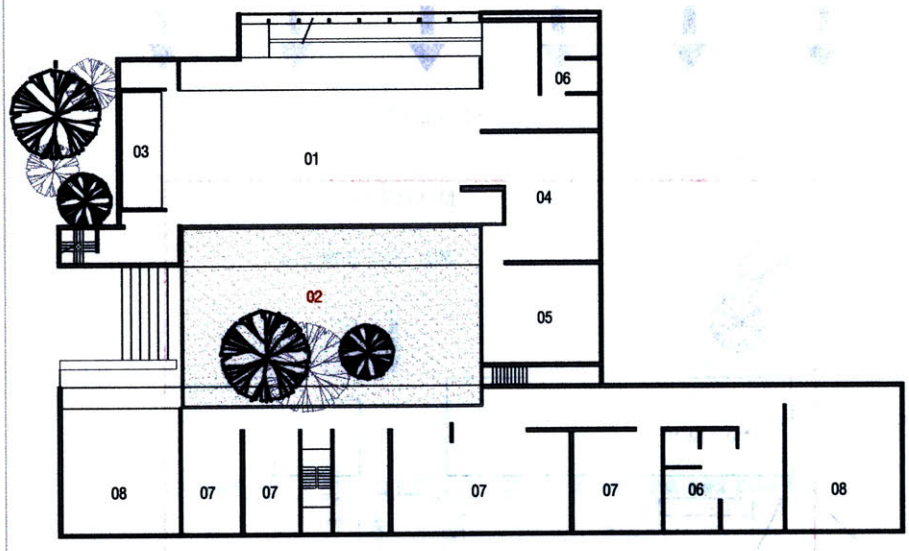
NORTH , SCALE 1'=1/64"

legend

01 Communal Activity Room
02 Open Space (Sunken Garden) for 01
03 Stage
04 Kitchen
05 Kid's Room
06 Washing Closet
07 Classrooms for Korean School
08 Storage

Magazine Street

Dana Square



legend

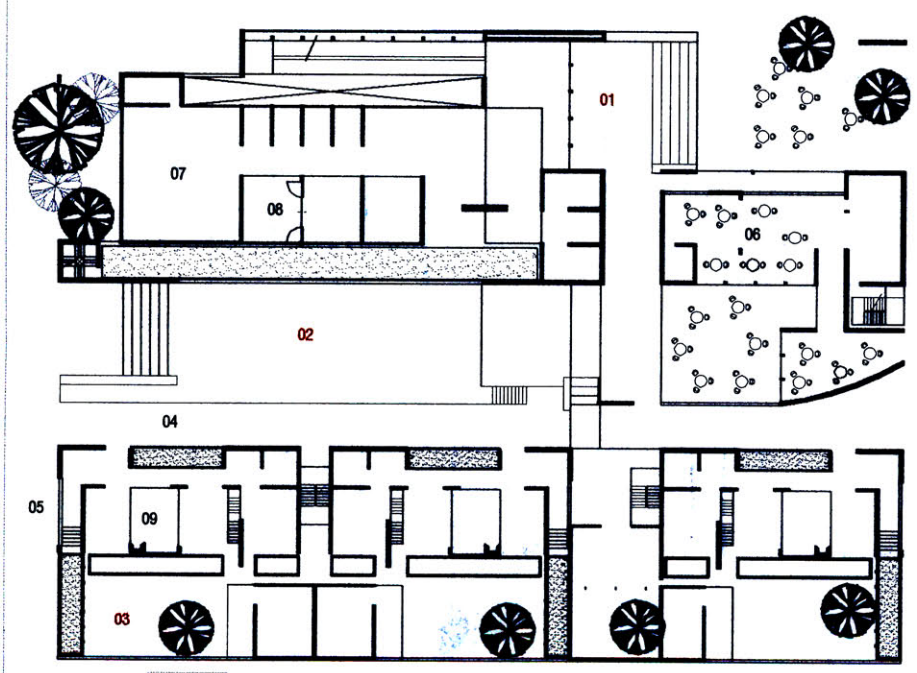
01 Communal Threshold
02 Open Space for Communal Activity Room
03 Open Space for House
04 Public Access
05 Threshold for House
06 Cafe Avec
07 Library
08 Study Rooms
09 Living + Dining Room

First Floor

NORTH , SCALE 1'=1/64"

Magazine Street

Dana Square



Second Floor

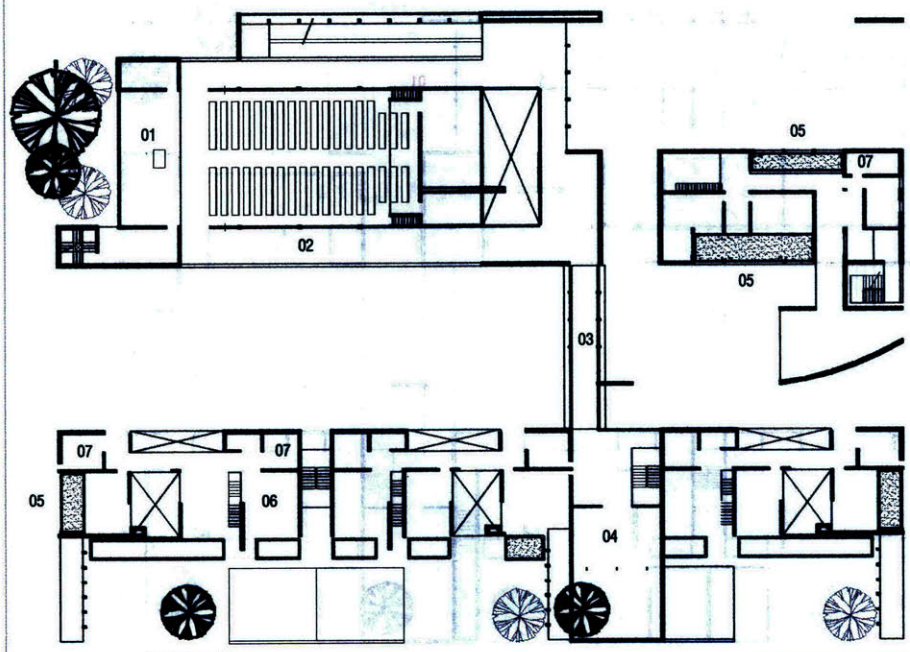
NORTH , SCALE 1'=1/64"

legend

01 Liturgical Space
02 Dedication Corridor
03 Bridge to Pastor's Room
04 Pastor's Room
05 Balcony
06 Master Bedroom
07 Washing Closet

Magazine Street

Dana Square



legend

01 Void to Liturgical Space
02 Living + Dining Room
03 Master Bedroom
04 Washing Closet

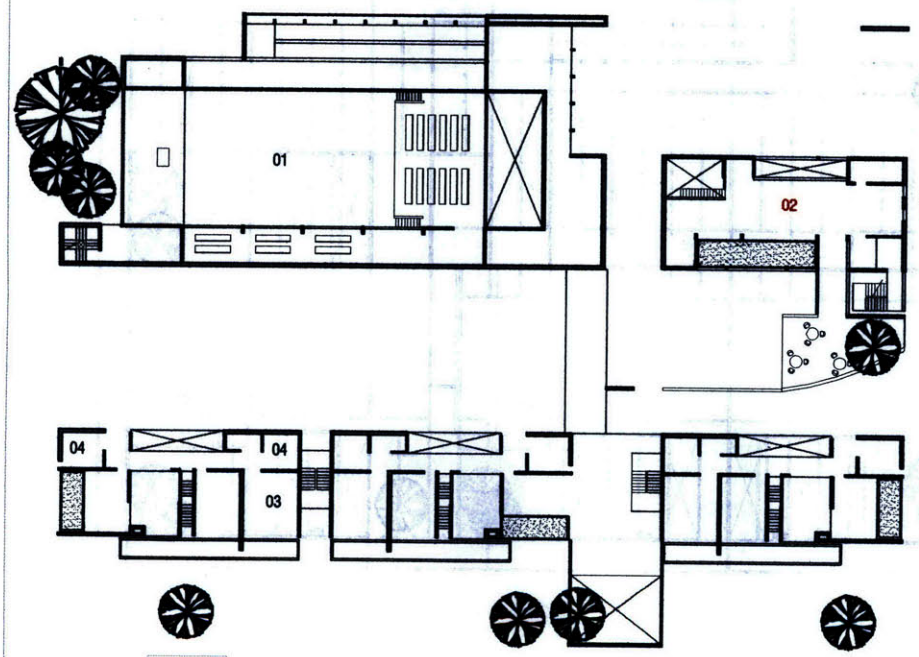
Note : Since upper housings have openspace in roof-garden, entrances were located on fourth floor. Privacy was given on third floor.

Third Floor

NORTH, SCALE 1'=1/64"

Magazine Street

Dana Square



Roof Floor

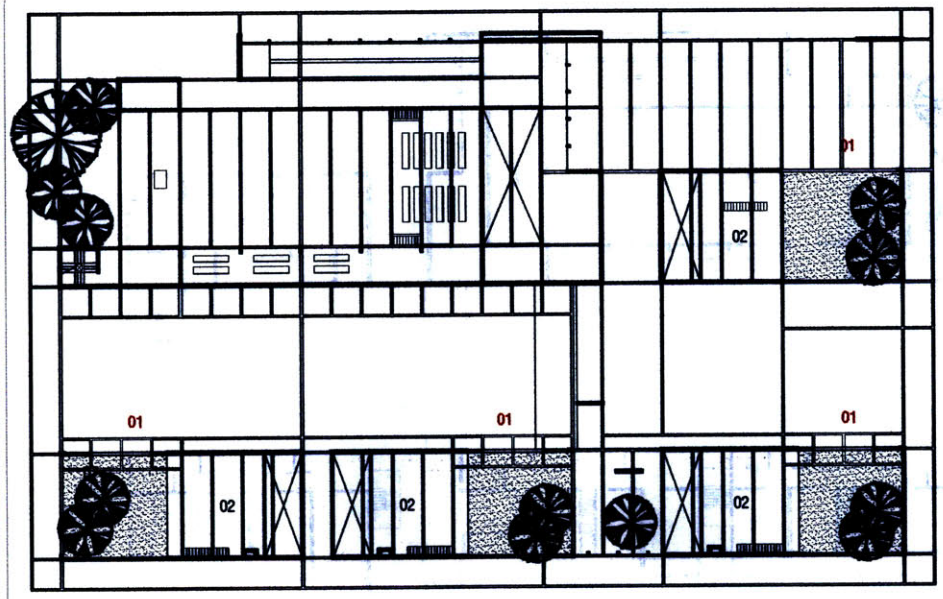
NORTH , SCALE 1'=1/64"

legend

01 Liturgical Space
02 Dedication Corridor
03 Bridge to Pastor's Room
04 Pastor's Room
05 Balcony
06 Master Bedroom
07 Washing Closet

Magazine Street

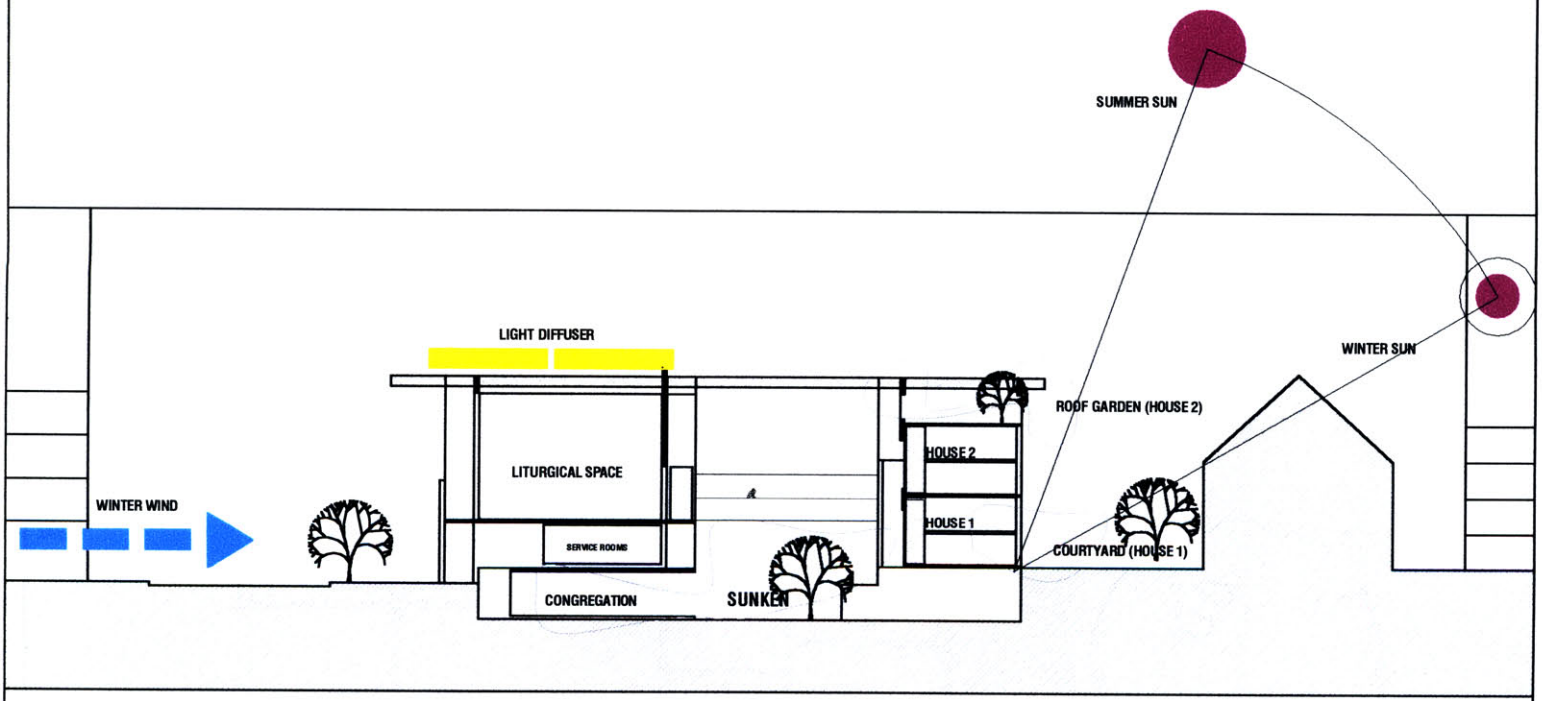
Dana Square



Section Diagram

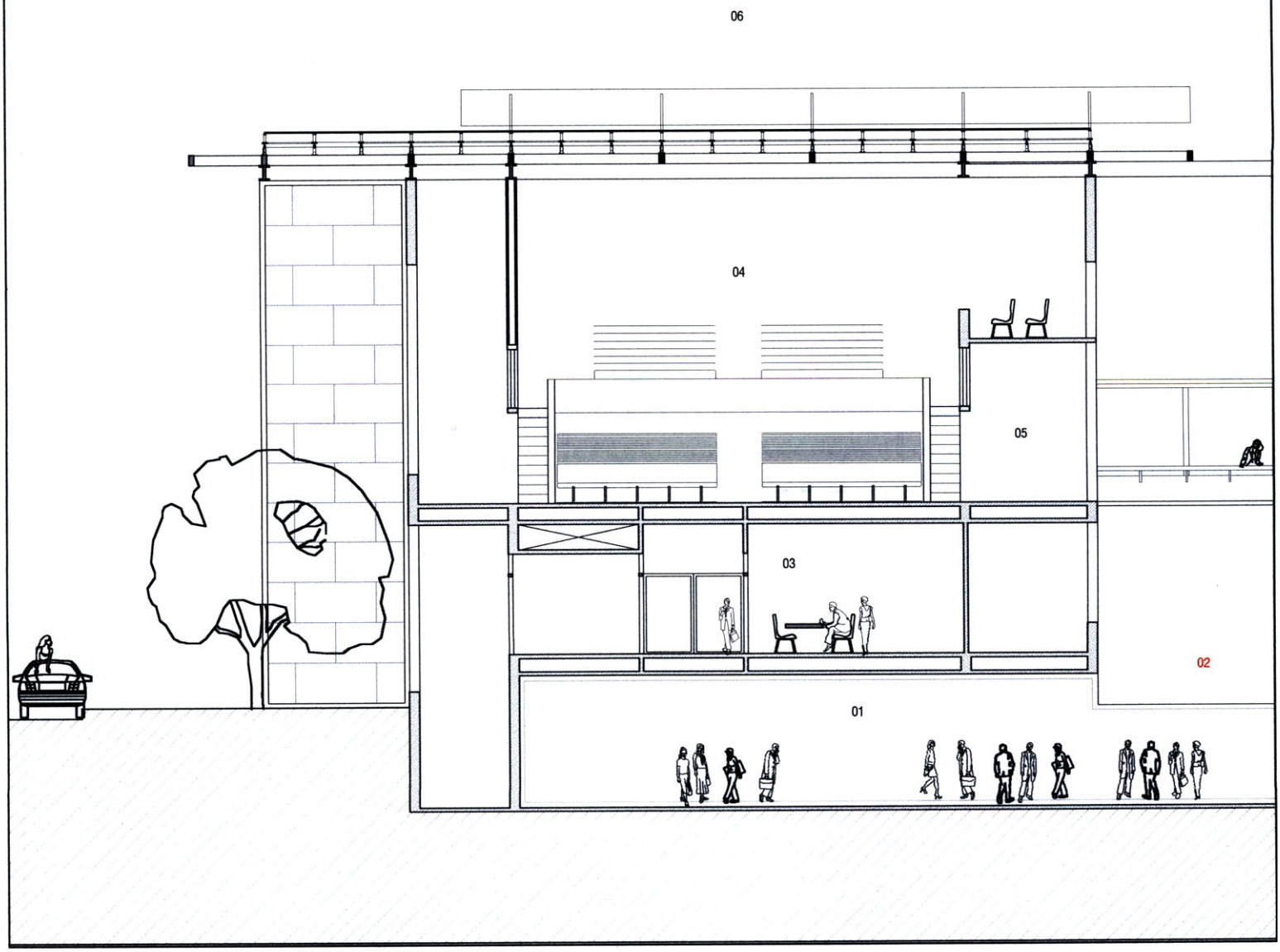
NON-SCALE

This diagram demonstrates the key issues involved in the thesis. Under one roof, large volume (traditionally regarded as church) and small volume (housing) together become one church. More over, all the communal rooms face some form of openspace to accommodate various activities to invigorate and nurture mutual relationship among members. Congregation space extends out to sunken garden and living room of the house 1 and 2 respectively extends out to courtyard and roof garden. Congregation space wil be used at a church level and living rooms will be functioned at cell level.



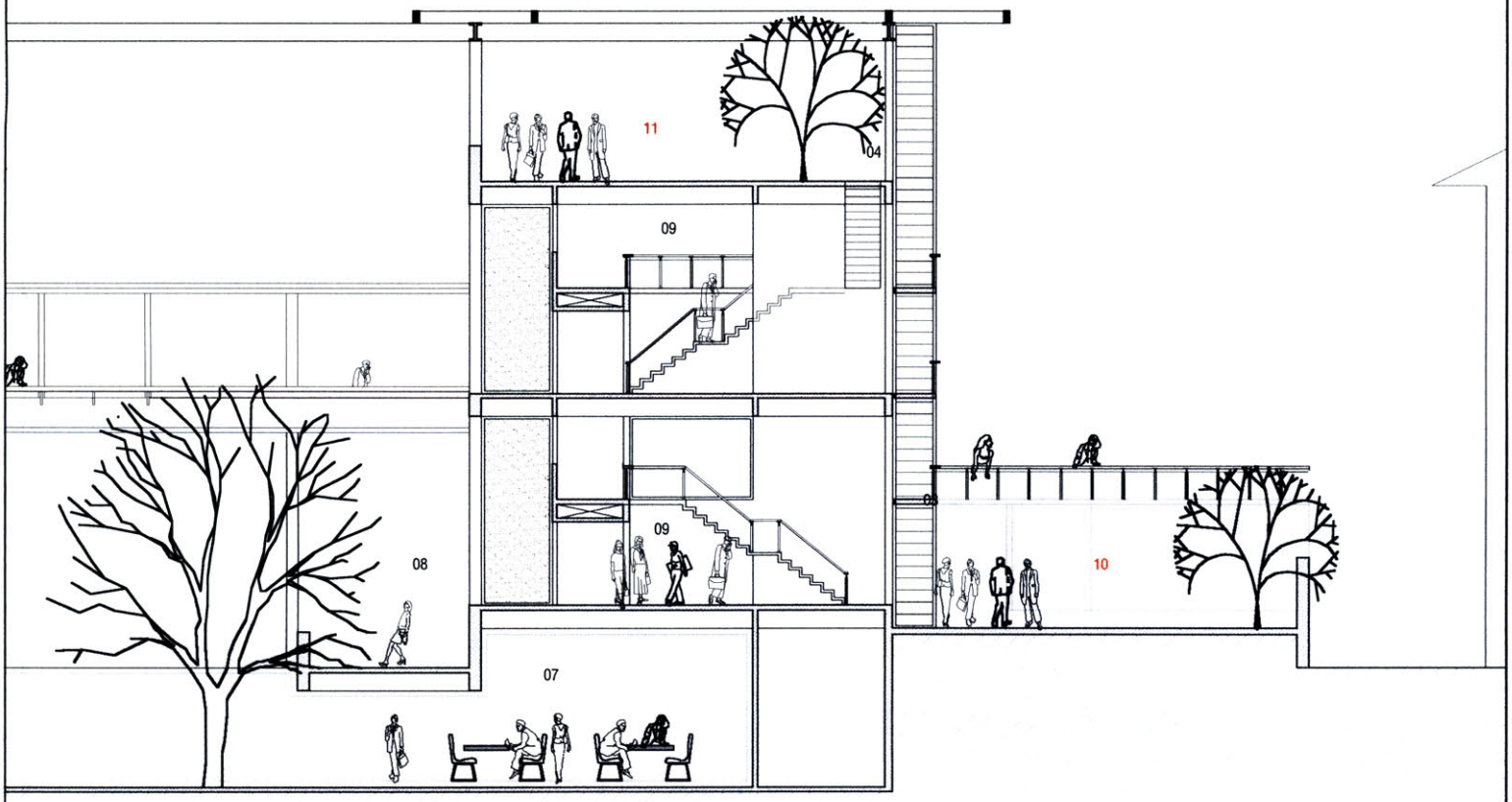
Section

SCALE 1' = 1/16"



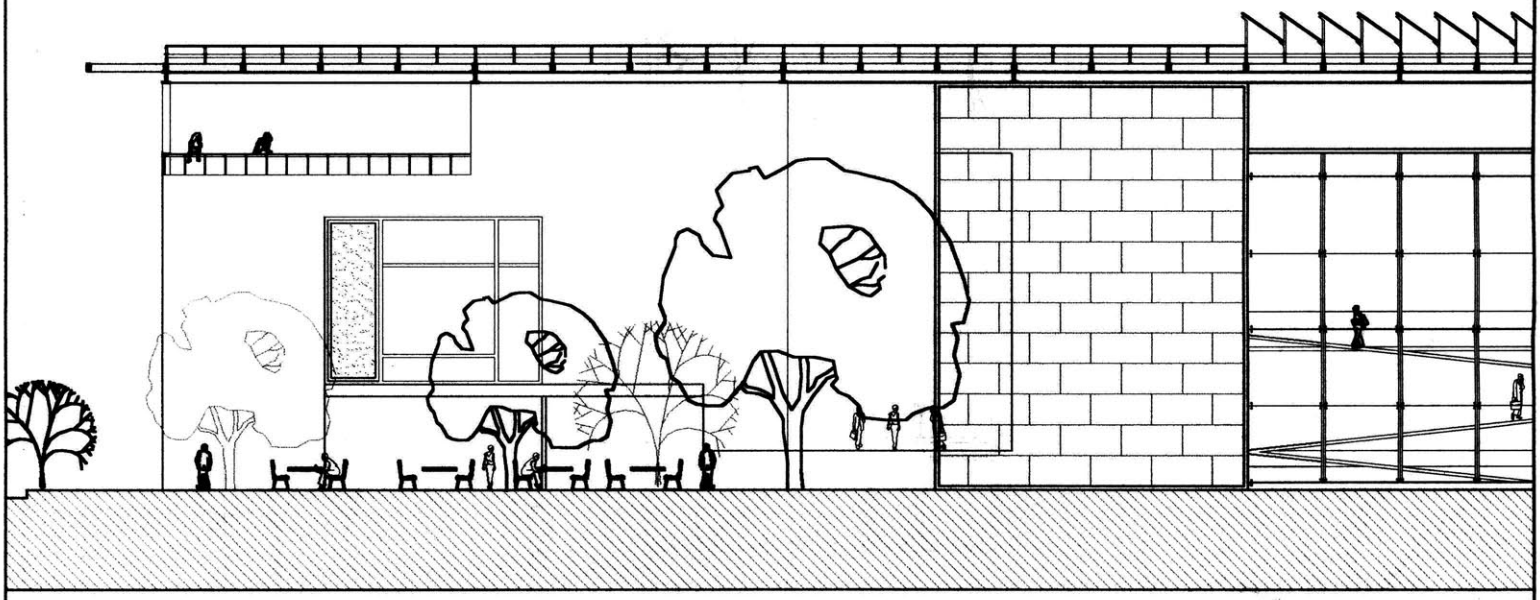
legend

01 Communal Activity Room
02 Open Space for Communal Activity Room
03 Library
04 Liturgical Space
05 Dedication Corridor
06 Roof-Light Diffusers
07 Classrooms
08 Public Access
09 Living + Dining Room
10 Courtyard
11 Roof Garden



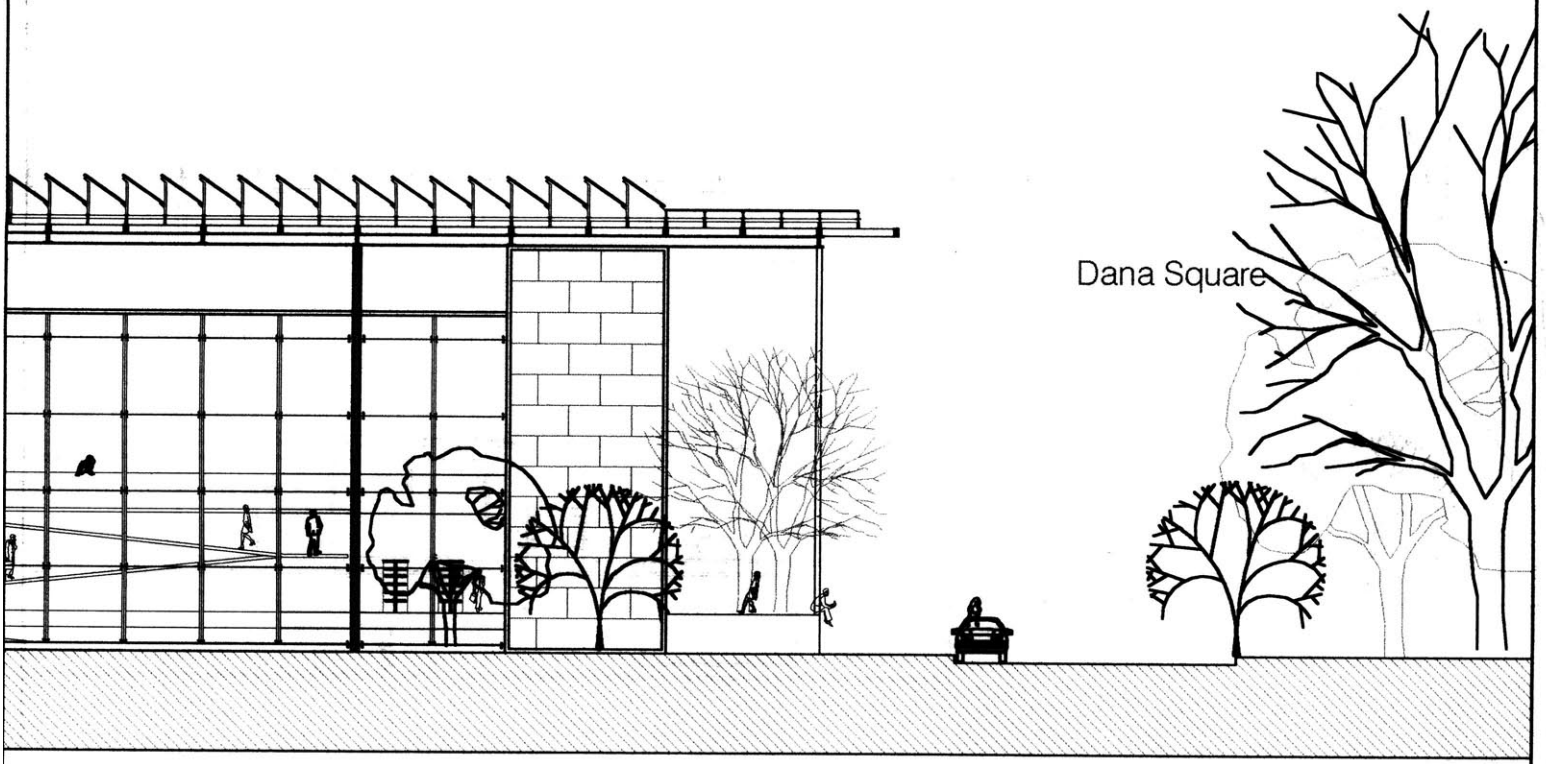
Elevation

SCALE 1' = 1/25"



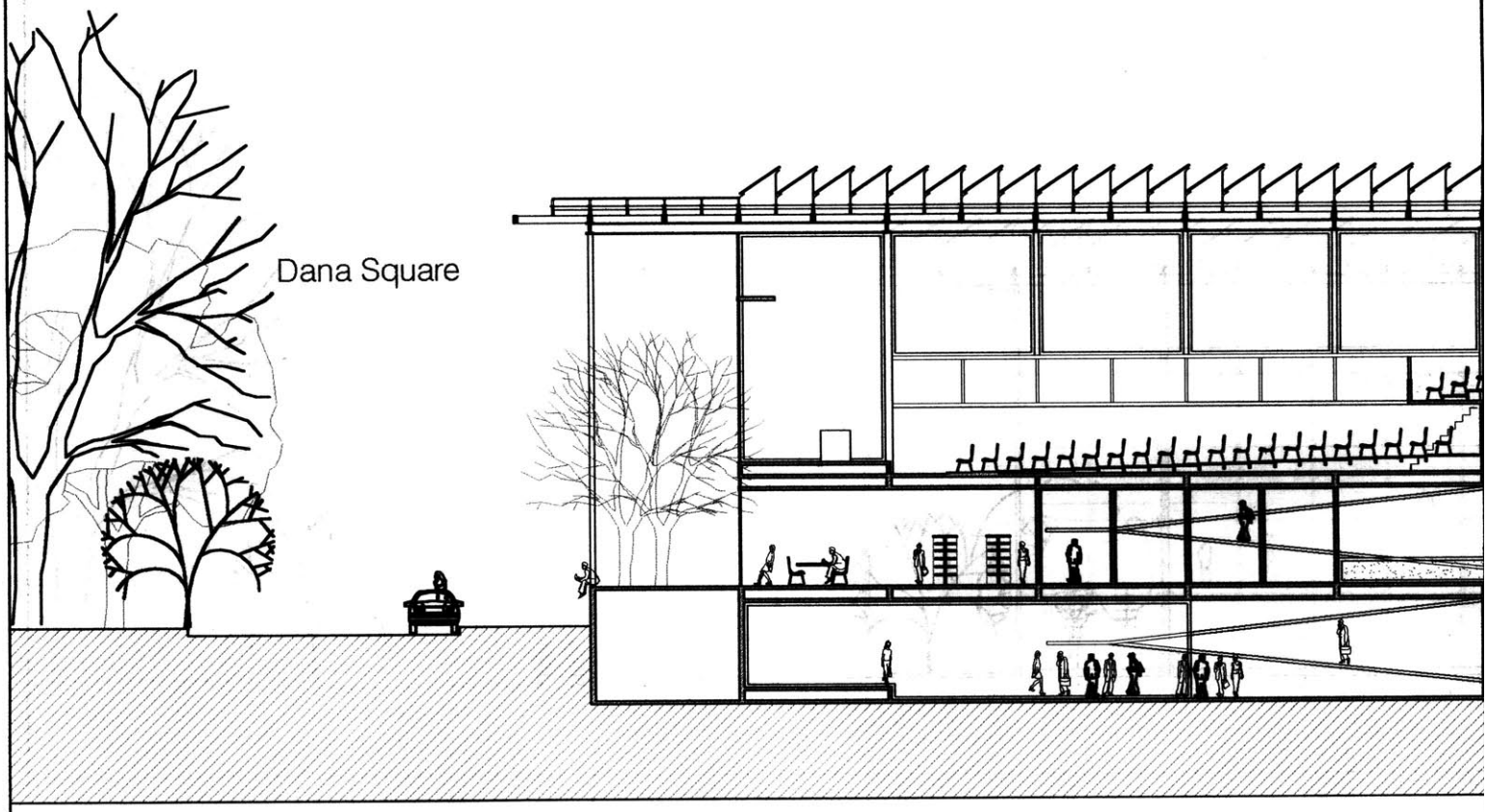
communal threshold

view from magazine street.



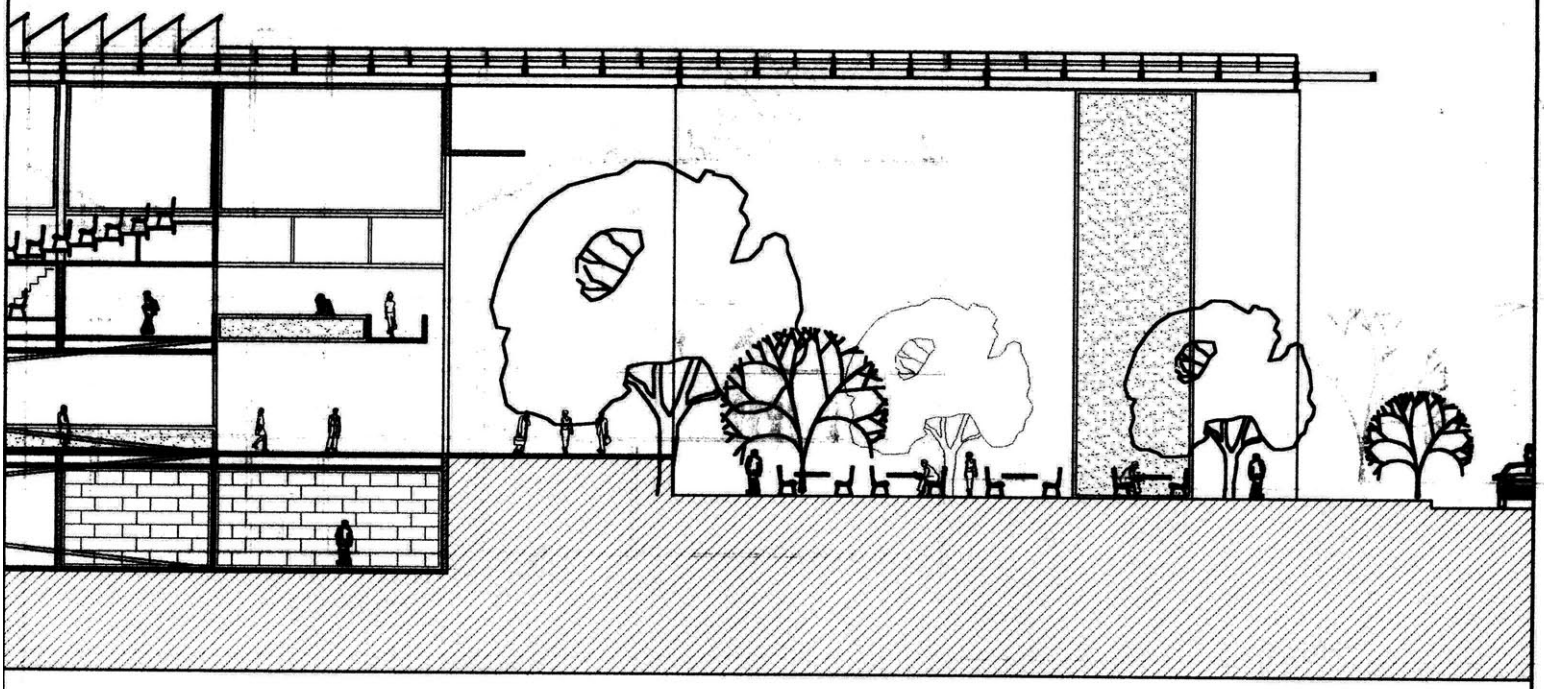
Section

SCALE 1' = 1/25"



congregation space in relation to

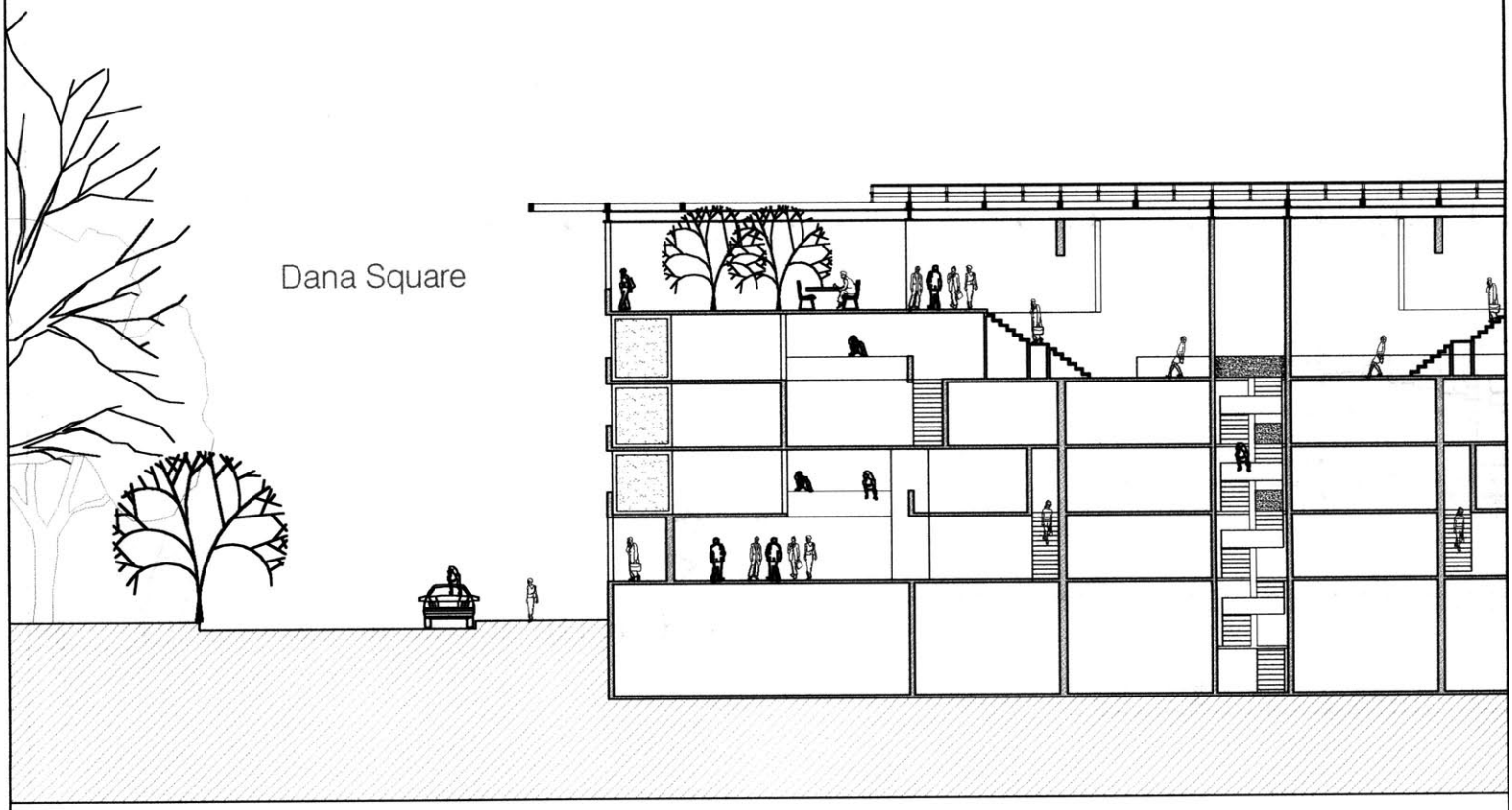
communal threshold and dana square.



communal threshold

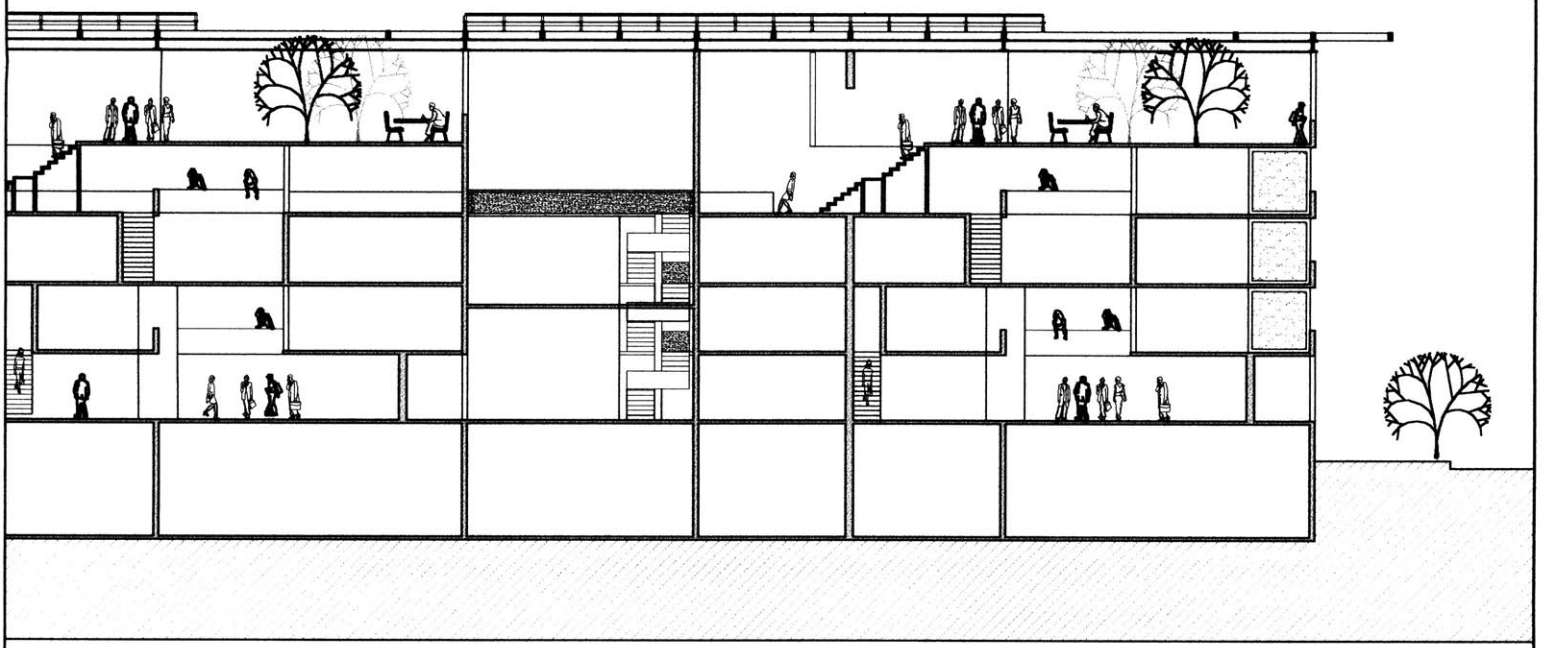
Section

SCALE 1' = 1/25"



roof-garden, porch, and balconies

create deep edges to the streets they face.



conclusion: final review

1. Roof wise: where are the points that are solid, how many roles does it function?

   The roof functions as light diffuser, glazing, open, shading for porticos, endless edges to the community.

2. Isn't it too literal to have one roof? This one roof seems awfully big in the fabric of Cambridge? Your roof, although you argue that the community would become a part of the neighborhood, margins such a strong boundary. Doesn't it mean than it is a secluded community?

   Seeing above the model, it deceives us to believe that the roof is huge, but on the ground it would be hard to actually perceive the roof as a whole. It is only at a roof garden level it would be possible to fully perceive the whole configuration of the roof.

   Your roof seems awfully big and it seems like it should be situated at another site, how do you think about that?

3. Your fantastic earlier concept model is some how lost in the process of progressing.

4. Andrew: Explain where private and public starts, ideas of materiality, sustainable issues incorporated in the project.

5. Isn't your scheme, due to the lessening the clarity of the earlier concept, too dominant as a church proper? You said your project is welcoming to the rest of community, but it seems like the church across the park where a formality came mostly from the elevated portico that is by far over scaled to the proportions of the street? Would a person passing by the Magazine Street hitting his right shoulders every morning appreciate this scale of the church? Isn't the elevation too solid and long to be part of the street?

   First, elevating the church proper came in accordance with how deep does the sunken wants. I needed enough air volume in the community space below, but then if the sunken garden became too deep I thought it would be less appreciative. Second, I thought giving them full glazing to the street and opening of the interior would give depth to the street, in my view giving them ramp would allow them visual attraction)

6. Don't you think, your courtyard in the middle has too strong a directionality? Doesn't it need some termination? The site and linearity of your center courtyard seemingly require another huge scale of a park on the other side.

   It does actually terminate by Café Avec. I was hoping people, during the weekdays would gather around this decked café and enjoy drinking coffee, and at a distance, would grasp glimpses of the park on the other side. Park itself is used mostly by the

elementary school and I envisioned it would be mostly kids playing hide and seek would use this courtyard as a continuation of the park.

7. Fernando: You've mentioned that this roof in your conceptual model is a key element of defining major space for the church. Listening to your argument, it seems major role of the church is happened in the 'circle time' space. Wouldn't it be more appropriate to place your 'circle time' space right under your roof to have a coherent argument? Your congregation space, it is really hard to see the rituals of the church in your plan. It seems very 'basilica' oriented type that has been everywhere since the beginning of the Christianity. What is the liturgical ritual of your church. Don't all churches have some sort of poetic dimension in their congregation space?

First comment I agree as another scheme and it would be still valid to think in that manner. Second comment, I dont' agree. I do believe existing church structures are based on the sacred ordinances or in your terms 'liturgical rituals' and are formalized in such a way, however, it is symbolic meaning or once-a-week rituals that I am critiquing of. Because, due to that formality, members of the community have not been influenced by the values of Christianity. I think your comment or your critique on the poetry of congregation space is a projection of architect's mind of what the church has to be. Spirit of Christianity requires different form of structure. The structure requires involvement. I would argue architects, since the dawn of Christianity, has

made ritualistic spaces based on what you are mentioning; e.g. creating dramatic spaces by light and providing sequential movement for spiritual purgation. I think these are all good church architecture, but they are bad churches.

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image sources

Fig. 1 19th century reconstruction of the Tabernacle in the wilderness
Meek, H. A. *The Synagogue*. London: Phaidon Press Limited, 1995, p27

Fig. 2 Temple of King Solomon :
http://www.afnetinc.com/~walrusss/solomon.html
Plan of temple of King Solomon :
http://home.earthlink.net/~tonybadillo/index.html

Fig. 3 Plan of Herod's Temple
Meek, H. A. ibid., p48

Fig. 4 Longitudinal type of Churches: origin and examples of '70s
Klassen Winand. *History of Western Architecture*, translated by Woo Kap Sim. Seoul, Korea: Daewoo Press, 1990, p 77 Gieselmann Reinhard. *New Churches*. Toronto, Canada: Architectural Book Publishing Co., 1972 p 28-29

Fig. 5 Centralized type of Churches: origin and examples of '70s
Klassen Winand. Ibid., p79
Gieselmann Reinhard. Ibid, p 122-123

Fig. 6 Contemporary Churches by Top Architects
Heathcote, Edwin & Spen Iona. *Church Builders*. London, England: Academy Editions, 1997

Fig. 7 Early House Church (231 A.D.)
Klassen Winand. Ibid. p76

Fig. 8 Benedictine Monastery: Cluny
Kostof, Spiro. *A History of Architecture*: Settings and Rituals. New York, U. S.: Oxford Univ. Press, 1995 p 324

Fig. 9 Idealized Cistercian Monastery
Kostof, Spiro. Ibid. p327

Fig. 10 Contemporary Churches by Top Architects
Heathcote, Edwin & Spen Iona. *Church Builders*. London, England: Academy Editions, 1997

Fig. 11 Contemporary Churches by Top Architects
Heathcote, Edwin & Spen Iona. *Church Builders*. London, England: Academy Editions, 1997

Fig. 32 Traditional Japanese House
Frampton, Kenneth. *Studies in Tectonic Culture*, Cambridge, USA: MIT Press, 1996 p 7

Fig. 34 Jorn Utzon, Sketch of Japanese Architecture
Frampton, Ibid p 248

Fig. 35 Utzon, Bagsvaerd Church, Copenhagen, 1976
Frampton, Ibid p 287

Fig. 36 Utzon, House in Bayview, 1965
Frampton, Ibid p 271

Fig. 37 Louis Kahn, Bath House, Trenton, 1956
Fig. 38 Kahn, Unitarian Church, Earlier Version, 1959
Fig. 39 Kahn, Unitarian Church, Final Version
Frampton, Ibid p 234-235

Fig. 42 Piano, De Menil Collection, 1986, Interior
Gossel, Peter. *Architecture in Twentieth Century*, Nuremberg, Germany: Benedikt Taschen Verlag GmbH, 1991 p 382

Fig. 44 Piano, Beyler Museum, Exterior
Buchanan Peter, *Renzo Piano Building Workshop – Complete Works*: Volume 4, London: Phaidon Press, 2000

Fig. 45 Norman Foster, Renault Distribution Center, 1982
Foster Associates, *Foster Associates: Buildings and Projects*: Vol. 2, Hong Kong: Watermark, 1989

Fig. 46 Foster, Stansted Airport, 1991, Painting by Ben Johnson
Foster Associates. *Foster Associates: Buildings and Projects*: Vol. 1, Hong Kong: Watermark, 1989, p 88

Fig. 47 Foster, German Parliament, Reichstag, 2000, Final Version
Foster, Norman. Rebuilding the Reichstag, New York: The Overlook Press, 1999

Fig. 49 Thomas Herzog, Congress and Exhibition Hall, Linz, Austria

Herzog Thomas, *Design Center, Linz*, Stuttgart, Germany: Gerde Hatje, 1994

Fig. 50 Thomas Herzog, Trade Fair Pavilion
Herzog, Thomas Ed, Solar Energy in Architecture and Urban Planning: Prestel 1996

Note : All other images, not mentioned above, in the text are my authorship.

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I am very grateful to my thesis advisor Andrew Scott for his devotion, encouragement, and contribution. Thanks for coming to my desk every week, Andrew. It's been wonderful talking with you throughout the semester. I am really glad you agreed to be my thesis advisor.

To my committee: thanks, Nasser. You and I both know this thesis is not finished yet, but I guarantee I will refine it again and again. Shun, thanks for your insightful comments at the last minute. I just wasn't brave enough to throw away all I have done.

Friends whom I went Japan with (Sean, Laurie, Mark, Zach, Junko, Ioana, and Jennifer): You guys are the best!! I will always remember how hard you guys worked.

To BBC: Let us keep on enlarging the 'Tent of God!'

Parents and wife: Thanks for your endless love and support. I love you all.