



## Chapter 6

Concept & Design Development

# Concept Development

The Church as a public building

## Cores

A Central Core of the Architectural Project which forms the anchor for the service related functions to take place, Fig.98.

- A Central Core for the Community - a catalyst for change and development-

## Spaces Between

Community does not happen within the buildings themselves, architectural relationships must facilitate community, Fig.99.

These Spaces must:

- Be activated both on their periphery and within the spaces created
- Be easily accessible
- Be scaled to the pedestrian
- Facilitate interpersonal interaction

## Enabling Architecture

The Core/s of the Architectural intervention must be able to both function as a centre alone and also to provoke and encourage further development of additional functions and expansion of the centre, Fig.100.

## Human Energy Flow

- Flow of Human Energy from the Core outwards into the Community
- Flow of Human Energy from the Community inwards into the Core

A symbiotic relationship must be attained from the conception of the project in order for it to be sustainable and attain relevance within the community, Fig.101.

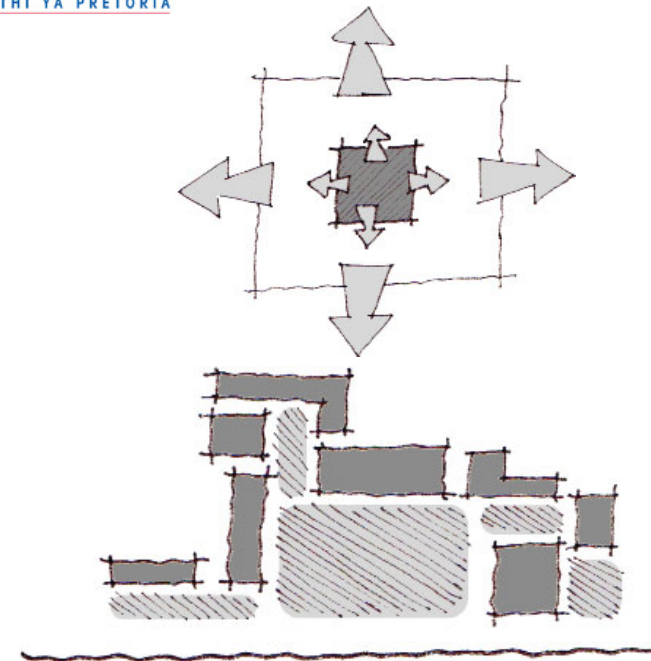


Fig.98.(By Author) Concept: Cores

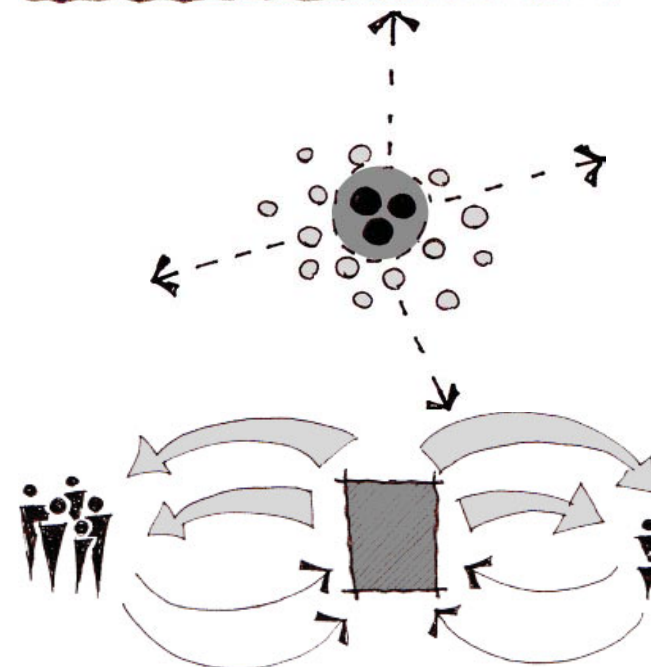


Fig.100.(By Author) Concept: Enabling Architecture

Fig.101.(By Author) Concept: Human Energy Flow

The concept of Photosynthesis, Fig.103, is a natural self sustaining, cyclical process that mirrors the human energy flow that is necessary to sustain the intervention as well as a metaphor which captures the social aim of the intervention. A system cannot survive if the energy flow is only outgoing, thus the building must provide the vehicle for the community to begin the process of growth and upliftment through mutual interaction with the services rendered. This interaction occurs on several levels:

### Community Services

- The kitchen, classrooms and day care are staffed and managed by the local community

### Production

- Even Jesus was a carpenter and through the teaching of trade and agricultural skills. This knowledge can be put back into the centre and the community.

### Sacred Space

- Provides a platform for many community functions and gatherings to take place while also providing a format for spiritual renewal to take place

### Commercial Trade

- Forms a part of additional financial support
- Promotes pedestrian interest, movement and interaction with the intervention at its most secular level

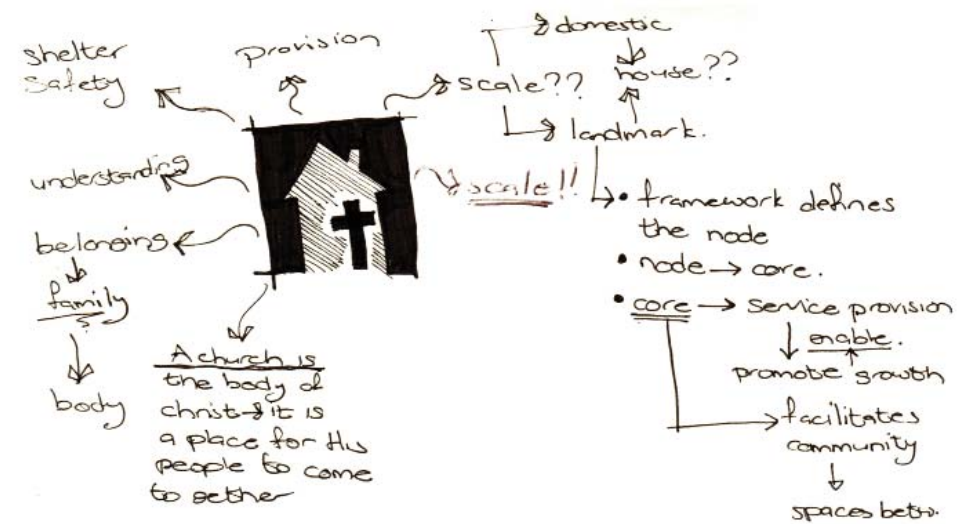


Fig.102.(By Author) Concept: The Church as a House of a Community

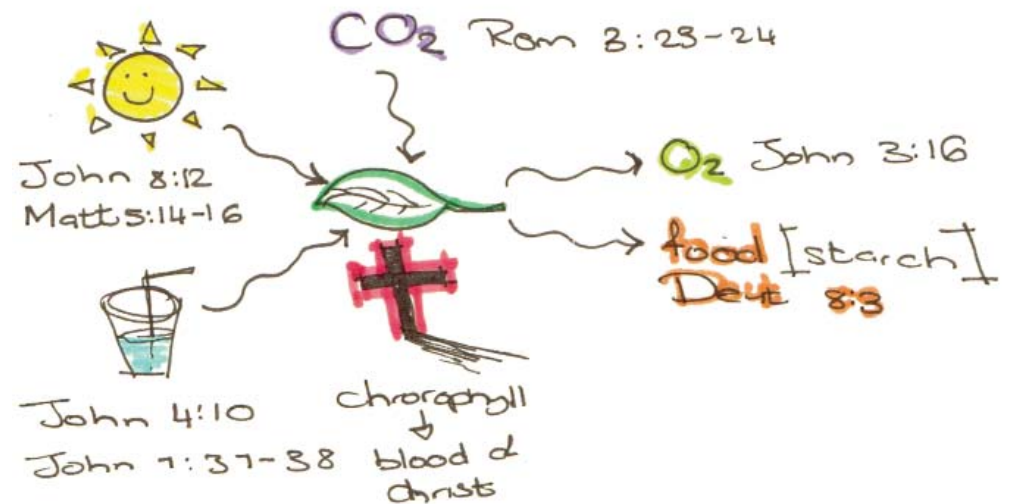


Fig.103.(By Author) Concept: Photosynthesis

# Design Development

## Site Constraints & Location of Intervention

The location chosen for the intervention is defined by, Fig.104 :

- An existing concrete canal
- Agriculture to the North
- Tsamaya Rd which provides great edge potential to the South
- Existing service access to the East
- Proposed new road, with further edge potential to the West

Four of the six existing agricultural sheds that are in the best condition are to be made good and moved alongside the existing service access road in order to allow for the best road frontage along Tsamaya Road as possible while also facilitating ease of access for service vehicles collecting goods grown within them.

Entrance into a Christian sacred space is traditionally West of the Altar. The public entrance must be located along the proposed new road, running North-South or to the western portion of Tsamaya Rd.

Service access will remain on the east of the Altar, as this is the secular portion of the proposal, it is thus deemed unnecessary to obey religious convention for the function.

## Design Informant: Lack of Edge Condition

The local area of Mamelodi East surrounding the intervention is lacking in a defined edge condition, Fig.105. This intervention seeks to create a localised commercial public edge that will have a catalytic effect in stimulating edge growth in the area, Fig.106.

The public edge becomes the main element of the catalytic node required in the Linear Nodal Development Framework.

## Zones on Site

There should be a functional connection between distinct areas of the site, Fig.107:

- Public: busy commercial and social space
- Sacred: Social, yet reserved, strongly structured area
- Natural: Agricultural landscape

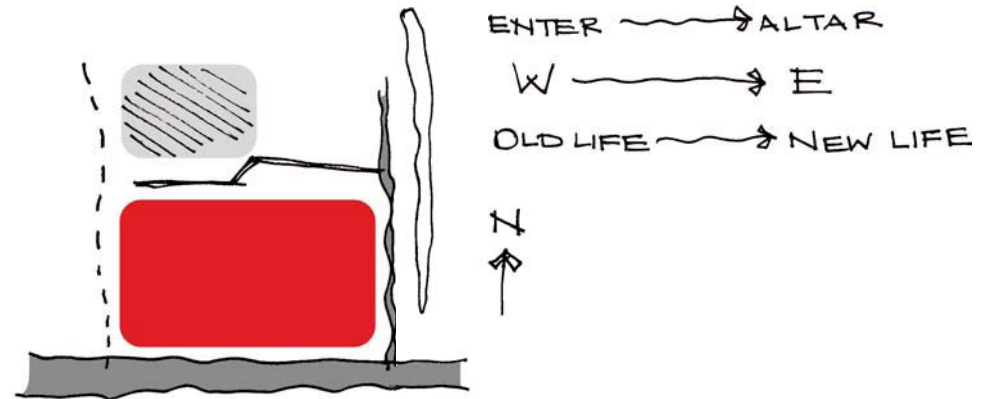


Fig.104.(By Author) Site constraints

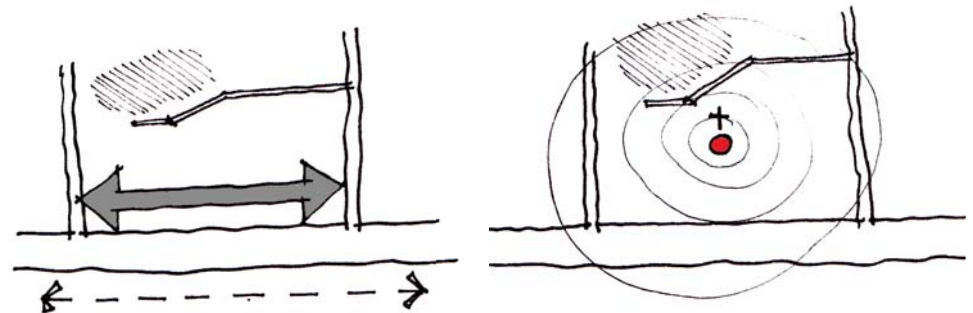


Fig.105.(By Author) Design Informant- Lack of Edge Condition

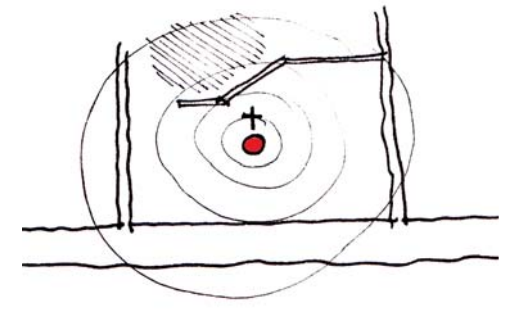


Fig.106.(By Author) Catalytic Node

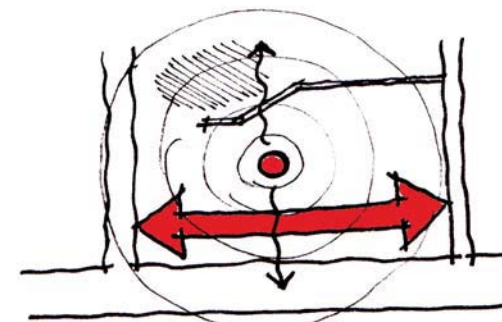


Fig.107.(By Author) Relationship between major core functions

## Design Informant: Development

The catalytic edge, Fig.108, would serve to:

- Spark commercial densification along the bordering edges
- Financially support the religious function
- Bring people in contact with the Church
- Create a functional buffer zone

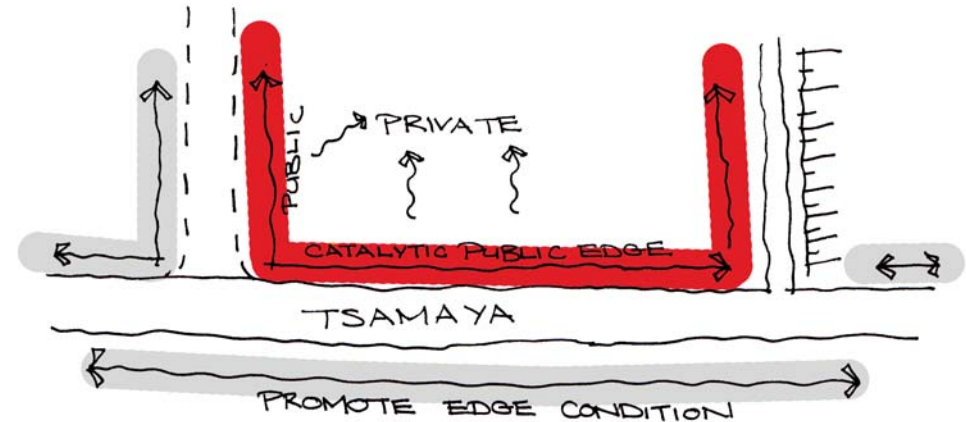


Fig.108.(By Author) Development of Design Informant

## Flow of Space I

The flow of space should develop as indicated, Fig.109, thus the public does not enter directly into sacred space.

*An entrance can either be clearly visible as you approach the house or you can be lead into a secluded courtyard entrance. The courtyard entrance provides a more gradual transition between public exterior and private interior. [Matthews 2007:26]*

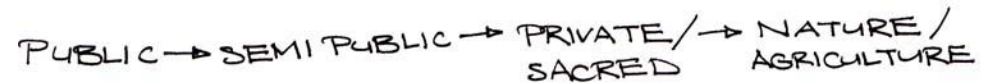


Fig.109.(By Author) Conceptual space flow diagram

## Flow of Space II

Due to the varied functions housed in the same development proposal, the planning needs a space or structure that is able to both link and separate the different areas, Fig.110.

This building is functionally suited to the hall because:

- Its volume allows for it to serve as a background to, and an extension of the sacred space
- It is also able to be both sacred and secular in function
- It can open on many different sides, providing the most flexibility of space

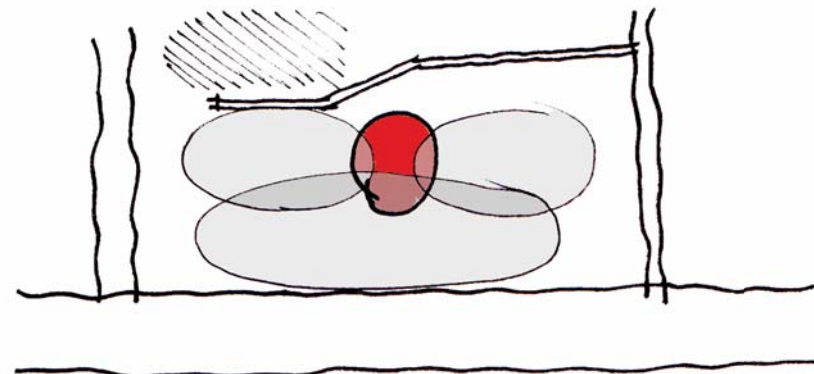


Fig.110.(By Author) Conceptual relationship of spaces

## Sacred Space: Planning

Basilican Church Planning, the most recognisable Christian Church typology follows certain conventions:

- A major axis running East - West, Fig.111.
- The entrance is on the Western wall
- The altar on the Eastern end, Fig.112.
- A central nave, along the longitudinal axis, focused on the altar
- 2 aisles on either side of the nave
- The planning is usually symmetrical about the central axis

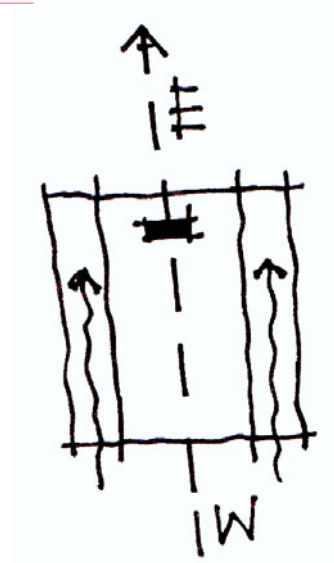


Fig.111.(By Author) Sketch showing basic elements of church planning

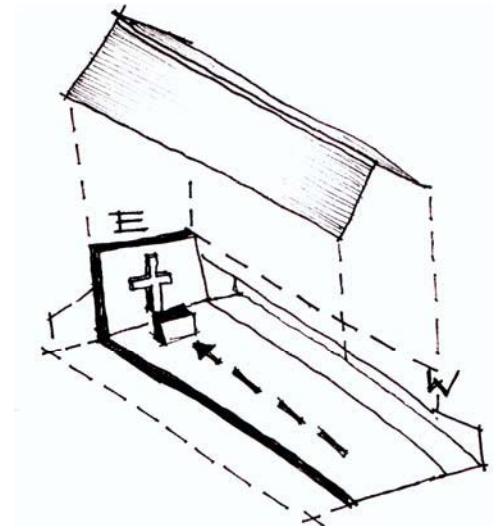


Fig.112.(By Author) Exploded sketch showing basic elements of church design convention



## Flow of Space: Development I

The proposed functions are divided into 3 'sacred' zones:

- Sacred healing and community
- Sacred Church
- Sacred Production

These are edged by a public commercial zone

These zones develop a functional flow along a linear axis, defined by both the sacred space and the commercial edge.

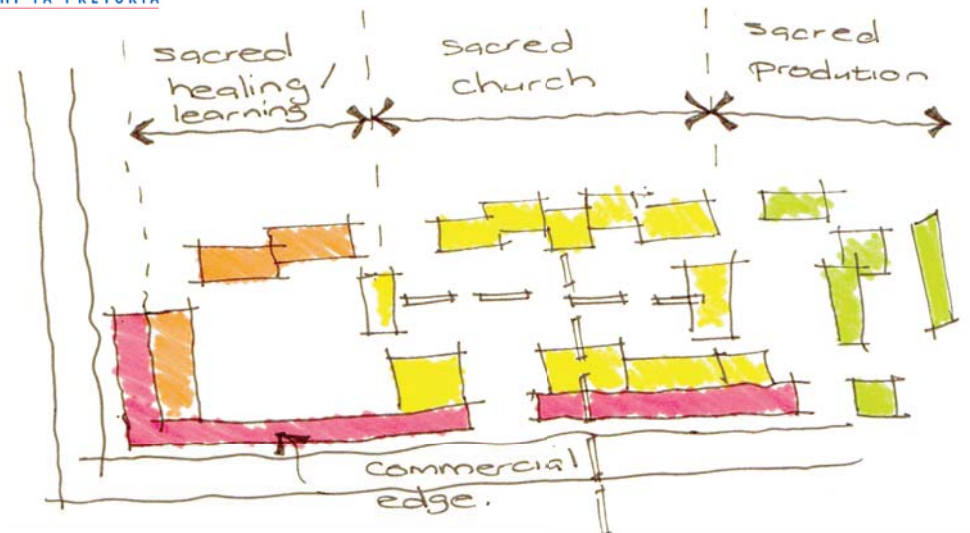


Fig.113.(By Author) Sketch showing development of planning

## Flow of Space: Development II

The functional zones described above facilitate internal edge conditions and courtyards. These intermediate spaces that are formed allow for transitional spaces, between:

- Public and sacred, there is a preparation space
- Sacred and agriculture, there is an edge, but not a boundary
- Public and production, there is a recreational space
- Production and agriculture, there is a circulation space.

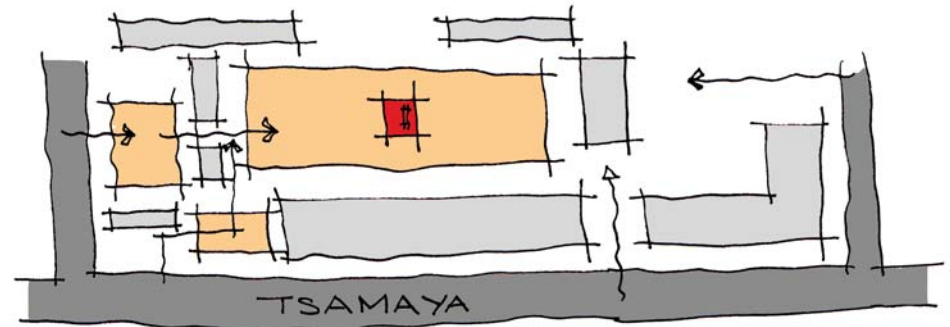


Fig.114.(By Author) Sketch showing further development of planning

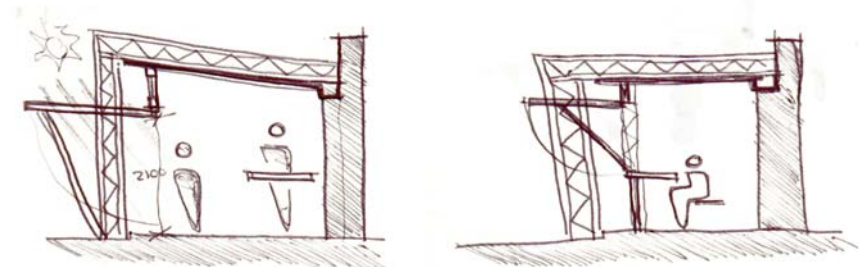
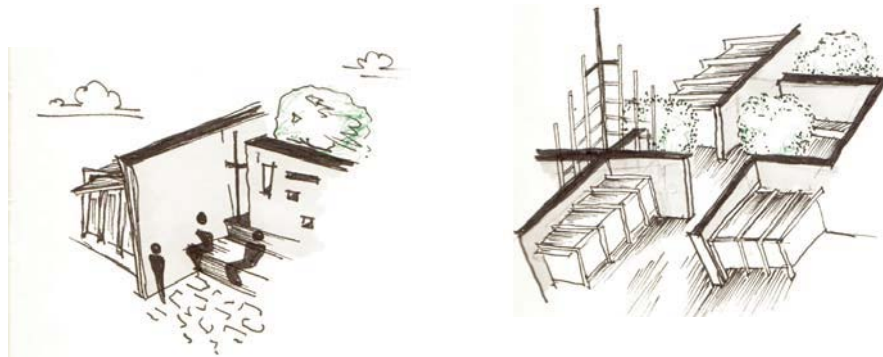


Fig.115.(By Author) Process sketches

## Development of Layout

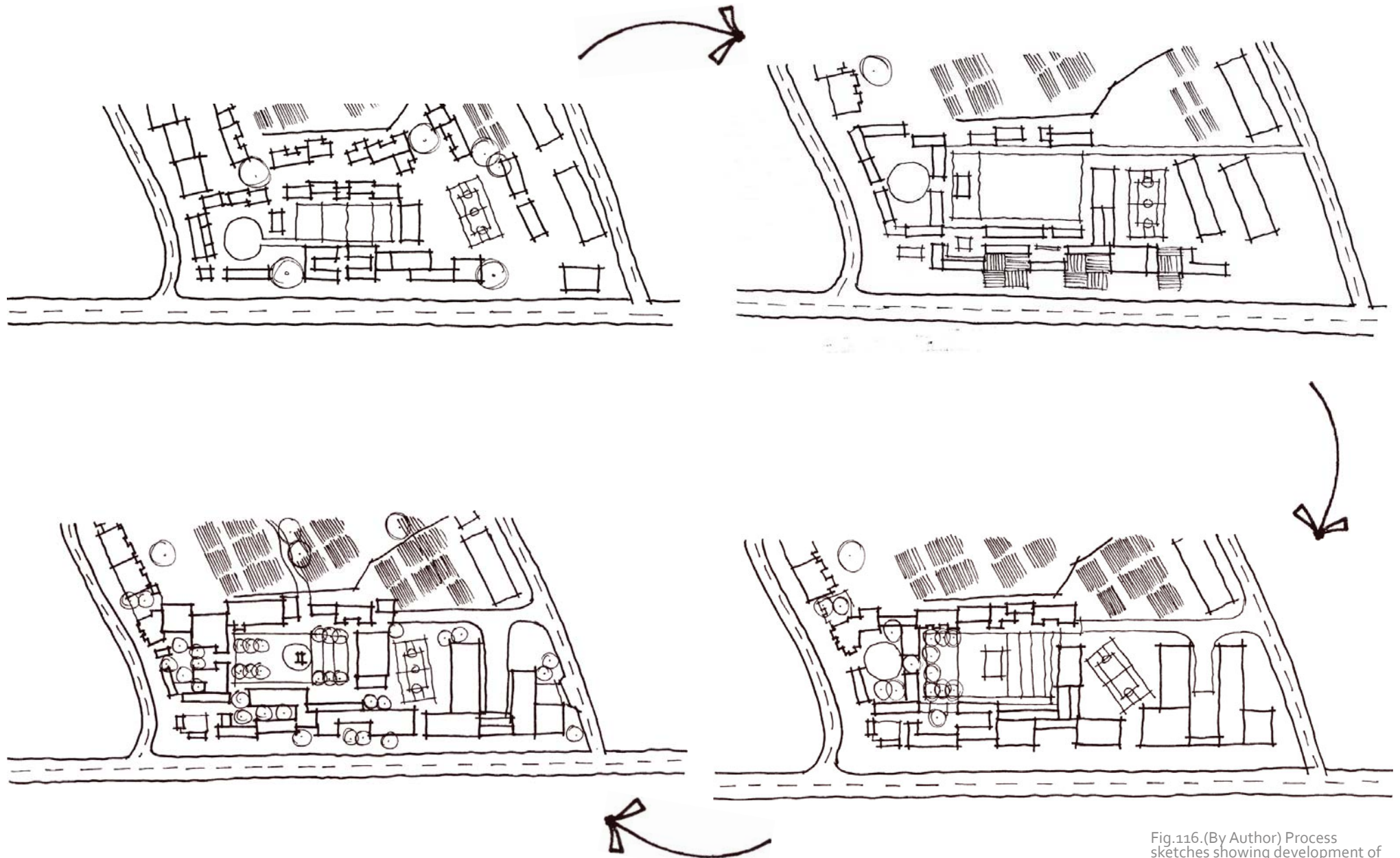
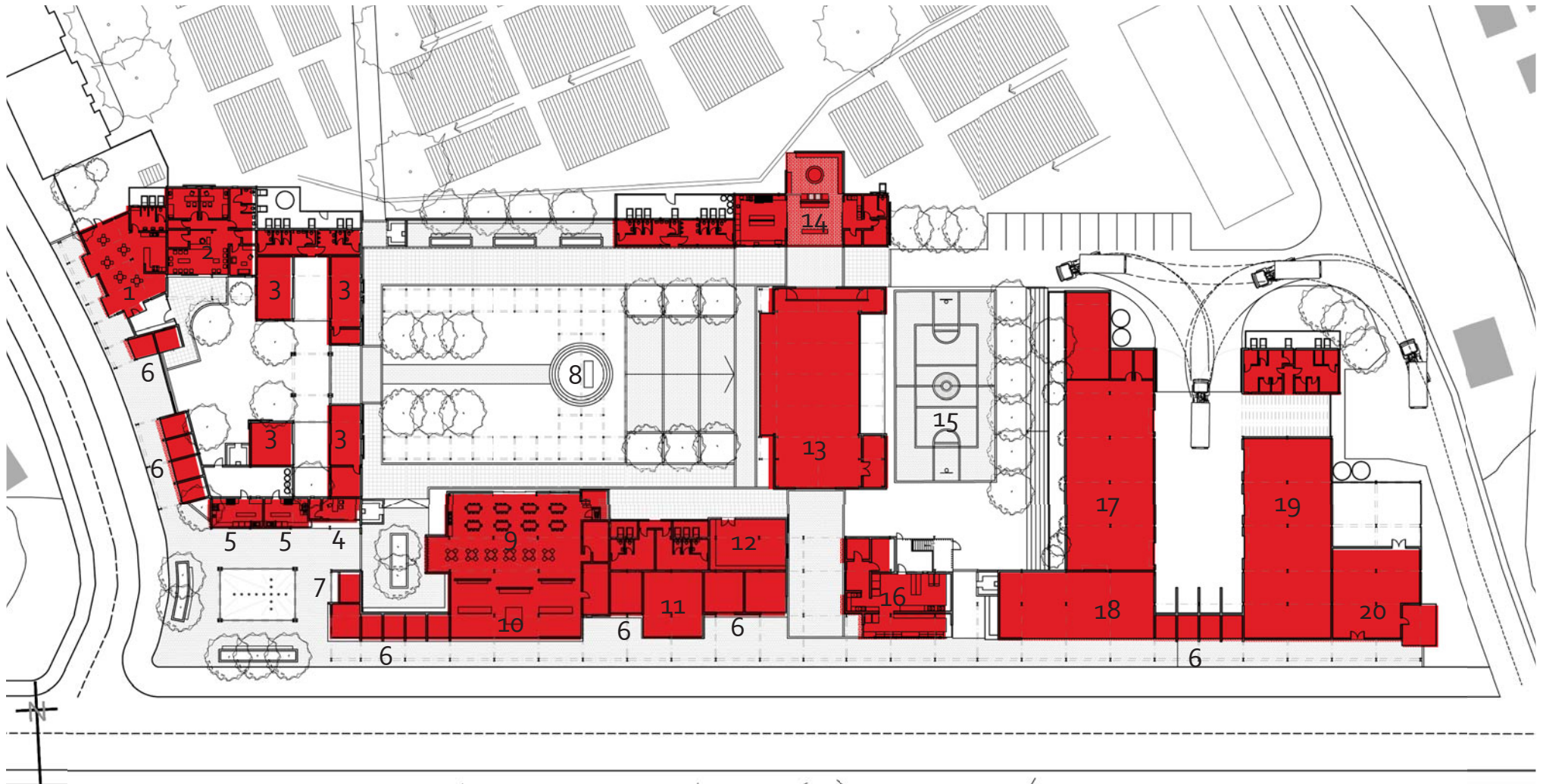


Fig.116.(By Author) Process sketches showing development of planning

## Layout of Accommodation



- |                               |                   |                      |                                    |
|-------------------------------|-------------------|----------------------|------------------------------------|
| 1. Daycare                    | 6. Shops for rent | 11. Spaza shop       | 16. Bakery                         |
| 2. Satellite clinic           | 7. Police box     | 12. Store room       | 17. Produce packing and processing |
| 3. Class/ small meeting rooms | 8. Altar          | 13. Hall             | 18. Market space                   |
| 4. Information                | 9. Craft training | 14. Kitchen          | 19. Building trade training        |
| 5. Food stalls                | 10. Craft selling | 15. Basketball court | 20. Recycling depot                |

Fig.117.(By Author) Plan showing the location of functions

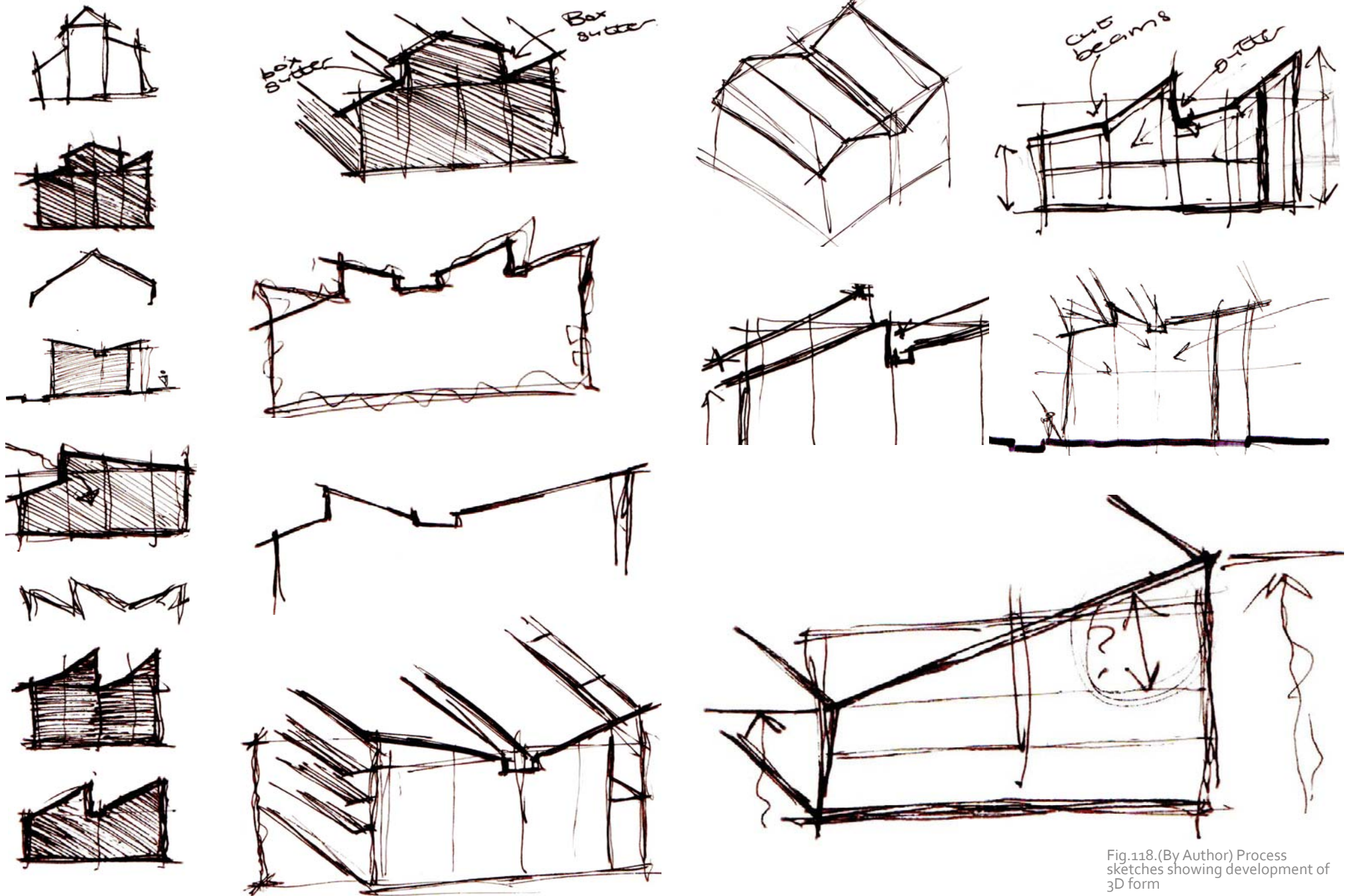


Fig.118.(By Author) Process sketches showing development of 3D form

## Scale of the Public Edge

The scale of the new intervention must be able to:

- Communicate with the existing scale, Fig.119
- Reflect the new scale for the area
- Act as a land mark
- Communicate to both the public and sacred functions, Fig.120, Fig.121
- Optimise on South light

## Roof Section: reflecting scale and function

The roof section reflects the taller, public face on the Southern side and the lower, sacred, private edge on the Northern side.

This roof section also serves to maximise the admittance of South light while limiting the admittance of North light and providing large over hangs and shading devices to further emphasise the scale, Fig.122.

The administration offices are situated on the taller, Southern side. This is both to assert hierarchy and to provide visual communication between those who serve the community and the community themselves, this as opposed to looking on to the sacred space which is a product of this service.

Traditionally church design has emphasised the vertical elements: the connection between ground and sky, man and God. The Multi-Service Centre for Mamelodi East will rather emphasise the horizontal line, scaling the intervention to man.

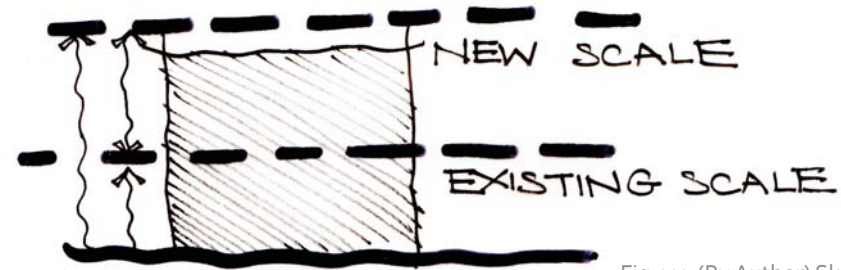


Fig.119.(By Author) Sketch showing form informant

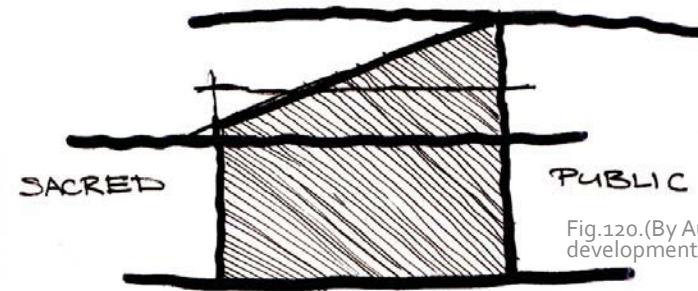


Fig.120.(By Author) Sketch showing development of scale relationship

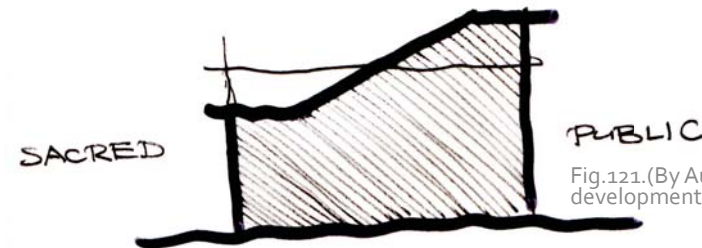


Fig.121.(By Author) Sketch showing development of scale relationship

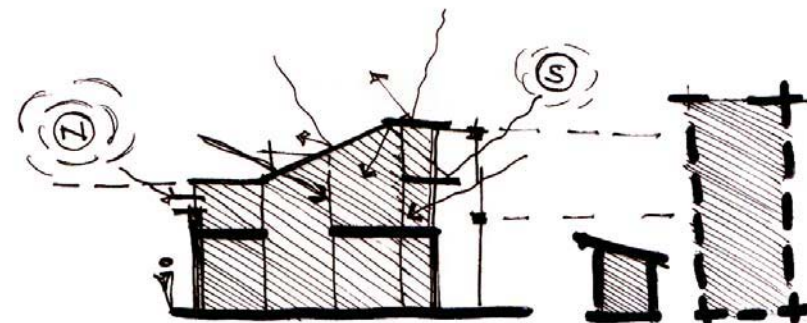


Fig.122.(By Author) Sketch showing scale and orientation

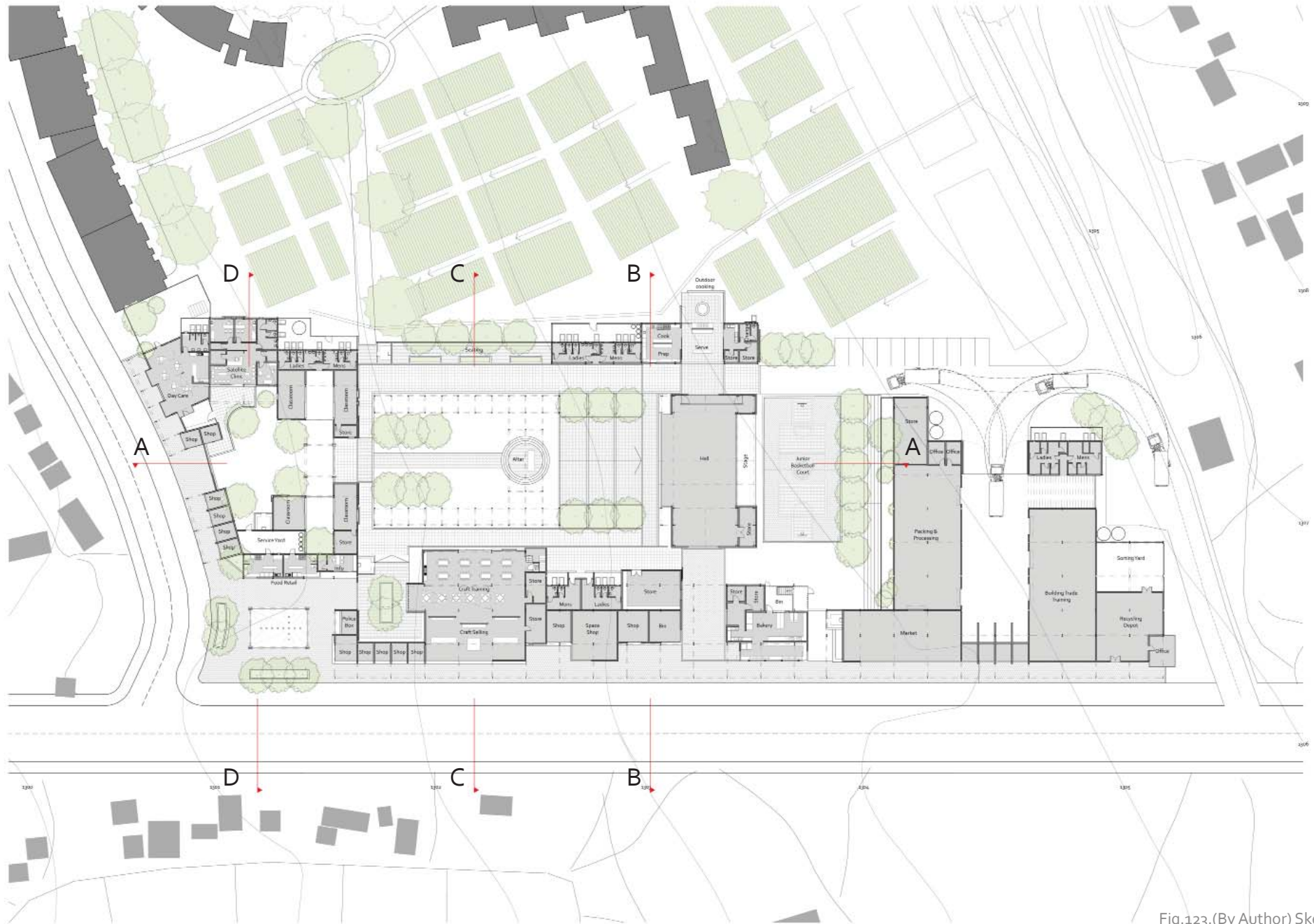


Fig.123.(By Author) Sketch showing scale and orientation



Fig.124.(By Author) Section A-A

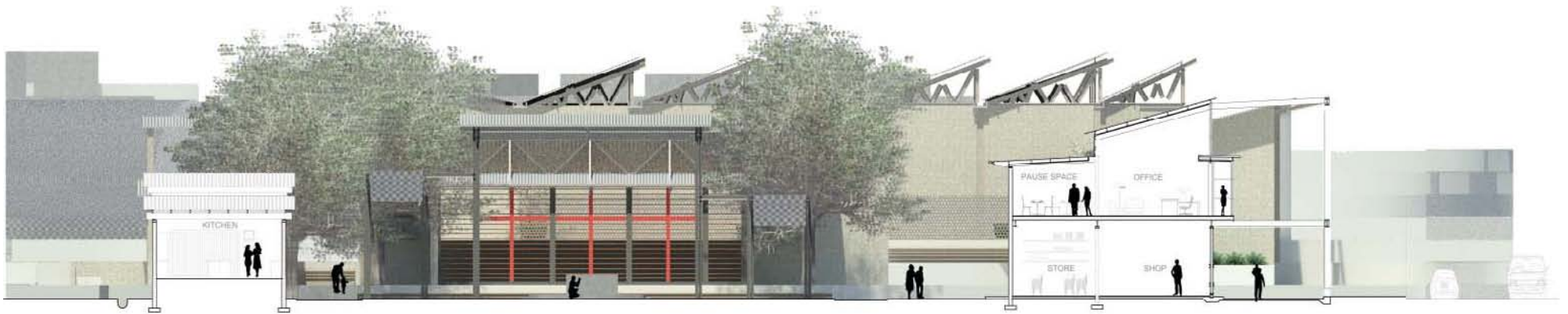


Fig.125.(By Author) Section B-B



Fig.126.(By Author) Section D-D

# Community Space



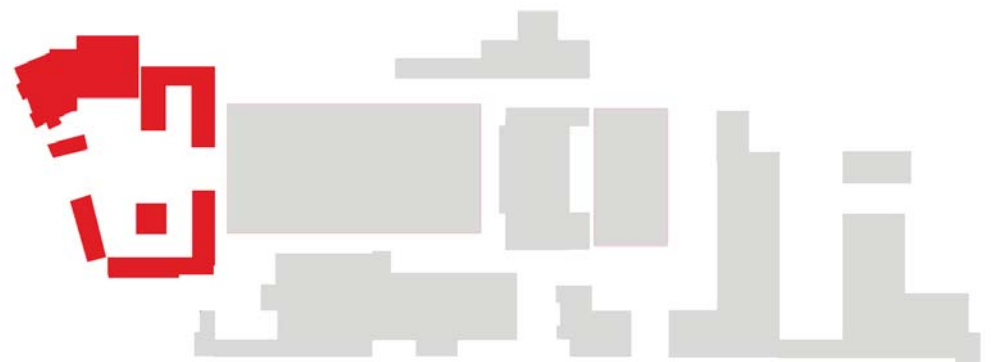


Fig.127.(By Author) Graphic plan indicating community space

## Community Courtyard

The scale is low as all the buildings are of a single story. Where there is a double volume, this is set back from the courtyard space. The courtyard has a quiet and peaceful atmosphere, as it is a space for children, a waiting area for the sick and those coming to small class meetings. The trees planted inside the space lower the scale further, bringing the sky to human scale. They will also soften the harsh sunlight, especially during summer.

This space must also serve as a secondary preparation area, before entry to the main sacred Church courtyard to the East.

## Shops to Rent

The shops to rent act as a buffer, defining edges and boundaries between public and semi-public spaces, such that the atmosphere in the courtyard is distinctly different from that of the public street.

## Day Care

The Day Care is intended to accommodate a class of about 20 children below school-going age. However this could double as an after-care centre for older children in the evenings.

It is equipped with both ablutions for the children and the care giver, and a changing station. The kitchen has a small cooking facility, from which the care giver is able to observe the children whilst remaining distinctly separate. The garden to the North is both a play space and a small food garden, where the children may begin to grow their own vegetables.

## Satellite Clinic

The Clinic is part of a greater initiative South of Hans Strydom Drive. It is able to house a nurse and a doctor, or two nurses and a counsellor. It is also equipped with its own ablutions and storage facilities. The courtyard doubles as an extension of the waiting area.

The classrooms are designed to accommodate small meetings such as small Church cell groups, confirmation classes, youth teachings and more. These spaces are also able to be rented out to the community for other functions such as evening classes, adult education, small governmental initiatives etc.



Fig.128.(By Author) 3D view looking towards the Satellite Clinic

Fig.129.(By Author) Opposite Page-Detailed Plan



# Commercial Edge

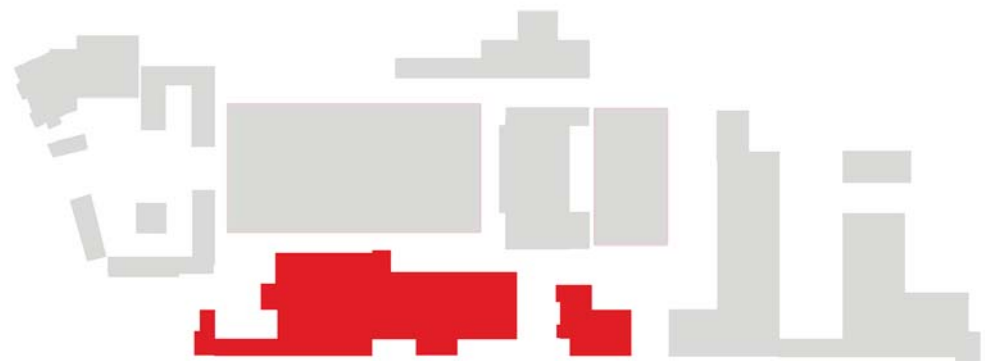


Fig.130.(By Author) Graphic plan indicating commercial edge

The public edge became one of the most important features of the design as it creates an important edge condition and initiates a new scale for the area. This building also houses the most public functions of the intervention.

## Ground Floor

### Craft Training & Selling

Craft training is housed on the sacred, more private edge as it requires controlled access and a more private environment.

Craft selling is linked to Craft Training although the spaces are clearly defined. The patrons buying the goods can still see and communicate with the people that made the products but access is easily monitored.

Access to the second floor is inside the Craft Training area, as the public and officials are encouraged to interact with the members of their community and functions on site.

### Shops to Rent

Along the public edge there are commercial spaces to rent. These are small shops that have lockable doors that are available to the community. The shop spaces have the advantage over the informal vendor stalls in that their goods are secure and situated in a high traffic area.

### Bakery

The bakery is a commercial venture, selling bread and baked goods to the community. It is situated as part of the public edge and is distinctly different from the community kitchen, to the North. The bakery is staffed by trained employees and sells directly to the public.

The bin area for the bakery is tucked under the void between the first floor slab and finish ground level. Delivery access is off Tsamaya Road.



## First Floor

### Reception

The receptionist is located at the top of the stairs and is able to monitor those coming and going. This space serves as a waiting area for those with appointments or meetings to attend as well as for the Legal Aid office.

### Resource Centre

The Resource Centre is both a community library and a computer centre. It is located on first floor level to add a measure of security. The library is located to the South, providing the ideal lighting. The computer centre is located on the North, where the scale is most appropriate.

The double volume that separates the functions also encourages visual communication between functions and different members of the community.

The glazed wall to the West is a feature that orients those entering the complex and admits light into the atrium space. The window has vertical internal timber louvres to shield the inhabitants from the Western sun. It also has a steel cross detail which will cast its shadow into the building.

### Meeting Room & Offices

The meeting room and offices for the municipal councillor are located on the Southern side of the building. This is to establish both a hierarchy and a direct visual link between the community and the officials. This is chosen instead of the North facade, where communication would be between the public functions and the sacred space, effectively hiding those that serve the community.

### Legal Aid

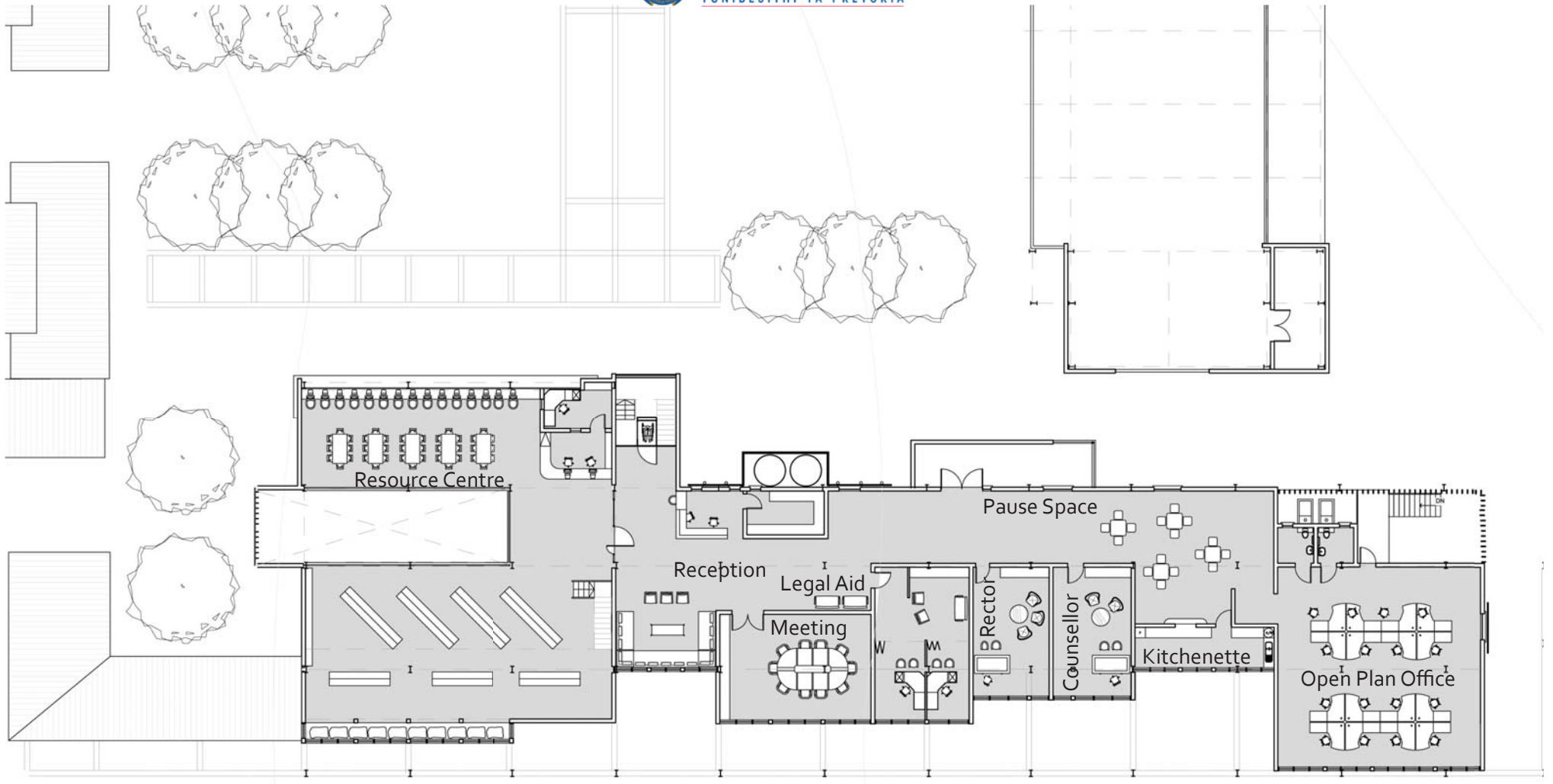
A small Legal Aid office is available to the community to assist those with legal troubles and advice. This service is also on the Southern edge as it is a public function.



Fig.132.(By Author) 3D view looking towards the Preparation Space

Fig.133.(By Author) Opposite Page-Detailed Plan





# Sacred & Recreation Spaces



Fig.134.(By Author) Graphic plan indicating Sacred and Recreation space

## Kitchen

The kitchen is divided into 3 parts:

- Preparation area [indoors]
- Storage and ablutions [indoors]
- Serving [under cover courtyard]

Food preparation is undertaken by members of the community and is a social act. The members who cook socialise together and when the food is served greater interaction and fellowship takes place. The kitchen has the possibility to be a spiritual space for members to interact and share with each other.

*Every day they continued to meet together in the temple courts. They broke bread in their homes and ate together with glad and sincere hearts*

Acts 2:46 [NIV]

The kitchen is on axis with the hall as it forms part of the functioning of this space. The kitchen can be used for secular and religious functions as the hall is able to perform both of these.

The courtyard is open to the North and connects visually with the agricultural fields through the axis created.

The kitchen is serviced via the service road to the East.

## Hall

The hall is uniquely positioned that it is able to perform both religious and secular functions.

When there is an independent event happening inside the hall, it becomes a flexible space, whereby each of the four sides are openable. This is able to create the ideal spatial focus for each event.

The Eastern wall retains to ensure the basketball court is level. This level is further raised to create a platform which becomes seating for the spectators or a stage for productions. The stage can either be focused internally or externally, depending on the event or the weather.

The hall must become an architectural feature in that it is multi-functional. It is also positioned at the termination and eventual focus of the East-West axis.

This axis is formed by the positioning of the building layouts to form a complex, sheltering and forming spaces between them. The sacred space is defined by twelve cruciform columns that form a pergola that focuses the line of sight toward the altar space and the hall beyond.

These twelve sets of columns on each side are symbolic of the twelve apostles and of the twelve stations of the cross that lead to the altar, and new life:

1. Jesus is Condemned to Die
2. Jesus is Made to Bear His Cross
3. Jesus Falls the First Time
4. Jesus Meets His Mother
5. Simon Helps Jesus Carry His Cross
6. Veronica Wipes Jesus' Face
7. Jesus Falls the Second Time
8. Jesus Meets the Women of Jerusalem
9. Jesus Falls the Third Time
10. Jesus is Stripped
11. Jesus is Nailed to the Cross
12. Jesus Dies on the Cross

Fish Eaters. Accessed 10 October 2010

## Basketball Court

The basketball court is undersized to prevent competitive games. This is a space for recreational activities, a level courtyard for social interaction or an informal auditorium for community events.

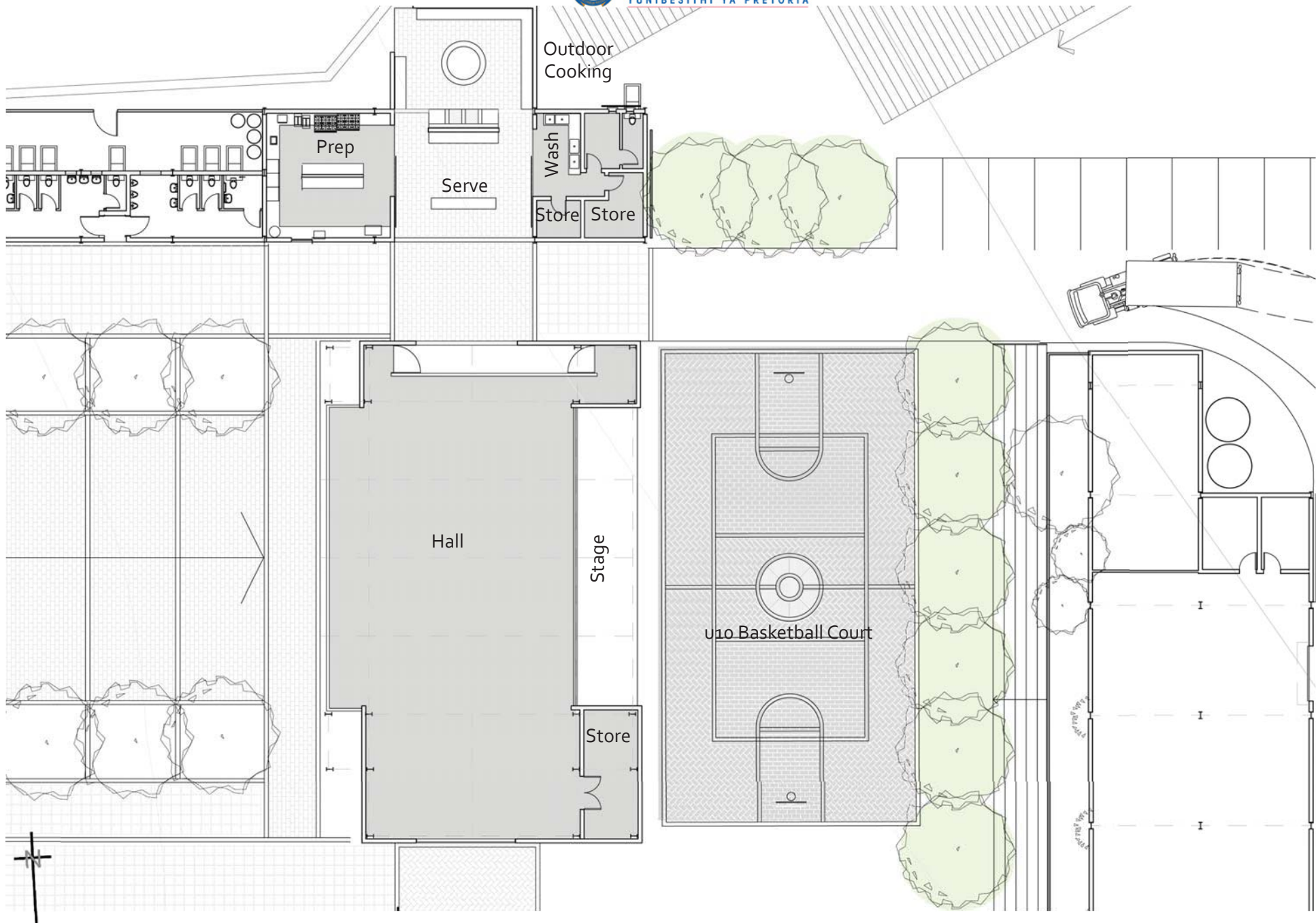
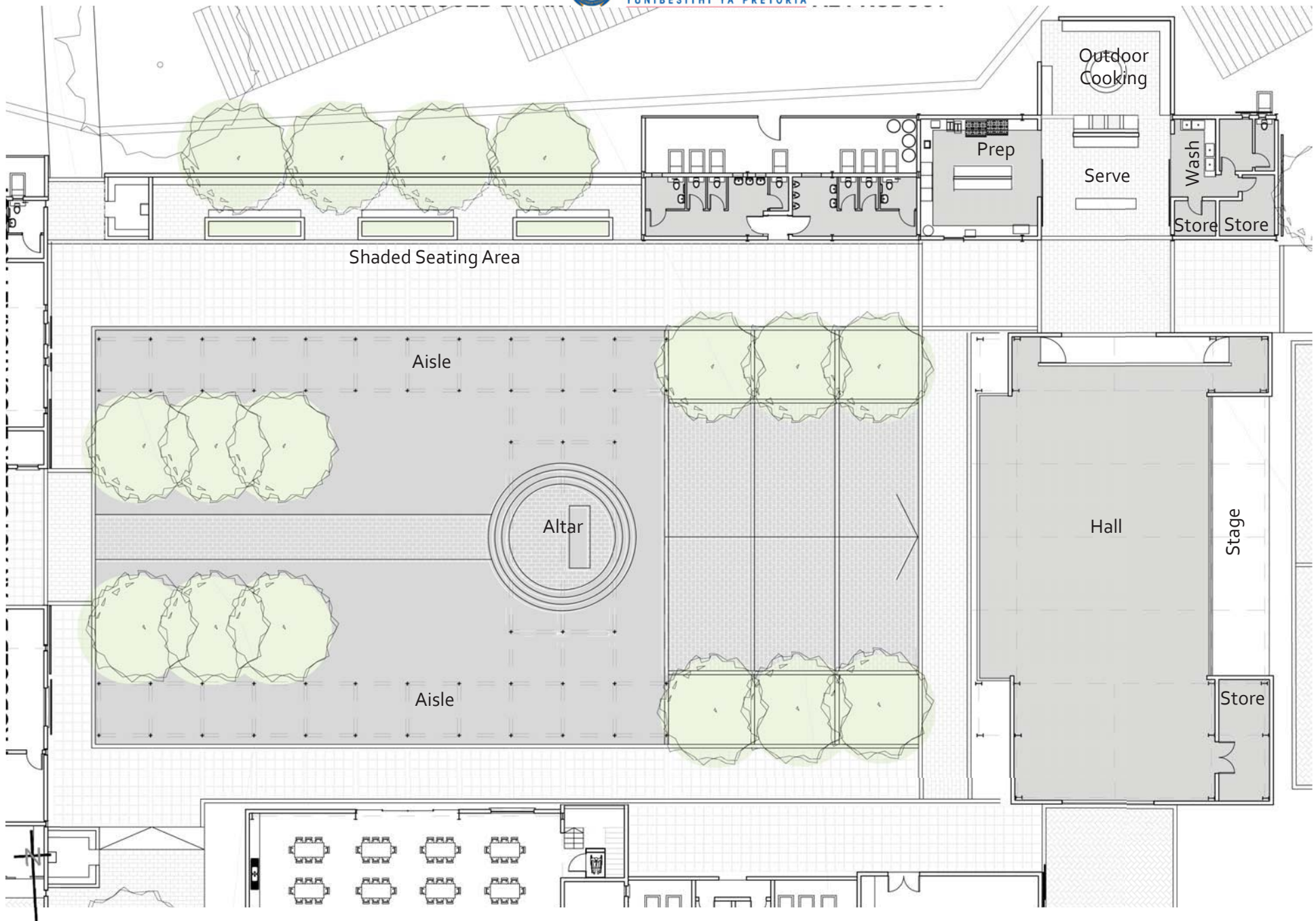




Fig.136.(By Author) View of sacred Space looking East

Fig.137.(By Author) Opposite Page-Detailed Plan



## Scenario 1: Small to Medium Church Service

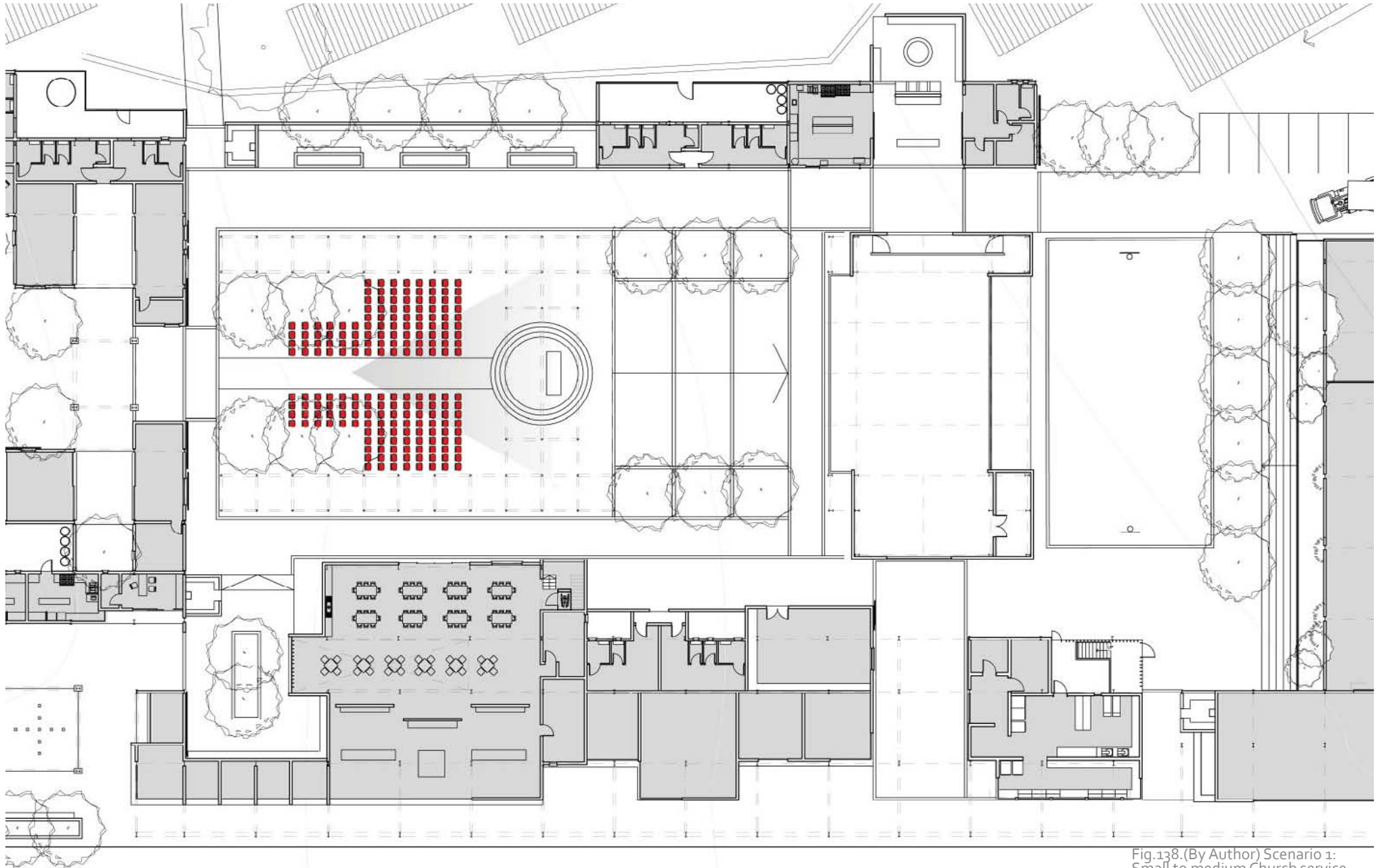


Fig.138.(By Author) Scenario 1:  
Small to medium Church service



## Scenario 2: Medium to Large Church Service

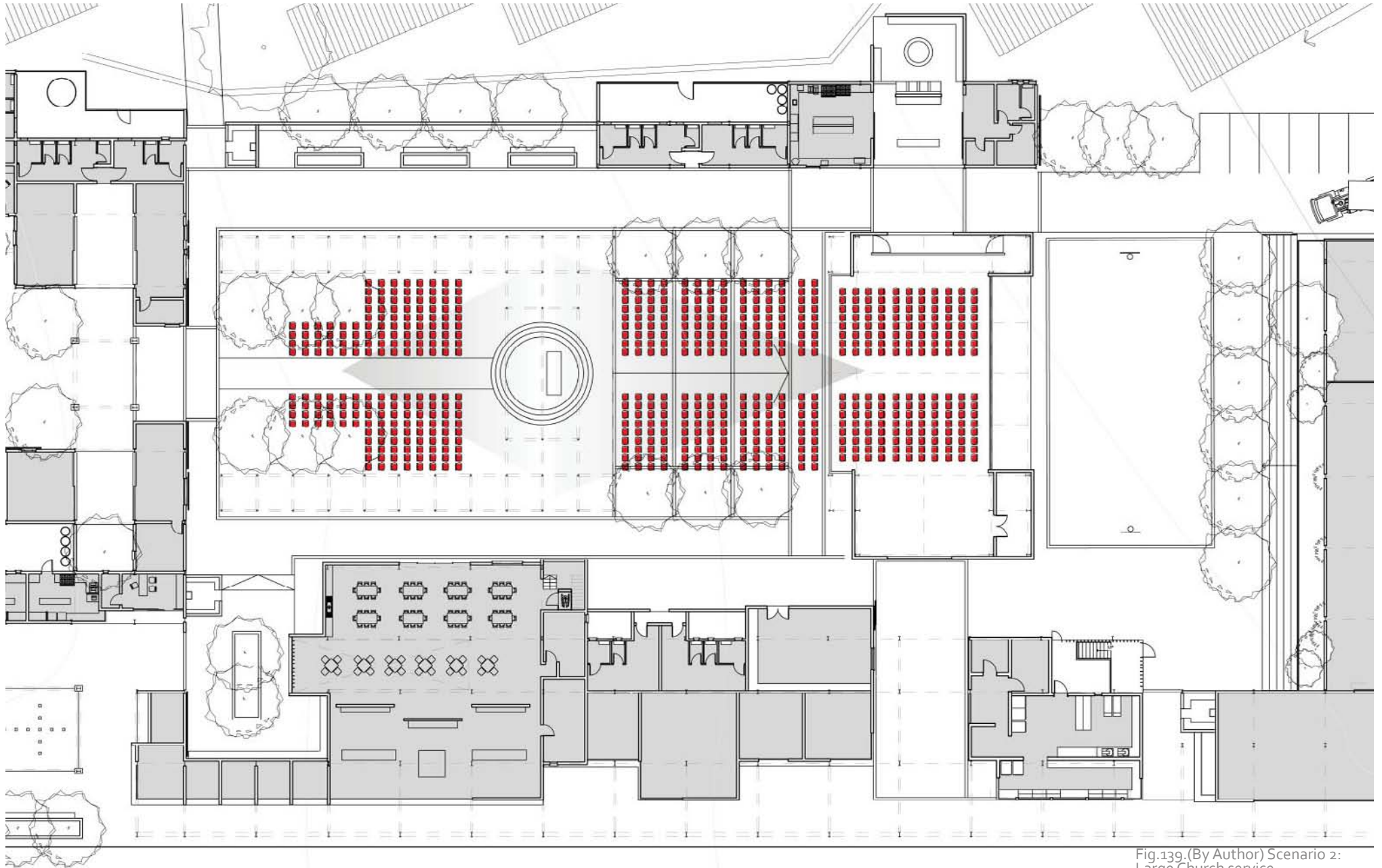


Fig.139.(By Author) Scenario 2:  
Large Church service

### Scenario 3: Medium to Large Public Function

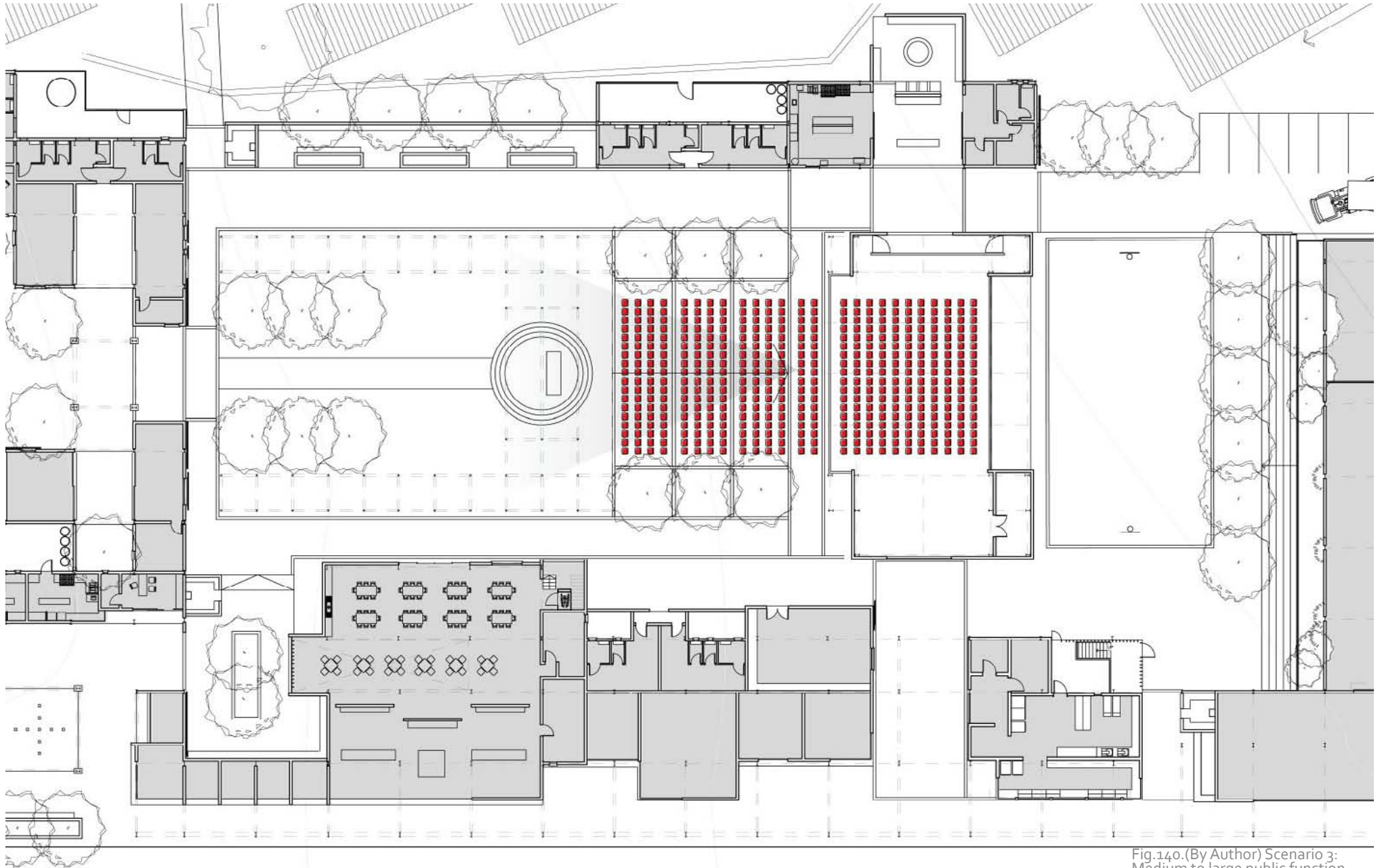


Fig.140.(By Author) Scenario 3:  
Medium to large public function

## Scenario 4: Indoor Performance

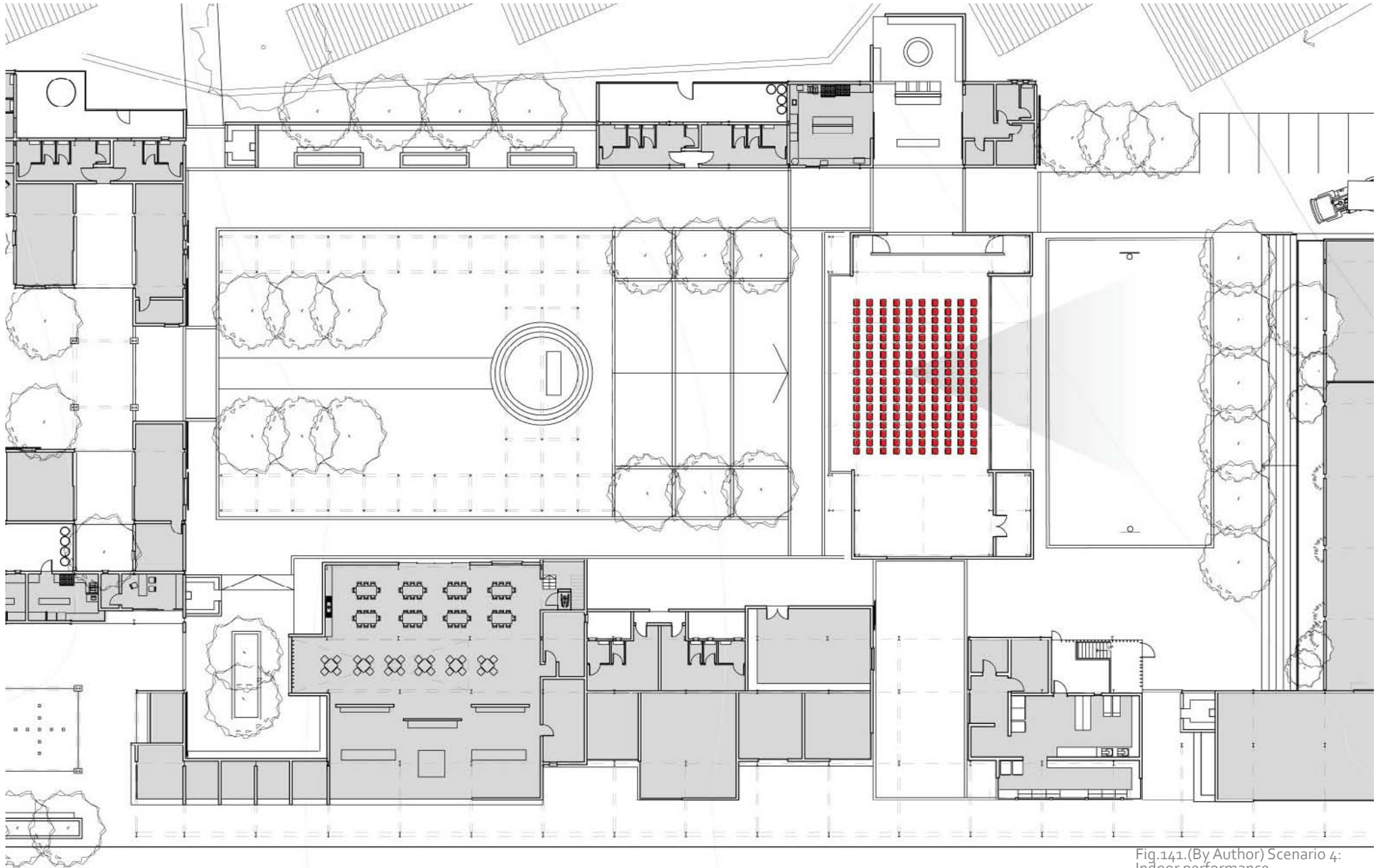


Fig.141.(By Author) Scenario 4:  
Indoor performance

## Scenario 5: Outdoor Performance

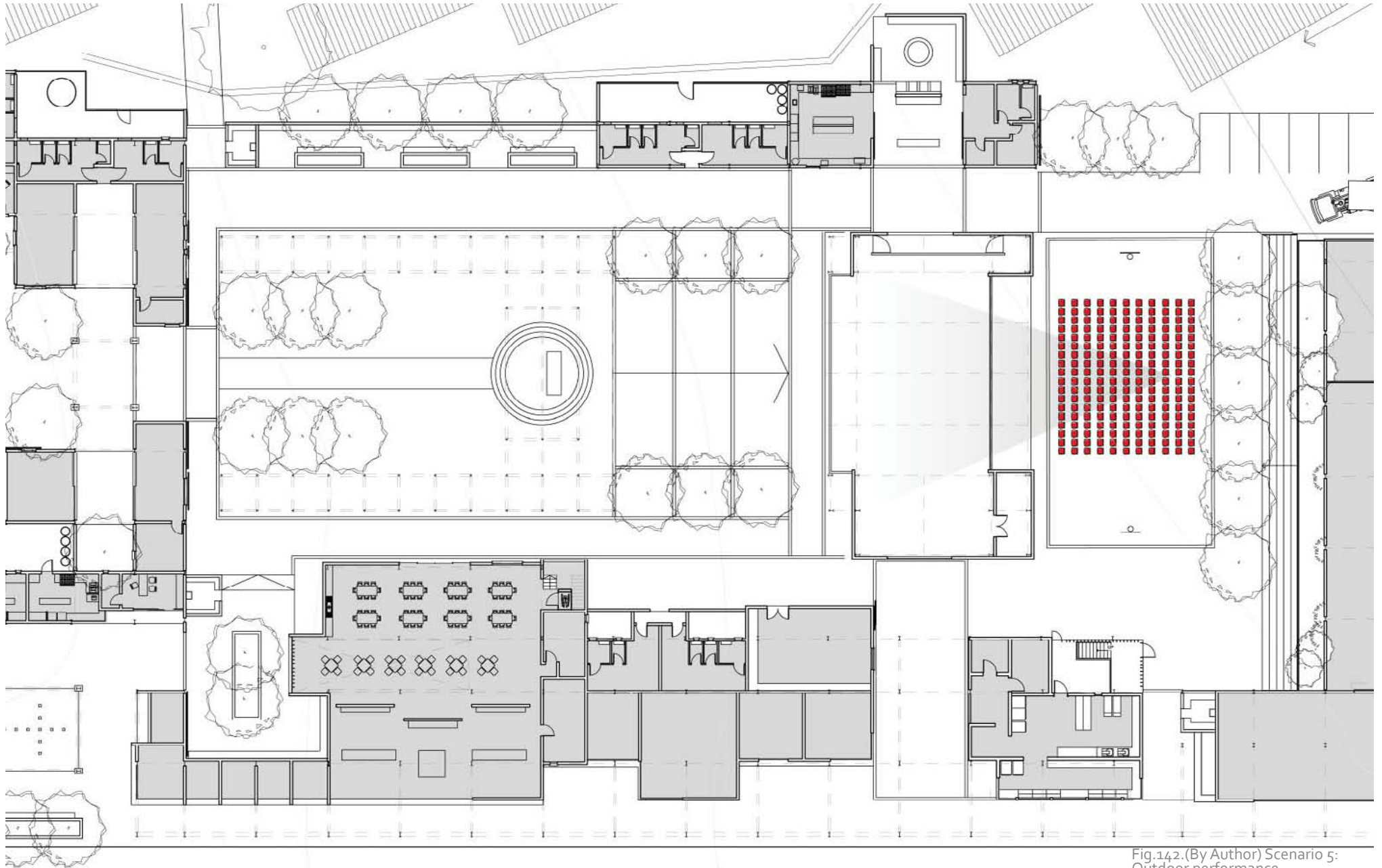


Fig.142.(By Author) Scenario 5:  
Outdoor performance

## Scenario 6: Indoor Speaker

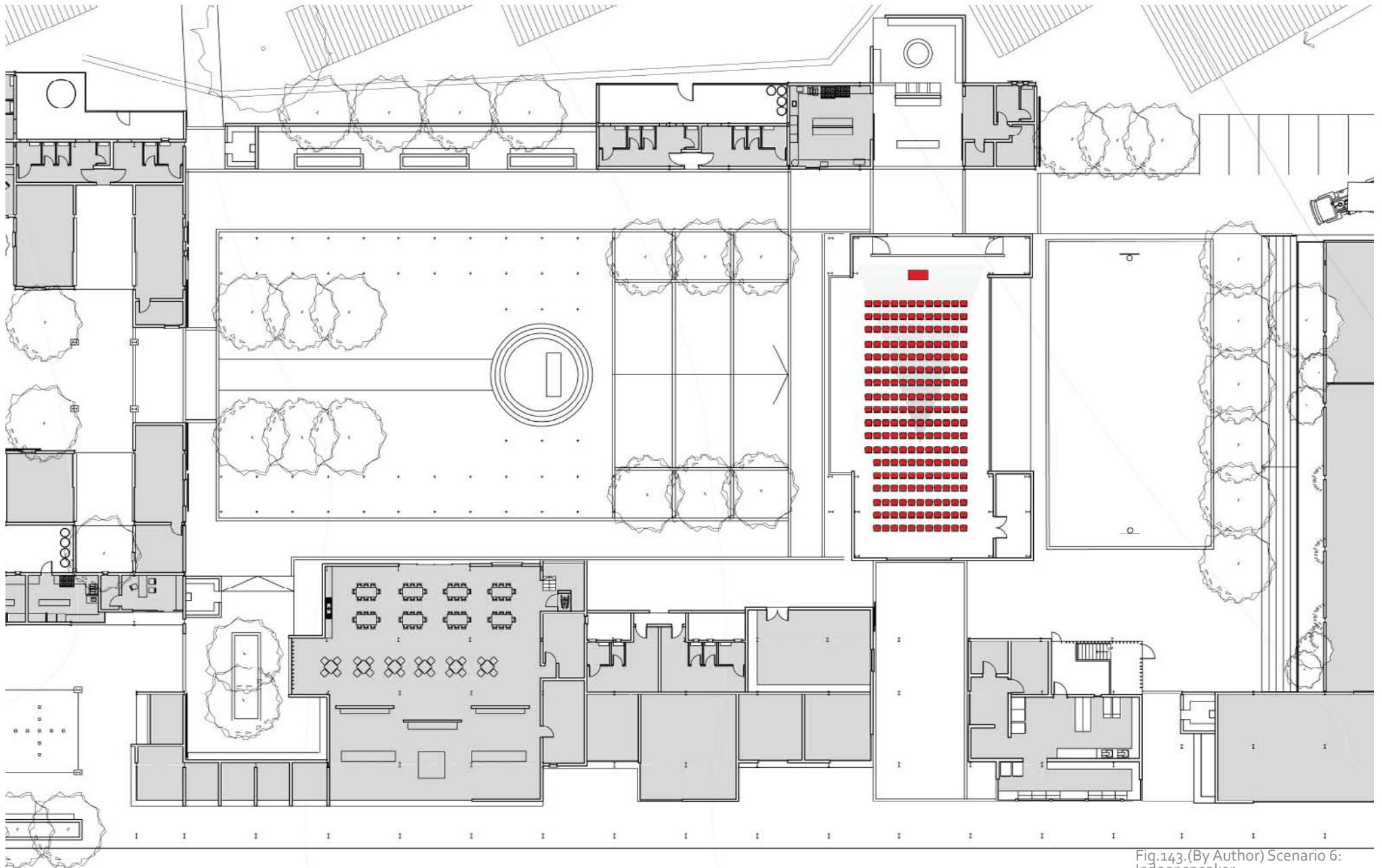


Fig.143.(By Author) Scenario 6:  
Indoor speaker

## Scenario 7: Social Event

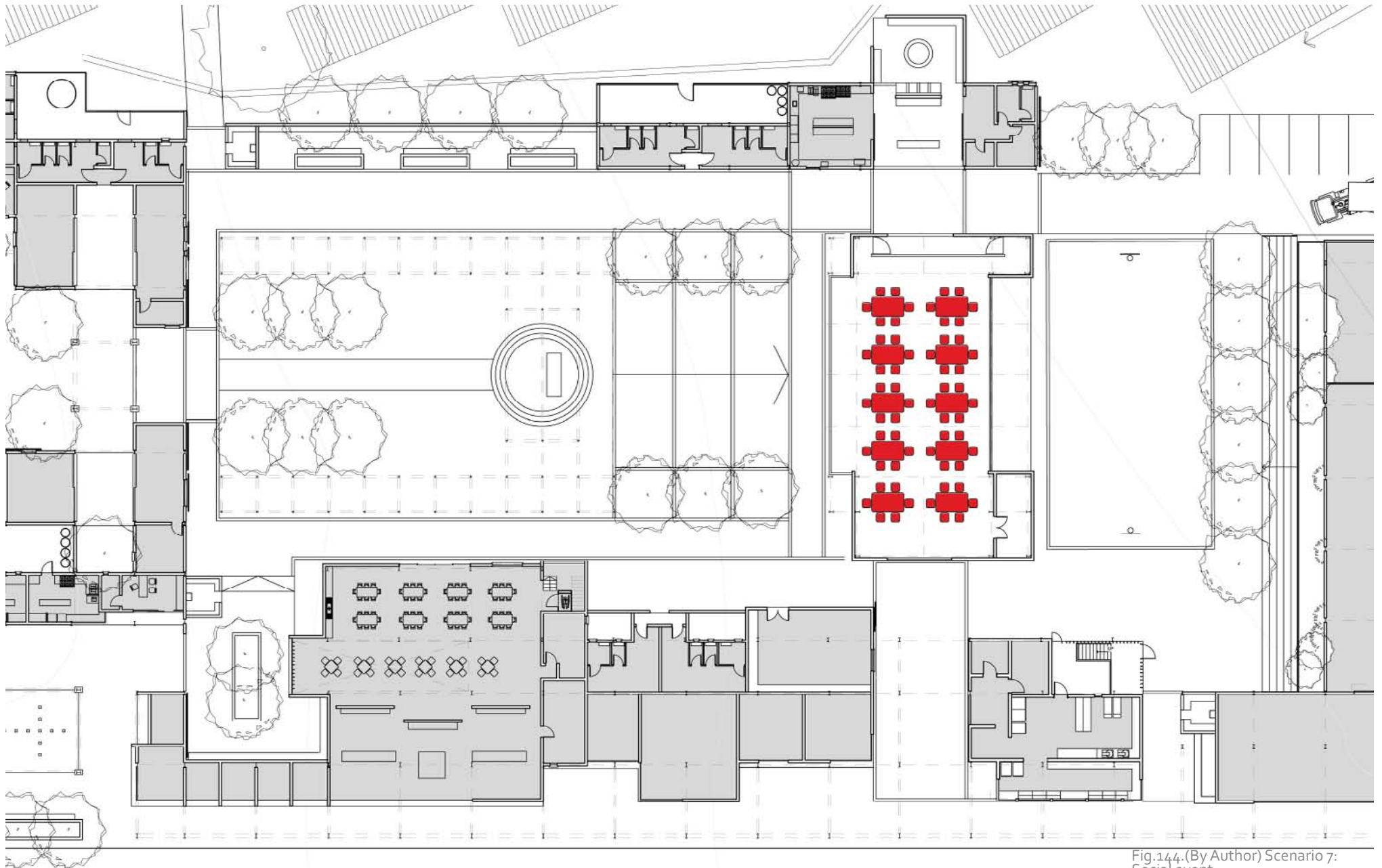


Fig.144.(By Author) Scenario 7:  
Social event

## Scenario 8: Social Sports Event

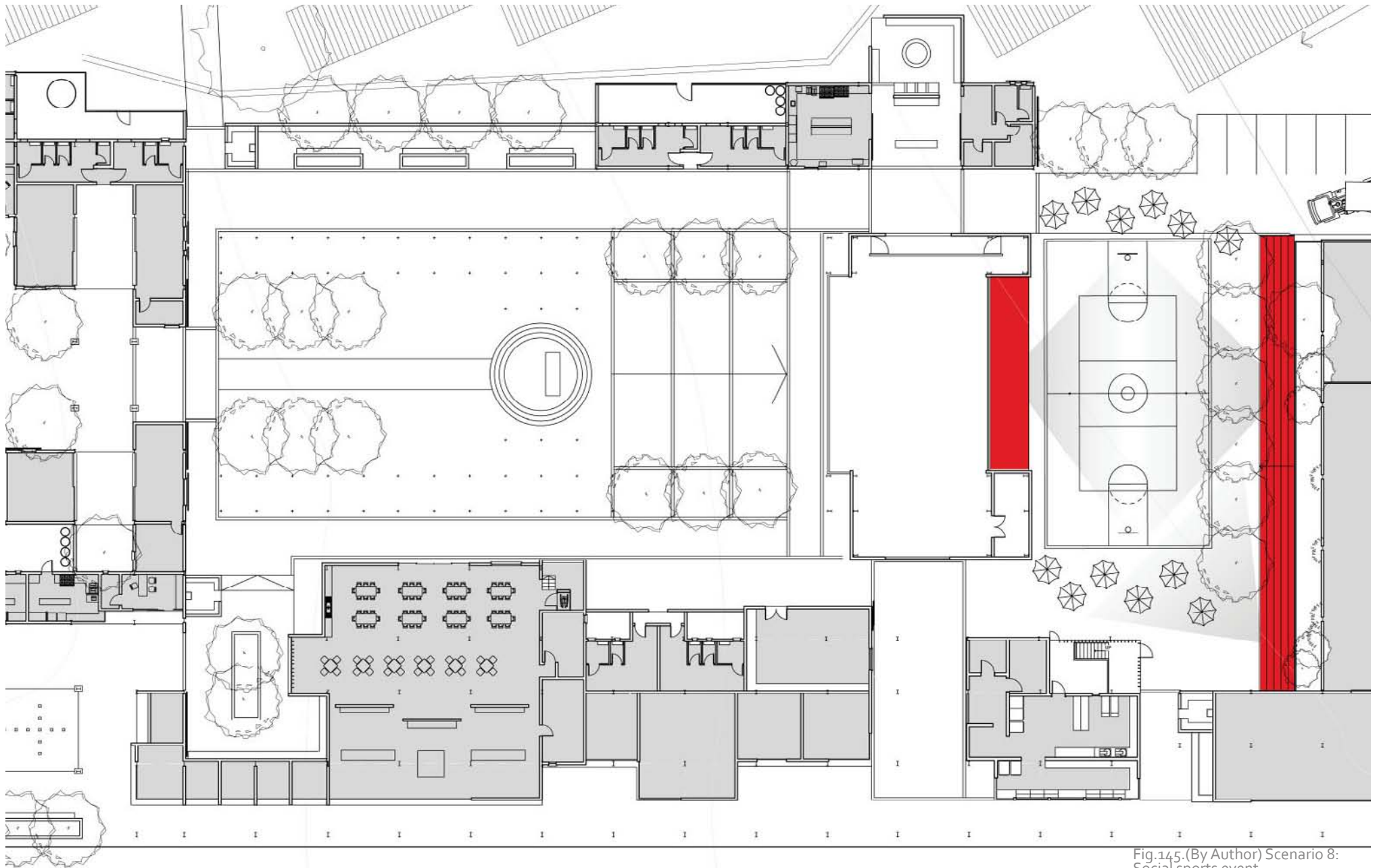


Fig.145. (By Author) Scenario 8:  
Social sports event

## Detail: Hall Doors

Light and shade are an important design element. They become a fourth dimension with which to design and texture spaces and facades.

The Hall must also form the termination point of the axis that runs East-West within the Sacred Space. The nature and function of the hall requires flexibility and a lightness, which is also contrasted by the necessity for solidity, an anchoring element that is heavy and communicates with the ground.

The lightness of the doors, which enable the space to transform, accommodating many functions is thus grounded by the heavy walls. These doors are constructed from a steel frame, with a steel, red cross detail inserted into the frame Fig.148. This detail is also to give additional support to the frame. Timber louvres are inserted inbetween the steel structure and draw from the simplicity of the horizontal shadow lines and elements that frame the sacred space. The three openable doors with their cross details are symbolic both of the Holy Trinity and of Jesus and the two men who were crucified at the same time.

The louvres will cast shadows either into the hall space when the doors are closed, Fig.146, or onto the ground, shading those below when open, Fig.147.

This dynamic play of light and shadow that changes with the time of day, weather and functional use, both adds to the quality and makes the user more aware of the space.

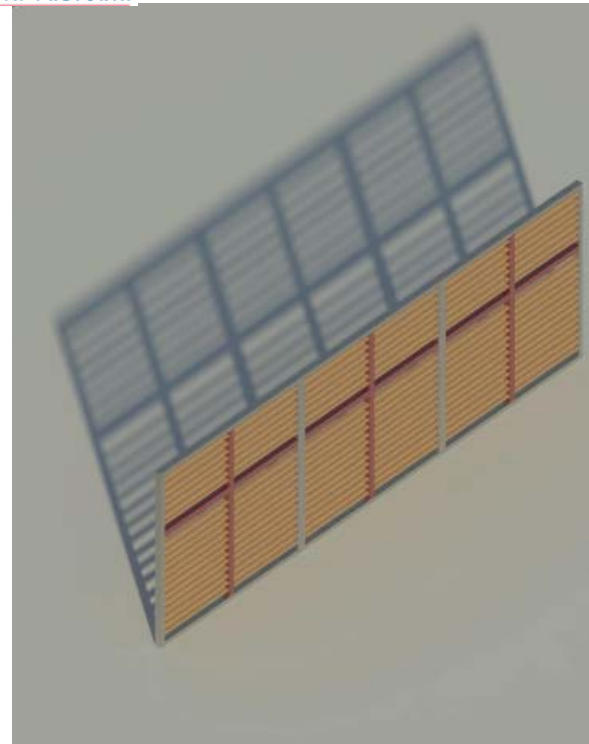


Fig.146.(By Author) Concept illustration showing doors closed

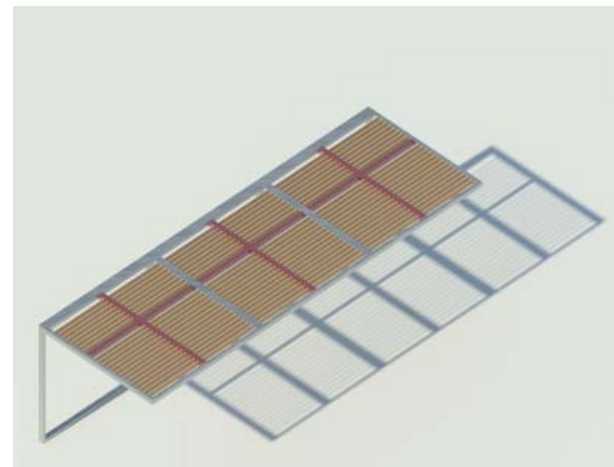


Fig.147.(By Author) Concept illustration showing doors open



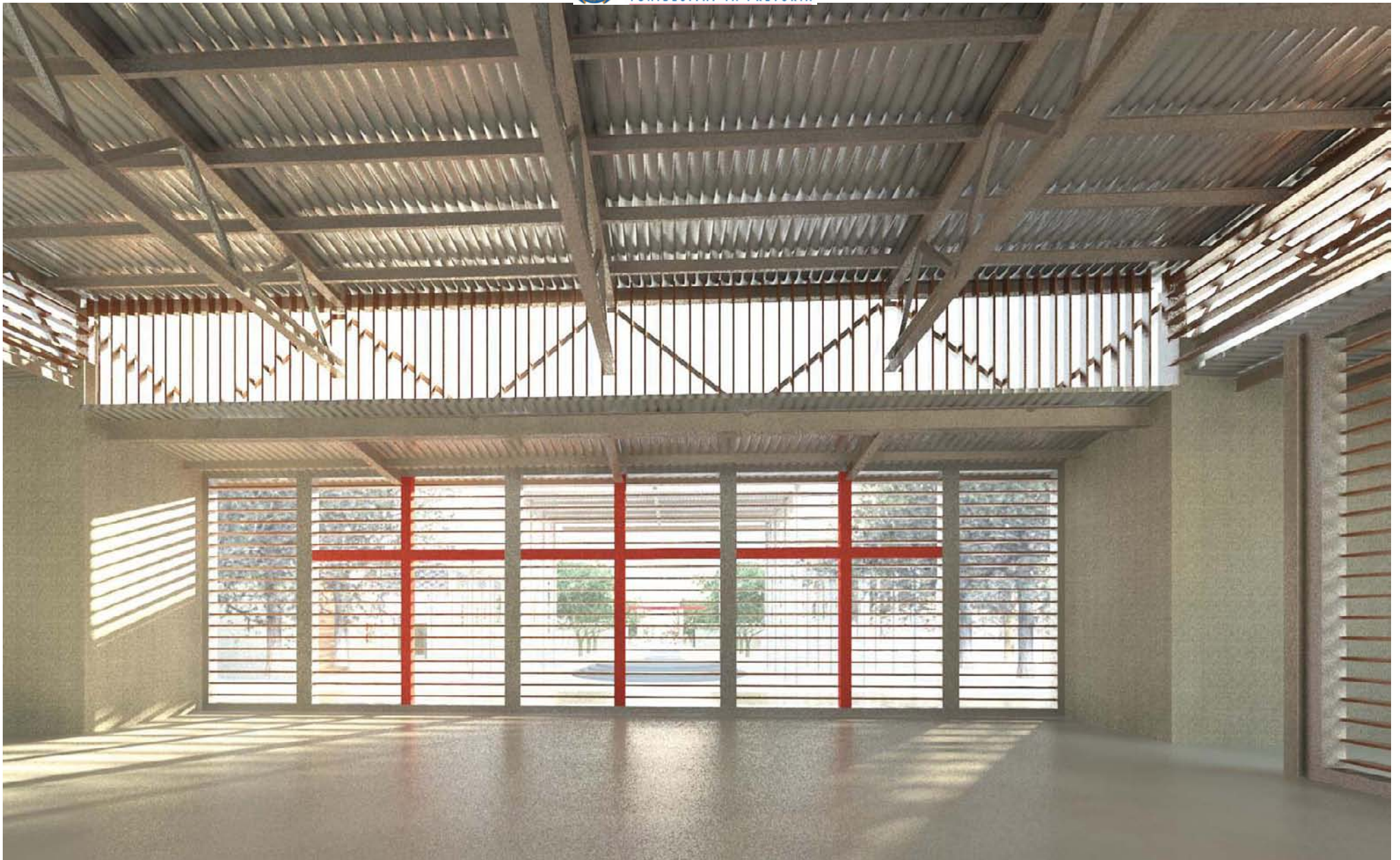


Fig.148.(By Author) Illustrative view inside the hall, looking West

# Production & Training

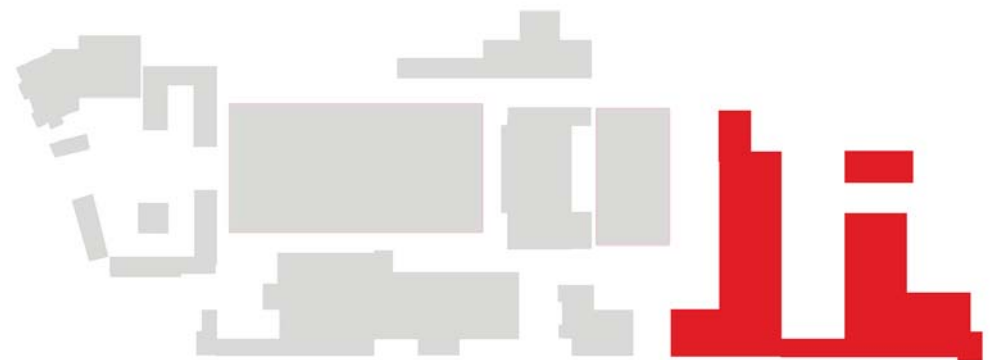


Fig.149.(By Author) Graphic plan indicating Production & Training

The Production area of the intervention is largely remaining as a general proposal, although the general function and spaces have been designed., the specifics remain too large to tackle within the scope of this thesis, Fig.150.

The existing primary function on site is a governmental agriculture and floraculture initiative. This project has not been maintained, although it still functions, it has fallen into disrepair.

## Packing & Processing

The Packing and Processing area will allow the goods being produced on site to be packaged and sold in the attached market space, directly benefiting the community, as well as for a portion to be sold to local retailers.

## Market Space

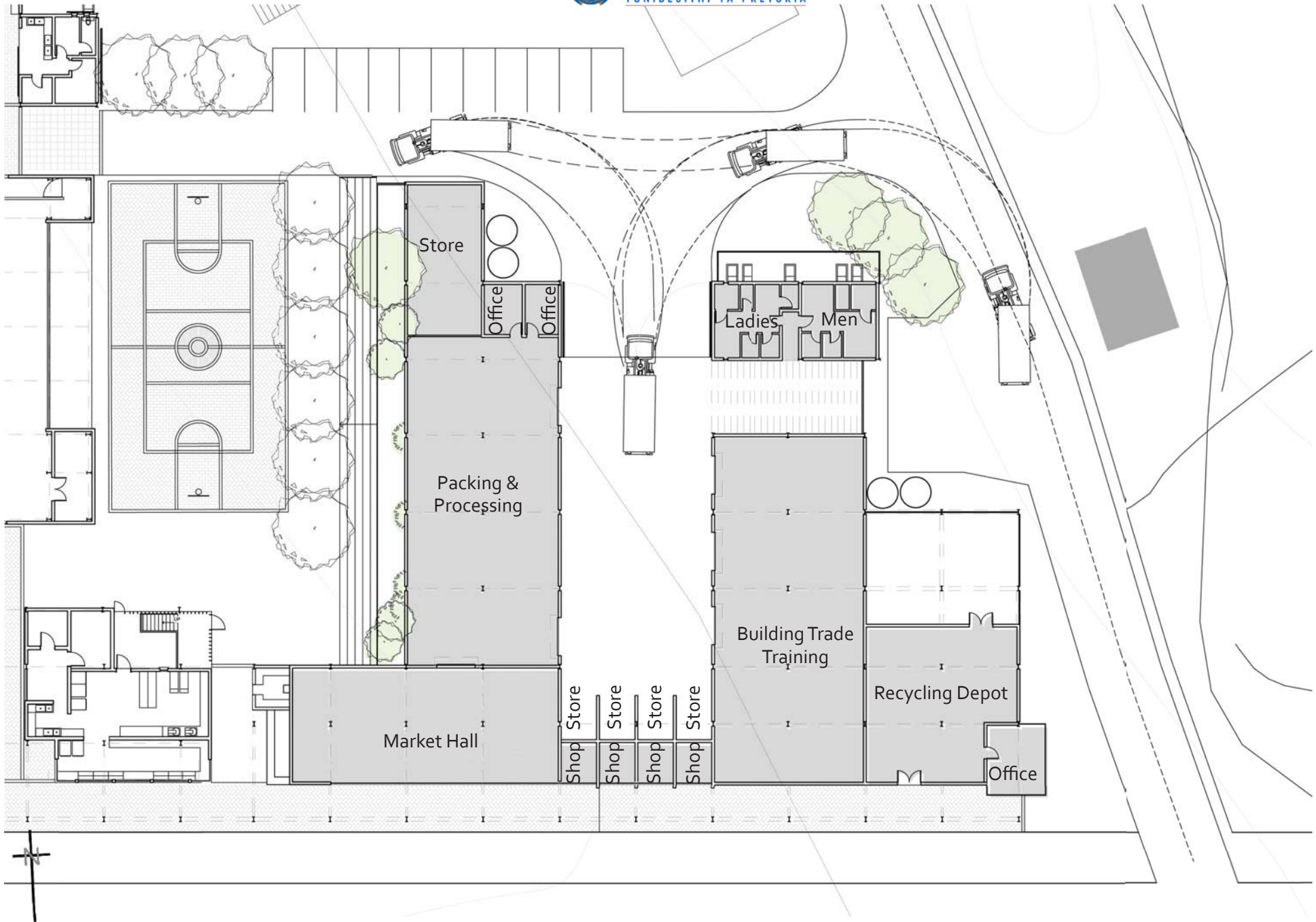
The open market hall is a space for the community to gather to sell their goods and a forum for community exchange. Quite a number of the local people already have a small plot of vegetables growing in their gardens, this market, along with the expanded agricultural intervention will increase education and local food productivity. This in turn will produce income for both the community and the intervention.

## Building Trade Training

This is a small trade school geared to teaching trade skills to the local community. These skills will be put back into the intervention in its construction and maintenance, as well as into the larger site development, through the building of social housing units.

## Recycling Depot

The community is able to bring their goods for recycling to the depot, increasing awareness about the importance of recycling. Here the goods will be sorted and taken to a recycling centre. In return the community may be able to get financial compensation for goods handed in.



## Sacred Space: Water

Water is highly symbolic in the Christian faith and at each entrance, Fig.152 there should be either a water point where one is able to drink, prepare and cleanse or a water feature, Fig.151.

*If anyone is thirsty let him come to me and drink. Whoever believes in me, as scriptures have said, streams of living water will flow from within him.*  
*John 7:37-38*

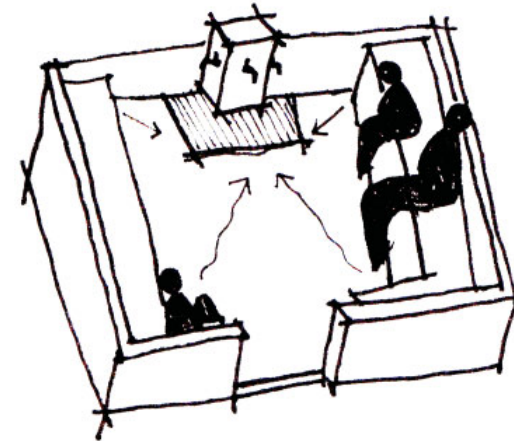
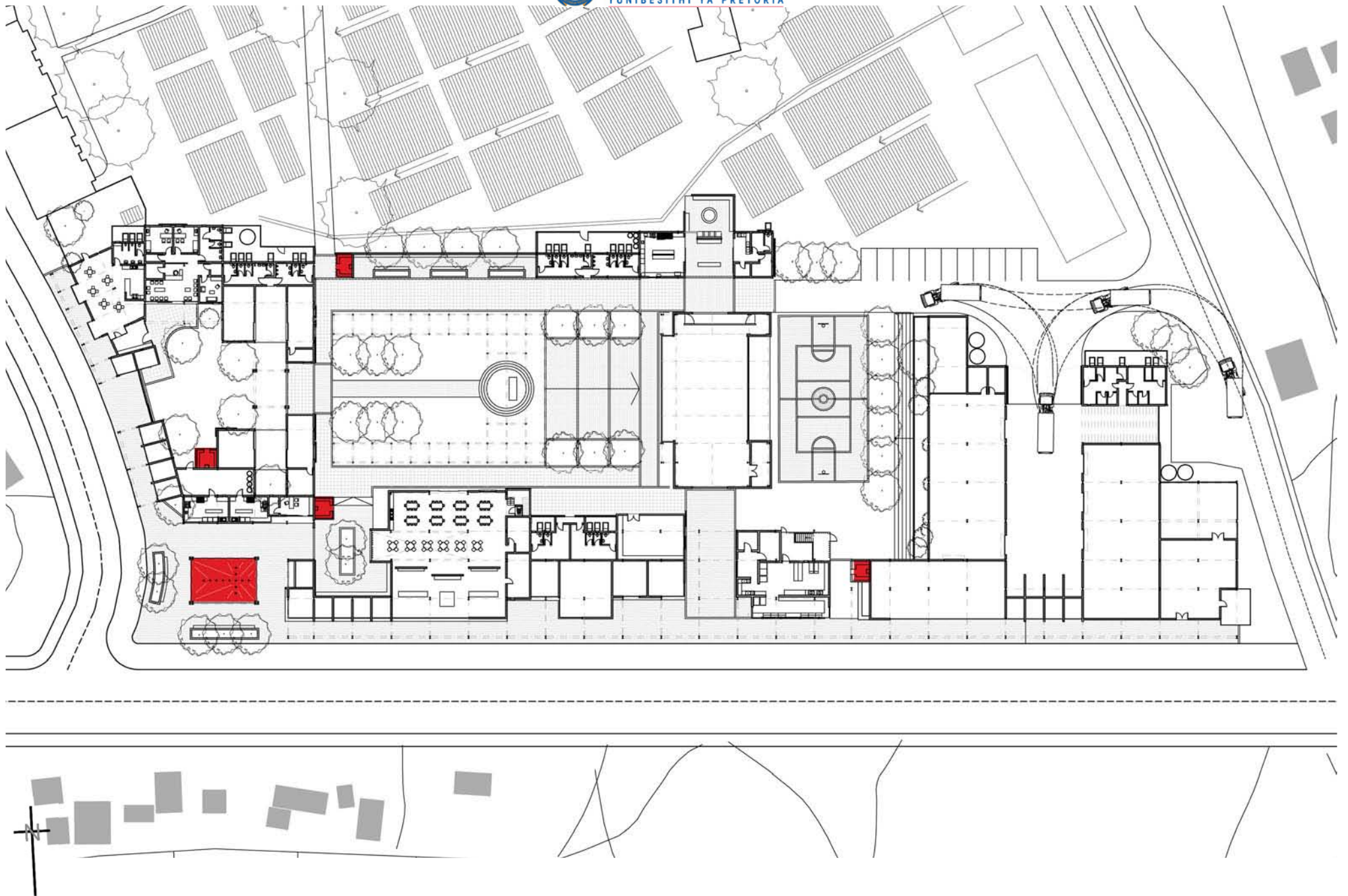


Fig.151.(By Author) Sketch showing water point

Fig.152.(By Author) Opposite Page-Plan showing location of water points



## Scale: South Elevation

The elevations of the public facades have a unifying element which ties the different functions and buildings together into one cohesive intervention, Fig.154.

This element must also reflect the two scales of the area, new and existing. Which will also serve to provide a pedestrian-friendly scale.

This unifying element is a projecting structural frame where the two horizontal members are emphasised through colour.

The structural frame representing God, within which the building is able to take shape and define space. Red is chosen to highlight the horizontal elements as it is a strongly symbolic colour in the Christian Church:

*But if we walk in the light, as He is in the light, we have fellowship with one another, and the blood of Jesus, His Son, purifies us from all sin.*

1 John 1:7 [NIV translation]

*In fact, the law requires that nearly everything be cleansed with blood, and without the shedding of blood there is no forgiveness.*

Hebrews 9:22 [NIV translation]

*Therefore, brothers, since we have confidence to enter the Most Holy Place by the blood of Jesus, by a new and living way opened for us through the curtain, that is, His body*

Hebrews 10:19-22

*To Him who loves us and has freed us from our sins by His blood, and has made us to be a kingdom and priests to serve His God and Father—to Him be glory and power for ever and ever! Amen.*

Revelations 1:6 [NIV translation]



Fig.153.(By Author) Process sketch of South Elevation

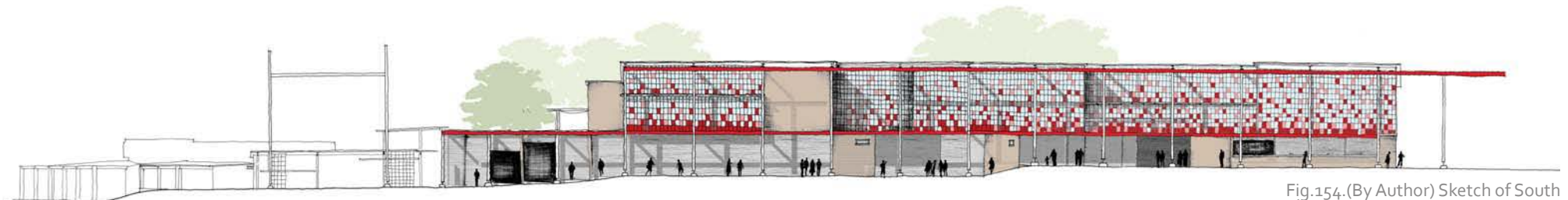


Fig.154.(By Author) Sketch of South Elevation



## Scale: North Elevation

The North elevation borders the sacred space and thus will reflect differently to the public facade.

This facade is of a much lower scale, speaking to the intimacy and relative privacy of the space.

Warmth and interest is added through timber sun screening which further emphasises horizontality. Concrete lintels are plastered and expressed as horizontal bands

The focus within the space is emphasised by the use of these horizontal elements which reinforce the East-West axis created by both building layout and landscaping, Fig.157.

Large overhangs contribute to the play of sunlight provided by the various elements, producing bands of shadow that are projected onto the wall face.

The scale and language of the architecture on this face, reflects inward, as compared to the Southern facades which seeks to directly communicate outward.

The edges created by the structures that border the sacred space seek to frame space, rather than compete for attention.

The language is simple, speaking of horizontals and verticals and using simple palette of textures.

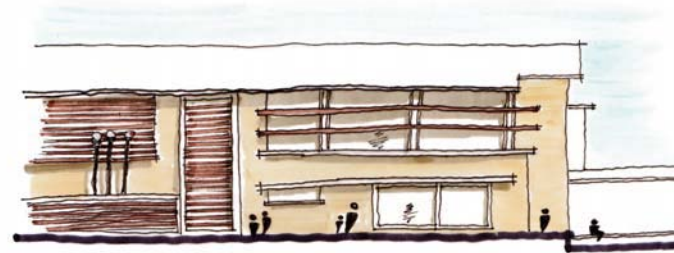


Fig.155.(By Author) Process sketch of North Elevation

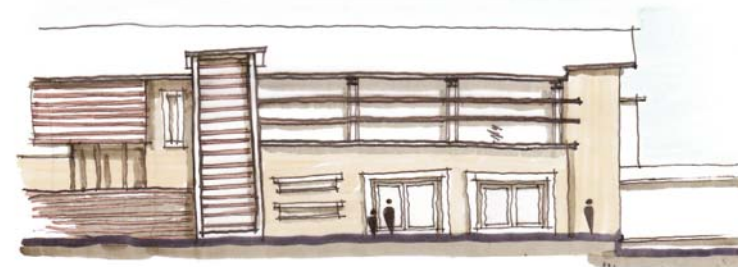


Fig.156.(By Author) Process sketch of North Elevation

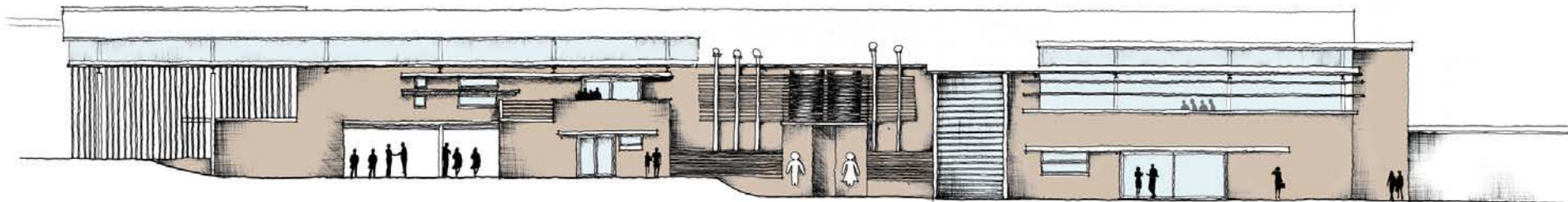


Fig.157.(By Author) Sketch of North Elevation



Fig.158.(By Author) Images showing 3D development



Fig.159.(By Author) 3D render -  
October 2010

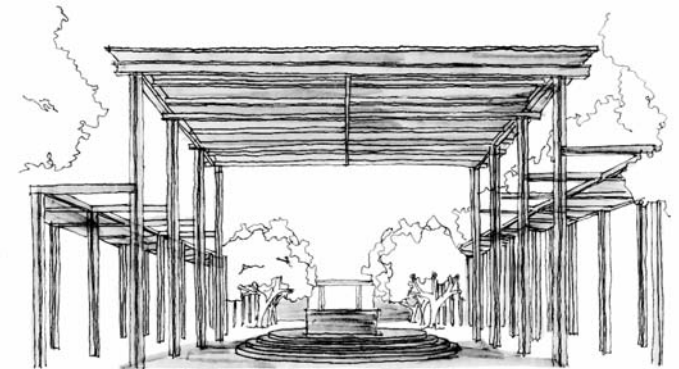
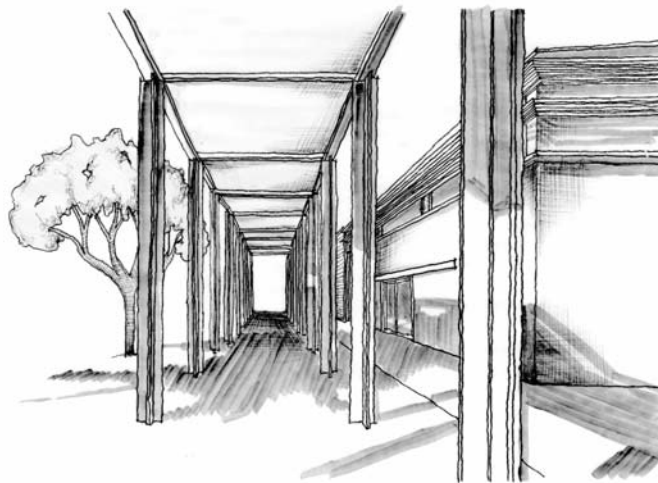
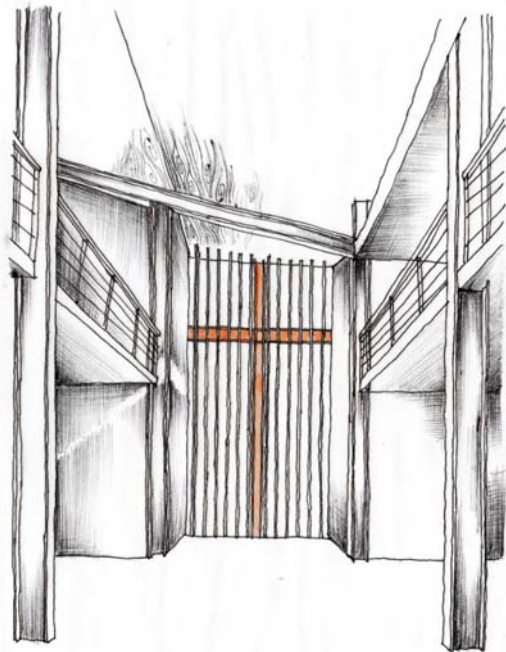
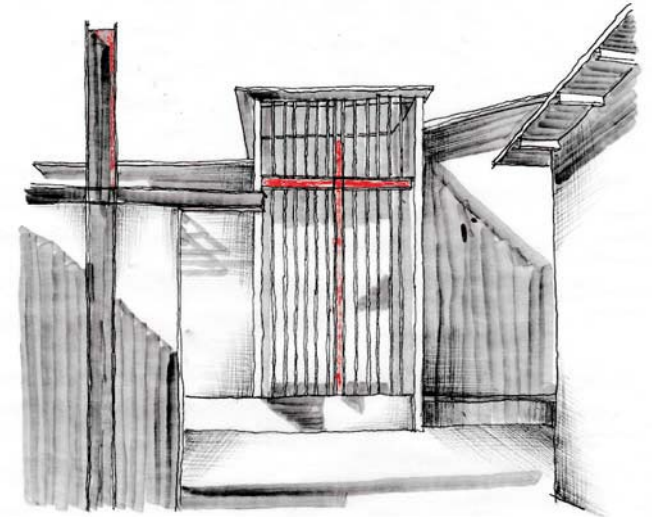
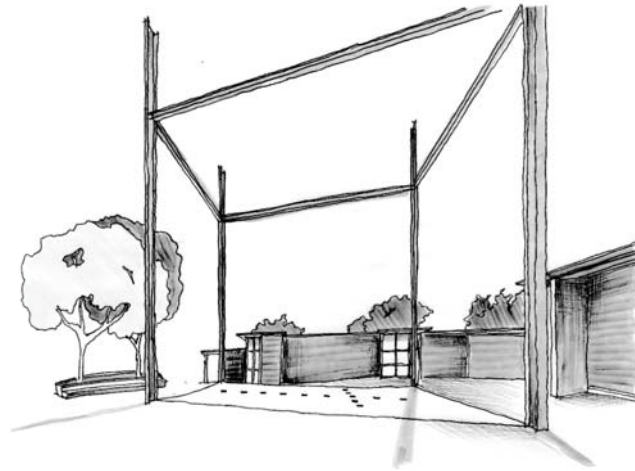
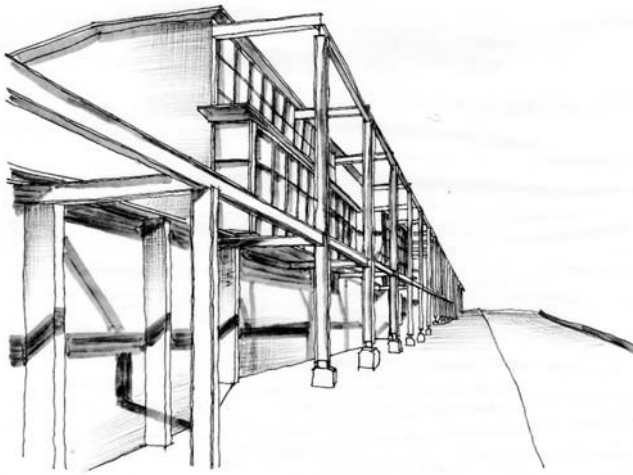
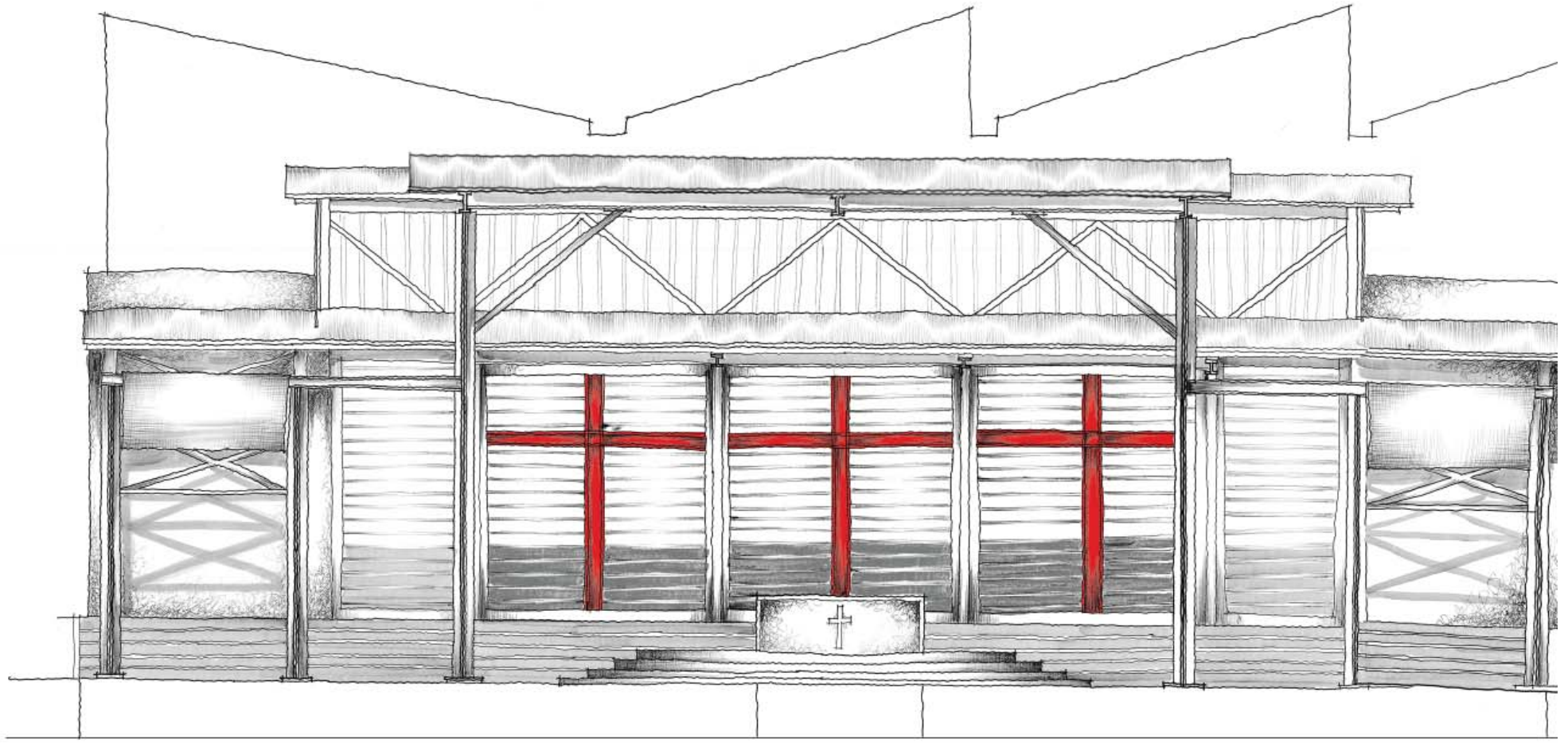


Fig.160.(By Author) 3D sketches of a community centre for Mamelodi East



Fig.161. (By Author) 3D Aerial view of a community centre for Mamelodi East



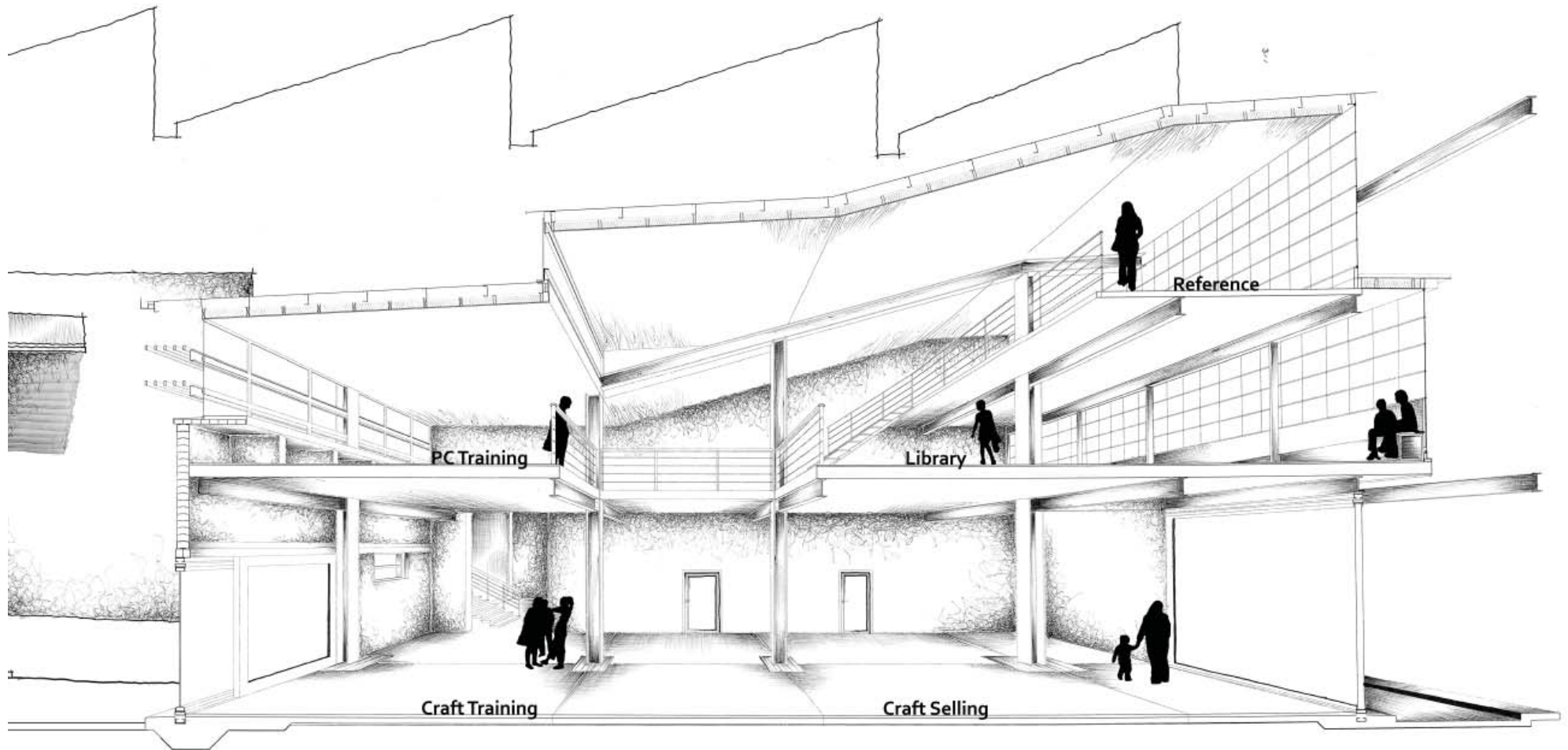


Fig.162.(By Author) Sectional Perspective of Craft Training and Selling and Resource Centre