#### Introduction.

coastline worship centre ebute-meta, Lagos state.

The redeemed christian church of God is a pentecostal bible believing church headquartered in Nigeria, with branches in the world over. The current national headquarters is located at ebute-meta, Lagos state. It bounds the Lagos lagoon, and has a major city landmark in its sight; the third mainland bridge. This project proposes



a five to seven thousand seat capacity worship centre, with strong aesthetic values, enough to transform the deplorable nature of the coastline. The structure shall be much more than the conventional worship centre, as it seeks to dispense its functions.

#### The brief.

innovation, dynamism, accessibility and profound aesthetic values.

The aim of the project is to create a coastline worship centre intended to transform the Lagos coastline. The client has specifically requested a masterpiece that is to be innovative, dynamic, accessible and contemporary.

The scheme shall primarily consist of;

- A worship bowl that is to seat 5,000 7,000
- A multi-level parking structure for 600 cars.
- An office structure with a helipad
- Ancilliary facilities (as required).

#### The site.

technology, smart solutions, creativity.

The site is bounded by the lagoon, and as such, exhibits typical characteristics of a water-logged site. the entire area is marshy and is currently saw-dust filled. this poses reasonable concern as regards structural considerations.

The sanitary conditions of the site is highly un-healthy and dirty. this will require an extensive clean-up, before commencement of construction. This condition is due in part to the current lumber processing community, who inhabit the area.

The site also experiences substantial wind pressure, with wind speeds reaching an average of 12km/h, reaching 4000 wind hours yearly. This situation creates a unique opportunity for the realization of green sustainable, clean energy.



#### Requirements of the design

coastline worship centre ebute-meta, Lagos state.

- The design should aim at providing spaces intended for artistic inspiration and meditation with an innovative, contemporary and avant-garde architectural approach.
- The design should promote the psychological and emotional comfort of its users.
- The spatial and circulatory flow of the design proposal must be immersive and interesting, branching out beyond organised space.
- The design concept must be aesthetically pleasing, original and distinctive without compromising buildability, cost effectiveness, structural engineering and serviceability.
- The proposed design must be original, having an expressively presented conceptual idea.
- The proposed design should present creative and innovative solutions to the presented urban and architectural problems.

#### **Our Urban Solutions**

accessibility, pollution, appropriate technology and community development.

#### ACCESSIBILITY.

The site is located in a dense region. This situation poses a considerable challenge as we have to effectively move nearly 7,000 worshippers in and out of the area on worship days. most of the two-way roads in the area have been converted to one way routes due to street parking, which is adopted by nearly all residents in the area. To this end, we planned a one way movement system which aims at keeping the access roads as free as possible.

#### POLLUTION.

The coastline has an already established and long-standing identity as a budding wood processing community, while the local industry is hailed for its ingenuity in tackling urban poverty, it does fail however in proper disposal of its major bi-product: SAW DUST, this conundrum has however unveiled itself as a unique opportunity to provide awareness as regards the use of saw dust as a viable building component, it shall be employed in our proposal in the following ways;

- Saw dust concrete masonry unit
- Saw dust concrete.

Saw dust concrete masonry unit is a revolutionary albeit simple technology that employs the use of organic waste (saw dust) as an admixture in the production of blocks, its benefits include; it is **light in weight**, and is ideal for high-rise construction (the office tower), because of its **low bulk density** and **good compressive strength**, other benefits include **good acoustics**, ready availability of saw dust, **better insulation** properties and **reduction** in environmental damage due to re-use and re-cycling, above all, it fosters **great cost savings.** 

**Saw dust concrete** will be used in areas where structural integrity cannot be compromised such as site works: pavings, roads, jetty platform, etc.



#### BROWNFIELD NATURE OF THE SITE AND REMEDIATION.

The sanitary condition, level of contamination and its potential to be redeveloped qualifies the site as a brownfield. The site must be assesed by an experienced environmental consultant before it can be redeveloped. This involves an analysis of the soil, ground water and surface water through testing for harzadous compounds, and ensuring that appropriate measures are taken to reduce identified risks and liabilities. **remediation** is therefore the process of removing all known contaminants to levels considered safe for human health. Some technologies employed include;

- biromediation
- phytoremediation
- in-situ chemical oxidation.

#### APPROPRIATE TECHNOLOGY AND COMMUNITY DEVELOPMENT.

Appropriate technology simply refers to technology and skill that is simple enough, and can be managed on a local level in the delivery of required needs. As previously stated, the coastline has an already established identity as a wood processing community. We plan on using their direct output (based on quality) in different parts of our proposed development, e.g furniture, falsework, e t c. Thus enhancing the local content of the project, and fostering community development.

2.

#### International recognition.

the quality of the project must be profound and powerful enough to achieve international recognition

#### INTERNATIONAL STANDARDS.

The brief was very explicit in its quest for an architectural masterpiece that will attract international recognition. We sought to achieve this objective via the attainment of architectural international standards which are dictated by trending concepts in the field. They are;

- LEED (Leadership in energy and environmental design.)
- ACCESSIBLE DESIGN.
- STRONG AESTHETICS.

#### LEED (Leadership in Energy and environmental design.)













LEED certification provides independent verification of a building's green features, allowing for the design, construction, operations and maintenance of resource-efficient, high-performing, healthy, cost effective buildings.

#### SO, HOW HAVE WE ACHIEVED A GREEN DESIGN?

#### 1. SUSTAINABLE SITE.

storm water management: we were able to reduce storm water runoff by increasing on-site filteration, through the use of permeable pavements, and effective hardscaping i.e since our structure is raised from the we were able to reduce the exposure of over 80% of on-site hard surface to rain, thus reducing run-off and preventing erosion.

reduction of heat islands: through minimum exposure and shading of car parks and impervious surfaces, we were able to reduce black-body radiation, thus minimzing heat islands and conccurently preventing a heated site.

water efficient landscaping: we were able to incorporate water management in spatial planning through the inclusion of pools in our landscape design, however, we ensured to use stored storm water for irrigation.

waste water reduction: water as a resource is increasingly scarce as the day goes by, to this end, we employed the use low-flow plumbing fixtures, as we tried to reduce the mean water use in the entire facility, and ensure efficiency.

sustainable redevelopment of brownfield: through the proposal 5. INNOVATION AND DESIGN. of rehabilitation, pollution elimination and eventual redevelopment.

regional priority: our proposed development includes a jetty, and is located within half a mile of a bus-stop.



#### 2. ENERGY AND ATMOSPHERE.

renewable energy: we encouraged self supply of clean green energy through the use of solar panels and wind turbines in order to reduce the impact of fossil fuel.

#### 3 MATERIALS AND RESOURCES

storage & collection of recyclables : occupants will dispose waste via refuse chutes in color coded plastic bags for easy identification of recyclable waste, worshippers will dispose waste in color coded bins as well

construction waste management: all identified recyclable waste during construction shall be redirected towards manufacturing.

recycled content: sawdust shall be used in partition walls as sawdust blocks, and in concrete as an additive for site works.

local content: the project shall employ locally produced wood in construction, and shall be applied in areas based on quality.

#### 4. INDOOR AIR QUALITY.

effective ventilation: de-mountable panels are employed along the auditorium in-order to allow for changing of air.

controllability of systems: high level of individual control over ventilation and lighting systems shall be employed to support high level of productivity, comfort and health of the users of the office complex.

daylight & views: we established a good balance between daylight, good acoustics, and good views, therefore providing good connection between interior and exterior of the office complex.

the design of the coastline worship center is created in conscious effort to create a sustainable green urbane unit. It employs innovative use sawdust as an innovative material.

#### 6. AWARENESS AND EDUCATION

this project aims at sensitizing individuals, organisations and the government of Lagos state on the viability of brownfields, the economic and environmental benefits of using saw dust as a building material, as well as the challenges of urban poverty and urban pollution effective use of sawdust can reduse.

#### 7. WATER EFFICIENCY.

use of grey water: storm water is collected and re-used for site irrigation purposes.

low flow fixtures: low flow plumbing fixtures are employed to reduce water use in the facility.

#### ACCESSIBLE DESIGN.



dis-ability can be physical, emotional or cognitive, it can be permanent or temporary. this development employs ramps, side railiings on walls in order to assist the blind, as well as an interplay of floor textures, all in a bid towards an accessible future.

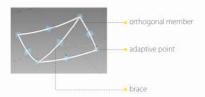


#### Structural systems.

safety, innovation, integrity, stability, and dynamism.

#### THE AUDITORIUM.

The structure is a 6000 plus seater reinforced concrete framed structure with precast R C tiers. The auditorium is enveloped by a **lattice shell structure**. the shell is a 2- layer lattice grid of double curvature with a depth factor of 0.00625, having a largest span of 75m, resulting in a thickness of 469mm. The maximum height is 40m above sea level. The shell creates a highly dynamic and fluid feel to the envelope, thereby creating an ephemeral sensation. The envelope is a light-weight solution to a column free span of the auditorium. It also reduces the weight of the structure, which is required, considering the low bearing capacity of the sub-strata.



#### THE OFFICE TOWER.

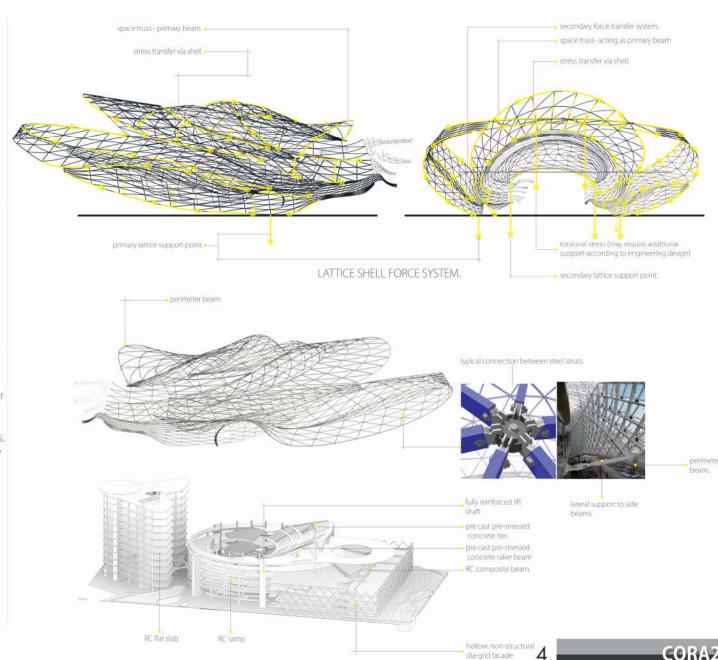
This is a 12-storey reinforced concrete framed structure. It is elevated by one floor in order to allow for parking and traffic flow. All slabs are flat slabs, with the exception of the first floor, which is a double tee slab. This enabled the reduction of the depth of transfer beams above the car park, the use of flat slabs ensures easy distribution of building services above the ceiling without significant reduction of headroom of the floors, or interference of drop beams. The proposed flat slab will save cost of formworks and increase the speed of construction.

#### MULTI-STOREY PARKING.

The structure parks 600 cars. It is a reinforced concrete structure with split level parking system. double tee slabs are used for high efficiency of the structure. A diagrid facade with void openings is used to enclose the structure.

#### FOUNDATION.

Due to the marshy nature of the site (location), **pile foundation** is being proposed for the safe transmission of building loads to stable strata.



#### Services and service integration.

#### THE OFFICE COMPLEX

Building services are classified into three categories; mechanical systems, electrical systems, and building operation systems, effective integration of service aides effective use and maintenance of the structure.

#### MECHANICAL SYSTEMS.

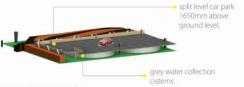
#### HVAC SYSTEMS.

We employed split unit air handling units. This afford- Water tanks are stored on the rooftop, and distributed ch influences productivity, user health and comfort.



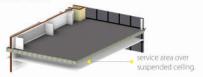
#### SITE DRAINAGE

Grey water systems were installed in a bid towards wa- distributed wiring, the main shaft is also located in ter efficiency and site irrigation systems, runoff to the lagoon was minimized via good use of soft surfaces.



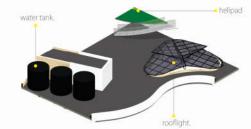
#### FIRE PROTECTION

in ensuring fire safety, we provided sprinkler systems, which are laid over the ceiling, water is supplied via the Refuse chutes were provided for waste collection, it is fire hose reel ducts. The perimeter walls of the fire esc-then sorted in the refuse room, and moved off-site to a ape are fire rated.



#### PLUMBING.

ed us the opportunity for high individual control, whi-I've water management.



#### **ELECTRICAL SYSTEMS**

Electrical panel rooms are installed on every floor for the panel room, and runs through the building.

#### **BUILDING OPERATION SYSTEMS**

#### TRANSPORTATION.

A total of 2 nos lifts was provided, in addition to a goods lift, 2 staircases and one fire escape.

#### SOLID WASTE MANAGEMENT.

recycling plant.

#### THE AUDITORIUM.

#### HVAC SYSTEMS.

air handling units are place on concourse areas that either have little or no public use, supply ducts are then passed through the highest level of the perimeter walls into the auditorium.



#### VENTILATION AND INDOOR AIR QUALITY.

as a means of complementing the HVAC systems (office and auditorium alike), and also to avoid stale air due to over reliance on air conditioning, we created demountable wall panels at the rear of the auditorium to allow for stack effect.



#### PLUMBING.

low flow fixtures are employed for effective water management in all lavatories in the structure. clean water is sourced via an on-site plant.

#### FIRE PROTECTION

Sufficient entry points have been provided for worshipers to effectively escape in case of a fire.

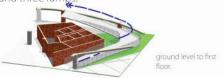
#### **ELECTRICAL SYSTEMS**

An electrical panel room is located next to the studios, and below the catwalk. This allows for easy wiring configurations.

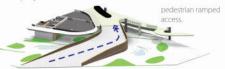
#### **BUILDING OPERATION SYSTEMS**

#### TRANSPORTATION.

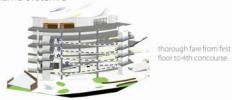
A total of 4 nos lifts with a maximum capacity of 20 passengers was provided, in addition to 5 staircases, and three ramps



#### ramp system A



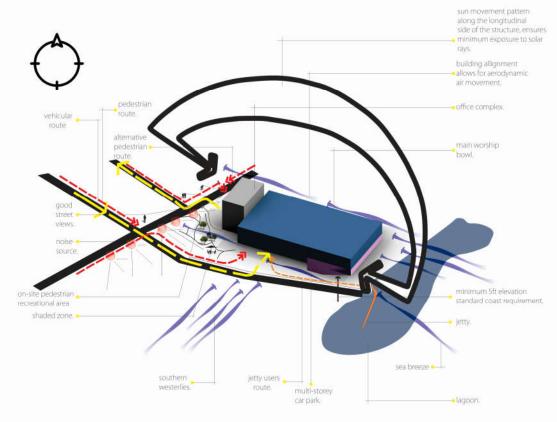
#### volume void. ramp system B



ramp system C

#### Conceptualization & rationalization.

safety, innovation, integrity, stability, and dynamism.



#### CONCEPT APPROACH

In approaching a project of such a high level of cross functionality between spaces, we wanted to create a symbiotic form which melts and fuses into itself. hence, all three main parts of the complex are treated as one living, breathing piece of architecture.

in satisfying all functional requirements, we also needed to appeal to the users of the complex, and create a unique user experience via design based on their values, way of life, and things they hold dear.

#### THE CONCEPT.

Our concept is called the **BEZALEEL CONCEPT**, which is interpreted **IN THE SHADOW OF GOD**. the bible in psalm 91:1 says, he that dwelleth in the secret place of the most high shall abide under the shadow of the Almighty. verse 4 says, he shall cover thee with his feathers, and under his wings shalt thou trust; his truth shall be their shield and buckler.

We depicted this clearly in the building's form, as the wings of the dove which signifies the Holy spirit is used to enclose the church.



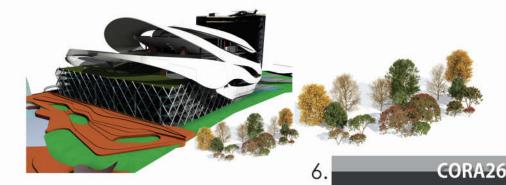


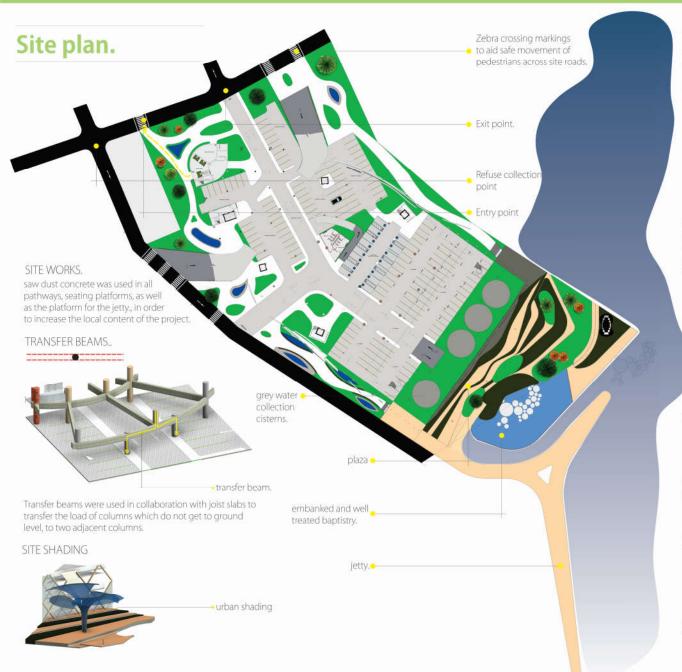
• the wings of the dove covering God's people

 advancement of literal concept to abstracted architectural concept.



CAD generated sketch via digital morphogenism





#### SITE SUMMARY.

### $\bigcirc$

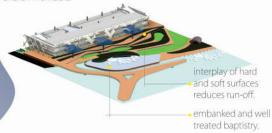
#### WASTE DISPOSAL.

Solid waste is collected via waste chutes in the office building, and are sorted in the refuse room into recyclable, and non-recyclable items, it is then moved to the waste collection point for removal form the site.

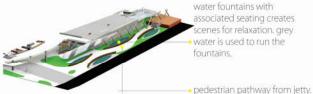


#### MARITIME ACTIVITIES.

As required by the brief, we provided an open plaza, and a baptistry, alongside the jetty in order to stimulate maritime activities, the plaza can play host to small gatherings and recreational activities, while the baptistry shall be used to baptize church members.

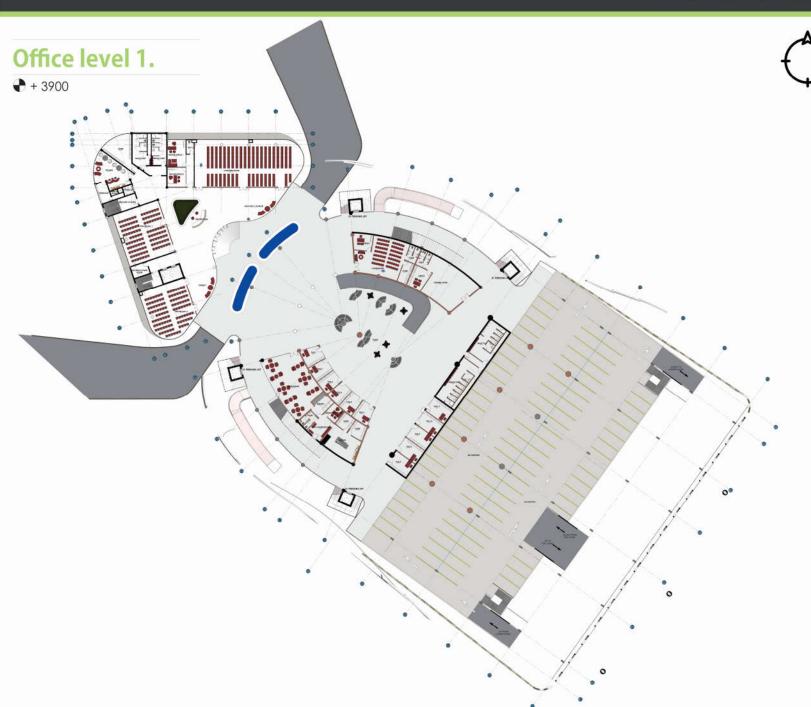


#### SITE IRRIGATION.



#### PHYSICALLY CHALLENGED PARKING.





#### SPACE SUMMARY.

SPACE SEATING CAPACITY.
Prayer hall 1 124
Prayer hall 2 124
Converts room 310
Choir room 84
Restaurant. 26



CONVERTS ROOM is easily accessed from the main auditorium. It is a place where new converts in our congregation are attended to



RESTAURANT has been added to the T.O.C venture areas to meet the needs of the

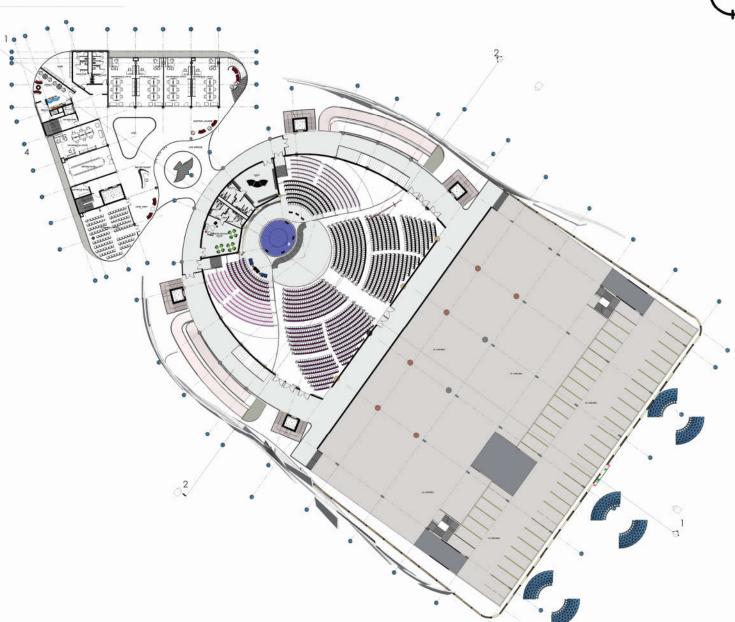
#### SPACES PROVIDED.

Prayer Rooms 1 & 2
Converts room
Escape stairs
Waste chute
Goods lift
Prayer hall 1 & 2
Pre-sit
Choir Room with 2 conveniences,
Store & office.
Central store

Restaurant with servery, staff locker room, Kitchen, manager's office, store, TOG ventures with male and female conveniences.

#### Office level 2.





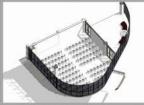
#### SPACE SUMMARY.

SPACE SEATING CAPAI
Meeting room 22
Conference room 124
departmental office 8
Chair section 405

astors and elders 394 Congregation 121



DEPARTMENTAL OFFICE AND MEETING ROOM Each departmental office is designed to accommodate an HOD, a secretary and 6 workers.



THE CONFERENCE ROOM is able to seat 124 people and has 2 entries for easy egress of people. There is also a pre-sit before the conference room.

#### SPACES PROVIDED.

Vestry with male and female conveniences.

Ministers meeting room

Store

Waiting Areas,

5 Departmental office with a provision for the head of department and secre-

ary.

Meeting room for 22 people.

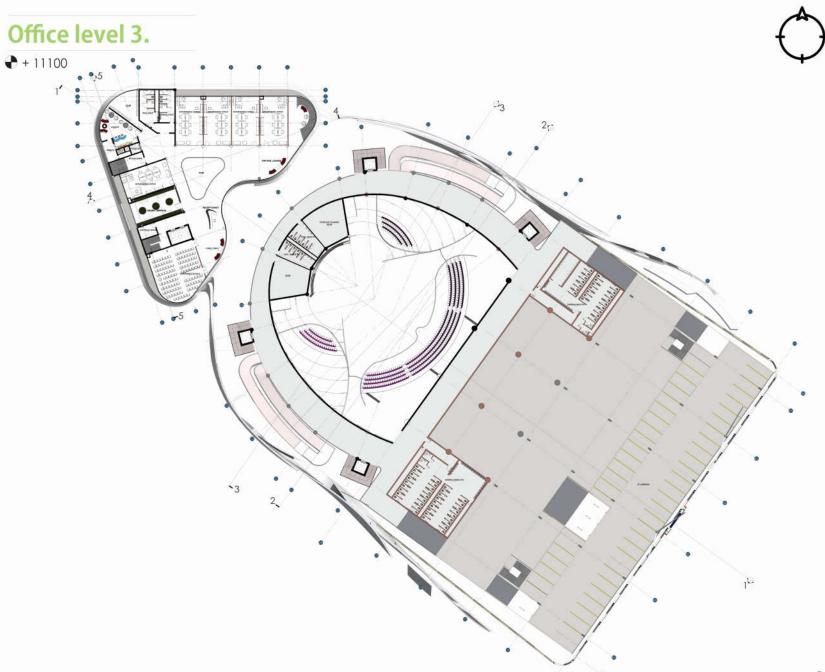
Conference room for 124 people.

Kitchen

Conveniences

Electrical room

1st level of the auditorium seating 2014 worshippers with sections for the ministers and elders and for the choir.



#### SPACE SUMMARY.



approach elevation and also on the 9th and 10th floor of the rear elevation.

The green terrace is a relaxation space for the staff. It also has a 2-storey green screen that provides natural ventilation for the circulation spaces through the atrium

#### SPACES PROVIDED.

Store for cleaning tools

Auditorium Executive toilets.

Auditorium General toilets

Store

Waiting Areas,

5 Departmental office with an provision for the head of department and secre-

Conference room

Green terrace

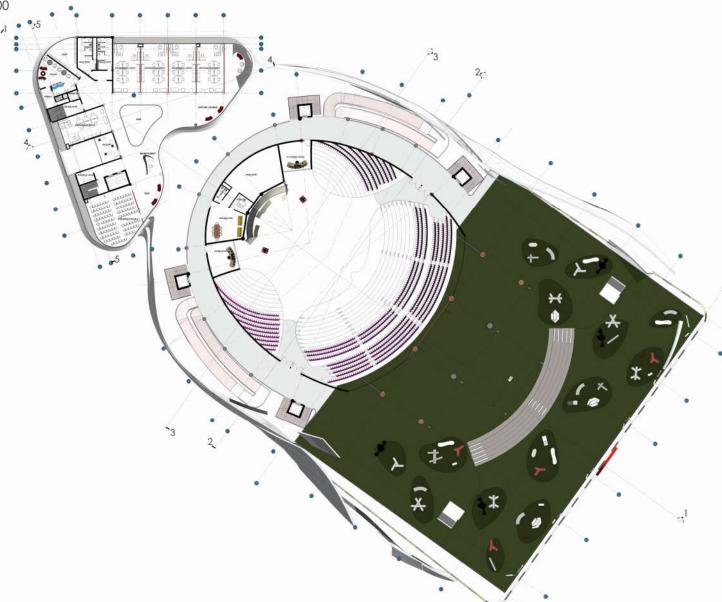
Kitchen

Conveniences

Electrical room

#### Office level 4.





#### SPACE SUMMARY.

SPACE SEATING CAPACITY

Conference room 124
Departmental office 8
Left gallery 301
Right gallery 297
Main gallery 1550



THE GREEN ROOF AND PLAZA is a public space that has been created to promote creativity inspiration among worshippers, it also provide a natural and friendly environment with a good view of the lagoon.

A stepped sitting area and various group seating layout have been design for Outdoo events and aroup meetings.

t could also serve as a means of holding crow before and after the service in the case of nultiple services.

#### SPACES PROVIDED.

3 Gallery Sections sitting 2148 worshippers Ushering room with large store and conveniences.

Sound Studio.

TV control room.

Green roof and plaza

Store

Waiting Areas,

5 Departmental office with an provision for the head of department and secretary.

Conference room for 124 people.

Balcony over green terrace

Kitchen

Conveniences

Electrical room

# Office level 5. + 18300

#### SPACE SUMMARY.

Seminar room 124
Departmental office 8
Meeting room 22

eeting room 22 It gallery 165 Int gallery 164 ain gallery 1846



A RECORDING STUDIO has been provide with a large store for sound and musical equipmen. It provides a room specially design for making musical recordings and for specialized choir rehearsals. Sunday Messages could also be recorded within this room.

#### SPACES PROVIDED.

3 Gallery Sections sitting 2175 worshippers ICT control room.

Electronic control room

Recording Studio with equipment store.

TV control room.

Green roof and plaza

Store

Waiting Areas,

5 Departmental office with an provision for the head of department and secre-

tary

Seminar room for 124 people.

Meeting room for 22 people.

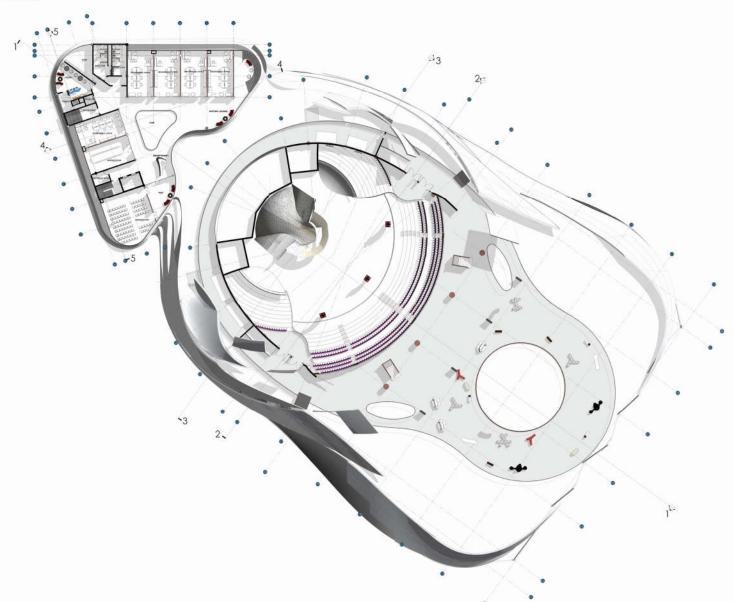
Kitchen

Conveniences

Electrical room

#### Office level 6.

+ 21900





#### SPACE SUMMARY.

	124
Departmental o	
Left gallery	
Right gallery	
Main gallery	



AN OBSERVATORY DECK just above the green roof provides an elevated open space for meditation, proyer and inspiration.

The large void and elevation has been

The large void and elevation has been designed to instill awe in the worshippers wh giving a great view of the lagoon and giving natural sea breeze.

it could also serve as a means of holding crov before and after the service in the case of multiple services.

#### SPACES PROVIDED.

3 Gallery Sections sitting 2175 worshippers Observatory deck

Store

Waiting Areas.

5 Departmental office with an provision for the head of department and secre-

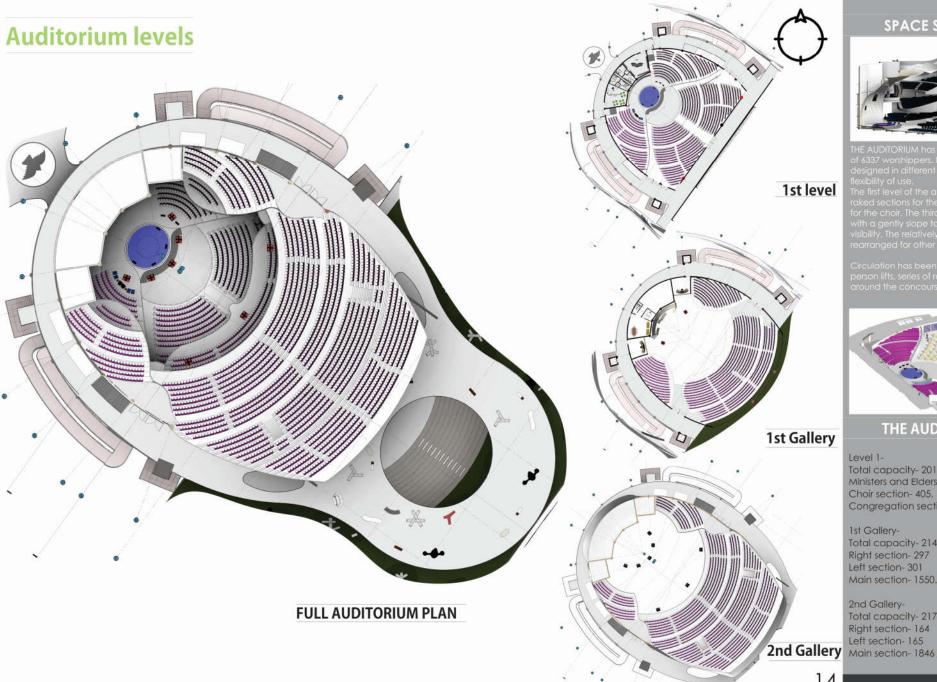
Seminar room for 124 people.

Meeting room for 22 people.

Kitchen

Conveniences

Electrical room



#### SPACE SUMMARY.





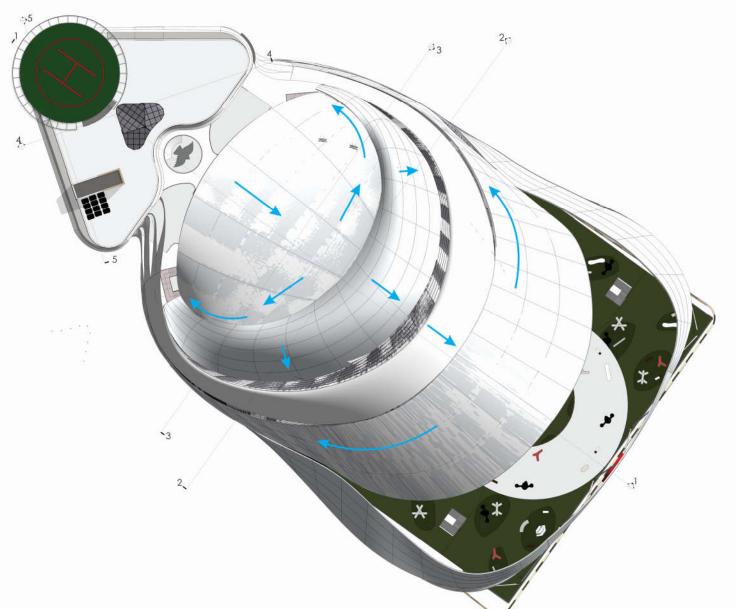
#### THE AUDITORIUM

Level 1-Total capacity- 2014. Ministers and Elders section-394. Choir section- 405. Congregation section- 1215.

1st Gallery-Total capacity- 2148 Right section- 297 Left section- 301 Main section- 1550.

2nd Gallery-Total capacity- 2175 Right section- 164 Left section- 165

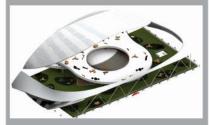
#### **Roof Plan.**





#### SPACE SUMMARY.





THE AUDITORIUM ROOF is a Steel Lattice Grid Shell cladded with fibre reinforced cementious panels. The shell provides a support free span o 75 meters with a height of 32 meters.

he storm water from the roof the office is collected and treated in the water plant seneath the office to be used on the site. storm water from the auditorium roof and greet terrace is also stored in cistems beneath the pit level car park.

#### **ROOF FEATURES**

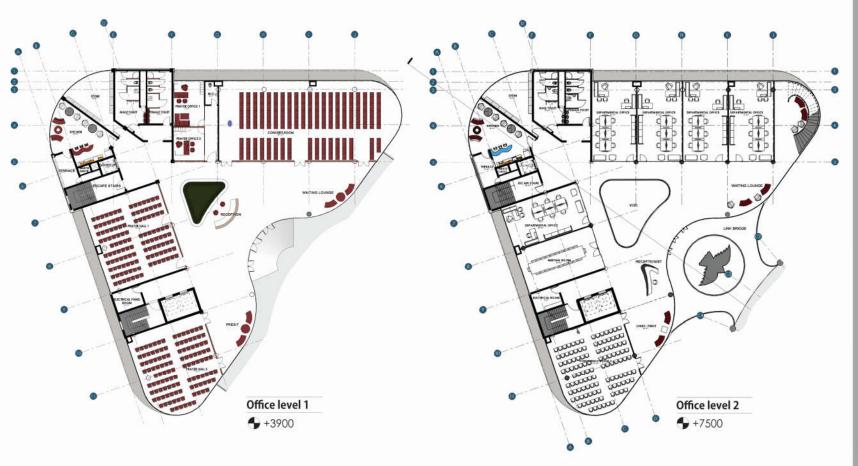
Green roof over the car park helps to reduce storm water run-off. It also provides an opportunity for a green environment in a congested urban area and small site.

The atrium over the circulation space of the office tower provides natural lighting thereby reducing energy consumption from artificial lighting.

Solar panel are placed on the flat roof of the office to provide a renewable energy option for light electricity loads. There is a 24m diameter helipad is on the roof which is accessed through a staircase and lifts.

#### Office tower.





#### SPACE SUMMARY.

#### OFFICE LEVEL 1

Kitchen

Store

Male and female convenience

Prayer office 1

Prayer office 2

Converts room

Waiting lounge

Reception

Electrical panel room

Pre-sit

Prayer hall 1 & 2

#### OFFICE LEVEL 2

Kitchen

Store

Male and female convenience

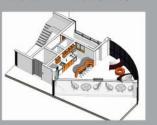
Conference room 1

Pre sit

Electrical panel room

Meeting room

Department office (5 nos)



**SERVICE ZONING** of the refuse chute, kitchen duct, goods lift and escape staircase.

LECTRICAL PANEL ROOM is situated on every our for easy wiring of the structure.

CIRCULATION PATHS: all circulation paths are non-dependent on artificial ventilation as a result of effective use of the atrium to enable stack ventilation.

HVAC SYSTEMS: high level of individual control over cooling systems was promoted via the use of split unit systems, with the air handling units placed on a perforated steel deck on the exterior.





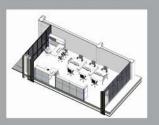
#### OFFICE LEVEL 3

Kitchen Store Male and female convenience Departmental office (5 nos) Conference room 2 Green terrace Electrical panel room

SPACE SUMMARY.

#### OFFICE LEVEL 4

Kitchen Store Male and female convenience Conference room 3 Pre sit Electrical panel room balcony Department office (5 nos)



**DEPARTMENT OFFICE:** designed for 8 occupants, however, the space is highly adatable & can be easily transformed.



GREEN TERRACE

Office level 3 Office level 4 +14700 +11100

#### Office tower.



# Office level 5 Office level 6 +21900 +18300

#### SPACE SUMMARY.

#### OFFICE LEVEL 5

Kitchen

Store

Male and female convenience

Departmental office (5 nos)

Seminar room Meeting room

Pre-sit

Electrical panel room

#### OFFICE LEVEL 6

Kitchen

Store

Male and female convenience

Departmental office (5 nos)

Seminar room Meeting room

Pre-sit

Electrical panel room







# Office level 7 Office level 8

+25500

#### SPACE SUMMARY.

#### OFFICE LEVEL 7

Kitchen Store

Male and female convenience

PIC's office-convenience

waiting lounge. secretary conference room

PIC's wife

Multi- purpose room

CCTV room

CSO's office

APIC 1's office

APIC 1's wife

ADMIN 1

ADMIN 2

ACCOUNT 1

ACCOUNT 2

APIC 2's office APIC's wife

Waiting lounge.

#### OFFICE LEVEL 8

Kitchen

Store

Male and female convenience

Electrical panel room

Large store

Missions office Library-Office 1 & Office 2

Conference room (42 persons)

Legal office

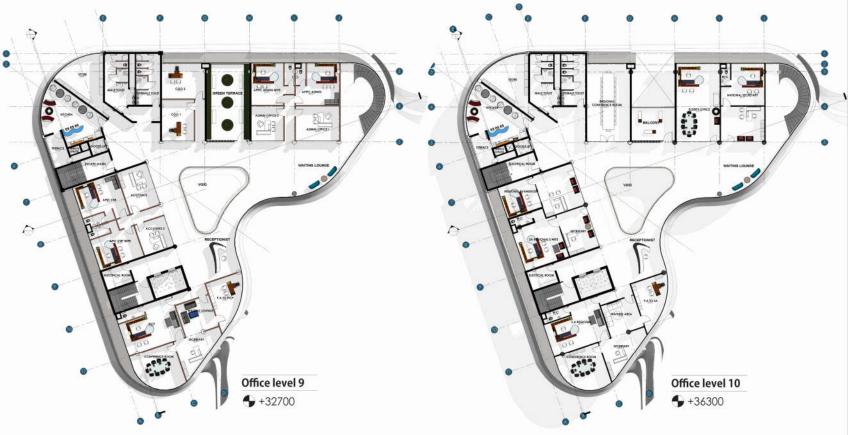
Audit office

ICT room

Provincial office.



+29100



#### SPACE SUMMARY.

#### OFFICE LEVEL 9

Kitchen Store

Male and female convenience PICP's office-convenience

> waiting lounge. secretary conference room Pa's office.

APIC CSR (ensuite)
APIC CSR's wife (ensuite) ACCOUNTS 1

ACCOUNTS 2 CGO 1

CGO 2

Green terrace APIC admin's office APIC admin's wife office

Admin office 1 Admin office 2.

#### **OFFICE LEVEL 10**

Kitchen

Store

Male and female convenience

SA regional's office-convenience

waiting lounge. secretary conference room Pa's office.

S A regional's wife's office (en-suite) Secretary to SA regional's wife

Regional evangelist

Regional conference room (22 people)

Balcony Elder's office

National secretary's office.



SA REGIONAL'S OFFICE.



## 0 Office level 11 Office level 12 +39900 +43500

#### SPACE SUMMARY.

#### **OFFICE LEVEL 11**

Kitchen Store

Male and female convenience

Electrical panel room

Accounts office

Store

Driver's room

Security

Reception

Conference room (10 people)

Secretary general's office

Admin office

Terrace

Lounge

Mummy G O's office (en-suite) Secretary to mummy G O

PA to daddy G O

Secretary to daddy G O

Daddy G O



DADDY G O'S PRIVATE WING: Designed for optimal comfort and privacy of Daddy G O. The spatial arrangement highlights the close functional relationship between his office and the surrounding spaces, I.e., mummy G O, his secretary and PA. His office enjoys a private toilet and bath facility, private terrace, and stunnin panoramas of the lagoon. The floor also has direct access to the helipad above.

#### **Section Views.**



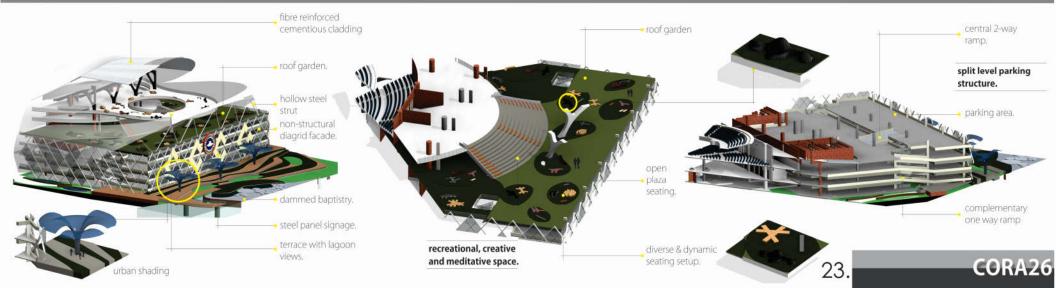
#### SECTION 1



#### **Section Views.**

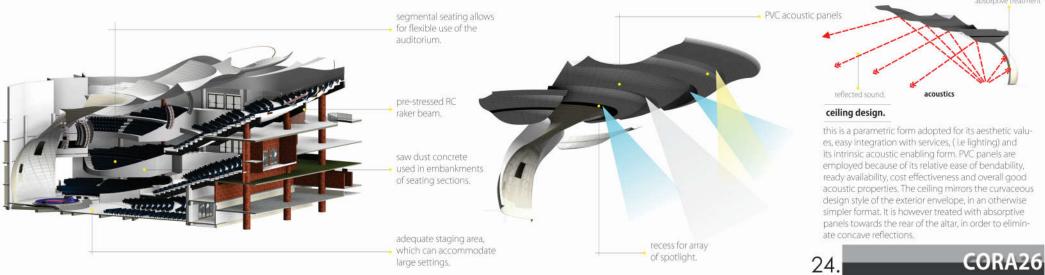






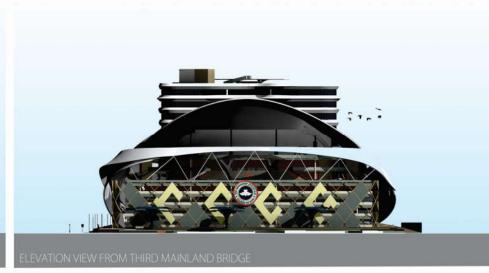
#### **Section Views.**

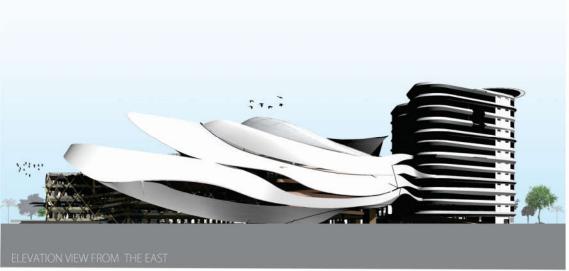






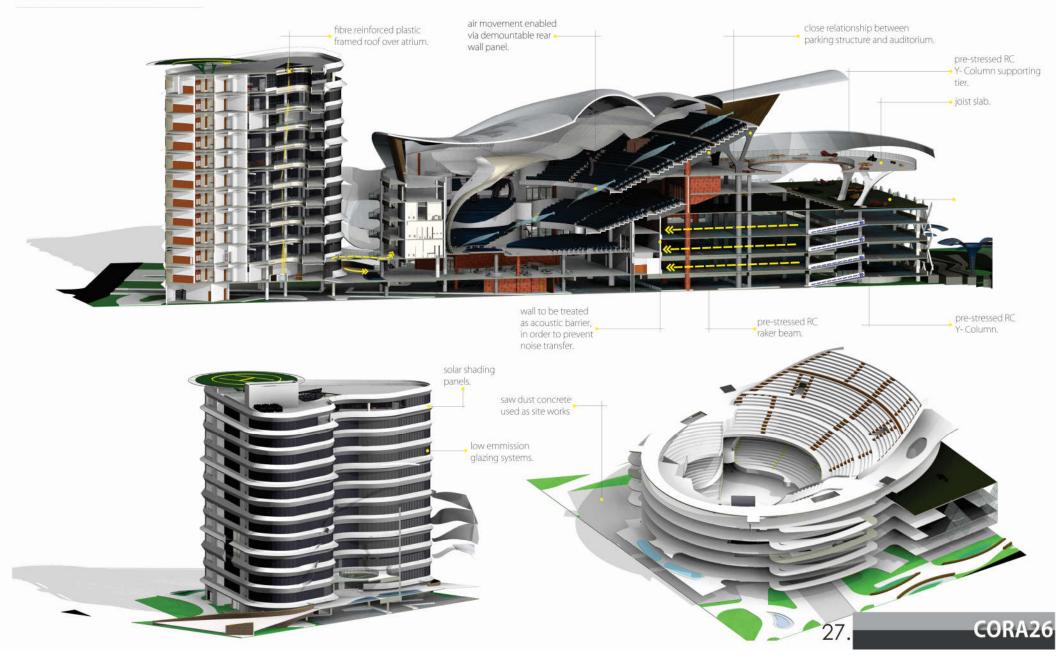


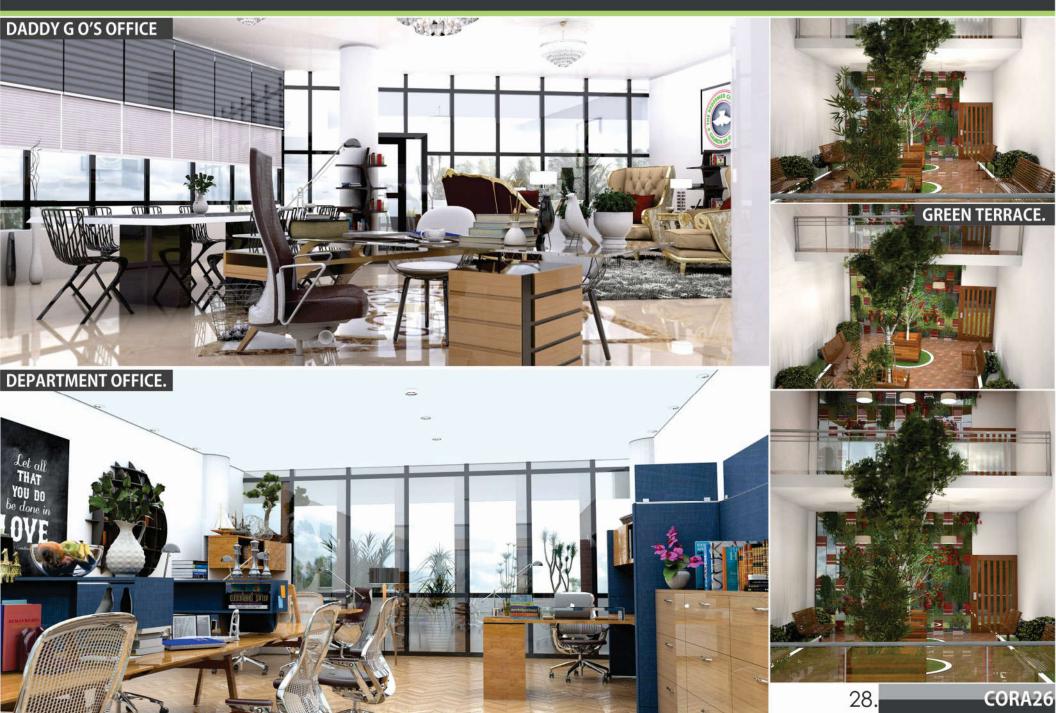






#### 3-D Sections.







9.

