

DESIGN DISTRICT

THESIS

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Architecture degree

By

Jemima Mariam George
(3621034)



DEPARTMENT OF ARCHITECTURE
SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited with Grade "A" by NAAC
JEPPIAAR NAGAR, RAJIV GANDHI SALAI,
CHENNAI - 600 119

May - 2021



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DEPARTMENT OF ARCHITECTURE

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **Jemima Mariam George (3621034)** who carried out the project entitled "**Design District**" under our supervision from January 2021 to May 2021.

Internal Guide

(Dr.Devyani Gangopadhyay)

Internal Review Member

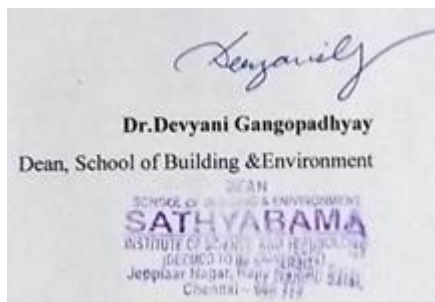
(Ar.Vijendranath Ravindren)

External Guide

(Ar. Udhayarajan)

Dean and Head of the Department

Dr. DEVYANI GANGOPADHYAY



Submitted for Viva voce Examination held on

Internal Examiner

External Examiner

DECLARATION

I, **Jemima Mariam George** hereby declare that the Project Report entitled “**Design District**” done by me under the guidance of **Dr.Devyani Gangopadhyay** (Internal Guide), **Ar.Vijendranath Ravindren** (Internal Review Member) and **Ar.Udhayarajan** (External Guide), Sathyabama Institute of Science and Technology is submitted in partial fulfillment of the requirements for the award of Bachelor of Architecture Degree.

DATE:

PLACE: Chennai

SIGNATURE OF THE CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **Sathyabama** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr. Devyani Gangopadhyay**, Dean and Head of the Department, **Dr. Suresh Kuppuswamy**, Design Chair of School of Building and Environment, Department of Architecture for providing me necessary support and details at the right time during the progressive reviews.

I would like to express my sincere and deep sense of gratitude to my Thesis Internal Guide **Dr.Devyani Gangopadhyay** , Internal Review member **Ar.Vijendranath Ravindren** and External Guide **Ar.Udhayarajan** for their guidance, suggestions and constant encouragement which paved the way for the successful completion of my project work.

I wish to express my thanks to all Teaching and Non-teaching staff members of the **Department of Architecture** who were helpful in many ways for the completion of the project.

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CHAPTER 1- INTRODUCTION

1.1 GENERAL

In today's world people spend longer hours in the office, almost equal to home or more. The environment at office plays a vital role in their well-being therefore today companies need to look at efficiency differently. There are ways to maximize the creative output of employees, and from that viewpoint the most efficient use of space is one that supports creative interactions. Such creativity boosting spaces is very important for upcoming design entrepreneurs. Offices need to take care of relaxation, better environments of work

The rise in self-employment has led to an explosion in demand for coworking spaces, particularly from millennial in start-ups. Co-working spaces are gaining momentum at a rapid pace in India and the industry is expected to double every year in the near future. There are many benefits of working in a co-working space such as more networking opportunity, increased productivity, boost in creativity, collaboration opportunities and great flexibility.

Daily Hunt news reports that by 2025, it is expected that around 42% of the population in India will work in urban centres and hence the demand for office space will increase manifold. With economics playing on the mind of many new businesses, the demand for shared office space will grow tremendously in the next decade.

1.2 AIM AND OBJECTIVES

- To create a place that invokes culture, a creative neighbourhood where one can shop, dine, experience contemporary art and design, and enjoy events and festivals.
- To engage, inspire and enable emerging talent, and educate the next generation about the power and importance of all forms of design.
- To create an environment that increases creativity.

- To create modules where employers get a choice of what kind of office space suits them.

1.3 DESIGN DISTRICT

Design district will be a place where creative community can work and get inspired. Where aspiring designers can cut their teeth and learn their trade, where local talents can work alongside international design, art and fashion houses. It is, at its heart, a place where creative minds can come together share and learn from each other.

The aiming at different users visitors and mostly employees, different facilities are clubbed together to create a pleasing environment that invokes creativity like exhibition, galleries, cafes and restaurants, etc.

What is a co-working space? Co-working is defined as the sharing of office space by self-employed, independent professionals who wish to work together in a communal, collaborative setting rather than the traditional employee-only office. This model has a lot of advantages that may make it ideal for many entrepreneurs

CHAPTER 2- LITERATURE CASE STUDIES

2. ANALYSIS

In this chapter, the evaluation leads to a comparative analysis aiming to understand connectivity, components, circulation, users, environment etc.

2.1 CASE STUDIES

The case studies are carefully selected to cover different functions in the project. Six architectural projects have been explained in detail in this chapter.

INDIAN HABITAT CENTRE

LITERATURE CASE STUDY

The India Habitat Centre was conceived to provide a physical environment, which would serve as a catalyst for a synergetic relationship between individuals and institutions working in diverse habitat related areas and would therefore maximize their total effectiveness. To facilitate this interaction, the Centre provides a range of facilities. The mission is to bring a holistic approach to problem solving in areas of environmental and regional planning, energy efficiency, appropriate technology options, transport and communication, lifestyle choices, socio-cultural linkages and information technology.

CONCEPT

The creation of a green and healthy environment forms the backbone of the complex. This contributes to the urban level functions and also creates a healthy and pleasant environment for the working employees.

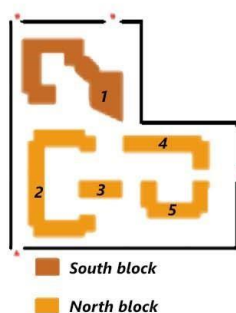


The public agency for Housing and Urban Development Corporation Ltd (HUDCO) wanted an office building for its workers and made the unprecedented decision to invite chosen non-profit organisations that shared their concern with habitat to share that work space.



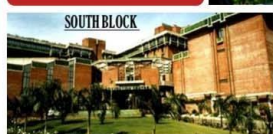
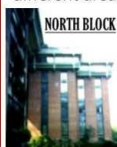
Block placement and entrances

5 main building blocks interconnected by various aerial walkways.



The complex is planned and divided into two blocks:

- |North block
- |South block



North block

The block adjoining the Lodhi Road and on the northern side of the site is this block which is further divided into **four zones** - 4, 5, 6 and 7.

This block primarily comprises of office places supported by different areas like lift lobby, staircase, AHU, etc.

South block

The block is further divided into **two zones**—Zone 1 and 2 and houses of most ancillary facilities for the North block like residential guest rooms, conference, library, health club, swimming pool, restaurant, etc. Zone 3 comprises of the auditorium and the plaza. The IHC caters to various functions like documentation centre, finest banquets and innovative theme parts

Total built up area :97,000 sq.m
Ground coverage(BCR)
=53,000 sq.m (25%)
F.A.R= 1.4 of 2.5

37 institutions includes TERI, HUDCO, MCD, COA, NID, Centre of building research, renewable energy development etc.

58 quest rooms

20 function rooms

4 performance venue, 1 Stein auditorium, 2 restaurants and fitness club.

Entrances:

Gate 1 is on the Lodhi road and acts mainly as a staff entry for people working in the Habitat centre.

Gate 2A is also on Meera Marg road, is mainly used for entry for Goods vehicle and fire tender.

This segregation of the auditorium and convention centre helps in handling the crowd in a better way and the separate entry to the convention centre helps to avoid any disturbances.

INDIAN HABITAT CENTRE

LITERATURE CASE STUDY

Architect: Joseph Allen Stein | Site Area: 38,400 m² | Location: New Delhi, India | Status : Completed

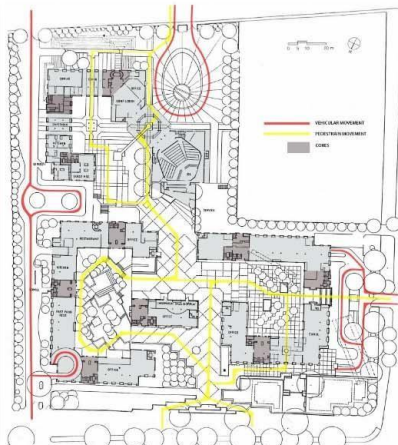
| Total 1000 covered car parking and 2000 two wheeler parking.

| 50 surface parking.

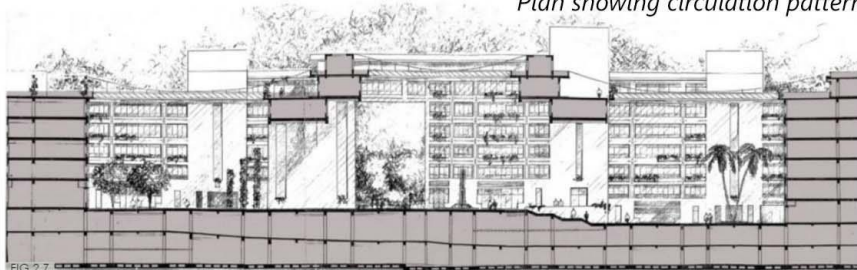
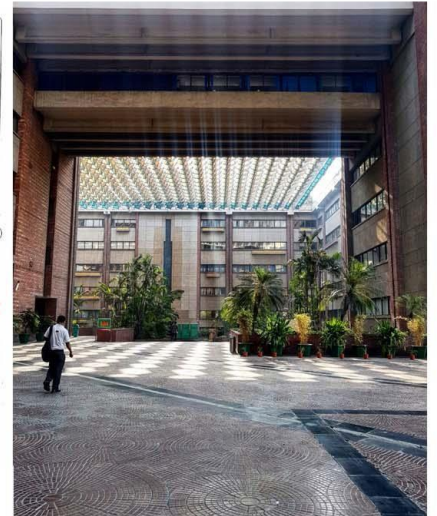
| Two lower basement floors for parking.



PARKING
IHC has a traffic free environment, cars and scooters are directed into two levels of basement from peripheral road. Parking is provided in two levels in the basement.



Plan showing circulation patterns



Building section

Courtyards

| The creation of a green and healthy environment forms the backbone of the complex environment of the IHC. This contributes to the urban level functions and also creates a healthy and pleasant environment for the working employees.

| The height of the building is 30m.

| The five main blocks are interconnected by means of aerial walkways.

| The presence of courtyard lightens the atmosphere bringing in natural light and ventilation. The whole complex seems having an affair with nature. The presence of palm trees adds magnificence. It becomes a pedestrian's paradise with interesting walkways connecting different spaces.

ROOF

The roof of the building comprises of reflectors designed as a spaceframe, providing shade and giving a respite from the scorching sun. The reflectors are aligned at an angle which reflect 70% of sunlight in summers and change their angle in winters to allow sunlight to pass through.

FEATURES

IHC exhibits a color palette of ravishing red brick cladding, majestic grey concrete and glorifying glass. The interplay of mass and void adds a majestic charm to the complex. Horizontal strip windows are beautified with the provision of the small planters in the front. Reflective laminated glass is used to prevent visibility from outside.

Office

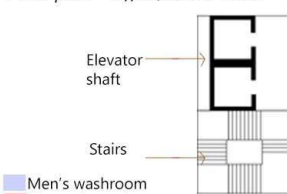
| The office spaces are provided as free flowing spaces without internal partitions.

| Office spaces measure approximately 14.15m x 14.15m and 33.1m x 14.75m.

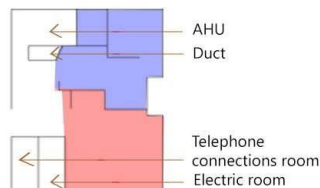
| The entire building is air-conditioned. The floor to floor height is 3.75m, but with false ceiling height it reduces to 3.0m.



Service core
Floor plan - Office/North Block



Men's washroom
Women's washroom
Floor plan- Service core unit



Service

| The basements are mechanically ventilated. The complex has its own water purification plant.

| Service core consists of two lifts, one staircase, electric and telephone connections, duct and toilets for both sexes- serve the office space.

| All office spaces have the flexibility of providing their own wet areas apart from those provided in the central core.

| Computerized building management systems have been designed for the efficient operations, including watering the window boxes and detection of faults

INDIAN HABITAT CENTRE

LITERATURE CASE STUDY

Architect: Joseph Allen Stein | Site Area: 38,400 m² | Location: New Delhi, India | Status : Completed

Fire Safety

| Sprinkler system are installed in all usable areas.

| Fire escape staircases and lobbies are pressurized to prevent the spread of the fire along vertical shafts.

CAFETERIAS

There are six cafeterias in total out of which Eatopia and The American Diner is open to the public while the rest are only opened to members.



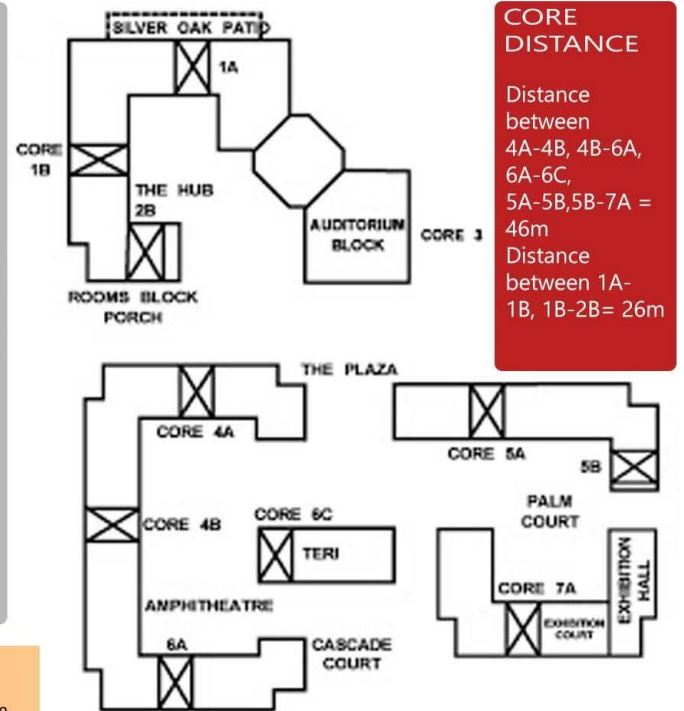
Exhibition areas

The complex consists of three art galleries known as visual art gallery, open palm court and experimental art gallery that provides a platform to the artists to display their talent. It also consists of an exhibition space at the convention centre.



The Habitat library and Resource centre

It's the intellectual hub of IHC offering a range of services like internet access, use of multimedia resources, audio-visuals, etc. There is also a library lounge for members with a capacity of 50 persons for discussions.



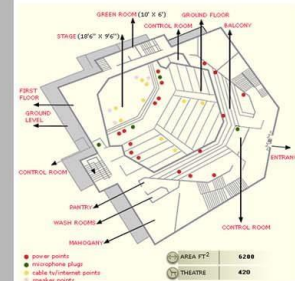
Area	Level	Capacity	Area (in msq)
Auditorium Block			
Auditorium	Ground	537	558
Basement theatre			194
a) Mahogany hall	First floor	25	
b) Kadamba hall	Basement	50	
c) Rudraksh hall	Basement	50	
d) Amaltas hall	Basement	120	
Function room block			
Magnolia Hall	Basement	100	128
Silver Oak 1 Hall	Ground floor	100	120
Silver Oak 2 Hall	Ground floor	70	73
Silver Oak 1+2+ Foyer	Ground floor		405
Chinar Hall	First floor	25	28
Willow Hall	First floor	50	52
Gulmohar	First floor	120	245
Jacarand 1+2+ Foyer	First floor		338
Mahogany	First floor	25	40
Exhibition Hall			
The exhibition court	Ground floor	150	191
Habitat visual art gallery	Ground floor	350	
Outdoor Venues			
Amphitheatre	Ground	300	27
Margosa Lawn	Ground	140	468
Silk Cotton Lawn	Ground	85	243
The Hub	Ground	650	3201
Emerald Garden	Ground	80	252
Cascade Court	Ground		1132
The Plaza	Ground	450	360
Work Station			
Area	Number of stations	Area (msq)	
Cabin 1	90	0.27	
Cabin 2	90	0.37	
Cabin 3	140	0.46	
Cabin 4	73	0.27	
Cabin 5	73	0.27	
Cabin 6	72	0.46	

STEIN AUDITORIUM

The Auditorium is equipped with state of the art infrastructure enabling direct telecast. The hall is ideal for large conferences, seminars, special screenings, presentations, theatre and cultural performance.



Interior- Stein auditorium

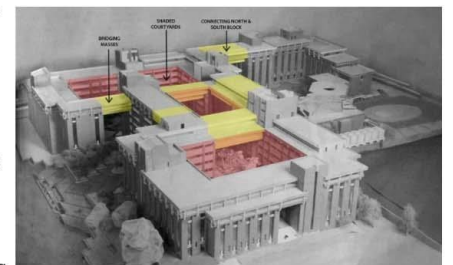


The auditorium has been provided with balcony seating.

Double wall system has been adopted that cancels sound disturbance from outside.

Climatic Responsiveness

In order to reduce solar heat gain, the building volumes are organised around shaded courtyards. These courtyards are covered by sun-screen pergolas suspended from a space frame structure. The sun-screen pergolas contain angled panels designed to block the summer sun while letting in the winter sun. Moreover, the pergolas shade not only the courtyards below but also the inner façades of the building volumes.



Projecting out the top two floors for self-shading, use of cavity walls and a controlled use of glass. To ensure adequate daylighting, the floor plates have been limited to a width of 15 metres so that no individual is more than 7.5 metres away from a window. However, the climate responsiveness of the IHC building could have been further improved had the fenestrations on each of the outer façades been designed differently as per their specific solar orientation.

GOOGLEPLEX

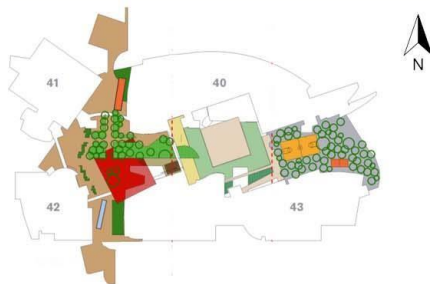
LITERATURE CASE STUDY

Architect: Clive Wilkinson Architects | Site Area: 25 Acre | Location: Mountain View, California, United States
Status : Completed 2004|

The Googleplex is the corporate headquarters complex of Google and its parent company Alphabet Inc. The site was previously occupied by Silicon Graphics (SGI). The former SGI facilities were leased by Google beginning in 2003. A redesign of the interiors was completed by Clive Wilkinson Architects in 2005.

CONCEPT

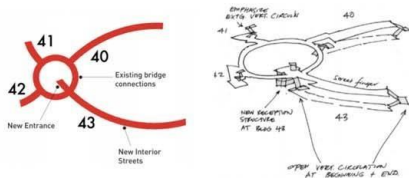
A primary vision was to merge the idea of workplace with the experiences found in an educational environment into a new way of working and maintenance of an edge. The reasoning for this was the idea that within the loosely structured university system, there are resources available to allow the individual to conceive, investigate, and execute the impossible—and that is how Google was originally conceived.



Existing SGI Campus before Googleplex

4 existing blocks.

STUDIOS Architecture was the architect for the original SGI campus and provided both interior architecture and base building design.

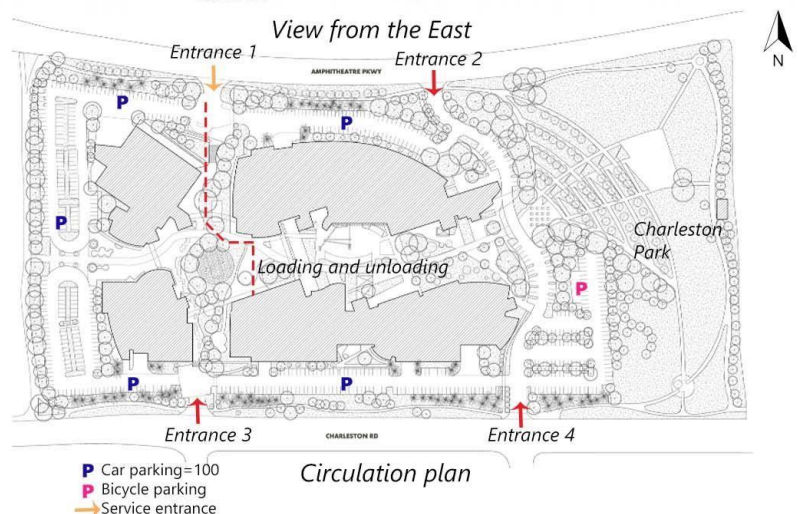
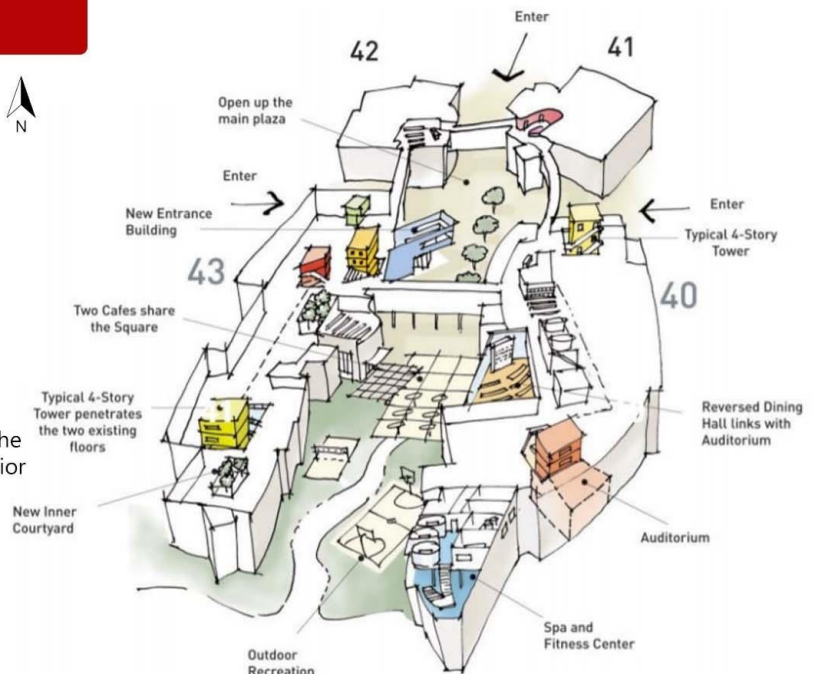


Four buildings joined- concept

Total built up area : 46,451.52 sq.m
Ground coverage(BCR)
=16,722 sq.m (16%)
F.A.R= 0.4

Components

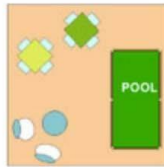
Offices	Auditorium
Cafe	Dining hall
Bakery	Basement Parking
Restaurants	=2000 spaces
Outdoor Basketball field	
Tennis	
Fitness center	
Spa	



GOOGLEPLEX

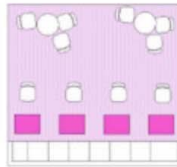
LITERATURE CASE STUDY

Architect: Clive Wilkinson Architects| Site Area: 25 Acre | Location:Mountain View, California, United States
Status : Completed 2004|



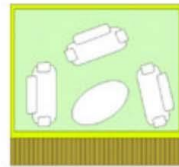
Clubhouse
-active nomadic work
-opportunity for chance encounters

1



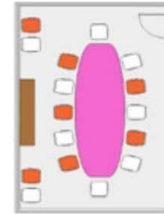
**Bakery/
Coffee Shop**
-active nomadic work
-opportunity for chance encounters and collaboration

2



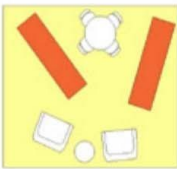
Supper Club
-alternative dining setting
for focused collaborative work.

3



Conference
-focused space for larger collaborative groups
-white boards
-projection capabilities

4



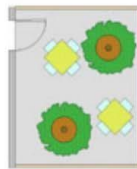
Library
- quiet nomadic work
-visitor workspace

5



I-Bar
-active nomadic work
-visitor workspace

6



Terrace
-quiet alternative for nomadic work
-visitor workspace

7



Open Meeting
-quiet nomadic work
-visitor workspace
-impromptu team collaboration

8



Open Huddle
-impromptu team collaboration

9



Closed Meeting
-focused space for collaboration
-white boards
-projection capabilities
-optional as war room

10



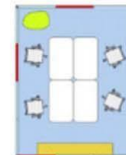
Huddle Room
-quiet nomadic work
-focused collaboration space
-white boards

11



Workstation
-quiet resident work
-furniture reconfigurable to meet team's needs

12



Workroom
-quiet resident work
-furniture reconfigurable to meet team needs
-panelized framing systems to accommodate joining offices for bigger teams

13

Modules

The concept was continued through the design of 13 individual environments, which re-created environments, usually found on a college campus, and were systematically integrated into the overall design of each building 1-13: 1 being more public and active zones, while 13 being more secluded and private. These zones were defined by location along the primary and secondary circulation corridors.

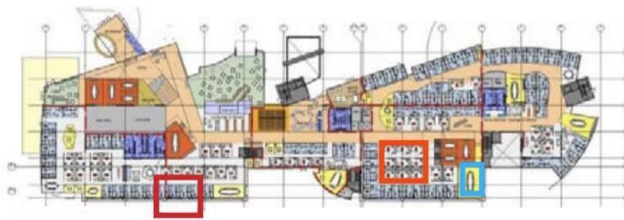


Clive Wilkinson notes that the Google team believed strongly in enclosed work areas for coding engineers, housing 3-4 employees where they can be productive both individually and collaboratively.

GOOGLEPLEX

LITERATURE CASE STUDY

Architect: Clive Wilkinson Architects | Site Area: 25 Acre | Location: Mountain View, California, United States
Status : Completed 2004 |



Types of Office
 40 Open
 60 Enclosed
 15 Meeting Rooms

Ground floor plan

The enclosed and open offices are share with 2 or 4 individuals. This workspace design promotes **high collaborative work** based on team.

Privacy

Along the linear path illustrated in light orange on the floor plan, the spaces transit from private to public with semi-private and semi-public threshold along the path. As result, there is balance of privacy and communication opportunities with in the space. Regardless where an employee is situated within the space, they are in close proximity to the different choice of privacy principles.



Colored Glass
 The glass color identifies the various teams and its transparent characteristics keeps everyone connected visually.

Enclosed



Huddle Room

Open Office

The open offices are within proximity to huddle rooms to facilitate employees to move from individual work to team work.

Within the open space area, the employees also have the choice to a open private corner for quick rejuvenation.

Open offices

Colored Glass

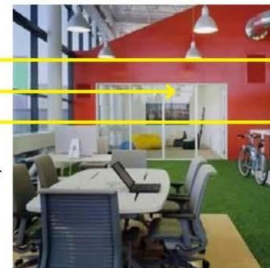
Certain teams are critical to Google's success, they selected the area along the windows for their location, in a traditional hierarchical way. To bring more democracy to the environment, the colored glass is used to enclose all the team "offices".

Shielded

Enclosed

Open

The various workspace designated for different type of activities is separated by the three main boundaries **open, enclosed and shielded**.



Distributed model



Zone model

COLLISION ZONE

Collision zones create interaction and chance encounters among employees. During those brief encounters, employees can share knowledge and information resulting to increase in ideation.

Collision Zones

Open seat in close proximity



Micro Kitchenette

Face-to-face conversation and confidential content-sharing are optimized in the enclosed huddle room adjacent to an open huddle area.

Spaces for focus and concentration retain a sense of energy through proximity and transparency to colleagues.

Day lighting

Google's cofounders insisted on these rooms being located on exterior of the building to bring in natural light.

Core distance

Longest distance between two cores=90m
 Shortest distance between two cores = 30m



BHARAT BHAVAN

LITERATURE CASE STUDY

Architect: Charles Correa | Site Area: 11,150 msq | Location: Shamla Hills, near Upper Lake, Bhopal| Status : Completed 1982|

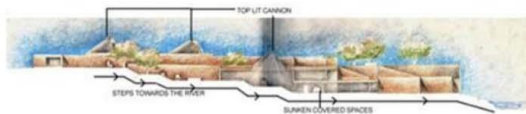
In the late 1970s, the Government of India launched an initiative to build in every capital an institution to celebrate the cultural and creative output of the nation.

Bharat Bhavan is an autonomous multi-arts complex and museum in Bhopal, India, established and funded by the Government of Madhya Pradesh.

CONCEPT

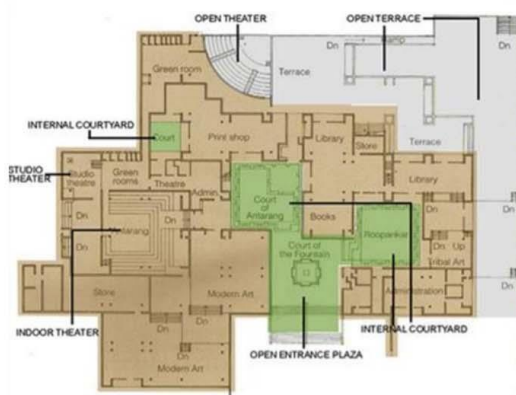
The terrace and courtyard reflect the designer's concern with progression through space- the maze or puzzle- where parts are casually revealed and the complex of internal streets act rather like a village layout. In this way the architect made the building reflect Bhopal's own organizational layout

The outdoor spaces at Bharat Bhavan are physical manifestations of the concept of "Empty Space," a recurring theme both in India's visual culture and, in particular, its philosophy. Away from the activity within the buildings, the courtyards provide a contemplative void, enhanced by the placing of sculptures in their center. These act a meditative focal point for the viewer, much like the solitary tree often found in the center of Japanese courtyards.

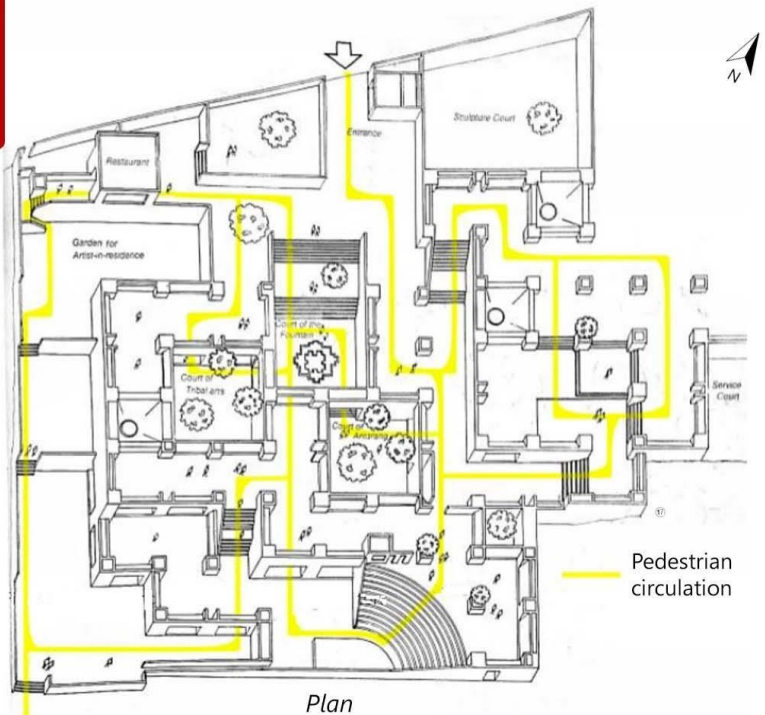


Section

The sunken court and terrace gardens cover a wide range and include a museum of tribal art, a library of Indian Poetry, galleries of contemporary art, workshop for lithography and sculptures and a studio for artist-in-residence. Bharat bhavan houses a full-fledged theater repertoire company and extension facilities for the performing arts including the indoor auditorium and the open air amphitheater overlooking the lake.



Courtyard plan



Plan

Built into a hillside which slopes down toward a lake, a series of terraces and courtyards comprise the complex. The route through the terraces encourages movement down the site's natural gradient, with the courtyards providing tranquil spaces for rest and relaxation. The dialogue between these two components creates a flow of energy around the complex, in what Correa described as a "Ritualistic Pathway".

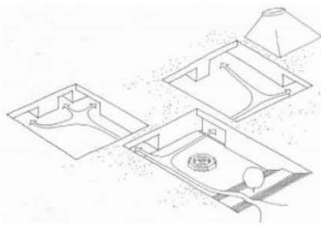
Total built up area=9785 msq
FAR =0.98

The complex is shaped by its environment, with climate control as a primary factor. Hence the open to sky spaces, which is ideal for Indian weather.

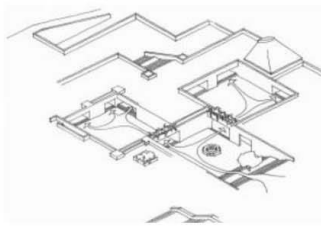
BHARAT BHAVAN

LITERATURE CASE STUDY

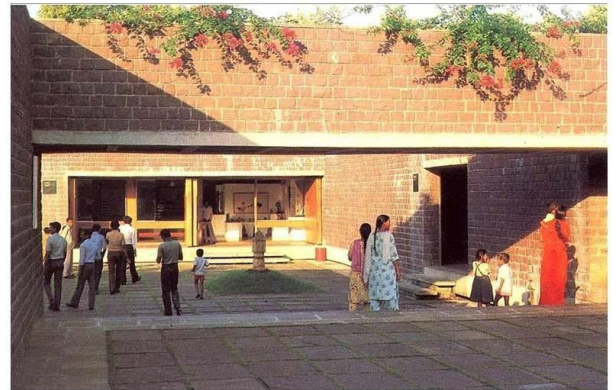
Architect: Charles Correa | Site Area: 11,150 msq | Location: Shamla Hills, near Upper Lake, Bhopal | Status : Completed 1982 |



The three connecting courtyards



Inter-connected terraces & courtyards



Shading

The sunken courtyards provide shade from the scorching midday sun, while the raised terraces offer refreshing air and space at cooler times of day. The sky is even incorporated into the interior spaces of the site, with concrete 'shells' atop the structure allowing light and air to pour in through their circular openings.

SPATIAL ORGANIZATION

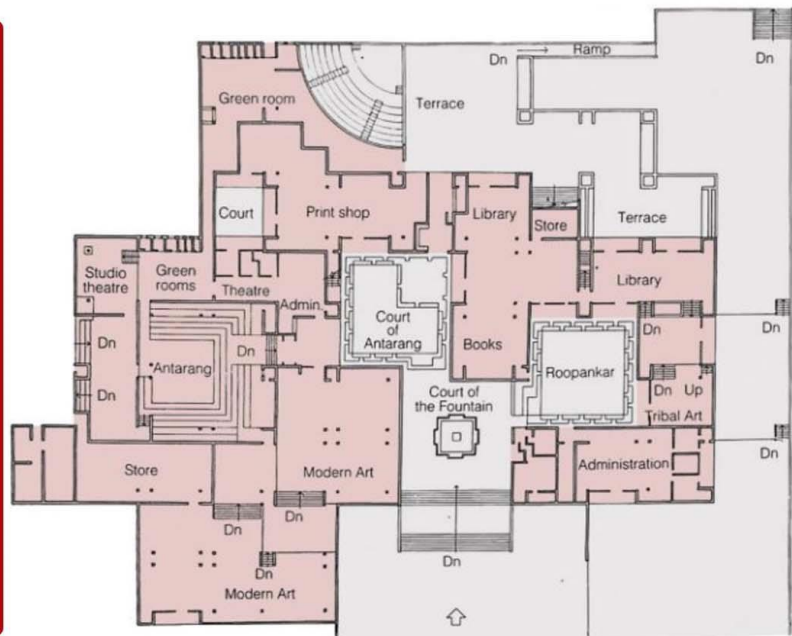
[The open-to-sky pathway is structured around three courtyard- from which one enters the various facilities.

[Courtyards and terraces act as connectors between the spaces.

[Built and open spaces merge into each other.

[Courtyards create communal public space, with the steps around their peripheries providing articulated seating to meet and socialize.

[The entire area is purely pedestrian, with vehicular movement ending at the gate.



Covered spaces
Open to sky spaces

Plan

COMPONENTS	SPACES	NO. USERS	AREA(SQ. M.)
ARTS CENTER (admin. Block)	Foyer+ lounge	15-20	50
	Reception		20
	Director's office		50
	p.a. room		15
	Accounts		50
	Office	20	20
	Toilets		10
Conference facilities	Store		10
	Lounge+ info desk		100
	Conference room-2	25	75
	Store		10
	Pantry		10
Studio/ workshops	Seminar rooms-2	80	150
	Dance studio-2		120
	Music studio-2		120
	Painting studio		60
	Textiles studio		60
	Drama studio		120
	Lithography studio		60
	Photography studio		60
	Photography lab.		60
	Sculpture workshop		120
	Pottery workshop		75
	Ceramic workshop		75
	Modelling workshop		75

COMPONENTS	SPACES	NO. USERS	AREA(SQ. M.)
Library	Circulation desk, 12 reading carrels, periodicals		100
	20 comp. terminals		60
	Stack		150
	Room(20000 books)		10
	Photocopy		20
	Store		20
	Office		20
			360
	Exhibition galleries		650
	Art galleries		50
RETAIL	Security+ office		60
	Curator's room+ office		100
	Workshop+ storage		800
Retail shops	40@20 sq.m.		800
Restaurants-2	Seating: @2/ppl.	75	150
	Kitchen: @0.8/ppl		60
	Service yard: @0.3/ppl		22
Restaurants-2	Seating: @2/ppl.	50	100
	Kitchen: @0.8/ppl		40
	Service yard: @0.3/ppl		15
760			

COMPONENTS	SPACES	NO. USERS	AREA(SQ. M.)
Auditorium(300)	Foyer		250
	Admin. Office	15-20	40
	Rehearsal room	20-25	60
	Green room	20	60
	Toilets		50
	Hall	300	560
			1000
Theatre(500)	Foyer		350
	Ticket office		10
	Toilets		70
	Office	40	50
	Rehearsal room	20	60
	Dressing room	40	60
	Stage workshop	5	60
	Loading/unloading		20
	Projection room	2	40
	Auditorium	500	800
1560			
7100+35% circulation =9785 sq. m.			

STATION F

LITERATURE CASE STUDY

Architect : Wilmotte & Associés | Site Area: 51,000 m² | Location: Paris, France | Status : Completed

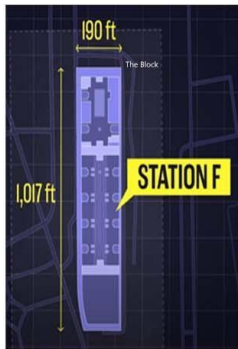
The building was initially conceived as a transshipment hub for trains and trucks and was connected to the railway network of Austerlitz station in Paris. Today, it sits in the Paris Rive Gauche urban renewal area, just by the French national library in the 13th arrondissement of Paris.

The former halle Freyssinet now houses STATION F, a 1,000 startup campus, which is a workplace that gathers all the services required for entrepreneurial and digital creation activities. It aims at creating a greater coherence for a startup ecosystem that was previously fragmented.

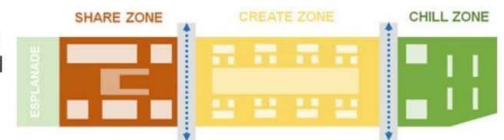


Each 'warehouse' benefits from exposed structure for passive cooling, opening windows and a central winter garden to aid cross ventilation and a robust palette of materials to minimise damage during tenant churn.

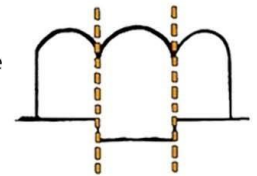
The design concept seeks to address the social issues of multi-occupancy buildings by creating a clustered arrangement of studios and hybrid units and through the celebration of circulation space as a social amenity and interaction space.



It aims at creating a greater coherence for a startup ecosystem that was previously fragmented. STATION F is made up of 3 distinct zones: the "Share" forum for digital sharing and interaction, the "Create" zone in the centre of the shed dedicated to startup work spaces, and the "Chill" zone that hosts a 3,500 sq.m restaurant.



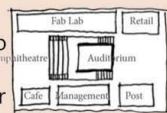
Each zone then separated into three vertical zone based on the three parallel naves, featuring pre stressed concrete arches in the hub. Among three naves, the central nave is dedicated to activities with higher level of collaboration.



SHARE ZONE

Share zone is the zone with the highest level of interaction and collaboration in Station F.

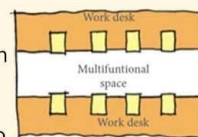
Forum space, amphitheater and auditorium for meeting up, sharing skill and technology can be found at the center. Most of the time, the huge event spaces are left empty, being flexible enough to be transformed to cater day and night events for public and external partners



Fab lab and retail allows startups to prototype their products. At first floor, temporary work station and meeting rooms are provided for entrepreneurs to meet their external partners and clients. A small event space which is a more intimate stage with powerful equipment for demo pitches of startups. Adjacent to this stage, there is a game area that engages both coworkers and guests.

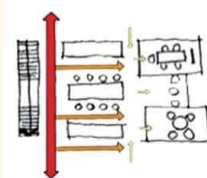
Heart of Station F where coworkers will be based.

The central nave is a multi-functional and community space which are suitable for smaller events. Both side naves are functional homes to all the startups as highlighted in orange. The open plan work spaces are subdivided into four villages and are supported by 4 bundles of facilities which is highlighted in yellow.



WORK SPACE DESIGN

Facilities core



Each facility core in create zone comes with kitchen pantry, skype box and meeting rooms which are easily accessible from all direction.

3,036 work stations

Visual connectivity



All 24 containers have full glass side facing the central nave to allow other coworkers to gain insight and choose meeting paces that fit their needs. This allow coworkers to be visually connected while physically separated.

Visual connectivity



Glass roof is installed at the center of the arches to allow daylight penetration into every space.

APPLE CAMPUS 2

LITERATURE CASE STUDY

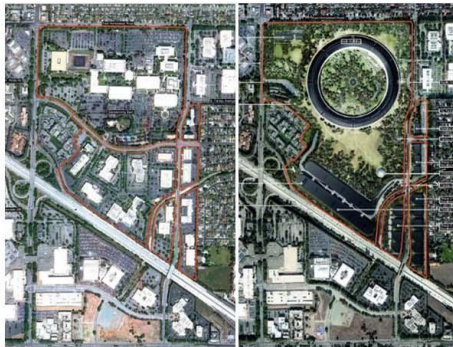
Architect: Norman Foster | Site Area: 175 Acres | Location: Cupertino, California | Status : Completed 2017 |

Apple Campus 2 is a result of replacement and rebuilding of the entire approximately 175-acre site with a mix of office, research and development and ancillary land uses. *The main objective of the project is to redevelop the site with a new unified, secure and private apple campus.*

CONCEPT

Apple wanted to make a statement about quality of design and innovation with respect to the future and the environment.

Circles may be one of the most symbolic shapes, often "a symbol for nature, perfection, the divine, industrialization, commitment- not to mention life itself. There is no end point in a circle but there is implied momentum and energy, free flowing and faster. There is nothing to impede progress within a circle.



Existing Apple Campus before Apple campus 2

Apple campus 2



Site vehicle access

- Visitor access
- Apple Transit access
- Auditorium parking
- Employee access
- Emergency services access
- Service access



Legends

- 1-Visitor Entry
- 2-Maintenance Facilities
- 3-Recreation Zones
- 4-Central Garden
- 5- Fountain
- 6- Amphitheatre
- 7-Dining Terrace
- 8-The Glade
- 9-Apple Transit Center
- 10-Auditorium Parking
- 11-Auditorium
- 12-Entry Meadow
- 13-Parking Structure
- 14-Service Area
- 15-Central Plant
- 16-Research and Development
- 17-Apple Park Visitor center

Site plan

APPLE CAMPUS 2

LITERATURE CASE STUDY

Architect: Norman Foster | Site Area: 175 Acres | Location: Cupertino, California | Status : Completed 2017 |



Pedestrian circulation

- Public sidewalk (detached where possible)
- Private Vistas
- Private jogging plan



Service cores

- 2 elevators
- 3 Staircases

Minimum distance between two cores = 75m
Maximum distance between two cores = 85m



Apple visitor experience center

It is designed as an exclusive public gateway to Apple Park, it features an expansive roof terrace with stunning views of the main building that offers a unique glimpse into Apple Park.

Stefan Behling, Head of Studio, Foster + Partners commented, "The idea was to create a delicate pavilion where visitors can enjoy the same material palette and meticulous detailing seen in the Ring Building in a relaxed setting, against the backdrop of Apple Park."

Sustainability features

The environmental sustainability features are designed to provide a **net zero increase of greenhouse gas emission, minimize natural resource consumption and improve the air, water, light and micro-climate quality of the site.**

Energy

Apple is committed to using 100% renewable energy, with an emphasis on onsite generation of photovoltaics and fuel cells.

300 electrical vehicle charging stations are provided.
Approximately 8MW of photovoltaics are installed on the Main Building and parking structure roofs.



Entrance

Day lighting

The windows and louvers will open or close automatically, letting the right amount of light, wind and fresh air to maintain a comfortable temperature. Light welled atrium spaces are places at regular intervals around the circle creating dynamic entrances. Smaller light wells punctuate the office spaces allowing natural light to penetrate the otherwise solid floor slab system.



Natural ventilation

Parking

Total number of parking = 14,200
Parking spaces are provided at subgrade level or in a parking structure, creating more permeable landscape and minimizing heat island effect.

Apple also expanded robust Transportation Demand Management (TDM) program by 20% increasing the reduction in peak hour trips from 28% to 34%. The TDM program include expansion of the employee shuttle program to access all regional public transportation systems and communities with concentrations of Apple employees, targeting employees residing within 15 minutes of the Campus.

Activity based working

Apple has also strategically designed the workplace layout proximity both horizontally and vertically across its four floors. This allows them to place teams that need to intensely collaborate close together, but also place them in close proximity with teams that would be otherwise removed from their day-to-day workflow; facilitating spontaneous encounters across the wider business.



Parking access

- Employees
- Registered visitors
- Services
- Apple Transit centre
- Auditorium parking
- Basement parking

DUBAI DESIGN DISTRICT-D3

LIVE CASE STUDY

Owner : TECOM Investments | Site Area: 18,43,493 m² | Location: Dubai, U.A.E | Status : Ongoing

Dubai design district (d3) is a destination dedicated to the creative fields. hosting the region's growing collective of creatives, artists and designers, d3 seeks to provide businesses, entrepreneurs, and individuals with a community where they can collaborate, create, and inspire. the district has also become a popular events space, attracting international crowds to a wide range of cultural exhibitions and serving as a design hub for the wider middle east region.

CONCEPT

d3 aims to engage, inspire and enable emerging talent, and educate the next generation about the power and importance of all forms of design. It also provides a platform to showcase Middle Eastern creative talent to a larger, global audience.



PHASE 1



Phase 1 Plan

Phase 1 included built up area of 2,98,000 m². The project was completed in December 2015. Phase 1 concentrates on galleries, events, festivals and co-working spaces



PHASES

Development of d3 has been separated into three phases.

Phase 1:Phase 1 was completed in 2015, with 1.2m sq. ft. of offices, studios, ateliers, showrooms, and over 200,000 sq. ft. of retail space.

Phase 2:Phase 2 will see the construction of the creative community which will house a range of design industry workshops, studios and showrooms. This phase is due for completion. The creative community is being designed by Foster and Partners.

Phase 3:The third phase of the development will focus on d3's 2 km long Creek side promenade which will feature hotels, international and regional food and beverage offerings with a wide selection of hospitality and leisure facilities. This phase is due for completion.

HAI d3

Architect: ibda design | Site Area: 1877 m²



The Dubai Design District (d3), would require some years to get in form and running, the need for a temporary space for offices and creative workshops were hence introduced. The temporary facilities lifespan was set to 5 years which needed to be planned and designed in an 8 month timeframe. The architects proposed the expansion of the development from the basic office area to create another hub which is capable of holding events and a lively location bustling with activity.



Architectural details: HAI d3

Inspired with the efficiency of the traditional Arabic neighborhood planning, the project's layout was designed to accommodate open spaces, which are further developed into landscaped "pockets" that serve as courtyards for each of the buildings in the complex. These courtyards not only complement the industrial nature of the architecture, but also promote activity, and consequently, vibrancy to the entirety of the site.

Passive cooling, through shipping containers designed as "wind towers", were distributed around the site. These wind towers promote natural ventilation by catching high draft winds and funneling it towards the courtyards in the site.



Roof plan - HAI d3



DUBAI DESIGN DISTRICT-D3

LIVE CASE STUDY

Owner : TECOM Investments | Site Area: 18,43,493 m² | Location: Dubai, U.A.E | Status : Ongoing

Event Venues

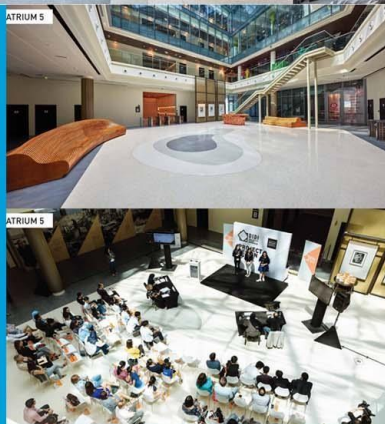
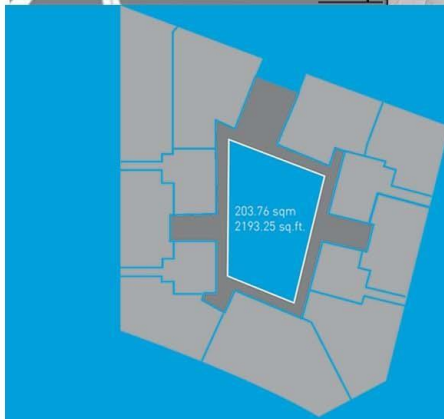
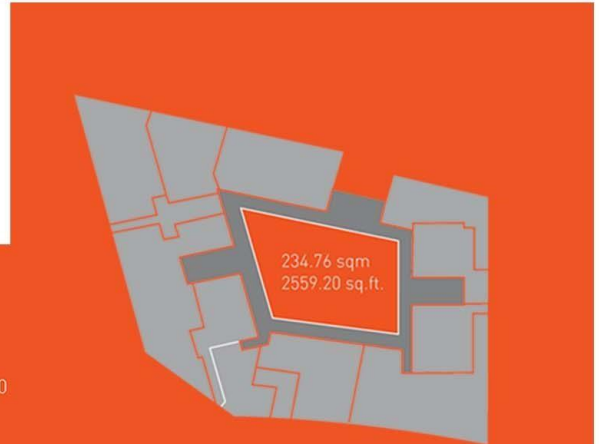
A full around-the-clock calendar of activities ensures d3 offers not just the hard infrastructure required by the creative sectors, but also an engaging holistic lifestyle experience for businesses, residents and visitors alike.



INDOOR SPACES

ATRIUM 4

Gross area | 234.76 sqm
Occupancy with chairs | 158
Occupancy without chairs | 340

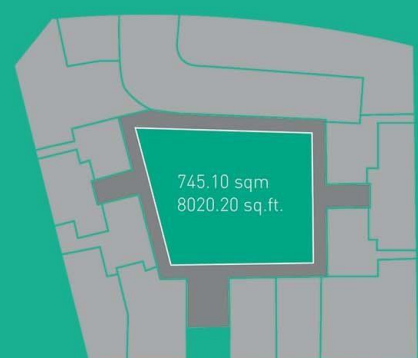
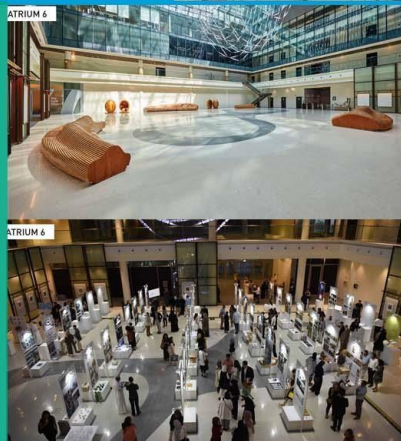


ATRIUM 5

Gross area | 203.76 sqm
Occupancy with chairs | 158
Occupancy without chairs | 340

ATRIUM 6

Gross area | 745.10 sqm
Occupancy with chairs | 520
Occupancy without chairs | 1,080



DUBAI DESIGN DISTRICT-D3

LIVE CASE STUDY

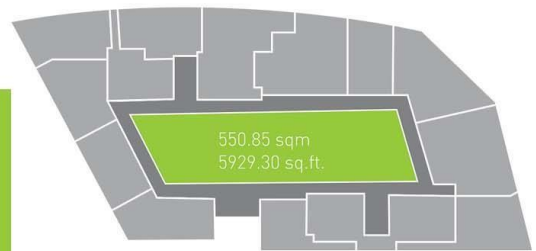
Owner : TECOM Investments | Site Area: 18,43,493 m² | Location: Dubai, U.A.E | Status : Ongoing



INDOOR SPACES

TRIUM 7

Gross area | 550.85 sqm
Occupancy with chairs | 372
Occupancy without chairs | 800

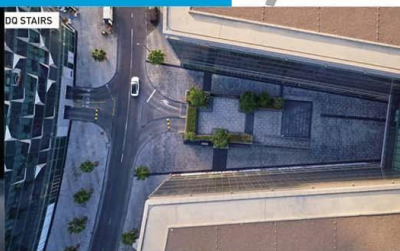
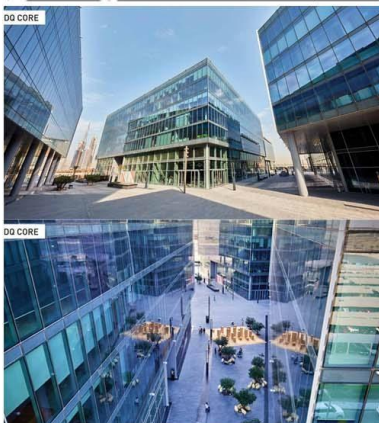
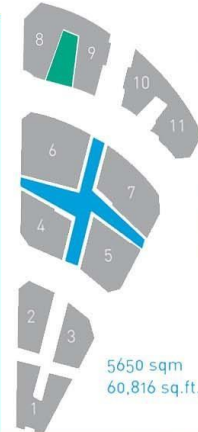


OUTDOOR SPACES

DQ CORE

Gross area | 5,650 sqm
Occupancy without chairs | 8,190

904.88 sqm
9,740 sq.ft.



DQ STAIRS

Gross area | 904.88 sqm
Occupancy without chairs | 1,312

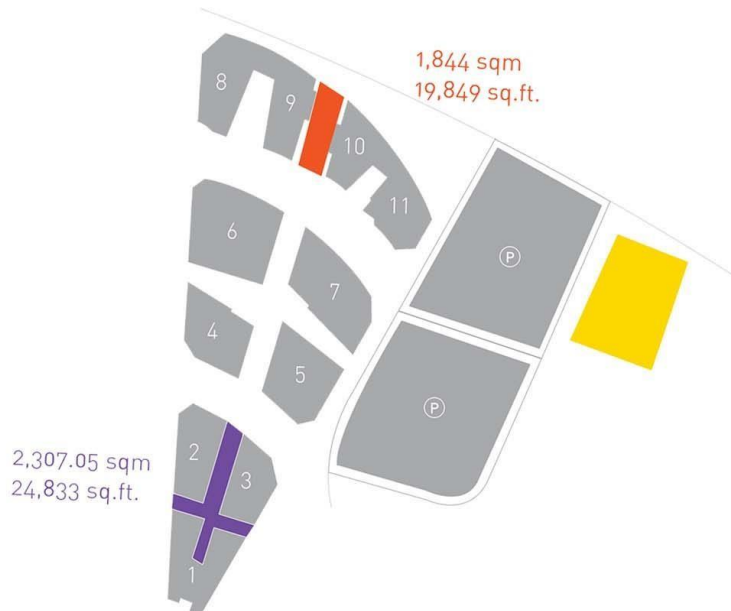


DUBAI DESIGN DISTRICT-D3

LIVE CASE STUDY

Owner : TECOM Investments | Site Area: 18,43,493 m² | Location: Dubai, U.A.E | Status : Ongoing

OUTDOOR SPACES



DQ NORTH

Gross area | 1,844 sqm
Occupancy without chairs | 2,673



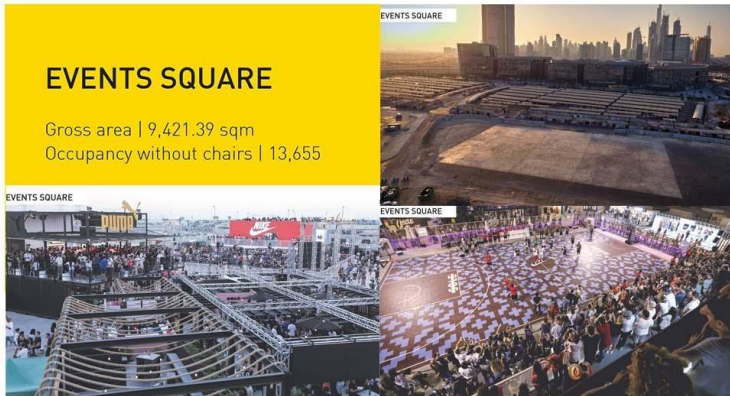
DQ SOUTH

Gross area | 2,307.05 sqm
Occupancy without chairs | 3,344

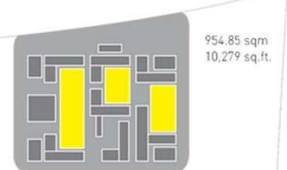


EVENTS SQUARE

Gross area | 9,421.39 sqm
Occupancy without chairs | 13,655



HAI d3



HAI d3

Gross area | 954.85 sqm
Occupancy without chairs | 1,384



DUBAI DESIGN DISTRICT-D3

LIVE CASE STUDY

Owner : TECOM Investments | Site Area: 18,43,493 m² | Location: Dubai, U.A.E | Status : Ongoing

THE BLOCK

Architect: desert INK | Site Area: 22,500m²

'The Block' stands out as one of the most unique and innovative landscape designs in the Middle East for providing an example of how site-found waste materials can be successfully utilized to create a unique character and function within a public landscape.



This urban park re-purposes countless recycled materials, features many incidental play areas for children to explore, an outdoor gym, sports facilities and food and beverage outlets.



The quaysones themselves are reusable, while timber decks utilise wood from shipping pallets and spent scaffolding planks rather than virgin, imported materials. Native plants such as date palms, Leptadenia and grasses are found throughout, thriving in the site's naturally sandy soils.



desert INK seized the opportunity to utilize more than 700 surplus concrete quaysones abandoned at the site during the construction of the adjacent Dubai Water Canal.



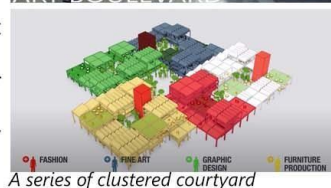
PHASE 2

CREATIVE COMMUNITY

Architect: Foster + Partners
Site Area: 92,903m² | Status: to be constructed

Foster + Partners' winning design for the Creative Community includes outdoor display venues, vibrant and attractive landscaping and a contemporary approach to architecture designed to inspire creativity. The plan includes flexible offices; co-working communal facilities and pedestrianised spaces, alongside year-round space management and events.

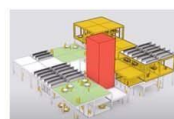
Inspiration was sought by visiting leading design destinations around the world, including New York's Meatpacking District and East London's Shoreditch, to better understand what makes them popular and relevant.



A series of clustered courtyard



Showroom units



Creative units



MARKET COURTYARD

Sathyabama Institute of Science and Technology| Thesis21'|Jemima Mariam George| 3621034

COMPARATIVE STUDY

CASE STUDY

Project details	Indian Habitat Centre	Googleplex	Bharat Bhavan	Station F	Apple Campus 2	Dubai Design District
Client	Housing and Urban Development Corporation Ltd (HUDCO)	Google	Govt. Of Madhya Pradesh	SDECN/Station F	Apple	TECOM investments
Typology	Public building	Commercial	Commercial	Institutional cum commercial building	Commercial	Mixed-use building
Completion year	1993	2004	1982	2017	2017	Ongoing
Location	New Delhi, India	Mountain View, California, United States.	Bhopal, Madhya Pradesh	Paris, France	Cupertino, California, United States.	Dubai, United Arab Emirates
Climate (Köppen-Geiger climate classification)	Humid Subtropical Climate	Mediterranean climate	Tropical wet and dry/ savanna climate	Marine West Coast Climate	Mediterranean climate	Tropical and Subtropical Desert Climate
Architect	Joseph Allen Stein	Clive Wilkinson Architects	Charles Correa	Wilmutte & Associés SAS	Norman Foster	Ibda Design, Foster+Partner, desert INK
Site Area	38,400m ²	25 Acre	11,150m ²	51,000m ²	175 Acres	18,43,493m ²
Built up Area	53,241m ²	46,451.52m ²	9,785m ²	34,000m ²	No information	322,377m ²
F.A.R	1.4	0.4	0.87	0.65	No information	0.17
B.C.R	25%	16%	No information	No information	No information	No information
Connecting bridges	At the north block, offices blocks are connected	Four blocks are connected emphasizing vertical circulations	Courtyards	None	None	Offices blocks are connected
Distance between each core	Longest distance between cores = 46m Shortest distance between cores = 26m	Longest distance between two cores=90m Shortest distance between two cores = 30m	No information	40m	Minimum distance between two cores =75m Maximum distance between two cores =85m	No information
Parking	Surface parking=60 Basement parking =993	Surface parking=100 Basement parking=1000	No information	No information	14,200	Surface parking =1,600
Structure (Material Pallet)	Exposed Brick Work, R.C.C, Ceramic tiles	Reinforced concrete, steel (alloy)	Red sandstone, Flemish bond bricks, R.C.C, Ashlar stone, Exposed concrete, marble and granite on the internal side	Pre-stressed reinforced concrete and steel	Concrete void slabs and glass	Concrete and Steel
Concept	The creation of a green and healthy environment forms the backbone of the complex. This contributes to the urban level functions and also creates a healthy and pleasant environment for the working employees.	A primary vision was to merge the idea of workplace with the experiences found in an educational environment into a new way of working and maintenance of an edge. The reasoning for this was the idea that within the loosely structured university system, there are resources available to allow the individual to conceive, investigate, and execute the impossible—and that is how Google was originally conceived.	The terrace and courtyard reflect the designer's concern with progression through space- the maze or puzzle- where parts are casually revealed and the complex of internal streets act rather like a village layout. In this way the architect made the building reflect Bhopal's own organizational layout. The outdoor spaces at are physical manifestations of the concept of "Empty Space," a recurring theme both in India's visual culture and, in particular, its philosophy.	A startup campus, which is a workplace that gathers all the services required for entrepreneurial and digital creation activities which aims at creating a greater coherence for a startup ecosystem that was previously fragmented.	Apple wanted to make a statement about quality of design and innovation with respect to the future and the environment. Circles may be one of the most symbolic shapes, often "a symbol for nature, perfection, the divine, industrialization, commitment- not to mention life itself. There is no end point in a circle but there is implied momentum and energy, free flowing and faster. There is nothing to impede progress within a circle.	Flexible offices, co-working community facilities and multifunctional spaces for events that cater the different fields of art and design.

COMPARATIVE STUDY

CASE STUDY

Project details	Indian Habitat Centre	Googleplex	Bharat Bhavan	Station F	Apple Campus 2	Dubai Design District
Built to open relation	The built is arranged in the manner that there are multiple courtyard created that flow into each other.	The built is arranged in the manner that the central plaza incorporates the language of a campus: outdoor sports activities, food, a commons, and a park.	Open to sky courtyards were provided to keep people involved in the outer part of the building.	The esplanade on the north side of the building and the tiered garden to the south, two new side roads have been designed, with a focus on pedestrians and greenery.	Jogging tracks and great vistas around the building.	Indoor outdoor relation positively impacts the occupants creating a space for events and gatherings.
Shading devices	Canopies-PVC coated nylon fabric	Fabric	The sunken courtyards provide shade from the scorching midday sun, while the raised terraces offer refreshing air and space at cooler times of day.	-	-	Cloth tensile structures
Number of access points	3	4	1	3	9	4
Connectivity	Vehicular, bus and metro.	Vehicular and bus	Vehicular and bus	Vehicular, bus and metro.	Vehicular and bus	Vehicular and bus.
Components	Retail, offices and galleries.	Offices, Cafe Bakery, Restaurants Outdoor Basketball field, Tennis, Fitness center Spa and Auditorium.	Museum, Workshop, Library, Galleries , Printer shop, Theatre, Store and Auditorium.	Offices.	Fitness center, offices, Theatre and experience center	Retail, offices, galleries and urban park.
Circulation	Interconnected blocks with a protective sunscreen that link the landscaped courts. Blocks are interconnected to each other with bridges.	Linear path, the spaces transit from private to public with semi-private and semi-public threshold along the path.	Free flow circulation was provided to avoid accumulation at a certain point.	Rectangular space which makes it easy in way finding for startups. The central nave has the primary connectors to all the spaces. As it is an open-plan design, secondary connectors are used to link all staircases, facilities containers and workstation together.	Free flow circulation was provided to avoid accumulation at a certain point.	Flow of spaces is simple and multi-functioning oriented with connected courtyards.
Users	Public, working staff	Working staff	Public, working staff	Entrepreneurs, public, student and working staff.	Public and working staff.	Public and working staff.
Inference	Effective zoning for handling crowds. Vehicular circulation is restricted to the periphery, making the site pedestrian friendly. Courtyards also act as important binding elements and tools for place-making.	The project is very successful in terms of architectural expression and as a place for indulging in cultural and leisure activities. Biophilic design with natural light by using glass windows, building outdoor space	The terraces and open-to-sky spaces bind into creating an experience for the visitors. Site is entirely pedestrian . However universal access is a problem due to many stairs.	Open plan office with standardized Y-shaped desk which has no dedication for privacy but promote interaction. Event related: No permanent furniture to allow flexibility in transforming based on events needs.	The campus looks outward to the space that surrounds it and at the same time inward to a private enclosed space.	The project is very successful in terms of architectural expression and as a place for indulging in cultural and leisure activities

2.1.1 Inference

2.1.1.1 Plan

Open work floor has been described as a new legibility of landscape prompting people to engage in conversations. Atrium is also observed to be an effective approach to reduce barriers, it does not only allow natural light to reach lower floors but also workers at different floors to be visually connected.

2.1.1.2 Location

Location must ensure easy access through public transport. The area must also be able to economically uplift the society.

2.1.1.3 Security

Spaces must not be secluded. All users must feel safe, by means of lightening and other measures.

2.1.1.4 Linkage of spaces

Spatial linkage is necessary throughout the design for a wholesome experience.

2.1.1.5 Multi-user

Spaces designed for all kinds of people- children, teens, adults ,etc as a result increasing the spatial usage.

2.1.1.6 Adaptive Spaces

Flexible to transform a space based on events where furniture can be moved to clear out space needed for bigger event. This will help build ownership and engagement of workers across the floor.

CHAPTER 3 – SITE STUDY

3.1 INTRODUCTION

Bangalore is the capital and the largest city of the Indian state of Karnataka. It has a population of more than 8 million and a metropolitan population of around 11 million, making it the third most populous city and fifth most populous urban agglomeration in India. Bangalore is known as the Silicon Valley of India because of its role as the nation's leading Information Technology (IT) exporter. The city blessed with a salubrious climate. It is a demographically diverse city. Historically a multicultural city, Bengaluru has experienced a dramatic social and cultural change with the advent of the liberalization and expansion of the information technology and business process outsourcing industries in India.

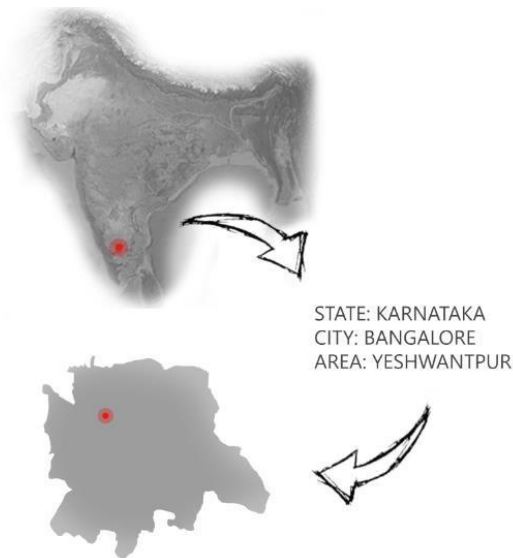


Figure 3.1: Location

3.2 SITE DESCRIPTION

Bangalore being overshadowed by its IT image in the recent past has overlooked the need to expand the cultural institution that caters designers especially in the regions that have become a part of the agglomeration lately. Yeshwanthpur is a sub locality in the north western part of Bengaluru City known for the biggest wholesale market of agricultural produce in the city. Yeshwantpur has a mix of residential and industrial units. Peenya is an industrial area of the Bengaluru city in India and it is one of the biggest industrial areas in Asia, which is very close to the site. An 8 minute walk (600m) from the Peenya Metro Station to the site.

3.3 SITE INFORMATION

Site is spread over 48.5 Acres. Land belongs to Bank of Baroda and HMT. The site has access points from the NH 75 which is 9.11m wide and pipeline road on 20m wide. The nearest Metro station is Peenya Station which is 600m. The nearest railway station is 5.2 km known as Yeshwantpur Junction.

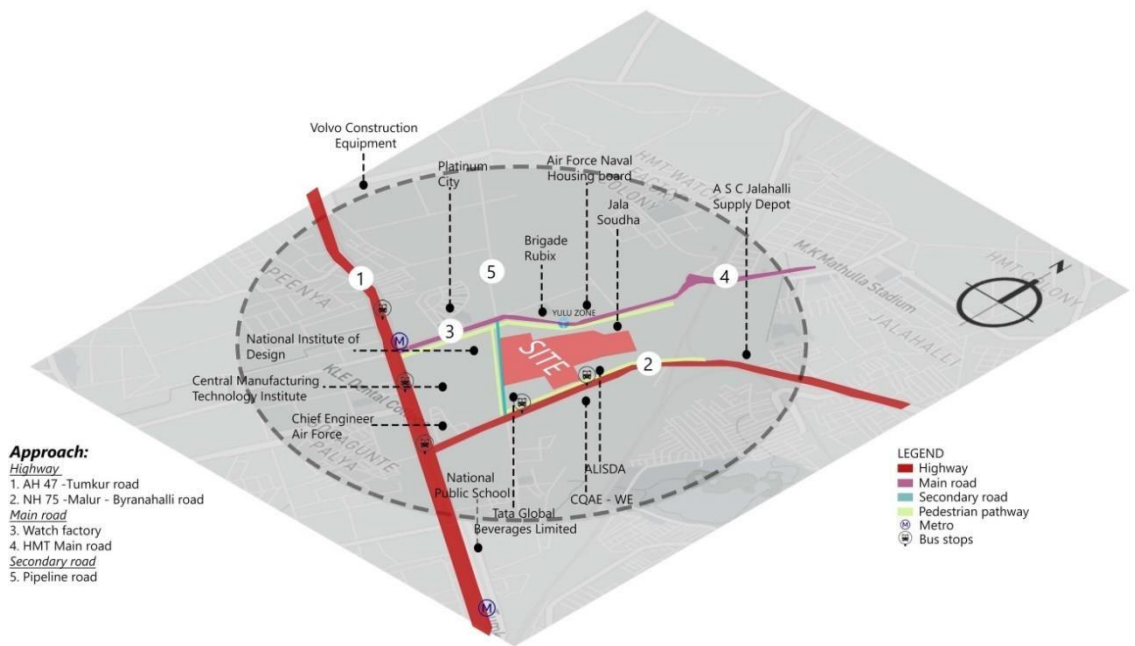


Figure 3.2: Site

3.4 JUSTIFICATION

The site is near the National Institute of Design; the design district will engage, inspire, enable and provide emerging talents with a platform to showcase their work to a larger, global audience. Also the Design District will be a place that not only design lovers can enjoy as art attracts and calms the exhausted employees around the area.

3.4.1 Flora and fauna

The fauna in urban areas of the city is limited domestic animals and other common animals. Fewer trees were found on the site with girth varying from 10cm to 20cm.

3.4.2 Land development

The area of the site is a non-agricultural barren land and has been classified as unclassified use. The present usage of the land is barren and the future development may bring in a positive impact.

3.4.3 Social impact

There are no displacements of populations from this site and the project will bring out great start-ups hence produce extra-ordinary entrepreneurs to the country. This will develop the country's economic growth. So by all means this project will create a great and positive impact in the society.



Figure 3.3: SWOT analysis

3.5 CONTEXTUAL ANALYSIS

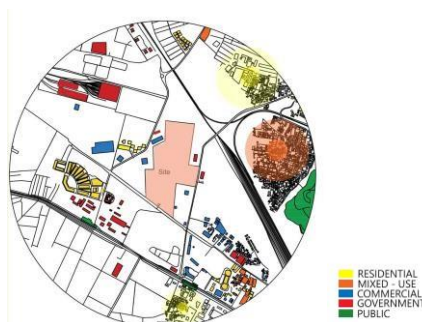


Figure 3.4: Land use map

3.5.1 Land Use

Immediate area around the site is commercial and government buildings. The adjacent area has residential and mixed-use.

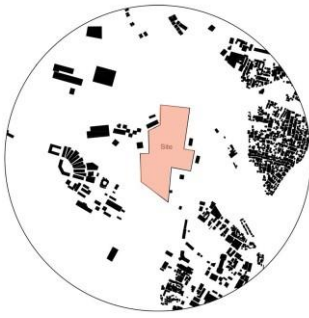


Figure 3.5: Figure and ground- Built

3.5.2 Figure and ground- Built

To the north and the south-west of the site are plotted housing developments, multi-storey housing towers and townships.

To the east of the site clusters of residential buildings are observed.

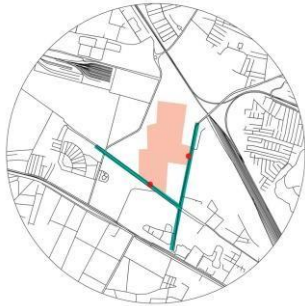


Figure 3.6: Figure and ground- road network

3.5.3 Figure and ground- Built

The site can be directly approached from NH75 and Pipeline road.

3.5.4

Topography

Water site will flow into the adjacent site an alternative path needs to be created.

Slope percentage = 2.25%

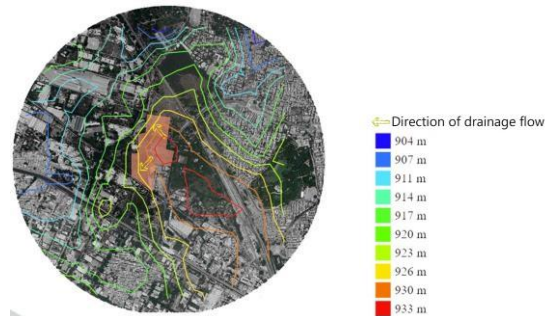


Figure 3.7: Topography

3.5.5 Climate and weather

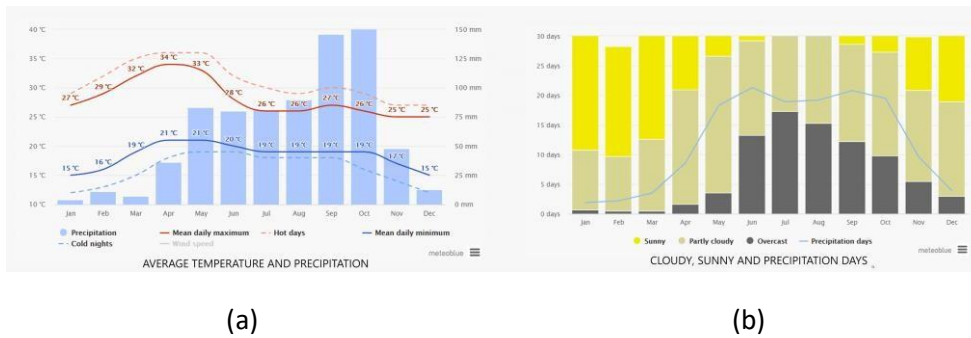


Figure 3.8: (a) Average temperature and precipitation (b) Cloudy, sunny and precipitation days

Bangalore has a tropical savanna climate (Köppen climate classification) with distinct wet and dry seasons. Due to its high elevation, Bangalore usually enjoys a more moderate climate throughout the year.

The coolest month is January with an average low temperature of 15.1 °C (59.2 °F) and the hottest month is April with an average high temperature of 35 °C (95 °F).

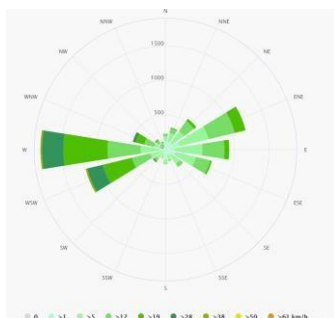
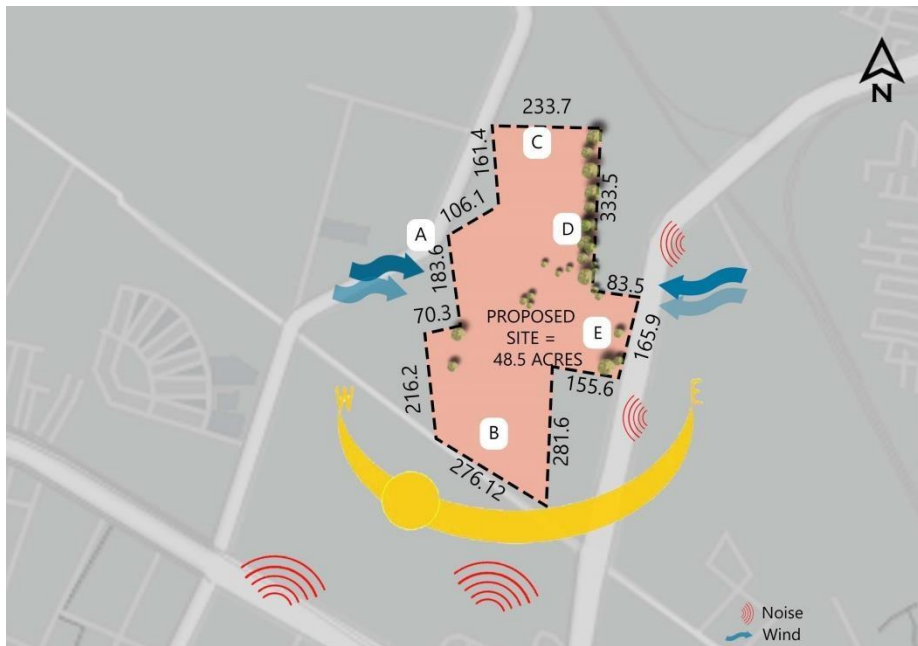


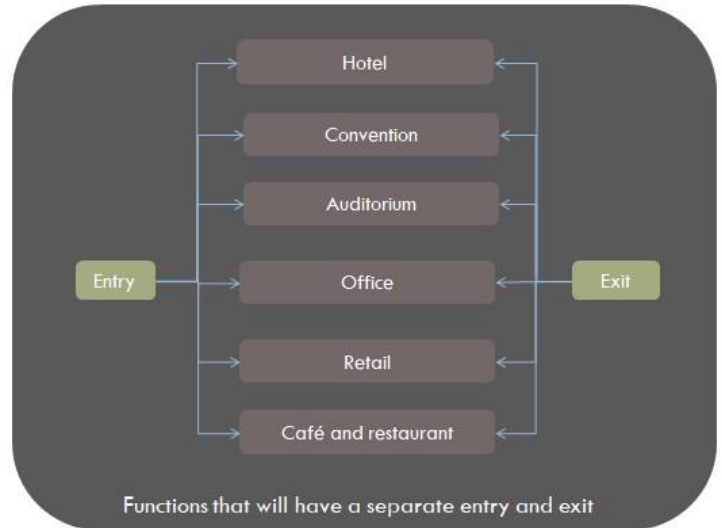
Figure 3.9: Wind rose

Strongest wind is blowing from West and other strong winds from South-West (SW) to NorthEast (NE).



CHAPTER 4 – DESIGN INTENT

4.1 PROGRAMME

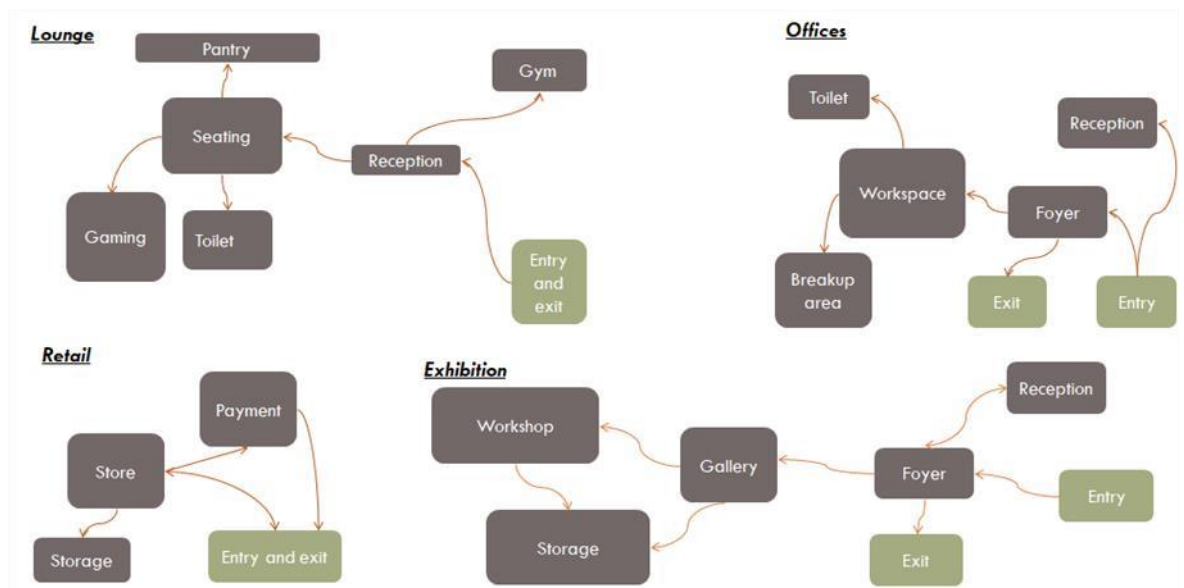


Business and knowledge

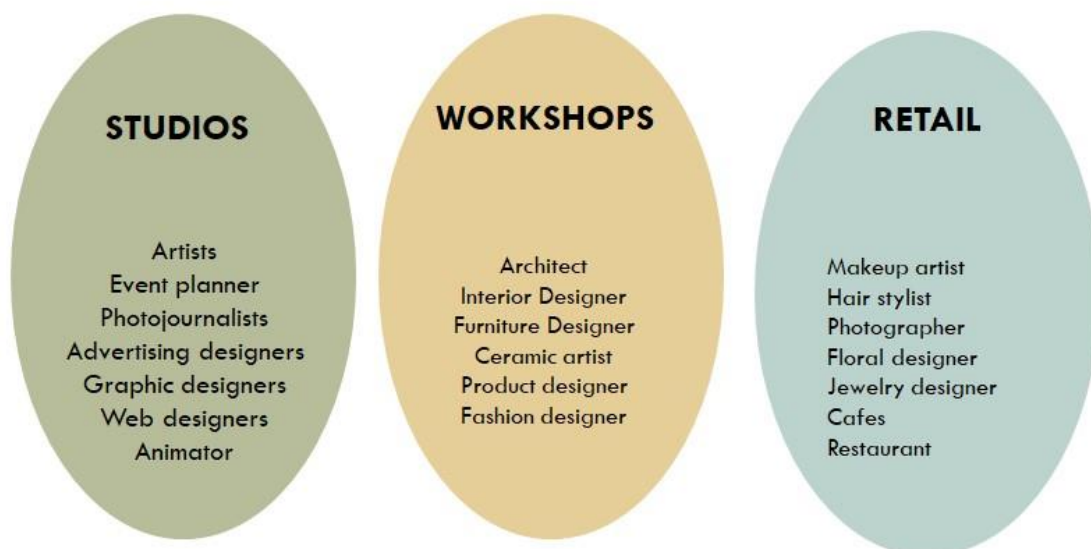
Startup entrepreneurs are innovated by global companies that will lead a branch in the district.

Art and entertainment connects multi-generations creating a cultural togetherness.

4.1.1 Individual component flow

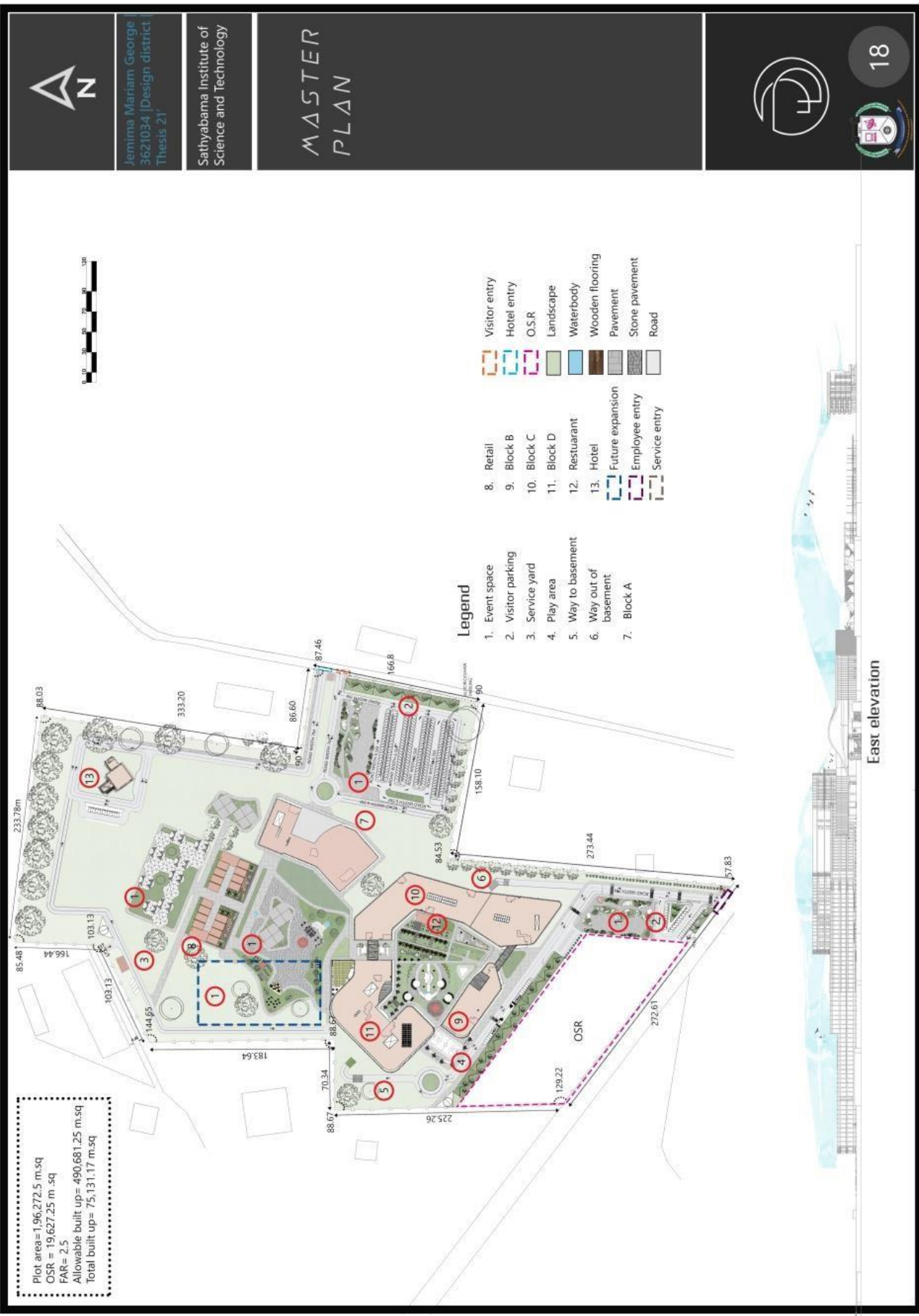


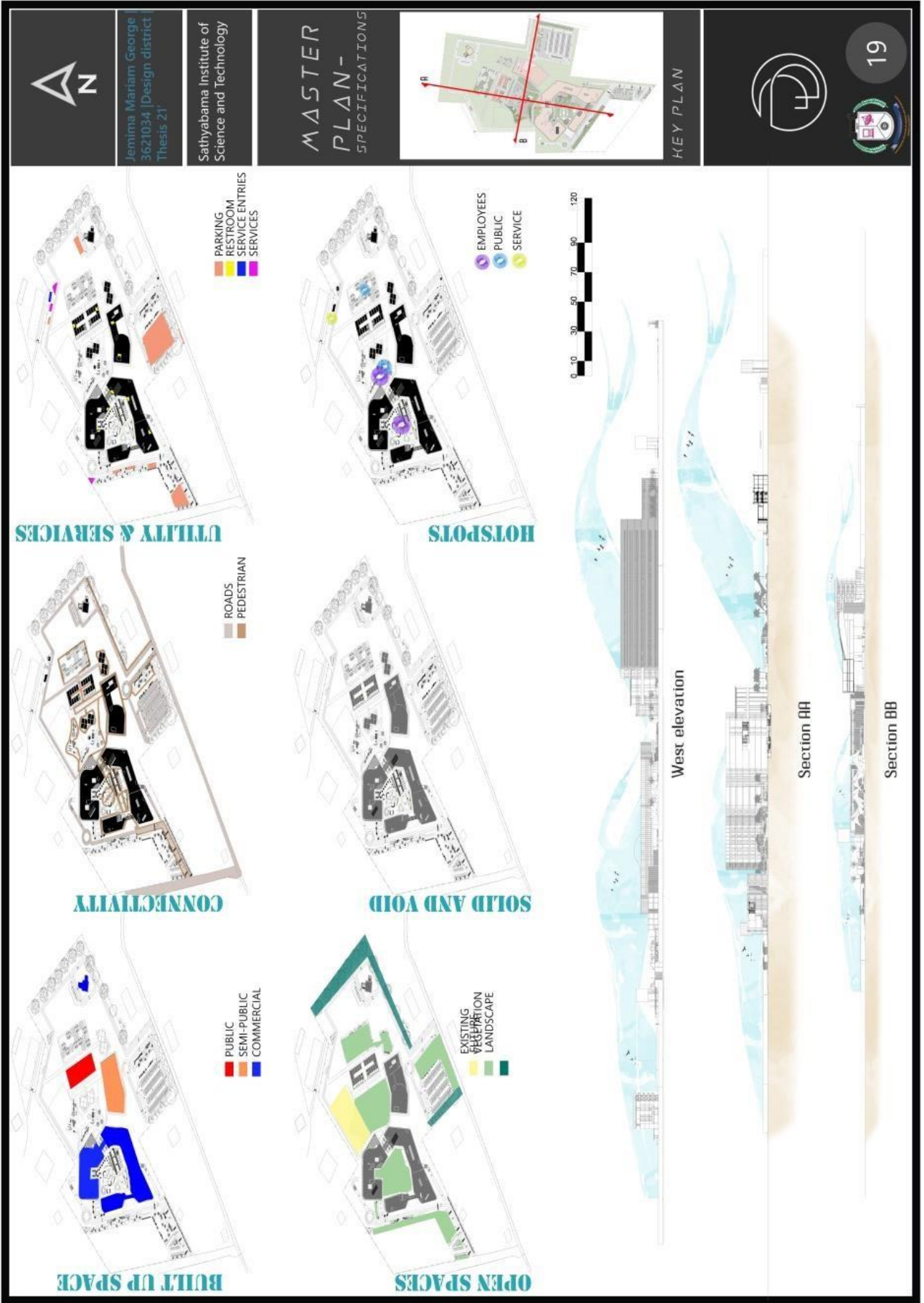
4.1.2 Users

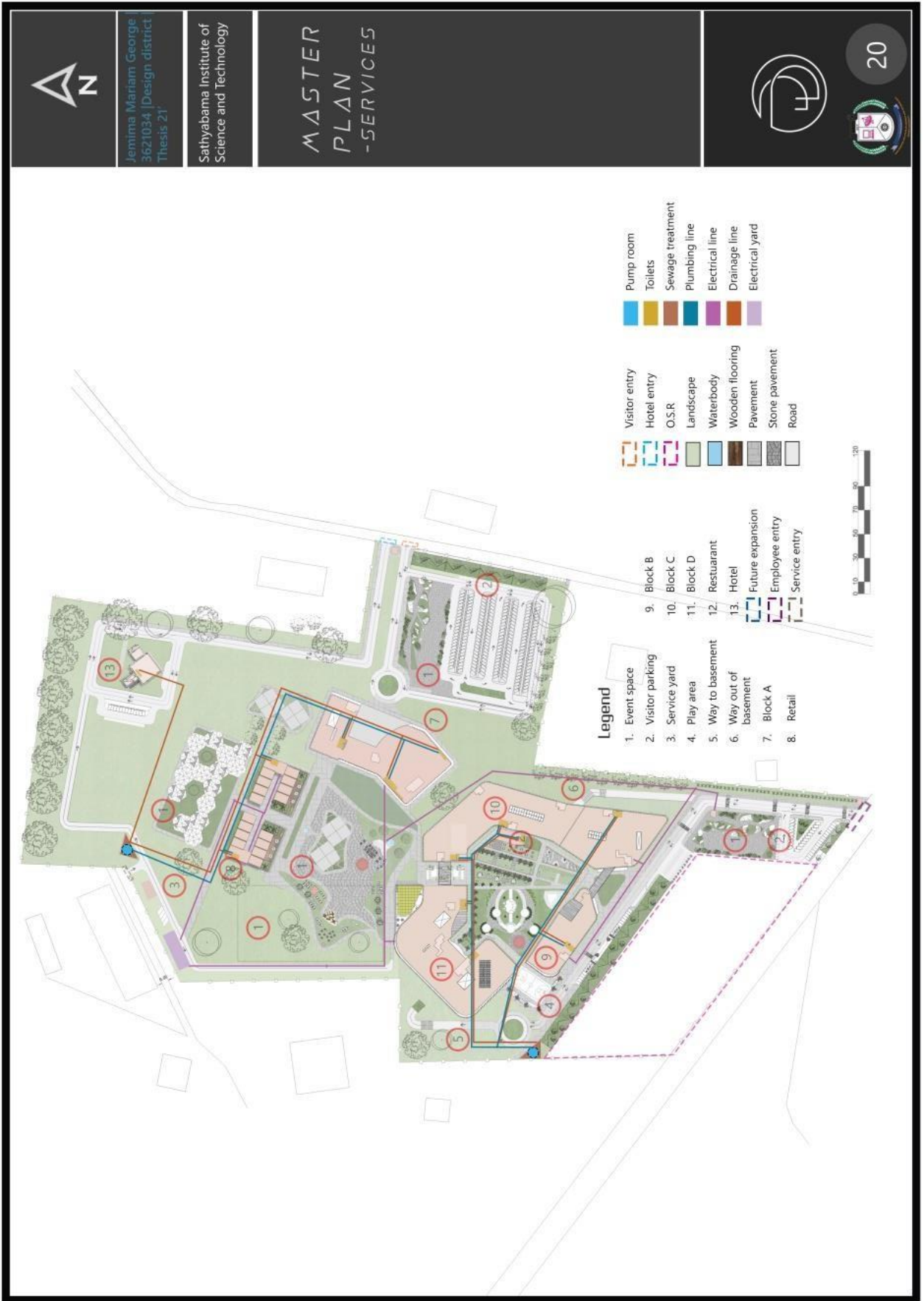


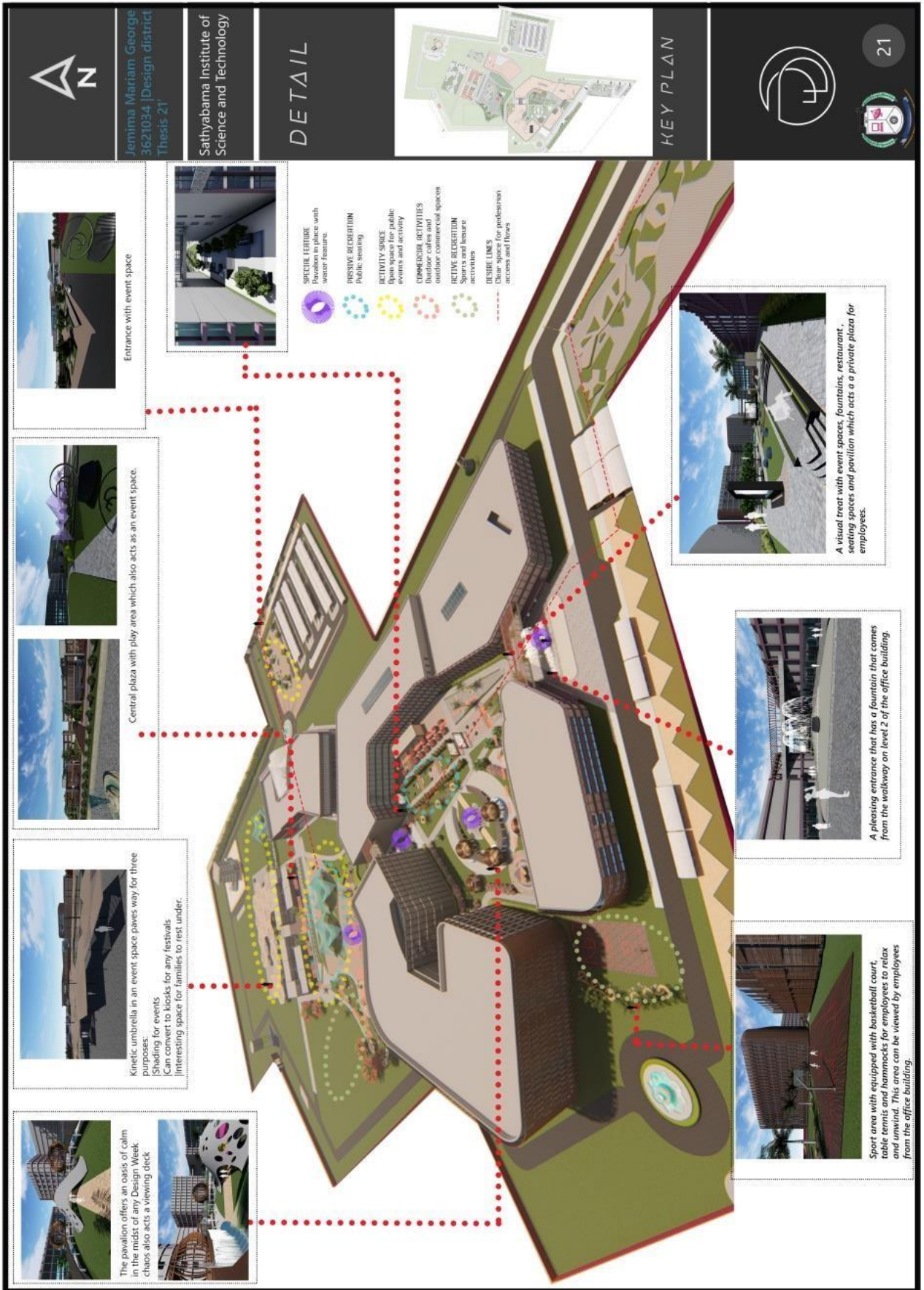
4.2 AREA STATEMENT

DESIGN CONSIDERATIONS	SPACE	TOTAL AREA (m.sq)		
Main block	Workshop 1 (No.3)	348	Huddle room	860
	Workshop 2 (No.3)	390	Pantry	1200
	Workshop 3 (No.2)	314	Printing area	650
	Workshop 4	111	Metal workshop	260
	Pantry	15.7	Photography studio	260
	HR Office 1	13	Seminar room 1	120
	HR Office 2	13.6	Seminar room 2	220
	General Manager	21.6	Male washroom	520
	Assistant room	8.9	Female washroom	520
	Meeting room	19	Handicapped	130
	Booking office	19.8	Café	1400
	Telephone room	24	Building management room	25
	AHU	22.8	Server room	45
	Electric room	6.1	AHU	430
	Women's washroom	31	Electrical	370
	Handi-capped toilet	6.2	Telephone	125
	Men's washroom	28.8	Solar collection room	12
	First aid room	13.3	Building automation room	15
	Total built-up area	1412.8 m.sq	cabin	220
			storage	830
Auditorium block	Projector room	16.4	informal meeting	3800
	Sound control room	8.6	CCTV	75
	Light control room	8.6	Kitchen	270
	Quick change (No.2)	16.8		
	Vip Lounge	57.6	Total Built up	69691 m.sq
	Pantry	15		
	Equipment storage	17.5		
	Women's washroom	38.7		
	Men's washroom	37.8		
	Performance room (male)	65.2		
	Performance room (female)	66.7		
	Changing rooms (No.10)	20		
	Electric room	36		
	AHU	29.4		
	Telephone room	36		
	Storage	88.5		
	Café	81.6		
	Exhibition hall 1	629		
	Exhibition hall 2	599.8		
	Meeting Hall (No.3)	114.3		
	Multi-purpose room	340		
	Total built up	2325.4m.sq		
Office	Workspace	2150		
	Meeting room	2450		
			Hotel	
			Total Built up	3780m.sq







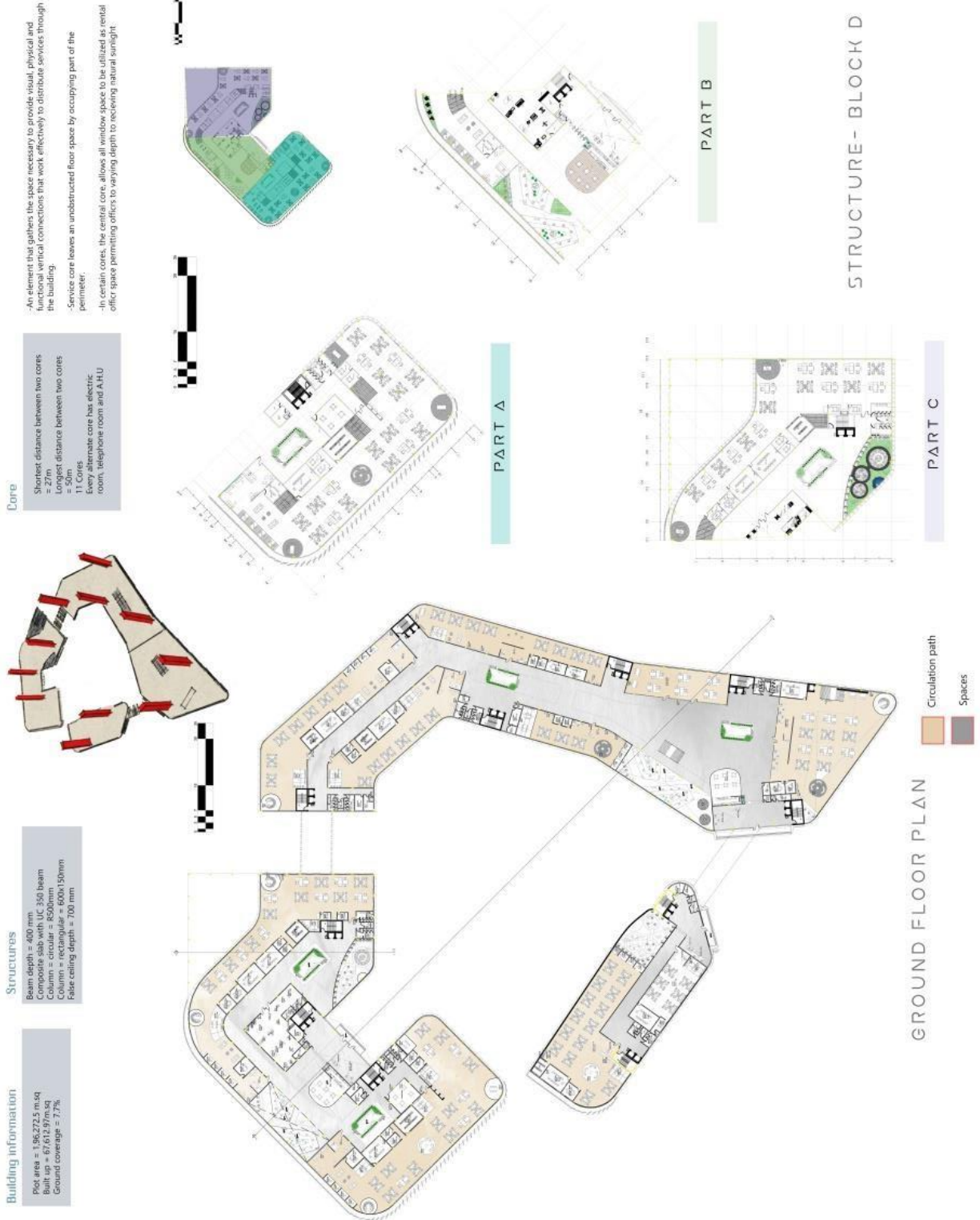


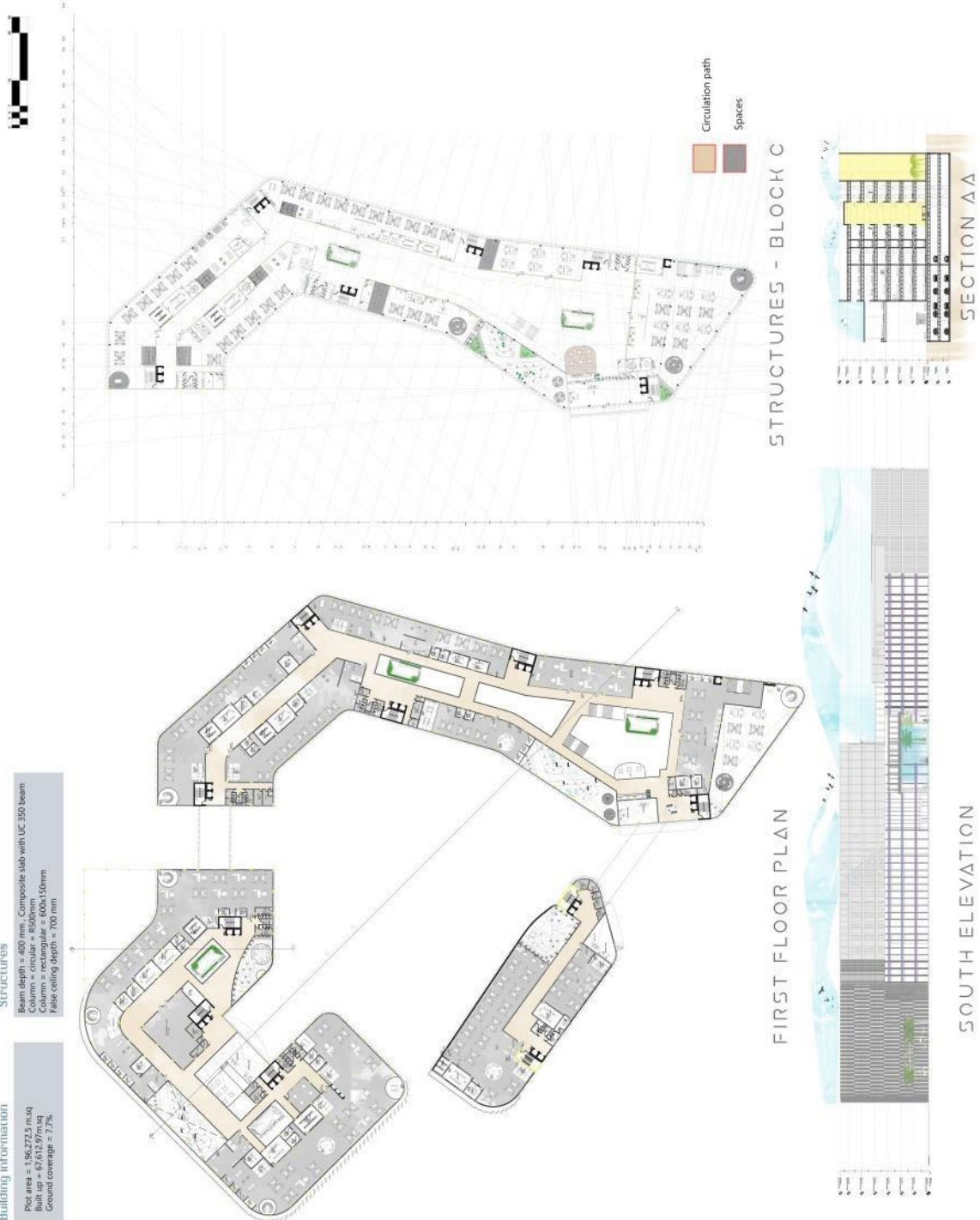


FLOOR PLANS OFFICE BLOCK



KEY PLAN







STRUCTURES BLOCK - B



The office block entrance has a fountain that comes from the walkway on level 2.



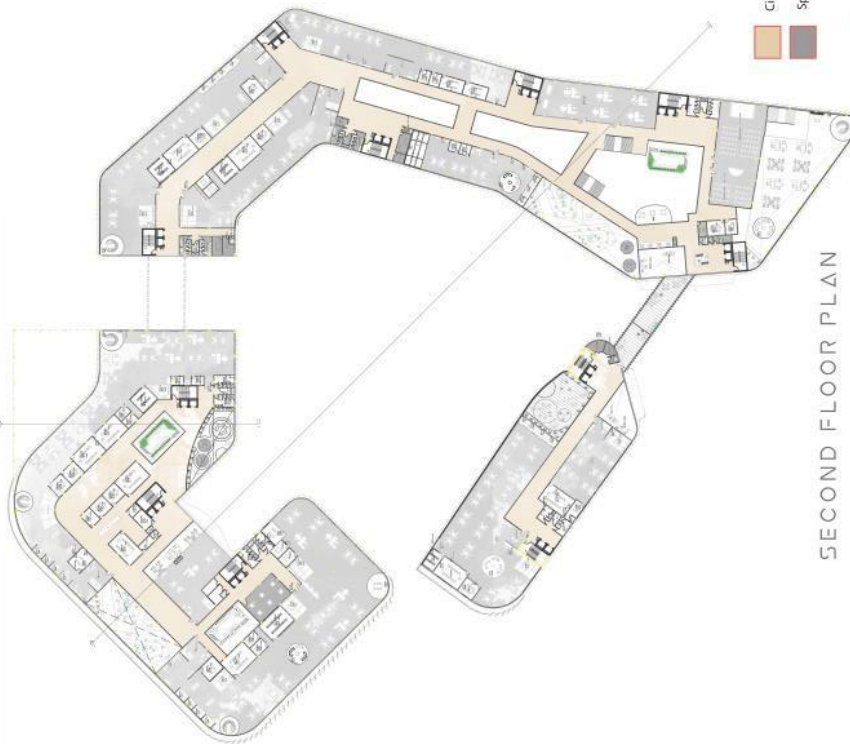
View from the walkway that faces the plaza.

Building information

Plot area = 1,96,222.5 m²
Built up = 67,612.97 m²
Ground coverage = 7.7%

Structures

Beam depth = 400 mm. Composite slab with UC 350 beam
Column = rectangular = 800x600x150mm
False ceiling depth = 700 mm



SECOND FLOOR PLAN



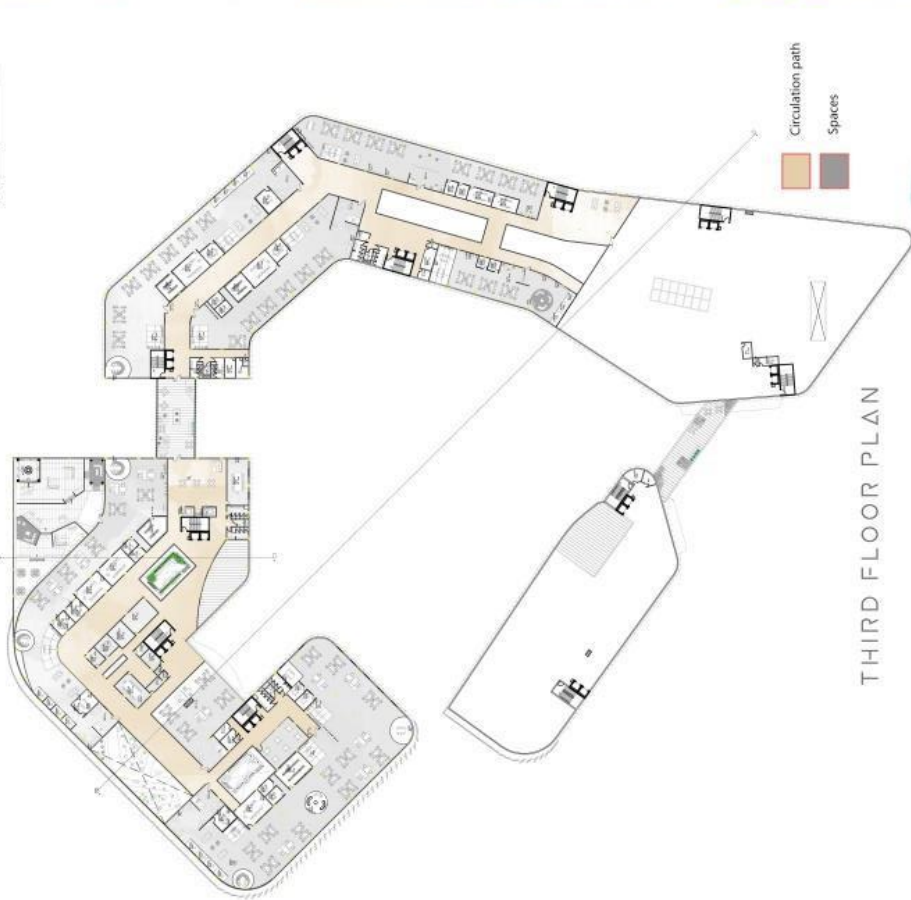
WEST ELEVATION

Building information

PLOT AREA = 196272.5 m²
BUILT UP = 67612.97 m²
GROUND COVERAGE = 7.7%

Structures

Beam depth = 400 mm
Composite slab with UC 350 beam
Column = circular column
Column = rectangular = 600x150mm
False ceiling depth = 700 mm



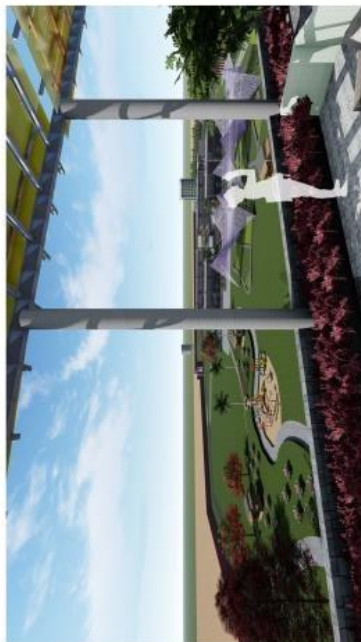
THIRD FLOOR PLAN



SECTION BB



Different levels at the outdoor working area to create segregation of spaces rather than building walls.



Views into the central plaza where events also take place creates a sense of visual connectivity.



The outdoor working area can also act as an event space as offices can rent this space out for parties or relaxation events after work hours.



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Science and Technology

FLOOR PLANS OFFICE BLOCK



KEY PLAN



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160 Solar panels of 1.5m x 1.5m has been provided at terrace level for all the three blocks considering the facts of feasibility of providing it at the highest building.
Approximately 38KWH/m² per year has been taken into consideration.
Reference: <https://us.sunpower.com/blog/2020/09/22/how-many-solar-panels-does-it-take-power-business>



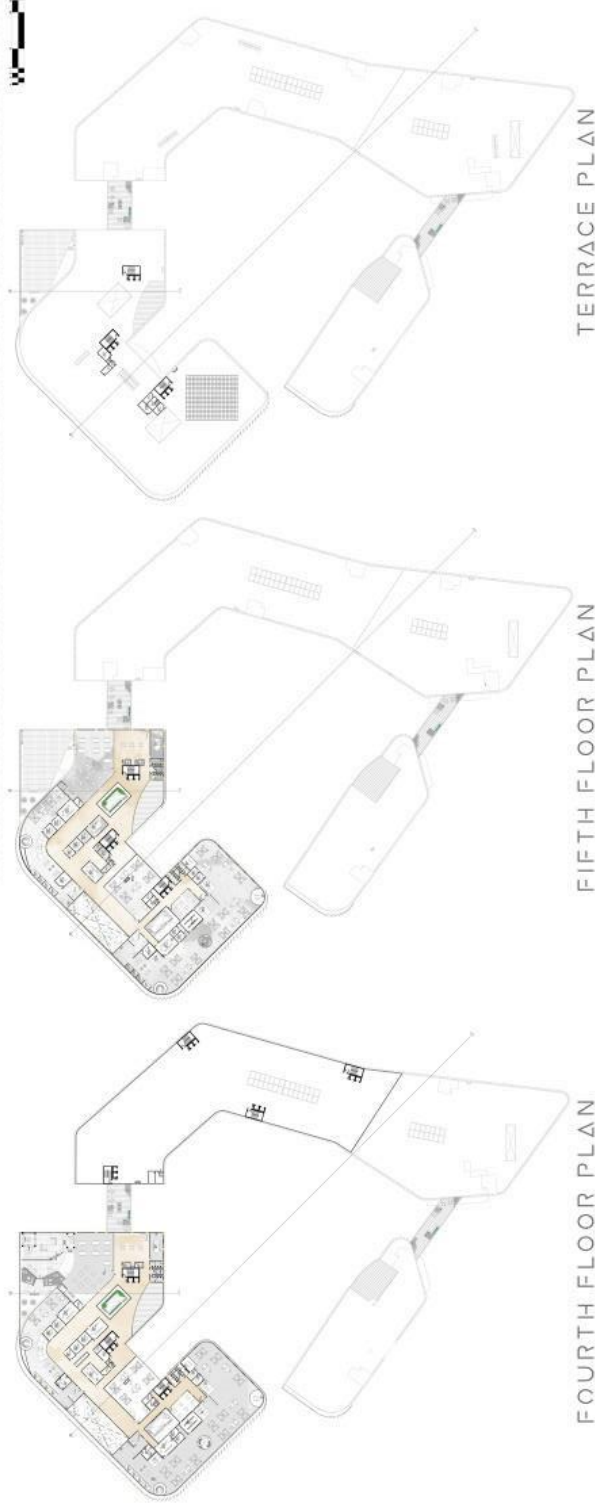
Solar panels inclined towards south to gain maximum radiation which can be used for the kinetic facade and for the building's electricity needs.

Structures

Beam depth = 400 mm
Composite slab with 150 beam
Column = rectangular = 800x800mm
False ceiling depth = 700 mm

Building information

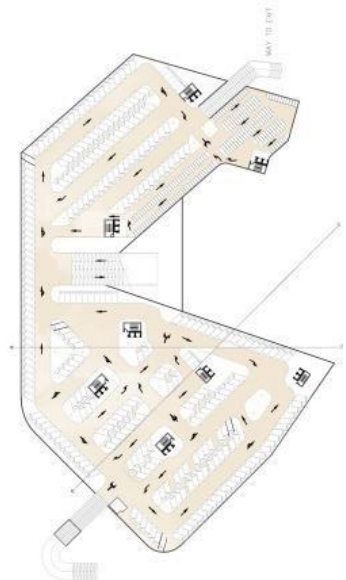
Plot area = 196272.5 m²
Built up area = 11610 m²
Ground coverage = 7.7%



FOURTH FLOOR PLAN

FIFTH FLOOR PLAN

TERRACE PLAN



BASEMENT 1 FLOOR PLAN



BASEMENT 2 FLOOR PLAN



DETAIL



KEY PLAN



Kinetic facade

Two distinct cooling phases:



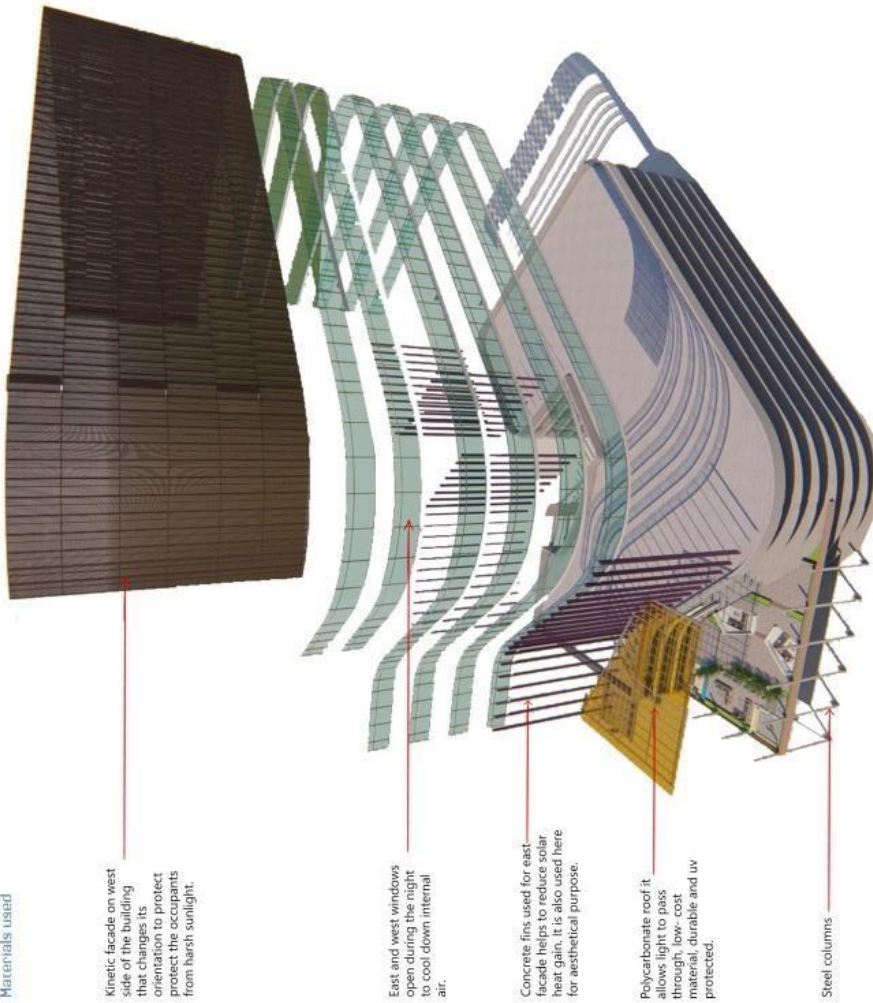
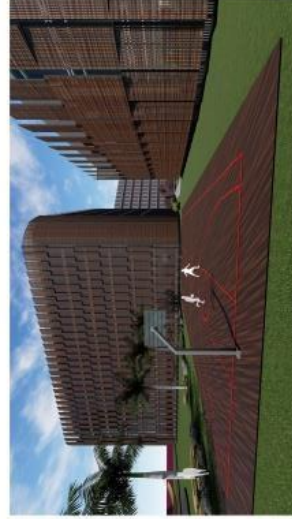
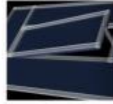
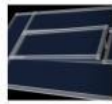
Night purge:
1am to 5 am

This is a cooling phase. Since night air is much colder than daytime the windows open to cool down the internal air i.e. the concrete ceilings

Concrete cooling:
7am to 12pm

Concrete ceilings will keep the internal air cool, AHU is used if needed.

The kinetic facade will cut off the harsh sunlight



Kinetic umbrella roofing



Kinetic umbrella in an event space paves way for three purposes

- |Shading for events
- |Can convert to kiosks for any festivals
- |Interesting space for families to rest under.



Roof plan



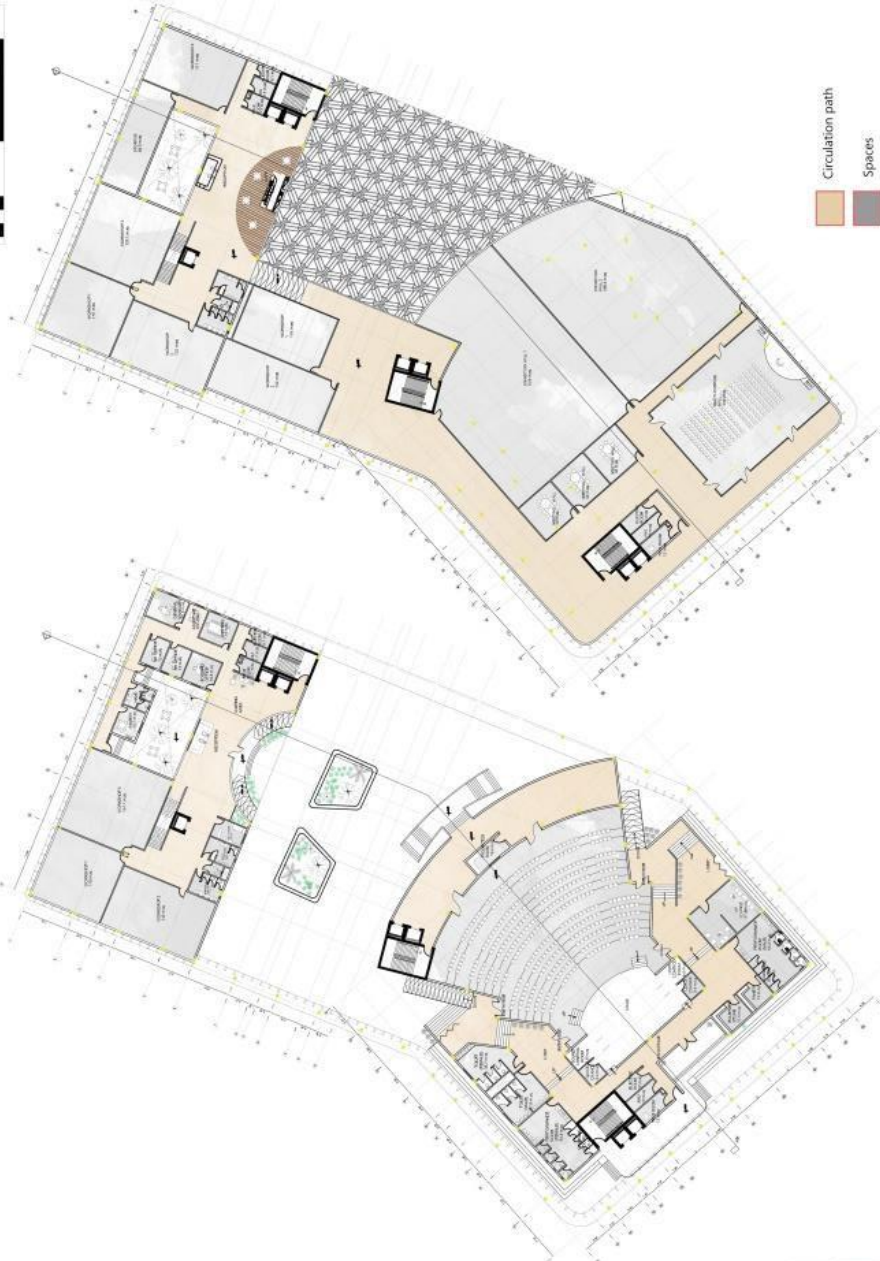
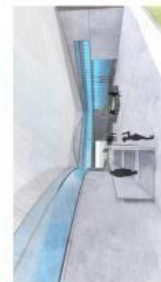
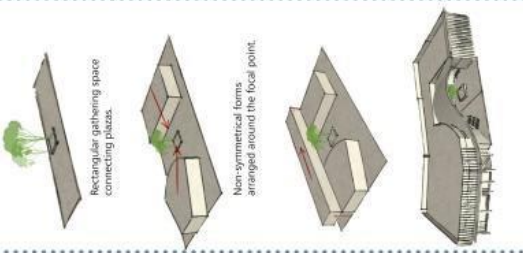
Building information

Pot area = 1,96,272.5 m² sq
Built up = 13,926 m² sq
Ground coverage = 1.8%

STRUCTURES

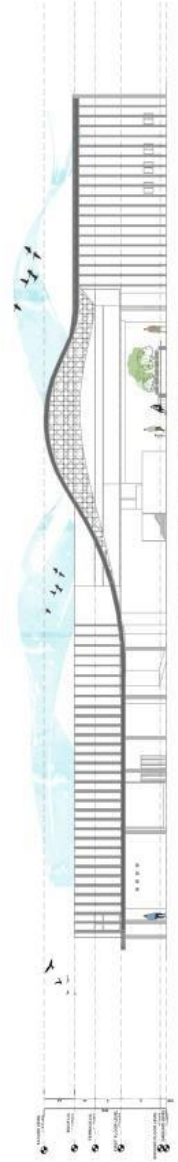
Beam depth = 200mm
Column = circular = R450mm
Column = rectangular = 700x250mm
False ceiling depth = 700 mm

Form development



FIRST FLOOR PLAN

GROUND FLOOR PLAN



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FLOOR PLANS BLOCK-A



KEY PLAN



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