

**IT PARK- EMPHASIS ON SENSE OF PLACE, TIME AND
CLIMATE CHANGE**
(Google Campus design)

A THESIS

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

By

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DEPARTMENT OF ARCHITECTURE
SCHOOL OF BUILDING AND ENVIRONMENT

SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY) Accredited

With Grade "A" by NAAC

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CHENNAI - 600 119

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BONAFIDE CERTIFICATE

This is to certify that Thesis Report is the bonafide work of **Atluri Keerthana (39210012)** who carried out the Thesis entitled "**IT Park- Emphasis on Sense of Place, Time, Climate Change**" under our supervision from December 2023 to May 2024.

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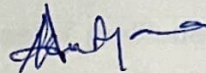
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DECLARATION

I, **ATLURI KEERTHANA** hereby declare that the Thesis Report entitled "IT Park-Emphasis on Sense of Place, Time, Climate Change" done by me under the guidance of **Ar.Surya Rajkumar** (Internal Guide), **Ar.Mohana Gopiraj** (Internal Review Member) and **Ar.Maheshwaran** (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: 20.05.2024

PLACE: Chennai



SIGNATURE OF THE CANDIDATE

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I would like to express my sincere and deep sense of gratitude to my Thesis Internal guide **Ar.Surya Rajkumar**, Internal Review member **Ar.Mohana Gopiraj** and External Guide **Ar.Maheshwaran** for their guidance, suggestions and constant encouragement which paved the way for the successful completion of my Thesis work.

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ATLURI KEERTHANA

THESIS SYNOPSIS

Indian cities are renowned for their unique cultural and historical character. However, globalization raises concerns about the potential homogenization of urban spaces, leading to a loss of this distinct identity. This thesis investigates this phenomenon in Hyderabad, focusing on the impact of development on the city's central business district (CBD). To understand how globalization influences urban development in Hyderabad, particularly regarding the preservation of cultural and historical identity within the CBD. The objective is to analyze the architectural ideology driving the current growth pattern in Hyderabad's CBD and Identify the factors contributing to the potential homogenization of urban spaces. Examine the role of architects in shaping the city's development while maintaining its unique character.

The study will focus on the Nanakramguda-Gachibowli corridor, encompassing HITEC City and Madhapur, as a microcosm of Hyderabad's CBD. A case study of Google's new campus in Nanakramguda will be used to explore the practical application of these ideas within a large-scale development project. The outcome would be understanding the ways to find the solution for this kind of development. Designing an IT building with implementation of all the contextual elements and something that's close to the native population.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The project is designing the upcoming google campus in hyderabad with incorporating the architecture of hyderabad in it without compromising on the values and essence of google. The campus is designed to have all the aspects of google relating to the context. The major objective of the project is to not design a monotonous neighborhood but create an architecturally enhanced space with elements of Hyderabad creating an identity to the area.

1.2 NEED OF THE PROJECT

In the process of globalization space creation and consumption have eroded the city's unique identity, replacing its diverse architectural elements with generic and easily interchangeable components. In this context, the essential connections between buildings, spaces, and infrastructure are often overlooked. This is a phenomenon where buildings in a particular urban setting are often seen as isolated entities, and their relationship with the surrounding urban space is not given much consideration.

Over the past two decades, the Financial District of Hyderabad has undergone significant changes as it aspires to become a new central business district (CBD). In response to an urgent economic crisis that was pushing the state into severe poverty and economic decline, the government opted to transform the capital into a thriving IT hub. It's apparent that there's a distinct transition between the older parts of Hyderabad, known as the old city, and the recently established business district. These differences are clearly noticeable in aspects such as architectural styles, streetscape, and the overall urban character.

1.3 AIM AND OBJECTIVE

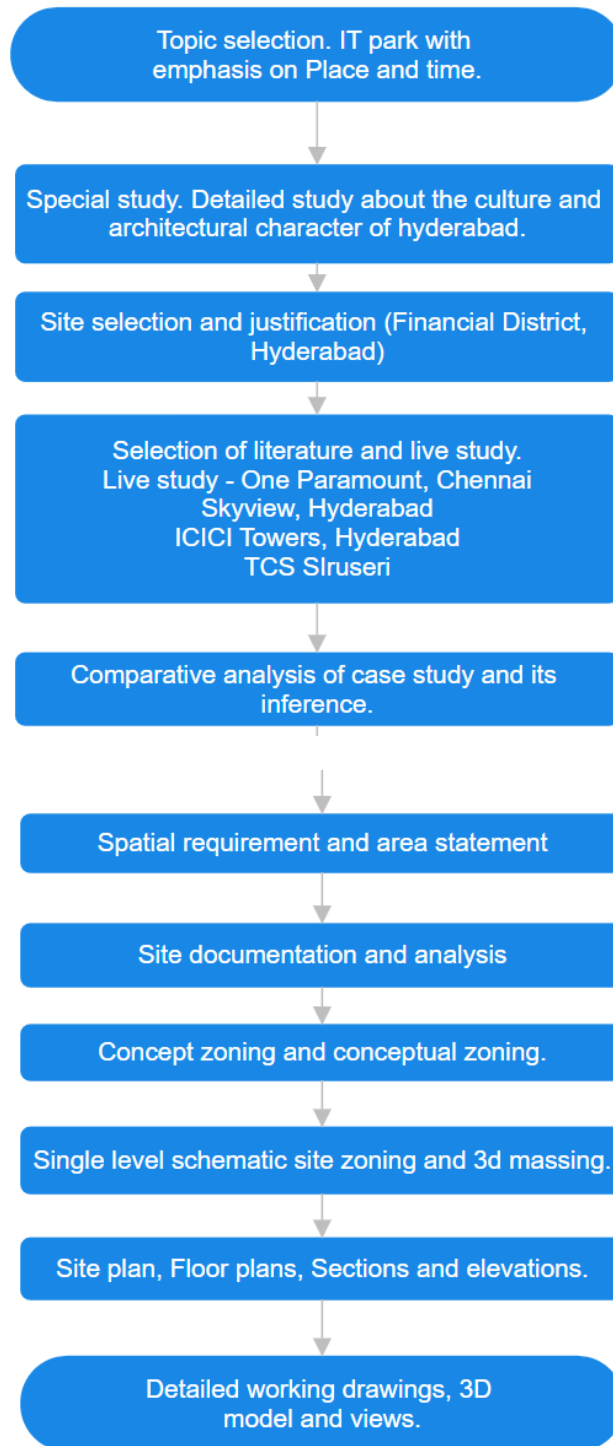
(a) To design a Google campus with all required and convenient infrastructure facilities with using hyderabad architectural style

(b) Constructions trying to incorporate hyderabad materials.

(c) Incorporating Google values and culture.

1.4 METHODOLOGY

My methodology utilizes a two-part study of Hyderabad's architecture. First, I'll conduct on-site analysis of key buildings, followed by a comparative analysis to inform the IT park design.



CHAPTER 2

LITERATURE CASE STUDIES

2.1 ONE PARAMOUNT - RMZ

Location - Chennai, India

Architect- RMZ Developers

Building type- Office building

completion – 2016

2.1.1 SPATIAL ANALYSIS:

The building is designed to house office spaces for a variety of firms, rather than being dedicated to a single company. This multi-tenant approach allows for a dynamic and diverse business environment within the same structure.

To ensure efficient and seamless operation, all essential services are strategically centralized in two core areas of the building. These cores are meticulously planned to serve every floor, providing easy access to elevators, stairwells, restrooms, and utility shafts, which helps in maintaining a streamlined and organized infrastructure.

The spatial planning of the building prioritizes accessibility and ease of use for a diverse population. This includes thoughtful consideration of pathways, entrances, and common areas to ensure that people from various backgrounds and with different needs can navigate the building without encountering any obstacles. Universal design principles are likely employed to accommodate individuals with disabilities, ensuring compliance with accessibility standards and promoting inclusivity.

Additionally, wayfinding is simplified through clear signage and intuitive layout, reducing confusion and enhancing the overall user experience. The design might also incorporate features such as ample natural lighting, open spaces, and communal areas to foster interaction and collaboration among tenants.

Overall, the building's design aims to create a flexible, inclusive, and efficient workspace that caters to the needs of multiple businesses and their employees, facilitating a productive and harmonious working environment.

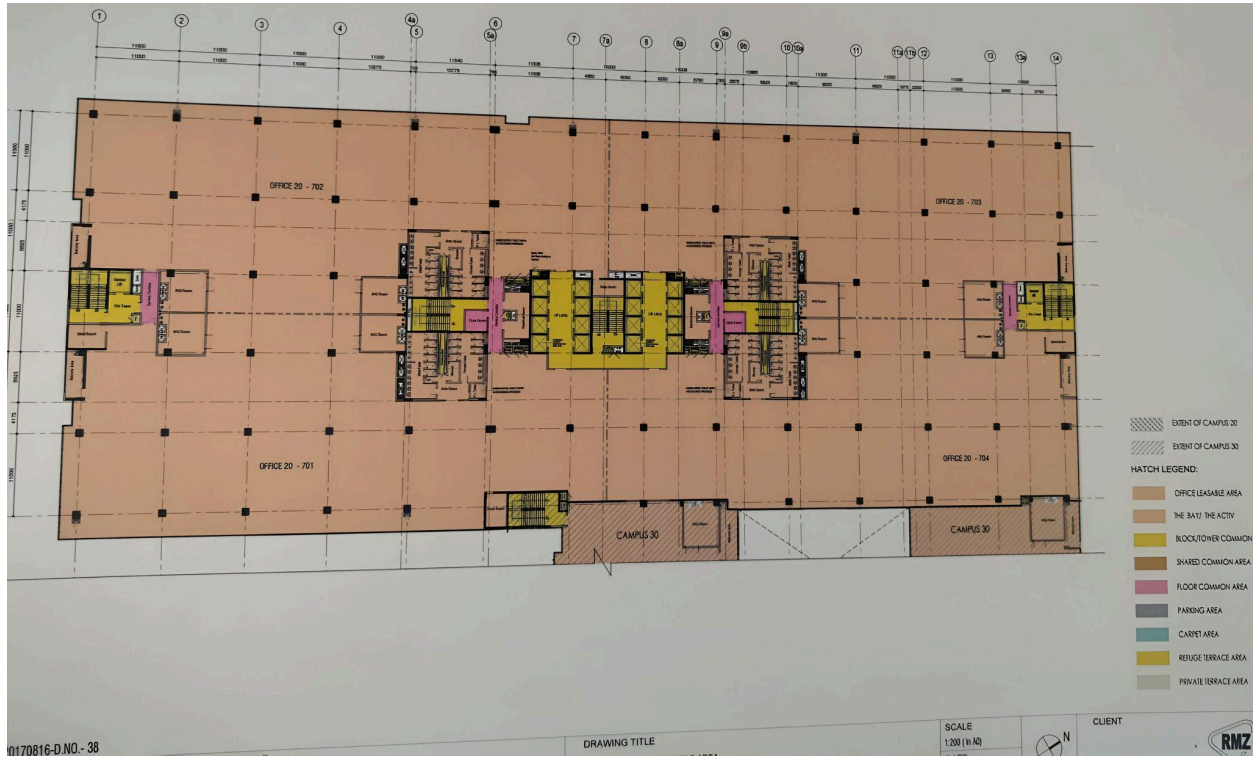


Fig 2.1: Plan of One Paramount

2.2 SKYVIEW, HYDERABAD

Location - Hyderabad, India
 Architect - DP Architects, Singapore
 Building type - Office Building
 Year of construction - 2016
 Area - 270sq.mts

2.2.1 ANALYSIS:

The Skyview in Hyderabad's Hitec City stands out with a bold and iconic office building design that is a first for the area. Its facade features double-glazed glass complemented by vertical perforated aluminum panels, reflecting the aspirations of the IT industry and ITES users. Beyond its impressive appearance, the design incorporates sustainability measures.

In partnership with DP Façade, the exterior of the two 22-story towers is engineered for an optimal response to the climate. The aluminum panels serve as screens, allowing ample natural light while reducing heat glare. This not only ensures a comfortable indoor environment but also lowers HVAC operational costs, even with the building's east-west orientation.

The architectural concept of The Skyview prioritizes well-being, incorporating elements like landscaped courtyards, sculpture gardens, water features, and outdoor dining spaces into a pedestrian-friendly and vibrant setting. These thoughtfully designed spaces encourage social interactions and gatherings.

The Skyview received recognition for its people-centric and sustainable design in the Commercial (Built) category at the 2022 Global Architecture & Design Award. The Skyview Hyderabad incorporates numerous cutting-edge sustainable features that are woven into every facet of the project. These measures are aimed at decreasing energy and water usage while also minimizing waste. Additionally, the MEX App, a tech-driven integrated platform, enhances the spaces within The Skyview, transforming them into smart, interactive environments that offer an enhanced experience for the communities that utilize these areas.

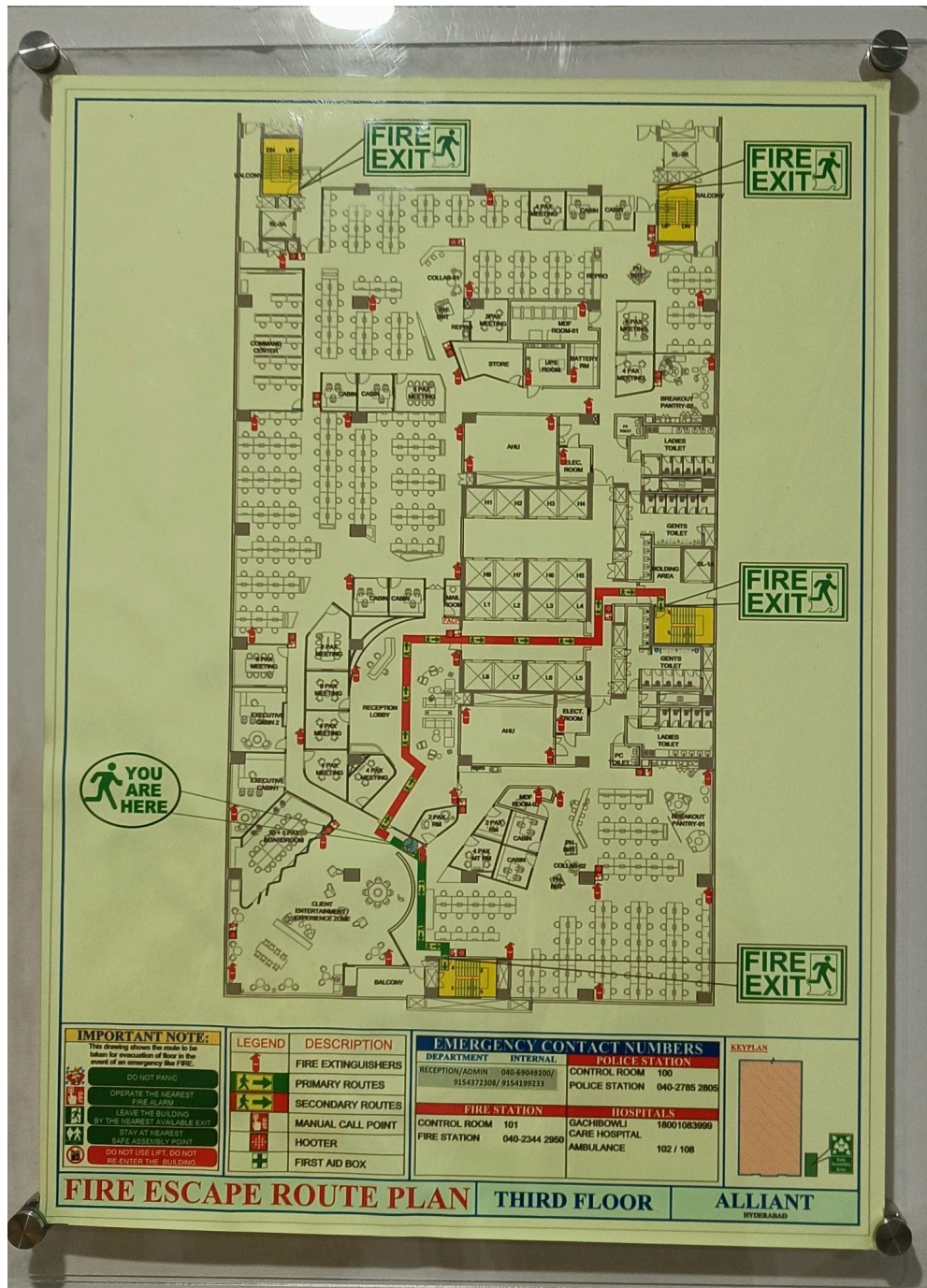


Fig 2.2: Fire escape route plan of one office in Skyview

2.3 ICICI HEADQUARTER – HYDERABAD

Location - Hyderabad

Architect - Hafeez Contractor Associates

Year - 2006

Area - 1100 sq.mts

Construction Time - one year (2005 – 2006)

2.3.1 ANALYSIS:

ICICI Towers in Nanakramguda, Hyderabad, is a prominent architectural landmark. It stands as the largest green office space, incorporating 18,500 tons of steel, which is twice the amount used in the construction of the Eiffel Tower. The building boasts a substantial 400,000 square feet of built-up area, with dimensions measuring 342 meters in length and 88 meters in width—equivalent to the span of four A380 airliners. Within its structure, you'll find a grand 20-meter-high atrium and the country's lengthiest escalator, measuring 14.4 meters. The Towers achieved impressive sustainability metrics, including a 42% reduction in potable water usage, a 28% decrease in overall energy consumption, the utilization of 40% green power sources, and a remarkable installed Lighting Power Density (LPD) of approximately 0.4 watts per square foot, signifying a 60% reduction from conventional standards.

The ICICI Towers feature a modern and contemporary architectural style that combines functionality with aesthetic appeal. The design is characterized by clean lines, geometric shapes, and a focus on creating a professional and corporate atmosphere.

The exterior of the ICICI Towers is distinguished by a combination of glass, steel, and concrete. The use of glass curtain walls allows for transparency and natural light to permeate the building, creating a visually striking and energy-efficient design. ICICI Towers comprises multiple interconnected buildings with varying heights. The layout is designed to accommodate the diverse needs of ICICI Bank, one of India's largest financial institutions. The interconnected design facilitates collaboration and efficient communication among various departments and teams.

The architects have incorporated sustainable design elements into the building's construction. These may include energy-efficient HVAC systems, green building materials, and features aimed at reducing energy consumption and environmental impact. The ICICI Towers are equipped with modern amenities, including state-of-the-art office spaces, meeting rooms, conference facilities, parking areas, and possibly recreational spaces. These amenities contribute to the comfort and functionality of the workspace.

ICICI Towers in Nanakramguda, along with other developments in the region, have played a significant role in the economic growth and development of Hyderabad. They reflect the city's

emergence as a financial and technological hub. The ICICI Towers in Nanakramguda serve as a major corporate office for ICICI Bank. The architectural design embodies the corporate identity and values of the institution. ICICI Towers Nanakramguda is a testament to the architectural and corporate development of Hyderabad, showcasing the city's transformation into a financial and technological center in India.

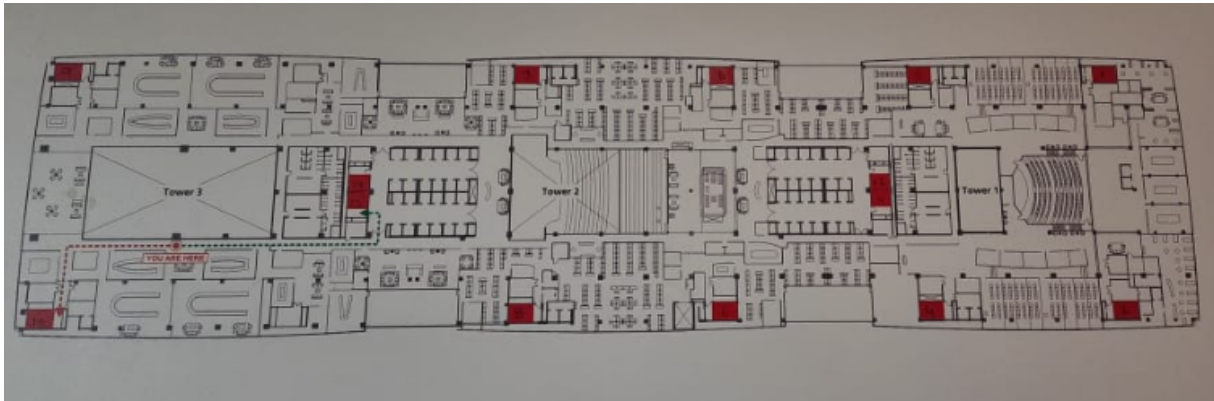


Fig 2.3: Typical floor layout of ICICI Tower, Nanakramguda

2.4 AUROBINDO GALAXY

Location - Hyderabad, India

Total site - 7562.75sq.m

Built up area - 1762.41sq.m

Building type- Office building

completion – 2016

2.4.1 ANALYSIS:

The magnificent Galaxy office complex, developed by Auro Realty, is in the heart of HITEC city. Rising to 25 stories and 100 meters tall, Galaxy is India's tallest corporate office tower constructed using precast technology. An office space spanning an impressive 1.9 million square feet. With its sleek glass exterior and contemporary design, Galaxy exudes a sense of modernity.

Notably, this remarkable office space has been pre-certified with a LEED v4 Gold rating by the USGBC, underlining its commitment to environmental sustainability and forward-thinking design that fosters limitless business opportunities. The grand double-height entrance lobby and unique design elements combine to enhance the overall user experience, while the presence of landscaped open areas creates a serene environment for its occupants. Galaxy is more than just a place to work; it's a setting that promotes a harmonious work-life balance, ultimately boosting employee productivity.



Fig 2.4: Ground floor plan of Aurobindo galaxy

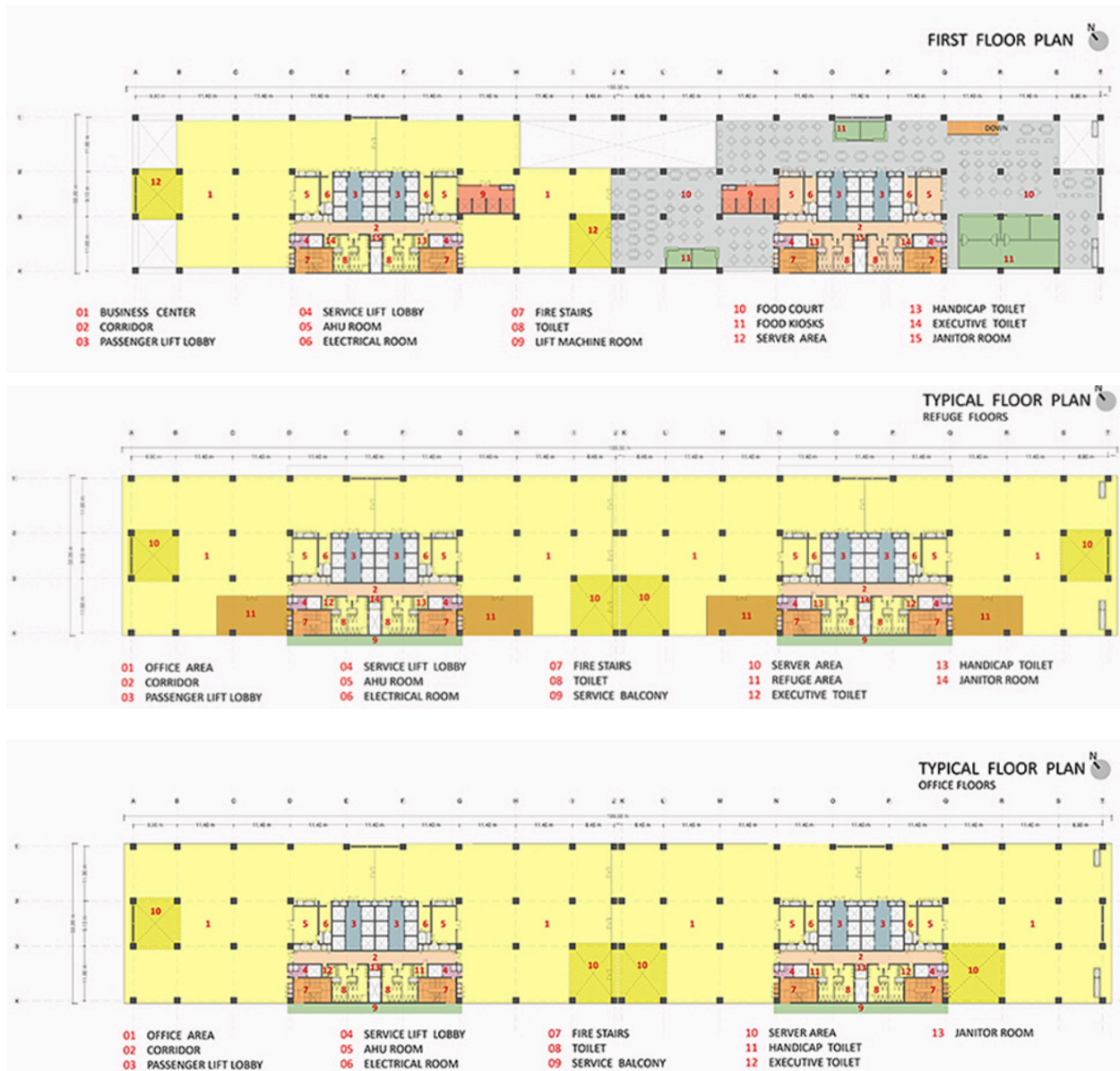


Fig 2.5: Floor Plans of Aurobindo galaxy

1

Examples of building which use vernacular architecture with modern interpretation - Materials

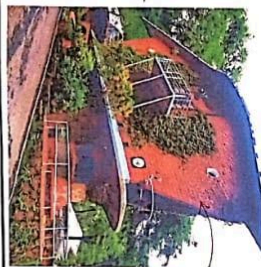
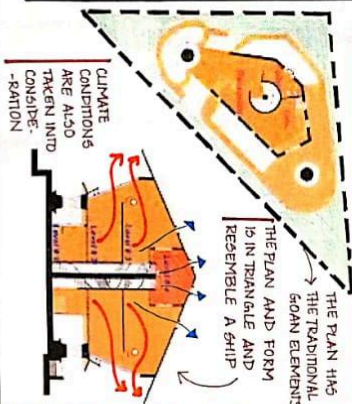
Houses of Goa, Museum

AMALGAMATION BETWEEN CLIMATE, CULTURE AND MODERN DESIGN AND TECHNOLOGY. GOA IS A LAND OF COLOUR AND SPACE. GAVS GERALD KAPO HAS CREATED IN GOA ARCHITECT



The museum is built as a traffic island in Torda, Salvador-do-Mundo, and Goa. Strangely enough it is in the shape of a triangle and resembles a ship. "When the Portuguese colonized Goa,

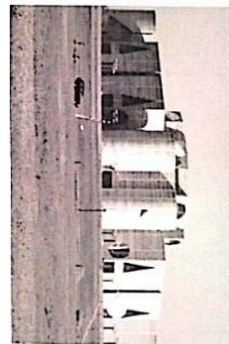
The thought behind the idea of conceiving the museum concept, is creation a ship-like structure to house all the goodness in Goan architecture, which would otherwise be lost. The shape of ship emerged, because the site was like that.



USAGE OF MATERIAL ALSO RELATED TO THE LOCAL STYLE AND CLIMATE

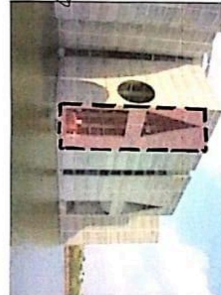
Assembly at Dhaka

PREFABRICATED CONCRETE WITH INLAID WHITE MARBLE WHICH IS NOT ONLY A MODERNIST STATEMENT

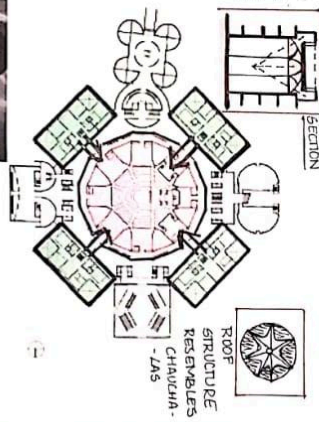


Design: The entire complex is fabricated out of poured in place concrete with inlaid white marble, which is not only a modernist statement of power and presence, but is more of a testament to the local materials and values

Design: The entire complex is fabricated out of poured in place concrete with inlaid white marble, which is not only a modernist statement of power and presence, but is more of a testament to the local materials and values



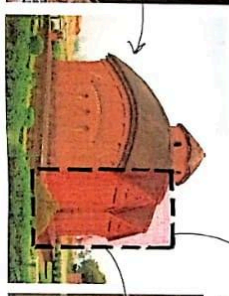
The geometric shapes found on the different faces of the facade add a dramatic impact to the overall composition of the building. The geometric shapes are abstracted forms found in traditional Bengali culture



THE PLAN IS ALSO DONE TO COMPLEMENT THE TRADITIONAL, BEN GALL SILE ARCHITECTURE

THE HOUSE GEOMETRICAL OPENINGS ARE DONE FOR BETTER LIGHTING AND VENTILATION

THE GEOMETRY IS FROM THE BANIGALI EXAGGERATED USE OF SHAPES IN THEIR INTERIORS AND EXTERIORS WE CAN SEE IN THE ARCHITECTURE OF ASSEMBLY BUILDING



A.KEERTHANA 31210012

Plate 3.2: Special study about cultural aspects. (interpretation of materials)

1 Modern interpretation of heritage architecture without losing the sense of character and identity of the place

Islamic Art Museum, Doha



NEAR TAHOON HARBOUR, Doha, QATAR
ISLAMIC ARCHITECTURE AND GEOMETRIC PATTERNS

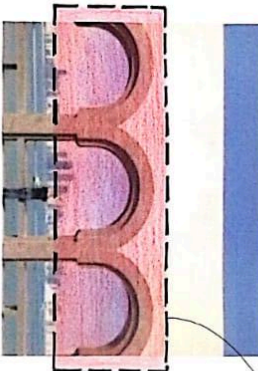
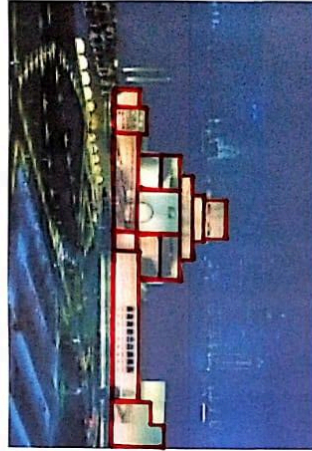
It is a museum located on one end of the seven kilometres long Corniche in the Qatari capital, Doha. As with the architect I. M. Pei's requirement, the museum is built on an island off an artificial projecting peninsula near the traditional dhaw harbour. The museum is influenced by ancient Islamic architecture, yet has a uniquely modern design involving geometric patterns. It is the first of its kind to feature over 14 centuries of Islamic art in the Arab States of the Persian Gulf.



Structure: The circulation is simple, a large atrium with walkways around that humongous window giving you that image they want you to see. Yes indeed, the rising Doha Skyline.

Design: The Suzhou Museum isn't just any museum-as Suzhou was IM Pei's hometown as a child, it must have had some special importance to him. The design clearly played a significant role in the later work he did on the Museum of Islamic Art.

The floor plans of both buildings have strong similarities. However, a different exterior material distinguishes the two designs from each other.



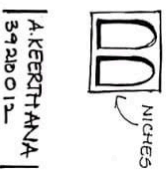
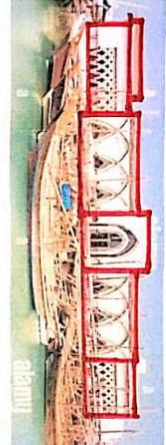
Asman Garh Palace, Hyderabad, India



The AG Palace is one of the palaces built during the Asaf Jahi period in Hyderabad. It was used as a summer palace and as guest house by the kings. The palace was later converted into a museum and currently it is functioning as St. Joseph's Public School.

Design: The school was extended to three more parts apart from the main palace, to maintain the character and identity of the area, the design of school has tried to implement few of the elemental and functional details from the palace design. The main palace is constructed in the amalgamation of Mughal and European styles. The school has taken up details like arches, parapets, ramparts etc.

THE 19th CENTURES TRADITION AND CULTURE WERE BROUGHT BACK IN THIS ARCHITECTURE ORTHOGONAL AND DIAGONAL LINES, LARGE ATRIUM AND THE SANDY EXTERIOR COLOUR RESERVABLE THAT.



A. K. KERTHANA
39.25.01.12

Plate 3.3: Special study about cultural aspects. (identity of the place)

CHAPTER 4

DATA COLLECTION AND STANDARDS

4.1 STANDARDS:

4.1.1 LIGHTING

Table 4.1 : Lighting standards for office spaces from NBC

Lighting			
	Range of Service Illuminance lux	Quality Class or Direct Glare Limitation	The recommended design sky illuminance values are 8 000 lux for composite climate
Computer workstations	300-500-750	1	
Conference rooms / executive offices	300-500-750	1	In office buildings windows of height 1.2 m or more in the centre of a bay with sill level at 1.0 to 1.2 m above floor for good distribution of daylight indoors
Deep plan general offices	500-750-1000	1	If the room depth is more than 10 m, windows should be provided on opposite sides for bilateral lighting.

Computer and data preparation rooms	300-500-750	1	Recommend using natural light wherever possible and achieving a daylight factor of at least 2%
Filing rooms	200-300-500	1	
Public area	200-300-500	1	

4.1.2 SOLAR PHOTOVOLTAIC SYSTEM

Table 4.2 : Solar photovoltaic standards for office spaces from NBC

Solar photovoltaic system
SPV lighting system should preferably be provided with CFL for energy efficiency.
Inverters used in buildings for supplying electricity during the power cut period should be charged through SPV system
Lighting shelves and light pipes may be explored for utilization and integration in the lighting design

4.1.3 VENTILATION

Table 4.3 : Ventilation standards for office spaces from NBC

Ventilation	
	Air Change per Hour
Cafes and coffee bars	10-12
Canteens	8-12
Conference rooms	8-12
Corridors	5-10
Entrance halls	3-5
Laboratories	6-15
Lecture theatres	5-8
Libraries	3-5

Offices	6-10
Toilets	6-10

4.1.4 SUBSTATION AND SWITCHROOMS

Table 4.4 : Substation and Switchrooms standards for office spaces from NBC

Substation and switchrooms
Availability of power lines nearby
The substation should preferably be located in a separate utility building and may be adjacent to the generator room
load centre will be somewhere between the geometrical centre and the air conditioning plant room
the floor level of the substation/ switchroom shall be at least 300 mm above the highest flood water level
Substation shall not be located immediately above or below plumbing water tanks or sewage treatment plant (STP) water tanks at the same location.
In case of HV panel and transformers located at different floors or at a distance more than 20 m, HV isolator shall be provided at transformer end.
MV/LV panel room
No services or ventilation shafts shall open into substation or switch room unless specific to substation or switch room.
the flow of electric power is from supply company' s meter room to HV room, then to transformer and finally to the MV switchgear room.
MV/LV switch room
located as close to the electrical load centre as possible, on the ground floor or on the first basement level of the building
distribution panels, switchgears shall be installed in readily accessible position. conveniently be mounted
adjacent to the rising mains

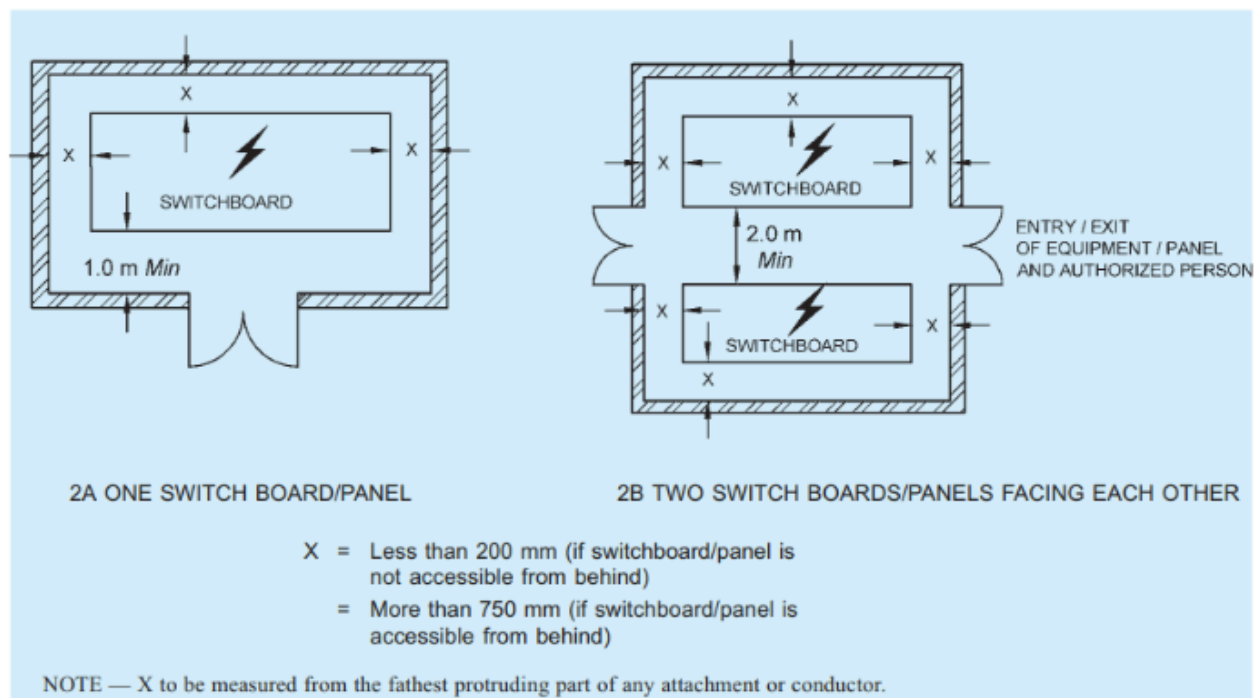


Fig 4.1: Clearance around switchboards in enclosed room

4.1.5 HVAC

Table 4.5 : HVAC standards for office spaces from NBC

HVAC - ECBC			
Equipment Room for Central Air Conditioning Plant			
This room shall be located preferably within the building being air conditioned and closer to external wall			
The clear headroom below soffit of beam should be minimum 4.5 m for larger capacity chillers (500 TR and above) and minimum 3.6 m for smaller plants.			
	System type	Fan Control	Cooling Type

Buildings with More than 12,500 m ² of Conditioned Area	VAV: Central cooling plant with variable volume AHU3	Variable volume	Chilled Water with water cooled condenser
Data Centre/ Server/ Computer Rooms	Computer Room air conditioners	Constant volume	Direct expansion with air cooled condenser

4.1.6 ACOUSTICS

Table 4.6 : Acoustics standards for office spaces from NBC

Acoustics and noise	reverberation	
very large offices	1s	reasons
canteens	1s	a) Office machines, such as keyboards, typewriters, and printers
		b) Telephonic conversation
Large general offices	provision of glazed screens carried up to the ceiling should be considered machines should be enclosed by panels or low screens lined with absorbent material and the ceiling should be sound absorbent.	c) Noise from the public admitted to the building
Open plan offices	the use of an acoustical ceiling together with partial height barriers between work spaces	d) Footsteps, voices and slamming of doors in circulation spaces, lift doors and gates
	electronic background masking noise system, The air-conditioning system can also be used to generate background masking noise	e) Sound reproduction in staff training rooms, conference rooms and recreation rooms, etc

Office equipment rooms	e keyboards, typewriters, printer, etc, should be quiet in themselves and also be fitted with resilient pads, apply sound absorbent treatment to the ceiling	f) Handling of crockery and utensils in canteens and kitchens
Public offices and waiting spaces	provision of resilient flooring, sound absorbent ceilings and heavy full height screens between the public space and the clerical office.	g) HVAC and lift machinery.
Canteens	floor and ceiling, use of plastics trays and tables with quiet tops are recommended.	
Circulation spaces	The provision of a sound absorbent ceiling, fitting automatic quiet action type door closers, Staircases and lifts should be isolated from quiet rooms and should have silent type doors, swing doors at intervals	
<i>Noise Producing Rooms</i>	<i>Rooms Requiring Quiet Conditions</i>	
Entrance and reception halls, staircases and corridors used by the public	Executive' s rooms, Conference rooms and board rooms	
Lifts and lift halls	Interview rooms	
Motor and plant rooms	Offices for one or two persons	
Lavatories	Medical officer' s rooms	
Public offices	Sick rooms	
Canteen and kitchens	Rest rooms	
Office machine rooms and typing pools	Libraries	
Recreation rooms	Telephoning rooms	
Large general offices		

Cinemas and projection rooms		
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4.1.7 WATER

Table 4.7 : Water management standards for office spaces from NBC

Water			
	Domestic Per Day litre	Flushing Per Day litre	Total Consumption Per Day litre
Offices (including canteen)	25 per head	20 per head	45 per head
for 18,000 people	450000	360000	810000
Landscaping	10 litres per day		
Capacity of drinking water sump	tank 1		
	tank 2		
Capacity of fire water sump	tank 1		
	tank 2		
Capacity of supply water sump			
Capacity of recycled water sump			
Rainwater sump			
Domestic water sump			
Treated sewage or other waste water of the community may be utilized for non-domestic purposes such as water for flushing, landscape irrigation, cooling towers of HVAC system, in fountains and recreational lakes			
The water may be stored in overhead tanks (OHT)			

Pressurized Distribution System (Hydropneumatic Pumping System (can eliminate OHT)			
Gravity Distribution System (OHT needed)			
		Public Toilets and staff toilets	
		male	female
Executive Rooms and Conference Halls in Office Buildings	Toilet suite comprising one WC, one wash basin (with optional shower stall if building is used round the clock at user's option)	1 per 1	1 per 1
Main Office Toilets for Staff and Visitors	Water closets	1 per 25	1 per 15
	Ablution tap with each water closet	1 in each water closet	1 in each water closet
	Urinals	4 for 71 to 100 (From 101 to 200, add @ 3% For over 200, add @ 2.5%)	
	Wash basins	1 per 25	1 per 25
	Drinking water fountain	1 per 100	1 per 100
	Cleaner's sink	1 per floor	1 per floor
Staff and public toilet utilities are generally common in office buildings. Where public toilets are to be provided independently, similar requirements as that of staff toilet may be provide			

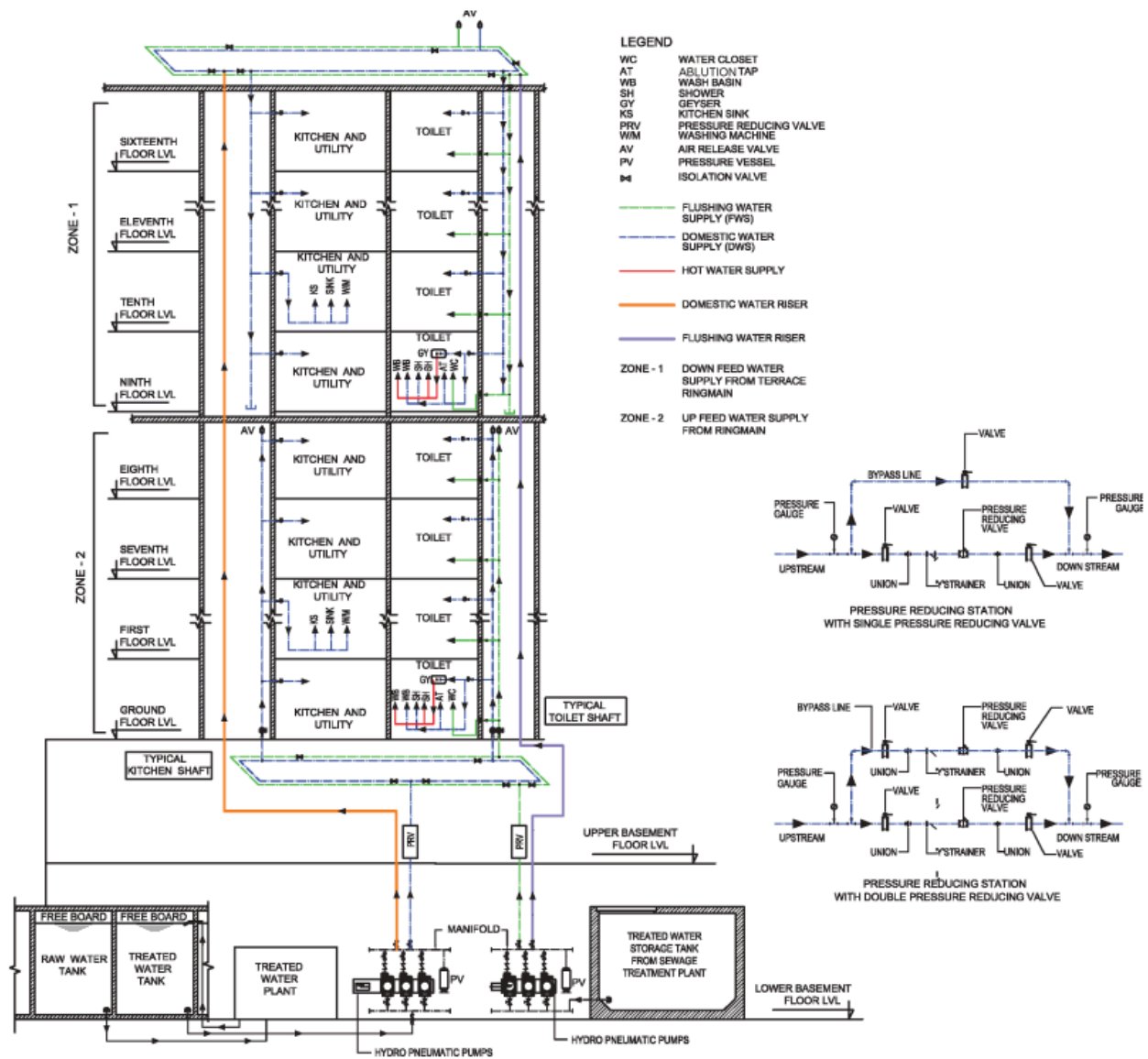


Fig 4.2: Schematic Diagram Showing The Distribution System In Respect Of Hydro-Pneumatic System For A Multi-Storeyed Building

4.2 TSS STANDARDS FOR OFFICE SPACES

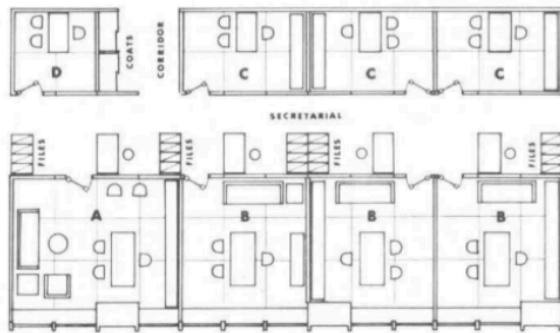


Fig. 2 Typical modular private office plan with secretarial area.

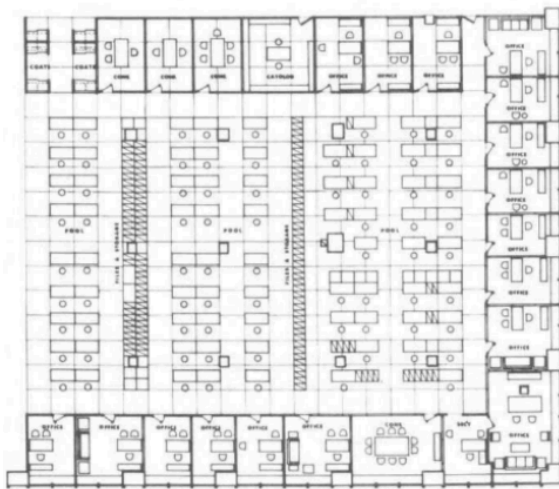


Fig. 3 Typical open office plan.

CLEARANCES FOR PRIVATE OFFICES

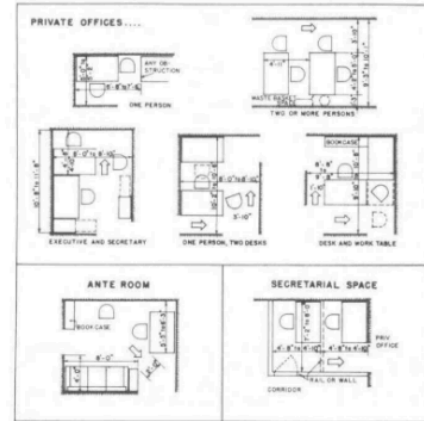


Fig. 1 Clearances in various types of offices.

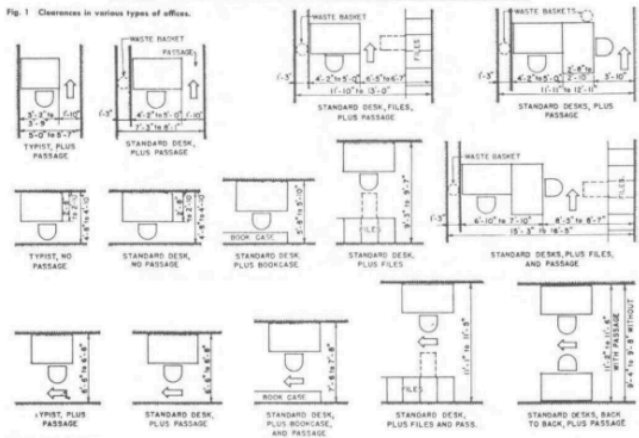


Fig. 2 Desk clearances.

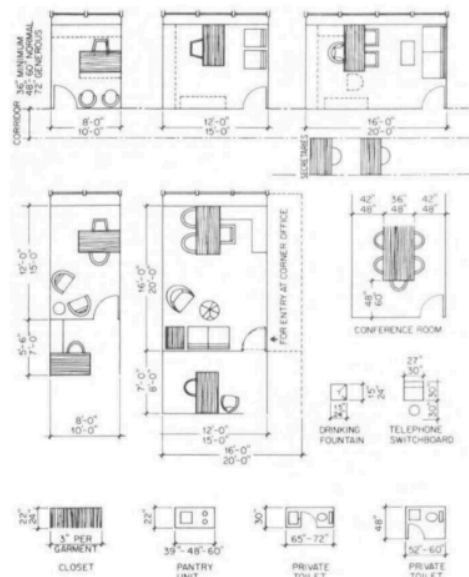


Fig. 8 Office planning: layouts for private offices.

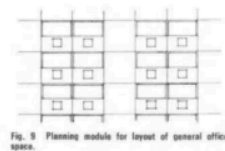


Fig. 9 Planning module for layout of general office space.

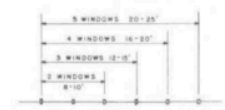


Fig. 10 Private office widths using a module of 4 to 5 ft with continuous windows.



Fig. 11 Private office widths using a module of 4 to 5 ft.

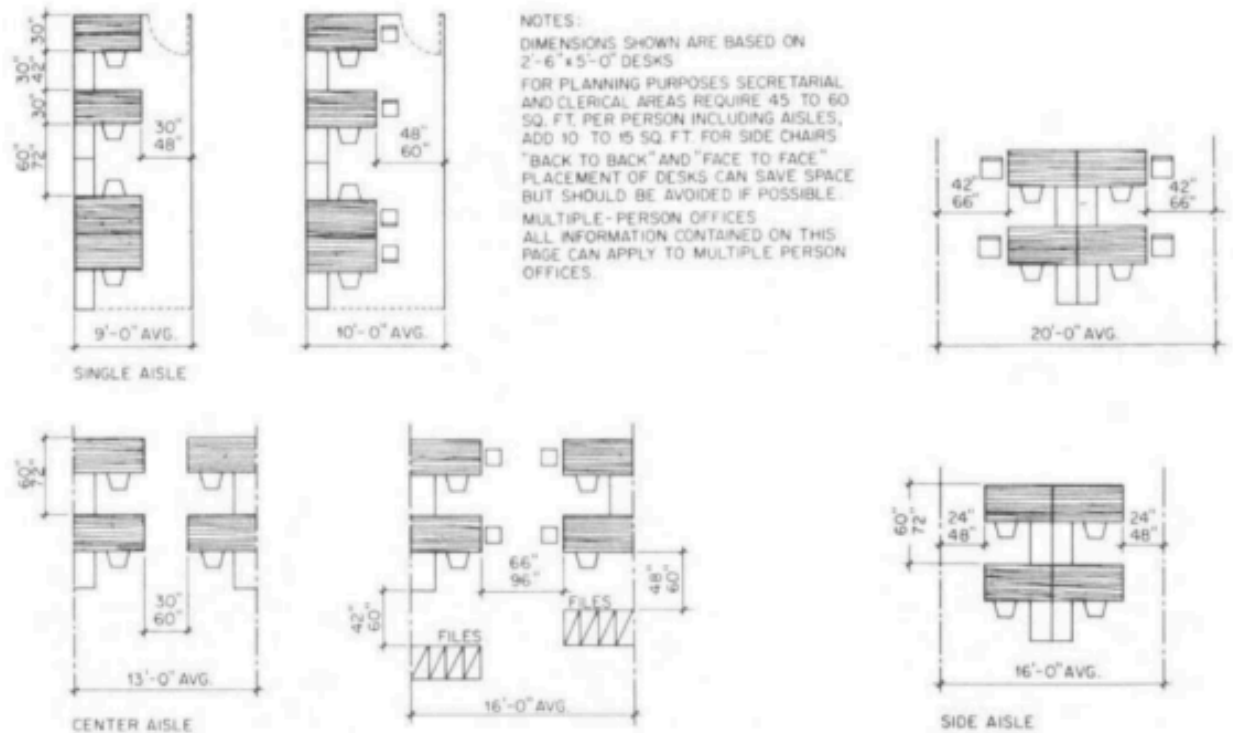


Fig 4.3: Office planning : Clearance for secretariat areas and general offices

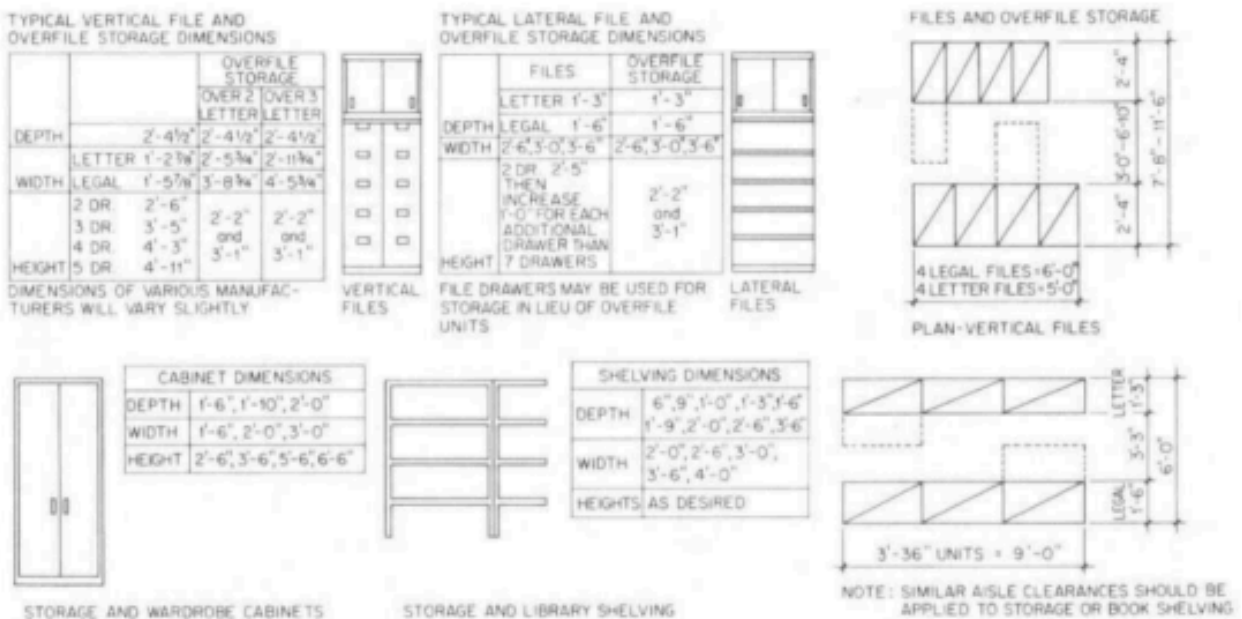


Fig 4.4: Office planning : Files and storage sizes

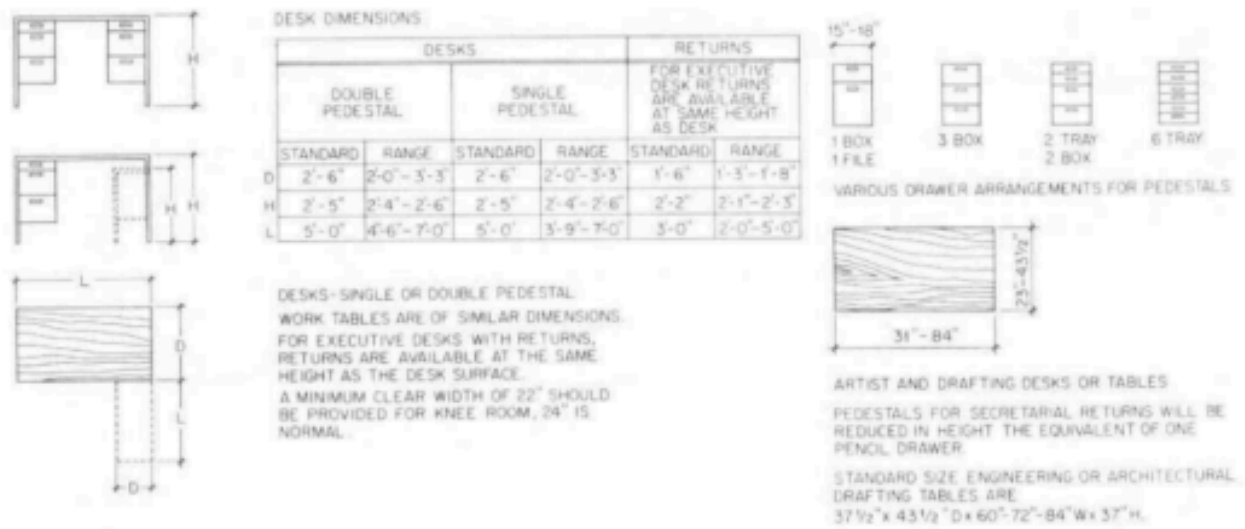


Fig 4.5: Office planning : Desk sizes

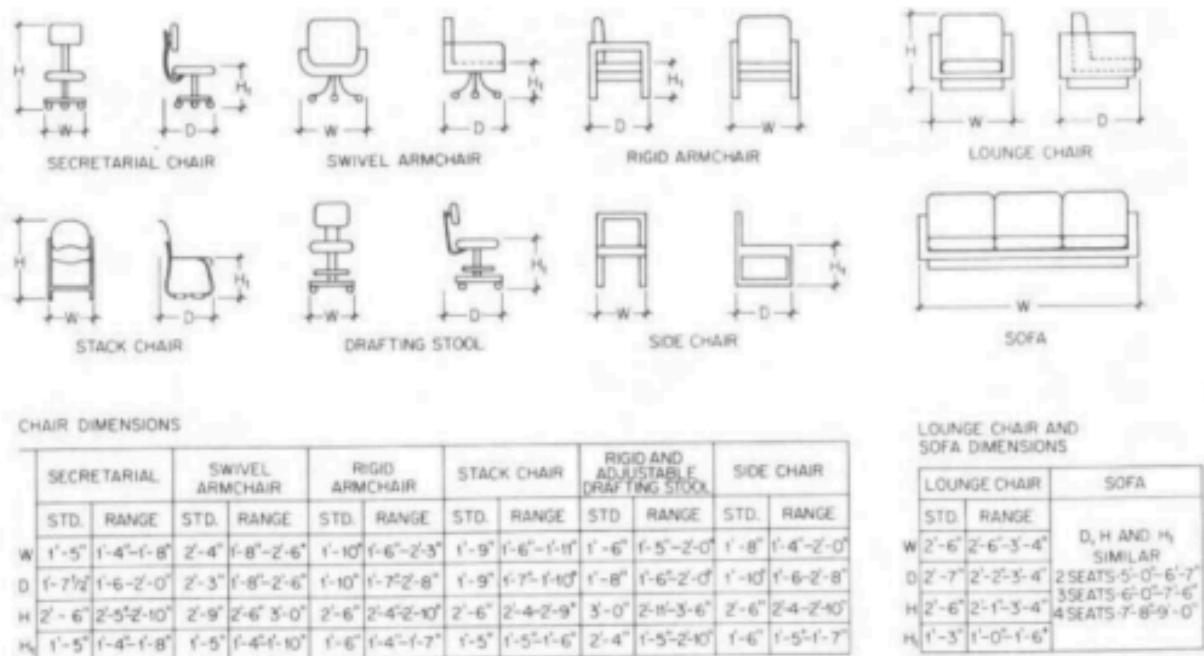


Fig 4.6: Office planning : Seating sizes

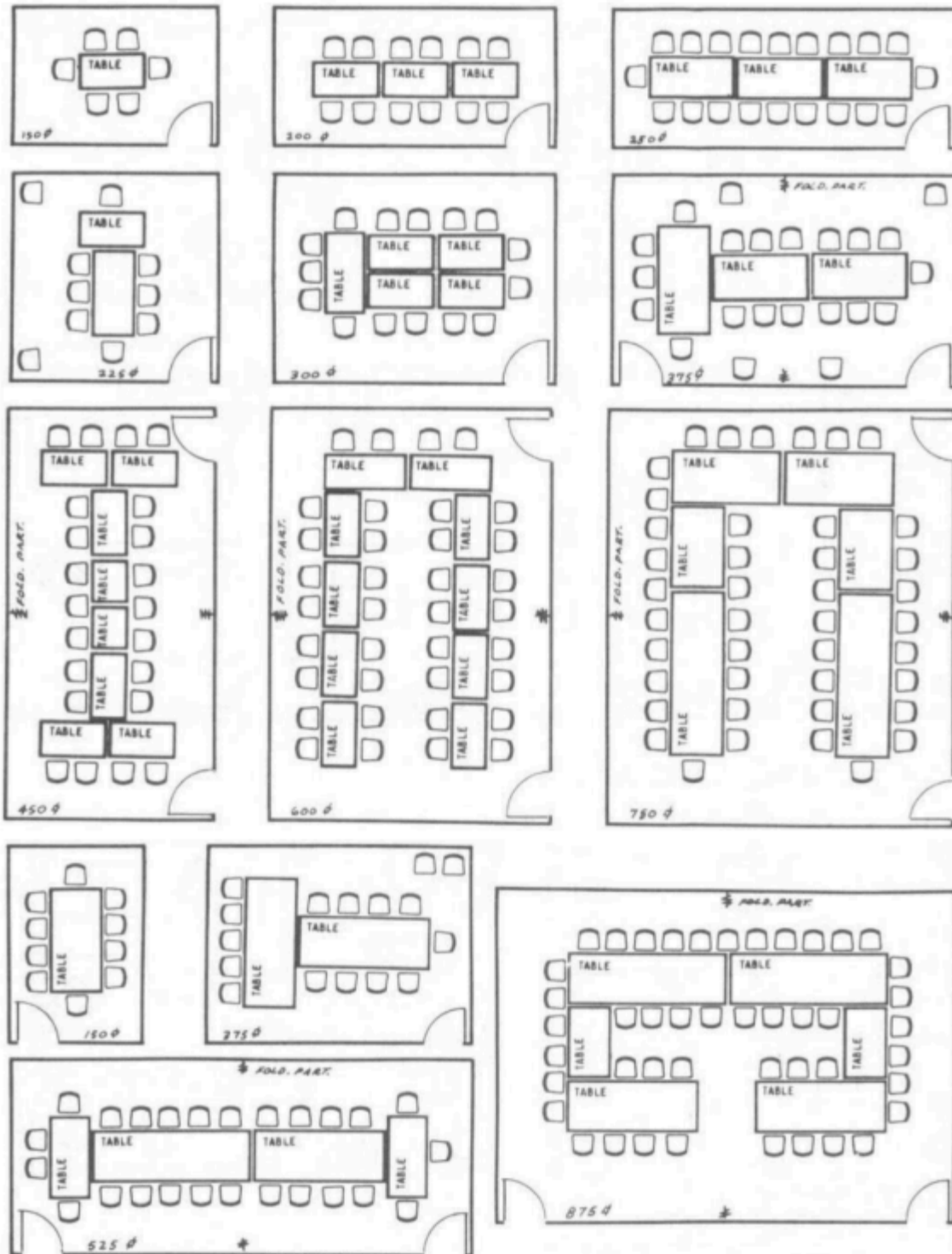


Fig 4.7: Recommended layout for Conference rooms

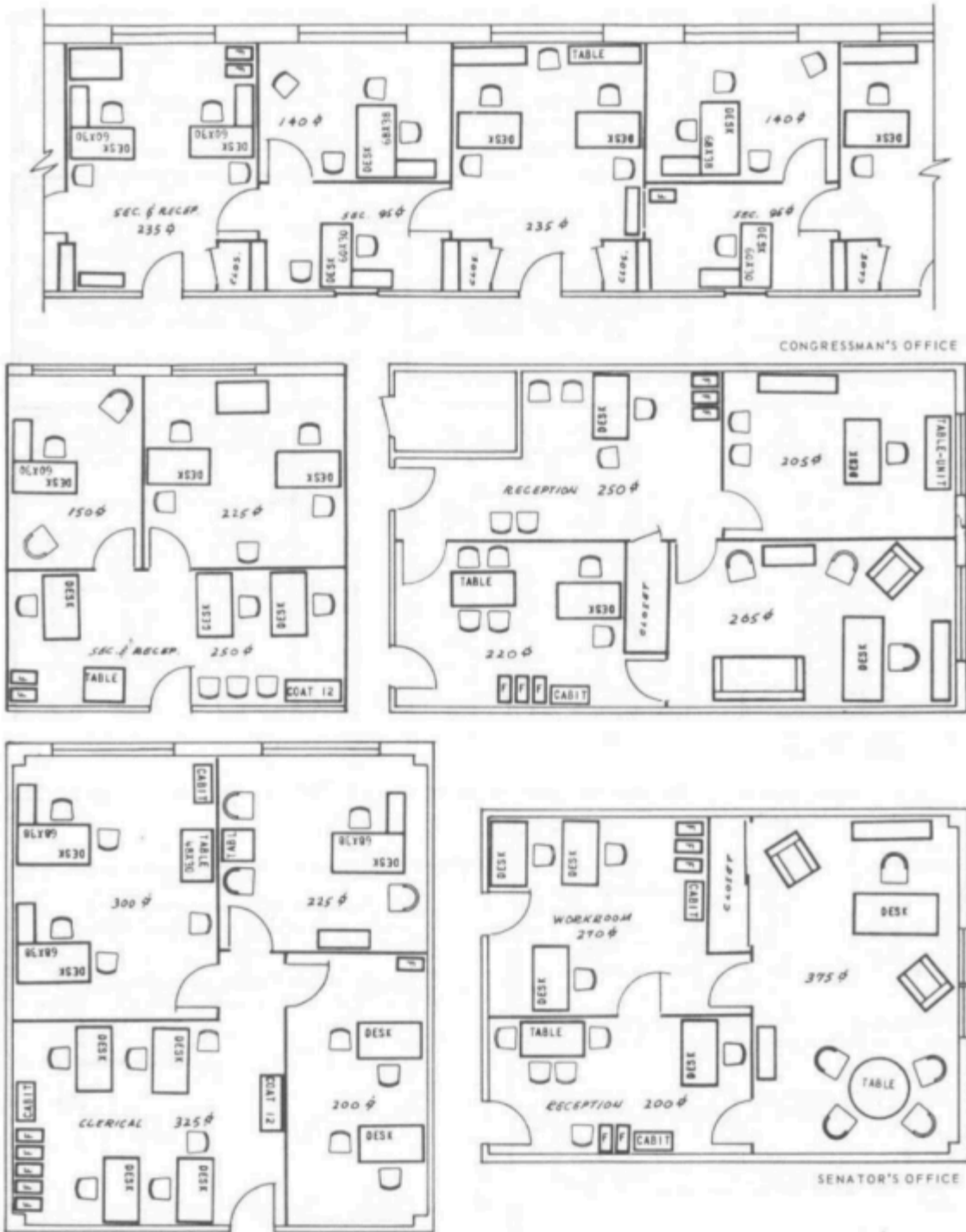


Fig 4.8: Recommended layout for Private and semi private offices

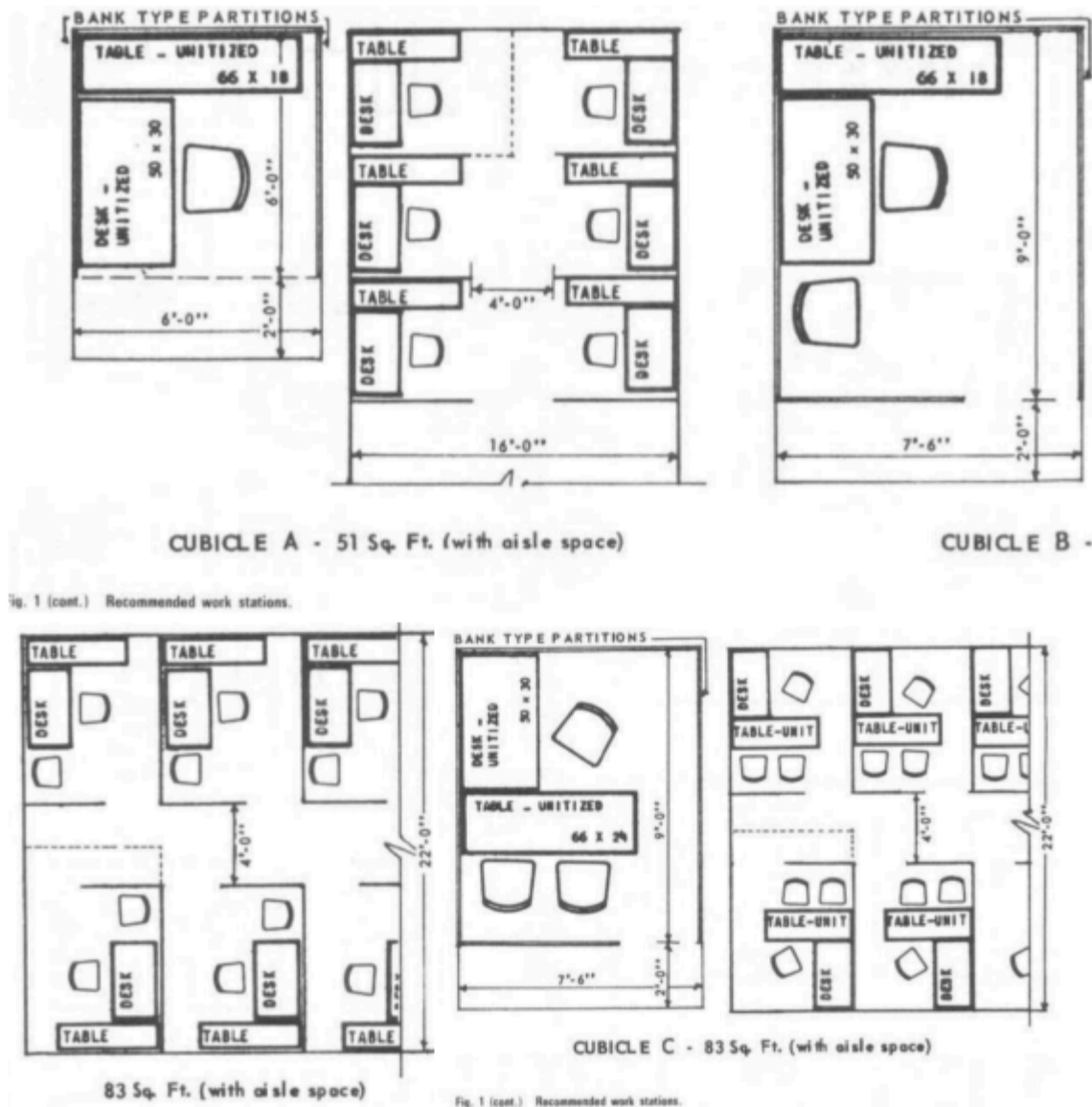


Fig 4.9: Times saver standard for office spaces.

4.3 Corridors:

- Exit corridors and passageways shall be of width not less than the aggregate required width of exit doorways leading from them in the direction of travel to the exterior.
- The minimum width of a corridor in a residential building shall be 1.2m for single loaded and 2.0m for double loaded and in all other buildings shall be 1.5m.
- Where stairways discharge through corridors and passageways, the height of corridors and passageways shall be not less than 2.4m.

4.4 Pathways:

(a) Public walks should be at least 1200mm wide and should have a gradient not greater than 1 in 20

(b) A walk shall have a level platform at the top which is at least 1500mm long, if a door swings out onto the platform or towards the walk. This platform shall extend at least 300mm beyond each side of the doorway.

(c) A walk shall have a level platform at least 900 mm deep, if the door does not swing onto the platform or towards the walk. This platform shall extend at least 300 mm beyond each side of the doorway.

CHAPTER 5

SITE STUDY AND ANALYSIS

5.1 SITE STUDY:

Site is located in the Financial district, Hyderabad. Site is in the center of the Business district. Total site is 29,542.1sq.m



Fig 5.1: Site from google earth

5.2 SITE JUSTIFICATION AND FEASIBILITY:

Despite the challenges, Hyderabad offers a number of opportunities and potential for growth. These opportunities include, The tech market in Hyderabad is growing rapidly, and Google is well-positioned to capitalize on this growth. Hyderabad has a large pool of skilled tech workers, thanks to its strong educational institutions and the presence of leading training providers. The

government of Telangana is supportive of the tech industry, and is offering a number of incentives to tech companies. Hyderabad is strategically located in the center of India, making it a good base for operations.

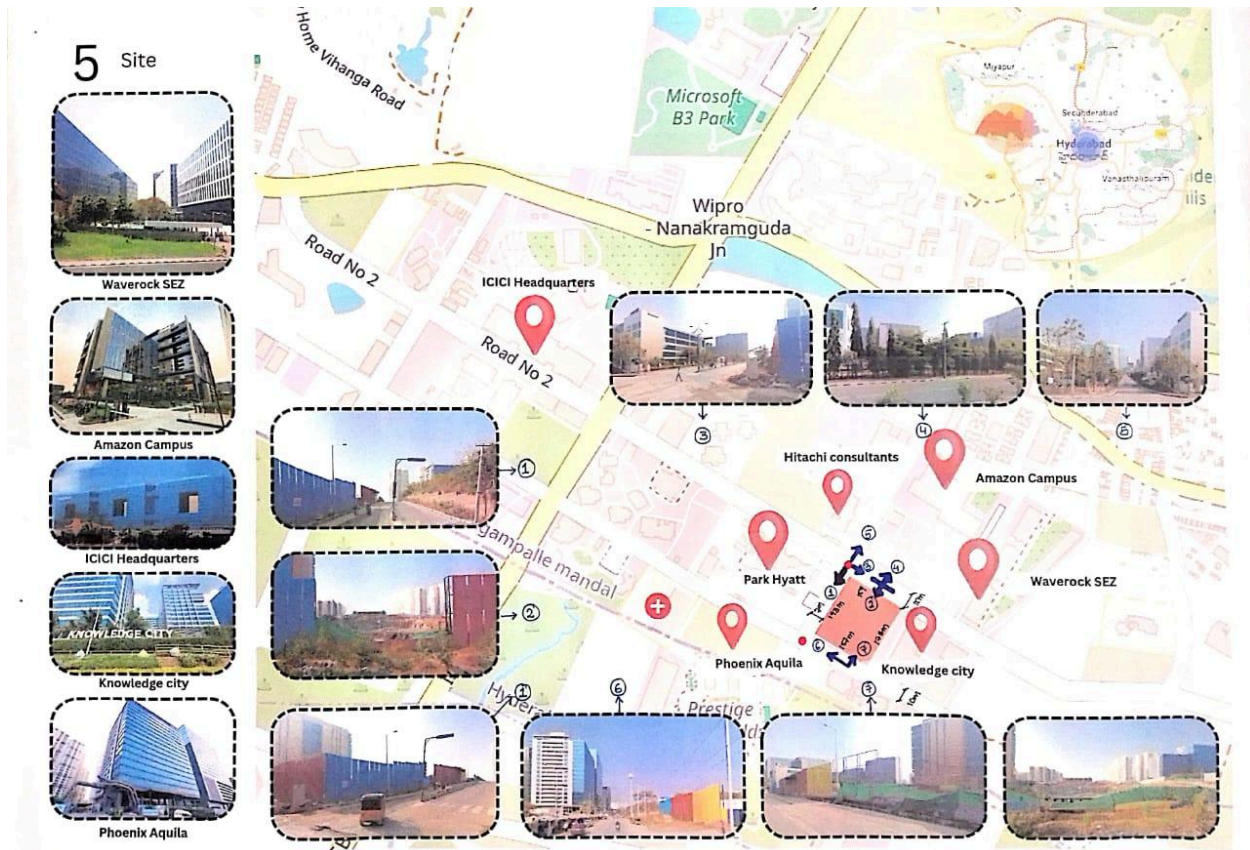


Plate 5.1: Site documentation

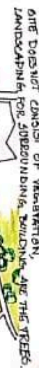
5.3. SITE ANALYSIS AND ZONING:

Setbacks – South (Front) - 3m
 East - 6m
 West - 6m
 North - 6m

Height restriction - 15m

Parking - 20% of the site
 - 1,624.05sq.m

- THE MAJOR LANDMAKERS ARE IT COMPANIES
- ICICI TOWERS
- AMAZON



32

5.3.2 Circulation:

Site has three sides of road access. Bus stop is about 500m from the site, the nearest metro is 6 km. Service trucks can be accessed from the road behind the site. The nearest airport is 31 km, railway stations are Nampally at a distance of 16 km (30min) and Secunderabad at a distance of 25km (45min)

5.3.3 Natural Physical Features:

Site has a natural slope of 2m for a distance of 214.04m. Drainage pattern follows the slope to the east side of the site. Soil type is rocky soil

5.3.4 Climate of Hyderabad:

Climate of Telangana falls under warm and humid. My site is located in Hyderabad here the temperature and humidity is less compared to the rest of the site.

CHAPTER 6

ARCHITECTURAL DESIGN

6.1 SPATIAL REQUIREMENTS

6.1.1 PRODUCT DEVELOPMENT AND ENGINEERING

Table 6.1 : Product development and engineering area statement (detailed)

Areas	m2	Activities	name of the room	no. of rooms	m2 of each room	no. of employees per room	per employee
Core working areas							
Product development and engineering							
Open workspace	29700	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly furniture	Informal space	Informal space	2970	10 sqm
Focus booths	5400	individual quiet spaces	Workstations, booths	540 workstations	10	540	10 sqm
Meeting rooms	2700	various sizes for huddles, team meetings, presentations	Small Private Conference Rooms	200 rooms	4	4	
			Regular Conference Rooms	20 rooms	20	6 to 12	
			Large Conference	2 rooms	50	20 to 100	

			Rooms				
Project rooms	1620	dedicated spaces for specific projects	discussion rooms, brainstorming rooms	500 rooms	20	6 to 12	
Training rooms	1080	professional development, workshops	Collaboration rooms	21 rooms	50	20 to 50	
Engineering labs	2700	hardware prototyping, testing	Labs	3	900		
Data science labs	1080	data analysis, visualization	Labs	4	270		
User experience labs	1080	user research, usability testing	Labs	4	270		
Total	45360						

6.1.2 GOOGLE CLOUD SERVICES

Table 6.2 : Google cloud services division area statement (detailed)

Google Cloud Services							
Open workspace	18900	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly furniture	Informal space	Informal space	1890	10 sqm
Focus booths	2700	individual quiet spaces	Workstations, booths	270 workstations	10	270	10 sqm
Cloud Infrastructure Management	2700	monitoring, troubleshooting, and performance optimization	Monitoring rooms / storage	1	2700		
Product Development & Innovation	2160	Labs for prototyping, testing, and	Collaboration rooms	25	50	20 to 50	

		development of new cloud solutions and services.	labs	1	900		
Customer Support & Service Management	1890		phone booths	10	3		
			Video conferencing rooms	20	40		
			Collaboration areas.	55	20	6 to 12	
Partnerships & Alliances	810		Meeting rooms	30	20	6 to 12	
			Collaboration areas	5	20	6 to 12	
			Dedicated spaces for hosting partners and managing relationships.	1	100		
Compliance & Security	540	data analysis, security audits, and compliance monitoring	Confidential meeting rooms	2	270		
Total	29700						

6.1.3 SALES AND CUSTOMER SUPPORT

Table 6.3 : Sales and customer support division area statement (detailed)

Sales and customer support							
Open workspace	12600	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly	Informal space	Informal space	12600	10 sqm

			furniture				
Focus booths	1800	individual quiet spaces	Workstations, booths	180 workstations	10	180	10 sqm
Sales Operations	900	sales planning, lead generation, and campaign management.	data analysis areas	20	20	6 to 12	
			Collaboration zones	15	40		
Customer Relationship Management (CRM)	900	managing customer data, interactions, and support tickets	Customer lounge	1	20	6 to 12	
			confidential meeting rooms	15	10		
			Collaboration zones	18	40		
Account Management	1440	building and managing relationships with key accounts	Accounting rooms	96	15		
Technical Support	1440	Call centers with phone booths, video conferencing rooms, and technical support labs	Conference rooms / presentation rooms	3	40		
			call centers	660	2		
Customer Feedback & Improvement	540	analyzing customer feedback, identifying improvement opportunities, and collaborating on solutions.	Meeting rooms	27	20	6 to 12	
Sales Analytics & Reporting	360		Conference rooms / presentation rooms	9	40		

Total	19980	
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6.1.4 AD OPERATIONS & DIGITAL MARKETING

Table 6.4 : Operations & Digital marketing division area statement (detailed)

Ad Operations & Digital Marketing							
Open workspace	9450	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly furniture	Informal space	Informal space	9450	10 sqm
Focus booths	1350	individual quiet spaces	Workstations, booths	135 workstations	10	135	10 sqm
Ad Operations Management	675	managing ad campaigns, optimization, and performance analysis.	Visualization areas	34	20	6 to 12	
Campaign Management	675	planning, executing, and monitoring individual advertising campaigns	meeting rooms	67	10		
Optimization & Performance Analysis	1080		data analysis labs	1	150		
			Collaboration areas	62	15		
Ad Technology Integration	405		development, testing room	8	30		
			Collaboration areas	11	15		

Quality Assurance & Compliance	270	ensuring ad quality, brand safety, and compliance with advertising regulations.					
Digital Marketing Strategy	675		data analysis areas	10	15		
			research zones	1	150		
			collaboration spaces	25	15		
Partnership Management	270	managing partnerships with publishers, influencers, and other marketing partners.	Meeting halls	5	50	20 to 50	
Total	14850						

6.1.5 BUSINESS OPERATIONS & STRATEGY

Table 6.5 : Business operations & strategy division area statement (detailed)

Business Operations & Strategy							
Open workspace	6300	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly furniture	Informal space	Informal space	6300	10 sqm
Focus booths	900	individual quiet spaces	Workstations, booths	90 workstations	10	90	10 sqm
Operational Efficiency	450	process improvement, cost	Informal discussion	45	10		

		analysis, and streamlining operations	areas				
Strategic Planning	720	developing and implementing long-term business strategies	research areas	1	80		
			meeting rooms	20	15		
			collaboration spaces	17	20	6 to 12	
Performance Management	720	tracking and analyzing business performance, setting goals, and providing feedback.	data analysis labs	5	50	20 to 50	
			meeting rooms	23	20	6 to 12	
Resource Management	450	managing financial resources, budgeting, and forecasting	meeting rooms	20	20	6 to 12	
Business Development	270		collaboration spaces	9	30		
Risk Management	180		meeting rooms for secure discussions	18	10		

6.1.6 RESEARCH AND INNOVATION

Table 6.6 : Research and Innovation division area statement (detailed)

Research & Innovation							
Open workspace	8100	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly furniture	Informal space	Informal space	8100	10 sqm
Focus booths	2025	individual quiet spaces	Workstations, booths	200 workstations	10	200	10 sqm

Hardware Labs	1350	prototyping, testing, and developing new hardware technologies.	Lab	1	1350		
Software Labs	1350	software development, testing, and experimentation with new algorithms and tools.	Lab	1	1350		
Data Science Labs	675	data analysis, visualization, and developing innovative machine learning solutions.	Lab	11	60		
Collaboration Rooms	675	various sizes for meetings, brainstorming, workshops	Brainstorming rooms	34	20	6 to 12	
Training Rooms	270	internal training, workshops, guest lectures	Workshop rooms	5	50	20 to 50	
Exhibition Space	270	showcasing ongoing research, prototypes, and innovations	Exhibition rooms	1	270		
Total	14715						

6.1.7 HR AND RECRUITMENT

Table 6.7 : HR and Recruitment division area statement (detailed)

HR & Recruitment							
Open workspace	1350	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly	Informal space	Informal space	1350	10 sqm

			furniture				
Focus booths	675	individual quiet spaces	Workstations, booths	67 workstations	10	67	10 sqm
Talent Acquisition & Recruitment	900	sourcing, screening, interviewing, and onboarding new talent.	interview rooms	20	15		
			candidate waiting areas	10	30		
Onboarding & Orientation	225	welcoming and integrating new hires into the organization	training rooms	5	20	6 to 12	
			breakout spaces	2	15		
			areas for introductions and team building.	1	95		
Employee Relations & Engagement	450	managing employee relations, addressing concerns, and fostering engagement.	confidential meeting rooms	30	15		
Performance Management	225	performance reviews, coaching, and development discussions	meeting rooms	11	20	6 to 12	
Compensation & Benefits Administration	225	managing compensation, benefits, and payroll needs	employee consultations	11	20	6 to 12	
Learning & Development	225	training, workshops, and skill development programs	flexible training rooms	1	225		
Total	4275						

6.1.8 POLICY AND LEGAL

Table 6.8: Policy and legal division area statement (detailed)

Policy & Legal Team							
Open workspace	512	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly furniture	Informal space	Informal space	512	10 sqm
Focus booths	153	individual quiet spaces	Workstations, booths	20 workstations	10	20	10 sqm
Legal Compliance	128	researching, analyzing, and implementing legal requirements.	data storage	1	50	20 to 50	
			team discussions.	4	20	6 to 12	
Policy Development	85	developing, reviewing, and revising internal policies and procedures	conference rooms for stakeholder consultations	1	50	20 to 50	
			collaboration areas for brainstorming.	1	30		
Contract Negotiation & Management	43	contract negotiations, review, and management	secure meeting rooms	3	15		
Intellectual Property Protection	43	managing intellectual property (IP) filings, patents, and trademark protection.	data storage	1	43		
Collaboration Room	43	large meeting room for team meetings,		1	43		

		presentations, training					
Training Room	22	internal training, compliance workshops, guest lectures		1	22		
Library & Research Area	26	storing legal resources, conducting research, and quiet contemplation.		1	26		
Total	1055						

6.1.9 COMMUNITY OUTREACH

Table 6.9 : Community outreach division area statement (detailed)

Community outreach							
Open workspace	1620	flexible desks, collaboration areas, informal meeting spaces	Informal Working areas with flexibly furniture	Infor mal space	Informal space	1620	10 sqm
Focus booths	405	individual quiet spaces	Workstation s, booths	40 works tation s	10	40	10 sqm
Program Development & Management	270	planning, managing, and evaluating community outreach programs.	meeting rooms	3	20	6 to 12	
			collaboratio n areas	2	50	20 to 50	
			data visualization zones	2	50	20 to 50	
Partnership & Relationship Management	216		meeting rooms	5	20	6 to 12	
			Comfortable networking	1	116		

			areas				
Volunteer Engagement & Support	135	volunteer recruitment, training, and resource management	volunteer lounge	1	25		
			Training room	1	50	20 to 50	
			workspace for volunteer coordinators.	3	20	6 to 12	
Communication & Storytelling	54		communication specialists spaces	1	54		
Community Hub	193		Multi-purpose space for hosting community events, workshops, meetings, and presentations.	1	193		
Innovation & Collaboration Space	81	brainstorming, prototyping new outreach initiatives, and fostering internal collaboration.	Brainstorming rooms	2	40		
Total	2974						

6.1.10 TRAINING AND DEVELOPMENT

Table 6.10 : Training and development division area statement (detailed)

Training & Development							
Open workspace	848	flexible desks, collaboration areas, informal	Informal Working areas with	Informal space	Informal space	848	10 sqm

		meeting spaces	flexibly furniture				
Focus booths	459	individual quiet spaces	Workstations, booths	46 workstations	10	46	10 sqm
Training Rooms	459	various sizes for workshops, presentations, team training	training labs for hands-on practice and technology-focused sessions.	3	50	20 to 50	
			Training rooms / presentation rooms	15	20	6 to 12	
Learning Resource Center	153	accessing learning resources, online platforms, and e-learning materials.	Library	1	153		
Studio & Recording Lab	61	creating video-based training modules, recording presentations, and multimedia content.		1	61		
Assessment & Evaluation Center	61	conducting skills assessments, performance evaluations, and providing feedback.	Include private testing rooms	1	50	20 to 50	
			room for assessment specialists.	1	15		
Collaboration Space	92	brainstorming new training methods, co-creating learning materials,	Brainstorming rooms	4	20	6 to 12	

		and team collaboration.					
Total	2133						

6.1.11 NON WORKING SPACES

Table 6.11 : Non working spaces area statement (detailed)

Non working zones (relaxing)							
Resting Areas							
Quiet Rooms	720	individual or small group pods for napping, prayer, meditation, or private phone calls	comfortable recliners, blackout curtains, white noise machines, and phone charging stations	180	4	180	
Relaxation Lounges	1,080	comfortable seating areas with couches, armchairs, and hammocks		3	360	any number can be accommodated	
Sleeping Pods	360	enclosed, soundproof pods for short power naps		120	3	120	
Calming Gardens	1,440	outdoor spaces with greenery, water features, and comfortable seating	walking paths, seating areas, and hammocks		1440	any number can be accommodated	
Gaming Areas							

Arcade Room	540	classic and modern arcade games, air hockey, pinball machines	comfortable seating areas for watching and socializing	1	540		
Console & VR Gaming Lounge	540	gaming consoles, VR headsets, comfortable seating		1	540		
Board Game Library & Cafe	360	wide selection of board games, comfortable seating, cafe with snacks and drinks	dedicated space for larger groups and game setup	1	360		
E-Sports Arena	360	e-sports tournaments, spectating, and casual practice	comfortable seating, and large screens	1	360		
Additional Relaxation Spaces							
Fitness Rooms	360	cardio equipment, strength training machines, free weights, yoga/fitness classes		2	180		
Massage Rooms	180	provide professional massage services for stress relief and relaxation		16	11		
Art & Music Rooms	180	art supplies, musical instruments, jam sessions, art exhibitions		1	180		
Rooftop Terrace	180	outdoor space with comfortable seating, greenery, and scenic views		1	180		

Total	6300						
Support spaces							
Lactation Rooms	135	Private and comfortable spaces for mothers to pump breast milk	Equip with refrigerators , comfortable seating, and privacy screens	65	2		
Childcare Center	500	childcare facility for employees with young children	play areas, learning activities, and qualified childcare professionals.	1	500		
IT Help Desk	270	In-person and remote support for technical issues	self-service kiosks and dedicated areas for technician assistance	54	5		
Facilities Management (ramesh sir)	270	Office maintenance, cleaning, and space management services.	Include storage for equipment and supplies	1	270		
Security & Lost & Found	270	Security office, access control, and lost and found items management.		1	270		
Concierge Services	90	Assist employees with personal errands, travel arrangements, and other needs	Offer a variety of services and partnerships with local	4	20		

			businesses				
Mail & Package Services	540	receiving, sorting, and distributing mail and packages.	self-service lockers, package tracking systems, and secure storage	2	270		
Printing & Copying Center	270	Self-service printing, copying, and scanning facilities		1	270		
Total	2345						
Cafeteria							
Main Dining Hall	3,000		booths, tables, high chairs, communal tables	1	3000		
Grab & Go & Food Stalls	1,200	Offer quick and convenient options for takeaway meals, salads, sandwiches, and snacks		24	50		
Themed Restaurants & Cafes	900	unique dining experiences with specific cuisines or themes	Offer table service or counter service options				
Outdoor Seating	900		Include tables, chairs, umbrellas				
Kitchens	1,080	Multiple kitchens equipped for preparing various cuisines		1	1080		

Dishwashing & Waste Management	540			1	540		
Storage & Refrigeration	540			1	540		
Staff & Management Areas	540		changing rooms, and administrative offices	1	540		
Total	8,700						
Total builtup area	162,377						
Circulation area is 15% of floor plate area							

6.2 CONCEPT

IT Park with Emphasis on Sense of place and time Hyderabad



In the process of globalisation space creation and consumption have eroded the city's unique identity, replacing its diverse architectural elements with generic and easily interchangeable components. This transition from individuality to uniformity is what Rem Koolhaas refers to as the "Generic City." Instead of focusing on a futuristic vision, the Generic City prioritises current needs and abilities, aiming to provide convenience and comfort. In this context, the essential connections between buildings, spaces, and infrastructure are often overlooked. This is a phenomenon where buildings in a particular urban setting are often seen as isolated entities, and their relationship with the surrounding urban space is not given much consideration.

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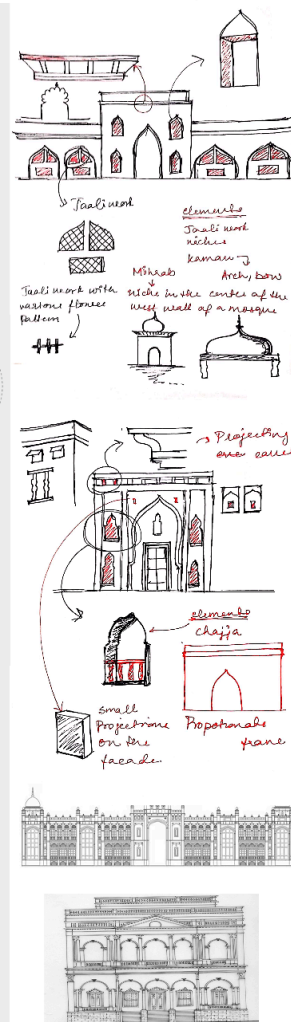
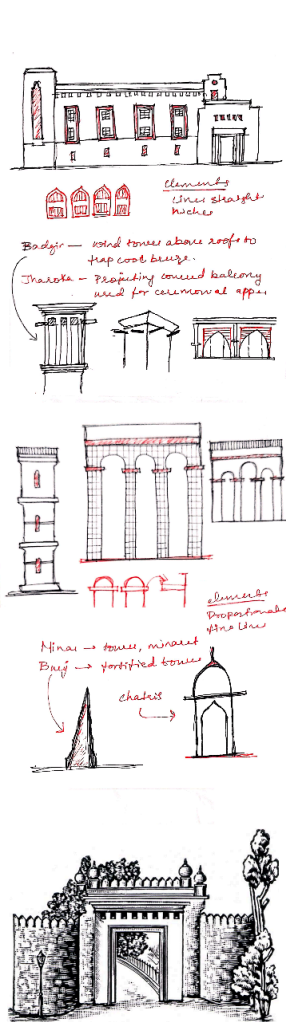
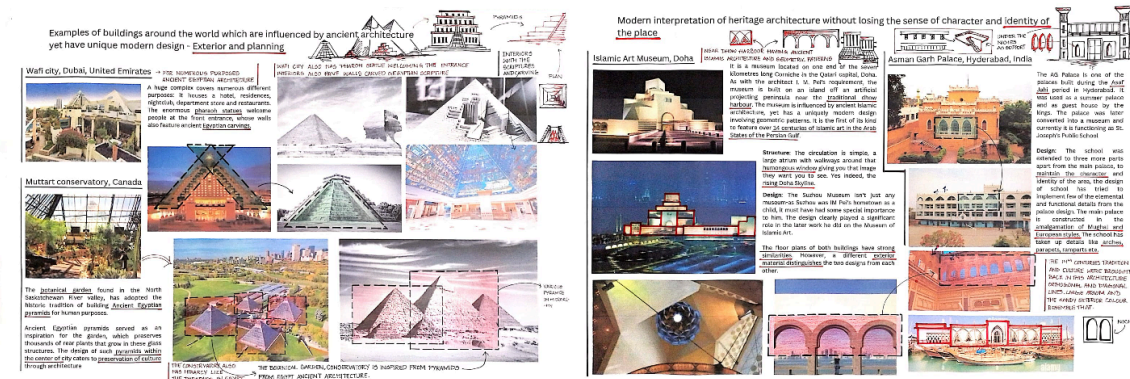
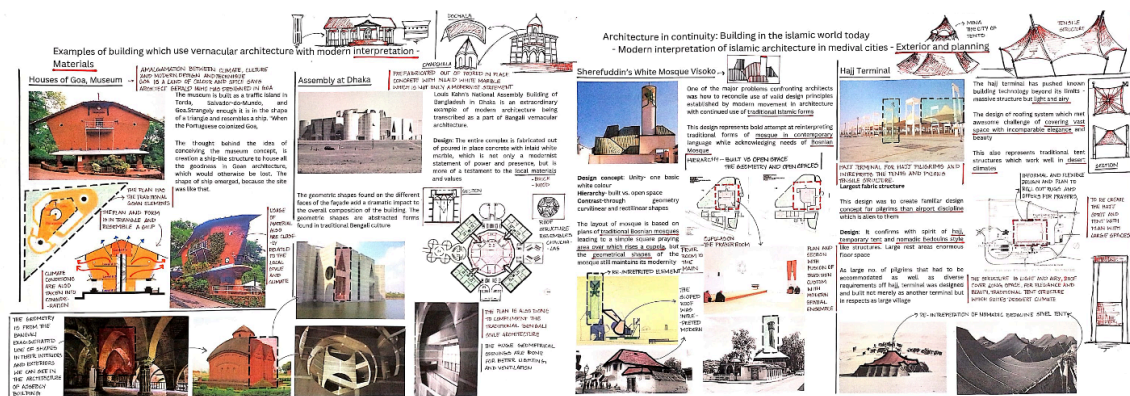


Plate 6.1: Concept and Inspiration.



	TCS	Titan Integrity campus	ICICI Headquarters	Skyview	One paramount	Inference
Location	Chennai	Bangalore	Hyderabad	Hyderabad	Chennai	
Year of Completion	2007	2017	2009	2020	2020	
Architect	Carlos Ott Architects	Sarjaj Moghe	Haleez Contractor		RMZ Developers	
Site area	70 acres	6.5 acres	2 acres	2 acres	14.3 acres	
Buildup area	444515.2	36232.1956	66425.7336	2787.0512	222967.296	
Design approach	The design prominently features exposed steel structures, prioritizing both aesthetics and functionality, with a substantial emphasis on structural integrity and safety. Space frames, known for their strength and efficiency in distributing loads, are incorporated into the design to further enhance its stability and resilience. This meticulous attention to the architectural framework ensures not only a visually striking	Meanwhile, the incorporation of greenery through landscaping, vegetation, and green spaces softens the built environment, providing visual relief and promoting a sense of tranquility and well-being. Trees, shrubs, and plants introduce color, biodiversity, and seasonal changes, creating a dynamic and engaging environment that evolves over time.	The imposing nature of expansive glass facades can sometimes create a sense of disconnection from nature, as they can seem alienating. However, by designing lower floors to respond to human scale, incorporating elements such as varied features, green spaces, and accessible entrances, we can mitigate this effect and foster a more inviting and inclusive environment.	The project's design embraces a modern and sleek aesthetic while placing significant emphasis on addressing the challenges of our changing climate. This commitment is evident through the utilization of various facade treatments aimed at mitigating environmental impact. Aluminum facades, for instance, are strategically employed to minimize glare indoors, ensuring a comfortable and visually appealing interior environment.	Design approach would be towards context along with contemporary style with incorporation of various passive strategies and BIM technology.	
Architecture style	Contemporary	Contemporary with Eco-friendly architecture.	Human-Centered Design architecture	Contemporary with Sustainable Architecture	Contemporary	Contemporary with Sustainability
Urban Context	The building is situated in an IT industrial area where all the surrounding buildings are also Office buildings and the area is moderately crowded	calm area with restricted people entry, surrounding place is not industrial, its mixed use, peaceful place	Financial district. IT companies surrounding, moderately crowded, only working population travel in that area	Near to core of financial district, major junction, high crowded, in the midst of IT buildings	Industrial area, not particularly IT hub. Low crowded, only workers travel there	Financial district, IT companies surrounding, moderately crowded, only working population travel in that area
Floor Plans						
Parking	Parking on ground	Parking on ground	Parking Underground	Parking Underground	Parking Underground	Parking on ground
Program	Office Spaces specific to TCS, Amnities for employees, Meeting rooms, Conference rooms, Informal spaces, Canteens, Lunch halls, Entertainment zones for employees	Office spaces specific to Titan, green terraces, meeting rooms, conference rooms, formal and informal spaces for employees, service core	Office spaces specific to ICICI bank, IT spaces, meeting rooms, food courts, conference rooms, workstations, private office rooms	Office spaces for various different firms, Urban terrace, market place, indoor games, turf, workstations and other generic office rooms	Market, Office spaces for various different firms, OAT, Themed restaurants, Courtyard, amnities, yoga, jogging, gym, turf	Office Spaces specific to Google, Amnities for employees, Meeting rooms, Conference rooms, Informal spaces, Canteens, Lunch halls, Entertainment zones for employees
Site planning	As the site is huge for the project, it was planned according to office spaces for employees with privacy, and parking in one particular side of the site.	The site is adjacent to a water body so it has incorporated many features from the water body, the office spaces and informal spaces are designed together so that there is no much separation between them. Interior directly open to green areas and terraces so that there is a connection between indoor and outdoor.	The building covers most of the site so the planning is mostly done on vertical level, where there is a multilevel parking for 2 floors from 2 basement parking and then 3 floors are completely catered to food court and then office spaces begin.	The site is mostly covered by the building, so planning is done on vertical level, there are basement parking and onground parking which leads to urban terrace, and then there is a market place followed by office buildings	There are 2 towers, the site is planned very well with proper pathway through in and out of the site, the vehicle entry exit and needs of others are also considered, parking is fully basement, on the ground level there are restaurants and markets followed by office spaces	The building covers most of the site so the planning is mostly done on vertical level, where there is a multilevel parking for 2 floors from 2 basement parking and then 3 floors are completely catered to food court and then office spaces begin.

Plate 6.2: Special study and case study analysis.

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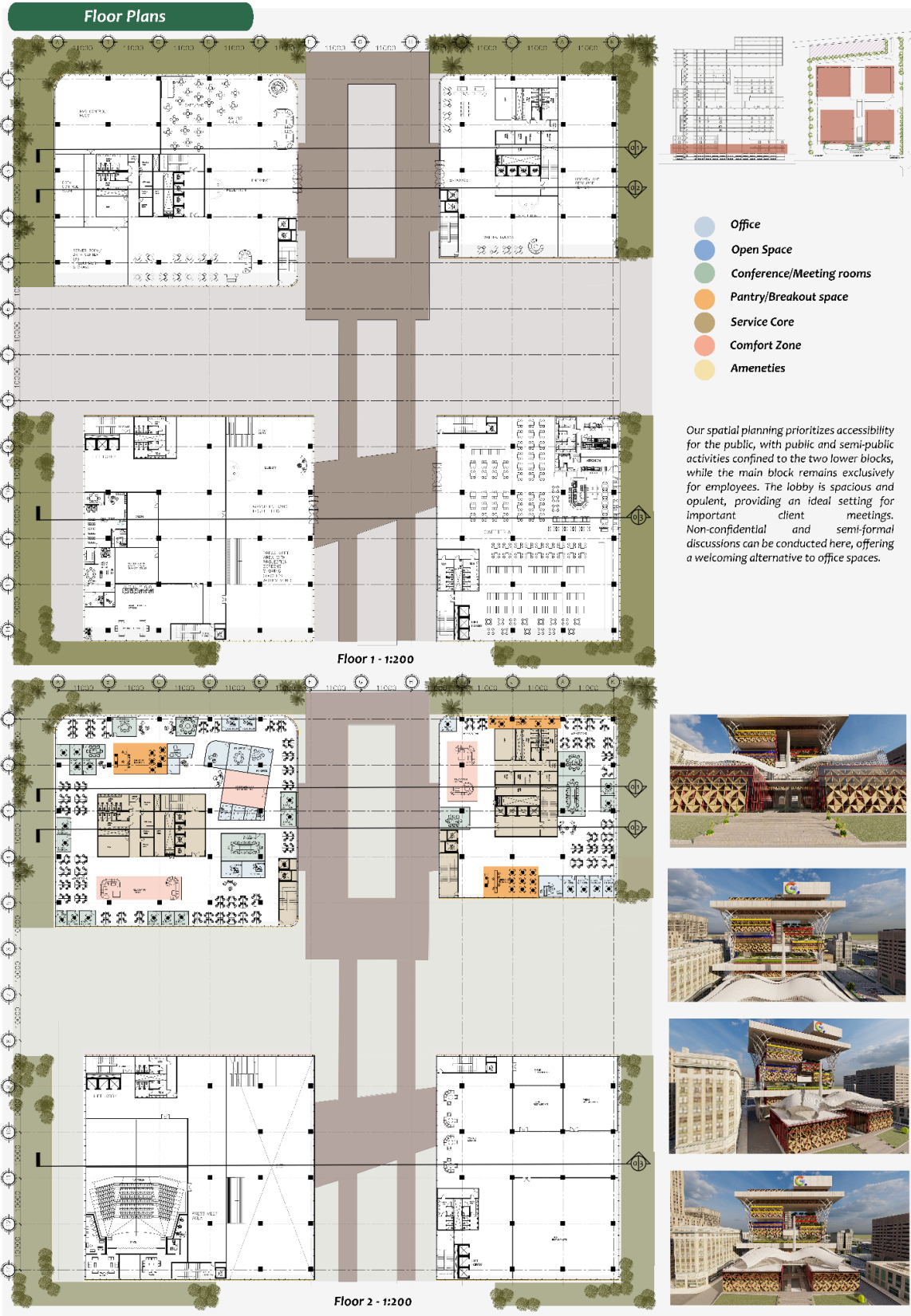


Plate 6.4: Floor plans (1, 2).



Sathyabama Institute of Science and Technology
Department of Building Environment
Bachelor of Architecture

SIGN :

PROJECT TITLE : GOOGLE CAMPUS
LOCATION : HYDERABAD
SHEET TITLE : FLOOR PLANS



A Keerthana
39210012

Plate 6.5: Floor plans (3, 4)

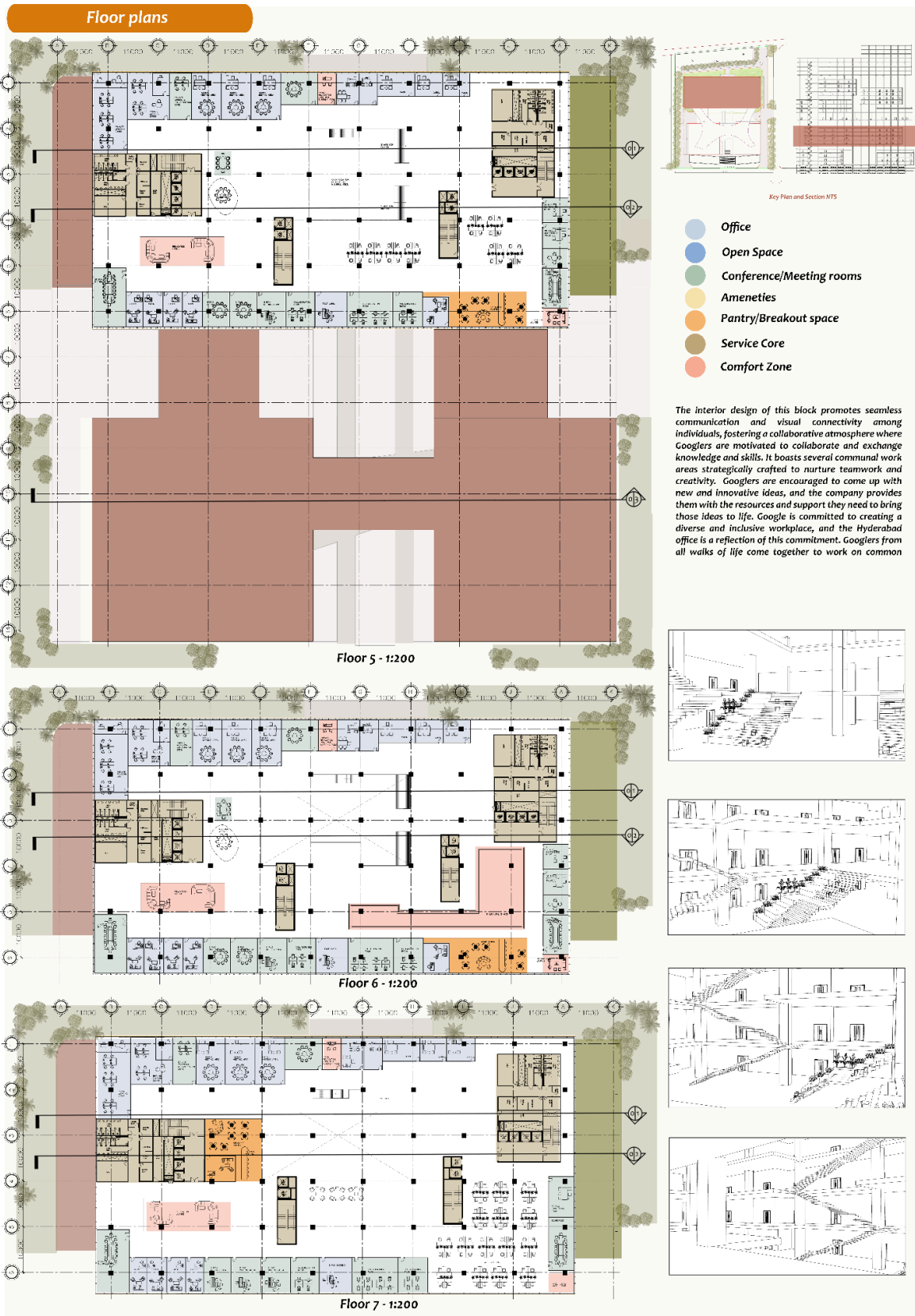
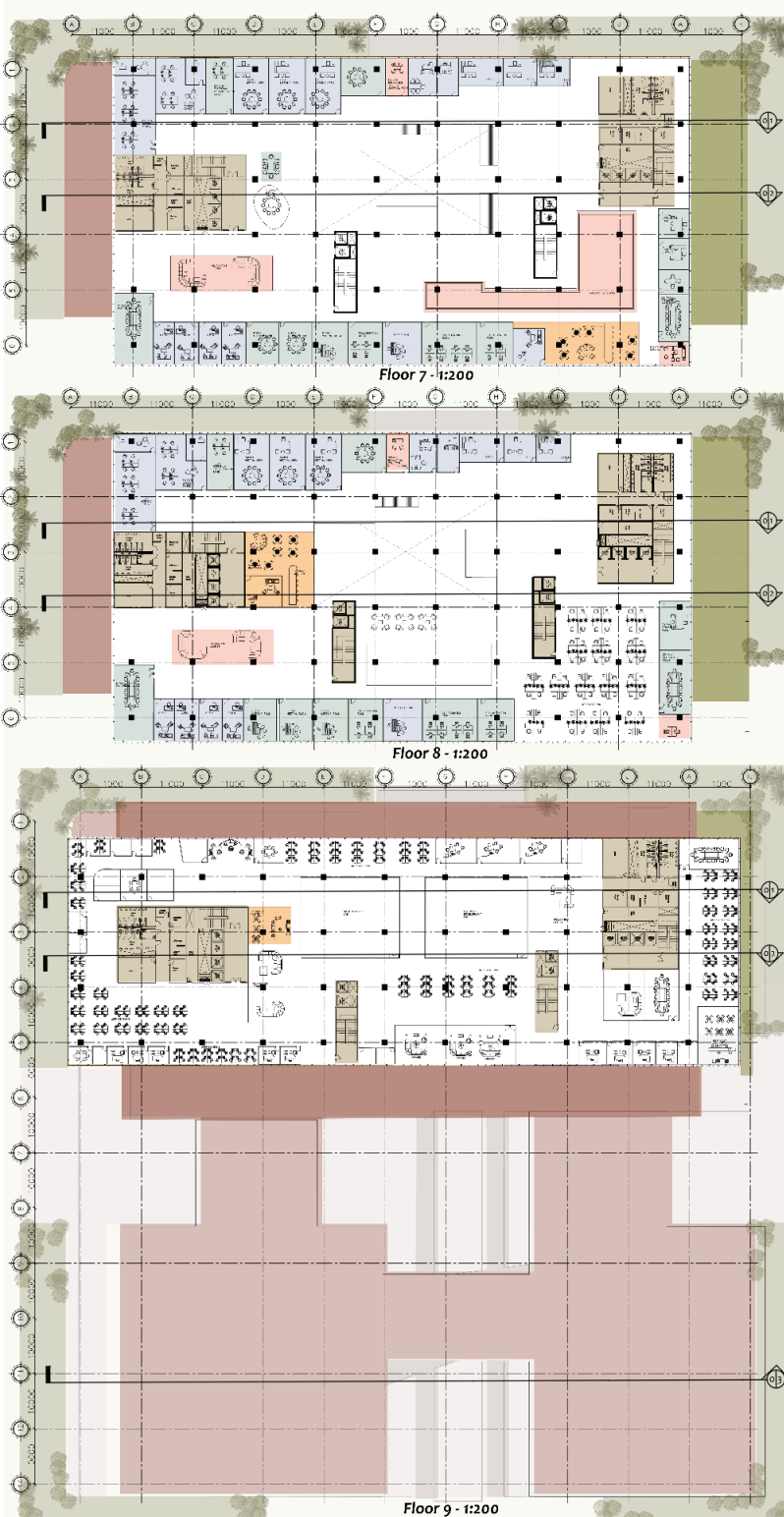
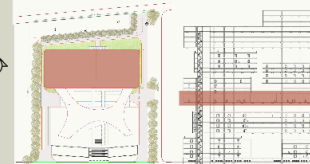
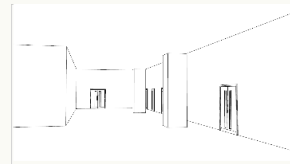
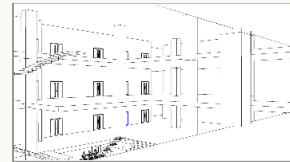


Plate 6.6: Floor plans (5 to 7)



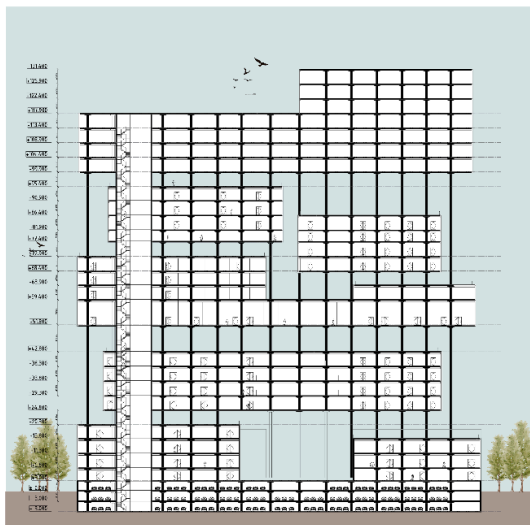
Crafting an immersive and welcoming work environment for your team presents challenges that shouldn't be underestimated. The success of such endeavors hinges on meticulous planning and the utilization of precise optimization tools from the outset. Simultaneously, it's imperative to factor in your company's growth trajectory to ensure the sustainability of the space over time. Aligning your space design with your hiring strategies and future aspirations not only streamlines operations but also conserves valuable resources.



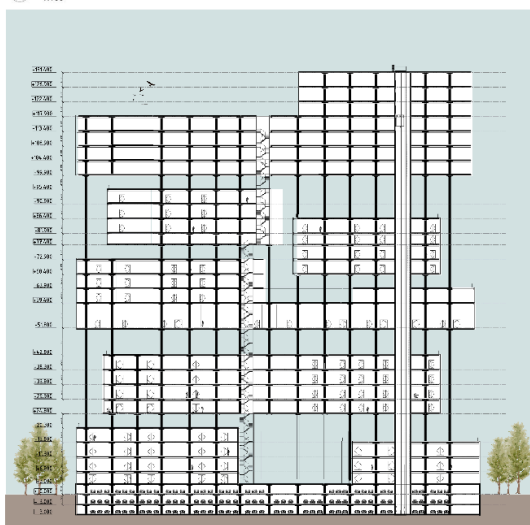
Key Plan and Section NTS

	Sathyabama Institute of Science and Technology Department of Building Environment Bachelor of Architecture	SIGN :	PROJECT TITLE : GOOGLE CAMPUS LOCATION : HYDERABAD SHEET TITLE : FLOOR PLANS	A Keerthana 39210012
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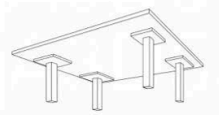
Plate 6.7: Floor plans (7 to 9)



01 Section
1:100



02 Section
1:100



The building employs a robust structural system consisting of a steel frame along with a post-tension slab. To ensure sturdy support, drop panels have been strategically incorporated. These elements collectively enhance the building's strength and durability, providing a reliable foundation for its functionality and longevity.

The facade of the building boasts a dynamic feature known as a kinetic facade, equipped with daylight sensors that regulate its opening and closing based on the natural light intensity. This innovative design not only enhances the building's aesthetic appeal but also optimizes energy efficiency by maximizing natural light utilization. Anchored securely to the concrete slab, this feature seamlessly integrates with the curtain wall, further enhancing the building's architectural harmony and functionality.

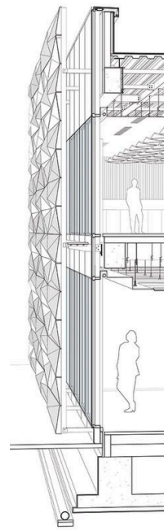
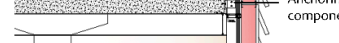
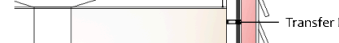
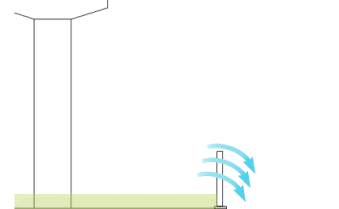
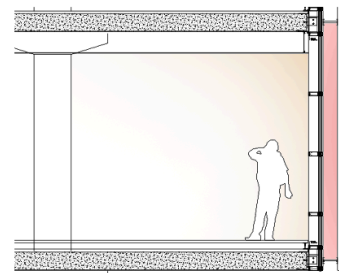


Plate 6.8: Sections

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