

HERITAGE CENTER AND MUSEUM

THESIS

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

By

SAKTHI KRITHIKA B
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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
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 Thesis Report is the bonafide work of **SAKTHI KRITHIKA B (3621061)** who carried out the thesis entitled “**HERITAGE CENTER AND MUSEUM**” under our supervision from January 2021 to May 2021.

Internal Guide

Ar. Jhannu priya

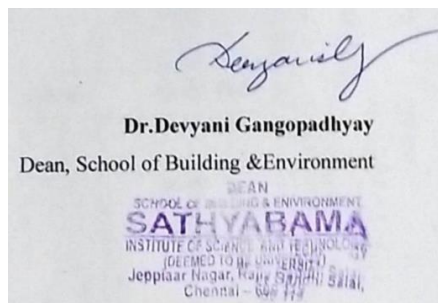
Internal Review Member

Ar. Monisha micheal

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Dean and head of department

Dr. DEVYANI GANGOPADHYAY



Submitted for Viva voce Examination held on _____

Internal Examiner

External Examiner

DECLARATION

I, **SAKTHI KRITHIKA B** hereby declare that the Thesis Report entitled “**HERITAGE CENTER AND MUSEUM**” done by me under the guidance of **Ar.Jhannu priya** (Internal Guide) and **Ar.** (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 Thesis 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 and 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 **Ar. Jhannu Priya** ,Internal review members **Ar. Monisha micheal** and External guide **Ar.** their guidance, suggestions and constant encouragement which paved the way for the successful completion of my thesis works.

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 Thesis .

I also thank my family and friends for their constant support in the completion of this thesis.

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1. INTRODUCTION

1.1 AIM

The Aim of this thesis is to study and showcase, how cultural heritage can be enhanced.

1.2 OBJECTIVE

- To study the value of culture and try to incorporate it in the contemporary works.
- To understand the architectural spaces of the past.
- To retain the sentimental value, evokes architectural challenges and increase the economy of the area.

1.3 NEED OF THE PROJECT

We live in a world where technology plays a vital role and which is also developing day by day, but at the same time we are losing our heritage and culture. We value social life and machineries then environment and our identity. Why don't we value THEM?

Because we don't know the story behind it.

When we have a mall to shop and hall to watch movie, then why not a space to tell stories and showcase the culture?

This place(heritage center) will be entertaining, interesting and also educate us about the past and lets us celebrate the culture together.

1.4 SCOPE

This project helps in preserving and increase the value of cultural heritage around.

This space makes people to celebrate and learn culture together.

Could offer employment directly or indirectly.

Create awareness among the people about the heritage spaces and same way helps in the tourism. Thus, this place creates positive impact in social, cultural and economy of the place.

1.5 METHODOLOGY

- Primary data collection through net
- Finding answer to the research question framed through journals and research papers.
- Identifying the relevant case study
- Analysing the site and context

2 LITERATURE CASE STUDY

2.1 INDIAN HERITAGE CENTRE, SINGAPORE

CLIENT - National Heritage Board of Singapore

BUILT UP AREA - 3089.68 Sq.M

ARCHITECT - URBNarc Pte Ltd in Collaboration
with Robert Greg Shand Architects

TYOPOLOGY – Cultural centre | public

2.1.1. Location and Context

Location - 5 Campbell Ln, Singapore

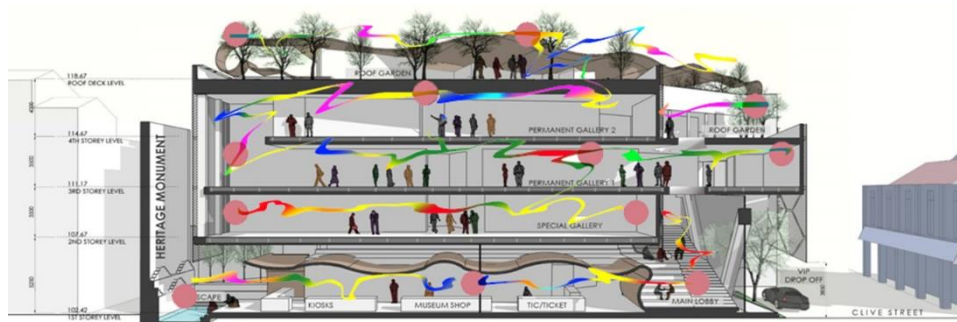
IHC would feature small-scale museum facilities as well as community and educational spaces and would be located on a tight triangular shaped site, nestled amongst the shop houses of the colourful, bustling Little India conservation district.

The site has dual way access to enter into the site, one from campbell lane and other is from clive street.

In Gaurang Khemka's (URBNarc) and Robert Greg Shand's winning design proposal, the form of the building is a direct response to the site.



2.1.2. Program and Requirement



Pays homage to Indian culture and heritage with a creative and contemporary solution.

The space requirement was for two large galleries housing the centre's permanent collection, a special exhibition gallery for changing exhibitions, and an activity space for smaller groups that could be closed off when in use or opened up to complement the special exhibition gallery. The challenge was to maximise gallery and activity space, while keeping ancillary and back-of house areas to a functionally minimum size.

2.1.3. Circulation and Spatial composition

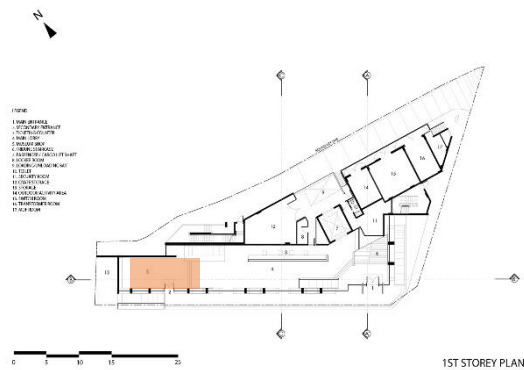
Maximum use of ground floor area is for the service. So it

Existence of staircase exactly opposite to

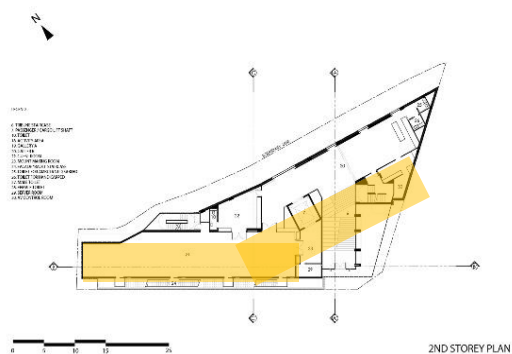
Activity area is zoned on the ground floor, so that



2.1.4. Site plan

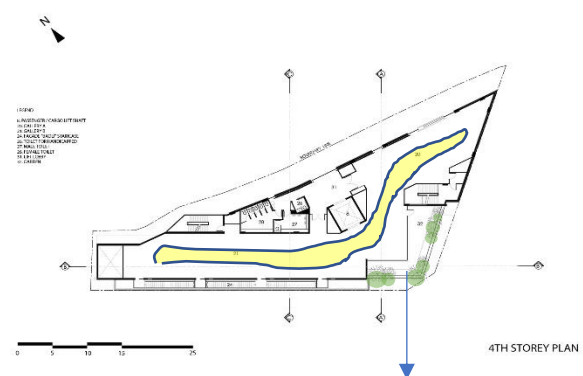
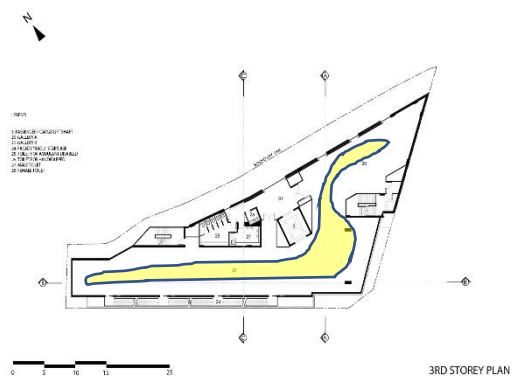


Museum shop and ticker counter are the only access in 1st floor, other than that are services and storage.

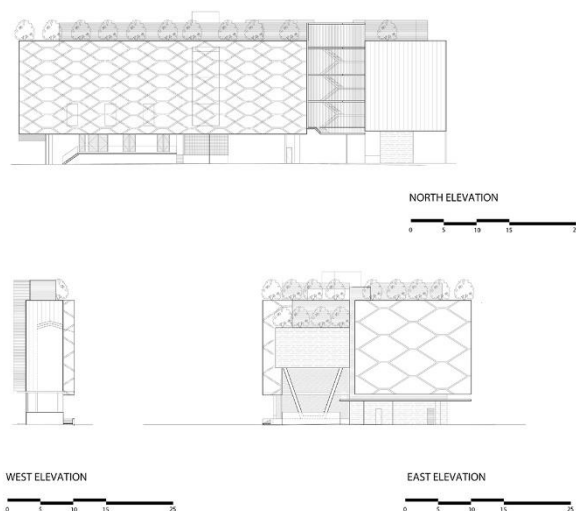
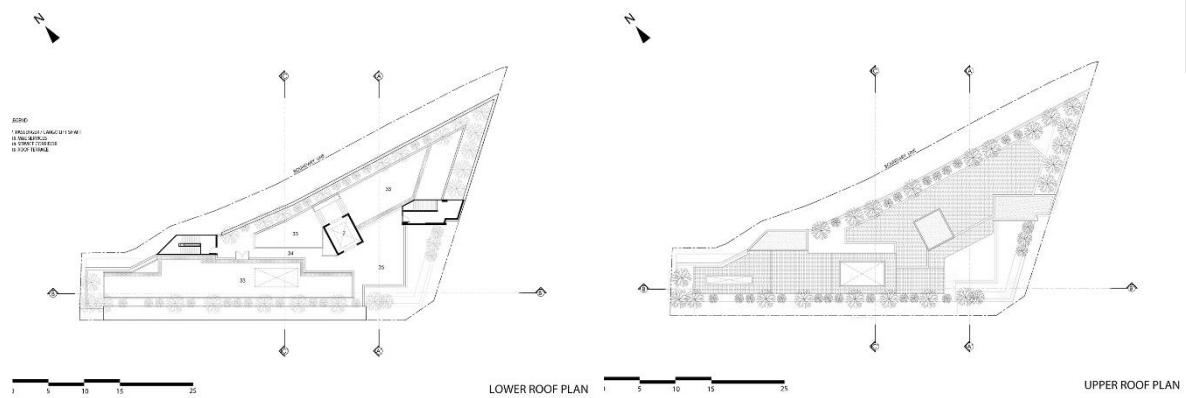


The centre is designed as a living museum where visitors start at the 4th level and after viewing the interior gallery step out into this double skin volume where they can see the rich tapestry and urban environment of Little India before stepping back into the galleries at Level 3.

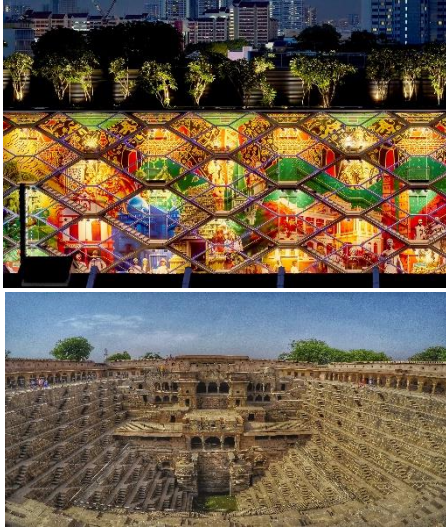
This process repeats itself and the sequence of taking the visitor inside and outside makes this a truly urban building solution.



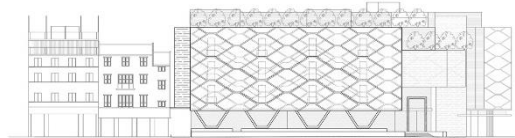
Flow of circulation in gallery space, no levels or obstruction between gallery A and B.



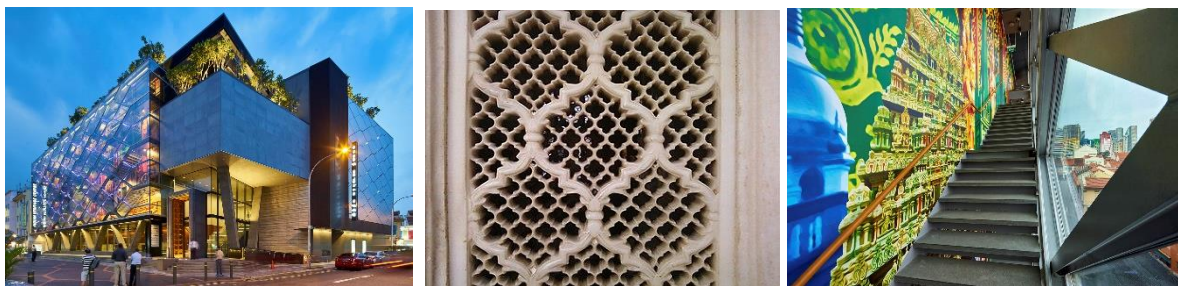
2.1.5. Architectural influence from culture



A key design reference for the facade is the Indian stepped well – specifically, the famous Chand Baori in India. That it was also a community hub for the Abhaneri locals sets up the baori as an apt reference for the heritage centre Chand Baori in India. . The criss-crossing patterning of the double flights of steps is the main inspiration for the museum's façade.



The steel structure of the curtain wall glazing echoes the staircases behind, creating a unique and recognizable motif for the building. The composition of the curtain wall glazing and staircases form a three dimensional 'jali', the traditional Indian lattice screen, to modulate light, air, and views between the streetscape and the galleries.



2.2 Heydar Aliyev Center

BUILT UP AREA – 57.519 m²

ARCHITECT - Zaha Hadid Architects

LOCATION - Azerbaijan

TPOLOGY – Cultural centre | public

2.2.1. Location and Context

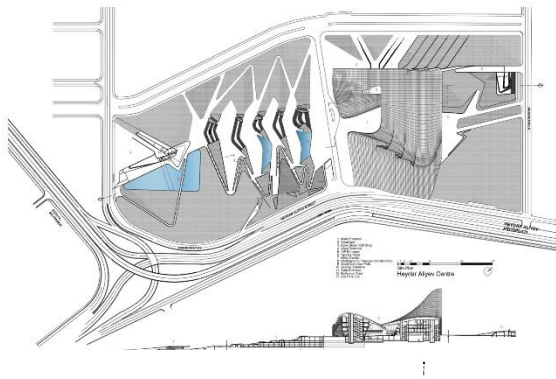
LOCATION - Baku 1033, Azerbaijan

Baku, Azerbaijan, sited as it is along the main trunk road, situated around a urban fabric. The site can be accessed from 4 roads which are aligned along the site. This centre has given more weightage to the open space(green space) then the buildt up.

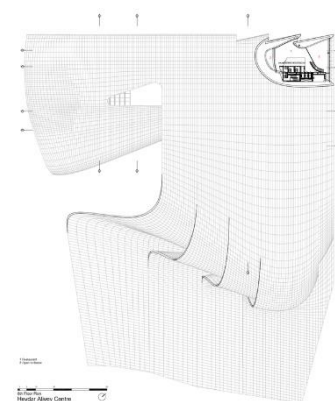
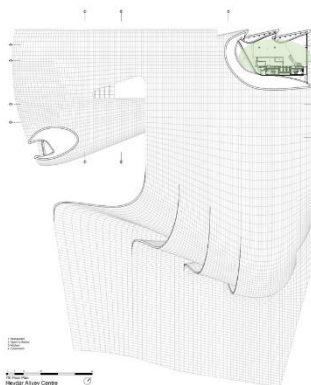
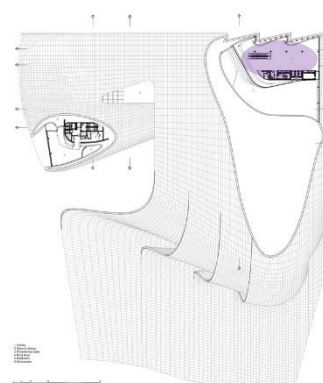
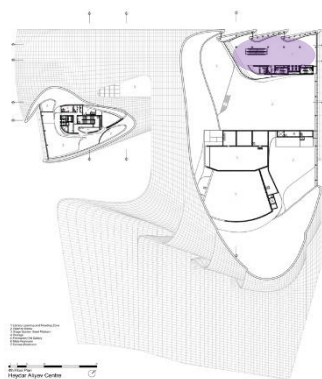
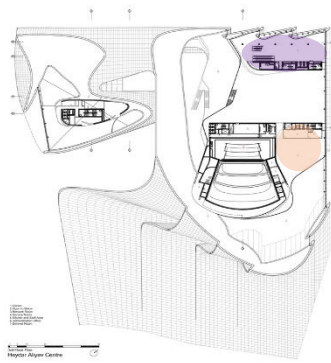
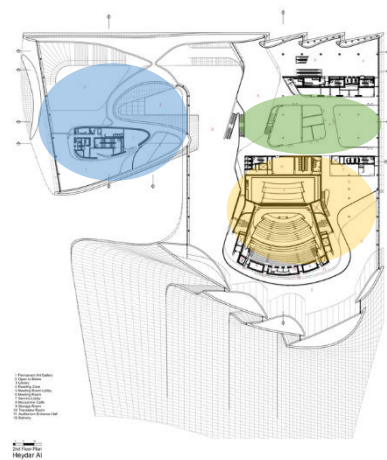
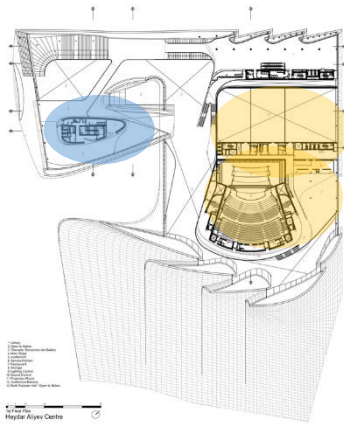
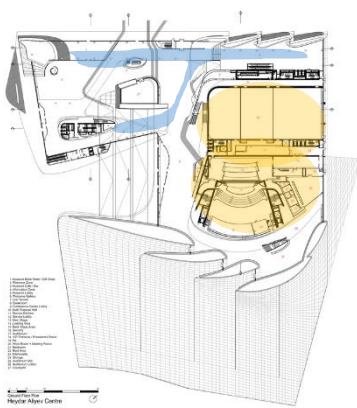


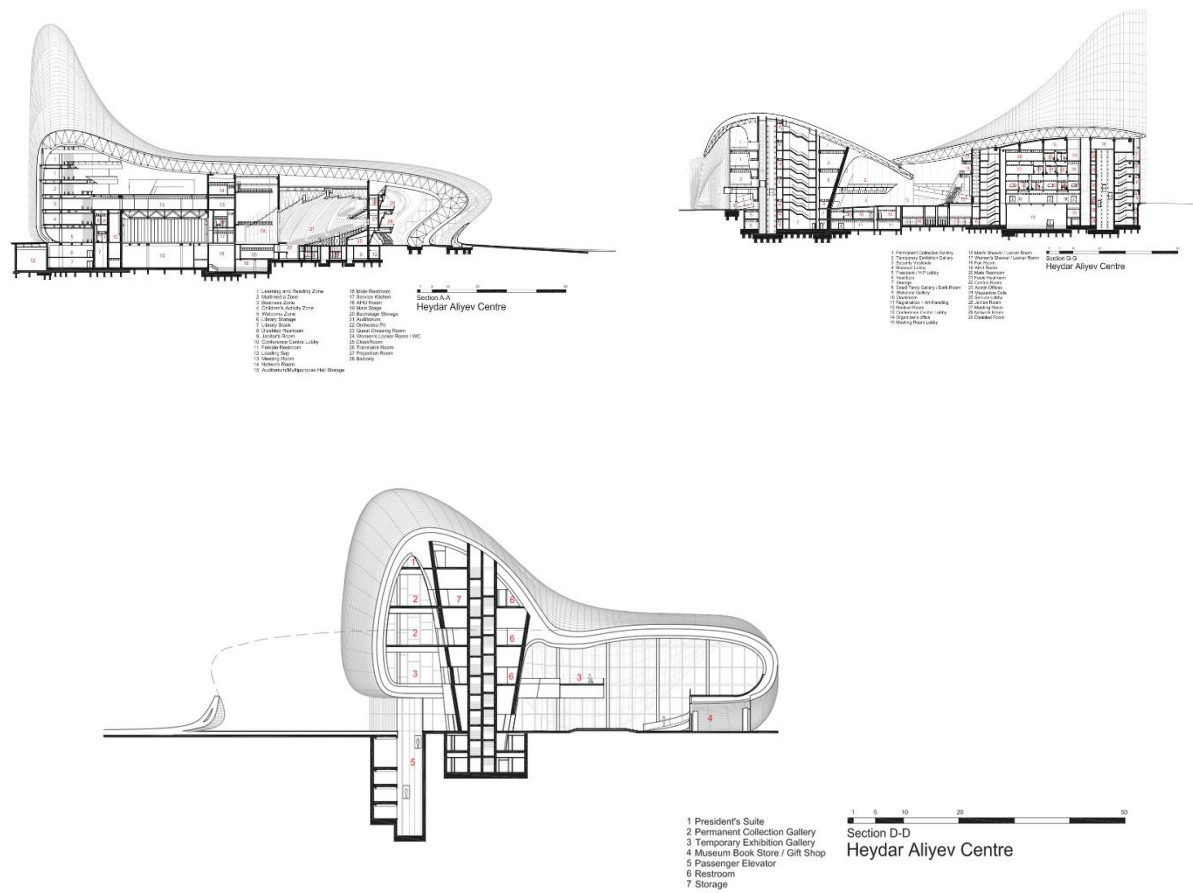
2.2.2. Circulation and Spatial composition

“Each program has a different look because of its required height: The tall one at the back is the library, with its many floors, and the rise to the side accommodates the conference center, with the auditorium’s fly tower.”



The three programs merge toward the center, which becomes the lobbies, which can handle several events at the same time. These events are supported by a large, open banquet space between the library and conference area. The rest becomes a cascading landscape, parts melting into each other fluidly and seamlessly, until the building





Two-wheeler and four-wheeler parking is segregated. Clear 7m for two-way parking has been given. Separate service parking is also given. Since the area is big, they have separated the parking one near the entrance and other parking in-between the rooms.

2.2.4. Architectural influence of culture

Their intention was to relate to that historical understanding of architecture, not through the use of mimicry or a limiting adherence to the iconography of the past, but rather by developing a firmly contemporary interpretation, reflecting a more nuanced understanding.

Fluidity in architecture is not new to this region. In historical Islamic architecture, rows, grids, or sequences of columns flow to infinity like trees in a forest, establishing non-hierarchical space.



Continuous calligraphic and ornamental patterns flow from carpets to walls, walls to ceilings, ceilings to domes, establishing seamless relationships and blurring distinctions between architectural elements and the ground they inhabit.



2.3 Bunjil Place

BUILT UP AREA – 57.519 m²

ARCHITECT - Zaha Hadid Architects

LOCATION - Azerbaijan

TPOLOGY – Cultural centre | public

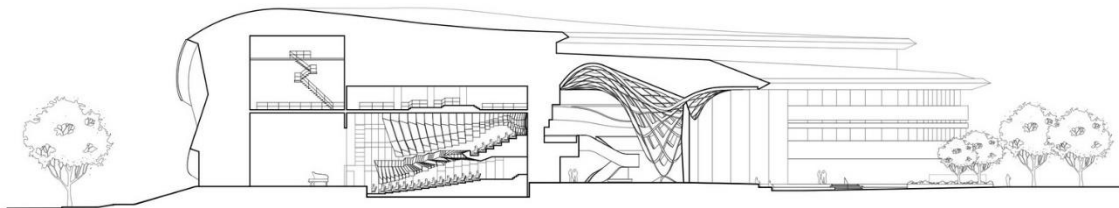
2.3.1. Location and Context



LOCATION - 2 Patrick NE Dr, Narre Warren VIC 3805, Australia.

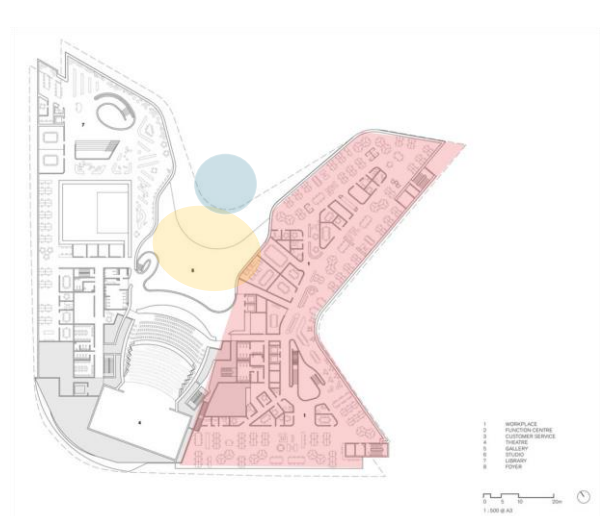
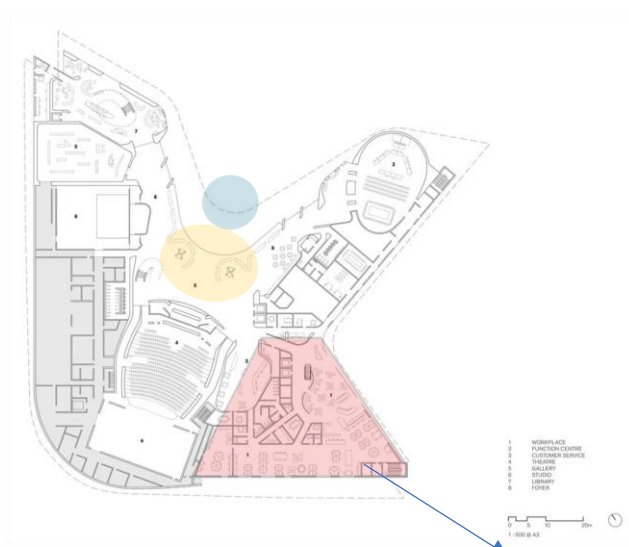
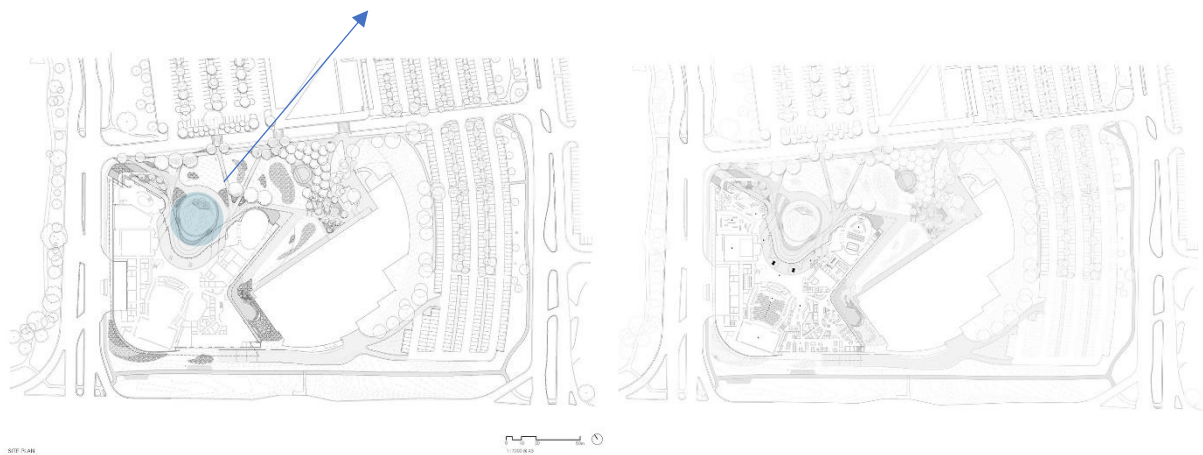
Located in a key metropolitan activity centre, Bunjil Place is close to existing recreational facilities, strong transport links, appropriate parking and a retail hub.

2.3.2. Program and Requirement



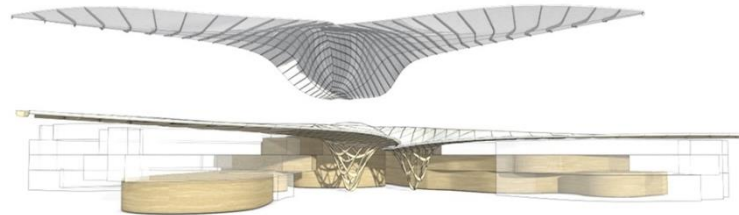
Bunjil Place is bringing together creativity, entertainment and community through an unprecedented mix of facilities including an outdoor plaza, a library, a performance theatre, a public gathering space, a place of exhibition, a flexible and experimental space for events, lectures, debate and celebration, it is a help point, a service centre and a place of work and collaboration. Above all perhaps, it is a place where all of this overlaps and interconnects and at the centre is the interconnecting fluid form of the foyer gathering space, a non-hierarchical space that unifies the complex.

Activity area



2.3.3. Structure

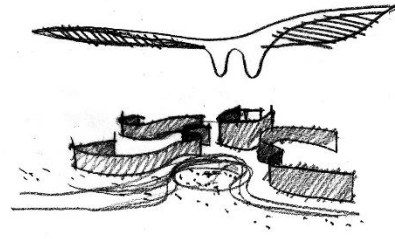
Supporting the dynamic roof forms and connecting them at two central points is a woven structure of laminated natural timber. A warm and innovative structure that emphasizes the lightness of the roof through a fluid, organic geometry and reinforces the openness and welcoming nature of the complex.



Shelter

2.3.4. Concept

The architecture began to form around the idea of an organic meeting of many paths. Gathering takes place under the protective and sheltering roof. Like Bunjil's wings, this sinuous element symbolises not only the traditions of the past, but provides a contemporary vision of the future, movement, technology and innovation, sheltering the central civic space and protecting occupants from the noise and pollution of the highway to create a welcoming celebration and back-drop for community life.



2.4 Bharat Bhavan

AREA – 11,148 sq.m

ARCHITECT – Charles correa

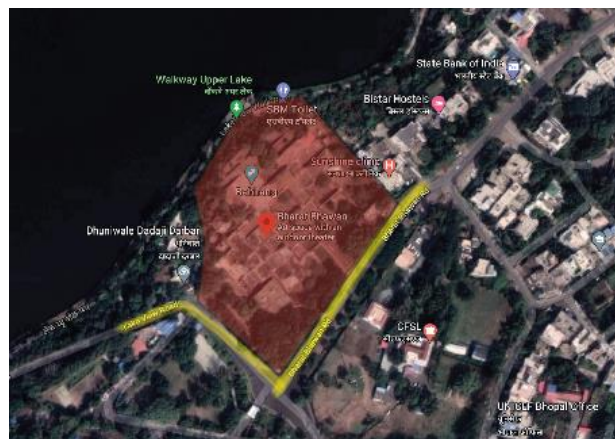
Typology – Multi-arts complex and museum

LOCATION – Bhopal | public

2.4.1. Location and Context

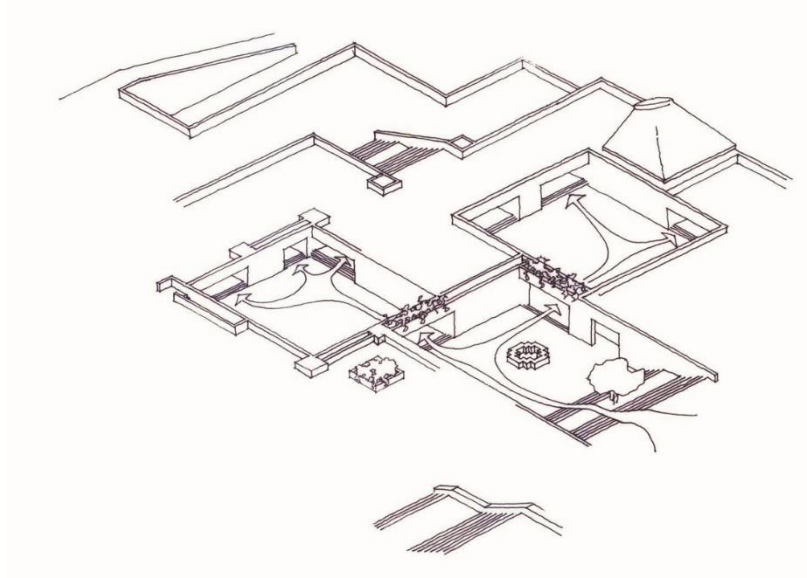
LOCATION - Near Upper Lake, Krishna Nagar, Shymala Hills, Bhopal, Madhya Pradesh.

Built into a hillside which slopes down toward a lake, a series of terraces and courtyards comprise the complex.

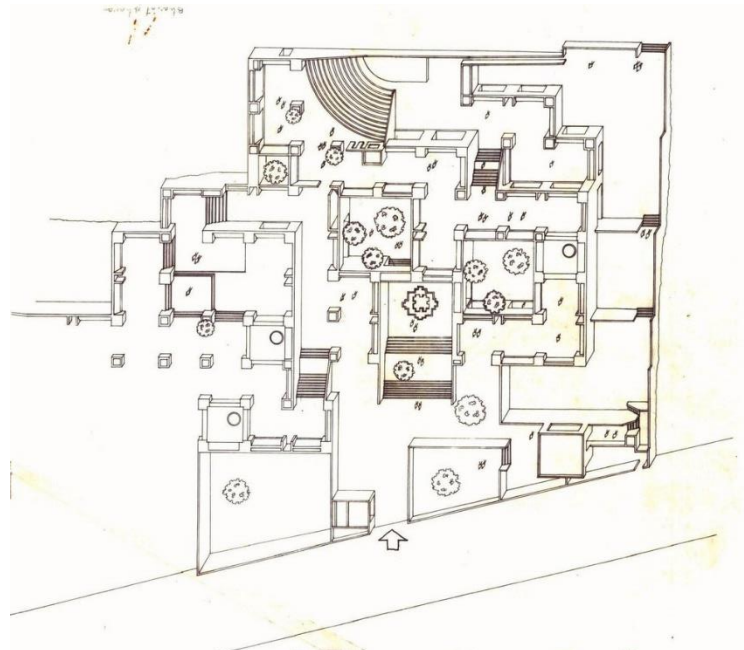


Upon entering, the visitor has the choice of following the path of terraces cascading down to the lake, or descending to the three courtyards which provide access to the majority of the cultural facilities. These include contemporary art galleries, a

museum of tribal art, an auditorium, a library of Indian poetry, a print shop, and a studio for an artist-in-residence. From the courtyards, wide glass-paneled openings to the buildings ensure the arts program is both literally and figuratively accessible to all. At the bottom of the site sits an amphitheater, where open-air performances take place with the lake forming a natural backdrop.

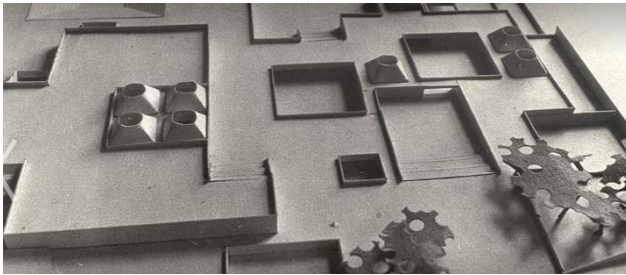


2.4.2. Requirement and Circulation



The intention is that those emerging from the galleries to the courtyards undergo a similarly dramatic spatial experience. The sky is even incorporated into the interior

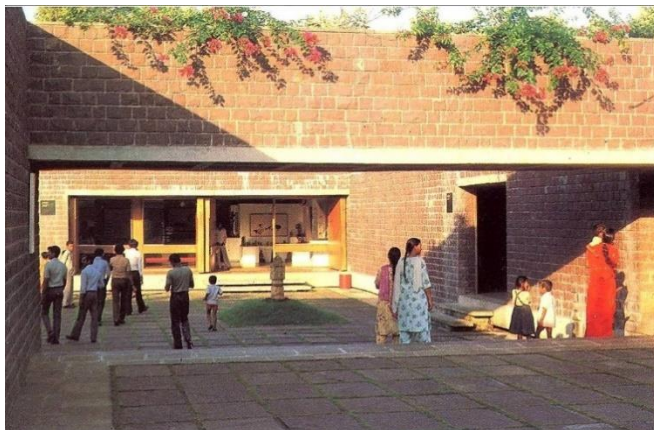
spaces of the site, with concrete 'shells' atop the structure allowing light and air to pour in through their circular openings.



The long-term success of Bharat Bavan is largely due to its enduring popularity with local residents. The courtyards create communal public space, with the steps around their peripheries providing articulated seating for residents to meet and socialize. The terraces have proven popular with families, who spend their evenings promenading down to the water's edge and enjoying the cultural

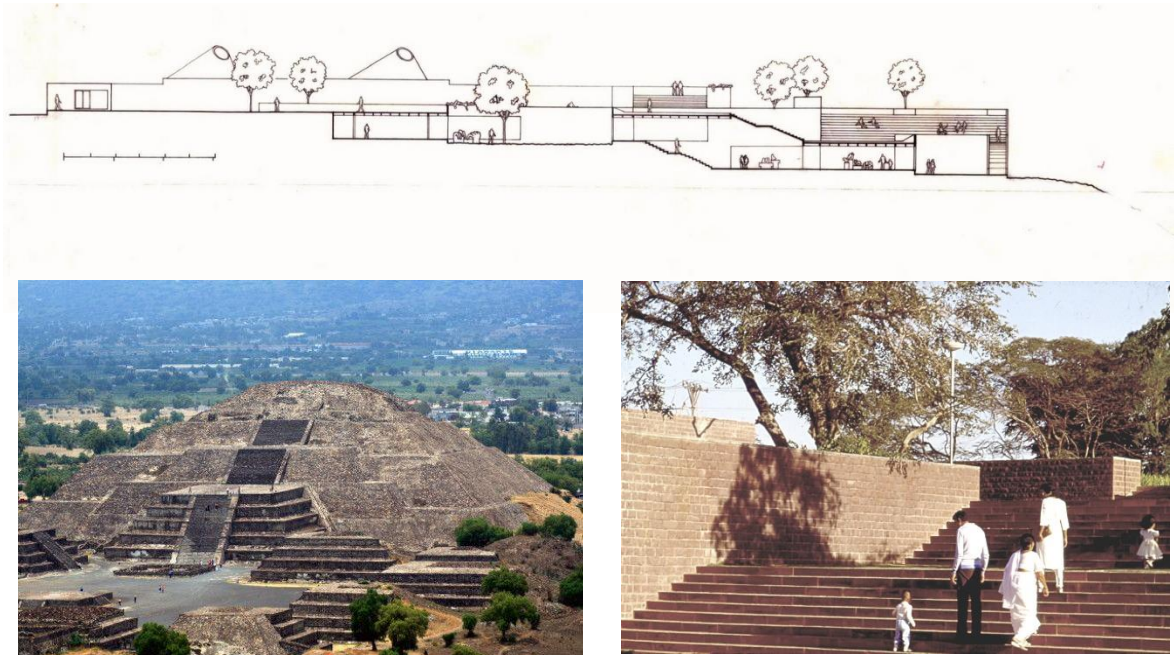
offerings of the complex.[13] In creating a building well-suited to the needs of contemporary society while making use of familiar architectural motifs.

Outdoor space are interesting by designing terrace garden and creating dark and light spaces. Courtyard form an interesting part of circulation because the visitors can decide which gallery or space to visit.



2.4.3. Architectural influence from culture

The ritual of following a sacred pathway is, he claims, “a universal impulse, found in all cultures and religions. Correa emphasized the spirituality of his own pathways by drawing parallels with those found in religious architecture. The stairs are reminiscent of ghats; steps found in Indian cities which lead down to a body of holy water, just as Correa’s steps guide the pedestrian to the lakeside.



2.5 virasat-e -Khalsa a heritage museum

BUILT UP AREA – 11,148 sq.m

ARCHITECT – Moshe Safdie and Associates

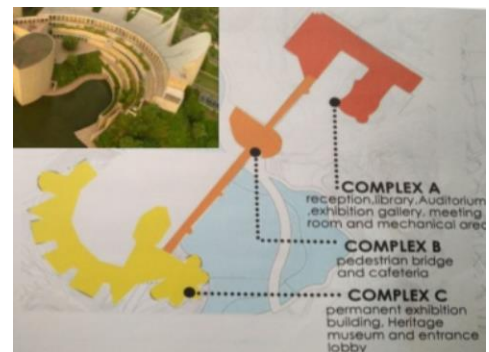
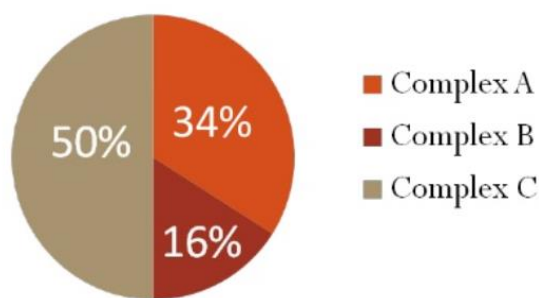
TPOLOGY – Museum complex | public

LOCATION – Punjab

The museum campus is composed of two functional sets of building (i.e) complex A and C connected together by a foot bridge.

Western complex A, forming a gateway to Anandpur sahib, houses exhibition galleries, a two level library centred around a grand reading room that overlook water gardens, a storing rare archival material, and 400 seat auditorium.

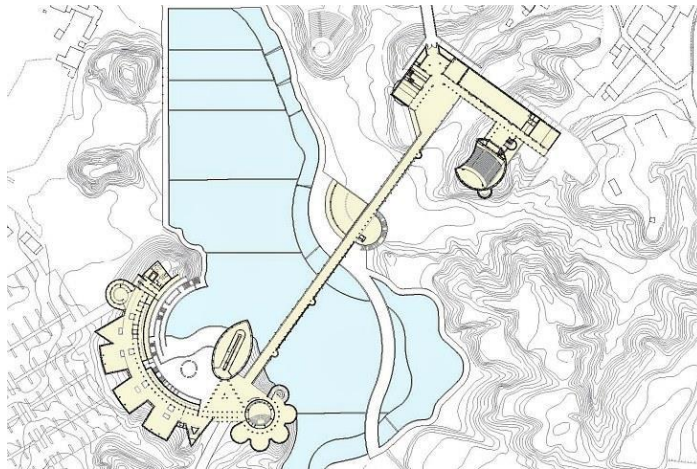
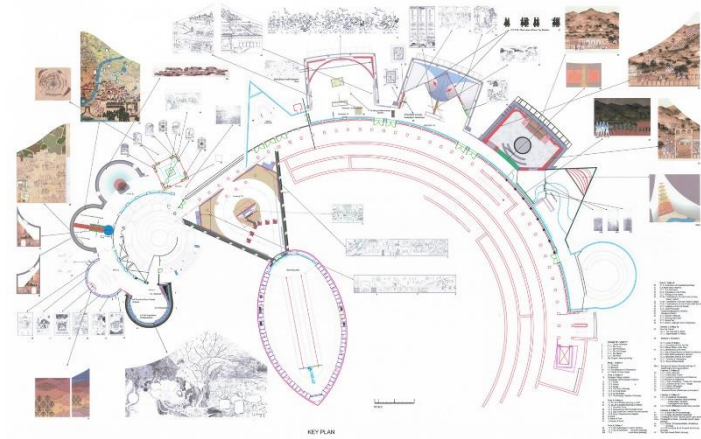
A 540- foot bridge from the western complex crosses a network of reflecting pools, providing access to eastern complex, which houses permanent exhibitions presenting sikh history, and culture.



2.5.1. Circulation and Spatial composition

The inside walls of the towering boat-shaped building have multiple colourful panels to create a three-dimensional effect, every inch hand-painted to perfection. The building also houses the largest hand-painted mural in the world, which uses a staggering 24,000 metres of fibre optics to illuminate it to depict Diwali.

The delightful experience begins at the Boat-shaped building 'Punj Paani- the first gallery depicting the past and the present of Punjab, as seen in its villages and towns. in Punjab. It is a static rendition that is brought alive with sound and light. You walk up the ramp discovering the socio-cultural aspects of daily life, tickled at the nuances and the detail of what is familiar and yet so unique about the state and its people- like details of the men washing hair on Sundays or life around the Gurudwara.



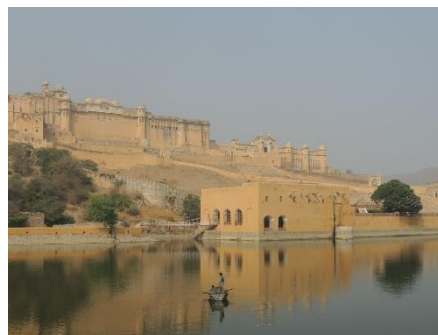
The second section deals with the establishing of Sikhism and the history of the Gurus. It uses mixed media and various kinds of craft to tell this story. There are miniatures, embroidery, metal, laser, oils, wood and anything else you can think of



the recorded narrative, stimulated by sensors as you move from one section to another is lyrical, poetic and factual at the same time. It tells stories like they need to be told

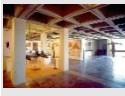
2.5.2. Architectural influence from culture

Clad with local sandstone and evoking the fortress cities of Rajasthan, Gwalior and Punjab, the Khalsa Heritage Centre acknowledges the Sikhs' history as celebrated warriors. The upwardly curving roofs of the museum's tower-like galleries are covered in stainless steel, designed in counterpoint to the rich tradition of gold domes that crown sacred Sikh buildings such as the Golden Temple in Amritsar.



2.6.1. COMPARITIVE ANALYSIS

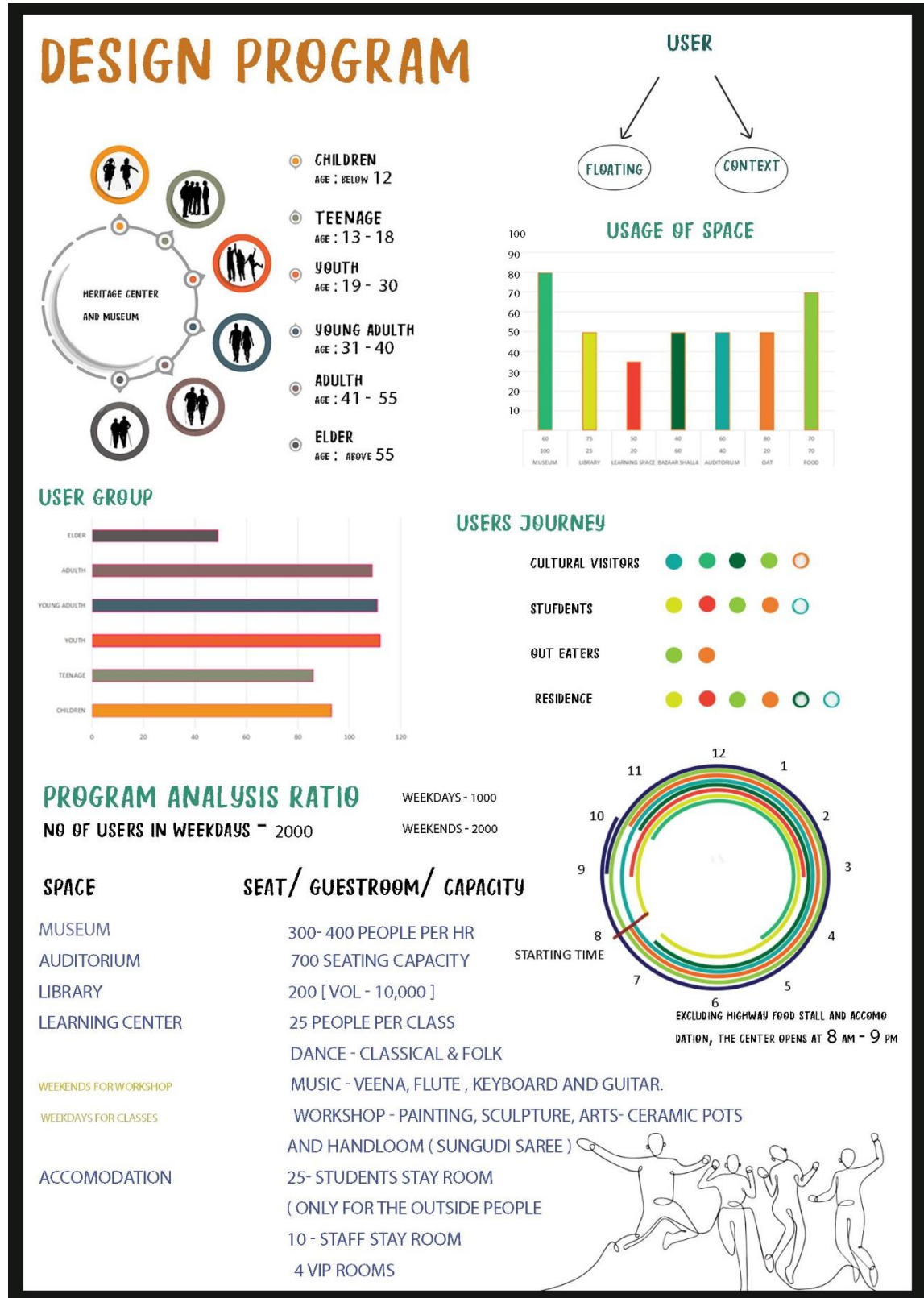
	Indian heritage centre	Heydar Aliyev Center	Bunjil Place	Bharat Bhavan	virasat-e-Khalsa	KADAMBAVANAM
Site location	Urban center	Urban center	towards developing	Urban center	Towards developing	Outskirts
Site access	2 side	4 side	4 side	2 side	2 side	1 side
Connectivity	2 major collector	1 major arterial 2 sub arterial 1 major collector	1 highway 2 major arterial 1 sub arterial	2 sub arterial	2 sub arterial	1 collector road
TYPOLOGY	Cultural centre public	Cultural centre public	Cultural centre public	Multi-arts complex and museum public	Museum complex public	– Resort cum cultural space semi public
DESIGN INTENT	To enhance Indian heritage	to express the sensibilities of Azeri culture and the optimism of a nation that looks to the future.	reinforces the history and diversity of the area	an institution to celebrate the cultural and creative output of the nation	To showcase the history and culture of Punjab	To live showcase the traditions and culture of Tamil nadu.

	Indian heritage center	Heydar Aliyev Center	Bunjil Place	Bharat Bhavan	virasat-e-Khalsa	B
Circulation	vertical	horizontal and vertical	horizontal and vertical	horizontal	horizontal and vertical	horizontal
Museum space	- 			- 		--
Lighting	Dark and artificial	Dark and artificial	Bright and artificial	Semi dark and artificial + natural	Dark and artificial	-

Auditorium capacity	-	967 seats	864 seats	1500	400 seats	
Innovation in structures	-	curved 'boot columns'	Supporting the dynamic roof forms	-	-	
Architectural influence	Indian stepped well	historical Islamic architecture	Eagle	sacred pathway	1) fortress cities of Rajasthan 2. rich tradition of gold domes	

3 PROGRAM AND STANDARDS

3.1 ARCHITECTURAL INFLUENCE FROM CULTURE



3.2 STANDARDS

- Standards are referred from TNCD & BR, Neuferts and TSS.

3.2.1 Administration

3.2.1.1 Planning

Social areas

Canteens or cafeterias (→ Catering, p. 174 ff.) are mostly operated as units by outside companies. Location near the reception and outside the access control allows outside visitors in.

Tea kitchens should be as near to the workstations as possible and connected with communication zones. For every approx. 50–100 workplaces, one ~10 m² kitchen.

Toilets

Sanitary facilities are to be provided in accordance with the Workplace Regulations (→ p. 270) and separation between the anteroom with washbasins and the actual toilets is important. A good ratio is one toilet unit per 50–80 workstations. Space requirement ~0.6–0.8 m² per workstation.

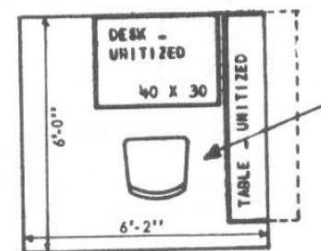


FIGURE 13-A - 37 SQ. FT.

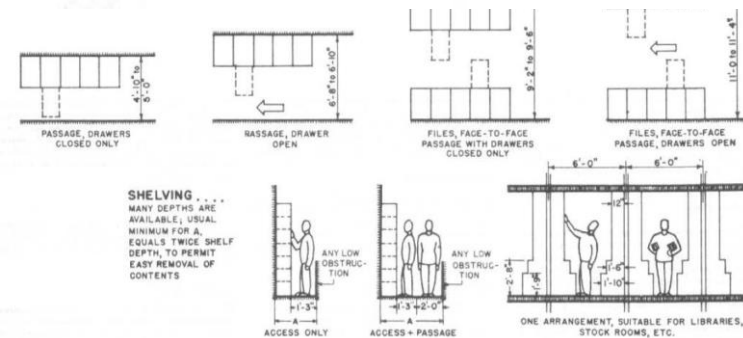
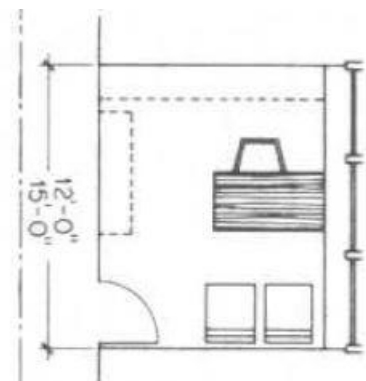
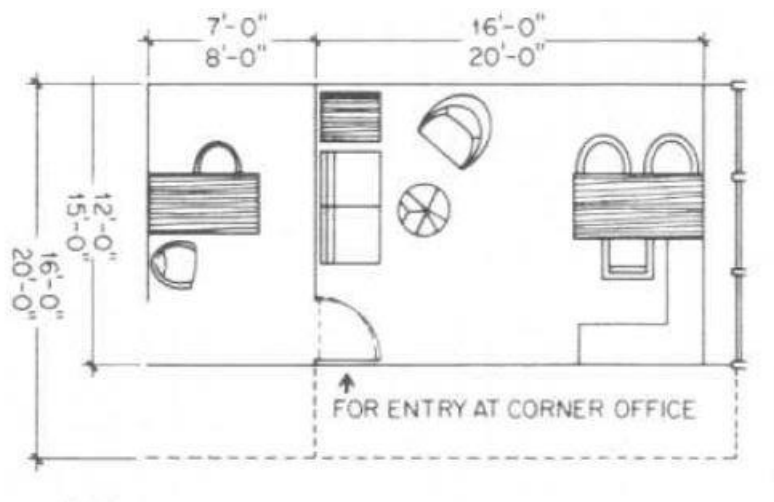
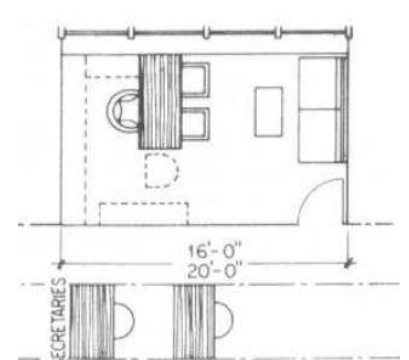


Fig. 3 Standard clearances for legal and letter-sized files.



Special Rooms Allowance

Depending on the type of business, offices will require rooms of a size matched to their use.

These will include:

1. Reception room
2. Waiting room
3. Interviewing room
4. Examination room
5. Conference room
6. Exhibit room
7. Medical room
8. Lunchroom
9. Employee lounge
10. Rest room
11. Mail room

The more common rooms will have the following typical space allotments, based on their use by 15 people.

	Square feet
Reception room	400
Waiting or interviewing room	200
Conference room	500

Office Space Allowance

The following typical allowances include space for departmental aisles, space to move about, space for occasional visitors and consultation, rest rooms, fountains, special files, general office equipment, bookcases, and coat racks. It does not include main aisles, corridors, or the space covered by the other four space categories.

	Square feet
Top executive	400-800
Junior executives	100-200
Supervisors	80-100
Operator at 60 in. desk	55
Operator at 55 in. desk	50
Operator at 50 in. desk	45

3.2.1.2 Sanitation

3.	Urinals	Nil upto 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons From 101 to 200 add at the rate of 3%; For over 200 persons add at the rate of 2.5%.	--
4.	Wash Basins	One for every 25 persons or part thereof	One for every 25 persons or part thereof
5.	Drinking water fountains	One for every 100 persons with a minimum of one on each floor	One for every 100 persons with a minimum of one on each floor
6.	Cleaner's Sinks	One per floor minimum; preferably in or adjacent to sanitary rooms.	--
7.	Executive Room / Conference Hall	Toilet Suite (1 WC, 1 washbasin, optional shower for 24 hr usage) Unit could be common for Male / Female or separate depending on the number of user of each facility	

Note: One water tap with drainage arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closet and urinals.

3.2.1.1 Parking

(5) Other Offices including regional offices of banks, etc.

(A) Corporation or Municipal Areas	(B) Panchayat Areas
1 car space for every 100sq.m of floor area or part thereof and 1 two wheeler space for every 25sqm of floor area or part thereof	1 car space for every 100sq.m of floor area or part thereof and 1 two wheeler space for every 25sqm of floor area or part thereof
Visitors Parking: In addition to the parking spaces specified above, parking spaces for visitors shall be provided to the extent of 10% of the number stipulated above subject to a minimum of 1 car space and 1 Two wheeler space.	

3.2.2 Museum

3.2.2.1 Planning

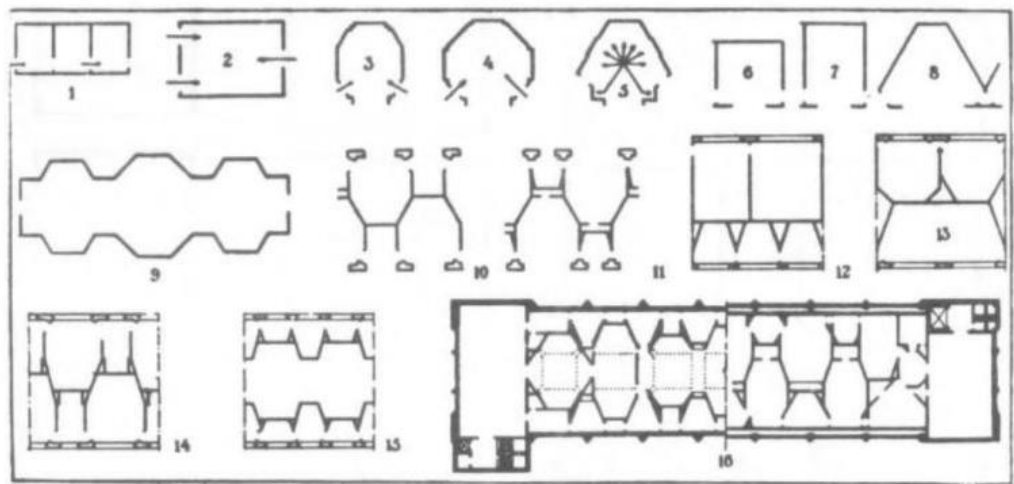


Fig. 2 (a) to (d) Floor plans for the location of doors in relation to the use of space. (e) 1 - Traditional location of doors. 2 to 8 - Secondary doors. 9 to 15 - Polygonal enclosures.

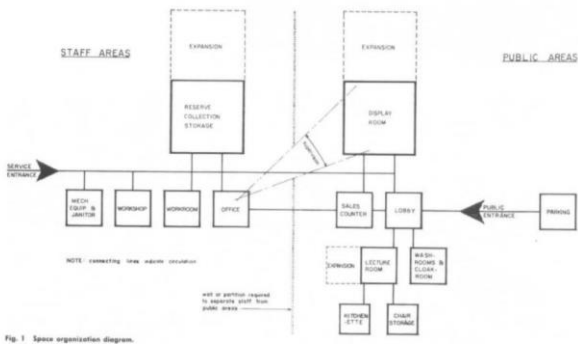


Fig. 1 Space organization diagram.

Functions	Space required
1. Curatorial Functions	
a. Collection, preservation, identification, documentation, study, restoration.	a. Office-workroom, Workshop
b. Storage of collections.	b. Reserve Collection Room
2. Display Function	
Thematic and changing displays of selected objects and documents from the collections arranged to tell a story.	Display Gallery
3. Display Preparation Function	
The preparation of exhibits.	Workshop, Office-workroom
4. Educational and Public Functions	
This term has been expanded to include all public functions.	
a. Lectures, school tours, society meetings, films, and social functions.	a. Lecture room, Chair storage closet, Kitchenette
b. Reception, information, sales, supervision of display gallery.	b. Lobby Sales and Information Counter
c. Public requirements.	c. Cloak room, Washrooms
5. Other Services	
a. Mechanical.	a. Heating-ventilation plant
b. Janitorial.	b. Janitor's closet

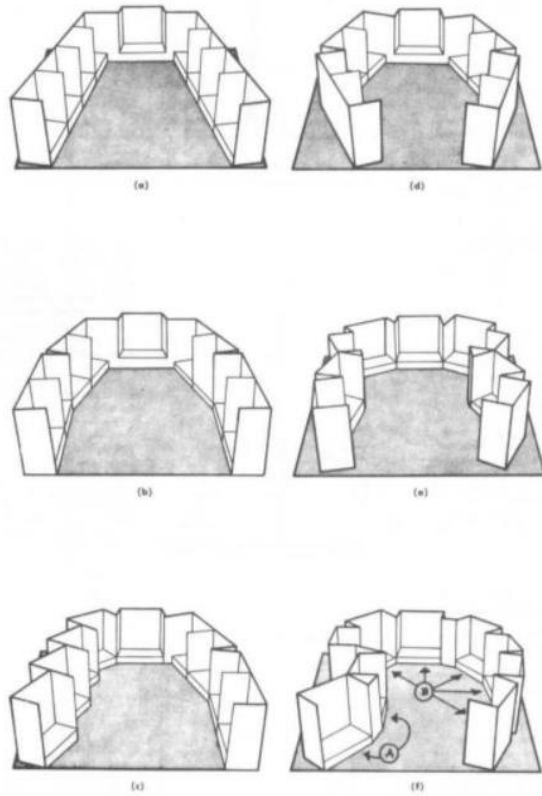
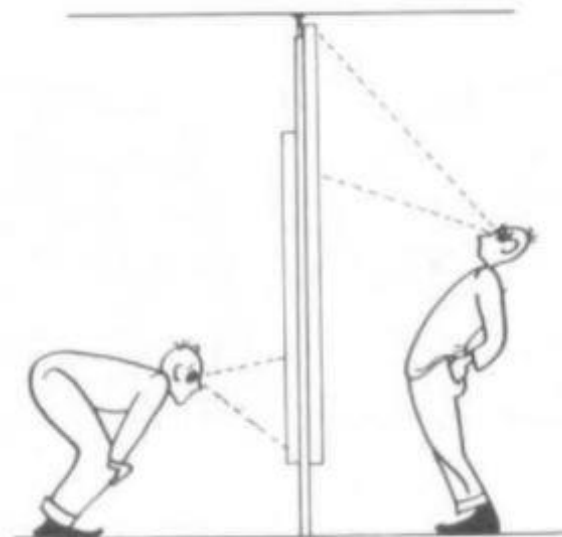
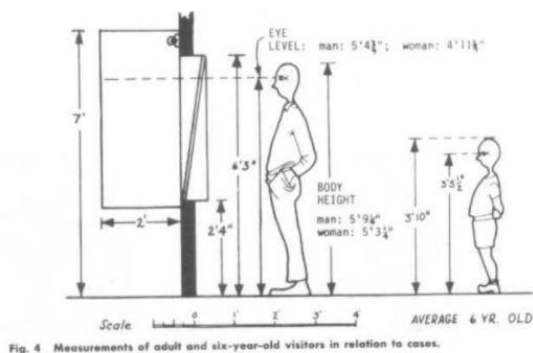
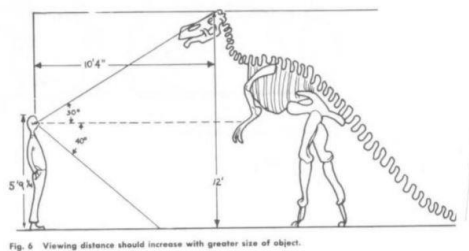
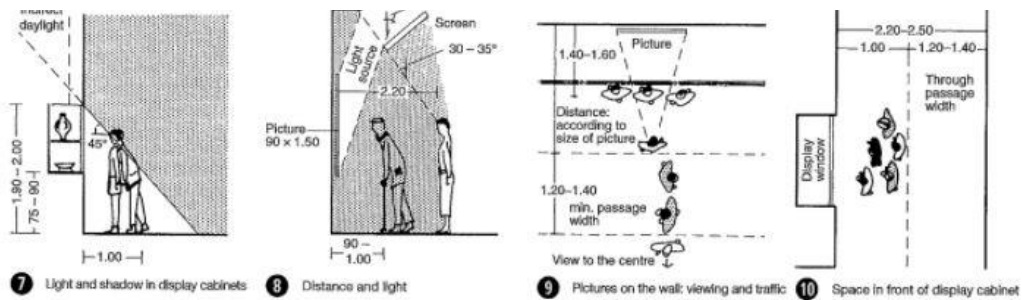
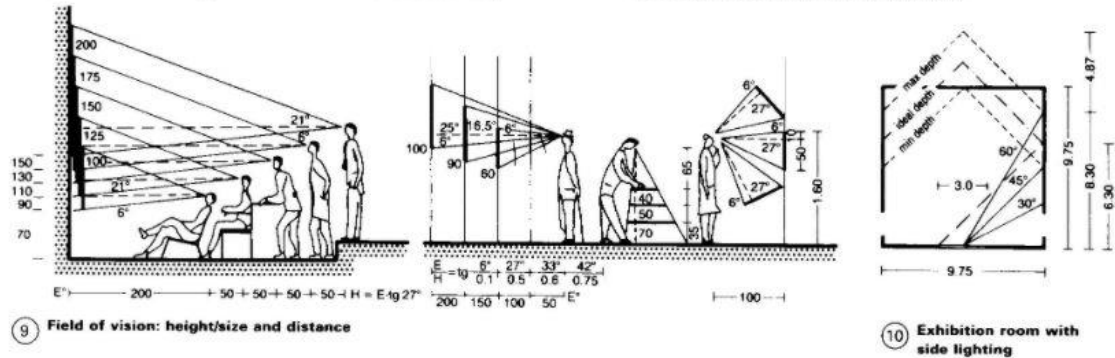
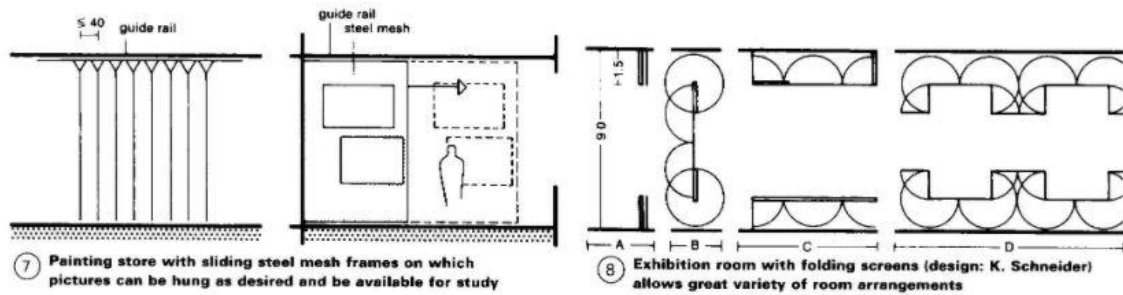
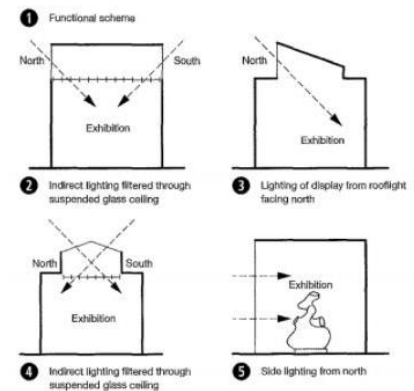
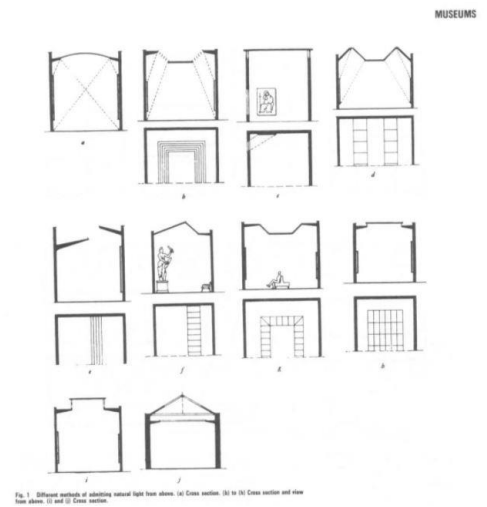
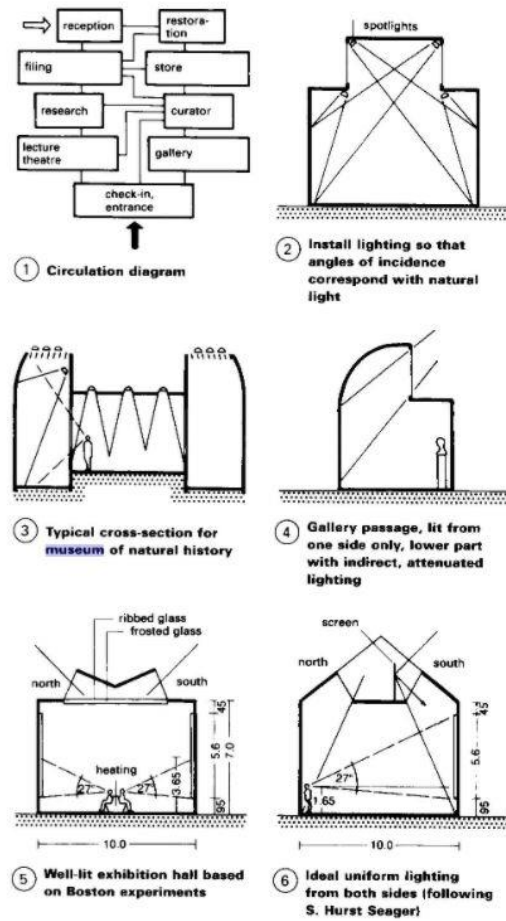


Fig. 7 Possible gallery arrangements.

3.2.2.2 View Angle



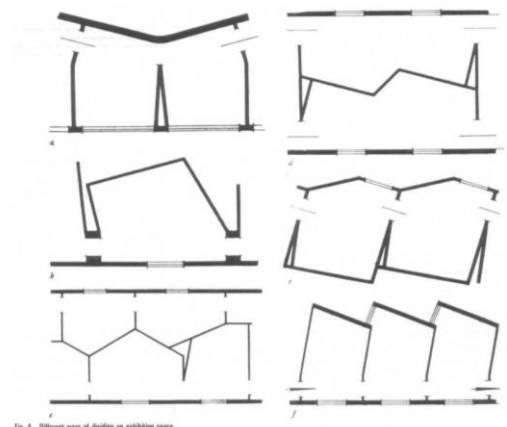
3.2.2.2 Lighting



3.2.2.2 sanitation

Table:9 Sanitation Requirements for Assembly Buildings (Art, Galleries, Libraries and Museums)

Sl. No.	Sanitary Unit	For Public		For Staff	
		Male	Female	Male	Female
1.	Water Closet (W.C.)	One for 200 persons upto 400 persons. For over 200 persons, add at the rate of 1 per 250 persons or part thereof	One per 100 persons upto 200 persons. For over 200 persons, add at the rate of 1 per 150 persons or part thereof	One for 1-15 persons. Two for 16-35 persons	One for 1-12 persons. Two for 13-25 persons, add at the rate of 1 per 6 persons or part thereof
2.	Ablution Taps	One in each W.C.	One in each W.C.	One in each W.C.	One in each W.C.
3.	Urinals	One for 50 persons or part thereof	--	Nil upto persons One for 7-20 persons Two for 21-45 persons	--
4.	Wash Basins	One for every 200 persons or part thereof. For over 400 persons, add at the rate of 1 per 250 persons or part thereof.	One for every 200 persons or part thereof. For over 200 persons, add at the rate of 1 per 150 persons or part thereof	One for 1-15 persons Two for 16-35	One for 1-12 persons Two for 13-25 persons
5.	Cleaner's Sink	One per floor, minimum			
6.	Drinking Water Fountain	One per 100 persons or part thereof			
7.	Shower/Bath	As per each kitchen			



3.2.3 Library

3.2.3.1 Spacing

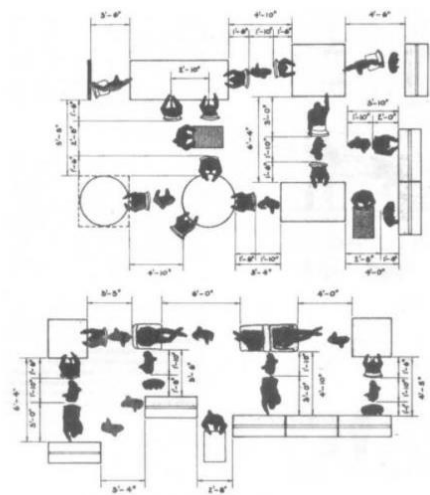
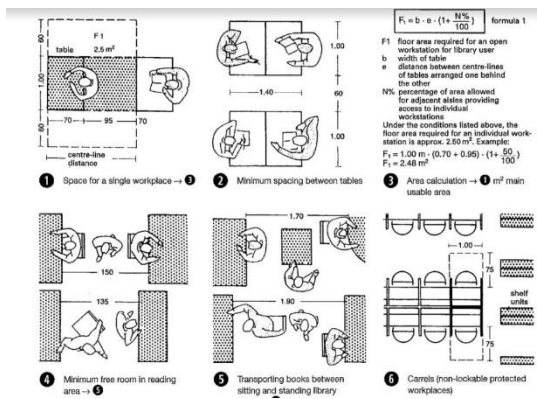


Fig. 5. Minimum clearances for people and equipment in reading rooms.

TABLE 2 Guidelines for Determining Minimum Space Requirements
Library Space*

Population served	Size of book collection, volumes	Linear feet of shelving†	Amount of shelving, sq. ft.	Reader space, sq. ft.	Staff work space, sq. ft.	Estimated additional space needed, sq. ft.	Total space, sq. ft.
Under 1,499	10,000	1,500	1,000	Min. 400 for 13 seats, at 30 sq ft per reader space	300	300	2,000
2,500-4,999	10,000-15,000	1,500-2,500	1,000-2,500	Min. 500 for 15 seats, at 30 sq ft per reader space Add 5 seats per 1,000 over 10,000 Add 4 seats per 1,000 over 15,000 Add 3 seats per 1,000 over 20,000	300	700	2,900, or 2.7 sq ft per reader, which may be greater
5,000-9,999	15,000-20,000	2,500-3,500	2,500-3,500	Min. 700 for 23 seats, at 30 sq ft per reader space Add 1 seat per 1,000 over 15,000 Add 1 seat per 1,000 over 20,000 Add 1 seat per 1,000 over 25,000	500	1,500	3,700, or 2.7 sq ft per reader, which may be greater
10,000-24,999	20,000-30,000	3,500-5,000	3,500-5,000	Min. 1,200 for 40 seats, at 30 sq ft per reader space Add 1 seat per 1,000 over 20,000 Add 1 seat per 1,000 over 25,000 Add 1 seat per 1,000 over 30,000	1,000	1,800	4,000, or 2.7 sq ft per reader, which may be greater
25,000-49,999	30,000-50,000	5,000-7,500	5,000-7,500	Min. 2,200 for 73 seats, at 30 sq ft per reader space Add 1 seat per 1,000 over 25,000 Add 1 seat per 1,000 over 30,000 Add 1 seat per 1,000 over 35,000	1,500	3,200	5,900, or 2.8 sq ft per reader, which may be greater

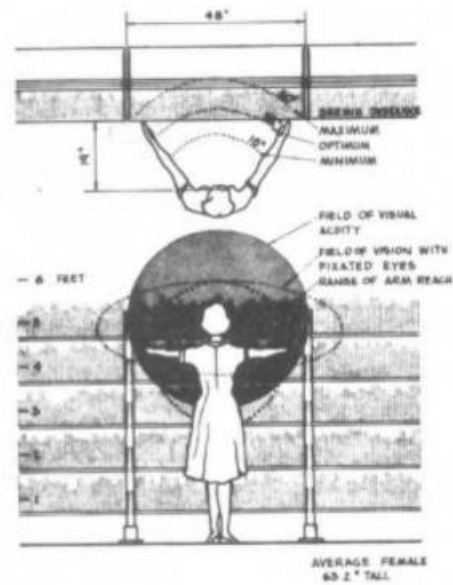


Fig. 8. Study for feasibility of scanning the 48-in. shelf.

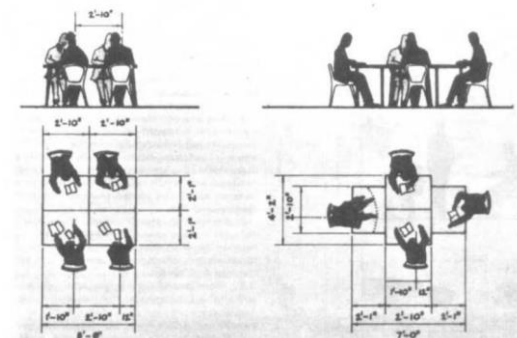


Fig. 6. Table space requirements for readers.

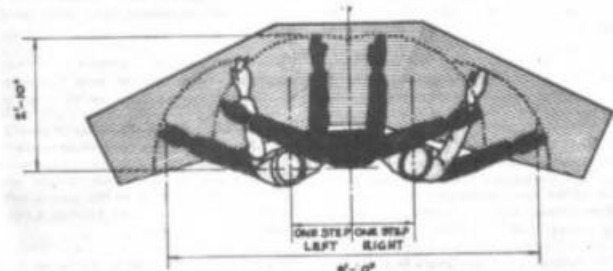
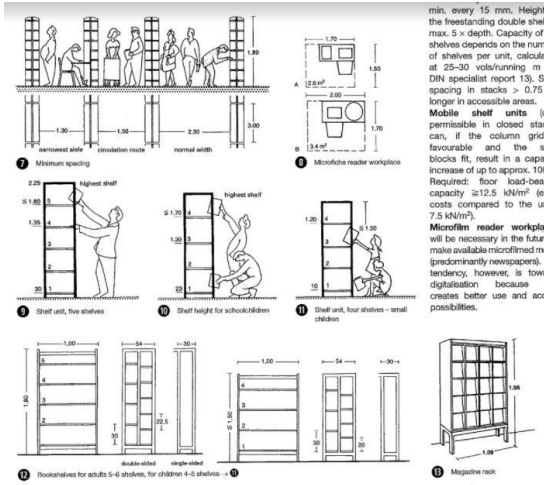


Fig. 9. Study for charge desk—maximum usable space from one position or station.

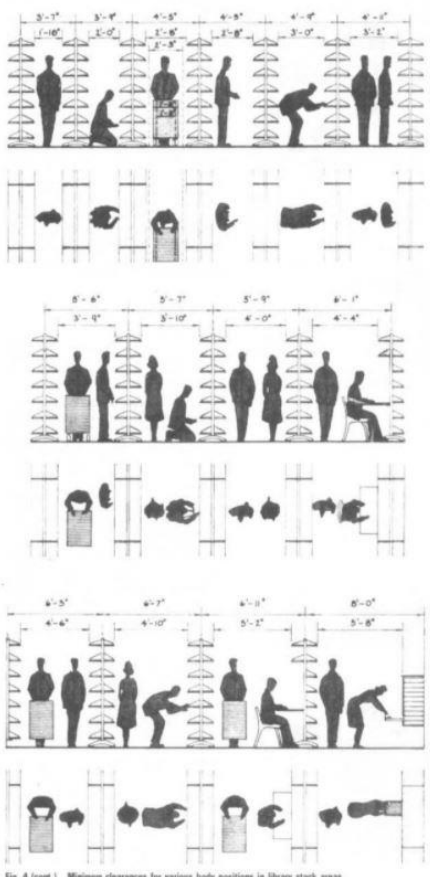
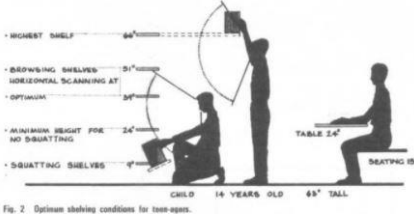
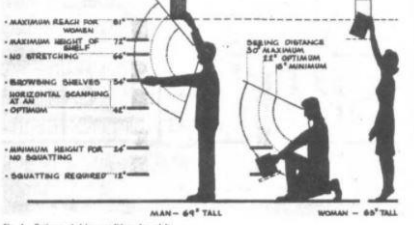
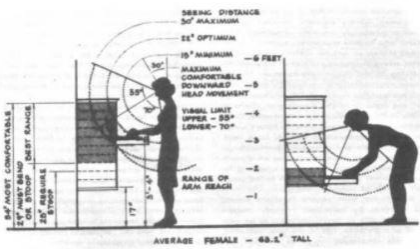
3.2.3.1 Shelf

TABLE 5 Book Shelving Capacity (Approx.)

No. of 3 ft sections	Single-face sections			Double-face sections			Lineal ft of 3 ft shelving sections
	High—7 shelves	Medium—5 shelves	Counter—3 shelves	High—7 shelves	Medium—5 shelves	Counter—3 shelves	
1	150	105	65	300	210	130	3
2	300	210	130	600	420	260	6
3	450	315	195	900	630	390	9
4	600	420	260	1,200	840	520	12
5	750	525	325	1,500	1,050	650	15
6	900	630	390	1,800	1,260	780	18
7	1,050	735	455	2,100	1,470	910	21
8	1,200	840	520	2,400	1,680	1,040	24
9	1,350	945	585	2,700	1,890	1,170	27
10	1,500	1,050	650	3,000	2,100	1,300	30
11	1,650	1,155	715	3,300	2,310	1,430	33
12	1,800	1,260	780	3,600	2,520	1,560	36
13	1,950	1,365	845	3,900	2,730	1,690	39
14	2,100	1,470	910	4,200	2,940	1,820	42
15	2,250	1,575	975	4,500	3,150	1,950	45
16	2,400	1,680	1,040	4,800	3,360	2,080	48
17	2,550	1,785	1,105	5,100	3,570	2,210	51
18	2,700	1,890	1,170	5,400	3,780	2,340	54
19	2,850	1,995	1,235	5,700	3,990	2,470	57
20	3,000	2,100	1,300	6,000	4,200	2,600	60

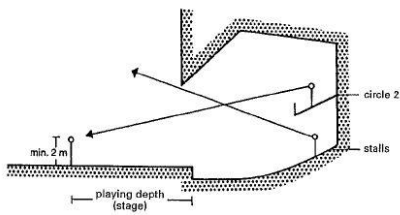


min. every 15 mm. Height the freestanding double shelving max. 5 x depth. Capacity of shelves depends on the num. of shelves per unit, calculat. at 25-30 vol/shelving m. DIN specialist report 13). Si spacing in stacks > 0.75 longer in accessible areas. Mobile shelving units (c. permissible in closed stack can, if the column grid favourable and the si blocks fit, result in a capa. increase of up to approx. 10%. Required: floor load-bear capacity > 12.5 kN/m² (in costs compared to the us 7.5 kN/m²). Microfilm reader workpla will be necessary in the futur make available microfilm ms (predominantly newspapers). tendency, however, is tow digitalisation because creates better use and acc possibilities.

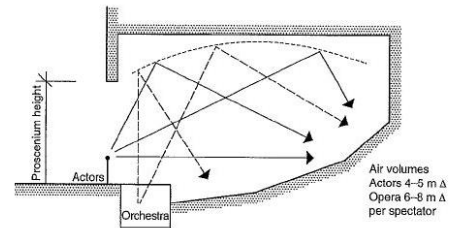


3.2.4 Auditorium

5 Field of perception and proportions of the proscenium arch



6 Tiered theatre and view of stage



7 Acoustics must be adapted through appropriate measures like ceiling shape or acoustic 'sails' → p. 220

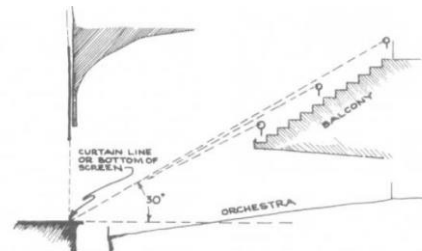
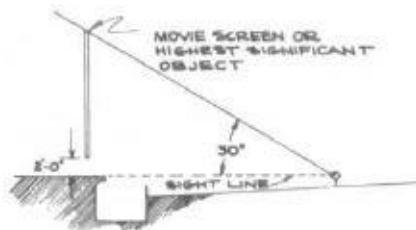
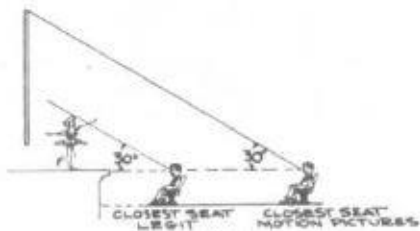
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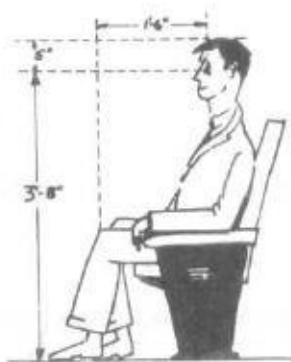
Fig. 19 Maximum tolerable downward sight line angle from balcony.



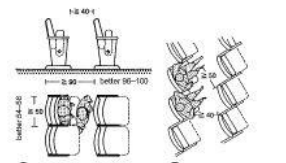
(a)



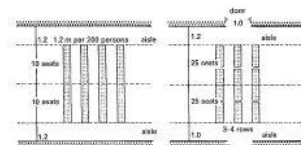
(b)



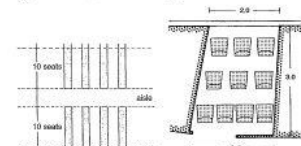
(c)



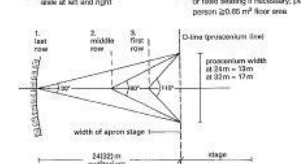
- Seating must be fixed according to Places of Assembly Regulations. Minimum dimensions are not adequate for theatres!
- Staggered folding seats offer freedom for elbows.



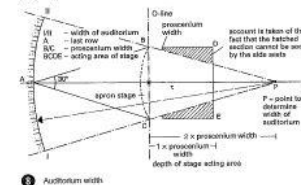
3 Row width 20 places



5 Row width max. 10 places, side
width on left and right.



7 Proportions of traditional auditorium plan



100

Auditorium and black-box theatre

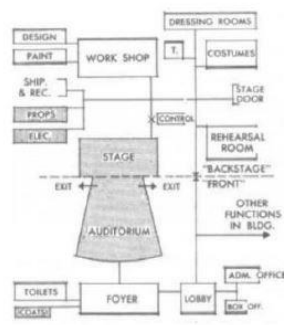


Fig.227: Functional layout of an auditorium

An auditorium consists of several functions which can be grouped into three main categories:

1. Front of the house
2. Stage and seating space
3. Back of the house

Front of the house

The front of the house is dedicated to the audience and houses all facilities required by the audience before, during and after the show. It consists of:

1. The prefunction lobby
2. Box office
3. Cloak rooms
4. Waiting lounge
5. Toilets
6. F&B Bar

Seating areas

- **Sizing:** An area of atleast 0.5 sq.m. per spectator is to be used for sitting spectators.
- **Length of rows:** A maximum of 16 seats per aisle; 25 seats per aisle is permissible if one side exit door of 1 m width is provided for every 3-4 rows. The National Building Code recommends having not more than 14 seats in a two-aisle row and not more than 7 seats for a single-aisle row.
 - The spacing of rows of seats from back to back shall be neither less than 850 mm nor less than 700 mm plus the sum of the thickness of the back and inclination of the back. There shall be a space of not less than 350 mm between the back of one seat and the front of the seat.
- **Exits, escape routes:** 1 m wide per 150 people (as per Neuferts standards). NBC recommends exit

widths of 2000 mm.

- Clear aisles of min. 1.2 m shall be provided such that no seat is more than seven seats away from the aisle. Cross-aisles shall be provided parallel to the line of seating to provide direct access to the exit (min. of one cross-aisle for every 10 rows of seating. The width of the cross aisles shall be minimum 1 m.
- For an auditorium of this capacity, atleast 3 exits have to be provided.

- **Proportions of auditorium (classical):** Maximum distance of last row from the proscenium line ('start of stage):
 - for playhouse - 24 m (maximum distance from which it is still possible to recognise facial expressions)
 - for opera - 32 m (important movements still recognisable)

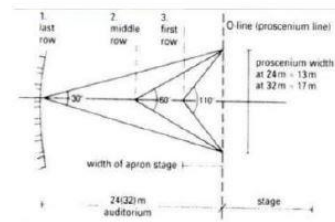


Fig.228: Optimal auditorium widths

3.2.4.1 Sanitation

Table:8 Sanitation Requirements for Assembly Occupancy Buildings (Cinema, Theaters, Auditoria. etc.)

Sl. No.	Sanitary Unit	For Public		For Staff	
		Male	Female	Male	Female
1.	Water Closet	One for 100 persons upto 400 persons. For over 400 persons, add at the rate of 1 per 250 persons or part thereof	Two per 100 persons upto 200 persons. For over 200 persons add at the rate of 1 per 100 persons or part thereof	One for 15 persons. Two for 16-35 persons	One for 1-12 persons. Two for 13-25 persons add at the rate of 1 per 6 persons or part thereof
2.	Ablution Taps	One in each W.C.	One in each W.C.	One in each WC	One in each WC
3.	Urinals	One for 50 persons or part thereof	—	Nil upto 6 persons One for 7-20 persons Two for 21-45 persons	—
4.	Wash Basins	One for every 200 persons or part thereof	One for every 200 persons or part thereof	One for 1-15 persons Two for 16-35	One for 1-12 persons Two for 13-25 persons
5.	Drinking Water Fountain	One per 100 persons or part thereof			
6.	Cleaner's sink	One per floor			
7.	Shower / Bathing	As per trade requirement			

Note: - i) One water tap with draining arrangements shall be provided for every 50 persons or part

thereof in the vicinity of water closets and urinals.

ii) It may be assumed that two thirds of the numbers are males and one third females.

3.2.4.2 Parking

(12) Auditorium, Kalyana Mandapams, Cinema Halls

(A) Corporation/ Municipal Areas	(B) Panchayat Areas
1 car space and 1 two wheeler space for the every 20sq.m of Auditorium/Kalyana Mandapam area or part thereof	1 car space and 1 two wheeler space for the every 50sq.m of Auditorium/Kalyana Mandapam area or part thereof

3.2.5 Restaurant

TABLE 1 Square Feet per Seat Used for Various Types of Food Operations

Type of operation	Square feet per seat
Cafeteria, commercial	18-18
Cafeteria, college and industrial	12-15
Cafeteria, school lunchroom	9-12
College residence, table service	12-15
Counter service	18-20
Table service, hotel, club restaurant	15-18
Table service, minimum eating	11-14
Banquet, minimum	10-11

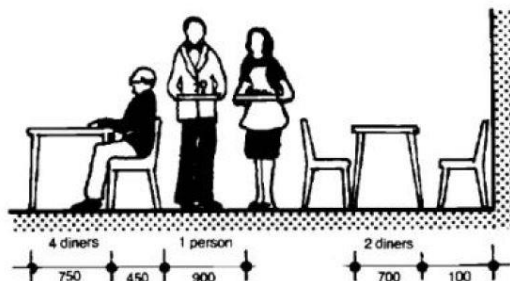


Fig.250: Aisle width

Work aisle guide	Width, in.
For 1 person working	24 to 36 (Keep to minimum)
For 2 persons working back to back	42
For personnel who must pass equipment which projects into the aisle	30 + the distance of projection into the aisle
Traffic aisle guide	
For 2 persons to pass	30
For 1 truck to pass one person — one-way traffic	24 + maximum truck width
For 2 trucks to pass — one-way traffic	20 + maximum truck width
For 2 trucks to pass — two-way traffic	30 + the sum of truck widths
Multi-usage aisle guide (these are not recommended but must sometimes be employed)	
For personnel passing 1 worker at his station	42
For personnel passing 2 workers, back-to-back at their stations	48
For trucks passing 2 workers, back-to-back at their stations	80 + truck width

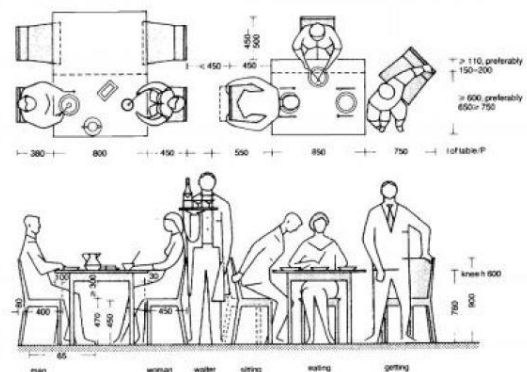


Fig.252: Table seating with dimensions

3.2.5.1 Sanitation

Table :10 Sanitation Requirements for Restaurants

Sl. No.	Sanitary Unit	For Public		For Staff	
		Male	Female	Male	Female
1.	Water Closet (W.C.)	One per 50 seats upto 200 seats. For over 200 seats, add at the rate of 1 per 100 seats or part thereof	One per 50 seats upto 200 seats. For over 200 seats, add at the rate of 1 per 100 seats or part thereof	1 for 15 persons. 2 for 16-35 persons. 3 for 36-65 persons. 4 for 66-100 persons.	1 per 1-12 persons. 2 for 13-25 persons. 3 for 26-40 persons. 4 for 41-57 persons. 5 for 58-77 persons. 6 for 78-100 persons.
2.	Ablution Taps	One in each W.C.	One in each W.C.	One in each W.C.	One in each W.C.
3.	Urinals	One for 50 persons or part thereof	--	Nil upto 6 persons. 1 for 7-20 persons. 2 for 21-45 persons. 3 for 46-70 persons. 4 for 71-100 persons.	--

4.	Wash Basins	One for every water closet
5.	Kitchen Sinks & Dish Washer	One per each Kitchen
6.	Service Sink	One in the restaurant

3.2.5.1 Parking

(10) Restaurants and Hotels

(a) Restaurants, Fast Food outlets	
(A) Corporation or Municipal Areas	(B) Panchayat Areas
1 car space for every 50sq.m of floor area or part thereof and 1 two wheeler space for every 25sq.m of floor area or part thereof	1 car space for every 100sq.m of floor area or part thereof and 1 two wheeler space for every 50sq.m of floor area or part thereof

3.2.6 Learning center

3.2.6.1 Classroom

Seminar rooms

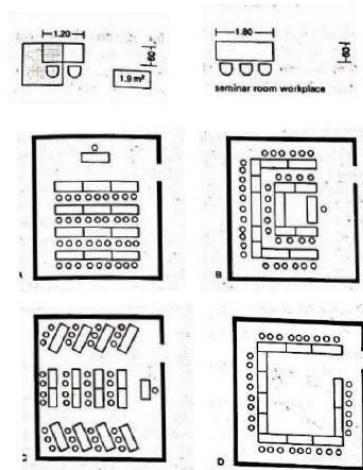


Fig. 220 Seminar hall arrangements

Classrooms

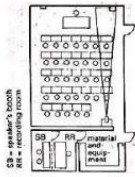


Fig. 221: Language labs

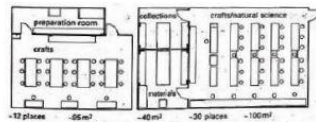


Fig. 222: Craft teaching areas

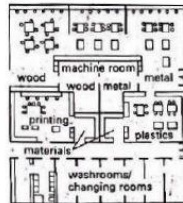


Fig. 223: Handicrafts classrooms

Area per pupil in traditional classrooms: 2 sq.m., for teaching in sets: 3 sq.m., for open plan teaching: 4.5 sq.m. including ancillary areas. Standard room shape: rectangular or square (12 m x 20 m, 12 m x 16 m, 12 m x 12 m, 12 m x 10 m)

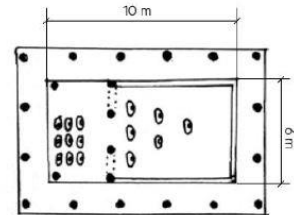


Fig. 224: Traditional dance classroom

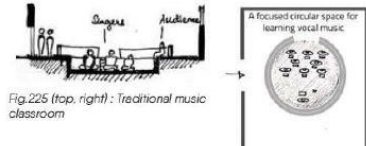
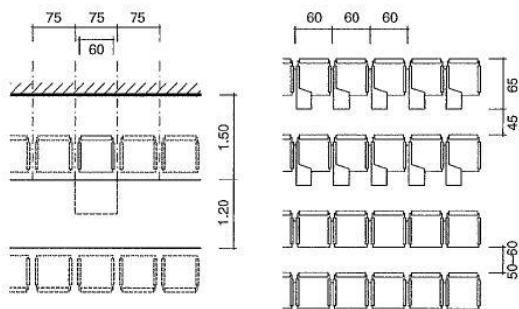
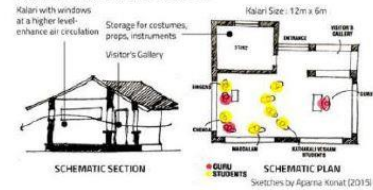
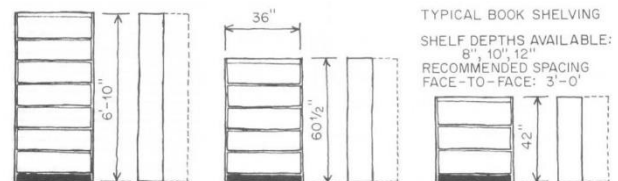


Fig. 225 (top, right): Traditional music classroom

Fig. 226 (below): Kathakali classroom



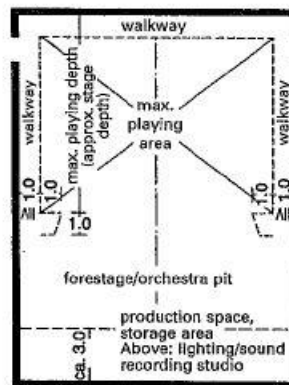
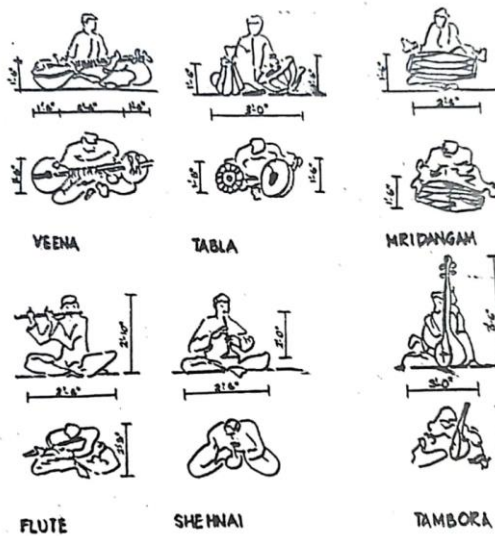
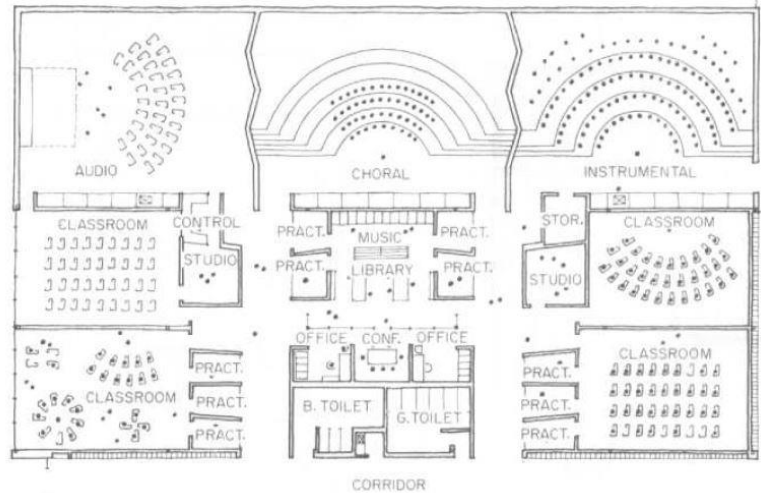
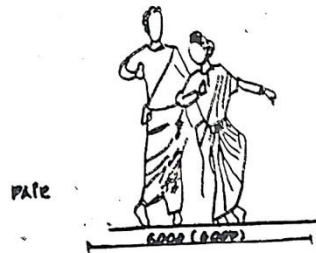
2 Space requirement for seating in conference and training rooms



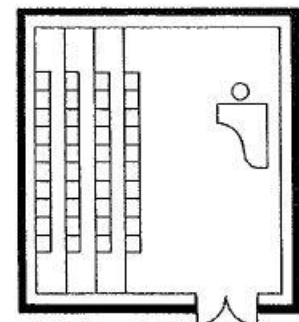
APPROXIMATE BOOK CAPACITY PER 3' SINGLE-FACE SECTION:
HIGH SHELF UNIT: 150; MEDIUM SHELF UNIT: 105; LOW SHELF UNIT: 65

Fig. 43

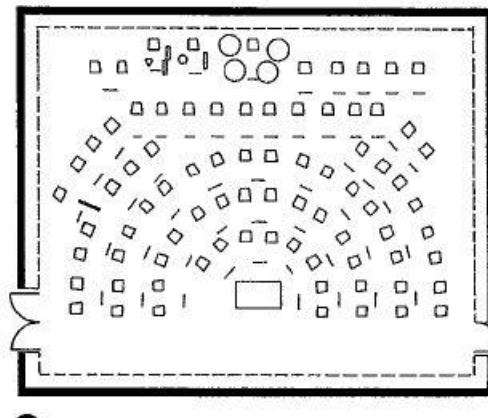
3.2.6.2 Music & Dance



1 Large rehearsal stage, typical plan



2 Chorus rehearsal room, typical plan



ca. 2.0-2.4m²/musician
ca. 8.0-10m³/musician

3.2.7 Bazaar

3.2.7.1 Sanitation

Table: 1. Sanitation requirements for shops and Commercial Offices

Sl. No.	Sanitary Unit/ Fittings	For Personnel
1.	Water closet	One for every 25 persons or part thereof, exceeding 15 (including employees and customers). For female personnel 1 for every 15 persons or part thereof, exceeding 10.
2.	Drinking Water Fountain	One for every 100 persons with a minimum of one on each floor.
3.	Wash Basin	One for every 25 persons or part thereof.
4.	Urinals	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 40-70 persons 4 for 71-100 persons From 101 to 200 add at the rate of 3%; For over 200 persons add at the rate of 2.5%.
5.	Cleaners' Sink	One per floor minimum, preferably in or adjacent to sanitary rooms.

Note: Number of customers for the purpose of the above calculation shall be the average number of persons in the premises for a time interval of one hour during the peak period. For male-female calculation a ratio of 1: 1 may be assumed.

3.2.7.2 Parking

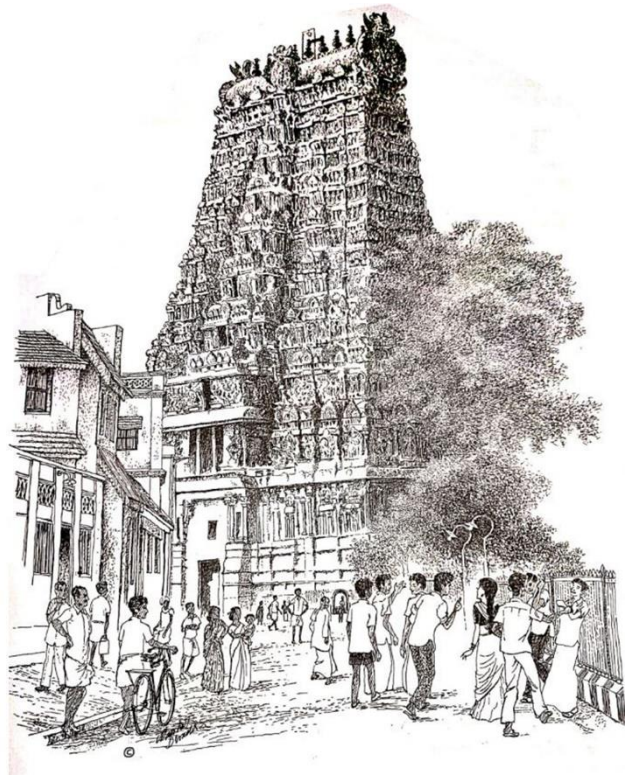
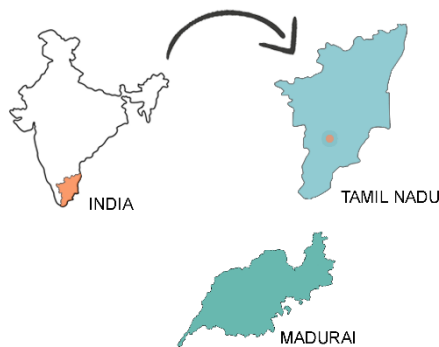
(2) Shops/Shopping Centres/Departmental Stores/Super Markets

(A) Corporation or Municipal Areas		(B) Panchayat Areas	
Floor Area	Number of Parking Spaces	Floor Area	Number of Parking Spaces
Upto 50 sq.m	Nil	Upto 75 sq.m	Nil
Above 50 sq.m	1 car space and 1 Two wheeler space for every 50 sq.m or part thereof excluding the first 50 sq.m	Above 75 sq. m	1 car space and 1 Two wheeler space for every 75 sq.m or part thereof excluding the first 75 sq.m

4 SITE STUDY

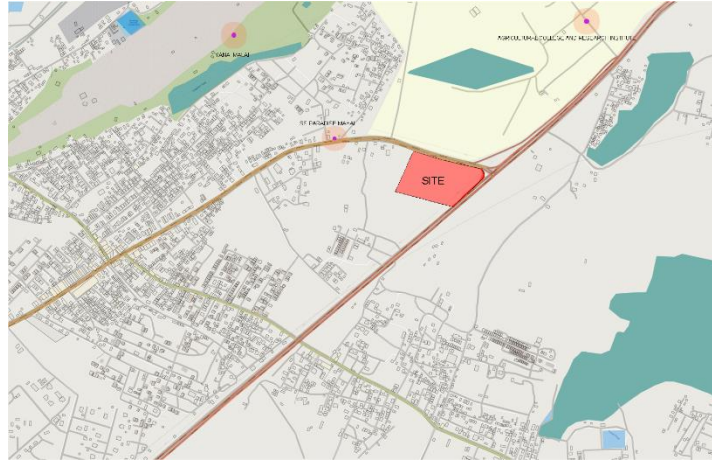
4.1 SITE CONTEXT

4.1.1 Location



Madurai is one of the ancient cities of South India with a glorious history. It is famous for its world acclaimed Meenakshi Sundareshwarar Temple. The city of Madurai has been constructed in the form of a lotus and is built around the temple. It is situated on the banks of the river Vaigai. Owing to its rich cultural heritage and architectural splendor, the city is often referred to as the 'Athens of the East'. The origin of Madurai dates back to the Sangam period, the golden period of Tamil Literature. The ancient history of the region is associated with the Pandya kings, and Madurai was the site of the Pandya capital.

According to mythology Madurai was earlier a forest called Kadambavanam. Once a merchant passing through the forest saw Indran, the King of Gods worshipping a Swayambhulingam under a Kadam tree. This was immediately reported to King Kulsekarer Pandayan. The king cleared the forest and built a splendid temple, known as the Sri Meenakshi Sundareshwarer Temple, around the holy Lingam and later built a beautiful lotus-shaped city surrounding the temple.



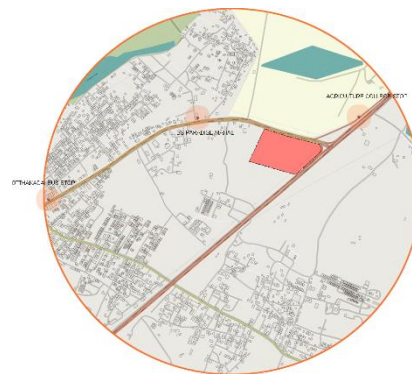
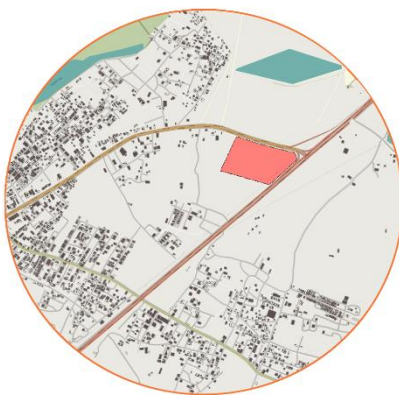
4.1.2 Landuse

JSL



High use of I and is for residence, and melur main road is a stretch of commercial and mixed use zone. Since there is more residence, public realm in this site, will be utilized to the fullest by the surrounding people

4.1.3 Figure and ground



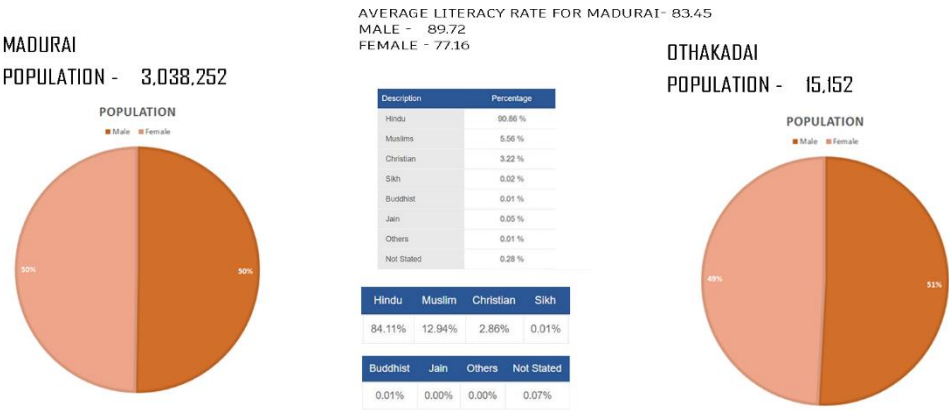
Ratio of void space is more then solid, because this place developing and also existence of farm land.

NH- 38 which connects chennai to Thiruvananthpuram,Thiruchendur, Thoothukudi, Nagercoil, Thirunelveli,Kanyakuma

4.1.5 Chronology



4.1.6 Demography



4.1.7 Occupation

Most of the people are traders and madurai is well worth in handloom industry espeacially for sungudi saree. people around this site are working in brick klins, timbers, it and in farming.



4.1.8 Tourist

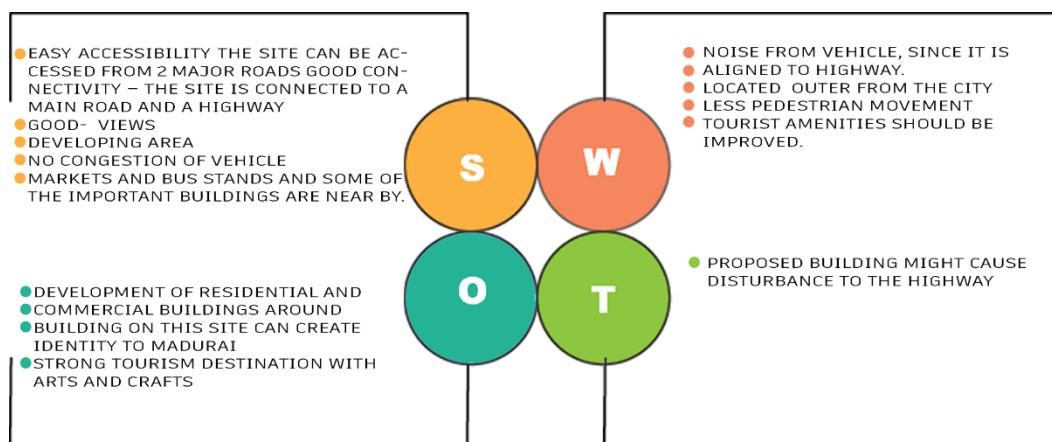
Sex	Domestic		Foreign	
	Number	Percentage (%)	Number	Percentage (%)
Male	222	65.68	129	79.63
Female	116	34.32	33	20.37
Total	338	100.00	162	100.00

Purpose	Domestic		Foreign	
	Number	Percentage (%)	Number	Percentage (%)
Leisure (sight-seeing)	231	68.34	98	60.49
Health	28	8.28	19	11.73
Religion	38	11.24	--	--
Education	11	3.25	38	23.46
Visiting Friends	10	2.96	--	--
Business	11	3.25	--	--
Others	9	2.68	7	4.32
Total	338	100.00	162	100.00

4.1.9 Local material

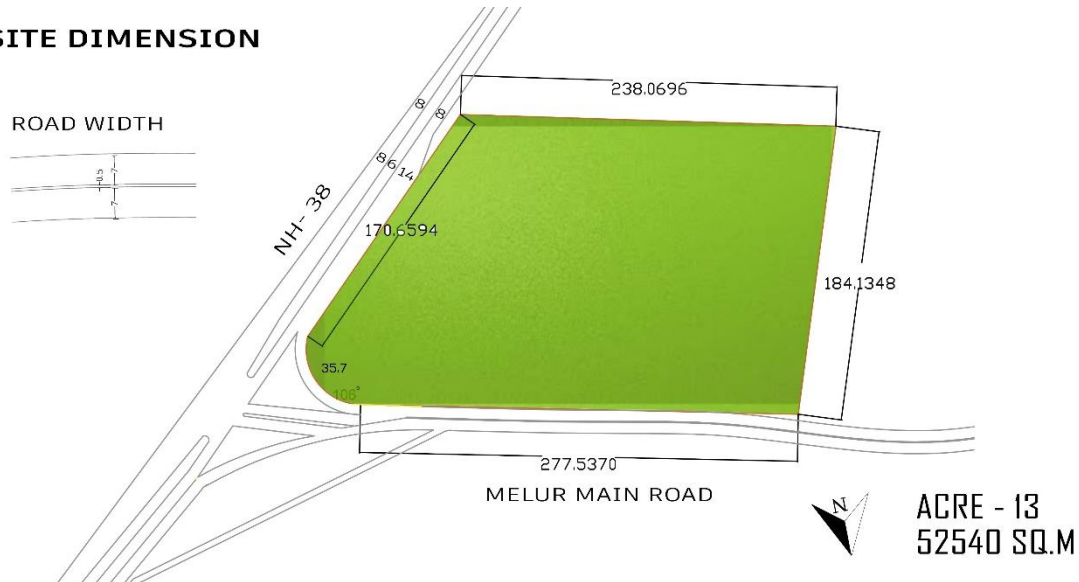


There is a lot of brick klin at madurai, and also the stretch of melur main road had many timber shops. So it is very easy transport as well as less expense.



4.1 SITE ANALYSIS

SITE DIMENSION



SITE



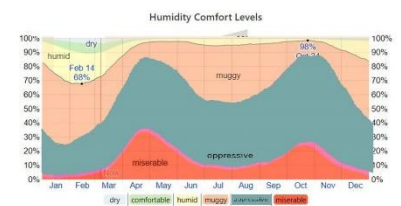
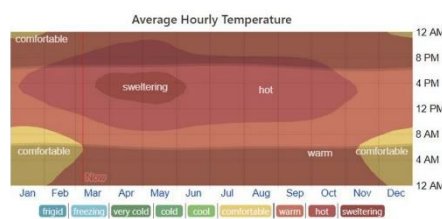
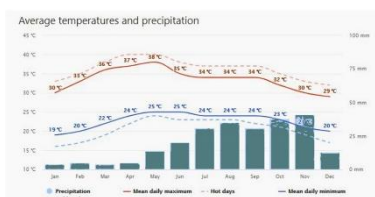
SITE IDENTITY

AGRICULTURE COLLEGE IS ONE A MAIN IDENTITY TO THE SITE OR THE SITE IS AT THE ENTRY TO MELUR MAIN ROAD FROM CHENNAI.

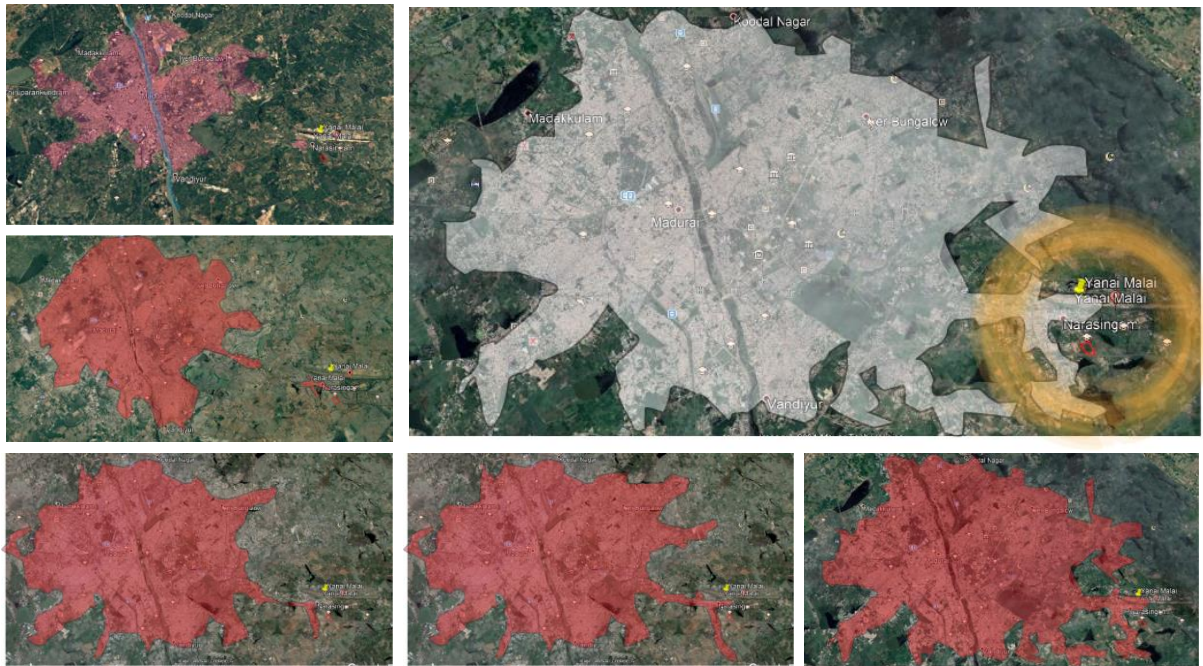


CURRENT USE

CURRENTLY THE SITE HAVE BEEN USED FOR CAR AND 2 WHEELER DRIVING PRACTICE AREA BY THE SURROUNDING PEOPLE AND ALSO TO CONDUCT POLITICAL MEETING.

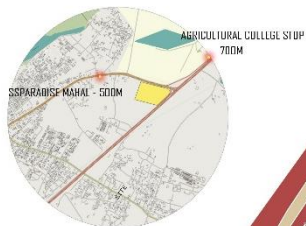


HUMIDITY IN MADURAI IS MODERATE WHEN COMPARED TO CHENNAI BECAUSE OF THE OF SEA.

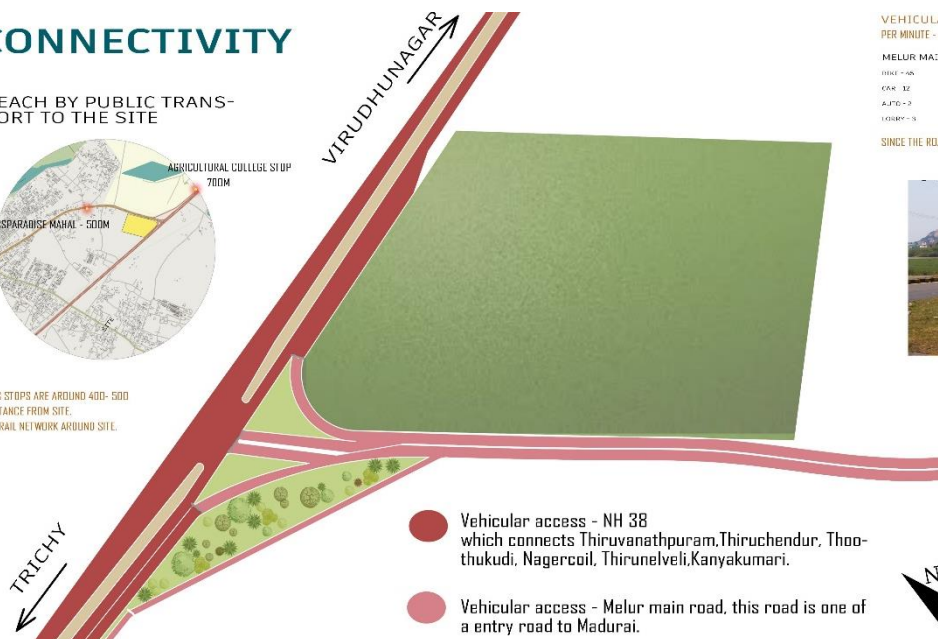


CONNECTIVITY

REACH BY PUBLIC TRANSPORT TO THE SITE



BUS STOPS ARE AROUND 400- 500 DISTANCE FROM SITE.
NO RAIL NETWORK AROUND SITE.



- Vehicular access - NH 38 which connects Thiruvananthapuram, Thiruchendur, Thoothukudi, Nagercoil, Thirunelveli, Kanyakumari.
- Vehicular access - Melur main road, this road is one of a entry road to Madurai.

VEHICULAR ANALYSIS (TYPES AND COUNTS) PER MINUTE - AFTERNOON -

MELUR MAIN ROAD	NH - 38
TRUCK - 45	BUS - 20
CAR - 12	CAR - 15
AUTO - 2	TRAM AUTO - 2
TRAM - 3	LORRY - 3

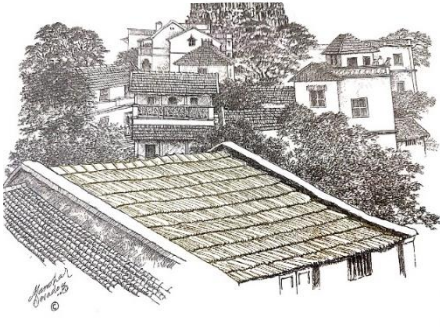
SINCE THE ROAD IS 'WIDE', THERE IS NO TRAFFIC JAM AROUND SITE.



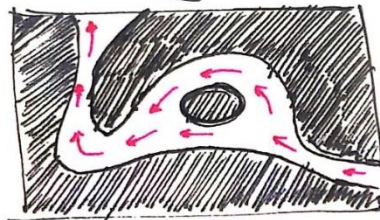
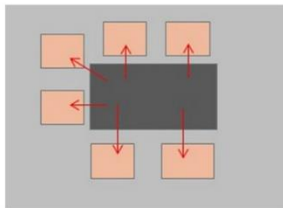
People who are passing by Madurai or wanted to go keeladi, can visit this space, so that they an idea of what is there how and some basic info about the excavation site, without stepping into Madurai.

5 INTENT

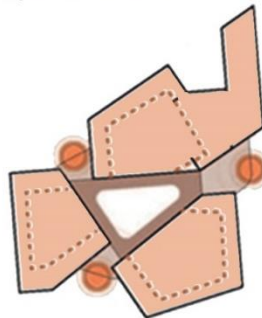
TO USE THE ELEMENTS OF TAMIL NADU AND HIGH LIGHT THE FEATURES OF MADURAI.



MUSEUM SPACE - EXPERIENTIAL, SORT OF BRINGING LIFE INTO SPACE AND ALSO CREATING ZONES OF PAST PRESENT AND FUTURE.



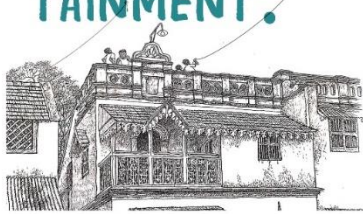
CIRCULATION AND PATH CAN CREATE A GREAT IMPACT ON EMOTION OF THE PEOPLE



ADDING LIVE ACTIVITY IN BETWEEN MUSEUM SPACE, CAN ADD MORE VALUE AND MAKE THE PLACE INTERESTING.

USING LOCALLY AVAILABLE MATERIALS - BRICK, ASH BLOCKS, TIMBER AND STONE.

ENSURE PLAMAKING, TO CREATE A SPACE WHICH PROMOTE HAPPINESS, INTERACTION AND ENTERTAINMENT.



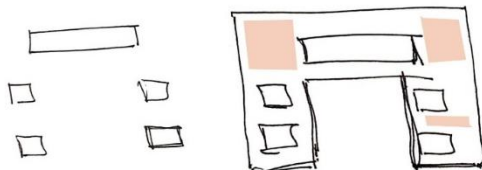
THESE PLACES CAN ALSO BE INSPIRED FROM INTERACTING SPACES OF THE PAST.

TO UTILISE THE BACKGROUND OF YAANAI MALAI

AN IDEA OF BRINGING NATURE INTO OR THROUGH BUILDING



PHYSICALLY BLOCKS ARE NOT INTERCONNECTED, BUT VISUALLY CONNECTED BY ROOF.



THESE INBETWEEN SPACE CAN BE COURTYARD, SEATINGS OR SERVICES AND RESTROOMS.

