BTAR3028 DESIGN STUDIO VI
PORTFOLIO

CHUNG JUN KIT
22WVR05810

“HI, I’M JUN KIT”

Hi,

As I come to the end of my bachelor's year, this marks the last time I will prepare this portfolio series. Time flies by surprisingly fast. This semester has been the most challenging of my student life, and it has been quite depressing at times. I nearly lost my mind, but I managed to hold on tightly. It is such a relief that I was able to make all my submissions on time.

The brief for Design Studio VI was particularly demanding. From the site selection to the program requirements, every aspect required a thoughtful response to produce a good design. Although the given time was not sufficient to fully mature my design, it remains an ongoing process.

Lastly, I would like to express my appreciation for the efforts of all my lecturers: Mr. Megat, Ar. Toong, Puan Haslina, and Ar. Lee, who guided us through this last semester. I wish them all the best in their teaching careers.

Feel free to let me know if you need any further adjustments!

TABLE OF CONTENT

01 Project 1: Affiche
‘THE FLOW’

02 Project 2: Site Analysis
‘Jalan Pangong’ Chinatown

03 Project 3: Precedent Study
‘Naippa Art Complex’

04 Project 4: Cultural and Creative Centre
‘The Opera Community Center

05 Appendix
Thematic Essay :
-Projecting the Future: How Emerging Technologies are Reshaping Architectural Design and User Engagement

PROJECT 1: AFFICHE

“FLOW”
WHERE ECHOES OF HERITAGE FADE

FLOW is an immersive art installation that confronts the fading echoes of Kuala Lumpur's Chinese heritage. Utilizing everyday materials like paper, bamboo, and Styrofoam, it highlights the stark contrast between the tangible and the intangible loss of culture.

Inspired by the legacy of the Yan Keng Dramatic Association and the Xiangyin Museum, the installation finds its home on Jalan Panggung – a once-vibrant hub for Teochew opera now facing decline. This purposeful placement speaks of the lost community surrounding Chinese opera, the dwindling presence of traditional instruments, and the erosion of rituals and performances.

The central figure is a vibrant opera performer, her colorful attire a poignant contrast to the fading significance of the art form. She holds a traditional fan – a symbol of both elegance and a once-captivating world of performance. A river-like form in red evokes the Klang River, a silent witness to the changing tides of culture. LED lights mimic the stage lights of forgotten performances, highlighting the commercialization that threatens to overshadow the heart and soul of traditional Chinese culture in the relentless pursuit of modernity.

FLOW is more than just an artwork; it is a lament. It compels viewers to confront the reality of fading traditions and question the growing chasm between heritage and the relentless march of progress, urging reflection on what might be lost to future generations.

PROJECT 2: SITE ANALYSIS JALAN PANGGONG, KUALA LUMPUR.

Located in the centre of the urban region of Kuala Lumpur. Lot 20000 is a piece of land that is next to Jalan Panggong and Jalan Tun H.S. Lee. It is presently used as a small temporary police officer parking area and as private vacant land. Within walking distance lots to the site were shophouses and other buildings located on Jalan Panggong and Jalan Sultan.

The area around the site has significant cultural and historical value. The proposed land had a buildable area of 3728.03 SQM after the setback, in contrast with the plot of land's total area of 5449.42 SQM (1.35 acres). The proposed site was given a plot ratio of 1:6+0.5 (TOD), meaning that about 50138.14 sqm could be built on this lot, according to the local authority, DBKL.

KEY PLAN
NOT TO SCALE

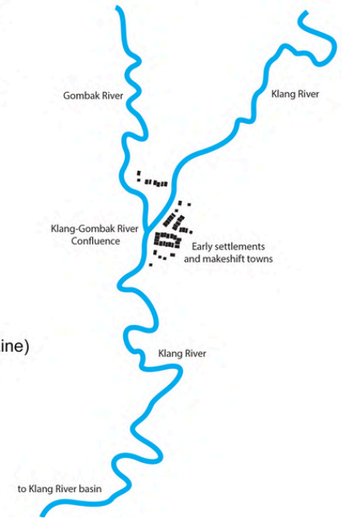
LOCATION PLAN
NOT TO SCALE

MORPHOLOGY

Legend

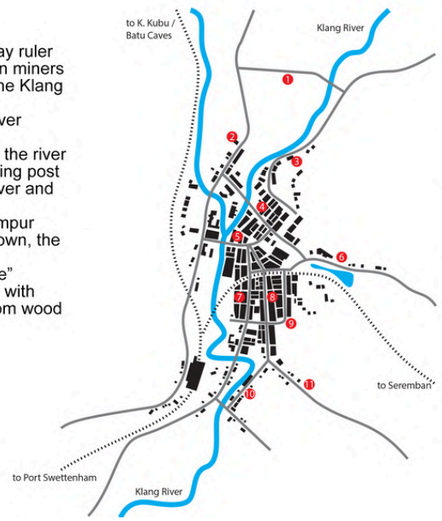
1. Jalan Dang Wangi
2. Jalan Tuanku Abdul Rahman
3. Jalan Ampang
4. Jalan Tun Perak
5. Leboh Pasar Besar
6. Jalan Pudu
7. Jalan Tun H.S. Lee
8. Jalan Petaling
9. Jalan Sultan
10. Jalan Syed Putra
11. Jalan Maharajalela
12. Jalan Kinabalu

KTM Railway Line
LRT (Kelana Jaya Line)
LRT (Ampang - Sri Petaling Line)



Mid 1800's

- The Selangor Malay ruler ordered chinese tin miners to move up from the Klang River basin to the Klang-Gombak River confluence
- The village east to the river bank became trading post between Klang River and the tin mines
- In 1857, Kuala Lumpur established as a town, the name meaning "muddy confluence"
- Settlement started with buildings made from wood and "atap"



Late 1800's

- The railway system between Kuala Lumpur and Klang completed in 1886, reliance on Klang River declined
- Arterial roads formed to link to mines (Jalan Ampang, Jalan Pudu, Jalan Batu etc.)
- Chinese miners and traders settled around Market Square and High Street (now Jalan Tun H.S. Lee)
- Malays, Indians and Sumatrans resides along Java Street (now Jalan Tun Perak)
- After the Selangor Civil War in 1874, tin mines were abandoned. The Chinese kapitan opened plantations and tapioca mills in Petaling Street, and persuades miners and coolies to stay
- 'Atap' buildings that underwent frequent fires were demolished and eventually replaced with brick

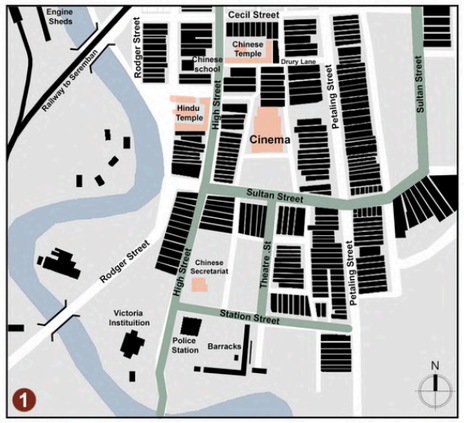
1900's - Independence

- KL operated as capital of the Federated Malay States and became a municipality in 1947
- Uprise of road transportation system, demand of car tyres fueled local rubber industry
- Klang River underwent modification since 1926 such as embankment due to severe flash flood issues
- Before and after the war, Kuala Lumpur continued to expand, development expands rapidly and spreaded towards the outskirts

Independence - Present

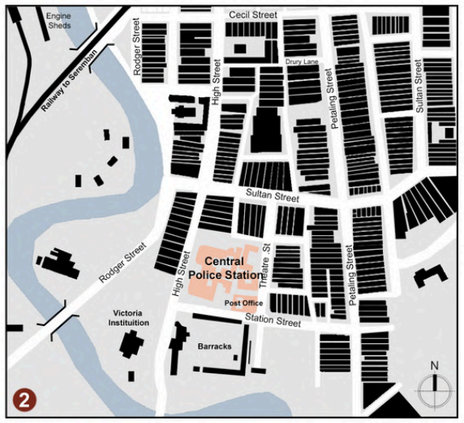
- Kuala Lumpur achieved federal territory status in 1974. KL ceased to be Selangor's capital in 1978.
- The administrative and judicial functions of the government were shifted from KL to Putrajaya in 2001.
- In the early 1990's, the development of light rapid transit (LRT) railway system started, certain railway lines runs along the banks of Klang River.
- Klang River underwent further straightening and reinforcement to adjust to the railway line construction.
- Since 2011, Klang River as the origin point of the city, the riverfront underwent cleaning and beautification efforts to improve the urban environment

HISTORICAL DEVELOPMENT



1870

Jalan Sultan was formed. Shophouses made of bricks and mansory were built to replace huts. Seperated with wider streets for fire safety.

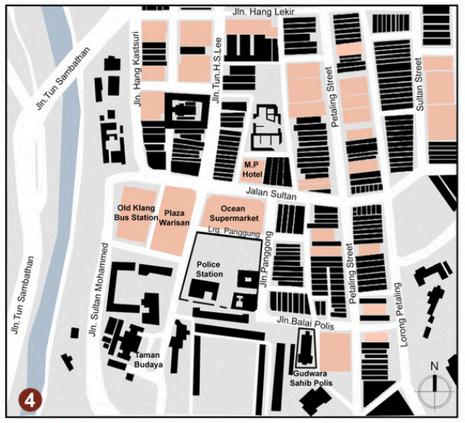


1911

Post Office Jalan Panggung was built. This mock-Tudor style Timber building was used as a sub-post office at the corner spot along Station Street and Theatre Street.

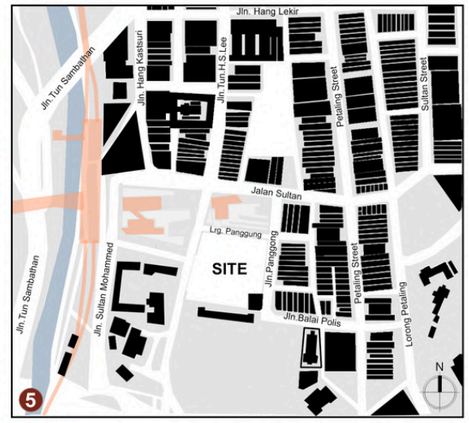
1968

Pasarama Kota Bus Station which was a former market, serves its operation and act as one of the few main regional transportation hub during that time to Klang.



1979

Mandarin Pacific Hotel were built. Prewars buildings & shophouses ordered to demolished,leads to changing of urban fabric in this area. Lots of large density building built at that time. Lrt Station Pasar Seni starts its operation.



2013

Pasarama Kota Bus Station , Plaza Warisan and Ocean Supermarket were demolished to make way for MRT station.

1873

Jalan Tun H.S Lee which was formely known as High Street were built. It first started with Sri Mariamman Hindu Temple and were then named after first finance minister.

1918

After the World War 1, happen in 1914-1918. A colonial style **Central Police Station** expansion built across its former site.Sikhs from India employed by British to work in the Malayan Police Force to control and ensure the safety.

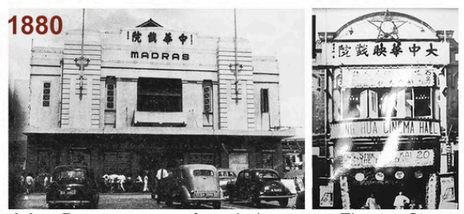
1970

Chong Hua Cinema and shophouses located behind were burn down by heavy fire and were left abandoned.

1999

Taman Budaya which is a cultural centre managed by the Kuala Lumpur City Hall burnt down by fire .

Present



1880

Jalan Panggung was formely known as Theatre Street, because of a Chinese Theatre that was built here in 1880s, which played Cantonese Wayang and hosted performances by a Teochew Opera and Chinese temple nearby.

1929

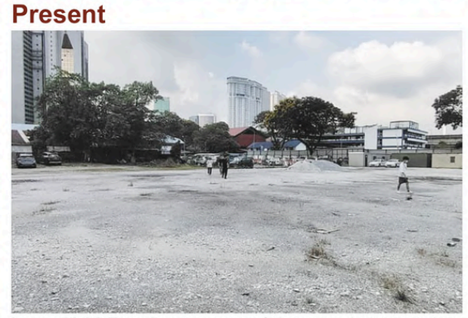
Victoria Instituition moved to Jalan Hang Tuah, formerly known as Shaw Road due to frequent flooding occurs nearby Klang River during heavy downpours since 1926.

1971

Serious Flash Flood cause by heavy moonson rains, swelled the Klang, Batu and Gombak river, leds to implementation of flood migitation measures, include straighten & deepen of rivers & construction of flood barriers

2000

Old Abandoned Cinema were then demolished and turn into car park which served until now.



Large Void Forming as most of them are being used as open-air car park, causing lost connection and lost space between the station and the old city of pasar seni

LANDMARKS

→ Chan She Shu Yen Clan Ancestral Hall

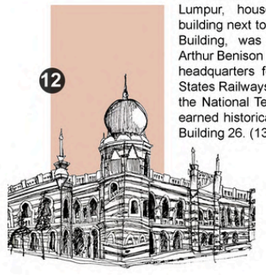
Cantonese-style heritage building with gilded carvings, rooftop figurines & a small museum.The building was completed in 1906 and was modeled after Chan She Shu Yuen (Chan Clan Temple) in Guangxi Guangzhou China. (4 min walk; 3 min drive)

→ KL Railway Station

Completed in 1917, replaced an older station and served as the city's railway hub until 2001. Noted for its unique blend of Eastern and Western designs, it is located on Jalan Sultan Hishamuddin, near the Railway Administration Building, National Mosque, and Dayabumi Complex.(12

← National Textile Museum

The National Textile Museum in Kuala Lumpur, housed in a Moorish-style building next to the Sultan Abdul Samad Building, was originally designed by Arthur Benison Hubback. It served as the headquarters for the Federated Malay States Railways until 1917. Converted to the National Textile Museum in 2010, it earned historical status in 1983 as JKR Building 26. (13 min walk; 6 min drive)



→ Sultan Abdul Samad Building

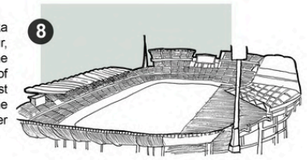
The Sultan Abdul Samad Building, dating back to the late 1800s, is situated on Jalan Raja, overlooking Dataran Merdeka and the Royal Selangor Club in Kuala Lumpur, Malaysia. Originally used as offices for the British colonial administration and initially named Government Offices, its construction started in September 1894 and ended in 1897.(14 min walk; 10 min drive)

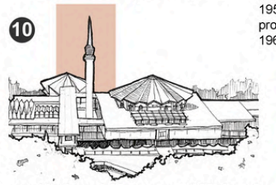
↑ The Go Down Art Centre

Established in 2019, The Godown is a centre for the arts and an events venue located in Bukit Nanas in the historic heart of Kuala Lumpur. (16 min walk; 12 min drive)

→ Stadium Merdeka

The Independence Stadium or Merdeka Stadium is a stadium in Kuala Lumpur, Malaysia. It is known as the site of the formal declaration of independence of the Federation of Malaya on 31 August 1957. The stadium is also the site of the proclamation of Malaysia on 16 September 1963. (8 min walk; 4 min drive)





↑ National Mosque of Malaysia

The National Mosque of Malaysia in Kuala Lumpur is a modern mosque with a 15,000-person capacity, set amid 13 acres of gardens. Completed in 1965, the mosque's bold design in reinforced concrete reflects the aspirations of a newly independent nation. (8 min drive)

← Daya Bumi Complex

The Dayabumi Complex is a major landmark in Kuala Lumpur, Malaysia. It houses several commercial facilities and is one of the earliest skyscrapers in the city. Officially opened and launched on 5 May 1984 by Prime Minister Mahathir Mohamad. (17 min walk; 7 min drive)

↓ Dataran Merdeka

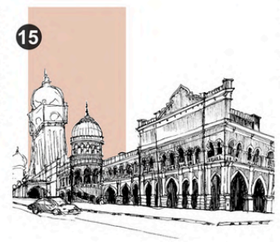
It is situated in front of the Sultan Abdul Samad Building. It was formerly known as the Selangor Club Padang or simply the Padang and was used as the cricket green of the Selangor Club. (14 min walk; 7 min drive)

← Perpustakaan Kuala Lumpur

Malaysia's main library, offers a diverse collection of books covering various topics such as monographs, business, economy, music, art, magazines, newspapers, and references. Originally built in 1898 as a government printing office for the British administration in Malaya, the museum building, designed by A.C. Norman and J. Riddell, underwent refurbishment in 1989. (15 min walk; 7 min drive)

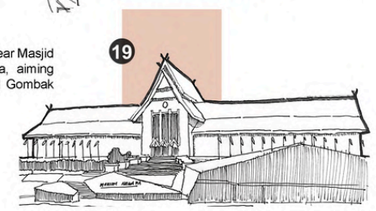
← Sultan Abdul Samad Jamek Mosque

Jamek Mosque, also known as Sultan Abdul Samad Jamek Mosque, stands at the confluence of the Klang and Gombak rivers. Designed by British architect Arthur Benison Hubback, it's one of Kuala Lumpur's oldest mosques, built in 1909 and colloquially referred to as the "Friday Mosque."(15 min walk; 9 min drive)



↑ River of Life

The River of Life project revitalizes the area near Masjid Jamek Mosque in Kuala Lumpur, Malaysia, aiming to enhance the aesthetics of the Klang and Gombak rivers.



→ St Mary's Cathedral Kuala Lumpur

St. Mary's Cathedral in Kuala Lumpur is the main cathedral for the Diocese of West Malaysia in the Anglican Church of the Province of South East Asia. It serves as the Episcopal seat of the Anglican Bishop of West Malaysia and is the diocese's mother church. (18 min walk; 9 min drive)

↑ Muzium Negara

The National Museum is a museum located in Jalan Damansara, in Kuala Lumpur, Malaysia. The museum is situated in close proximity to the Perdana Lake Gardens and it provides an overview of Malaysian history and culture. Its facade comprises elements from both traditional Malay and modern features. (6 min drive)

LANDMARKS

→ Sri Maha Mariamman Temple

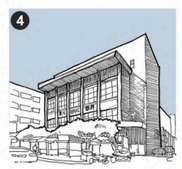
The Sri Mahamariamman Temple is the oldest Hindu temple in Kuala Lumpur, Malaysia. Founded in 1873, it is situated at the edge of Chinatown in Jalan Bandar. In 1968, a new structure was built, featuring the ornate 'Raja Gopuram' tower in the style of South Indian temples. (3 min walk)

→ Guan Di Temple

Malaysia-based Taoist temple located in Jalan Tun H S Lee, Kuala Lumpur. Founded in 1887 or 1888, it is one of the oldest temples in Malaysia. Not available for sitting in meditation. (3 min walk)

→ REXKL

A historic venue reborn, now serves as a multifunctional space for events, exhibitions, performances, screenings, workshops, retail, and F&B. It is a dynamic community and cultural hub located on the site of one of the country's initial theaters established in 1947. (7 min walk)



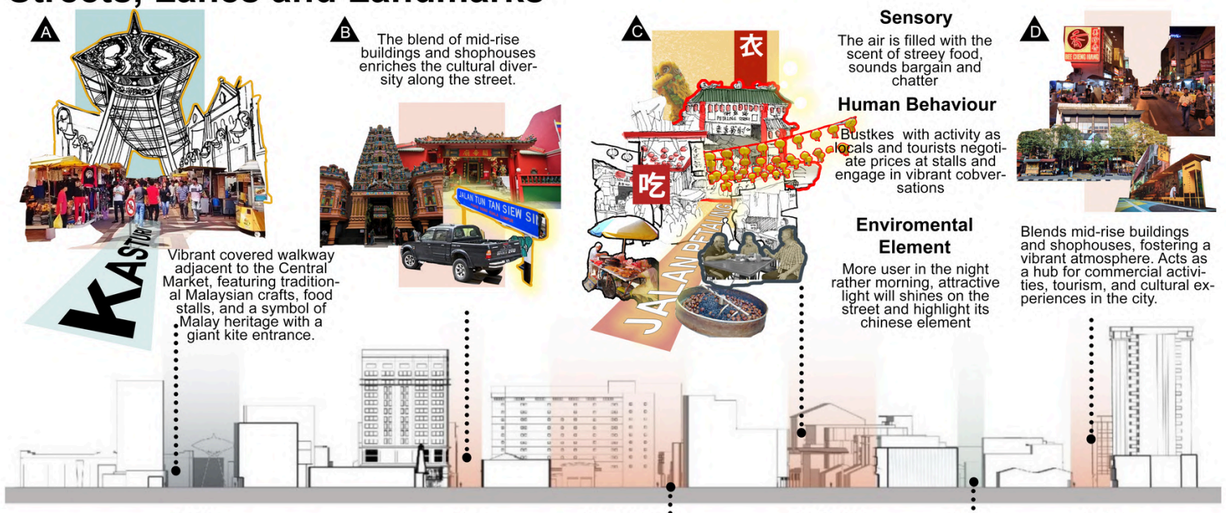
→ Merdeka 118

Formerly known as Menara Warisan Merdeka, KL 118 and PNB 118, is a 118-story megatall skyscraper in Kuala Lumpur, Malaysia. At 678.9 m tall, it is the second-tallest building and structure in the world. (11 min walk; 6 min drive)

→ Central Market

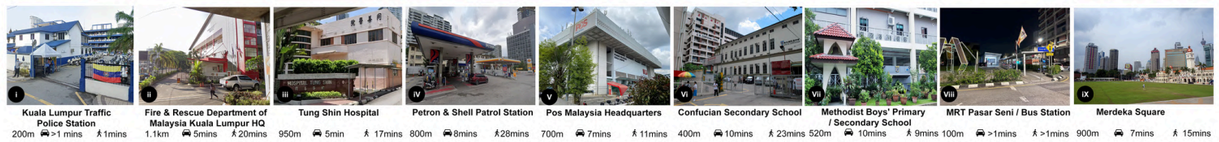
Situated near Petaling Street and Klang River, was established in 1888 as a wet market. The current Art Deco building, completed in 1937, is a designated Heritage Site recognized by the Malaysian Heritage Society, symbolizing Malaysian culture and heritage. (10 min walk; 5

Streets, Lanes and Landmarks

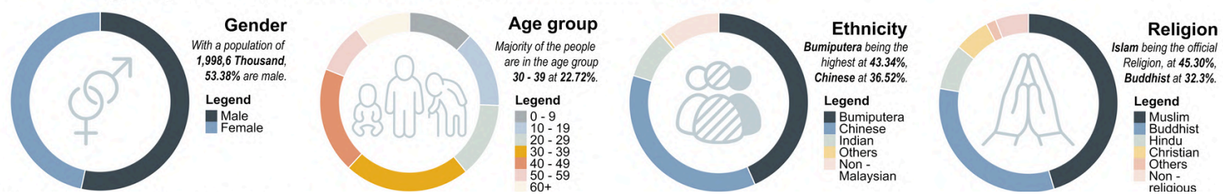


FACILITIES

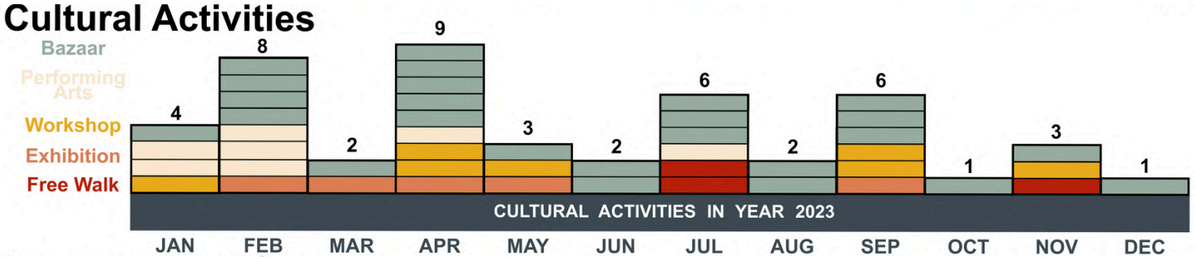
SERVICES	HEALTHCARE	FACILITY	EDUCATION	TRANSPORT	RECREATIONAL



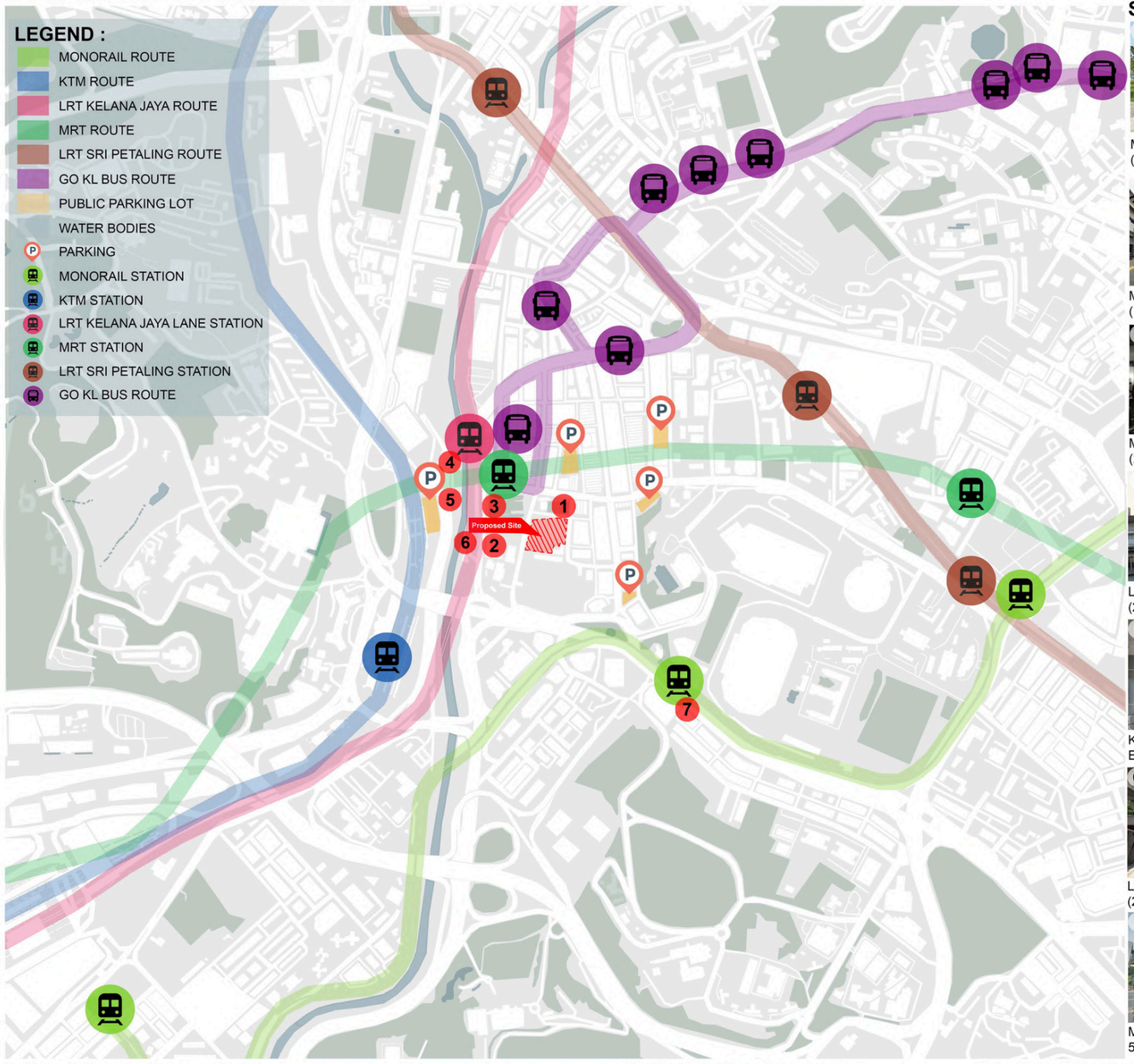
Demographics *(Population of W.P. Kuala Lumpur, Department of Statistics Malaysia, 2023)*



Cultural Activities



TRANSPORTATION



Station Entrance

MRT Pasar Seni Entrance A
(130m) 2 Minutes Walk

MRT Pasar Seni Entrance B
(160m) 2 Minutes Walk

MRT Pasar Seni Entrance C
(240m) 3 Minutes Walk

LRT Pasar Seni Station
(210m) 3 Minutes Walk

KTM Kuala Lumpur Entrance
E (210m) 3 Min Walk

LRT Pasar Seni Entrance
(240m)3 Min Walk; 6 Min Drive

Monorail Maharajalela (240m)
5 Min Walk; 6 Min Drive

Weekdays - 8am.

There's a mild traffic congestion on Jalan Panggong and Jalan Kinabalu in the mornings, mainly due to the local community's routine of stopping at the nearby wet market for breakfast before heading to school or work. This leads to a temporary increase in traffic activity that gradually diminishes later on.

Weekdays - 1pm.

Jalan Panggong experiences significant traffic congestion during lunchtime and after school hours, primarily due to the concentration of shop lots, eateries, cafes, and similar establishments in the area.

Weekdays - 6pm.

Jalan Kinabalu faces significant traffic congestion during non-peak hours. Furthermore, Jalan Tun H.S. Lee, Jalan Sultan, and Jalan Panggong are minimally affected during this period.

Weekend - 8am.

Like on weekdays, there is a slight traffic congestion on Jalan Panggong and Jalan Kinabalu in the mornings. Locals and tourists alike make brief stops at the nearby wet market, enjoying breakfast with family and friends. However, weekend traffic is comparatively lighter than on weekdays, as there is no urgency for work or school.

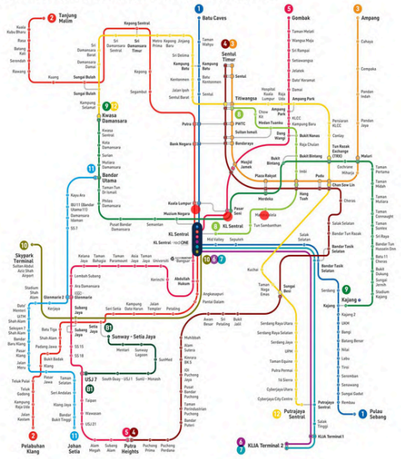
Weekend - 1pm.

During weekends, noticeable traffic congestion occurs around lunchtime on Jalan Panggong and Jalan Sultan. This is a result of locals spending their days off at the cafes and attractions in the vicinity.

Weekend - 6pm.

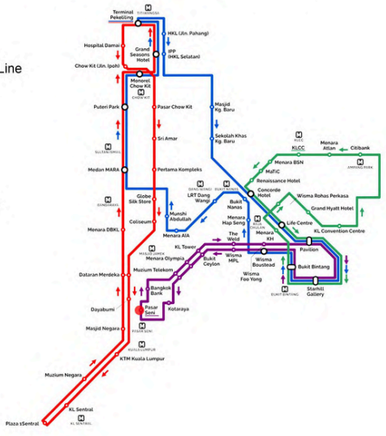
In the evening, Jalan Petaling and Jalan Sultan witness substantial traffic congestion, with the locals or tourists gathering at the bars and restaurants along these streets for weekend activities.

Trainrail Route Connection

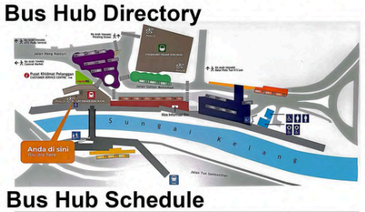


- KTM Batu Caves - Pulau Sebang
- KTM Tanjung Malim - Pelabuhan Klang Line
- LRT Ampang Line
- LRT Sri Petaling Line
- LRT Kelana Jaya Line
- ERL KLIA Ekepres Line
- ERL KLIA Transit Line
- KL Monorail Line
- MRT Kajang Line
- KTM KL Sentral - Skypark Terminal Line
- LRT Shah Alam Line
- MRT Putrajaya Line
- BRT Sunway Line
- GO KL BUS - Purple Line
- GO KL BUS - Blue Line
- GO KL BUS - Red Line
- GO KL BUS - Green Line

GoKL City Bus Connection

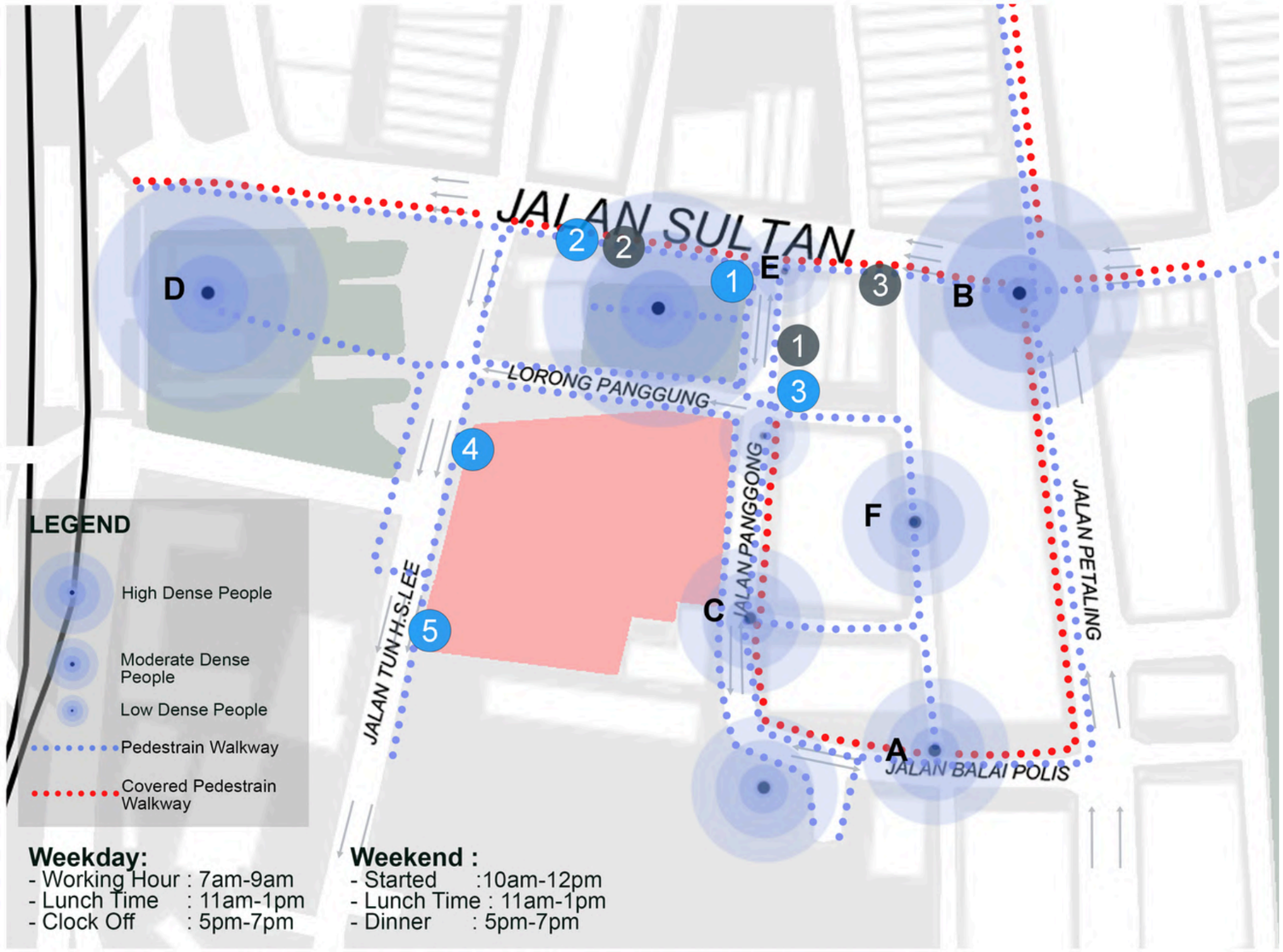


Bus Hub Directory

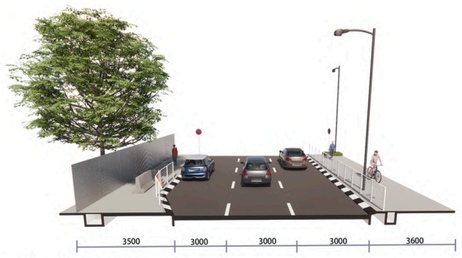


Bus Hub Schedule

Platform	Bay	Route	Origin	Destinasi	Frequency (min)
Platform A	A1 - A2	851	Pasar Seni	Kompleks Mahkamah Jalan Duta	35 - 80
	A3 - A5	GoKL - Purple Line	Pasar Seni	Bukit Bintang	10 - 15
	A6	782	Pasar Seni	Hentian PJ Old Town	60 - 145
	A7 - A8	180	Pasar Seni	Taman Dato' Senu	30 - 55
Platform B	B1 - B2	750	Pasar Seni	Seksyen 2, Shah Alam	30 - 45
	B3 - B4	751	Pasar Seni	Taman Sri Muda	25 - 50
	B5 - B6	770	Pasar Seni	Subang Mewah USJ 1	20 - 45
Platform C	C1	650	Pasar Seni	Taman Desa	20 - 55
	C2 - C3	640	Pasar Seni	Sri Manja	10 - 30
Platform D	D1 - D3	780	Pasar Seni	Kota Damansara	25 - 60
	D4 - D6	772	Pasar Seni	Subang Suria Mah Sing	15 - 60
Platform E	E1 - E3	600	Pasar Seni	Puchong Utama	10 - 30
Platform F	F1 - F3	821	Pasar Seni	Pantai Hill Park	8 - 30



PEDESTRIAN FLOW



Jalan Tun H.S. Lee
Jalan Tun H.S. Lee, a 1.8 km thoroughfare in downtown Kuala Lumpur, was originally High Street. It played a crucial role in the city's early development, especially during the tin mining era, and remains significant due to its ties to the Chinese community. Renamed after Tun H.S. Lee, a key historical figure, the street is lined with heritage shop houses, temples, and cultural landmarks. It reflects Kuala Lumpur's diverse heritage while connecting to other major streets like Jalan Sultan, Jalan Kinabalu, and Jalan Pudu, operating as a one-way route.

Jalan Panggong
Jalan Panggong, a secondary thoroughfare in Kuala Lumpur, serves as a vital link between Jalan Sultan and Jalan Balai Polis. Situated in the southern part of Chinatown, this road stands as one of the city's oldest streets, tracing its origins back to the 19th century when it was initially named Theatre Street. The street derives its name from a Chinese theater constructed by the affluent merchant Cheow Ah Yeok. Covering a distance of 0.13 km, Jalan Panggong operates as a two-way street, connecting Jalan Sultan and Jalan Balai Polis.

Lorong Panggong
Lorong Panggong, an alley off Jalan Panggung, serves as a crucial connector to Jalan Tun H.S. Lee and Jalan Balai Polis. Adjacent to Lorong Panggong lies the Pasar Seni MRT station, adding to its significance as a transportation hub. Additionally, this alley provides access to landmarks such as Petaling Street Art and Kwai Chai Hong. Lorong Panggong seamlessly blends old and new, where art intersects with heritage. Spanning 0.337 km, it operates as a one-way street.

HARDSCAPE

Leftover space with unclear function

Covered walkway at Mrt bus stop that only covers a short portion

Vandalised TNB feeder pillar

Walkway conditions: Tree roots damages floor (trip hazard)

Walkway conditions: Tiled walkway (slip hazard)

DBKL initiatives: murals on government properties

Motorcycle parks at undesignated areas blocking the pedestrian ways.

Decorative pathway at REXKL

GATHERING POINTS

URBAN FURNITURE

Repurposed drain cover

Bus stop chairs

Short benches

RexKl urban furniture character

VIEWS & VISTAS

1: View 1 shows **MRT station** and **Hotel Mandarin Pacific** at the North side of the site.

2: View 2 shows **shophouses** at the East side of the site.

7: View 7 shows panorama view from the **West side** to the site.

8: View 8 shows **Old Post Office** and the **South-East side** of the site.

3: View 3 shows **Wisma T.Sambathan**, **Takaful Tower** and **Wisma Pahlawan** at the South side of the site.

4: View 4 shows panorama view from **MRT station** and **Hotel Mandarin Pacific** to the site.

9: View 9 shows **Police Station** and **South-West side** of the site.

10: View 10 shows **Police Station** and the **West side** of the site.

5: View 5 shows panorama view from **shophouses** to the site.

6: View 6 shows panorama view from **Wisma T.Sambathan**, **Takaful Tower** and **Wisma Pahlawan** to the site.

11: View 11 shows **temporary parking** for police officer and the **North-East side** of the site.

12: View 12 shows **shophouses, Menara118** and the **East side** of the site.

SITE SECTION A-A SCALE 1:250

SITE SECTION B-B SCALE 1:250

VEGETATION

1.

Gleditsia Triacanthos
(Honey Locust)
Height: 20m-30m
Crown spread: 0.5m-1.5m

2.

Ficus Lyrata
(Fiddle-leaf Fig)
Height: 12m-15m
Crown spread: 1m-3m

3.

Falcataria Moluccana
(Peacocks Plume)
Height: 30m-40m
Crown spread: 5m-10m

4.

Ficus Altissima
(Council Tree)
Height: 30m-40m
Crown spread: 5m-10m

5.

Bischofia Polycarpa
(Chinese Bishop Wood)
Height: 10m-15m
Crown spread: 5m-10m

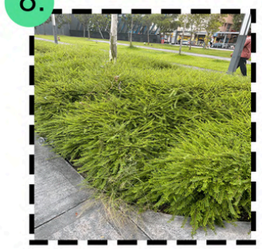
6.

Syzygium Myrtifolium
(Chinese Cedar)
Height: 10m-20m
Crown spread: 1m-5m

7.

Murraya Paniculata
(Orange Jasmine)
Height: 3m-7m

8.



Coleonema
(Sunset Gold)
Height: 2m-5m

9.

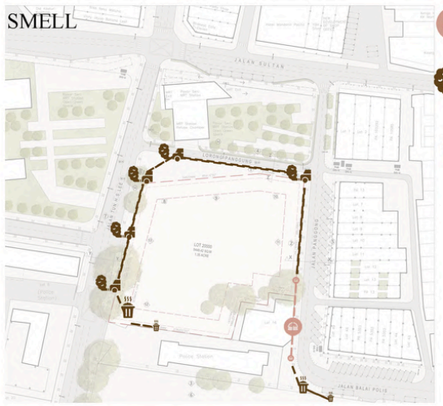
Syngonium Podophyllum
(Arrowhead Vine)
Height: 0.3m-0.5m

10.

African Oil Palm
(Oil Palm Tree)
Height: 5m-15m
Crown spread: 3m-5m

SITE OBSERVATIONS

SMELL



- Cooking smell from nearby cafes
- Vehincle exhaust emission
- Foul smell from rubbish waste

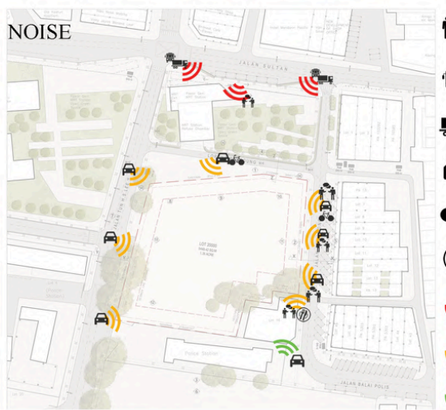
Analysis and Synthesis on Smell:

1. design of building enclosures must consider the surrounding smell.
For example: placement of ventilation blocks at suitable areas and etc.

2. it is observed that surrounding shoplots does not have a well designated place for their rubbish waste, causing the foul smell at the bins

3. EV (electric hicles) charging ports can be provided to encourage more EV usage.

NOISE



- People movements and conversations
- Bus engine sound
- Large vehicle sound
- Vehicle sound
- Bicycle sound
- Cafe sound
- 80 dB and
- 60-79 dB
- < 59 dB

Analysis and Synthesis on Noise:

1. surrounding traffic contributes mainly to the noise of the site.

2. bicycles are heard in the morning and noon, it is suggested to provide a bike parking area

3. design of the building can incorporate more sound insulation facing the roads, and also incorporate landscaping as sound buffers.

TACTILE

Brick

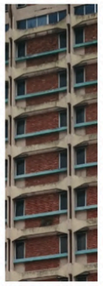
Ventilation block

Hello Planet and Sasha

Ventilation block

Arched windows

Hotel City Inn - tiled finishes and murals



Hotel Mandarin Pacific

White planks

Terracotta tiles

Mrt Pasar Seni

Metal and tiled finishes

glass

landscape grass

broom finished concrete

Purple Cane Restaurant

Pebble wash

Gravel

Bitumen

Lime wash and white wash shophouses

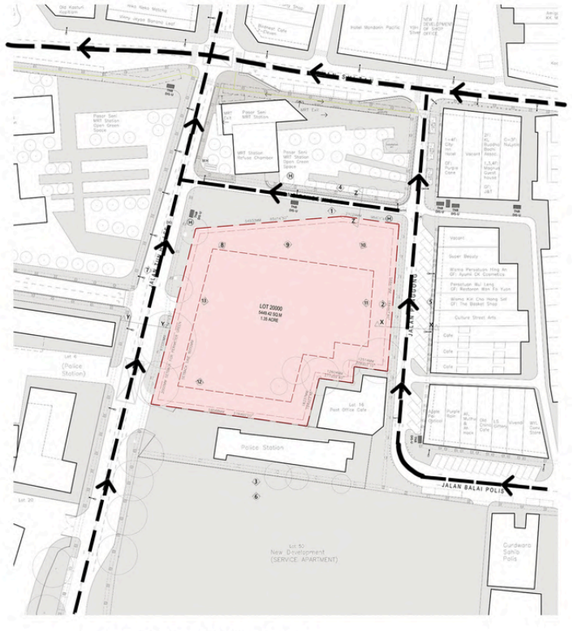
Analysis and Synthesis on Tactile:

1. during design stage, consider either contrasting materials to the existing tactile to stand out, or similar to blend in.

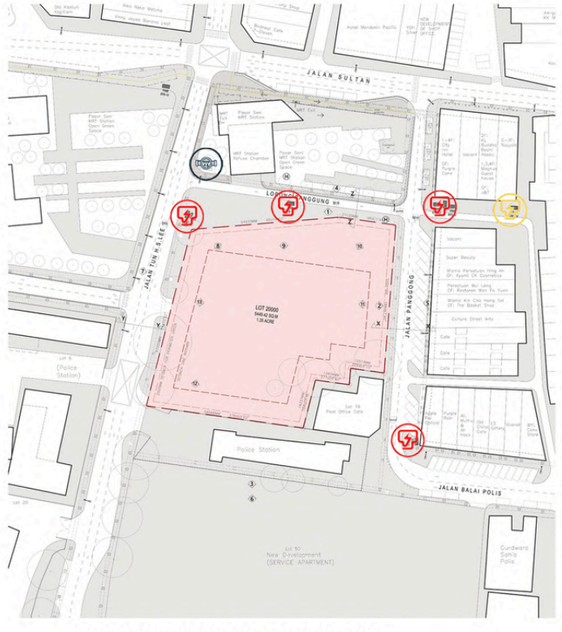
2. gravels and grass are low-key means of seperation of walking and resting space, both offer a natural and visually subtle way to define space.

3. shophouses from the1820s and 1960s were painted in pastel shades of green, pink and blue. They are now restored with lime plaster and breathable water-based paint under Thinkcity initiatives. However most facades are moulding.

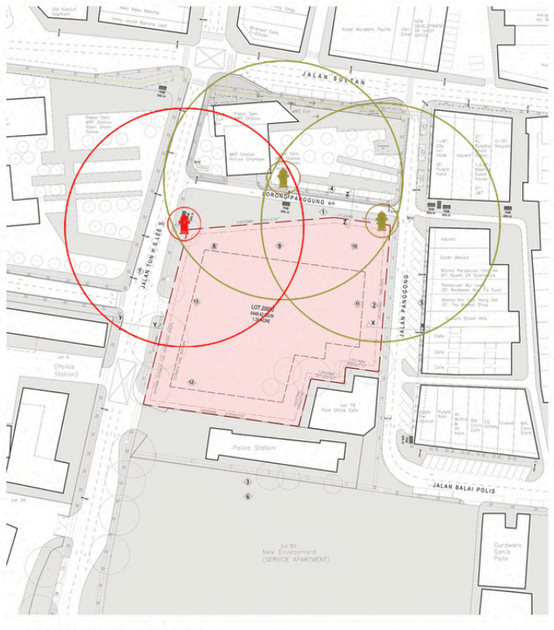
UTILITY & SERVICES



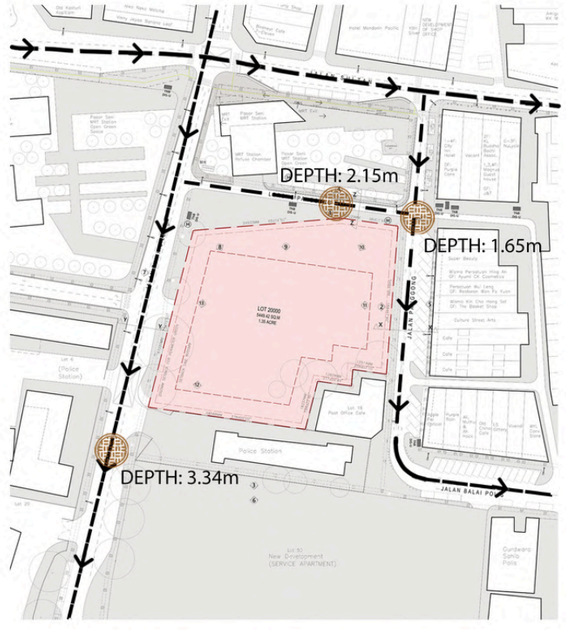
DRAINAGE SYSTEM
Rainwater around the site will be collected through inlet along the roads, then it will be gathered in main channel beneath **Jalan Sultan**. Rainwater will be discharged into **Klang River** about 100m away to the west.



ELETRICITY & WATER SUPPLY
There are multiple feeder pillars around the area. A electrical distribution substation titled **Pencawang Elektrik Malayan Banking Jalan Sultan** is located inside the building of NuLycie, which step down the voltage to 415V three phase,four wire power supply. Individual substation could be purposed based on estimated power usage.

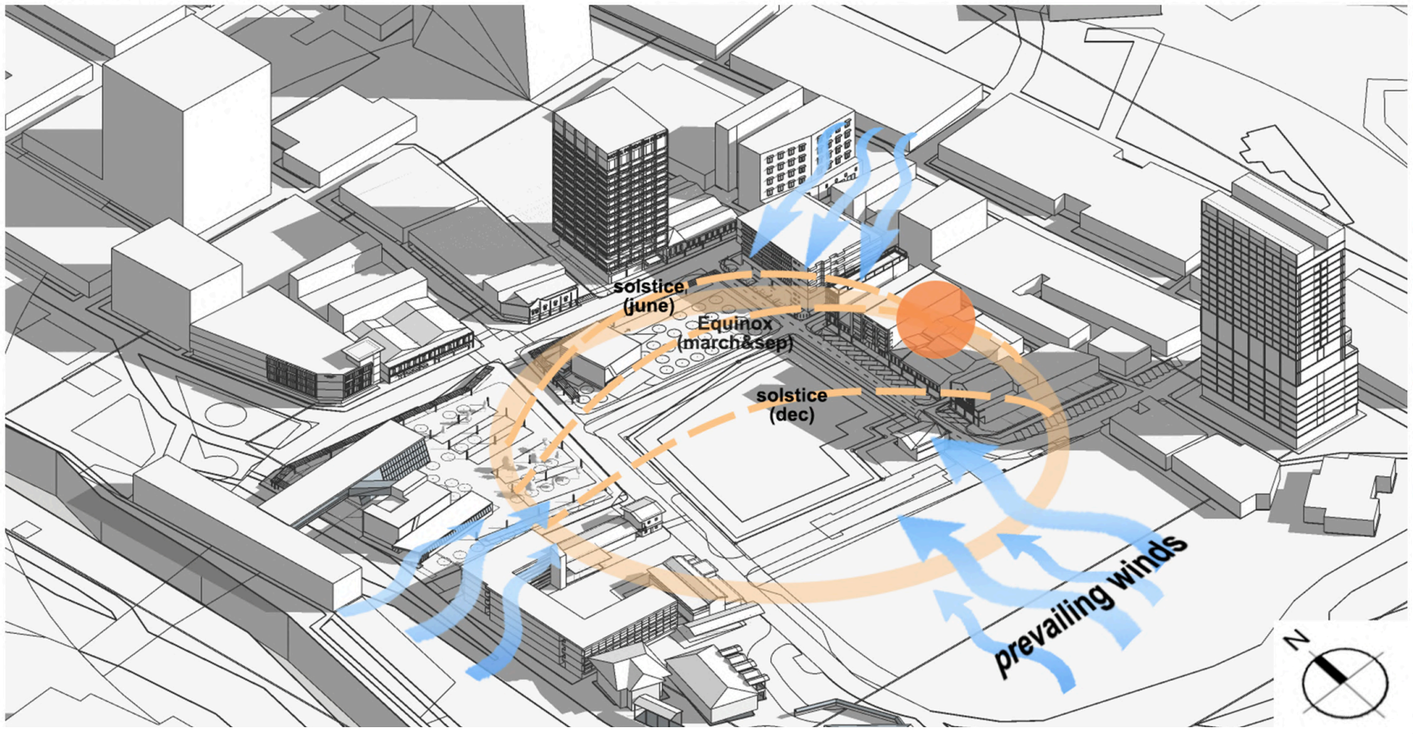


FIRE HYDRANT
There are public and private fire hydrants located along Lorong Panggung and Jalan Tun H S Lee. However, **UBBL 255 (2) stipulated that every building shall be served by at least one fire hydrant located not more than 91.5m from the nearest point of fire brigade access.** New fire hydrant shall be proposed at the south of the site for adequate coverage.

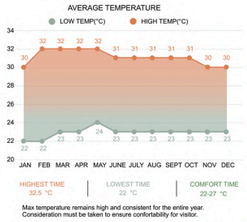


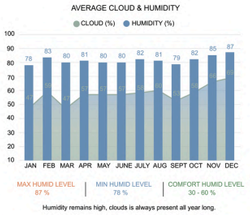
SEWERAGE SYSTEM
Sewer manholes located along Lorong Panggung and Jalan Tun H S Lee. The sewage in the region flows to a main transfer line towards **Pantai 2 Regional Sewage Treatment Plant (RSTP)**, which is located at 4.94km away to the southwest from the site.

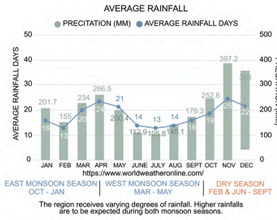
MICROCLIMATE OF THE SITE

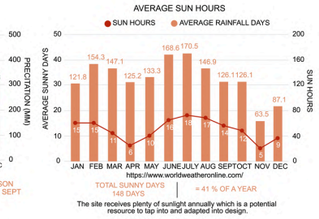


CLIMATE









Analysis of Site Environment

A :Humidity causes mold on building facade which is evident from the facades of the existing buildings around the site.

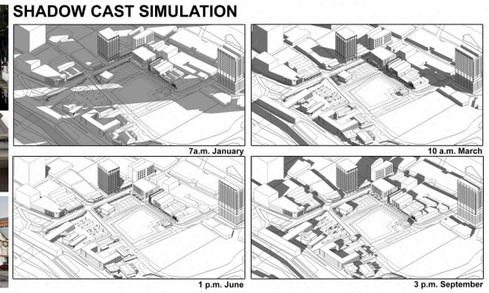
B :Surrounding buildings provide little to no shading, causing strong direct exposure to sunlight on site.

C :There is a clear lack of vegetation on site and sparce coverage of trees around the site.

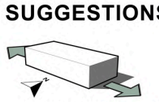
D :The weather on site from morning until noon tends to be very hot and humid.

E :There are cases of water pooling both on site and surrounding areas, hinting at bad drainage systems.

SHADOW CAST SIMULATION



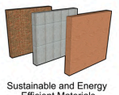
SUGGESTIONS


Building Orientation

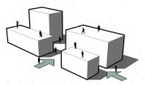

Courtyard System and Fenestration


Planting Trees and Vegetation


Pitched Roofs and Solar Panels

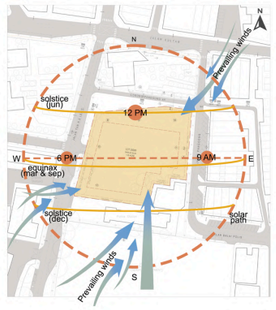

Sustainable and Energy Efficient Materials


Rainwater Harvesting System

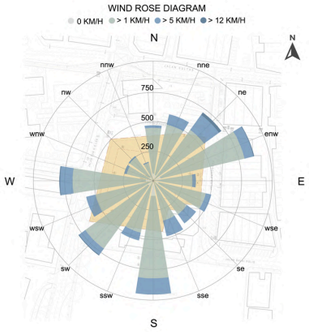

Split Mass and Entrances


Facade Using Louver System

MICROCLIMATE ANALYSIS



WIND ROSE DIAGRAM



SWOT

STRENGTH

ENVIRONMENT

CONVENIENT TRANSPORT
• Efficient access facilitated by multiple modes of public transportation.

STRATEGIC LOCATION
• Strategically located in a city of infrastructures

LOCATION

TRANSIT PROXIMITY
• Proximity to Pasar Seni MRT LRT Station enhances connectivity and accessibility.

EMERGENCY PROXIMITY
• Hospital, fire station nearby ensure accessibility.

SOCIAL

Night Patrol
• Police patrolling at night enhances safety and security in the area.

Cultural Magnet
• Culture and arts attract tourists, enrich community.

ECONOMIC

Cultural Tourism
• Culture, multiculturalism, and the arts attract tourists, boosting the local economy.

Heritage Economy
• History, culture attract heritage tourism.

OPPORTUNITIES

ENVIRONMENT

MIX CULTURE
• The surrounding area offers mix of modern, historical inspires designs.

Tree Scarcity
• Fewer existing trees on the site, allowing for more freedom in landscape design.

LOCATION

Transport Hub
• The site is surrounded by many public transportation options, enhancing accessibility and connectivity for residents and visitors.

SOCIAL

Community Promotion
• NGOs promote events, engage community.

Cultural Festivities
• Events increase the social attractiveness of the site.

ECONOMIC

Event Enrichment
• Events, festivals boost local economy.

Culinary Culture
• Food streets and culture drive economics.

WEAKNESS

ENVIRONMENT

Parking Expense
• Expensive parking rates

Illegal Parking
• Around the site may cause traffic congestion due to illegal parking.

LOCATION

Hardscape Variability
• Inconsistent hardscape

Sun Exposure
• High sun exposure due to lack of shading in open site.

SOCIAL

Homeless Security
• Security concerns due to homeless individuals

Pedestrian Infrastructure
• Lack of pedestrian-friendly infrastructure

ECONOMIC

Parking Constraints
• Limited commercial opportunities due to parking constraints

Space Limitations
• Constraints on development due to limited space

THREATS

ENVIRONMENT

Road Safety
• Slippery and damaged tiles endanger pedestrian safety.

UNDISCIPLINED ROAD USERS
• Users ignore crossings, oppose traffic rules.

LOCATION

Light Deficiency
• Low proximity of light.

Surveillance Absence
• Lack of CCTV surveillance in the surrounding area.

SOCIAL

Gentrification Concern
• Gentrification risks area's authenticity, culture.

Homeless Encroachment
• Homeless seek shelter in public areas, presence of hobos on the streets.

ECONOMIC

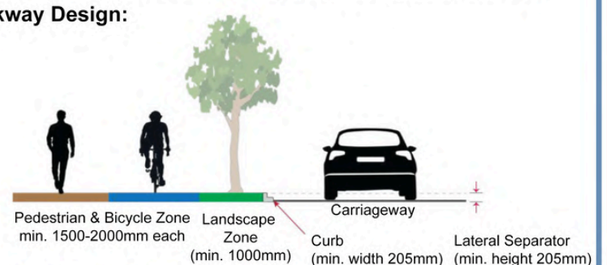
Economic Shift
• Foreign ownership taking over local economic landscape.

Authority Guidelines

Hierarchy	Wilayah Persekutuan
Location	Jalan Panggong
Plot Ratio (CCC)	1:0.5 to 1:10
Plinth Area	36% (Qualified), Max 60%

Total Setback: 8m
Setback: 6m Perimeter Planting: 2m
Open Space: 10% net of site area
Natural Light & Ventilation: 10% of clear floor area of the room

Walkway Design:



Rainwater Harvesting(SPAH)
Depends on 2 factors:

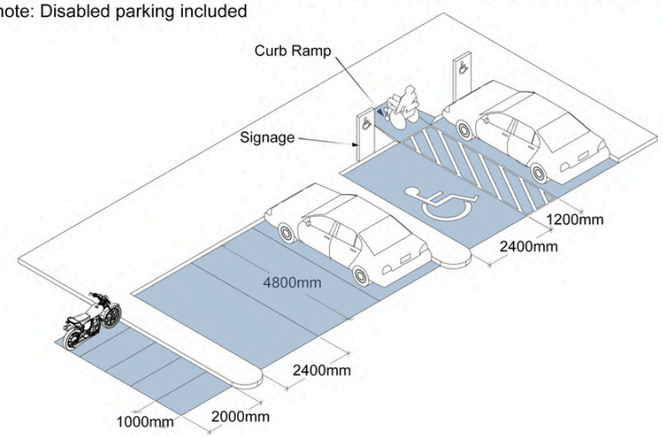
Rainwater Demand
No. of people using water (~100pax)
Average consumption per person (toilet)
(3.8litre per flush, 4 times a day)
Calculations: 3.8 x 4 x 100 = 1520litre per day

Rainwater Availability
Rainfall Characteristics
Catchment Area (m2)
Tank Size: $1m^3 = 100m^2$

Source: MSMA 2nd Edition

Parking Provision

Car Parking: 21-33 bays Motorcycle Parking: 11 bays Disabled Parking: 2 bays
*note: Disabled parking included

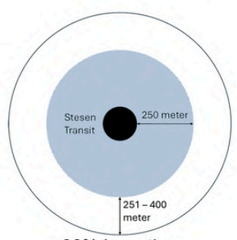


Parking Provision Calculation and Incentive
Car (TLK) : 1TLK per 650sq.ft
: ~ 33TLK

Motorcycle (TLM) : 1TLM per 2000sq.ft
: ~ 11TLM

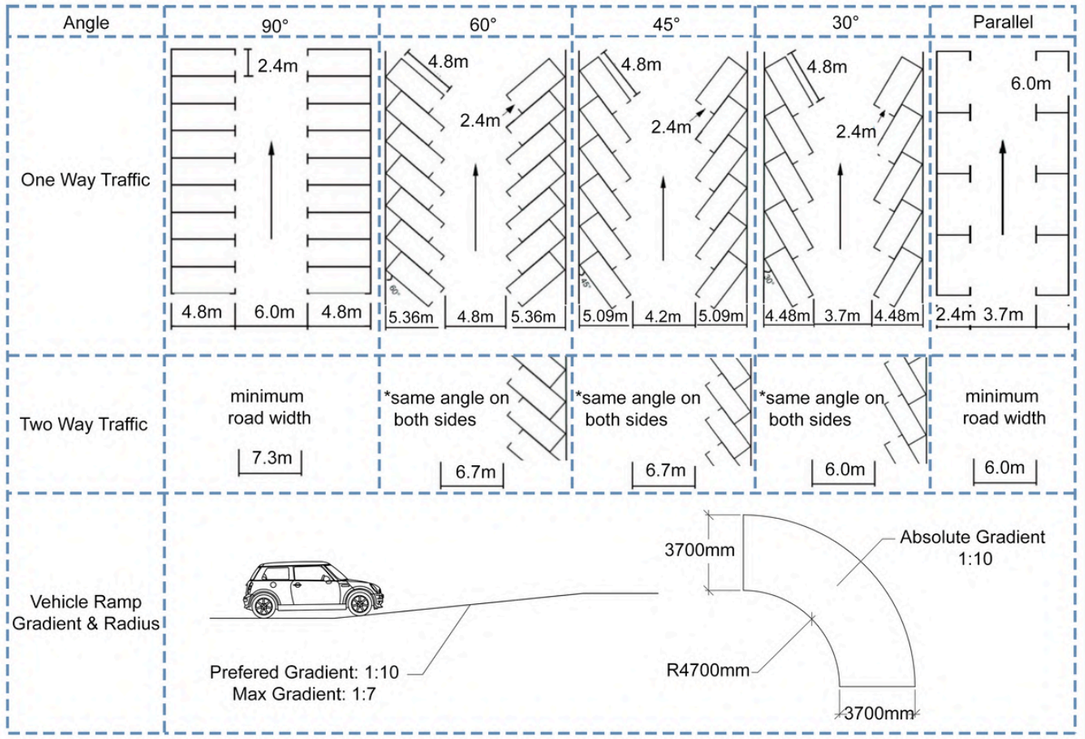
Disabled (OKU) : 25TLK per 1 OKU TLK
: 33TLK = min. 2nos.

Incentive : 33TLK - 30% - 10%
= 21TLK



30% Incentive
10% Additional

Internal Circulation



*Source: Garis Panduan DBKL

Fire Requirements

Cultural and Creative Centre:
Purpose Group VII - Place of Assembly
Classification of Place of Assembly:
Class C Capacity
- 100 to 300 persons
- 2 means of exit (consisting of separate exits/doors)

Travel Distance

	Maximum Travel Distance (m)
Dead end limit and corridor dead end limit	15m
Unsprinkled Radius Coverage	45m
Sprinkled Radius Coverage	60m

Fire Appliance Access

Fire appliance access shall have minimum width of 6m throughout its entire length and shall be able to accomodate the entry and manoeuvering of a fire appliance.

Enclosing Means of Escape

Building with 4 storeys or more & more than 12m in height above ground level, in any place of assembly, such staircase is to be used as alternative means of escape and shall be enclosed throughout its length with fire resisting material.

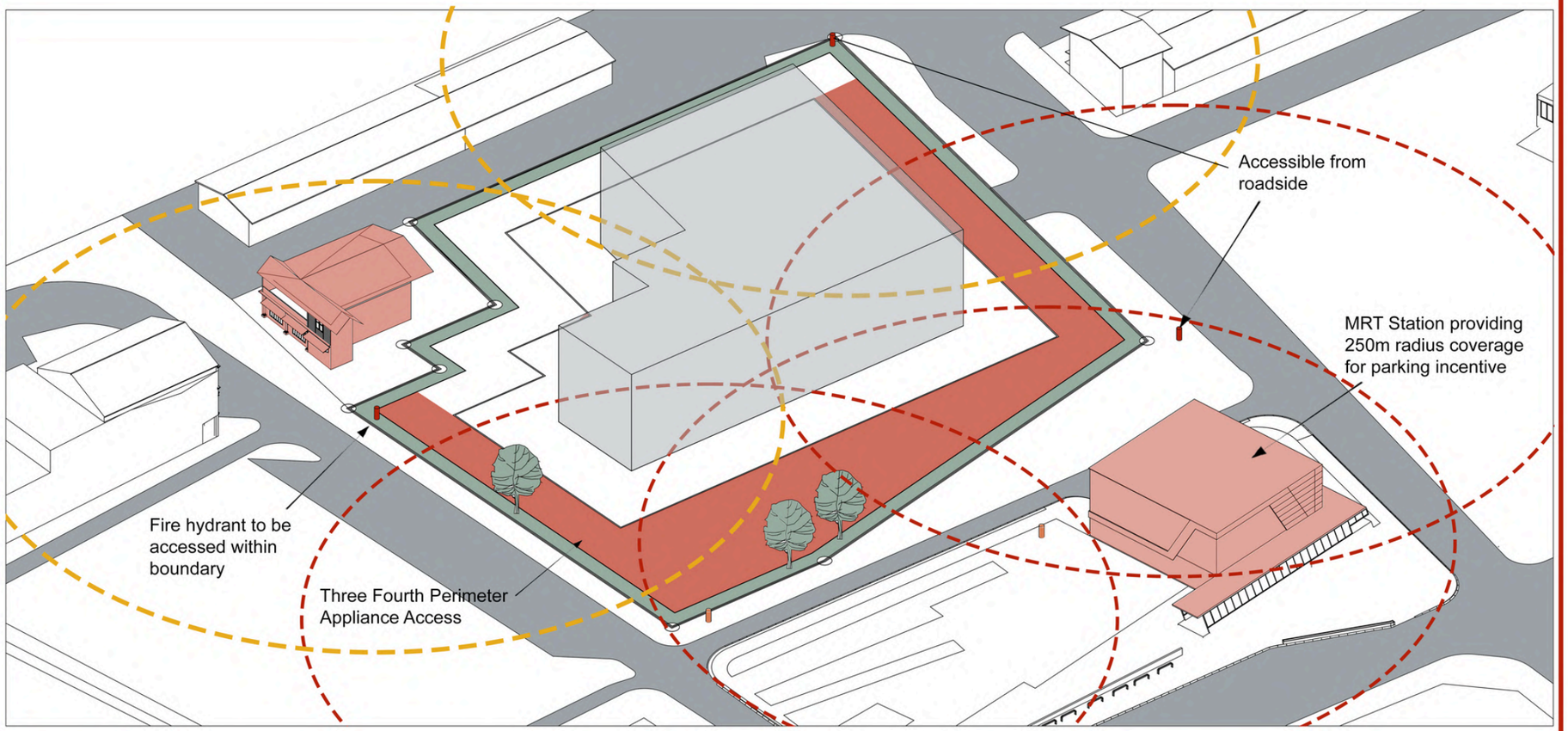
Staircase Calculation

Occupancy load = 1.5 net floor area
Capacity exit = 75 person per unit
min. 2 number of staircases

Fire Hydrant

A new hydrant(s) will have to be provided if there is no hydrant within 45m radius of the new building. (In new buildings adjacent to existing developments) and they must not be more than 90m apart from each other.

*Source: Uniform Buidling By Laws 2022



Legend:

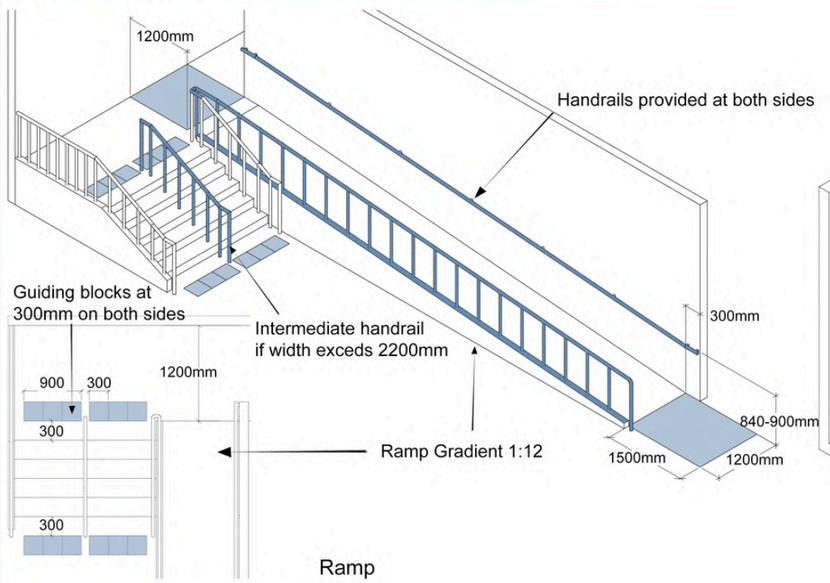
Fire Appliance Access / Setback
Perimeter Planting
Existing Fire Hydrant Coverage
Proposed Fire Hydrant Coverage

Hydrant should be located:
1. >2m from adjacent buildings & overhangs.
2. between 0.61m to 2.4m from Fire Appliance Access

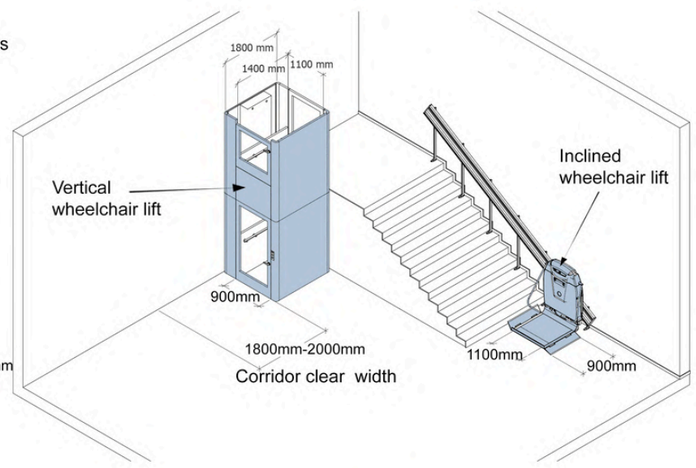
*Source: Guide To Fire Protection in Malaysia

OKU Guidelines

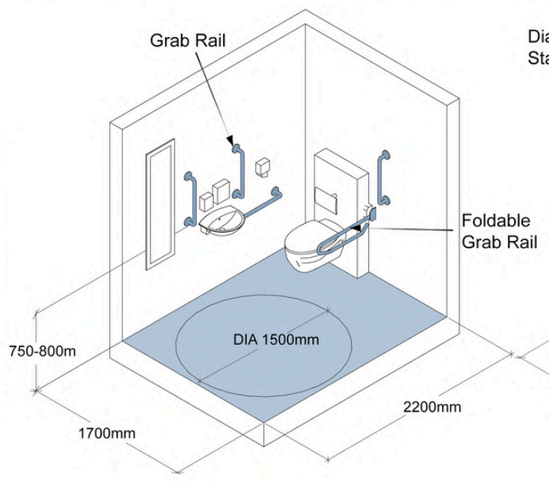
*Source: MS 1184: 2014 Universal Design and Accessibility In the Built Environment - Code of Practice (2nd Revision)



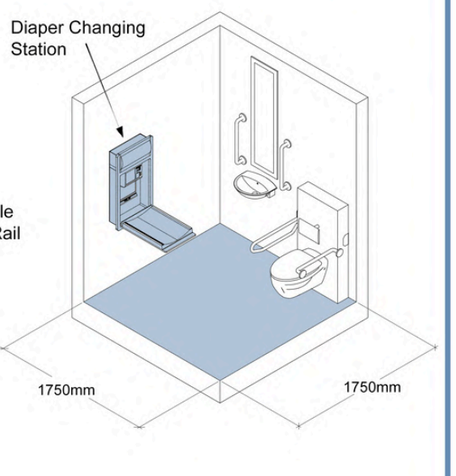
Ramp



Wheelchair Lift



Disabled Toilet



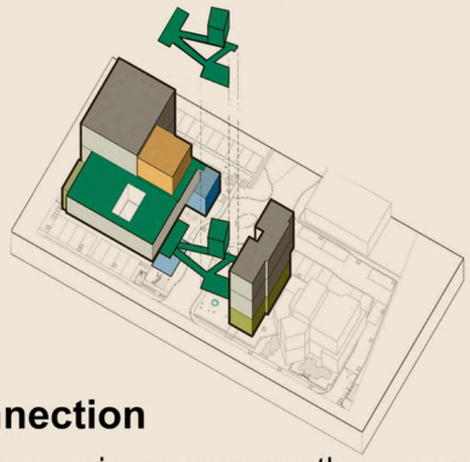
Baby Room

PROJECT 3: PRECEDENT STUDY ‘NAIPPA ART COMPLEX’

The Naipa Art Complex includes an art gallery, recording studio, dance studio, dining areas, and office spaces. The design aims to integrate with the existing natural environment, specifically focusing on preserving and showcasing the mature trees present on the site. The architecture emphasizes minimal impact on the site, blending the buildings into the greenery using materials like reflective glass to create a seamless transition between built and natural environments

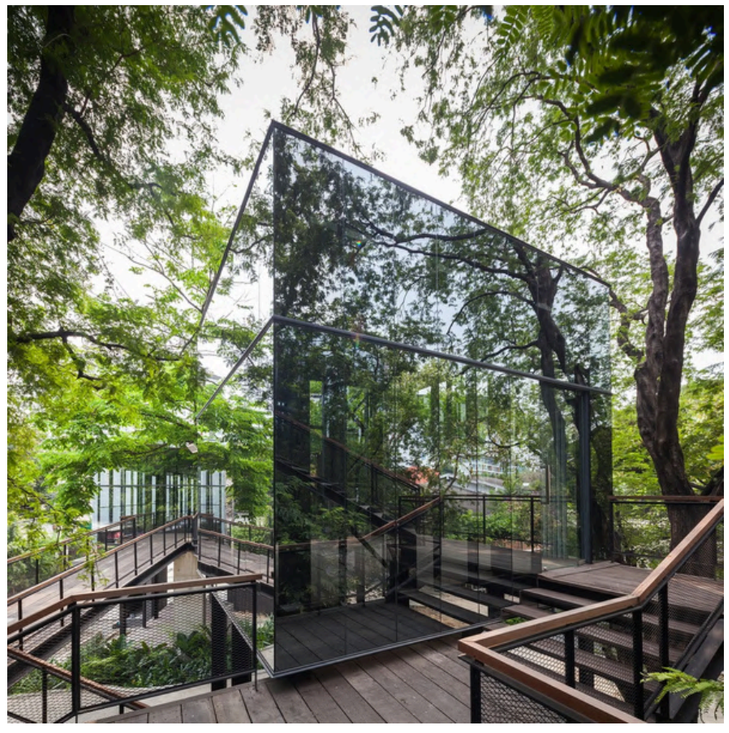
- Architect: Stu/D/O Architects
- Year of Completion: 2016
- Location: Sukhumvit 46, Phra Kanong, Bangkok, Thailand
- Coordinates: 13.7116° N, 100.5903° E
- Area: site area of 1,200 square meters with a gross floor area of 2,400 square meters.
- Client: G’RIS 46

Program



Connection

The two main masses are then connected together by multi-level sculptural terraces that intertwine itself between the existing trees, leaving all the trees untouched.



Massing

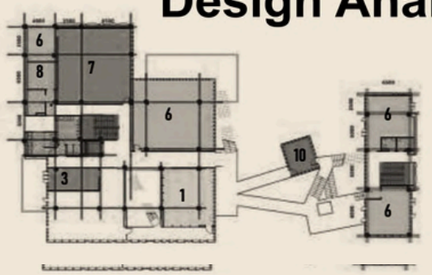
Two main masses surround the trees to preserve the existing trees on site.

Varied masses result in distinct visible angles for train passengers, captivating their attention.

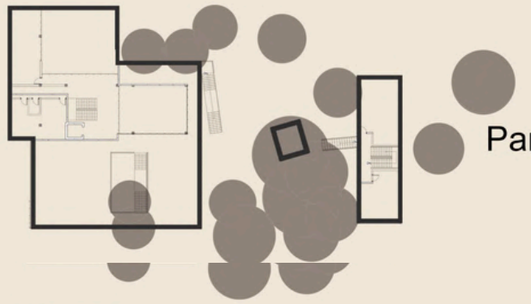
Lowering the level to preserve existing trees and incorporating a green roof to enhance natural surroundings.

Preserving the existing green space on the site also establishes a hierarchy among surrounding buildings that lack greenery.

Design Analysis

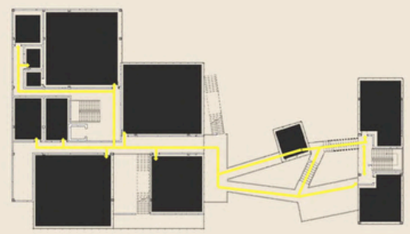


Grid System



Parti

Repetitive to Unique



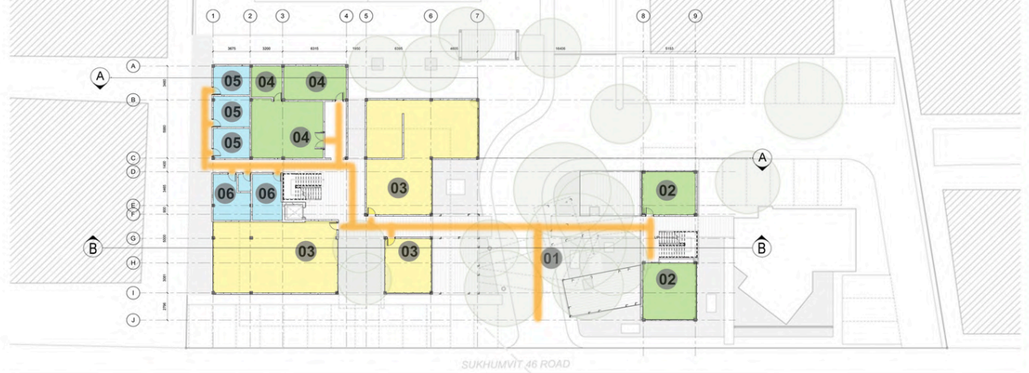
Circulation

Unit to Whole

Massing & Hierarchy

Zoning & Circulation

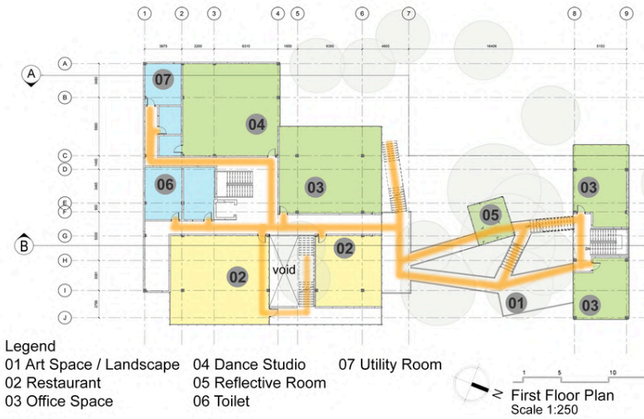
The entire building generates revenue primarily by renting out its various spaces. The ground floor hosts a restaurant and café, easily accessible to the public, alongside spaces available for community art activities.



Legend
Services
Private
Public

Legend
01 Art Space / Landscape
02 Cafe
03 Restaurant
04 Recording Studio
05 Plant Services Room
06 Toilet

Ground Floor Plan
Scale 1:250



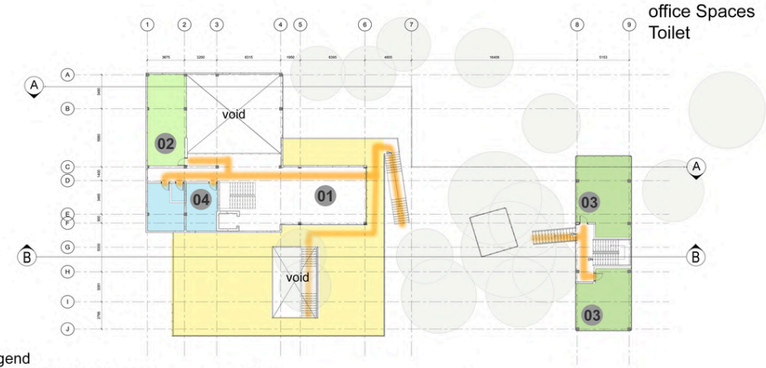
Legend
01 Art Space / Landscape
02 Restaurant
03 Office Space
04 Dance Studio
05 Reflective Room
06 Toilet
07 Utility Room

First Floor Plan
Scale 1:250

Ground Floor Level	SQM
Cafe	56sqm
Restaurant	195sqm
Recording Studio	76sqm
Plant Services Room	33sqm
Toilet	29sqm

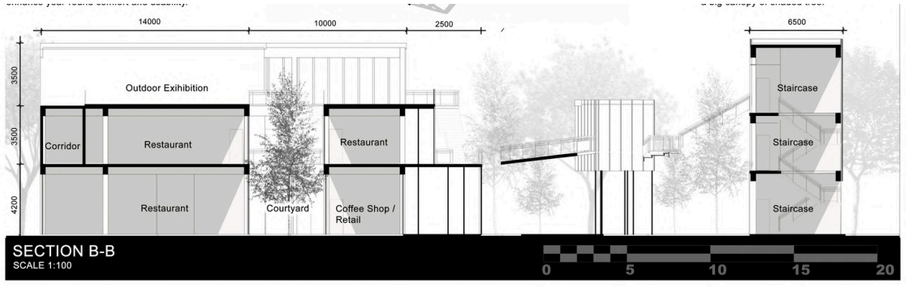
First Floor Level	
Restaurant	138sqm
Office Space	163sqm
Dance Studio	90sqm
Reflective Room	15sqm
Toilet	37sqm
Utility Room	26sqm

Second Floor Level	
Fitness	35sqm
office Spaces	73sqm
Toilet	31sqm

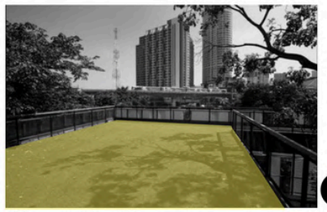


Legend
01 Art Space / Landscape
02 Fitness
03 Office Space
04 Toilet

Second Floor Plan
Scale 1:250



EXPLODED AXONOMETRIC



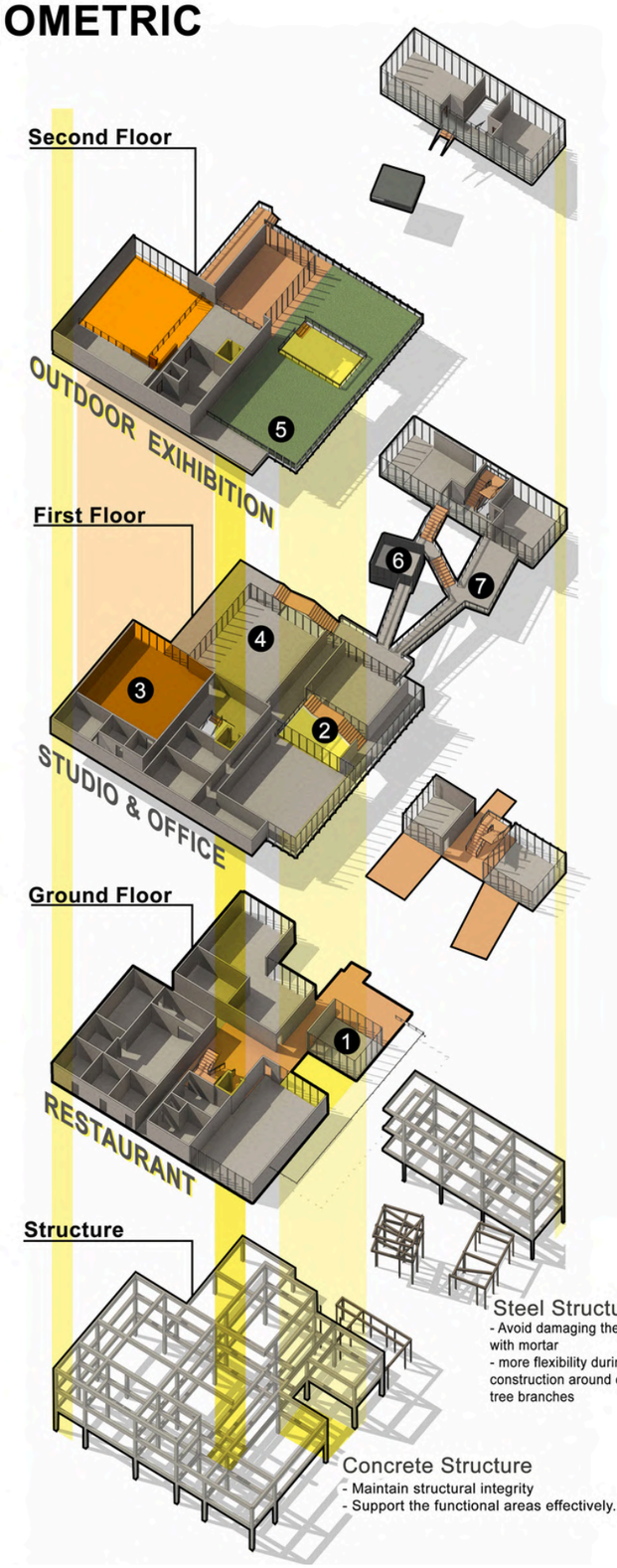
5 Green Roof
- Helping the building to be a thermally controlled by the passive properties.

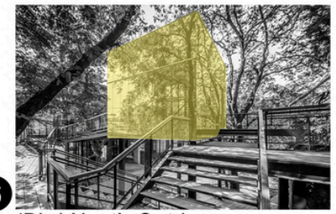
4 Office
- The office is spacious, well-ventilated, and offers a visual connection to the outdoor natural surroundings.

3 Dance Studio
- Double ceiling height creates a feeling of spaciousness, grandeur, and openness, enhancing natural light

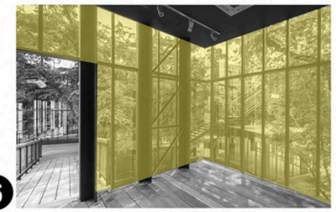
2 Courtyard
- Provide natural light and aiding airflow, and a direct link to nature.

1 Cafe
- Shade from hot weather and wind shelters enhance year-round comfort and usability.



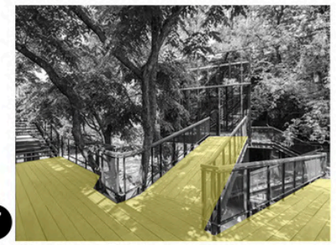


6 'Bird Nest'- Outdoor
- Concealing the building within the forest, expanding the vision of greenery with reflective glass enclosures all around.

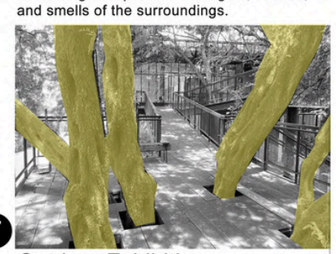


6 'Bird Nest'- Indoor
- Creating a distinguished inside& outside atmosphere, perfect for exhibition due to it nature lighting.

7 Outdoor Staircase
- The stairs encourage people to gaze upward, connecting visually with the tall trees and feeling immersed in nature.



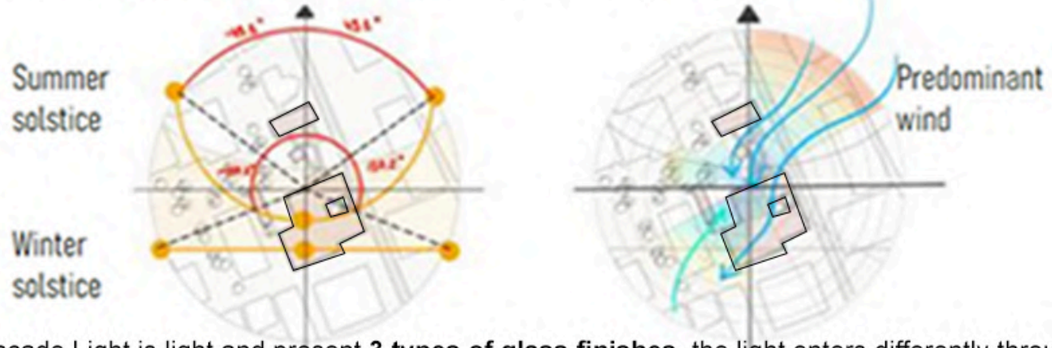
7 Outdoor Bridge
- Offers a multisensory journey through nature, immersing occupants in the sights, sounds, and smells of the surroundings.



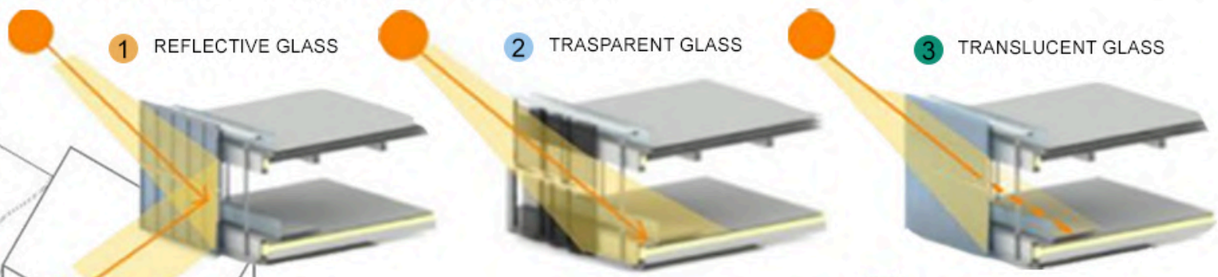
7 Outdoor Exhibition
- Connection to the natural surrounding under a big canopy of shaded tree.

Orientation & Facade

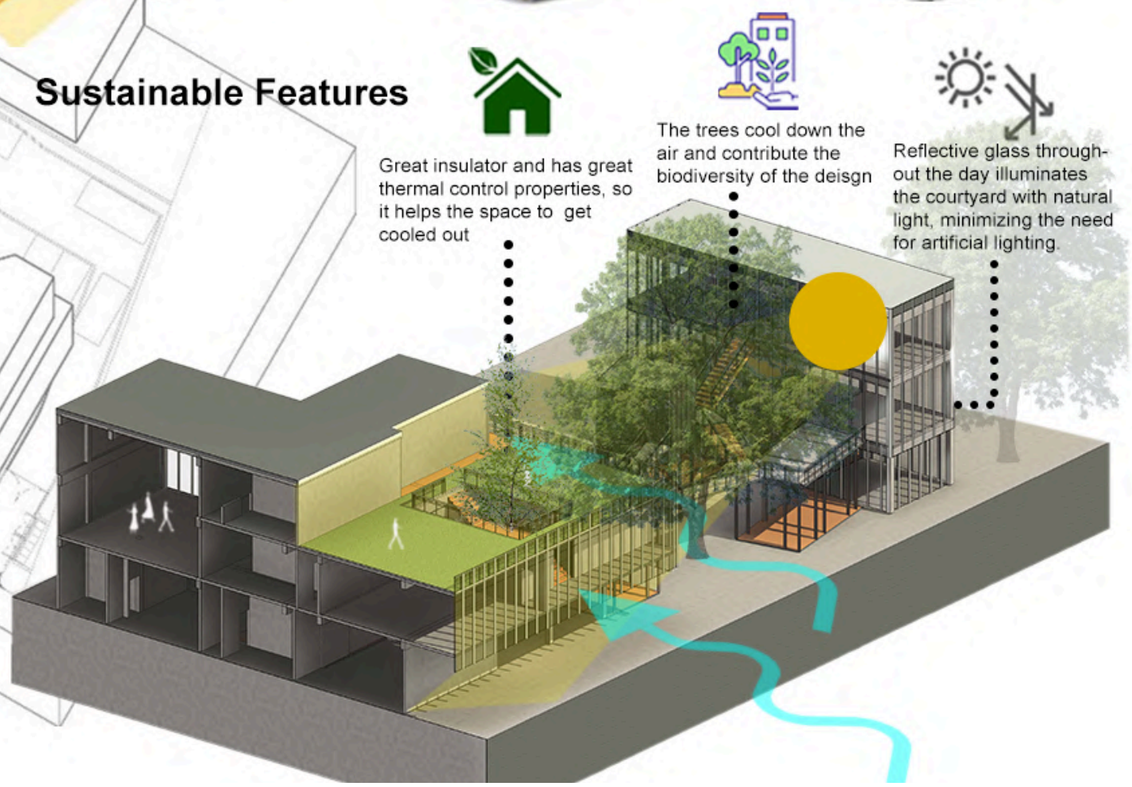
Dividing the building into two parts enhances wind flow through corridors and utilizes tree shadows for cooling. The east facade suits the restaurant, preventing overheating, while the western side shields the dance studio from sun exposure, aiding in effective cooling.



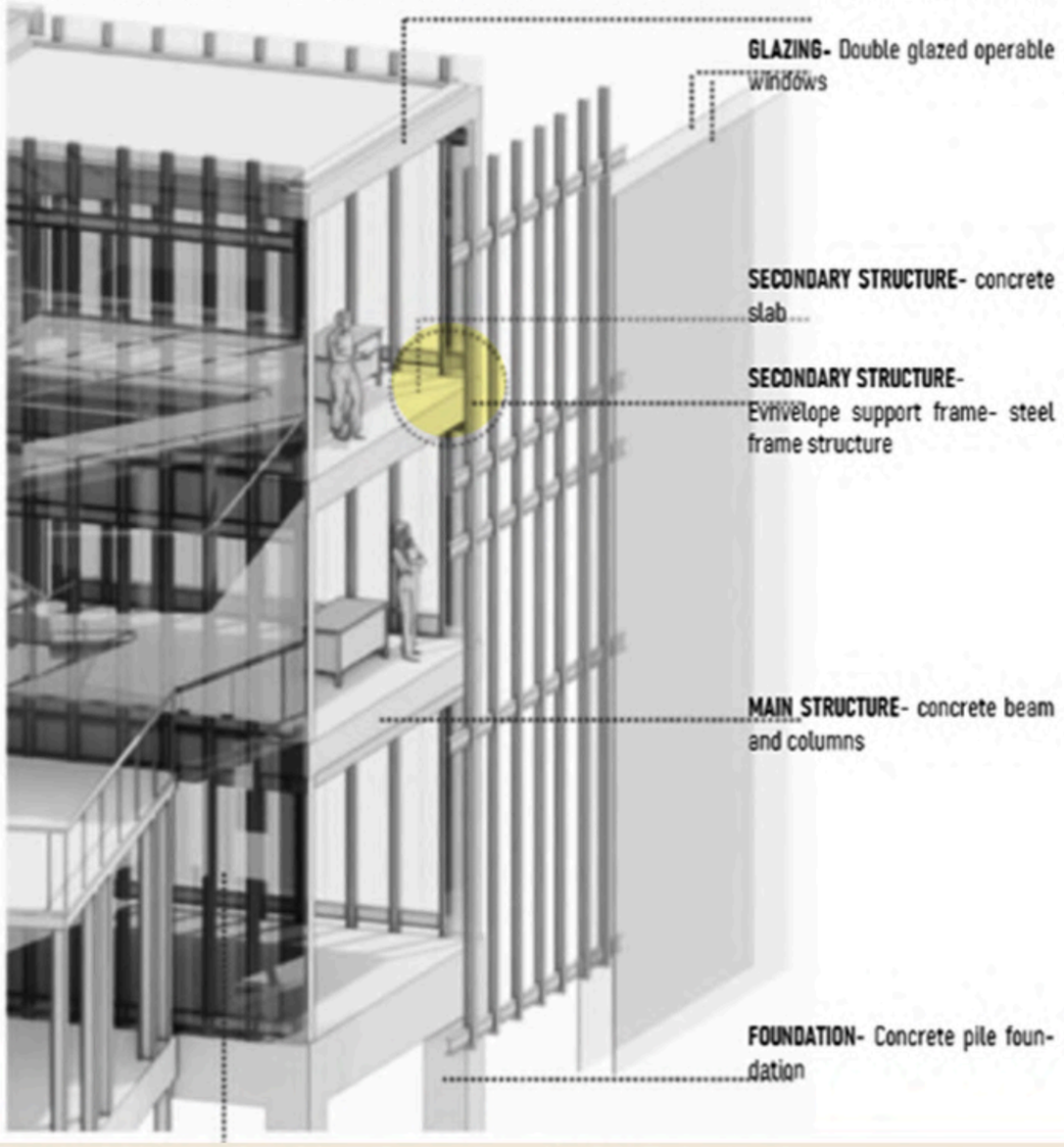
Facade Light is light and present **3 types of glass finishes**. the light enters differently through these different surfaces, so in places where the sun barely hits, a higher-transperency glass was used to capture the light but not the solar gain.

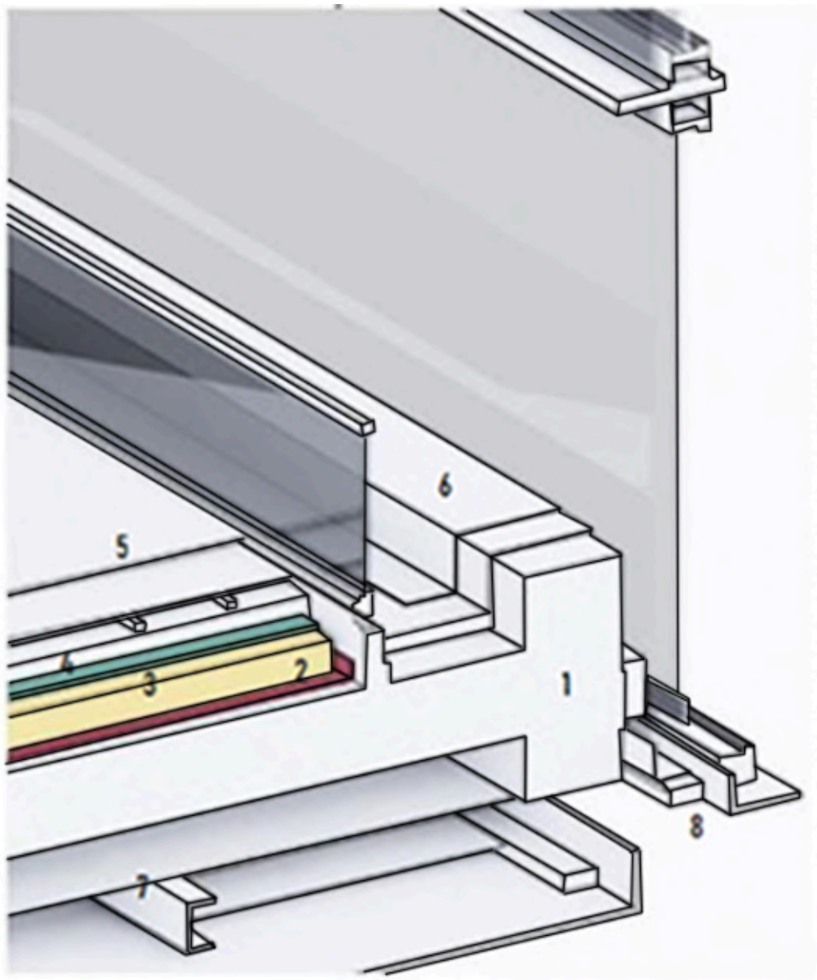


Sustainable Features



Facade Construction





Construction Details

1.Concrete Main Structure
200mm in- situ reinforced concrete
2. 15mm Damp Proof Membrane
3. Insulation-150mm rigid insulation
4.15mm Vapour Control Layer
5.Floor Finish
-steel support
-50mm poured decorative concrete
6. 12mm Metal Channel Protectionover separation layer
7. Exterior Ceiling
-steel tie
-ceiling finish
8. Curtain Wall Flooring System
-attachment clip
-wind anchor
-steel embed in concrete

Evaluation

Yellow poinciana

Spread :9m - 15m
Plant height :12m - 15m

Sustainable Water Cycle

The case study **lacks details on water circulation**, **storage**, and recycling, with no information provided on water tanks for capturing or recycling water.

Local Material

On-site renewables utilize **local trees** for **construction and functionality**, benefiting from nearby industries for material sourcing.

Overall planing strategy

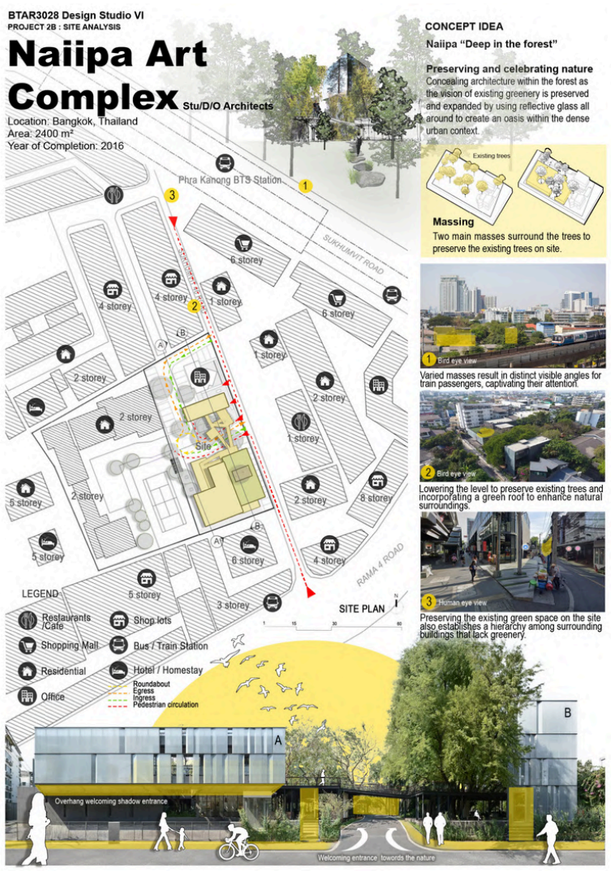
Things to learn :
-Strategically utilizing **building levels** based on **site conditions** and **neighboring structures.**
Employing **shadows**, **vegetation**, and **building orientation** to create an **inviting pedestrian entrance**.

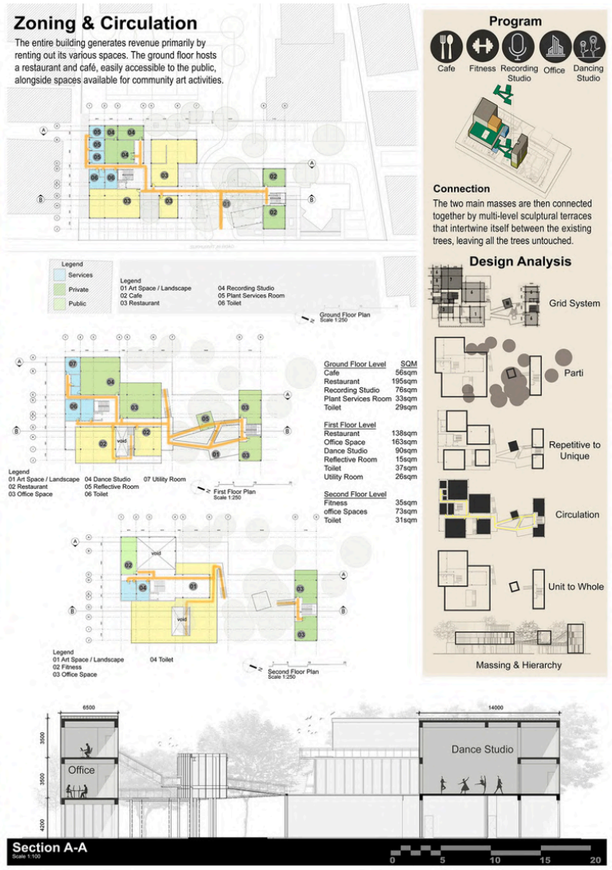
Weaknesses
-**Solar panels** and excessive mechanical ventilation system were not observed.
-**Limited clarity** in the separation between **pedestrian** and **vehicular pathways**.

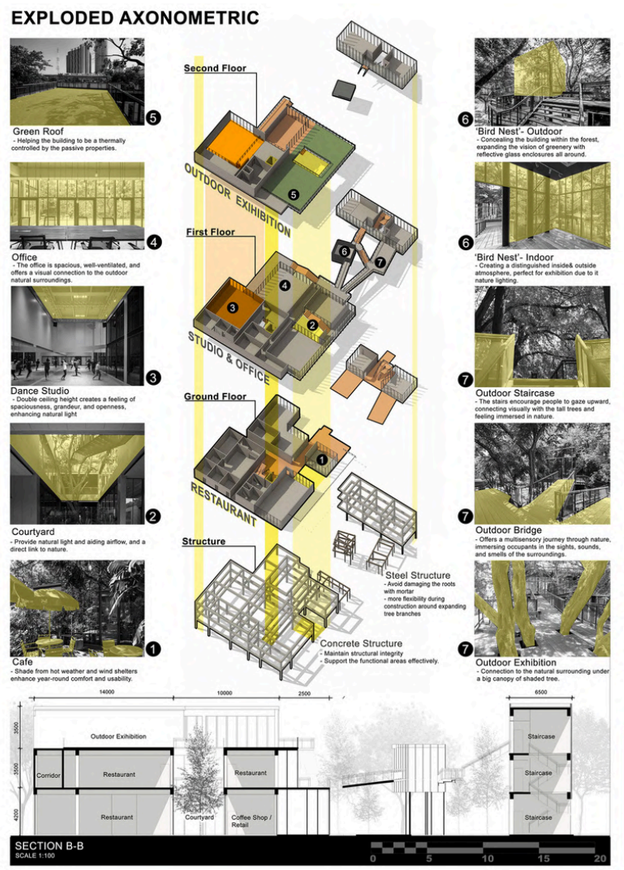
Sectional Model
Shows main spaces in the building, for example the dance studio shown above

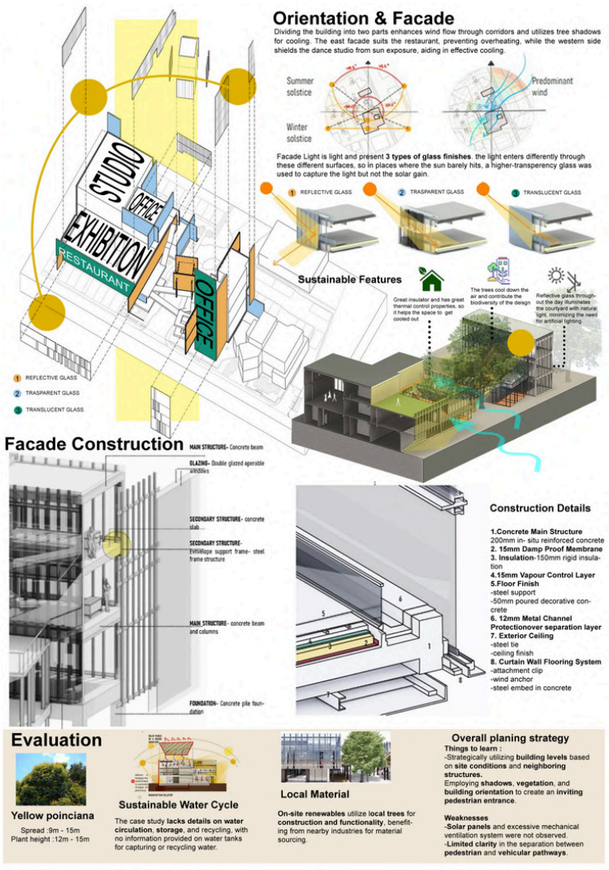
Precedent Study Model
Material: 3D printed

Overall presentation board layout









PROJECT 4: CULTURAL AND CREATIVE CENTRE

INTRODUCTION

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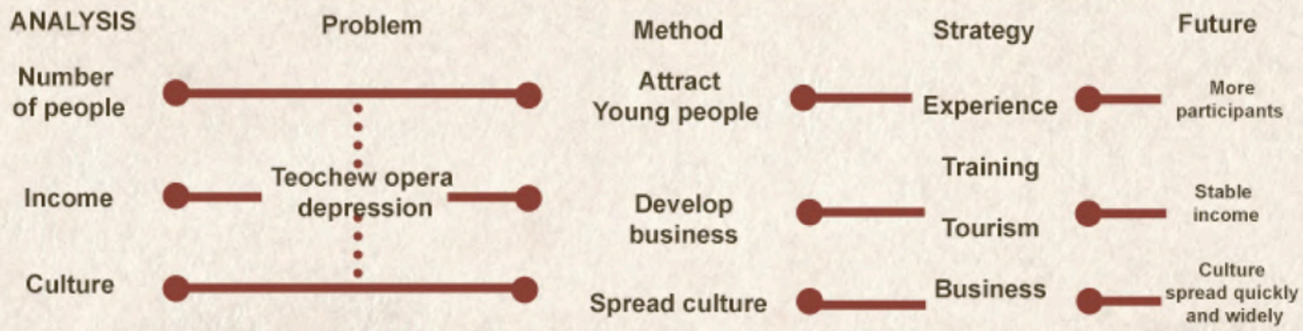
In a dynamic world, our history and environment connection evolves. The envisioned Chinatown performing arts facility must adapt to arts' increasing public influence. Drawing inspiration from Chinatown's essence, particularly the symbolic River of Life, the building will foster cultural creativity. Like the Klang River, it will channel artistic energy, linking Chinatown to global cultural hubs.

This architectural design accommodates formal and informal artistic expressions, catering to daily activities and special performances. It embodies humility and audacity, striving to be versatile and generate surplus energy. Departing from conventional institutional architecture, it encourages innovation and cre-

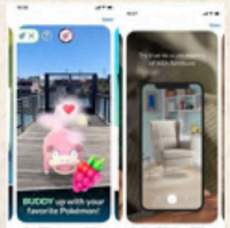
WHAT ARE THE PROBLEM ?



Projecting the Future: How Emerging Technologies are Reshaping Architectural Design and User Engagement

Digital technologies are crucial in architecture and cultural heritage preservation, transforming static structures into dynamic storytelling platforms. This section explores the role of digital projection, focusing on projection mapping, AR, and holographic displays. These technologies offer immersive and interactive experiences, revolutionizing user interactions within architectural spaces. A literature review lays the groundwork for analyzing these technologies in architecture.

Projection Mapping



Augmented Reality (AR) Experiences

Holographic Displays

MISSING CULTURE IN CHINATOWN

THE TEOCHEW OPERA

What was once a traditional vibrant display of life during Chinese New Year is now a dying art form today. Chinese Opera is a culmination of stories from thousands of years involving several cultural elements including illustrious songs, martial arts and acrobatics, magnified through majestic theatrics on stage.

Although there are many different types of traditional Chinese Opera out there, Teochew Opera remains the most common and prominent one in Malaysia. With little to no words spoken, colours of a character's face play a significant role in breathing life and guiding the audience through a story.

BURN DOWN

Jalan Panggung was formerly known as Theatre Street, because of a Chinese Theatre that was built here in 1880s, which played Cantonese Wayang and hosted performances by a Teochew Opera and Chinese temple nearby.

Is one of the oldest Chinese opera clubs in Kuala Lumpur. It raises money for charity by the performance of Chinese opera and choral singing. The money is mainly donated to the old folk's homes, hospitals and schools. As membership decreased part of the premises was sublet for extra revenue.

SHUT DOWN

Lost

Community engagement may lack in preserving cultural heritage in these areas.

CHINATOWN ?

Authentic

These places have lost their charm and authenticity due to commercialization.

RESTING

Lacking a place to rest and learn the malaysian Chinese culture

The focus of the Petaling Street Heritage House is the preservation of Chinese dialect songs and its musical heritage. Although he suffered insufficient funds due to damages to the heritage house, he doesn't give up on how he wanted to preserve the culture of Chinses dialect songs and its musical heritage.

LACK OF EXPOSURE

CLIENT

Performing Art (Malaysian Chinses)

CENDANA
CULTURAL ECONOMY DEVELOPMENT AGENCY

Film & Digital content (Promote)

CENDANA sponsors the Opera Community to revive the cultural heritage of Chinatown on Jalan Panggung. This initiative reintroduces traditional opera performances, revitalizing the area's historical arts scene, attracting visitors, and fostering appreciation for Chinatown's rich traditions.

TARGET USER

IMPACTS OF ASSOCIATIONS IN SOCIETY

Encourage younger generation taking part to preserve and promote art and culture.
Inspire and educate tradition in the community.

Chin Woo Athletic Association Selangor & KL is an international martial arts organisation founded in Shanghai, China, on July 7, 1910 by Grandmaster Huo Yan Jia.

MOTTO: 爱国、修身、正义、助人: (Love One's Country, Cultivate One's Character, Righteousness, Helping Others)

The Selanggor & KL Teo Chew Association was founded on the Mid-Autumn Festival in 1891.

Mission:
1)Handle charity and public welfare. 2)Support and sponsor cultural undertakings. 3)Resolve disputes in the same country. 4)Promote good relations and feelings between fellow countrymen, and live in harmony. 5)Give play to the spirit of mutual assistance & improve the welfare of the same country. 6)Discuss and deal with issues that have a major relationship with the same township.

CONCEPT

CENDANA

PERFORMING ART
+
FILM & DIGITAL CONTENT

REVEAL

CONNECT

TECHNOLOGY

PRECEDENT STUDY

ACTIVITIES

FESTIVAL

Wedding ceremony

Chinses New year
Mooncake festival

Immersive
performance

Multipurpose Hall

PERFORM

Film

opera

music

Coutyard

WORKSHOP

Tea House
calligraphy

Tea
workshop

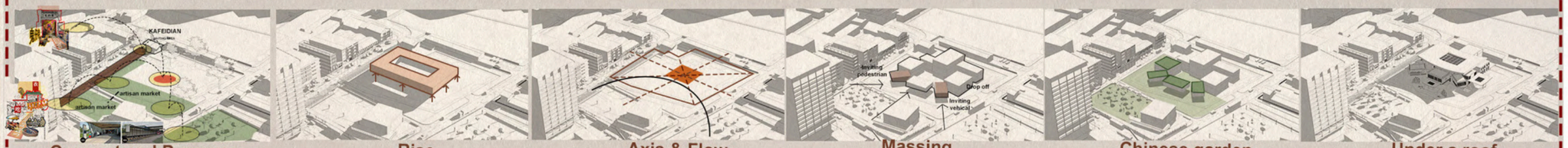
RELAX

Market

Games

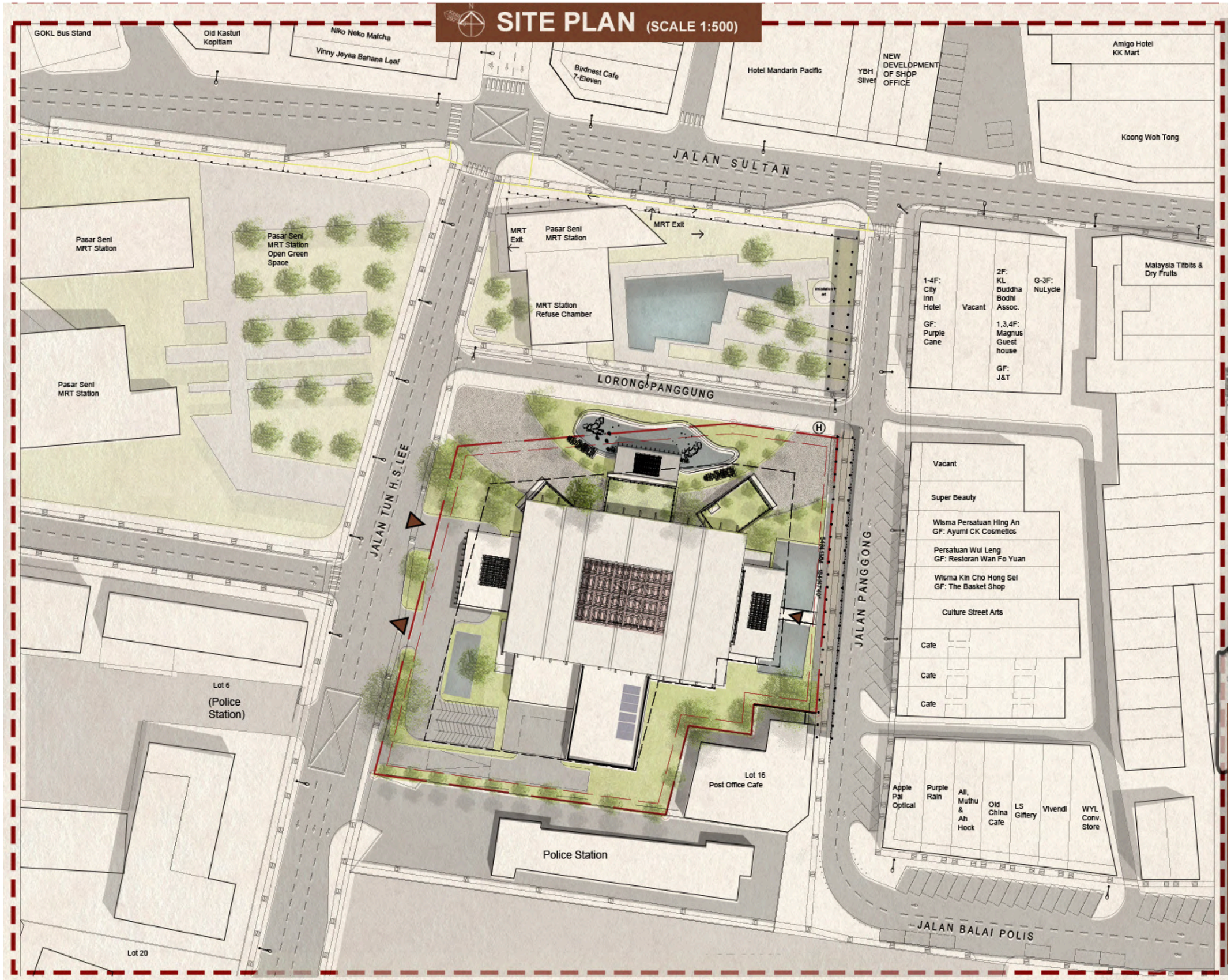
Taichi

DESIGN DEVELPOMENT



Connect and Preserve | Rise | Axis & Flow | Massing | Chinese garden | Under a roof

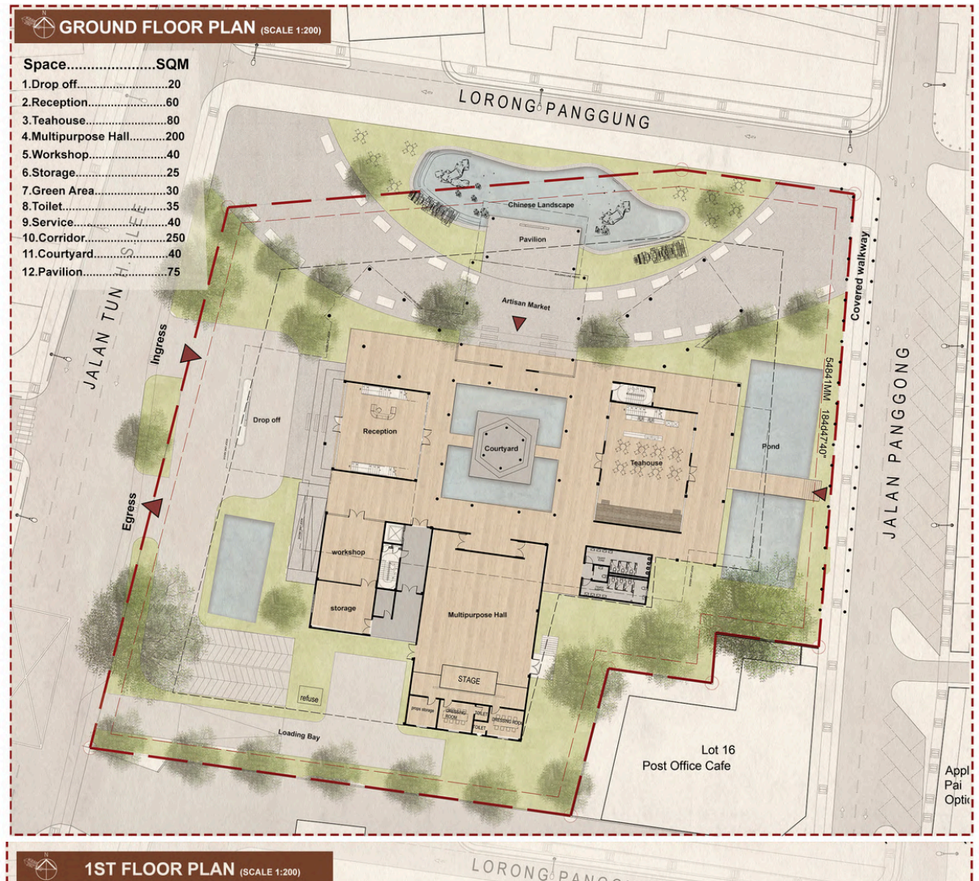
SITE PLAN (SCALE 1:500)



GROUND FLOOR PLAN (SCALE 1:200)

Space.....SQM

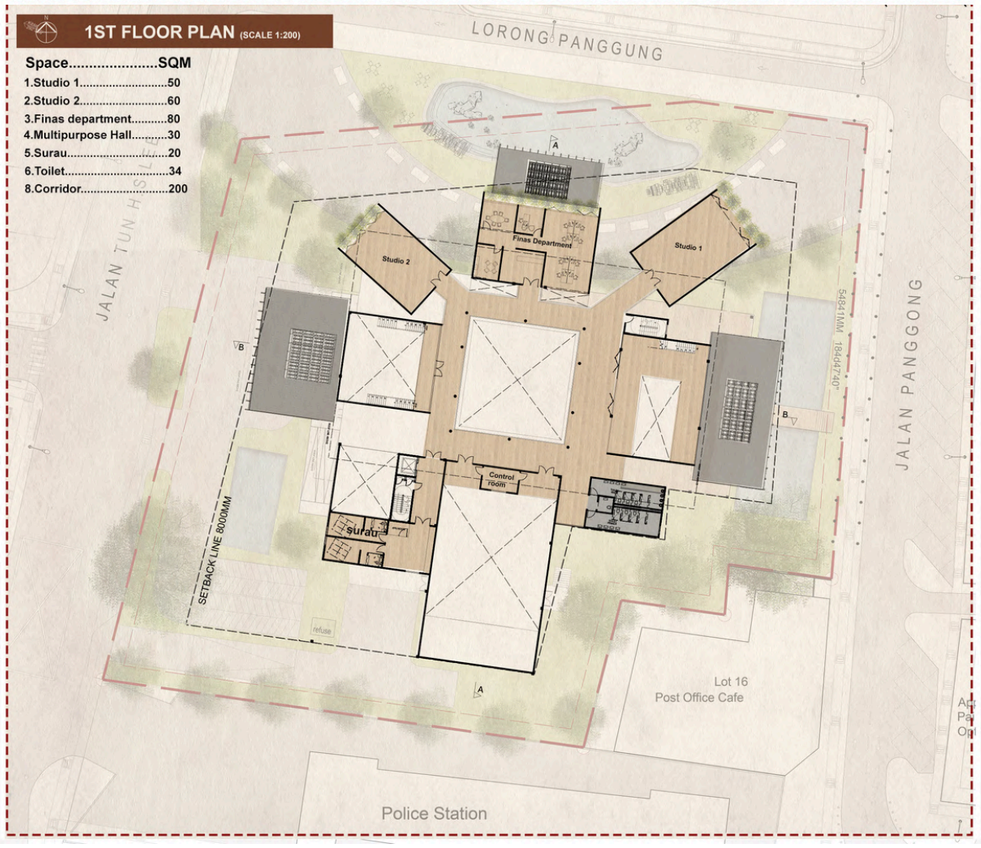
1.Drop off	20
2.Reception	60
3.Teahouse	80
4.Multipurpose Hall	200
5.Workshop	40
6.Storage	25
7.Green Area	30
8.Toilet	35
9.Service	40
10.Corridor	250
11.Courtyard	40
12.Pavilion	75



1ST FLOOR PLAN (SCALE 1:200)

Space.....SQM

1.Studio 1	50
2.Studio 2	60
3.Finas department	80
4.Multipurpose Hall	30
5.Surau	20
6.Toilet	34
8.Corridor	200

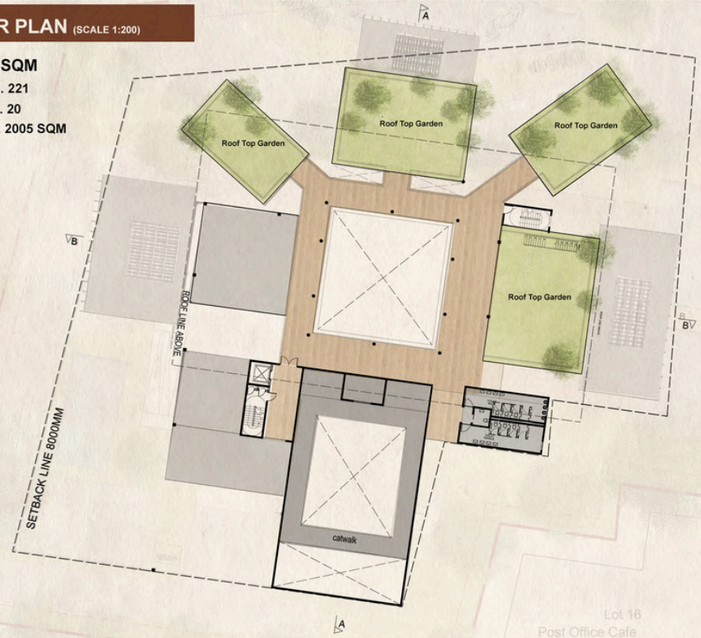


SUBBASEMENT PLAN (SCALE 1:200)

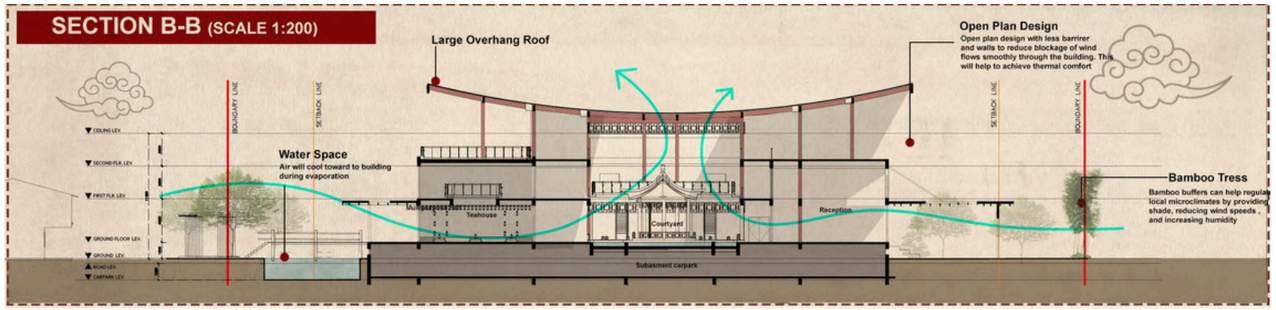
42 Carpark + 2OKU
20 Motoparking

2ND FLOOR PLAN (SCALE 1:200)

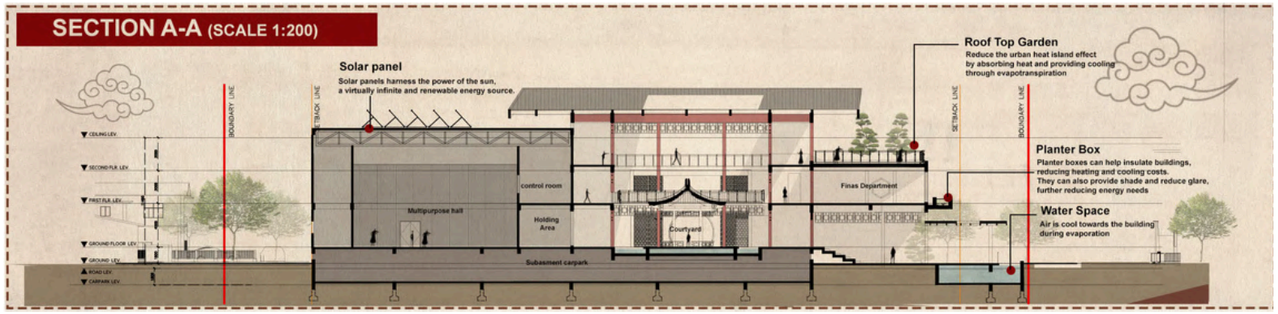
Space.....SQM
1.Roof Top Garden..... 221
2.Catwalk..... 20
Total Build Up Area..... 2005 SQM

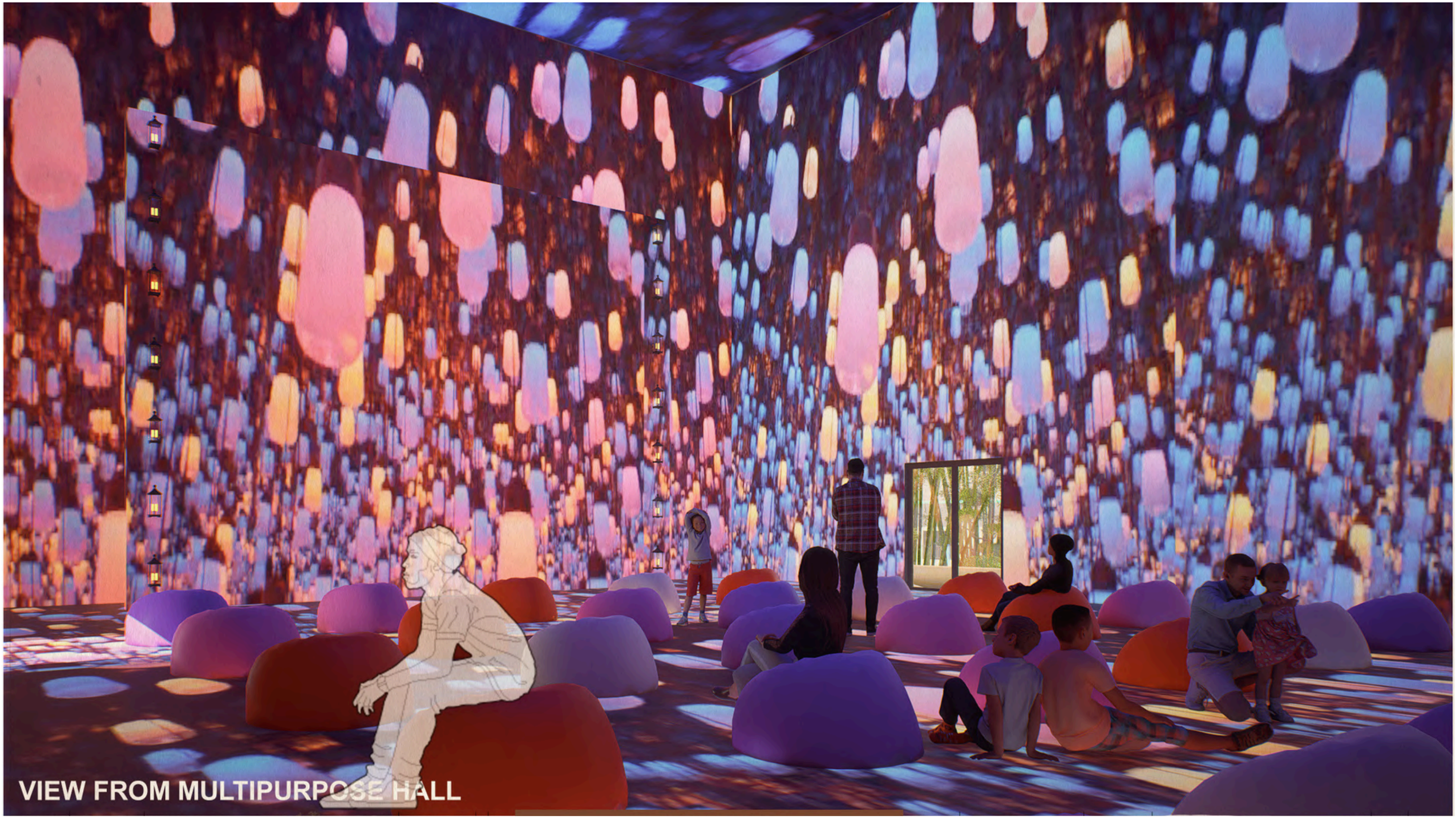


SECTION B-B (SCALE 1:200)

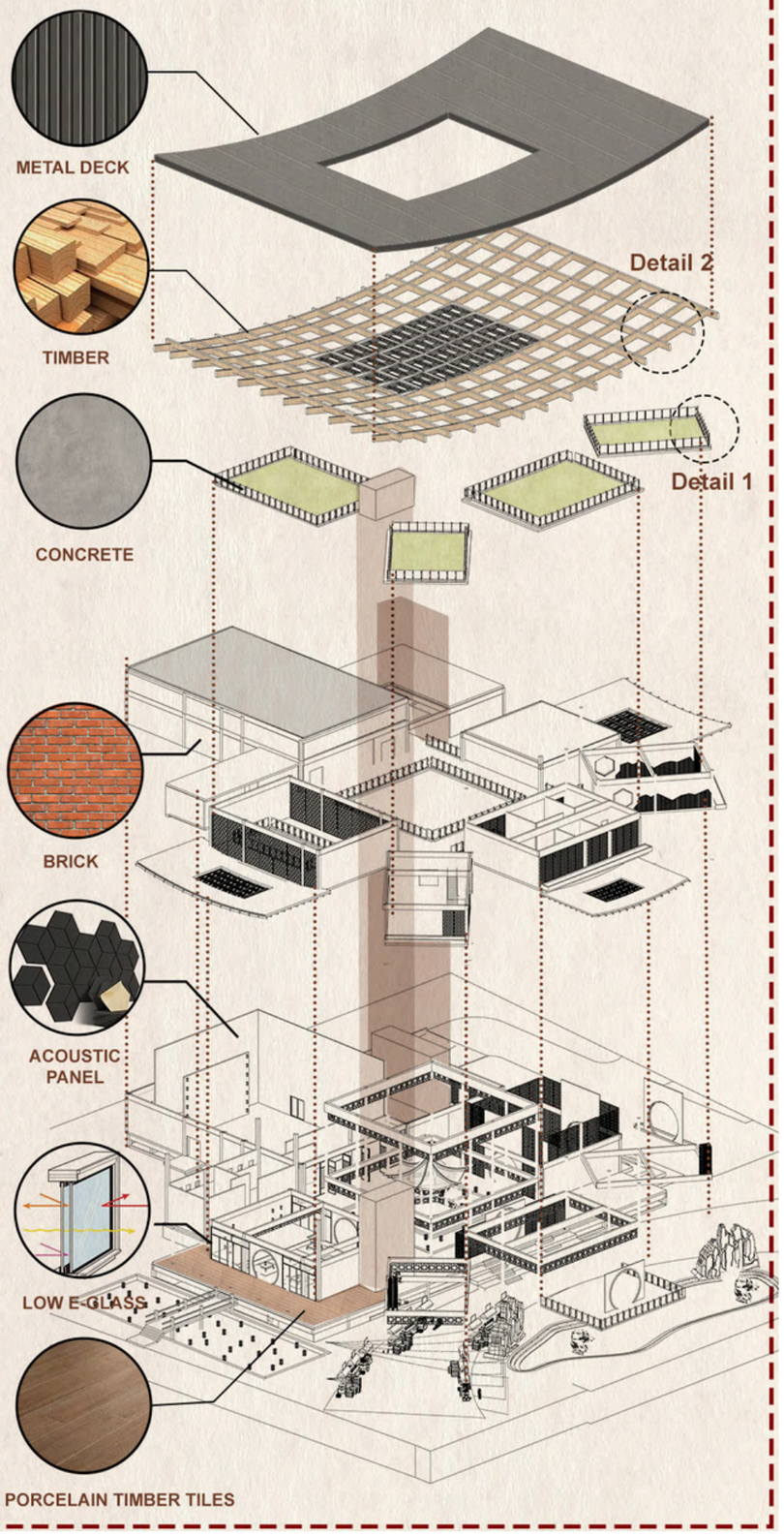


SECTION A-A (SCALE 1:200)

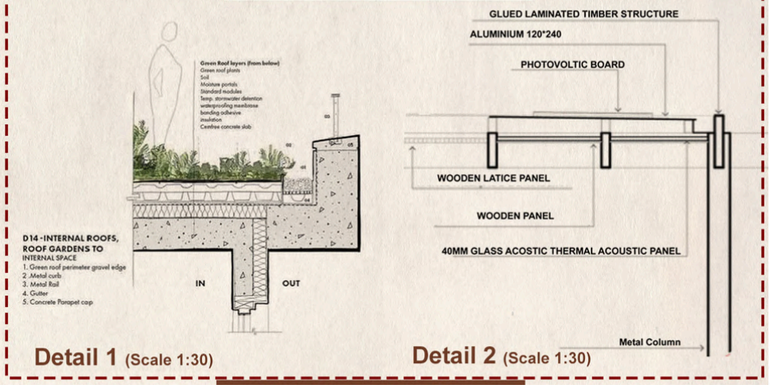




MATERIALS

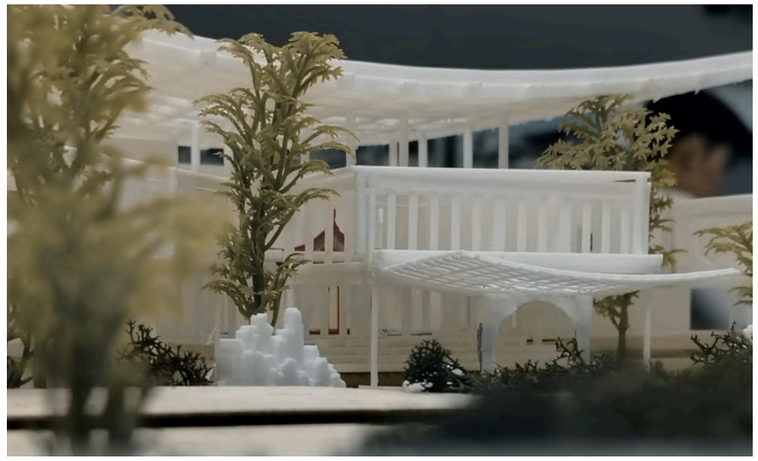


CONSTRUCTION DETAILS

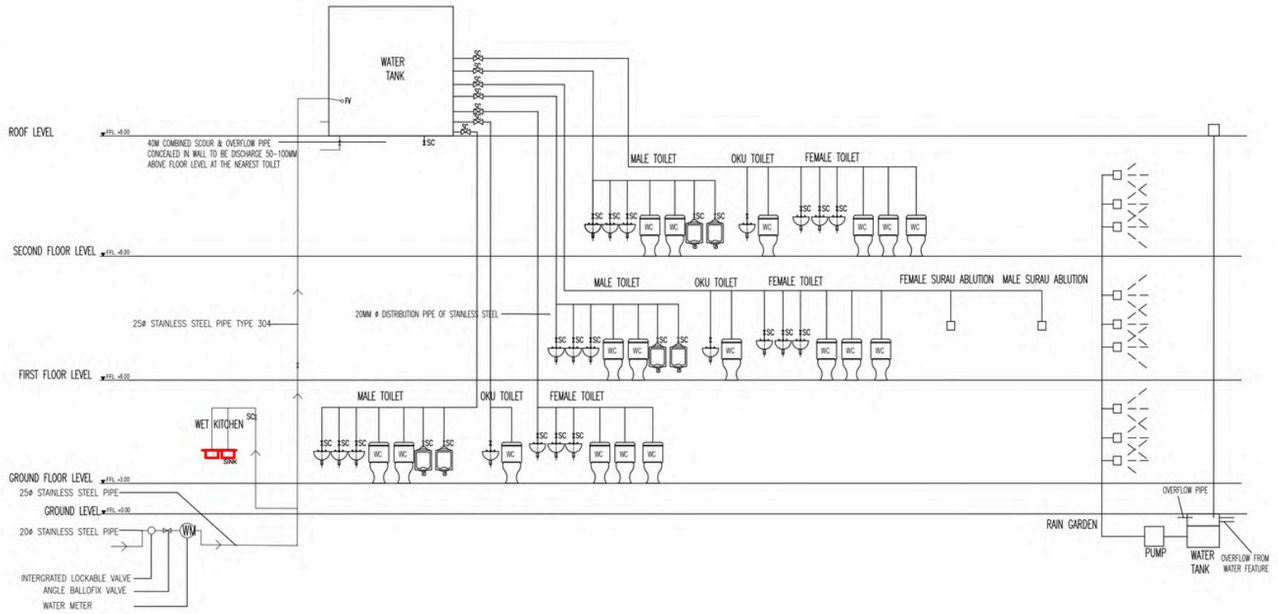


ELEVATIONS

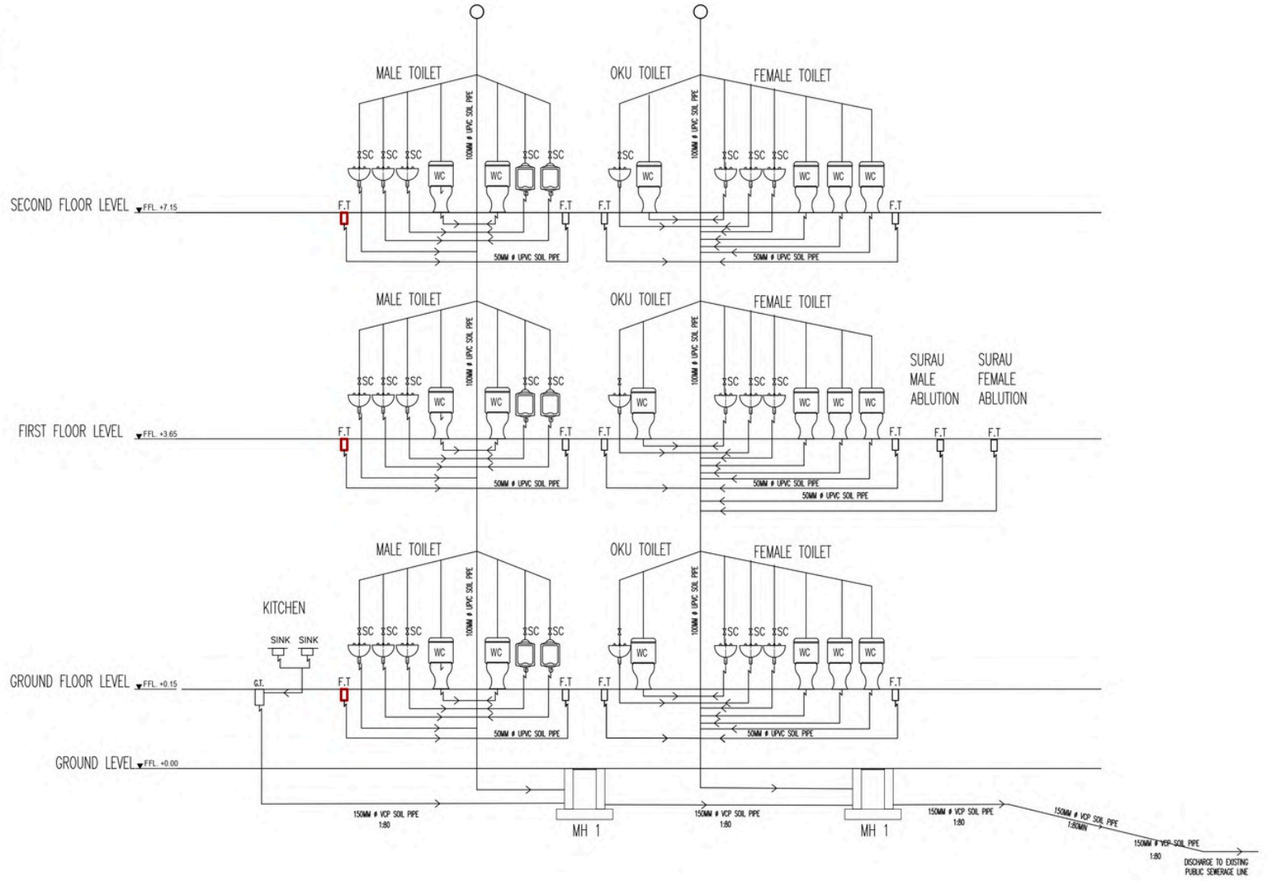
PHYSICAL MODEL PHOTO



Plumbing Diagram



Sanitary Diagram



Calculation to Staircase Width
UBBL 7th Schedule

Purpose Group	OLSMP	Capacity Exit for Staircase
Place of Assembly	**1.5**	75
Floor Area (sqm) First floor Level	**480 SQM**	
Occupant Load	**Area/ OLSMP 480/1.5**	=320 person
Capacity Exit	**Occupant Load / Capacity Exit =320/75**	4.27m
Staircase Width	**Exits Capacity x 550m 4.27 x 0.55**	2.35m
Width Provided		2.5

Purpose Group	OLSMP	Capacity Exit for Staircase
Place of Assembly	1.5	75
Floor Area (sqm) 2nd floor Level	nd	
Occupant Load	**Area/ OLSMP 221/1.5**	=147 person
Capacity Exit	**Occupant Load / Capacity Exit =147/75**	1.96m
Staircase Width	**Exits Capacity x 550m 1.96 x 0.55**	1.1
Width Provided		2.5

THE OPERA COMMUNITY CENTRE

BY Chung Jun Kit
22WVR05810

INTRODUCTION

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KEY PLAN
NOT TO SCALE

LOCATION PLAN
NOT TO SCALE

MISSING CULTURE IN CHINATOWN

THE TEOCHEW OPERA

What was once a traditional vibrant display of life during Chinese New Year is now a dying art form today. Chinese Opera is a culmination of stories from thousands of years involving several cultural elements including illustrious songs, martial arts and acrobatics, magnified through majestic theatrics on stage.

Although there are many different types of traditional Chinese Opera out there, Teochew Opera remains the most common and prominent one in Malaysia. With little to no words spoken, colours of a character's face play a significant role in breathing life and guiding the audience through a story.

BURN DOWN

Jalan Panggung was formerly known as Theatre Street, because of a Chinese Theatre that was built here in 1880s, which played Cantonese Wayang and hosted performances by a Teochew Opera and Chinese temple nearby.

Is one of the oldest Chinese opera clubs in Kuala Lumpur. It raises money for charity by the performance of Chinese opera and choral singing. The money is mainly donated to the old folk's homes, hospitals and schools. As membership decreased part of the premises was sublet for extra revenue.

SHUT DOWN

Lost

Community engagement may lack in preserving cultural heritage in these areas.

CHINATOWN ?

Authentic

These places have lost their charm and authenticity due to commercialization.

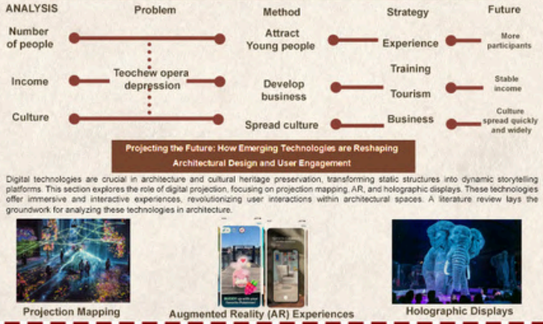
RESTING

Lacking a place to rest and learn the malaysian Chinese culture

The focus of the Petaling Street Heritage House is the preservation of Chinese dialect songs and its musical heritage. Although he suffered insufficient funds due to damages to the heritage house, he doesn't give up on how he wanted to preserve the culture of Chinses dialect songs and its musical heritage.

LACK OF EXPOSURE

WHAT ARE THE PROBLEM ?



Projecting the Future: How Emerging Technologies are Reshaping Architectural Design and User Engagement

Digital technologies are crucial in architecture and cultural heritage preservation, transforming static structures into dynamic storytelling platforms. This section explores the role of digital projection, focusing on projection mapping, AR, and holographic displays. These technologies offer immersive and interactive experiences, revolutionizing user interactions within architectural spaces. A literature review lays the groundwork for analyzing these technologies in architecture.

Projection Mapping

Augmented Reality (AR) Experiences

Holographic Displays

CLIENT

Performing Art (Malaysian Chinses) ····· CENDANA ····· Film & Digital content (Promote)

CENDANA sponsors the Opera Community to revive the cultural heritage of Chinatown on Jalan Panggung. This initiative reintroduces traditional opera performances, revitalizing the area's historical arts scene, attracting visitors, and fostering appreciation for Chinatown's rich traditions.

IMPACTS OF ASSOCIATIONS IN SOCIETY
Encourage younger generation taking part to preserve and promote art and culture.
Inspire and educate tradition in the community.

Chin Woo Athletic Association Selangor & KL is an international martial arts organisation founded in Shanghai, China, on July 7, 1910 by Grandmaster Huo Yan Jia.

MOTTO: 勤勉, 特色, 正义, 和人: (Love One's Country, Cultivate One's Character, Righteousness, Helping Others)

The Selangor & KL Teo Chew Association was founded on the Mid-Autumn festival in 1991.

Mission: 1)Handle charity and public welfare. 2)Support and sponsor cultural undertakings. 3)Resolve disputes in the same country. 4)Promote good relations and feelings between fellow countrymen, and live in harmony. 5)Give play to the spirit of mutual assistance & improve the welfare of the same country. 6)Discuss and deal with issues that have a major relationship with the same township.

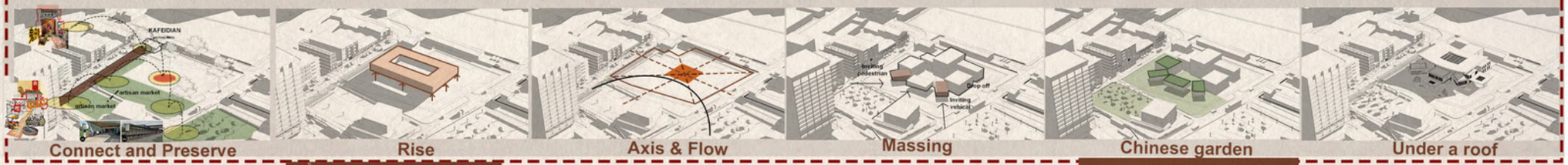
TARGET USER

CONCEPT

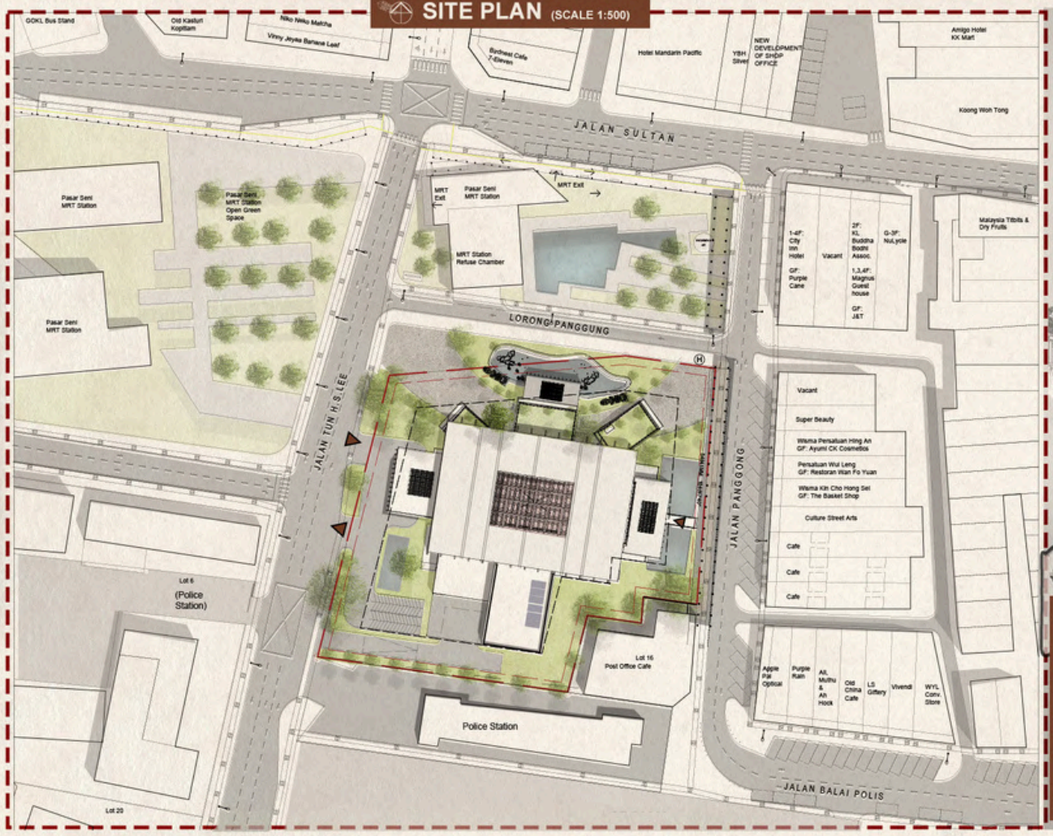
CENDANA

PRECEDENT STUDY

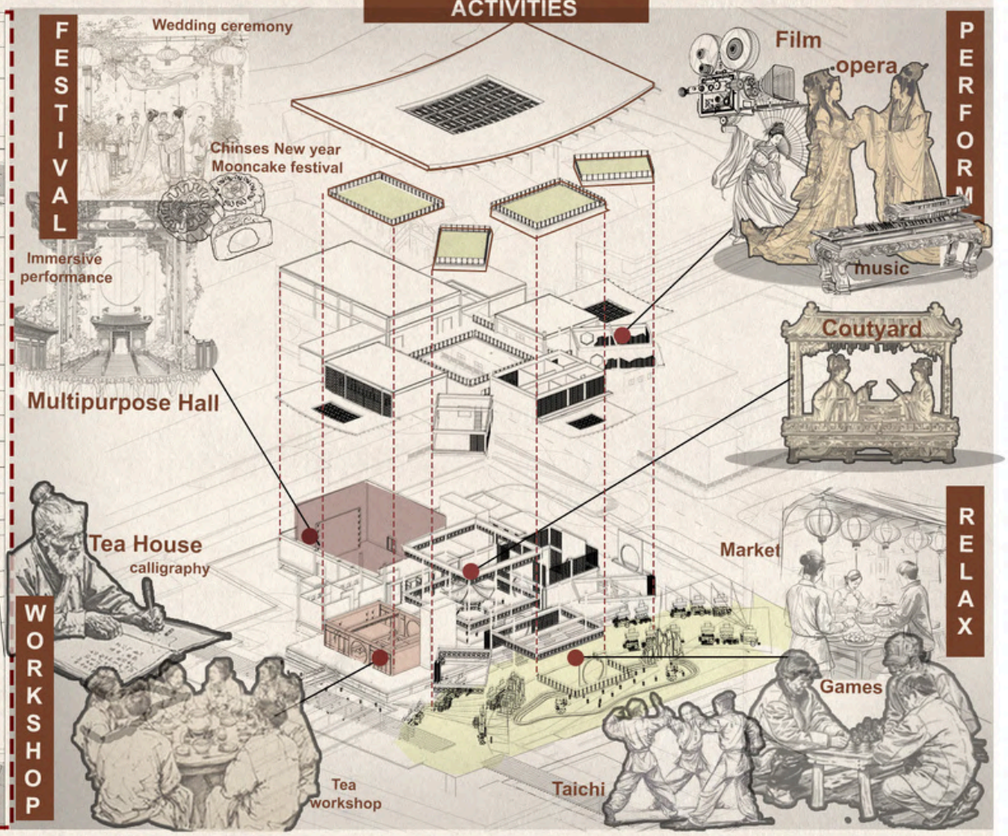
DESIGN DEVELPOMENT



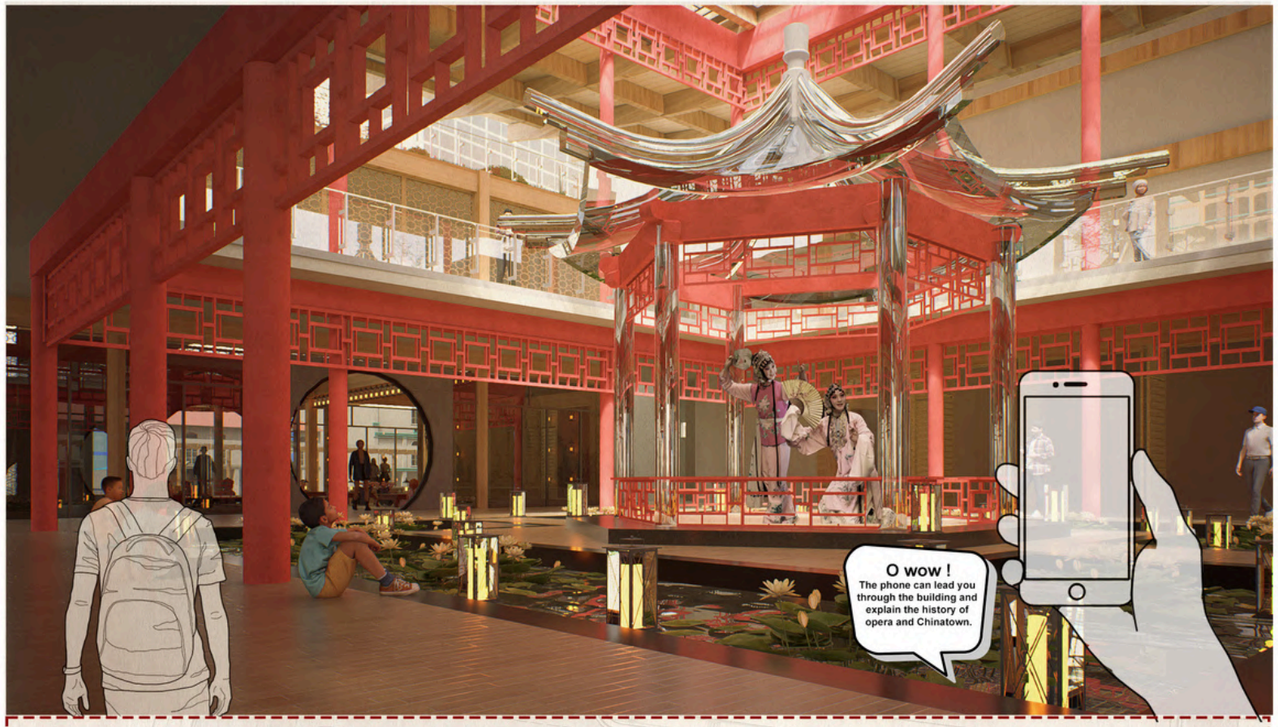
SITE PLAN (SCALE 1:500)



ACTIVITIES



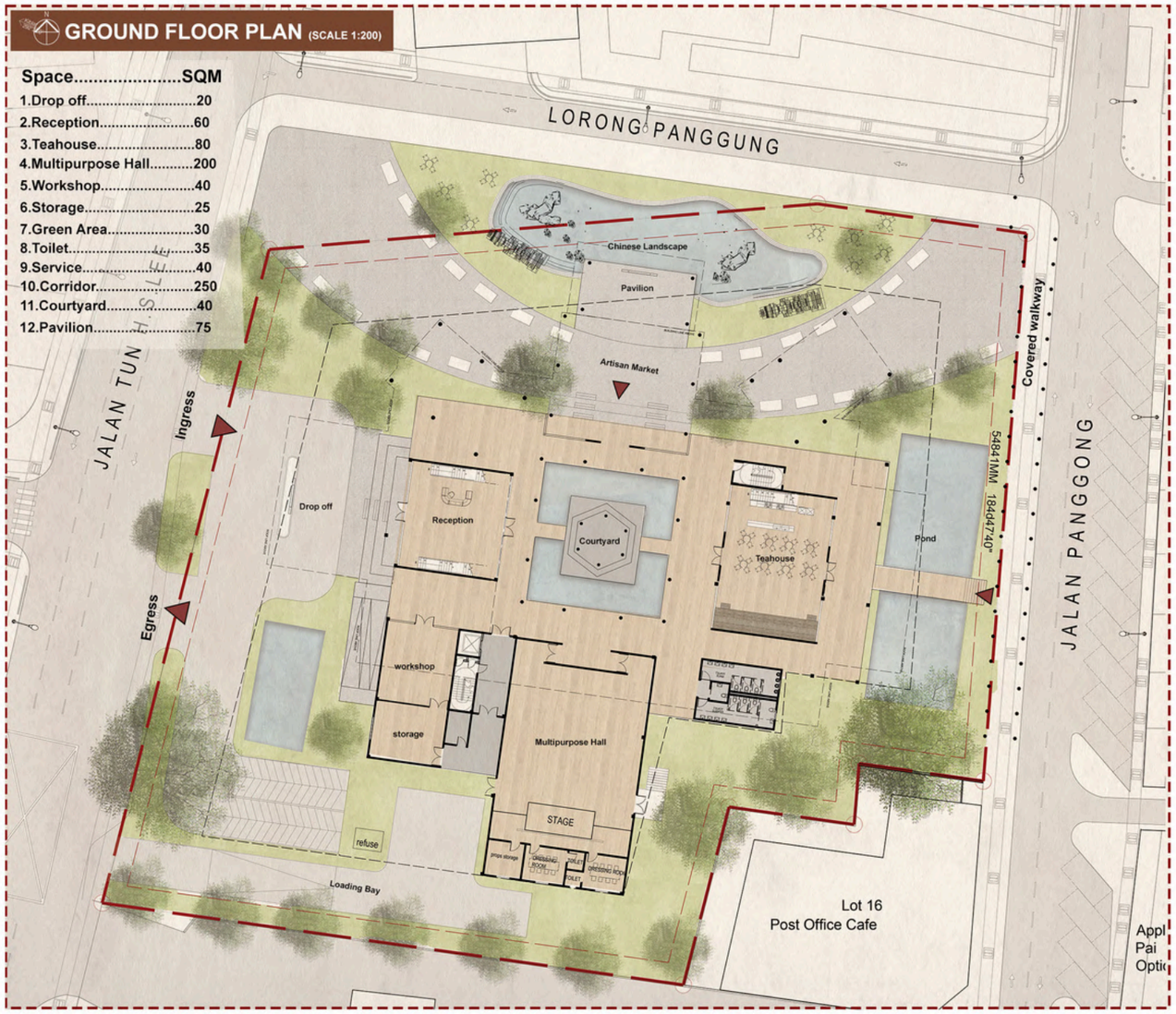
VIEW FROM ARTISAN MARKET



GROUND FLOOR PLAN (SCALE 1:200)

Space.....SQM

1.Drop off.....20
2.Reception.....60
3.Teahouse.....80
4.Multipurpose Hall.....200
5.Workshop.....40
6.Storage.....25
7.Green Area.....30
8.Toilet.....35
9.Service.....40
10.Corridor.....250
11.Courtyard.....40
12.Pavilion.....75



1ST FLOOR PLAN (SCALE 1:200)

Space.....SQM

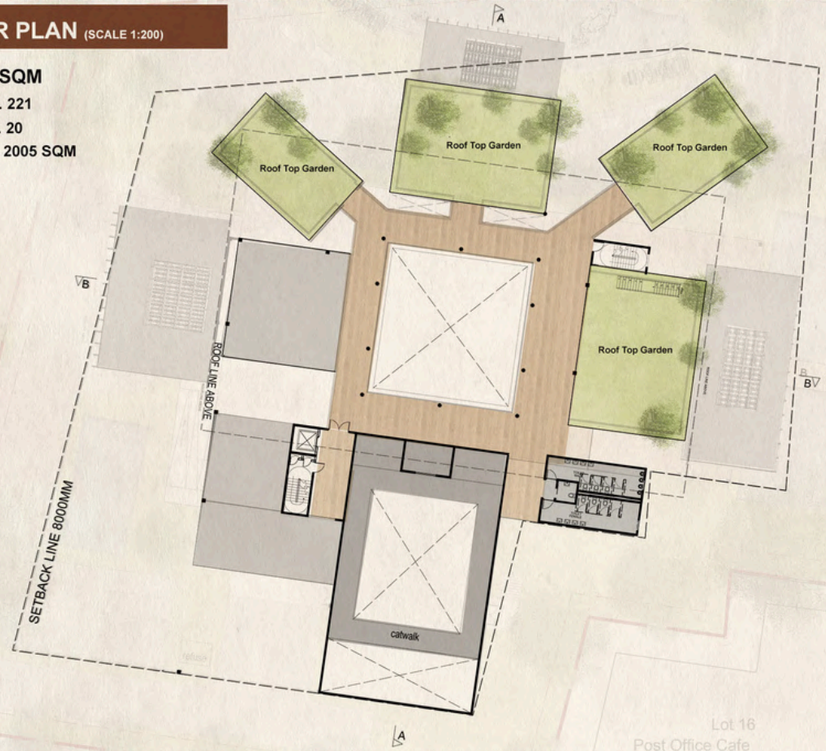
1.Studio 1.....50
2.Studio 2.....60
3.Finas department.....80
4.Multipurpose Hall.....30
5.Surau.....20
6.Toilet.....34
8.Corridor.....200

SUBBASEMENT PLAN (SCALE 1:200)

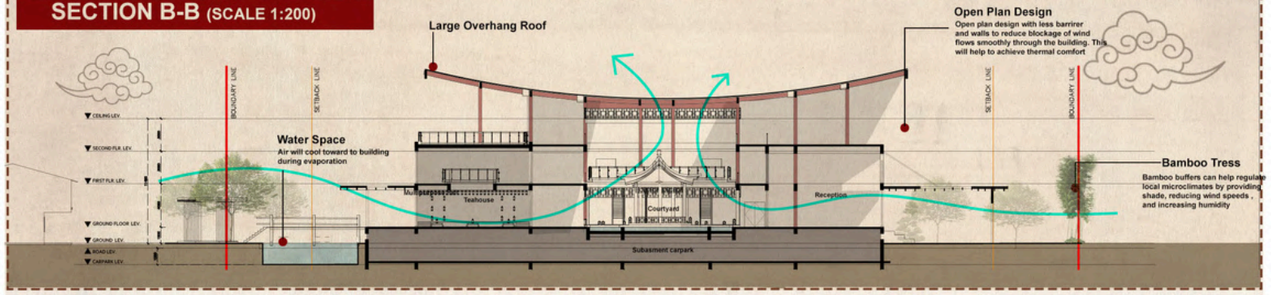
42 Carpark + 2OKU
20 Motoparking

2ND FLOOR PLAN (SCALE 1:200)

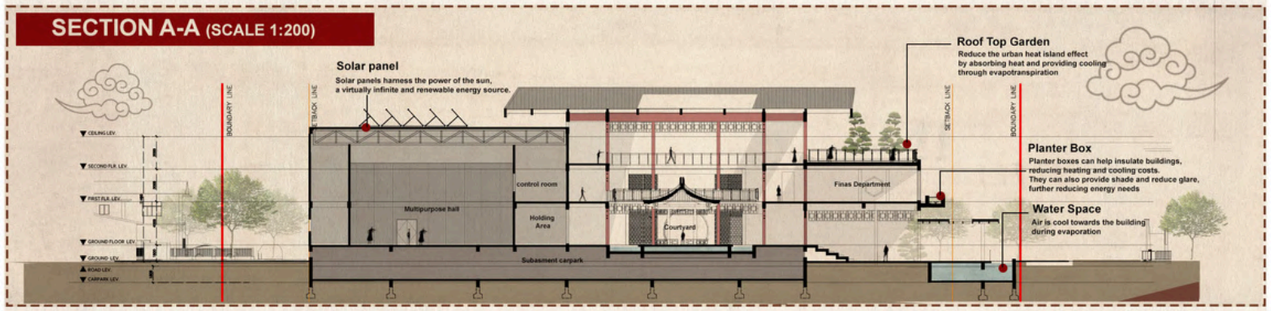
Space.....SQM
1.Roof Top Garden..... 221
2.Catwalk..... 20
Total Build Up Area..... 2005 SQM



SECTION B-B (SCALE 1:200)

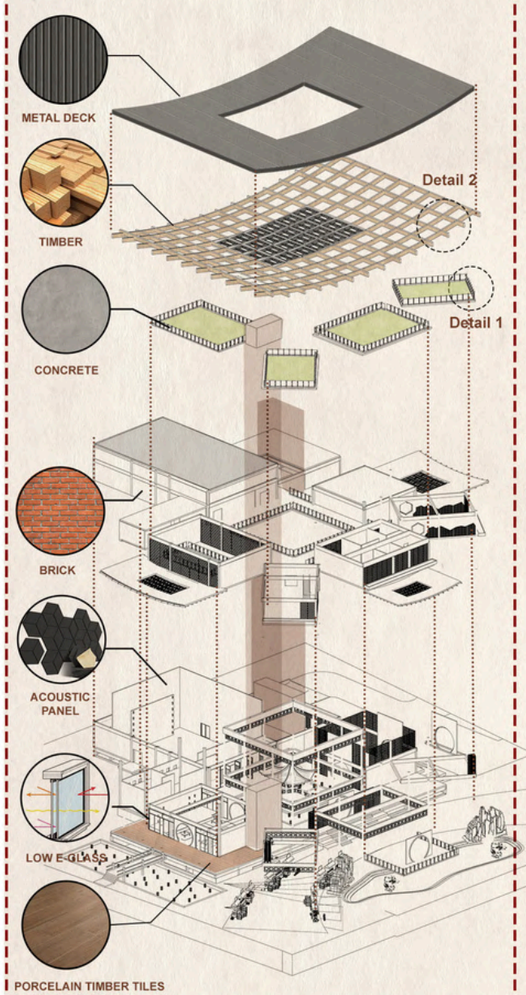


SECTION A-A (SCALE 1:200)

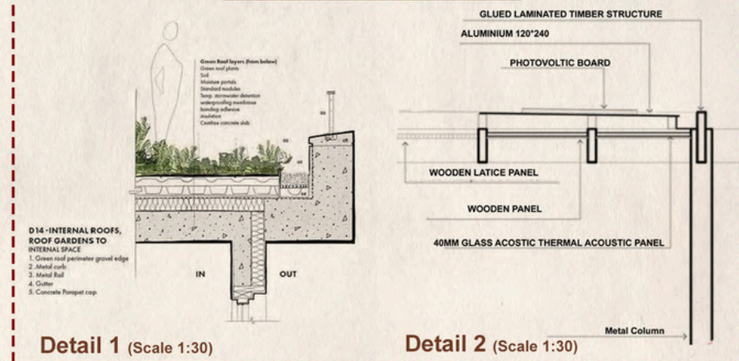


ELEVATIONS

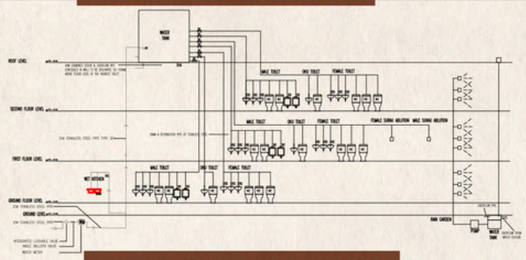
MATERIALS



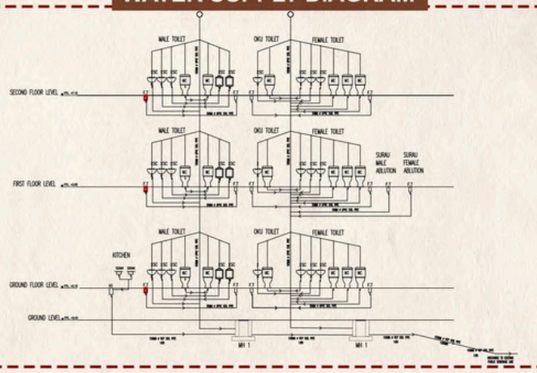
CONSTRUCTION DETAILS



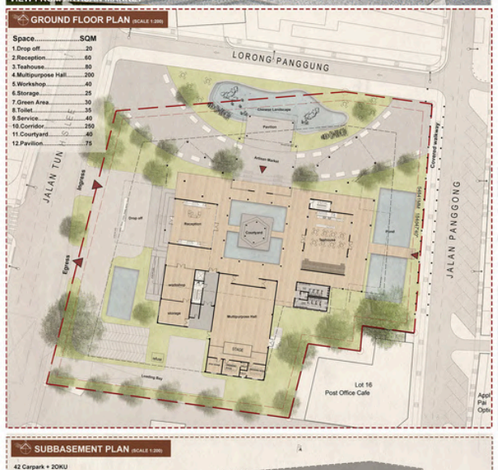
SEWERAGE DIAGRAM

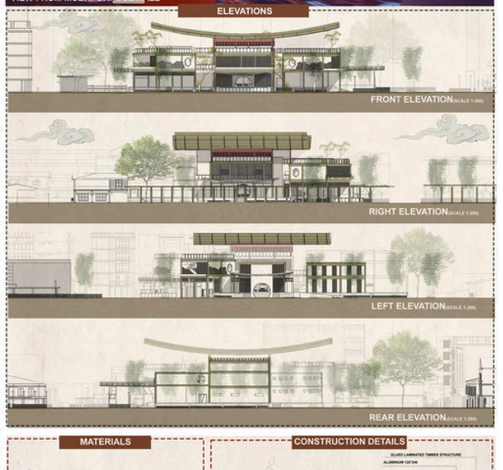


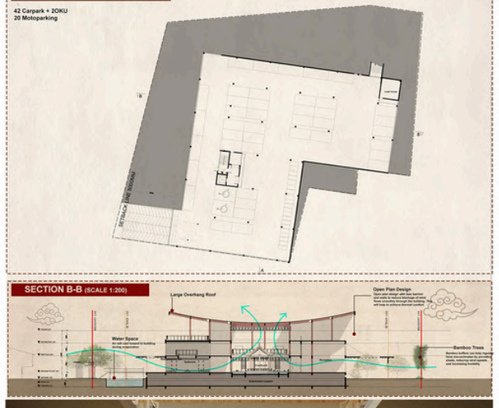
WATER SUPPLY DIAGRAM

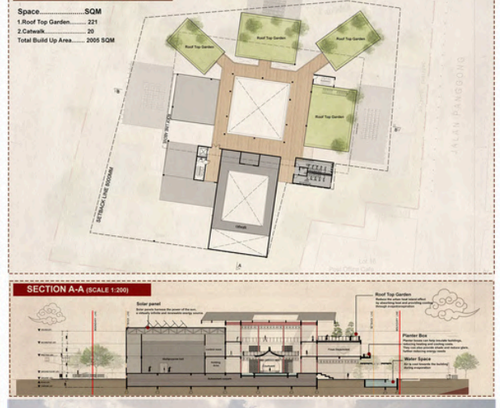


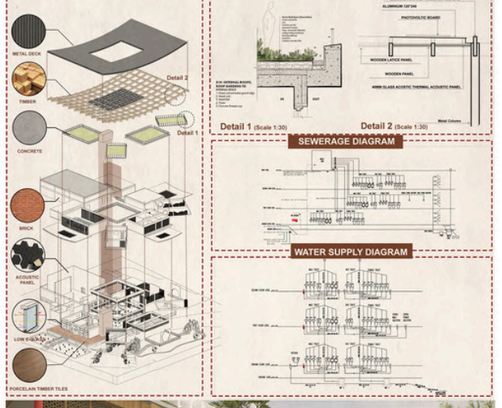
Overall presentation board layout

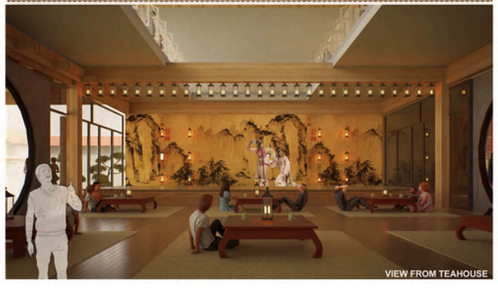












PART 0 2: THEMATIC ESSAY

Projecting the Future:

How Emerging Technologies are Reshaping Architectural Design and User Engagement

Abstract

This thematic essay explores the transformative impact of innovative visual technologies, specifically projection mapping, augmented reality (AR), and holographic displays, in the realm of architecture. By examining the hardware and software requirements, advantages, disadvantages, and real-world examples of each technology, this study aims to provide a comprehensive analysis of their applications in architectural design, cultural heritage preservation, and the creation of interactive and immersive experiences. The findings shed light on the potential of these technologies to redefine architectural visualization and user engagement.

Introduction

The integration of digital projection within a performing Arts Centre transcends visual connectivity, becoming a conduit for preserving cultural heritage. This research explores its significance in contemporary architecture, focusing on the BTAR3028 Design Studio VI project establishing a Culture and Creative Center in Jalan Panggung, Kuala Lumpur. Incorporating digital projection goes beyond aesthetics; it strategically amplifies cultural significance by blending technology with tradition. Architectural facades host dynamic digital displays, vividly bringing cultural narratives to life. Through interactive digital installations, virtual performances, and immersive experiences, visitors engage with tradition, fostering community pride. This paper delves into projection mapping, augmented reality (AR), and holographic displays in architecture, exploring their transformative potential, requirements, and implications. Through comparative analysis, it illuminates their innovative applications.

Background/ Literature Review

In architecture and cultural heritage preservation, digital technologies play a crucial role in creating engaging experiences. This section explores the significance of digital projection, transforming static structures into dynamic storytelling platforms. It also discusses how technology intersects with cultural heritage preservation, focusing on projection mapping, AR, and holographic displays for conserving and reinterpreting historical sites. Moreover, it highlights the immersive and interactive potential of these technologies in revolutionizing user experiences within architectural spaces. Through a literature review, this paper lays the groundwork for analyzing projection mapping, AR, and holographic displays in architecture.

Research Question/Methods

The research question delves into the transformative effects of cutting-edge visual technologies like projection mapping, augmented reality (AR), and holographic displays on user experience, storytelling, and architectural design possibilities. Data will be sourced from reputable online platforms such as Archdaily, Architizer, and Archtoolbox, among others. Several exemplary buildings employing projection mapping, AR, and holographic displays will be selected to illustrate their immersive storytelling capabilities both inside and outside the structure, thus affirming their widespread adoption and innovative usage in architectural contexts.

4.1 Projection Mapping

According to Projection Mapping Central. Projection mapping, also called video mapping, projects video onto surfaces, transforming objects or architectural elements into dynamic display surfaces. This technique creates optical illusions by mapping visual content onto static volumes, whether 2D or 3D. Specialized software spatially maps video onto surfaces, allowing for the projection of videos and animations that interact with shapes and textures. Used for advertising, artistic performances, product launches, corporate events, and more, it provides immersive visual experiences by adding dimensions, illusions, and movement to static objects. (What Is Projection Mapping? – Projection Mapping Central, n.d.)

Hardware&Software Requirements

Accoding to holographic disply the hardware & software requiremnet are as follows. Products (n.d.)https://holographicdisplays.co.uk/.

Hardware:

1. Projection Equipment:
2. Media Player
3. Computer
4. Cables
5. Projection Surfaces

Software:

1. Projection Equipment Projection Mapping Software
2. VJ Software

Advantages & Disadvantages

Advantages

Aspect	Exterior	Interior
Visual Impact	Create stunning visual effects on large architecture	Transforming Interior Space into an immersive environment, enhancing ambiance and atmosphere
Dynamic Content	Allows for dynamic storytelling and interactive experience	Enable the projection of dynamic content onto walls, floors, and ceilings, enhancing engagement
Attention Grabbing	Captivating the audience and drawing attention to building or landmark	Grabs attention in retail environments, exhibitions, and events, increasing foot traffic
Flexibility	Offer flexibility in adapting content for different occasions or events	Provides flexibility in transforming spacers for various purposes, such as exhibitions, presentations, or entertainment
Architectural integration	Seamless integration with the architecture, enhancing its aesthetic appeal	Enhance architectural features and complement interior design elements.

Disadvantage

Aspect	Exterior	Interior
Environmental Factor	Suction to weather conditions such as rain, wind, and temperature changes, requiring a protective measure	Limited by interior conditions, requiring adjustment for optimal projection quality.
Maintenance	Requires regular maintenance of equipment and projection surfaces to ensure optimal performance	Many encounter issues with calibration and alignment, requiring ongoing monitoring and adjustments.
Technical Complexity	Complex setup and calibration process, requiring expertise in projection mapping techniques.	Technical challenges in mapping onto complex interior surfaces, such as curved walls or irregular shapes
Power Consumption	High power consumption due to the brightness requirement for outdoor visibility.	Power consumption considerations for extended use in indoor environments.

Belanger tabulated the advantage and dis of projection mapping interior and exterior in Architecture. (Belanger, 2023)

Examples

Lighting the Sails of the Sydney Opera House

Schielke cited the lighting of the sail of the SOH as a good example of projection mapping Schielke (2023).The Sydney Opera House hosts diverse projection mapping projects, such as the lighting of its sails. This display features animations that interact with the architecture, offering a unique visual experience that redefines viewers' perceptions of the building. The projection mapping on the sails highlights the fusion of art, technology, and storytelling, delivering a visually stunning presentation.

Lighting of the sail of the SOH

Green cited the lighting of the sail of the SOH as a good example of projection mapping.Green (2024).The Digital Art Museum in Odaiba, Tokyo, was transformed into an enchanting realm by the Japanese art collective Team Lab, employing projection mapping technologies. Within this space, diverse concepts and scenes seamlessly merge to create a singular 'borderless' universe. The exhibition blurs boundaries as artworks transcend room confines, forging connections with viewers, engaging in dialogue with other pieces, exerting influence, and occasionally blending together. Spanning across a sprawling 10,000 square meters, the immersive installation is animated by the power of 520 computers and 470 projectors.

Augmented Reality (AR)

According to Hayes, Augmented reality (AR) seamlessly merges virtual elements into the real world, enhancing sensory experiences like visual, auditory, haptic, somatosensory, and olfactory sensations. AR systems integrate real and virtual worlds, allowing real-time interaction and precise 3D registration of objects. This transformative technology alters users' perceptions by overlaying digital information, creating immersive experiences. With applications in entertainment, gaming, education, medicine, and more, AR enriches experiences by integrating immersive sensations into the environment. (Hayes, 2024)
eriences by adding dimensions, illusions, and movement to static objects. (What Is Projection Mapping? – Projection Mapping Central, n.d.)

Hardware&Software Requirements

According to FAQ, the hardware & software requiremnet are as follows. (What Are the Hardware Requirements for Augmented Reality? - FAQ About, n.d.)

Hardware:

1. Display Device
2. Camera, Smartphone
3. Sensors (GPS)
4. Processing Power
5. Connectivity, Input Devices, and Battery Life

Software

1. Operating System
2. Graphics Processing Unit (GPU)
3. Software Platform and Tool
4. Content Creation and Optimization

Advantages & Disadvantages

Advantages

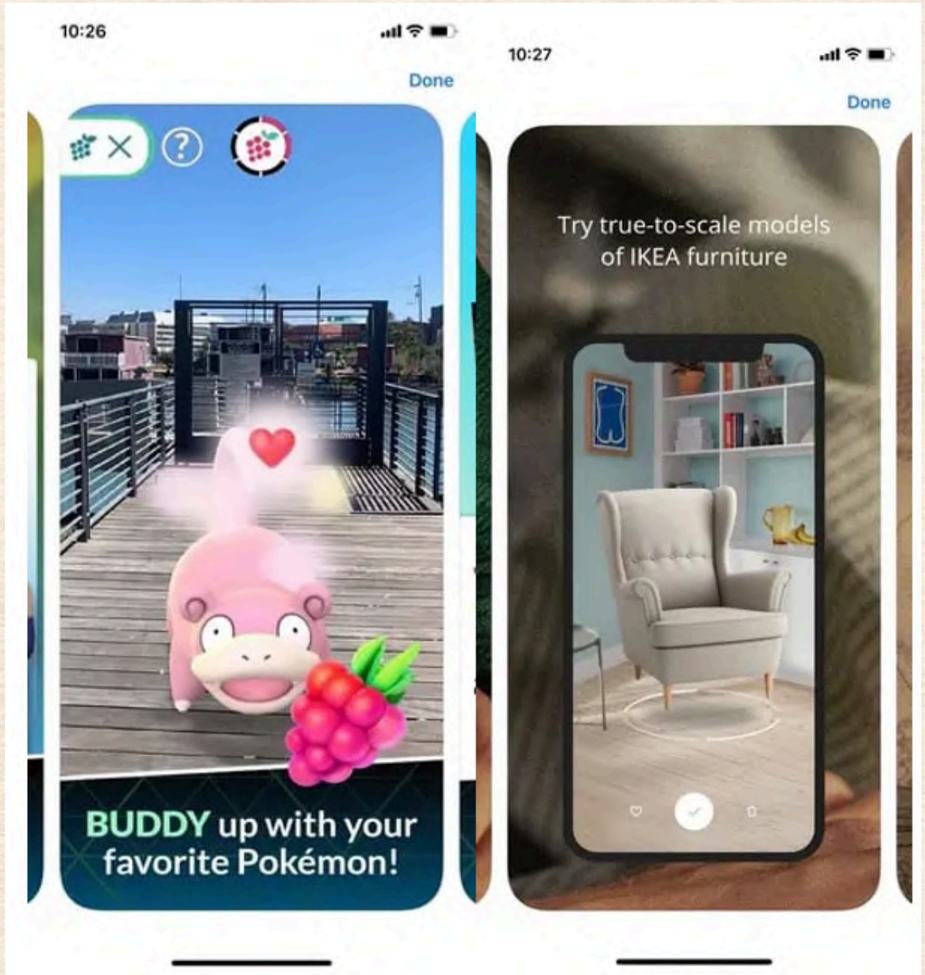
Aspect	Exterior	Interior
Immersive Engagement	Enhances interaction with virtual elements in controlled environments.	Amplifies user engagement by overlaying virtual content onto real-world outdoor space
Enhanced learning	Facilities hands-on learning in an indoor setting, aiding in visualizing complex concepts.	Offers contextual learning experiences in outdoor environments, such as historical or geographical information.
Practical Applications	Useful for interior design visualization, training simulations, and educational purposes.	Applications include outdoor navigation, tourism, advertising, and cultural experiences.

Disadvantage

Aspect	Exterior	Interior
Technical Complexity	Outdoor AR experiences encounter technical limitations like GPS reliance, environmental visibility issues, and connectivity challenges in remote areas.	Complex outdoor environments may pose challenges for accurate AR tracking and rendering.
Maintenance	Susceptible to environmental factors like weather and lighting conditions, requiring additional maintenance.	Regular maintenance of hardware and software is necessary.
Privacy Concerns	Collects and processes user data, raising privacy issues.	Privacy concerns may arise from location tracking and data collection in outdoor AR experiences.

Hopkins tabulated the advantage and disadvantage of Augmented Reality interior and exterior in Architecture. (Hopkins, 2010)

Examples



Pokémon GO and IKEA Place App

Forsey cited Pokémon GO, IKEA Place App, StubHub AR Feature, U.S. Army Tactical Augmented Reality (TAR), as a good example of Augmented Reality. Forsey (2024)

1. Pokémon GO and IKEA Place App.

- Pokémon GO is a popular AR game where users capture virtual Pokémon in real-world locations using smartphones, showcasing AR's ability to blend virtual and physical environments for engaging experiences.
- IKEA's AR app, IKEA Place, lets shoppers preview furniture in their living spaces before purchasing, providing a virtual try-on experience that improves the shopping process and aids decision-making. Forsey (2024)

StubHub AR Feature

- StubHub introduced an AR feature in its mobile app for Super Bowl LII, allowing ticket buyers to visualize the U.S. Bank Stadium and surrounding areas in 3D before purchasing tickets, enhancing the buying experience and reducing the risk of dissatisfaction. Forsey (2024)

. U.S. Army Tactical Augmented Reality (TAR)

To enhance soldiers' situational awareness by providing precise location information and target details through an eyepiece connected to a tablet and thermal site, showcasing how AR can revolutionize military operations. Forsey (2024)

Holographic Displays

According to Law Insider. "Holographic displays" in architecture use holographic technology to project 3D visuals within architectural spaces, eliminating the need for special glasses. These displays can revolutionize how architectural designs are perceived, allowing interactive transformations and opening up new possibilities for design exploration and client presentations. Integrating holographic displays into architectural elements like glass facades enhances the overall architectural experience by creating dynamic environments. (Holographic Display Definition | Law Insider, n.d.)

Hardware&Software Requirements

According to Agócs, the hardware & software requiremnet are as follows. (Academia.edu - Share Research, n.d.-b)

Hardware Requirements:

1. Holographic Films
2. Projectors
3. Sensors and Tracking Systems
4. Glass Panes
5. Computers

Software Requirements:

1. Holographic Software
2. Content Creation Tools:
3. Projection Techniques

Advantages & Disadvantages

Advantages

Aspect	Exterior	Interior
Immersive Engagement	Enhances outdoor architectural visualizations with lifelike 3D imagery.	Creates immersive 3D visualizations of architectural designs.
Interactive Presentations	Engages viewers with interactive outdoor displays, fostering deeper understanding.	Allows for interactive presentations, enabling real-time exploration of design concepts.
Realistic Visualization	Offers a realistic portrayal of outdoor architectural elements in various environments.	Provides clients and stakeholders with a realistic view of indoor architectural spaces.
Enhanced Communication	Improves communication about outdoor architectural projects by showcasing design intent and spatial relationships.	Facilitates clearer communication between architects, clients, and stakeholders by visualizing complex design concepts.

Disadvantage

Aspect	Exterior	Interior
Technical Complexity	Technical challenges may arise due to outdoor environmental factors like lighting and weather conditions.	Requires technical expertise for setup and maintenance.
Limited Viewing Angles	Viewing angles outdoors may be affected by sunlight and other external factors, potentially reducing visibility.	Viewing angles may be limited, impacting the visibility of holographic content for some viewers.
Environmental Sensitivity	Outdoor displays may be affected by weather conditions such as rain, wind, or extreme temperatures.	Susceptible to indoor lighting conditions and space limitations
Costly Implementation	Implementation costs for outdoor holographic displays, including weatherproofing and maintenance, can be significant.	Initial setup costs for indoor holographic displays can be high.

According to Gillis and Saad tabulation on the advantage and disadvantage of Holographic Disply interior and exterior in Architecture. Gillis (2021), Saad (2012)

Garage Screen / SYNDICATE

SYNDICATE won the competition to design the Summer Cinema Pavilion at the Garage Museum of Contemporary Art. The winning design incorporated holographic technology in its façade, demonstrating the aesthetic possibilities of holographic exterior design in architectural structures.

Quantum Field X3 / Hiro Yamagata

The Guggenheim Museum Bilbao has cube-like structures outside that were erected in 2004, which use holographic technology to create shimmering colours on the façade. This adds a unique visual appeal to the museum.

Roncalli Circus / Optoma

The German circus Roncalli replaced live animals with holographic animal projections using laser projectors, demonstrating how holographic technology can transform traditional practices and create engaging spectacles in architectural settings.

Hologram Rooms / Euclideon

Euclideon offers Hologram Rooms, immersive environments that allow users to navigate through three-dimensional projected architectural environments, showcasing the potential for holographic technology to revolutionize architectural visualization and user experiences.

Discussion/ Conclusion

Each technology offers unique advantages and challenges in architectural applications. Projection mapping transforms architectural spaces with dynamic visuals but is susceptible to environmental factors. Augmented Reality (AR) Experiences integrate virtual elements into real-world environments, enhancing engagement, but require stable connectivity. Holographic Displays create immersive 3D visualizations of architectural designs but may have limited viewing angles and sensitivity to environmental conditions.

Aspect	Projection-Mapping	Augmented Reality (AR) Experiences	Holographic Displays
Advantages	Transforms architectural spaces with dynamic visuals.	Integrates virtual elements into real-world environments, enhancing engagement and interaction.	Creates immersive 3D visualizations of architectural designs.
	Enhances storytelling and cultural narratives.	Enhances learning and engagement through interactive experiences.	Provides clients with realistic views of indoor architectural spaces.
Disadvantages	Susceptible to environmental factors like lighting.	Requires stable connectivity and compatible devices.	Limited viewing angles and sensitivity to environmental conditions.

Reference

1. Agócs, T. (2015). A scalable hardware and software system for the holographic display of interactive graphics applications. www.academia.edu. https://www.academia.edu/18069447/A_scalable_hardware_and_software_system_for_the_holographic_display_of_interactive_graphics_applications
2. Belanger, S. (2023, October 25). Projection vs. LED: Making the Right Choice for Your Event - Bluewater. Bluewater. https://bluewatertech.com/projection-vs-led/
3. Cao, L. (2023, May 18). Holography: How it could change architectural space. ArchDaily. https://www.archdaily.com/963011/holography-how-it-could-change-architectural-space
4. Forsey, C. (2022, October 18). 8 Innovative & Inspiring Examples of Augmented Reality in Marketing. Hubspot. https://blog.hubspot.com/marketing/augmentd-reality-examples
5. Gillis, A. S. (2021, December 29). holographic storage (holostorage). Storage. https://www.techtarget.com/searchstorage/definition/holographic-storage
6. Green, R. C. (2024, January 29). TeamLab Borderless - GaijinPot Travel. GaijinPot Travel. https://travel.gaijinpot.com/teamlab-borderless/
7. Hayes, A. (2024, February 4). Augmented Reality (AR): Definition, examples, and uses. Investopedia. https://www.investopedia.com/terms/a/augmented-reality.asp
8. Holographic display Definition | Law Insider. (n.d.). Law Insider. https://www.lawinsider.com/dictionary/holographic-display
9. Holographic displays. (n.d.). Holographic Displays. https://holographicdisplays.co.uk/
10. Hopkins, D. (2010, July 7). Advantages and Drawbacks of using Augmented Reality. David Hopkins / Education & Leadership. https://www.dontwasteyourtime.co.uk/technology/advantages-and-drawbacks-of-using-augmented-reality-augmentedreality/
11. Li, J., Smithwick, Q., & Chu, D. (2022). Holobricks: modular coarse integral holographic displays. Light-Science & Applications, 11(1). https://doi.org/10.1038/s41377-022-007427
12. Products, P. T. (n.d.). Projection Mapping Specs: What you need to create a memorable experience. Aristaproav. https://www.aristaproav.com/article_d.php?id=680&lang=en&tb=5
13. Saad, R. M. (2012). Hologram Applications in Architecture and Interior design. International Design Journal (Print), 1(1), 19–34. https://doi.org/10.21608/idj.2012.295285
14. Schielke, T. (2023, May 18). Light matters: 3D video mapping, making architecture the screen for our urban stories. ArchDaily. https://www.archdaily.com/432355/light-matters-how-3d-video-mapping-makes-architecture-the-screen-for-our-urban-stories
15. What are the hardware requirements for Augmented Reality? - FAQ About. (n.d.). https://faqabout.me/iam/augmented-reality/what-are-the-hardware-requirements-for-augmented-reality-11150
16. What is projection mapping? – Projection Mapping Central. (n.d.). https://projection-mapping.org/what-is-projection-mapping/

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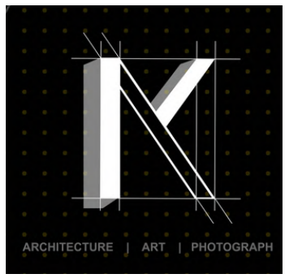

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