Project Management Report

MGT 60403/ ARC 3614

Project 2: Proposed Urban Farming Wellness Centre, Kuala Lumpur for Dewan Bandaraya Kuala Lumpur.

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Name: Ong Ker Sin

Student ID: 0321719

Tutor: Ms. Alia

Marks for 3 component	: 1. _____/10	2._____/10	3._____/10
TOTAL	: _____/30		

URBAN FARMING

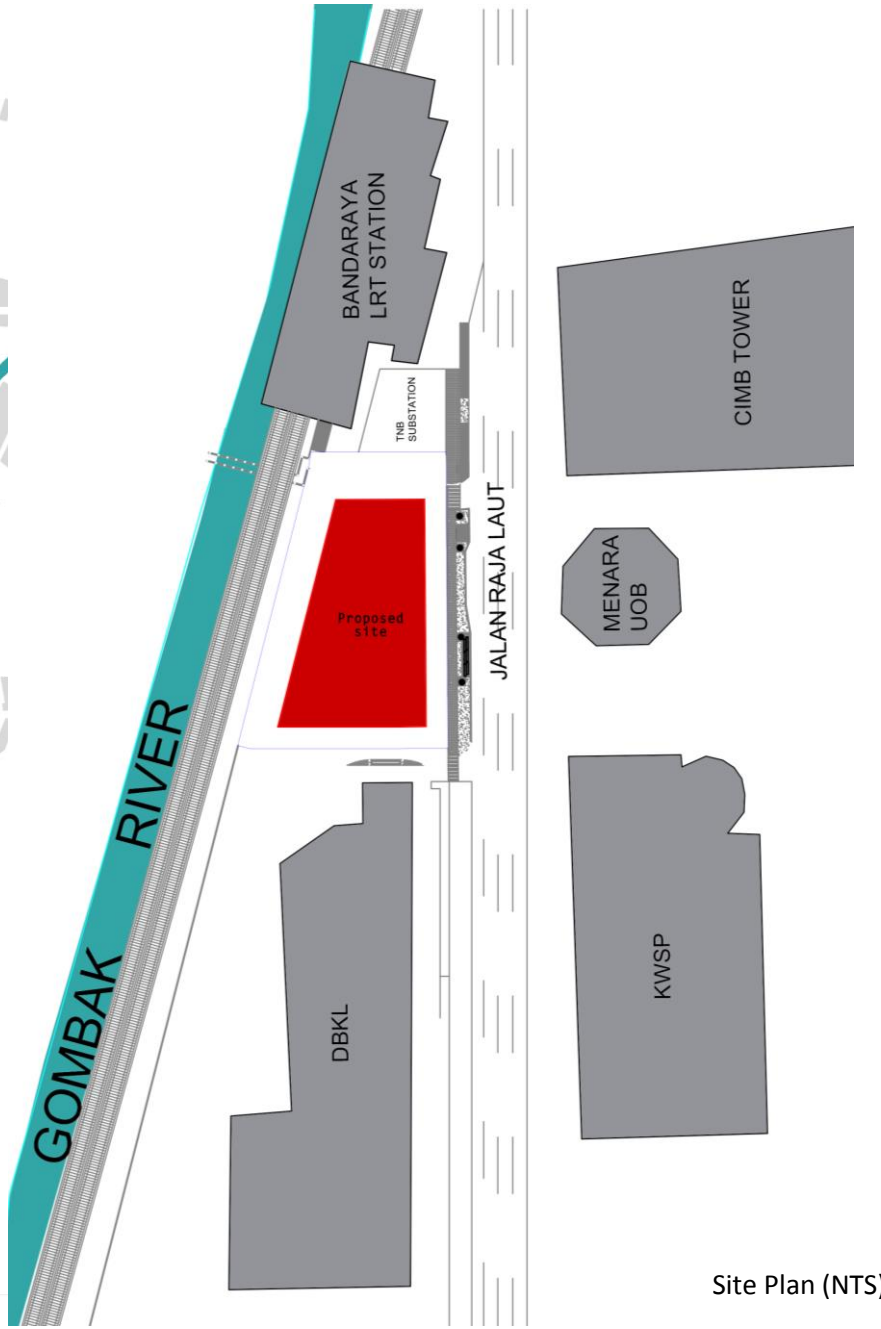
The Project

The client's aim for the design of this project is to respond to both environmental and social issues caused by the rapid urban development within the area, and so to improve liveability by creating a more comfortable environment and providing spaces for healthy recreational activities. The proposed site is located at an existing carpark next to the Dewan Bandaraya Kuala Lumpur (DBKL) building, in which the site is congested with many high rise buildings without enough green space per person. Today, the amount of green space per person in Kuala Lumpur has fallen below the WHO standards of 16 square meter per person. Therefore, the proposed project of urban farming is aimed to promote the green awareness, in order to increase the amount of green space per person, while at the same time enhancing the participation and engagement between the communities on site.

Please take consideration of the ideas from the client:

1. Provide sufficient space for the farming and different processes involved in food production.
2. Ensure that an ideal condition such as the indoor temperature, ventilation and humidity is achieved in the building for the growth of the plants.
3. Promote river frontage facilities that are accessible to the public and integrate with the River of Life (ROL) project to become the key features of the overall urban design.
4. Provide spaces for the purpose of communal participation and engagement.
5. Consider and drive in the local urban patterns into the building.
6. Ensure that the urban intersections between the human traffic, vehicle circulation and the Gombak River are taken into consideration to create a comprehensive pedestrian network around the building.

Key Plan (NTS)



Site Plan (NTS)

Proposed Programme

Urban farming is proposed in this project with objectives of responding to the environmental and social issues, while at the same time increasing the amount of green space per person in the city. Two types of urban farming methods are proposed in this project, including the conventional farming and aquaponics, which also known as the vertical farming. Besides, a self-sustaining farming system is aimed to be achieved in this proposal of urban farming. Therefore, a closed-loop organic food and waste system is proposed, whereas the farming is aimed to produce various organic food, then supply to the vendors or restaurants to be sold to the visitors. Besides, not only different spaces are designed and provided for food processing, storing and collecting, a waste decomposing system is proposed as well, in which the system decomposes the waste generated and collected from the food process, vendors or restaurant into useful ingredients as fertilizers for the wild plants or landscape in the project.

Apart from the main farming programmes, there are some other educational programmes that are proposed in this project as well, including the experimental lab, species showcase garden, seed banks and classroom that serve as a platform to impart different knowledge in urban farming in order to spread and promote green awareness within the communities. Besides, several programmes such as the community living room, vendors and roof top restaurant are proposed to improve and enhance the communal engagement and participation in the building.

Programme Objectives

1. To improve liveability and create more comfortable environment of the site by increasing the amount of green space per person in the city.
2. To solve the social issue of confined communities on site by introducing healthy recreational activities to enhance communal participation and engagement.
3. To set up a platform to promote urban farming by sharing this knowledge with the inhabitants of the city, and so increasing the percentage of farming, then the amount of green space per person in the city.
4. To integrate and become one of the node along the Gomabk River in the undergoing ROL project that aims to revitalise the Gombak and Klang River.
5. To create a green character within the overall urban design by creating a green corridor connecting the existing open spaces, river or heavily trees areas radiating from the city.

Client

Dewan Bandaraya Kuala Lumpur (DBKL)

DBKL is a local authority in Kuala Lumpur that is responsible for the planning and controlling of the development of the city in a prompt, organised, controlled and transparent way to make the city grow and remain competitive. Besides, it also involves in organizing social activities or development for the local communities with different resident associations or NGOs on schedule in each constituency at least 2 times a month in order to form a united culture and harmony community.

SITE INTRODUCTION

Precinct 7, Kuala Lumpur

The proposed site for this project is located at an open carpark in trapezium shaped with buildable area of 2933 square meter, flanked by the Gombak River and Jalan Raja Laut, Kuala Lumpur at its West and East side. Also, the site is sandwiched by the Bandaraya LRT station and DBKL building at its North and South side. The site is surrounded by many office towers such as the Menara UOB and CIMB Bank Kuala Lumpur, resulting in majority of the passers-by are the workers that are working nearby. Besides, it serves as a strategic and convenient location that coincides with the urban intersection between human traffic, vehicle circulation and the connection with the Gombak River, to be taken into account while designing the building to create a comprehensive circulation network around the building. On the other hand, there is a River of Life project driven by a Joint Development Council (JDC) sponsored by the Minister for Federal Territories and Urban Wellbeing, and coordinated by DBKL with an objective to revitalise the two iconic rivers which are the 10.7km of Gombak River and Klang River. As a result, it is a potential site to integrate with the ROL project to achieve the green mission.

Swot Analysis

Strength:

- Location of the site coincides with the urban intersections that connect the site with the human flow towards the LRT/ MRT station, vehicle circulation at Jalan Raja Laut as well as the connection with the Gombak River.
- The site has a potential to become one of the node along the river cruise which is proposed in the River of Life (ROL) project that is currently undergoing by the government along the Gombak River and Klang River.

Weakness:

- Lack of open spaces or green spaces per person to act as the contact points within the area, as the site is congested with many high rise office towers.
- Limited parking space on site, as there is no extra carpark available within the area.
- Dormancy on site with few passers-by after working hours as the site is located within area of high rise office towers and is away from the main boulevard.

Opportunity:

- Pedestrian traffics around the site can be allocated along the water's edge and the urban street frontage, naturally spurring the activities around the building.
- There is a high demand for healthy recreational and entertainment activities which are lacking within the area to improve the liveability and vibrancy of the city.
- To create a green character within the overall urban design by creating a green corridor connecting the existing open spaces, river or heavily trees areas radiating from the city.

Threats:

- The vehicle occupancy is almost always full during working hours, also with the Bandaraya LRT Station located next to the site, having the commuters passing through the site that causes disturbances.
- The site orientation has larger exposure at its East and West orientation, where careful design responses towards solar heat gain in the building have to be taken into consideration to achieve high energy efficiency and sustainability.
- Locals within the area do not visit to the site, unless for some administrative procedure purposes, resulting in confined community groups within the area.

Pestle Analysis

Political:

The site for this project is located at Jalan Raja Laut, Kuala Lumpur (Precinct 7). Kuala Lumpur which known as Federal Territory of Kuala Lumpur is the national capital of Malaysia as well as its largest city. The site is surrounded with many office towers as well as different administrative buildings such as the Dewan Bandaraya Kuala Lumpur (DBKL) building, resulting in imbalance of work and leisure due to the lacking of recreational or entertainment areas and activities in the city.

Technological:

Technologies in Kuala Lumpur is also known as of one of the most developed in Malaysia, where it monitors manifestation of essential parameters as well as on daily basis to continuously improve the liveability conditions and attractiveness of the city. Besides, it is important to have developed technology in the one of the major tourist destination as it contributes to enhance and improve the image of the city in the eyes of the world.

Economical:

The economy is mostly dependent on the tourism as it is one of the major tourist destination in Malaysia as well as a strategic location consisting of iconic and historical buildings. Therefore, creating a variety of healthy recreational and entertainment outlets can help enhancing the liveability and vibrancy of the city, and also become natural contact points for work and play for the inhabitants of the city over the course of a day, naturally driving economic activity from both locals and visitors.

Environmental:

The environmental quality in Kuala Lumpur is polluted due to its rapid development, and is congested with many high rise buildings, which resulting in lacking of the amount of breathing spaces or green spaces per person that falls under the WHOs standard. Therefore, the proposed ROL project is expected to turn the areas surrounding the two iconic rivers (10.7km of Gombak River and Klang River) vibrant and beautiful by implementing river park and river revitalisation. The government had allocated RM 4 billion for the whole project, while of the total, RM 1 billion was for beautification purposes, and the rest was to improve the quality of the river water from current Class III (defined as unsafe for body contact) to Class IIB (defined as safe for recreational use with body contact.

Sociological:

The population in Kuala Lumpur comprising a majority of workers as well as tourists and a minority number of locals that are staying nearby the area. Based on the results from the site analysis and survey, the activity patterns of the communities within the site area are consistent as there is no interaction among them. Therefore, it is important to propose programs with healthy recreational or entertainment purposes such as urban farming to promote communal participation and at the same time, solve both social and environmental issues on site.

Legal:

Government has strong control towards building planning such as 6m setback from the river's edge that is required by DBKL and also some other requirements from UBBL that have to be followed while designing the buildings.

PROGRAMME VIABILITY

Project Objectives

The aim of this project is:

- To fully deliver client's brief, achieve all client's requirements and satisfactions about the deliverables.
- To complete the project within the timeframe and budget with good quality through proper and professional planning and management throughout the project.
- To ensure that the project meets the business objectives by understanding the business drivers and aligning it with the key performance indicators.
- To manage and prevent risks through detailed planning throughout the duration of the project to keep the project on track with good performance.

Project Goals

- To improve liveability and create more comfortable environment of the site by increasing the amount of green space per person in the city.
- To reconnect the site with Gombak River by integrating the proposed program with the ROL project that promotes green awareness and appreciation of the Nature within the area that is lacking of breathing spaces.
- To bring vibrancy and life back to the site through communal participation within the community groups within the area which are the white-collar workers and the local residents.
- To achieve the purpose of self-sustaining in the building within the city area.

Success Criteria

Project success criteria is the standard used when evaluating a project as a success or failure in the eyes of the stakeholders. The triple constraints of the success criteria are used when monitoring and controlling to check whether the project is deviating from its baseline. It is essential to use the triple constraints which are scope, time and cost to indicate the key performance of a project, but these are not the only indicators used to evaluate whether a project is a success. Business objectives and criteria should be taken into account as well, to ensure the successfulness of the project. Therefore, a project that is completed on time, within the timeframe with high quality have to achieve the business objectives to be considered as a success project. However, most importantly, the satisfaction of the clients on the quality of the deliverables must be fulfilled.

Quality:

A completion of high quality project will meet client's satisfaction and even exceed their expectations. So, the completion of the proposed urban farming has to be well equipped with different sustainable features in terms of proper control on indoor temperature, ventilation and humidity, in assurance of providing sufficient amount of sun light as well as natural ventilation for the farming along with proper hygiene and refinement works. Besides, the designs and constructions of the urban farms as proposed in the building have to be planned and consulted with professionals to ensure the workability and quality performance of the farms without defects. In addition, the building shall aim for a silver award in GBI rating within 66 to 75 points.

Scope:

Scope details the amount of the effort and work of the team within the project's timeframe. The project is strictly monitored according to the schedule produced from the Gantt chart. So, the project management tools such as the Gantt chart, risk management plan and Work Breakdown Structure (WBS) are produced through detailed planning, to manage the project flow and risks. Besides, strict site monitoring is required to ensure quality performance of the construction on site and prevent any mistakes or failures that might affect the project's timeframe. Lastly, constant meetings and reviews among the team members and the other consultants are required to ensure project progress within the project's timeframe.

Time:

This project is aimed to be completed within 24 months starting from 1st May 2017 to 30th April 2019 while ensuring quality performances and workmanships in the project. Gantt chart is planned and produced to ensure the schedules and timeframe of different phases are followed without delaying the subsequent phases. Construction materials or components used are modular and chosen based on the availability in the local market to save the transportation time and cost. Besides, the transportation of these materials are strictly monitored to ensure safe and punctual arrivals. Prefabricated Glass Reinforced Concrete (GRC) are proposed to use as the material of the building outer shell to save construction time with shorter installation time, while ensuring the aesthetic of the facades.

Cost:

We need to have cost control to estimating, budgeting and controlling the expenses throughout the project, depending on the cost and budget estimation of the project. The initial budget estimation for this project will be RM10 million and are funded by the client, Dewan Bandaraya Kuala Lumpur (DBKL) and the other investors. In this project of urban farming, most of the costing is estimated to be spent on the structural element of the building as the building has to be stable enough to support the weight of the plants. Besides, due to the DBKL's requirement of 20 car parks, half-basement car park is proposed as the size of the site is limiting for ground level car park. Therefore, more budgets are estimated to be spent on the construction of the half-basement car park. Besides, some other sustainable building systems such as the solar panels, rainwater harvesting system as well as the waste management system are estimated to take up some of the portions of the estimated budget.

Initial Project Cost Estimation:

Category	Item	Price (RM)
Operational expenditure cost of development cost	Authority	190,000.00
	Preliminary Cost	550,000.00
	Contingency Cost	300,000.00
	Total	1,040,000.00
Construction cost	Architectural	1,000,000.00
	Civil & Structure Engineering	3,200,000.00
	Mechanical & Electrical Engineering	2,400,000.00
	Landscape Architecture	800,000.00
	Others	230,000.00
	Total	7,630,000.00
Others	Consultation fee	700,000.00
	Labour Cost	150,000.00
	Sub-contractor Cost	400,000.00
	Total	1,250,000.00
	Total	**9,920,000.00**

Stakeholder

White-collar workers:

As the site is located within the area consisting of majority of office towers, the workers from these office towers will be playing an important role in the programs of this building. Various programs with defined purposes are proposed in this project to attract the workers from the surrounding offices, in order to spur the economic activities on site, as well as the engagement with the local residents. The proposed vendors that resemble the local markets on site are introduced to seduce the passing-by workers into the building. Besides, different programs with educational purposes such as the species showcase garden, experimental lab and seed banks are proposed so as to promote green awareness among the working community.

Local residents:

The local residents that are staying nearby the site will be involving in different programs proposed in the building, as one of the goal of this project is to enhance the communal participation and engagement between the locals and working community. The proposed vendors that resemble the local markets on site, not merely will be spurring the economic activities in the project, but also providing job opportunities to the local residents and enhancing the engagement between the locals and workers. Besides, rooftop communal living rooms are proposed allowing the locals to enjoy the beauty of the river's edge and the urban street frontage, while at the same time enhancing the bonding with their family, friends as well as the workers.

Professional management team and volunteers:

Farming is the main programme that has been proposed in this project, in which a professional management team including experts and volunteers are involved to ensure the productivity of the farms as well as the functionality of the integrated systems such as the solar panel system, rainwater harvesting system and the waste decomposing system.

LRT/ KTM users:

The proposed site of this project is located nearby a LRT and KTM station, in which the human flow of the LRT and KTM users will be affecting the design of the proposed project. The entrances and exits of the building are designed responding to the intersection of the human flow towards the LRT and KTM stations in order to attract and drive the users into the building and create a comprehensive pedestrian network around the building.

Carpark users:

The proposed site is an open carpark that is busily in use within the area, so the proposed project will be relocating a temporary carpark at nearby open area as a replacement of the existing carpark.

Government and authorities (Joint Development Council and DBKL) involved in ROL:

Urban farming is proposed in this project in response to the environmental issues on site as well as an integration with the ROL project where the initiative will be driven by a Joint Development Council (JDC) sponsored by the Minister for Federal Territories and Urban Wellbeing, and coordinated by DBKL. Integration with this ROL project will help driving and spurring the development of this project.

Malaysia Environmental NGOs (MENGO):

A grouping of Malaysian Environmental NGOs (MENGO) that was formed under the DANIDA-supported programme for environmental assistance in Malaysia. MENGOs play a very important role in the country's path towards sustainable development. It aims to facilitate community mobilisation and participation, as well as education and awareness raising on environmental concerns. The collaboration between MENGO with the proposed urban farming project would help spurring and enhancing the sustainable development in the country.

DESIGN SUITABILITY

Key Features

Layout:

The layout of the building is designed responding to the urban intersection between the human flow towards/ from the LRT/ KTM station with the circulation on the main road (Jalan Raja Laut) as well as the connection with the Gombak River. As a result, the main entrance of the building is located at this intersection point to seduce and drive the passers-by into the building. Besides, the layout of the programmes in this building are designed based on different purposes of the programmes which include food production, educational and communal. The main programmes which are located on the ground floor are designed for food production purpose including the conventional farms and aquaponics (vertical farms). Whereas, the programmes that are proposed on the first floor including the experimental lab, species showcase garden and seed banks, are designed for educational purpose. The programmes such as the communal living room and open restaurants which are located on the second floor are proposed to enhance the communal participation and engagement.

Sustainability (solar panels, rainwater harvesting system, waste decomposing system):

The sustainability of the building is considered according to different aspects such as the orientation of the building that responds to the sun and wind direction, integrated with the rainwater harvesting system. The proposed site has its longer sides facing East and West, as a result, the proposed farms are located along the sides of the building to prevent direct solar heat gain and radiation into the building. At the same time, the ventilation within the building is ensured through careful design of the openings on the facades. It is essential as a certain level of indoor temperature, ventilation and humidity have to be achieved for the growth of the plants. Besides, solar panels are proposed to be installed on the roof, for the absorption of the sun light, then generate own electricity to be used in the building. Rainwater harvesting system is proposed to be installed on the second floor, with ponds that collect and filter the rainwater, then channel the filtered rainwater to disinfection zone and lastly to the holding tank as a water supply for toilets usage.

Urban patterns:

Some local urban patterns of different scales are proposed to be included into the design of this project. For example, one of the large scale urban pattern that can be found on site which is the local street market has been introduced and located on the ground floor of the building, in order to attract and enhance the engagement between the locals and workers. Besides, some other large scale urban patterns such as the street performance and exhibition are introduced into the building as well. In addition, smaller scale urban patterns such as farming and sitting under the tree are integrated with the programmes and design of the building.

Programme Relationship

The overall proposed programme can be divided into three categories which are the farming, educational and communal. The design is to integrate all three categories of programmes through vertical communication and connection of the building. With this design strategy, it ensures both horizontal and vertical communal participation within the building to eliminate the dormancy on site. As a result, this connection of the programmes are able to produce a smooth and comfortable experience for the occupants as they explore the building from the ground floor to the top floor. On ground floor, the occupants get to involve and experience different farming methods. As they enter first floor of the building, they get to experiment, learn and gain knowledge about the species in urban farming. Lastly, when they explore further up, they will be entering a space for them to communicate and engage with each other, while at the same time, enjoying the beauty of the river's edge and the urban street front.

Gross Floor Area (GFA)

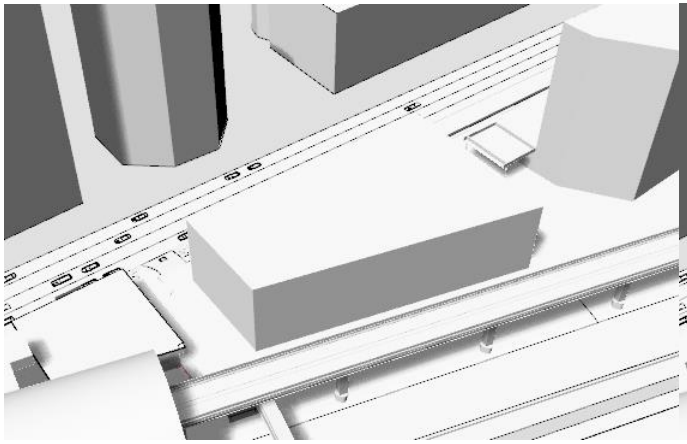
Space	Gross Floor Area (SQM)
Ground Floor	
Aquaponics (vertical farm)	135
Conventional farm	77
Interactive farm	105
Communal space (including sitting areas)	33
Food processing, storing & collecting space	41
Waste decompose space	51
Temporary market space/ exhibition space	51
Lobby/ reception	98
Administrative office	64
M&E room	13
Total	668

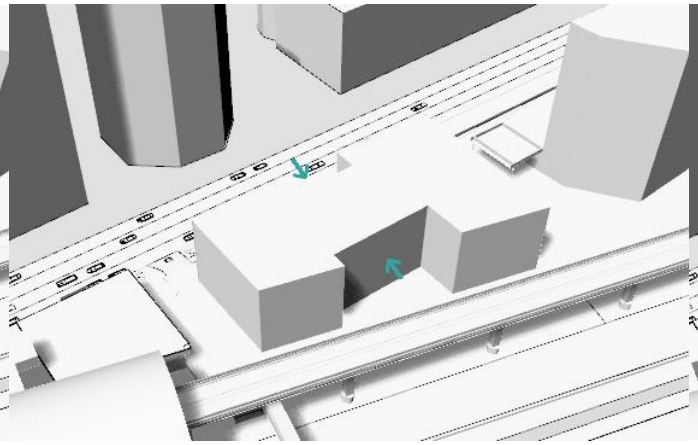
Space	Gross Floor Area (SQM)
First Floor	
Experimental lab	98
Species showcase farm	30
Species showcase exhibition	50
Seeds bank	41
Classroom 1	90
Classroom 1	95
Administrative office	47
Meeting room	46
M&E room	13
Total	510

Space	Gross Floor Area (SQM)
Second Floor	
Indoor restaurant	90
Open eating area	78
Rooftop farm	47
Community living space	50
Staff accommodation (rooms, kitchen, living space)	170
M&E room	13
Total	510

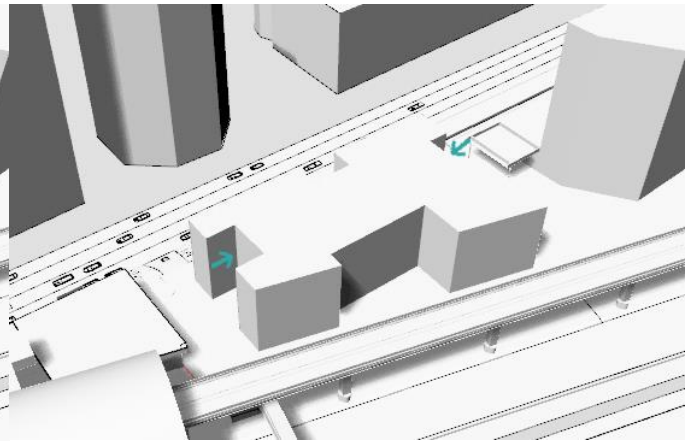
Massing Strategy

The massing strategy of this building is considering and responding to the site context such as the human traffic, urban street frontage and the river's edge, resulting in the "bumps" on the plans of the building. Besides, the urban streetscape on site has been taken into consideration while designing the elevations, resulting in a smooth decrease in height from South to North side of the building. Most importantly, the building is designed in an organic shape that allows the inhabitants to escape from the "box jungle", into a space to enjoy the true beauty of the Gombak River as well as the farms and plants in the building.

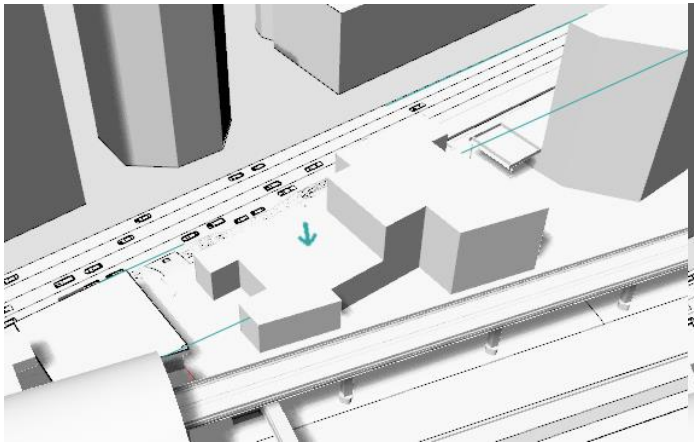




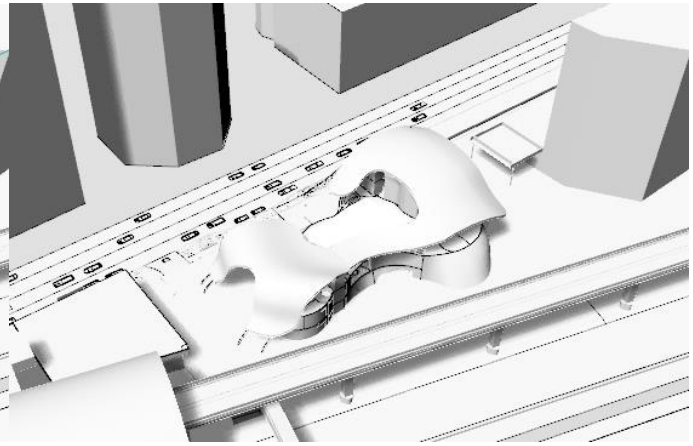
Responding to Jalan Raja Laut and Gombak River.



Responding to urban intersection between human flow and vehicle traffic.



Responding to urban streetscape (height of the surrounding buildings).



Final outcome of the massing.

MAINTENANCE STRATEGY

Programme Maintenance

The programmes of the building are mostly focusing on the farming with some other systems that are integrated with the building such as the solar panel system, rainwater harvesting and filtering system as well as the waste decomposing and managing systems. Hence, it is important to maintain the condition and relationship between these systems as it is a crucial process in farming and food production. Besides, the cleanliness and comfort level of the spaces within this building have to be well managed to ensure the quality experience of the occupants throughout their journey in the building. The operation hour of this building is proposed to be starting from 6am to 10pm every day. It allows the market activities (vendors) to be carried out in the morning before normal working hours. Besides, it also allows the workers from nearby to visit after work as its operation hour is until 10pm.

Elements	Frequency	Strategy
Conventional farm	Daily	To ensure the growth of the plants by maintaining an optimum indoor condition such as the temperature, ventilation and humidity. Consult with specialists if needed.
Aquaponics (vertical farm)	Daily	To ensure the growth of the plants by maintaining an optimum indoor condition and ensuring the efficiency of the self-irrigation system of the aquaponics through regular check-ups and maintenances. Consult with specialists if needed.
Processing machines	Daily/ Monthly	To ensure the quality and hygiene of the space and machines used in food production processes (food producing, cleaning and storing) through regular check-ups and maintenances. Replace if needed.
Waste decomposing machines	Monthly	To ensure the waste decomposing machines are working efficiently in good hygiene condition through regular check-ups and maintenances. Replace if needed.
Indoor water features	Monthly	To ensure the hygiene of the water to prevent the breeding of pests, and maintain the quality of water that is suitable for body contact through regular clean-ups.
Species showcase garden	Daily	To ensure the growth of the plants by maintaining an optimum indoor condition such as the temperature, ventilation and humidity. Consult with specialists if needed.
Seeds bank	Monthly	To ensure the fertility of the seeds by maintaining an optimum storage condition. Consult with specialists if needed.
Solar panels	Quarterly	To ensure the efficiency of the solar panels through regular inspections and maintenances. Replace if needed.
Rainwater collecting ponds	Daily/ monthly	To ensure the efficiency and hygiene of the rainwater harvesting system through regular inspections and maintenances by specialists.
Experimental lab	Monthly	To ensure the required ingredients and apparatus for the experiments are complete and in good condition through regular check-ups, and maintain the hygiene and quality of the space to provide healthy and safe environment for the occupants.
Classrooms	Daily	To ensure the cleanliness and hygiene of the classroom, and maintain the furniture in good condition through regular clean-ups and maintenances. Replace if needed.
Restaurants	Daily	To ensure the cleanliness and hygiene of the restaurant and kitchen, and maintain the furniture and kitchen appliances in good condition through regular clean-ups and maintenances. Replace if needed.

Building & Site Maintenance

Elements	Frequency	Strategy
Piping utilities	Quarterly	To ensure the piping is in good hygiene and function condition through regular check-ups and maintenances. Replace if needed.
Lifts	Twice a year	Inspections by specialists should be done to ensure smooth function of the lifts to access to different floors.
Glass and curtain wall	Monthly	To ensure the cleanliness and aesthetic of the façade as it provides visibility for the occupants in and out of the building, and allows sufficient amount of sunlight into the building for the plants. Regular clean-ups and maintenances are needed.
Glass reinforced concrete shell	Yearly	To ensure cleanliness and hygiene of the shell through clean-ups by specialists.
Flooring	Daily	To ensure the cleanliness and hygiene of the flooring and quality of space through daily clean-ups by the building's management team.
Outdoor timber decking	Yearly	To ensure the timber floorings are in good condition, regular maintenance and treatment are needed to prevent the infection of the timber.
Outdoor landscape and water features	Quarterly	To ensure the landscape is well maintained to prevent unnecessary pest breeding, to ensure good quality of outdoor experiences.
Half-basement carpark	Yearly	The half-basement carpark is open for visitors of the building only, from 6am to 10pm daily, whereas the amount of natural lighting and ventilation must be maintained at an optimum level, to maintain a comfortable and safe environment.