FINAL PROJECT REPORT
THE DESIGNING OF BUSINESS CENTER OF UIN WALISONGO SEMARANG WITH GREEN ARCHITECTURE APPROACH

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THE DESIGNING OF BUSINESS CENTER UIN WALISONGO SEMARANG WITH GREEN ARCHITECTURE APPROACH

FINAL PROJECT

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Has been checked and approved to be sumbitted:
Date of Examination: December 10th, 2021

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SHEET OF VALIDITY

This final project has been presented in front of the board of examiners and has been approved as the requirement to obtain the Architecture Bachelor Degree (S. Ars) in UIN Maulana Malik Ibrahim Malang

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STATEMENT OF AUTHENTICITY

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The Designing of Business Center of UIN Walisongo Semarang with Green Architecture Approach

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Malang, December 16th 2021
The writer,

Nahdiya Bella Pertiwi
17660118

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Assalamu'alaikum w.rb

*Alhamdulillahi Rabbil'alamin***,** The writer would like to express her highest gratitude towards Allah swt for all His abundance of grace, blessings and guidance so the writer could complete this final project report titled "The Designing of Business Center of UIN Walisongo Semarang".

There are so many people whom the writer would like to say thank you profusely for have been given support and love, either directly or indirectly, since the very beginning of her study journey in UIN Maulana Malik Ibrahim Malang. The writer's parents, who are very loved and loving, have always been prayed and support for the writer. The supervisor and co-supervisor of the final project, and all the lectures of UIN Malang who had been given so much knowledges. Specially for the writer's bestfriends who have always been there for her, without them, the journey would be less valuable. All the writer's friends from the hometown, wordwide and Werkudara '17. Friends from my first boarding school, and 18th room; have been the witness for all my ups and downs during in Malang. And lastly thanks for me, myself, for hanging on there and be responsible to finish her decision until the very end.

I do realize that this report is definitely far from perfection. Therefore, suggestion and constructive critics are expected for the better of this report.

Wassalamu'alaikum wr.wb

Malang, December 16th 2021

PERANCANGAN PUSAT BISNIS UIN WALISONGO SEMARANG DENGAN PENDEKATAN ARSITEKTUR HIJAU

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ABSTRAK

Sejak tahun 2019, UIN Walisongo telah berencana menjadi kampus cerdas dan hijau yang berbasis pada pembangunan berkelanjutan. Berdasarkan studi pendahuluan, terlihat bahwa unit-unit bisnis sebelumnya belum terintegrasi dengan sivitas akademika UIN dan masyarakat luas, sehingga tidak dapat diakses dengan mudah. Oleh karena itu, Arsitektur Hijau dipilih sebagai strategi pengembangan. Parameternya adalah: penataan infrastruktur, persampahan, energi perubahan iklim, air, transportasi dan pendidikan-penelitian. Dari studi pendahuluan dan analisis, terbentuklah sebuah konsep yang disebut “The Green Embassy”. Konsep ini menentukan tentang efisiensi, efektifitas dan kenyamanan. Semua aspek tersebut dihadirkan melalui berbagai setting di lahan dan bangunan. Implementasi parameter melalui konsep tersebut antara lain pengolahan limbah dan air hujan, penggunaan balkon hijau dan ventilasi silang. Selain itu, untuk mencengkeram dalam konteks konstruksi, pendekatan Arsitektur Hijau menjadi “manipulasi sosial” untuk mulai memiliki kebiasaan dan gaya hidup hijau bagi mahasiswa, staf, dosen, dan masyarakat sekitar. Penataan lahan dan bangunan berjalan sesuai dengan UI Green Matric Indonesia sebagai parameter pembangunan hijau (berkelanjutan) di UIN Walisongo Semarang.

Kata kunci: Arsitektur Hijau, *Business Center*, UIN Walisongo

THE DESIGNING OF BUSINESS CENTER OF UIN WALISONGO SEMARANG WITH GREEN ARCHITECTURE APPROACH

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ABSTRACT

Since 2019, UIN Walisongo has planned to become a smart and green campus based on sustainable development. Based on the preliminary study, it can be seen that the previous business units are not integrated with the UIN Academic Community and the broader community, so they can't be accessed easily. Thus, Green Architecture was chosen to be the development strategy. The parameters are: setting of infrastructure, waste, energy climate change, water, transportation and education-research. From the preliminary study and analysis, a concept is formed which is called "the Green Embassy". This concept determines about efficiency, effectivity and comfortability. All the aspects are presented through a variety of settings in land and buildings. The implementations of the parameters through the concept are such the waste and rain water treatment, the use of green balcony and cross ventilation. In addition, to gripping in the construction context, the Green Architecture approach becomes "social manipulation" to start having a green habit and lifestyle for students, staff, lecturers, and the local community. The settings in land and building are going in accordance with the UI Green Matric Indonesia as the parameters of green (sustainable) development in UIN Walisongo Semarang.

Keywords: Green Architecture, Business Center, UIN Walisongo

تصميم مركز الأعمال في جامعة الولاية الإسلامية واليسونجو سيمارانج بمقاربة العمارة الخضراء

اسم الطالب: نهدية بيلا بيرتيوي
رقم الطالب: ١٧٦٦٠١١٨
المشرفة: تارانيتا كوسوماديوي
المشرف المشارك: نونيك جونارا

نبذة مختصرة

منذ عام ٢٠١٩ ، خططت جامعة ولاية والي سونغو الإسلامية بشكل استراتيجي لتصبح حرمًا جامعيًا كفؤًا وخضراءًا قائمًا على التنمية المستدامة. بناءً على الدراسة الأولية ، يمكن ملاحظة أن وحدات الأعمال السابقة لم يتم استخدامها كمراكز أعمال مدمجة مع المجتمع الأكاديمي لجامعة الدولة الإسلامية والمجتمع الأوسع بحيث لا يسهل الوصول إليها. حتى الآن ، العمارة الخضراء هي تنفيذ هذه الاستراتيجية. المعلمات المختارة هي الإعداد والبنية التحتية والنفايات وتغير مناخ الطاقة والمياه والنقل والتعليم والبحث. من الدراسة والتحليل الأولي ، ظهر مفهوم يسمى "السفارة الخضراء". يحدد هذا المفهوم الكفاءة والفعالية والراحة. لذلك ، يتم عرض جميع الجوانب من خلال مجموعة متنوعة من الإعدادات في الأراضي والمباني. يتم تنفيذ المعلمات من خلال المفهوم لمعالجة مياه الصرف الصحي والأمطار التي يتم تنفيذها قبل إطلاقها على الأرض ، واستخدام الشرفة الخضراء في كل طابق لتكون مكانًا للنباتات وحاجزًا للمبنى ، وفعالية الضوء والهواء من خلال الفضاء المفتوح والتهوية المتقاطعة في كل غرفة. . بالإضافة إلى الاستحواذ على سياق البناء ، يصبح نهج العمارة الخضراء "تلاعبًا اجتماعيًا" لبدء الحياة والحصول على عادات وأنماط حياة خضراء للطلاب والموظفين والمحاضرين والمجتمع المحلي. تسير الإعدادات في الأرض والمباني وفقًا للجامعة الإسلامية في إندونيسيا كمعايير التنمية الخضراء (المستدامة) في جامعة ولاية والي سونغو الإسلامية في سيمارانغ.

الكلمات المفتاحية: العمارة الخضراء ، مركز الأعمال ، جامعة واليسونغو الإسلامية الحكومية

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1. INTRODUCTION

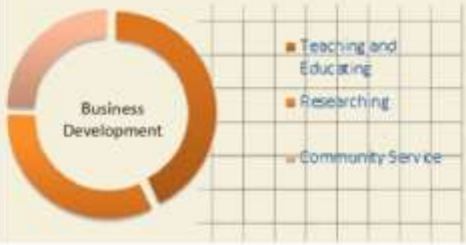
INTRODUCTION

INITIAL STUDY

UIN Walisongo Semarang is one of *Perguruan Tinggi Keagamaan Islam (PTKIN)* which is developing from time to time. There are at least three important things that had been through. Since funded in 1970 April 6th this university is initially the 14th Institut Agama Islam Negeri (IAIN). Then in 2000 IAIN decided to expand the mandate to open educational study programs of science and language. Then in 2014 changed to be *Universitas Islam Negeri (UIN)*. Along with the transformation, since 2009 UIN changed from common *Satuan Kerja (Satker)* to *Badan Layanan Umum (BLU)*.

Since 2019 UIN Walisongo had been planning strategic to be a smart and green campus based on sustainable development concept. This is done by forming a unit of "Eco-green Walisongo". A non structural unit which has duty to expand UIN as a green campus. On December 2019, UIN Walisongo was chosen as the second rank of "Eco Green Campuss" in the category of Indonesia PTKIN, and ranked 33rd in the category of UIN Green Matric Indonesia.

It can be concluded that the based principles for the development of UIN are to be excellence in educating and teaching, researching and community service which is integrated with the development of business.



From that point of view it be assumed that in the future UIN Walisongo will not only just a place for study but also for business and creating a green life style. As far, Green Architecture approach becomes the implementation of those strategic. Besides being a grip in the context construction, Green Architecture approach becomes social manipulation to start living and having habit of greeny (Green Habit and Green Lifestyle) for the students and local society.

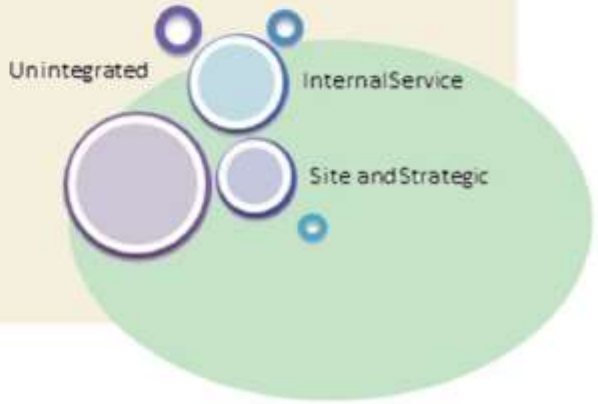
Due to regulatory demands with BLU status, UIN keeps making business development besides the main activities of academic, research, and community service. Some initiative had been taken such opening food courts, polyclinic, guesthouse, sport center and others.

Based on the preliminary study, it can be known that those business units haven't been made into a business center which integrated with UIN academic community and wider community could access it easily. From the preliminary observation had been found some weakness of the existence of UIN business facilities:

1. It is not designed in an integrated way so it seems to be unclear
2. It is hard to be accessed by the community because it is oriented on the internal service.
3. Green architecture wasn't been applied as the consequence of eco green campus which is part of the development strategic.

The preliminary observation also shows some potential development of UIN Walisongo with green architecture approach:

1. UIN Walisongo has 3 locations. the first one is at Jrakah Tugu Semarah which is the main gate of Jakarta-Semarang route. Then at NGaliyan Semarang which has a beautiful hills topography.
2. Along with the completion of Campus 3 construction from the expense of IDB, it has made decision to convert Campus I into a business center.
3. Green Architecture approach has been chosen to be one of the alternative for the development due to the consideration of the site and strategic planning of UIN Walisongo.



This kind of Business Center could be useful for the university or maybe for the local society. For the university itself, the Business Center could be a place for entrepreneurship development for students and gain the income of BLU. While for the local society, the Business Center could supply their needs.

DESIGN GOALS AND REQUIREMENTS

From the explanation above it can be known the purpose of the Business Center at UIN Walisongo Semarang:

- As a place where the students could hone the skill to compete in business and work outside.
- As a place to hold a workshop, seminars, research to develop the potentials of UIN.
- As a tool for the students to learn about business and management.
- Creating business units for the students to get knowledge, skill, and the attitude of leadership about business to be ready to compete with others.
- Designing a building that could be a social manipulation of green habit and green lifestyle.
- Designing a building that could gain the income for UIN Walisongo.

Place for gain potentials

Social manipulation

Tool for student to study

Hone skill of entrepreneur

Gain income

Design Requirements:

Environmental consideration

Harmony

Comfort

Flexibility

Locality

1. Aestethic elements adjust to existing building
2. comfort based on the green architecture approach
3. Spaces that could be multi-purposed
4. Environmental Consideration: use the land as it"s purposed
5. Mobile: user can move from one to another building without going out.
6. Locality: designing with consideration of the nature
7. Reduce maintenance work by proper design and materials

DESIGN SCOPE

1. Object
Designing a Business Center at UIN Walisongo Semarang which can accommodate some activities such as business, education and green land.
2. Design
By using Green Architecture approach to provide benefits for the building and surrounding environment
3. User
The objects could be used by all the UIN students, employees, and public whose has business.
4. Function and activity

Socialize
Eat
Discuss
Sharing
socio cultural
Communal space
Public area
Cafe

Training
Exhibit
Conference
Exercise
increase potential
Convention center
Exhibit hall
Gymnastics
Training room

Food, drinks, make up clothes trading
economic
commerce
cafe

Proper land use
Decrease surrounding issue
environment
park
communal space

2. DATA

DATA

OBJECT STUDIES

Business center is place for the management of trading of things, service, and other business to get profits. In this project, business center means a place in the environment of university that has functions to be a place for any activities related to trade of goods or service by using all the resources of the university.

For college students, business center could be a place for them to gain ability for doing the project just like in the real life. Through business center, the college students can learn how to selling or planning the project, counting for the expense, doing the job, controlling the quality, and managing the trading.

Student's unit can student cooperatives, canteens, shops, internet cafes, sport facilities and other small business units. No matter how small the unit is, if the students try to work professionally it can be useful for them to practice how is the industry works either marketing or administration that involved there.

At the Business Center there are several facilities which are related to each other and one unit can influence other units in developing the businesses.

The facilities are brand new and also there are some facilities that fulfilled the previous facilities at the site, such as the mosque. The facilities could be defined into the rented one and those which is owned by UIN.

COMMERCE
Cloth, Make upp, Bookstore

TRAINING

Training center where the students can have a live experience while getting along with the guides.

CONVENTION

To hold conferem=nce attended by the students, lecturers, employees and public.

To exhibit the student's product and hold agaendas for job seeker.

EXHIBITION

INDOOR BASKETBALL & FUSTAL COURT

GYMNASTIC
Gender differences

As a place where all of the users can use a same place at the same time while relacing.

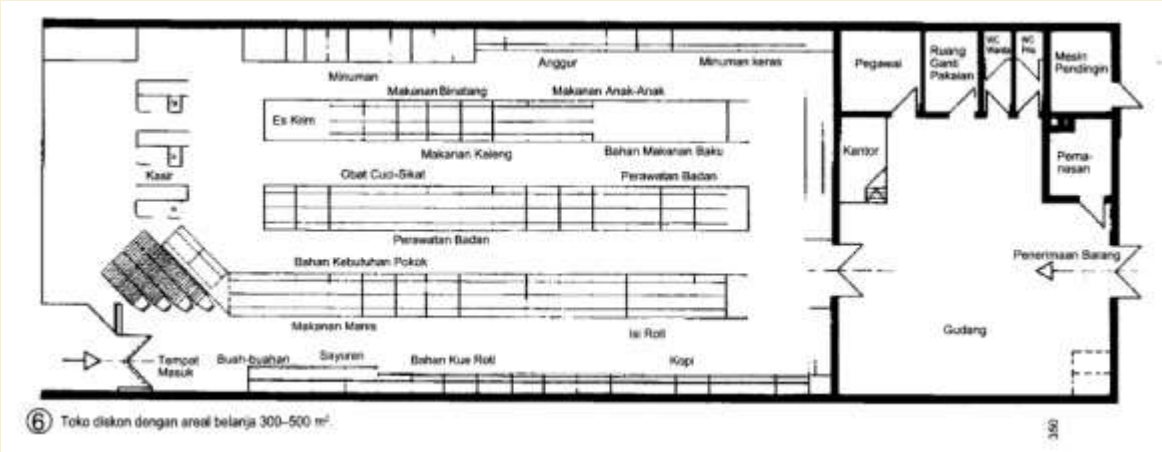
COMMUNAL SPACE

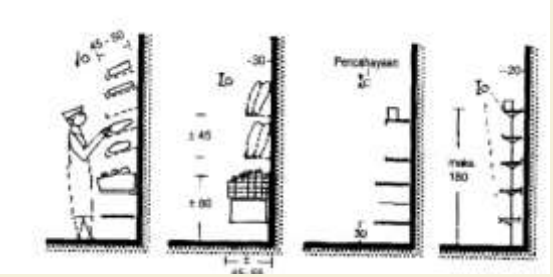
MOSQUE

Provide workspace for various types of people with different backgrounds. Give workers, students, and employers to discuss, share experiences, even establish partnerships with each other .

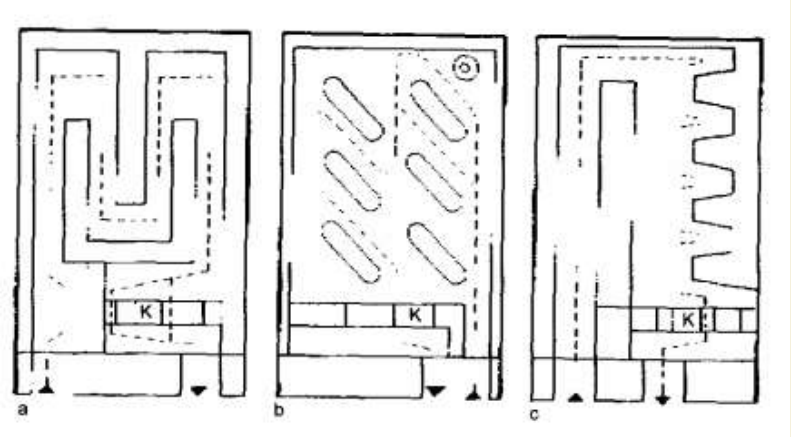
CO-WORKING SPACE

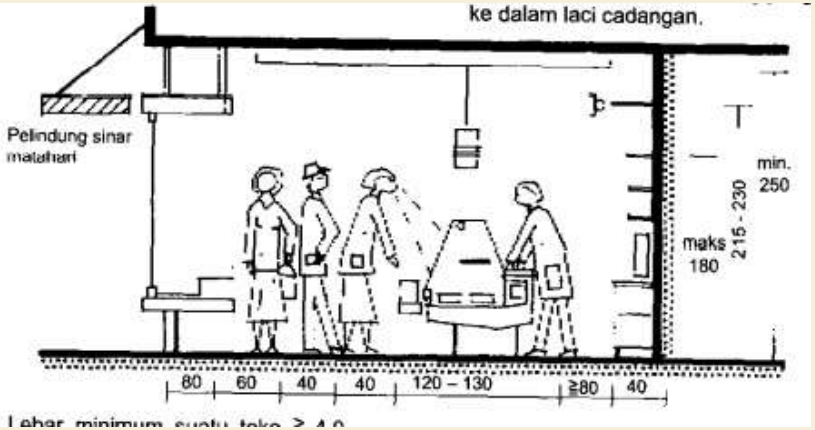
Layout standard for student retails





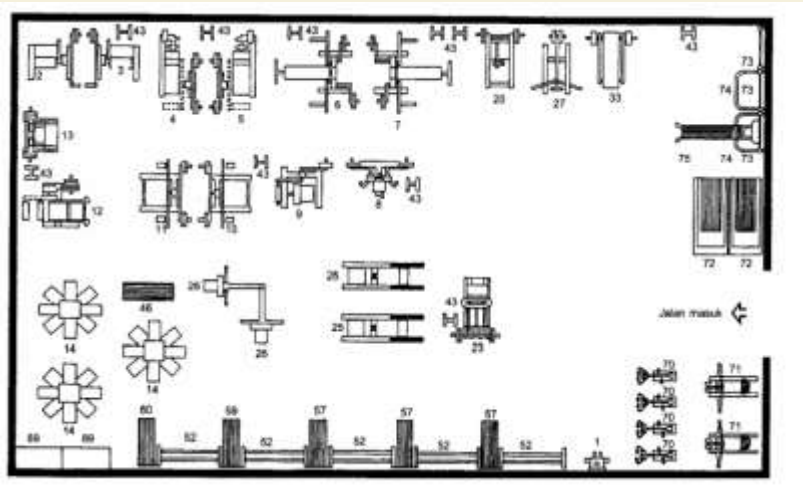
Circulation arrangement for the retails





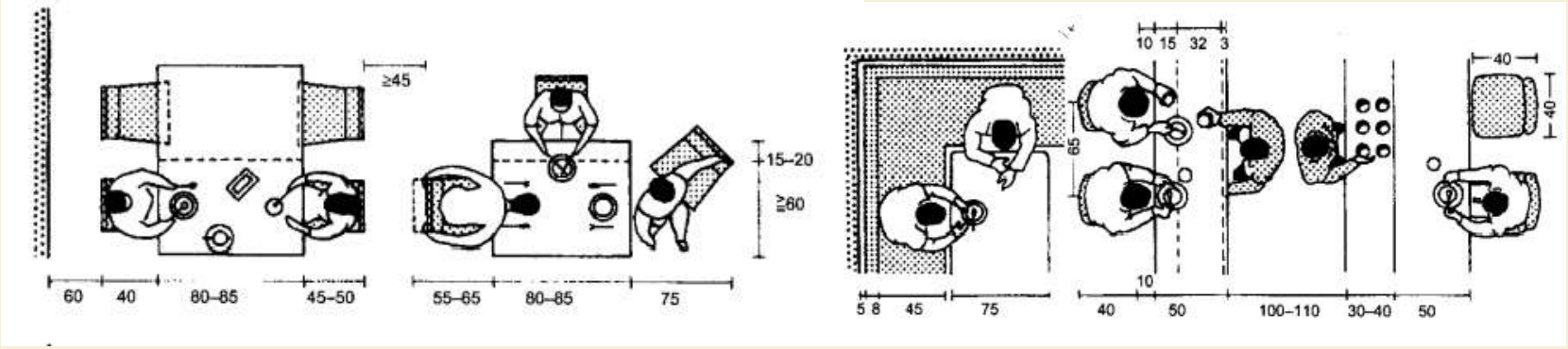
Source: *Data Arsitek Jilid 2*

Layout arrangement for gym



The smallest size room is 40 m2 that is suitable for 12 people. The minimum length is 15m need to be achieved for each room.

Standard for coffee shop



Source: *Data Arsitek Jilid 2*

APPROACH STUIES

UIN Walisongo Semarang has decided to develop using green architecture approach as the consequence of the UI Green Matric indicators and criteria. UI Green Matric is kind of green principles that's used for the universitites to relate with the green architecture approach.

As using the UI Green Matric there are some criteria and indicator for the green campus stated by Universitas Indonesia that was launched in 2010. UI has become a host of International Conference on World University Rankings. The conference has been making some conclusion to give credits to those universities that were making efforts to reduce their carbon footprint and thus help combat global climate change .

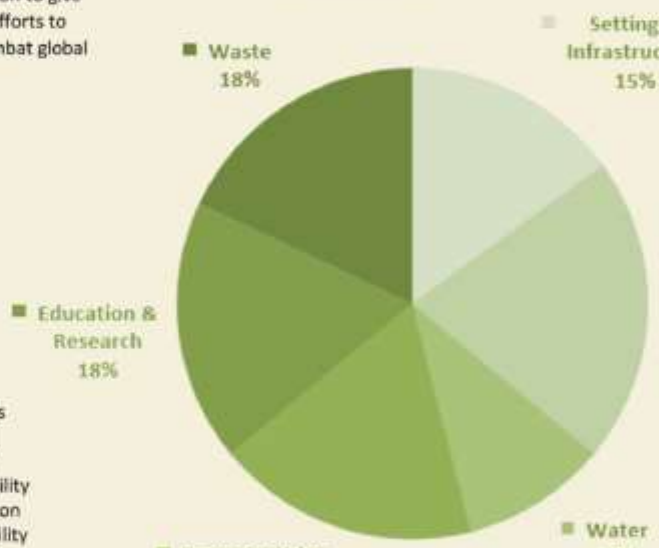
The small basic surface area as the consideration to make it built vertically as middle high rise building

SITE
The design gets along with the existing building on the side

BEAUTY AND FRESHNESS
The structure of the building gets along with the existing area which is famous for its green walls and roof

LIVING ARCHITECTURE
When craeting for living architecture, the kiving creature will make its habitats in the environment

Recycling program
Program that reduce the use of paper and plastic
Organic waste treatmentInorganic wate treatment
Toxic waste handled
Sewerade disposal



Open space
forest covered land
planted vegetation area
water absorbance

Smart buidling implementation
Renewable energy sources
electricity usage
reduction of green house gas
tatal of carbon footprint

Sustainability courses/subjects
Sustainability research
event related to sustainability
scholary publication of sustainability
sustainability student organization
univeristy's website of sustainability

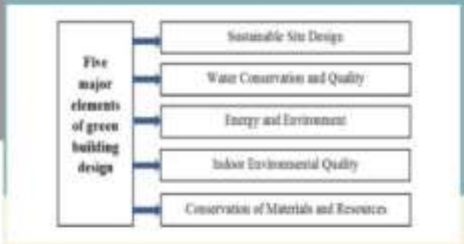
Water conservation program
Water recycling program
The use of water efficiency appliances
(water tap, toilet flush, etc)
Treated water consumed

Ratio of total evhicle/total population
Shittle service
Zero Emission Vehicles policy
Ratio od parking are
Pedestrian path

APPROACH STUDIES

Designing building using green approach can be a good idea for making the society realize how important it is to make the environment feel to better to be lived in. Green building can reduce or eliminate negative environmental impact and improve existing ungreen design.

The following points summarize key principles, strategies and technologies which are associated with the five major elements of green building design which are: Sustainable Site Design; Water Conservation and Quality; Energy and Environment; Indoor Environmental Quality; and Conservation of Materials and Resources.



1.ENERGY CONSERVATION

There are three requirements for energy efficiency and regenerative energy supply: constructional measure could be done through minimizing building energy, technical system be done for increasing energy efficiency, to generate the cool and electricity of the building use regenerative energy source. Energy requirement is determined by the materials of the building, orientation and shape of the building, transparent materials and shading devices (Baurer. 2007 : 51).

WATER STYTEM

Water provides a valuable resource to be celebrated in the process of green building design. According to Art Ludwig in Create an Oasis out of Greywater, only about 6% of the water we use is for drinking. There is no need to use potable water for irrigation or sewage. The Green Building Design course introduces methods of rainwater harvesting, grey water systems, and living pools (BCKL, 2009).

- **Water conservation with Technologies**

Lavatory flush with economy switch, Water-conserving taps (single lever handle faucet) and shower fittings, Public sector: fittings with infrared sensors, and Vacuum urinals.

- **Rain Water Use**

Rain Water harvesting can be used for flushing toilets, watering garden, washing and cleaning. Rain water is high mineral content so it's better than using regular water for watering the plants. For using the rain water it is needing the second piping system and cistern.

- **Grey Water Use**

Grey water comes from the bathroom sink, washing machine, and reservoir. It contains moderate amount of soap residue and skin oil, so it can be processed into usable water. It can be used for watering garden, flushing toilets and others (Baurer 2007: 63).

SOLAR ENERGY

- **Solar Protection**

Solar protection **is** naturally is made from the design element of the façade of the building. There is a design option for solar protection. The façade consist of individual aluminium ribs, and when the sun goes down the shutter will automatically goes down.
A good daylighting can be reached by making combination of a daylight system in the upper façade region and vertical louver blinds for the rest of the façade area (Baurer. 2007 : 83).

- **Daylight Utilization**

Daylight that comes to the building can be determined by the obstructions and the façade. For the façade the most important factors are the windows area, drop height and light transmission characteristic of glazing and solar protection system. If the daylight coming through the upper façade without reflecting off ceiling, walls, and floor it will make a maximum room depth (Baurer: 86).
The hangings could be a very efficient system. The determined by the shading and the solar protections but is also guarantees for the maximum daylighting.

- **Passive Solar Design**

Passive solar design refers to the use of the sun's energy for the heating and cooling of living spaces. Solar buildings are designed to keep environment comfortable in all seasons without much expenditure on electricity

- Passive solar design uses that to capture the sun's energy:
- Solar passive features
- Shape and form of buildings.
- Orientation of the facades.
- Design of Building plan and section.
- Thermal insulation and thermal storage of roof.
- Thermal Insulation and thermal storage of the exterior walls.

Major Components: Orientation, double glazed windows, window overhangs, thermal storage walls roof, roof painting, Ventilation, evaporation, day lighting, construction material etc. Designs depend on direction & intensity of Sun & wind, ambient temp., humidity etc. Different designs for different climatic zones.

2. MATERIALS

- **Green Building Materials**

Green building materials can be selected by their characteristics free of gassing of harmful air missions and toxicity, durability, longevity, and locality. Those are preferred for its occupant health and productivity and also it is more responsible for the environment because their impacts to the nature is lessen.

APPROACH STUIES

• Smart Materials

Smart Materials or Intelligent Materials are one of the most important thing to make the development of construction. The goal is to improve the development of energetic and adaptive qualities materials. The examples of the products are PCM, Vacuum Facades, Mineral Coatings, Low E-Characteristics, Glass with self cleaning properties,Titanium Dioxide, Bionic materials and surfaces, and other.

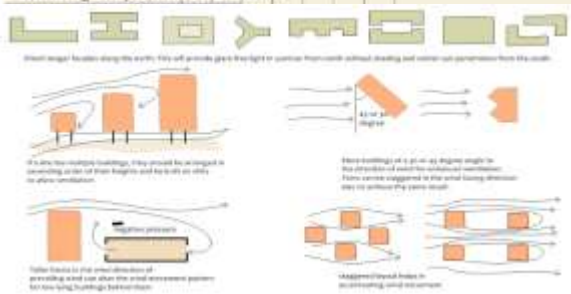
• Natural Building

A natural building involves a range of building systems and materials that place major emphasis on sustainability. Ways of achieving sustainability through natural building focus on durability and the use of minimally processed, plentiful or renewable resources, as well as those that, while recycled or salvaged, produce healthy living environments and maintain indoor air quality. The basis of natural building is the need to lessen the environmental impact of buildings and other supporting systems, without sacrificing comfort or health. To be more sustainable, natural building uses primarily abundantly available, renewable, reused or recycled materials.

In addition to relying on natural building materials, the emphasis on the architectural design is heightened. The orientation of a building, the utilization of local climate and site conditions, the emphasis on natural ventilation through design, fundamentally lessen operational costs and positively impact the environmental.

3.DESIGN

• Building shape and Orientation



The building is oriented towards the direction of the coming wind, the dimension and orientation of the building determined by the base shape of the building, different orientations will make different wind shadow (Leeward).

From the tables it can be known that in hot-humid regions the removal of heat and humidity is needed by using natural ventilation than minimizing the heat loss. The good orientation on slope is on the south, the adaptions can be done by maximizing the shade and wind. Using high canopy trees near the building for site development. Light colored exterior is preferred than using the warm ones because it can reflect the light than absorb it (Keplinger, D. 1978: 579-580).

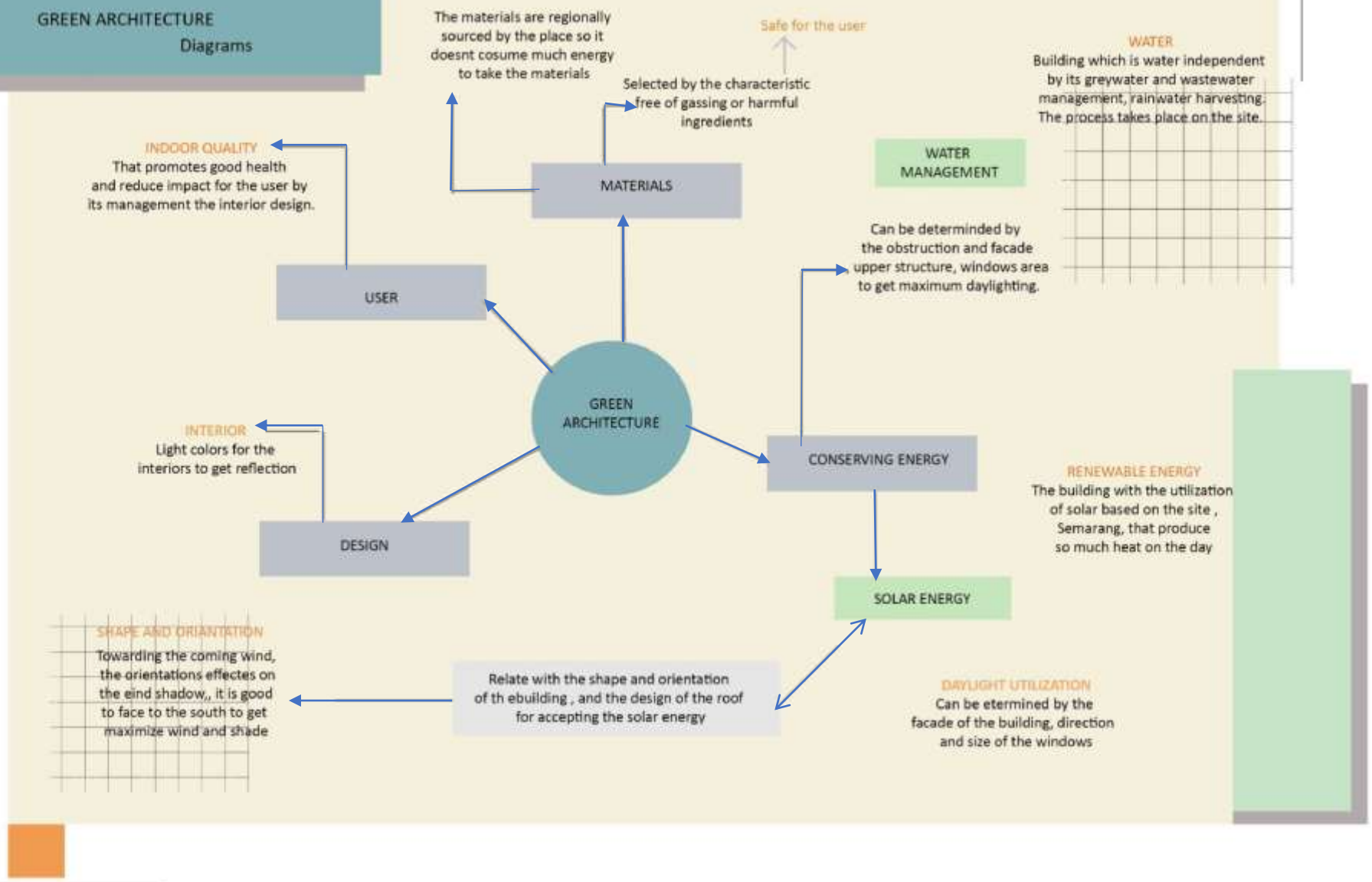
4.SURROUNDING ENVIRONMENT

• Living Architecture

The environment itself actually has the system to metabolize nutrients and waste to be more useful thing. The reason why we need to apply the living architecture because it has power to create the insulation (keep cool in summer and keep cold out in winter), improved the quality of indoor and outdoor climate, improved aesthetics elements, reduce greenhouse gases such as CO2, CO, and NO2. In addition, when creating for living architecture, the living creature will make its habitats in the environment.

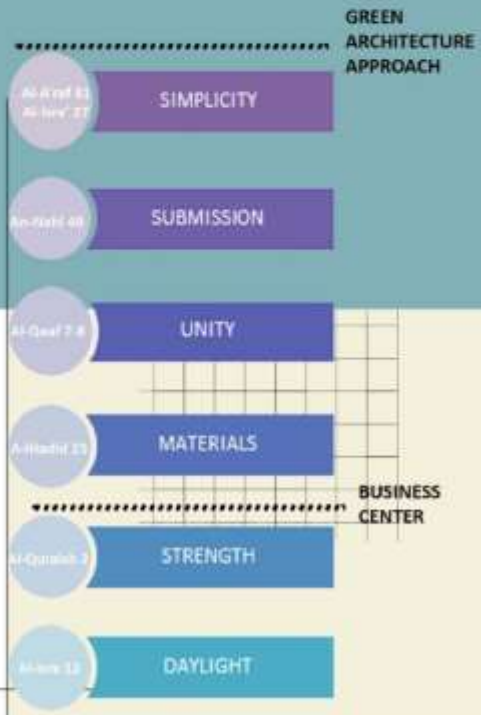
The last few years, the increasing interest of green, sustainable and ecological solution are making a result of the numerous of facilities establishment using energy-saving technologies. It also happen in Semarang, which is famous for its hot temperature. But there is no action to deal with it.

GREEN ARCHITECTURE
Diagrams



ISLAMIC DESIGN REFERENCE

These following are the verses of Al-Qur'an and Hadits which become guidelines and at the same time as the concept of the planning and designing that will be applied with the "Green Architecture" principles which are very closely related in architecture



Basically the life of muslim is to worship to Allah swt and it can be done by considering every steps on living in doing architecture. Green architecture is embodied in the Islamic values as the respond to the environmental concern. In the surah Al-A'raf 56 it mentions the values to motivate humans to live in harmony with the nature:

"And do not do mischief on earth after (God) to fix it, and pray to him fear (not accepted) and expectations (be granted). Verily Allah's mercy is very close to those who do good. "

1.The simplicity of functional spaces and forms
Al-Araf: 31 and Al-Isra :27

Interpretation: Allah doesn't like something excessive so that the establishment should be done economically, aesthetics and functionally, having purpose, and there is no excessive spaces. This one suits Green Architecture concept. (Jalalayn Tafsir).

2. The majesty of the room's atmosphere
An-Nahl: 49

Interpretation: to wipe off the arrogance and as Allah's servant, people would feel small (psychologically) when facing to the God. So that the different scale of human and space is needed.

3.Unity with the outside (Landscape arrangement)
Al-Qaa: 7-8

Interpretation: obviously, the outside is a miniature of the nature that has ability to make human feel much more grateful and piety. Adding green element obviously one of the most important thing when using green architecture concept.

4.Building's materials
Al-Hadid: 25

Conclusion: choosing the building's materials should paying attention to iron material for various possibilities, the physical structure of the building, (including steel, reinforced concrete, copper, and stainless). This also means for using other strong materials that has ability of long life term. Choosing strong material is one of the way for applying green architecture that is safe for everyone.

In Islam, Business itself has been widely exemplified by the Prophet and his companions. It is known that those companions gave big impact of the Islamic development in that time.

Islamic orientation is actually something that is recommended and allowed as long as it is not incompatible with norms and ethics of doing business in Islam.

The orientation for doing business not only just for looking up the profit for one person, but also for the other who are involved for doing the business either directly or indirectly. Obviously doing business should be appropriate with the principles of transaction and economic law in Islam.
These are the verses of Al-Qur'an and Hadits for doing business in Islam:

1.Strength for having journey
Al-Quraish: 2

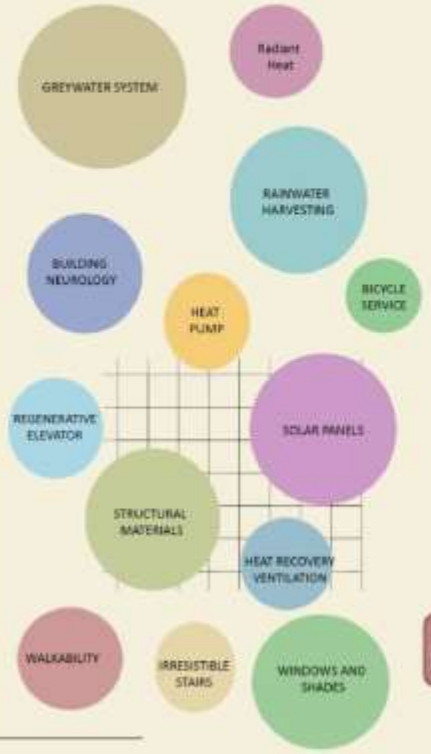
Interpretation: we were given grace by Allah for having journey to make trading and income from it.

2. Make the day lighten up
Al-Isra: 12

Interpretation: Allah has mad the day lighten up so that we can go out to do the job and et paid then in the night we can relax after struggling all the day (Tarigan, 2012 : 5).

PRECEDENCE STUDY

The Bullitt Center is a commercial office building at the intersection of the Central District neighborhood, and Capitol Hill, Seattle, Washington. The Bullitt Center was designed to be **the greenest commercial building** in the world, and was certified as a "Living Building" by the International Living Future Institute in April 2015. There are 14 features on the building that make it being above the average.



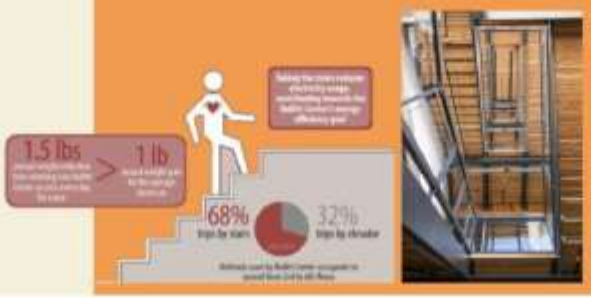
1. BUILDING NEUROLOGY

At the Bullitt Center, the BMS (Building Management Systems) is responsible for the control of the heating system, cooling system, passive and active ventilation systems, daylight control, composters and grey water metabolism. All these systems are carefully monitored for maximum efficiency at the main control room in the core of the building.

2. IRRESISTIBLE STAIRS

The staircase is brought right to the front entrance, making it an obvious choice for people who are able to use the stairs.This stairway has near-magical powers: people can't seem to resist going up.

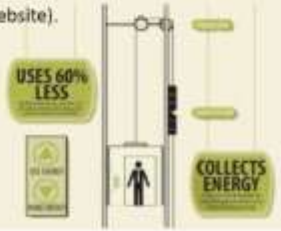
Stair-goers are rewarded by beautifully crafted wood and steel-clad steps, surrounded by a light glass volume. Extended landings cantilever out over the sidewalk, and create opportunities to take a break or greet a passing friend along the way. The incredible view of downtown and the Puget Sound unfolds as a final gift to those who chose the stairs.



The Bullitt Center

3. REGENERATIVE ELEVATOR

For people who are able to use stairs, it is designed to draw people upward as the primary means of vertical circulation in the building. the stairway was designed to minimize elevator use and maximize energy efficiency, the elevator is a bit of a technological marvel in its own right. There is a motor at the top of the shaft takes the energy from stopping the elevator car and converts it into electrical energy, which can then be used elsewhere in the building (Bullitt website).



The structures are connected by bridges, also to protect nature. Striving to maximize the open green space on the ground and reduce the impact on the root system of the trees, The screens protecting the project from heat and sunlight are inspired by the way tree branches twist and weave to create shadow.

Huaxin Businee Center, China

This building is located in the Guilin Road, Tianlin, Xuhui, China. The architect of the building has a unique concept of making the existing trees keep on the site. The architects aimed to be in harmony with nature and respect it.

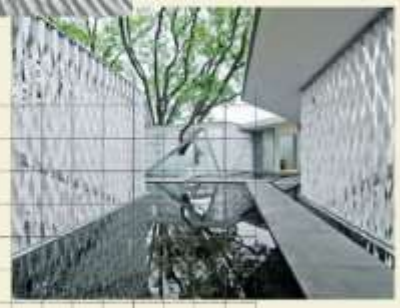
The interior continues the themes developed outside. A glass atrium on the first floor, whose transparent walls allow for a relationship with the exterior by letting in natural light and offering 360° views of the surrounding greenery. From here a skylight-covered, U-shaped stairway leads to the second floor rooms.

Scenic Architecture Office began by lifting the 730sqm building on pilotis to let nature run underneath. The elevation brings the building's occupants closer to nature with tree leaves and branches within touching distance.

Two of the buildings – one shaped like a Y and supported by three piers and another L-shaped and resting on two – interlock with the six trees like a Chinese puzzle. Two other buildings, modelled on the initial Y and L, extend the complex to the street front, implying that Ys and Ls could continue ad infinitum, if only they had the chance. The Ys and Ls produce complex triangles and Xs. Cantilevers project dramatically into the trees and toward the sidewalk, while obtuse angles draw the eye toward the building.

Huaxin Businee Center, China

When wandering across these translucent walls, the visitor will alternatively encounter rooms, courtyards, bridges and different sceneries guided by them. The branches and leaves of the trees traverse the building freely and become touchable friends.



Four outdoor courtyards dot the path, one contains a shallow pool from which water drips into the koi pond below. Branches from the camphor trees intersect the pathways and enter a meeting room.

Those facing the street are used as offices for the developer, while those nestled within the trees are VIP rooms and tearooms for meeting with potential clients. The connections between these rooms reinforce the project's concern for nature.

Detailing comes from the structure; for example, the path includes triangular gates formed by trusses instead of traditional round moon gates. A simple loop makes circulation around the building easy, but the variety of views along the way keeps it interesting. The complexity of the spaces and their materials and connections has the effect of making the building look bigger than it is.

SITE STUDIES

From the data uploaded by the local government, It can be known that Ngaliyan is one of the **sub-district in Semarang** which always developing from time to time in the sectors of economic and residential because its location is strategic.

BOUNDARIES

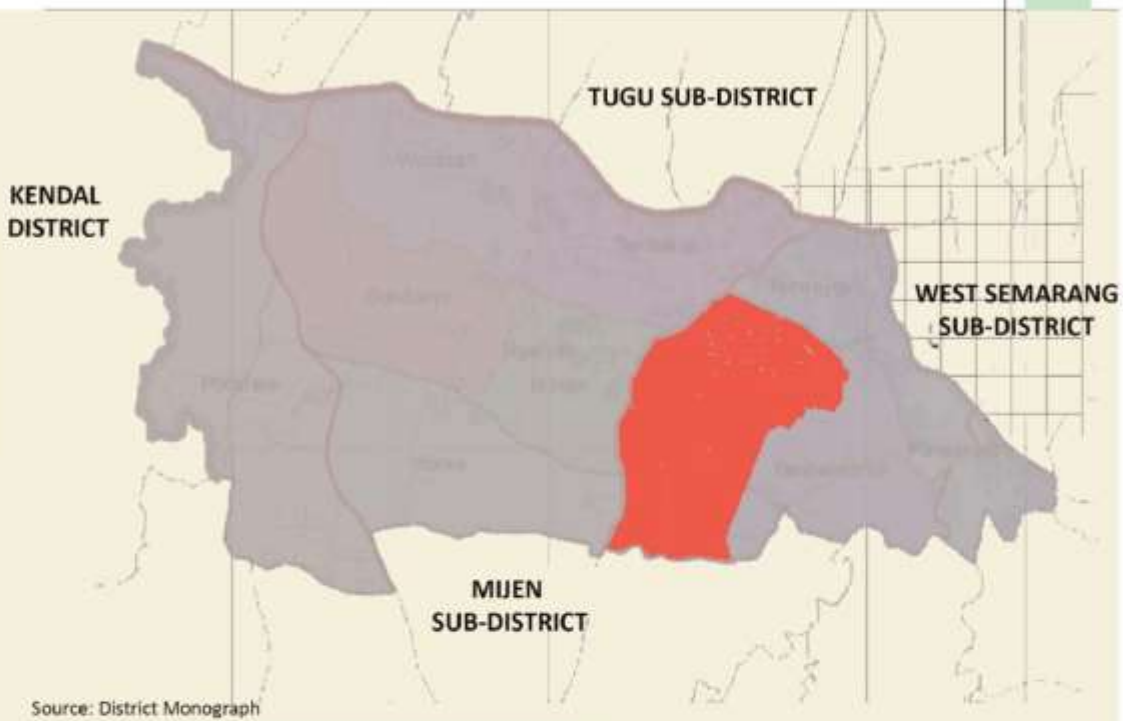
North : Tugu sub-district
West: Kendal District
South: Mijen sub-district
East: West Semarang sub-district

Although the development will be done for all the time , but there are some rules that need to be followed as *"PERATURAN DAERAH KOTA SEMARANG NOMOR 14 TAHUN 2011 TENTANG RENCANA TATA RUANG WILAYAH KOTA SEMARANG TAHUN 2011 – 2031"* the rule talks about Water Catchment Area, Local Protection Area and others.

"PERATURAN DAERAH KOTAMADYA DAERAH TINGKAT II SEMARANG TENTANG RENCANA DETAIL TATA RUANG KOTA (RDTRK) BAGIAN WILAYAH KOTA X (KECAMATAN TUGU DAN KECAMATAN NGALIYAN) TAHUN 1995 – 2005"

That regulation control Building Coverage Ratio (KDB) for Primary Arterial Road: Trade and services 60%
Floor Average Ratio (KLB) and Built Height:
Trade and services 1-2 floors is 1,2
2-4 floors is 2,4
4-6 floors is 3,6
Set Back Building : Trade and services 32 meters

That regulation control Building Coverage Ratio (KDB) for Minor Arterial Road: Trade and service 60%
Set Back Building: 29 meters (Bappeda Kota Semarang. 2012).



Source: District Monograph

NO	Kelurahan	Luas (Ha)	Jumlah		Jumlah Penduduk		
			RW	RT	LK	PR	Jumlah
1.	Gondoriyo	271,363	12	63	3.620	3.610	7.230
2.	Podorejo	605,349	12	57	4.391	4.455	8.846
3.	Bringin	106,458	20	138	8.228	8.232	16.460
4.	Purwoyoso	99.152	14	92	8.377	8.346	16.723
5.	Kalipancur	125,510	12	118	9.684	9.781	5.853
6.	Bambankerep	128.376	5	34	3.024	3.007	6.031
7.	Ngaliyan	527,645	12	87	7.403	7.196	14.599
8.	Tambakaji	383,040	16	121	10.532	10.487	21.019
9.	Wonosari	323,549	16	128	11.476	11.461	22.937
10	Wates	381,986	3	30	2.380	2.423	4.803
	Jumlah	**3.181.96**	**112**	**868**	**69.115**	**68.998**	**138.113**

Based on the data upload by Ngaliyan Districts office, the total populations are 138. 133 people and 21.019 to be more specifically in Tambakaji where UIN located. Based on the data it can be concluded that the local society not too prefer to work as an entrepreneur and doing business though Ngaliyan has potential for the community to make business because Ngaliyan is one of the districts in Semarang which is the most developed. (Satu Data Kota Semarang. 2017).

Walisongo Street classified as a Major Arterial Road which means an arterial street designed for safe movement of through traffic, with or without a median, with intersections at grade and with access to abutting properties or intersecting streets limited to the optimum extent.

Prof. Dr. Hamka Street classified as a Minor Arterial Road which means an arterial road that serve transportation with high average speed and limited of access(Ningsih. 2010. Vol.XV, No. 2).

UIN Walisogno Semarang located in a strategic area due to it is crossed by the main street to go in and out to Semarang. UIN Walisongo devided into 3 location:

Campus I: Located in Walisongo Street No. 3-5 Jrakah, Semarang.

Campus II: Located in Prof. Dr. Hamka Street KM 2 Tambakaji, Ngaliyan, Semarang.

Campus III: Located in Prof. Dr. Hamka Street KM 3, Tambakaji, Ngaliyan, Semarang.

Campus II and III connected with a local campus road as seen in the picture.

The chosen area

The chosen area

CAMPUS I

Campus I is intended for the development of Magister Academic Program and Business Center and Guest house. The total area: 26,541.73 m² and circumfence 662.10 m.

Demographic
The studnets who study at UIN with magister propgram are 321 and the employees are 300 who work at Campus I (Rector's speech on UIN's 60th Dies Natalis on April 6th, 2020).

Campus II

Campus II intended for the development of dormitory (Ma'had), water conservation (reservoir), Waste treatment area, beautification of pedestrian and vehicle road.

Campus III

Campus III is intended for clusteriaztion, circulation of vehicle and pedestriants, forest campus, garden and plaza, water conservation and recycling, community service, culture center, lecture's housing.

SITE DATA

1. Location
Walisongo Street 3-5 Tambakajji, Ngaliyan, Semarang City, Central Java.
Precisely Campus I UIN Walisongo Semarang which originally a Magister Building and a mosque.

Campus I UIN Walisongo Semarang

2. Boundaries
West side: official residence and guesthouse.
North side: Walisongo Street.
East side: Rector's building which would be converted to be a Magister Building
South side: WMC Building and Tennis court.

3. Shape and Measure
Area: 4,530 M and circumference: 2.301,30 M
The site has a rectangle shape but it's not perfectly rectangle.

4. Accessibility
There is a main gate at the south which is directly adjacent with Dr. Prof. Hamka Street and second gate at the north which directly adjacent with Walisongo Street. Inside UIN the local street has length of 7 M that could be used by 2 cars at the same time.

5. Circulation and Density of vehicles and pedestrians
There are local streets that could lead to the site directly inside UIN. The density of vehicle is classified as moderate. The Lack of the site is there is no space for pedestrians to walk comfortably inside the site.

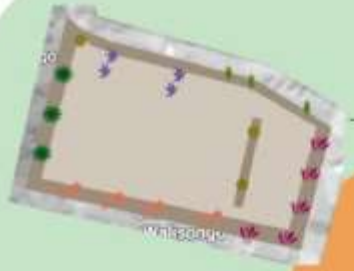
6. VIEW

7. Climate

The wind is blowing from the north because there are no any barrier to the site.
Sharp smell (sewage smell) originates from the north where there are many factories across the street and the smell is quite disturbing.

8. Noise

The loudest noise comes from the North tread because it is directly adjacent to Jl. The Wali Songo, while from the south, west and east are classified low because the site does not directly border big road but only a small road in scope UIN



9. VEGETATION

11. Physical Conditions and Infrastructure

The building around the site have a modern style with a distinctive style of UIN Walingoso Semarang which is salted egg tilled walls and Limas roof style.
There are complete infrastructure network of water and electricity around the site.

10. Demographics

The number of undergraduate students studying at UIN are 16.729 and 603 for magister students, 557 lectures and 240 employees. But Campus I is intended for Magister Programs.

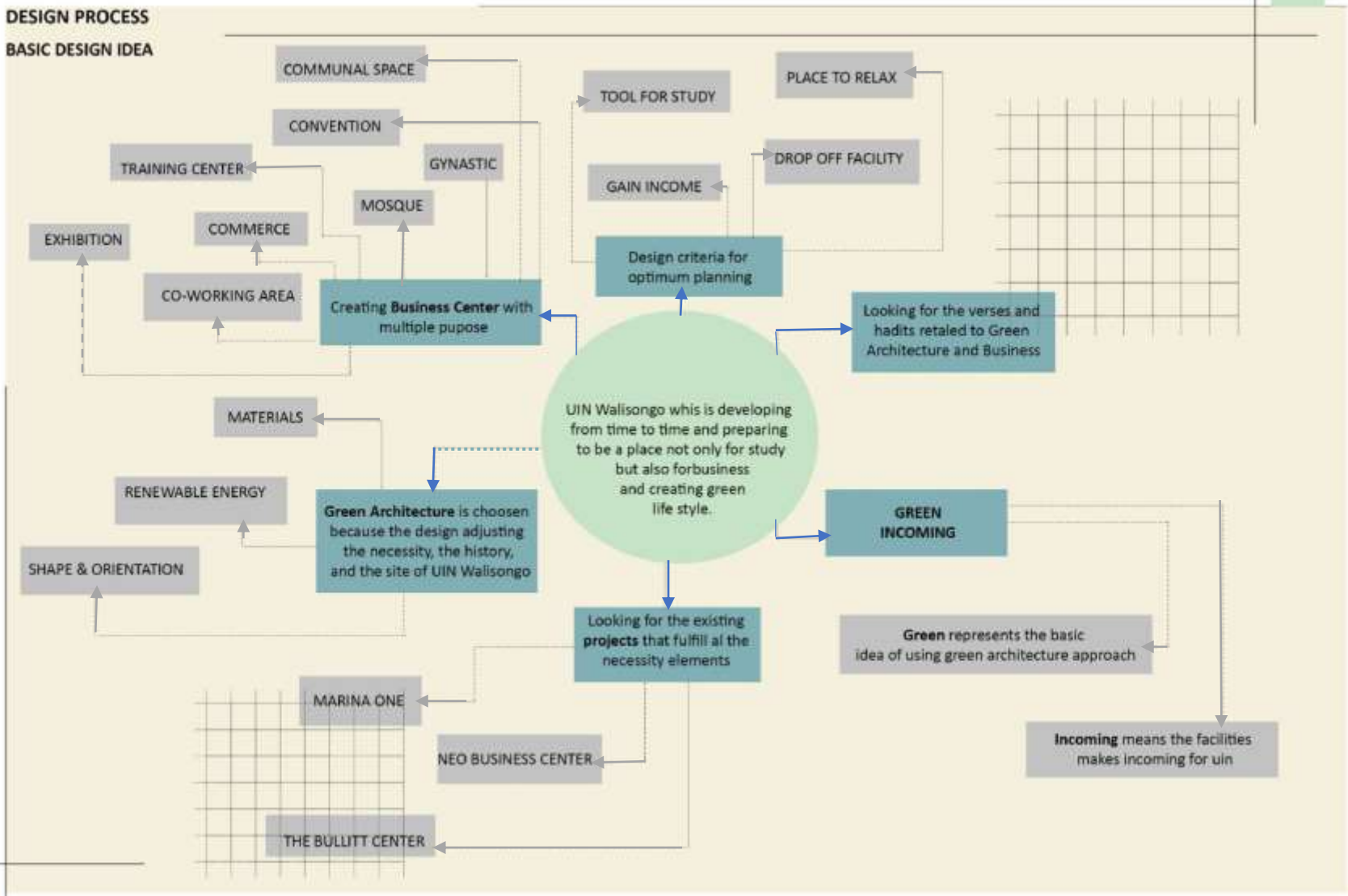
12. Potential

The site is located in a potential site that is bordered by big ways and good position to be seen from the outside.

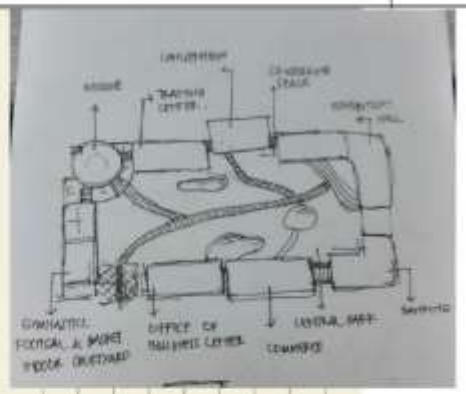
3. DESIGN PROCESS

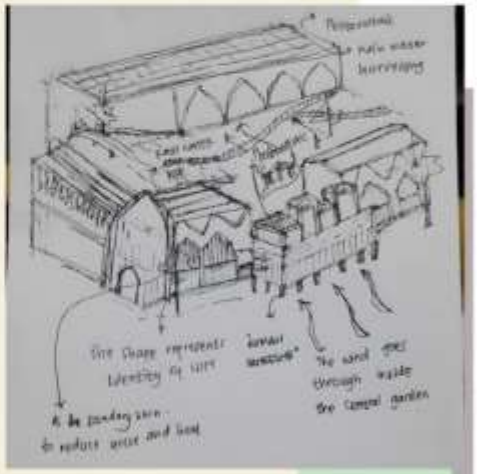
DESIGN PROCESS

BASIC DESIGN IDEA

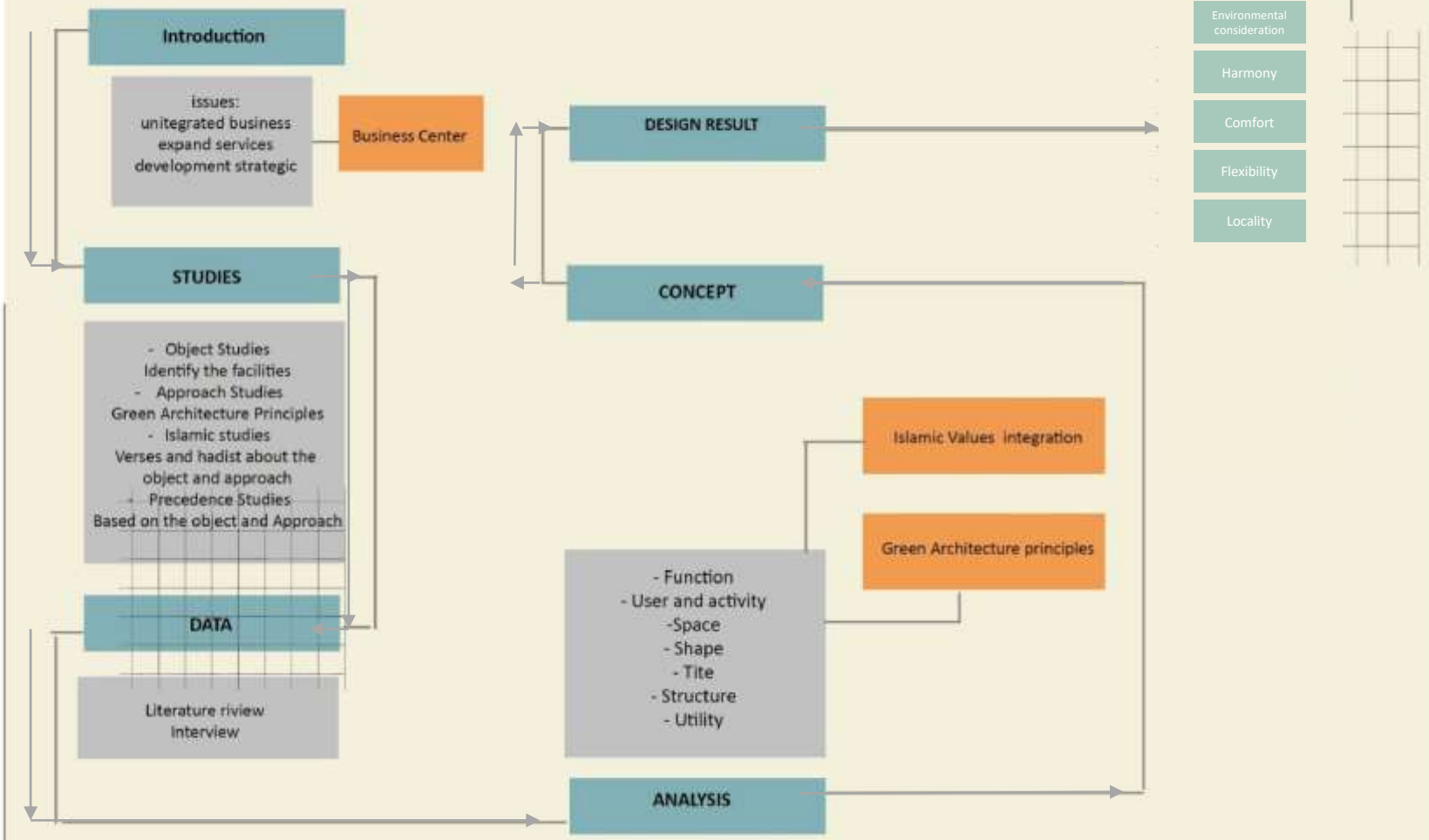



MOSQUE → · ON THE WEST SIDE
· form feature on the backside
→ use glass to get natural lighting and applied the Islamic studies of "magicity of the room's atmosphere"
use EFFECT "egg white" color as the tool to adjust with the existing
→ BRIDGE to connect one with another building.
the pond connects to the central garden
· use basement parking to maximize the land-use.
BRIDGE
BASEMENT PARKING
ENTRANCE for parking
use the concepts of "HUMAN PARTICIPATE" → Indonesia Traditional House
to allow the wind comes through to the CENTRAL GARDEN and the buildings on the south
CENTRAL GARDEN as COMMUNAL PLACE.





DESIGN SCHEME



4. ANALYSIS

SI

SITE AND INFRASTRUCTURE
Various arrangement of the site, building and infrastructure.

EC

ENERGY AND CLIMATE
Consideration of energy utilization, energy alternative and energy conservation.

WS

WASTE
The program of managing the waste such as recycle, manufacturing the organic water, the system of waste disposal.

WR

WATER
Reduce the use of water and increase the water conservation program.

TR

TRANSPORTATION
The arrangement of motor vehicle restriction and vertical transportation.

ISLAMIC INTEGRATION

Al-A'raf 31

Efficiency and effectiveness that's applied on the building planning.

Al-Hadid 25

The use of high endurance material and safe for human and environment.

Al-Quraish 2

The design of business center is the application of Allah's command to work and get basic necessities of life.

PRELIMINARY
STUDY

CONTEXTUAL ANALYSIS

SITE ANALYSIS

FUNCTIONAL ANALYSIS

PLANNING

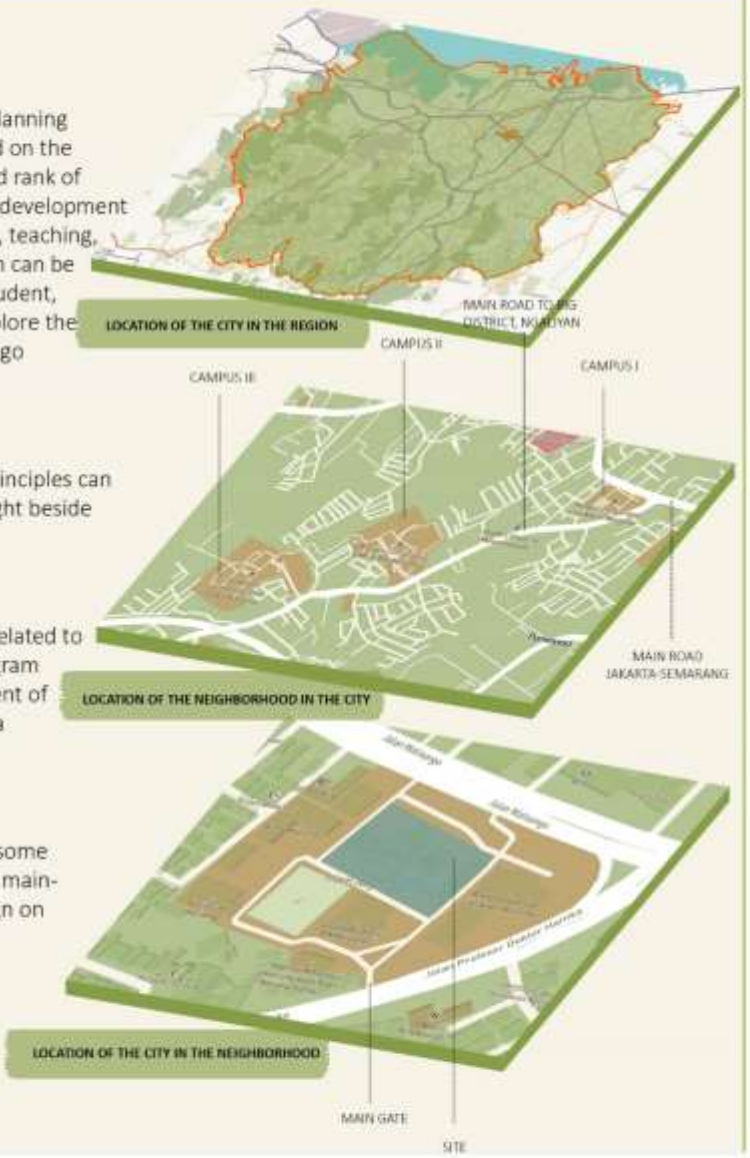
ENERGY ANALYSIS

HISTORY
Since 2019 UIN Walisongo had been planning to be a smart and green campus based on the result of UI Green Matric as the second rank of PTKIN. Based on the principles for the development of UIN is to be excellence in education, teaching, research and community service which can be achieved by creating a place for the student, lecturer or even the community to explore the business program held by UIN Walisongo Semarang.

MAGNETIC
The strategic plaln to develop those principles can be achieved by its startegic location right beside the main road of Jakarta-Semarang.

ACTIVITIES
Some activities on the site are things related to teaching process for the magister program and business things for the development of UIN Walisongo Semarng such as media center and hajj and umrah agents.

THREATS
By using green architecture approach some threats can be found is about the high maintenance of the greenery which is design on the site.



CONTEXTUAL ANALYSIS

LOCATION

The site is taken place in the territory of UIN Walisongo Semarang, specifically Campus I which is on Walisongo Street Number 3-5 Jrakah, Semarang City.

NEW GOALS

UIN Walisongo has decided to be a good role model for its surrounding environment either for the community to ralize how important it is to to live with Green style to have a green habbit, green life style and use Green Architecture Approach.

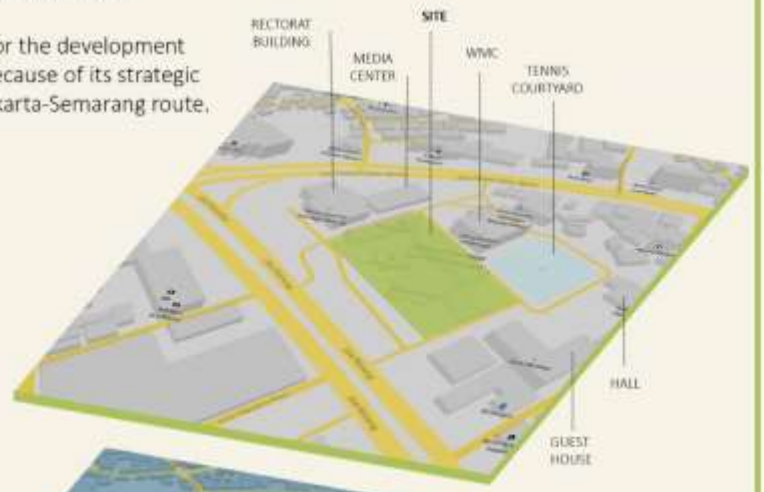
ISSUE

Due to regalatory demands with BLU status, UIN Walisongo needs to expand its ability in business but also integrated with the accademy programs.

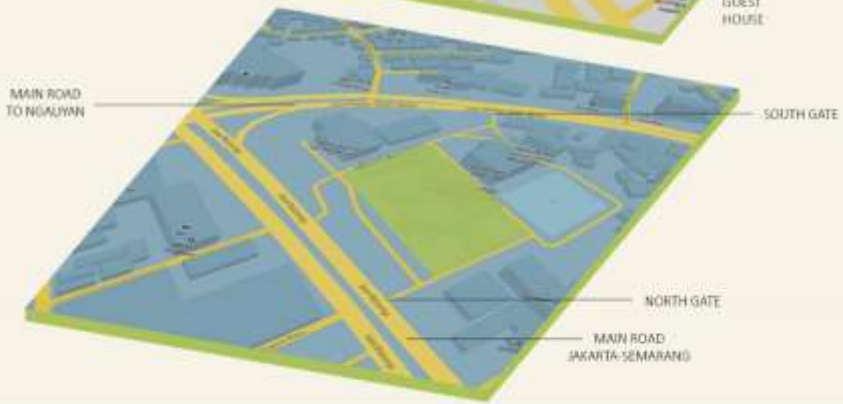
UIN Walisongo has already having some partial business such as Food court, Hajj and Umrah Program Center, bookstore and etc but it isn't integrated into a center and built with Green Approach as consequence of the UI Green Matric.

Campus I was chosen to be a place for the development of business and Magister program because of its strategic location which is the main gate of Jakarta-Semarang route.

NEIGHBORHOOD FEATURES

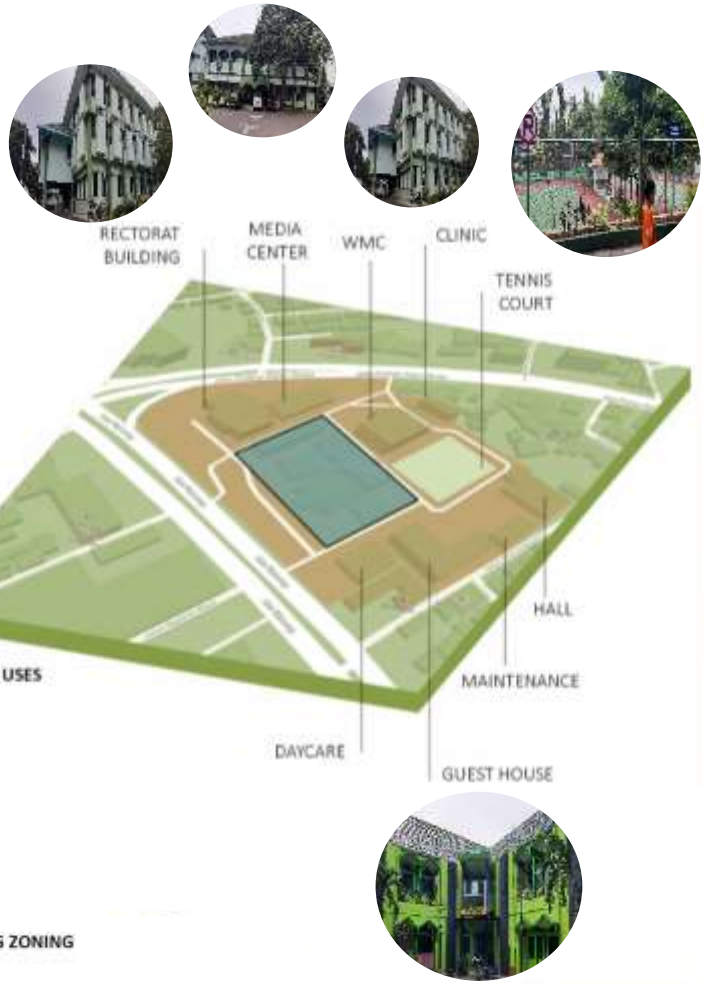


INFRASTUCTURE



NEIGHBORHOOD CONTEXT

Existing Zoning and Uses



EXISTING ZONING

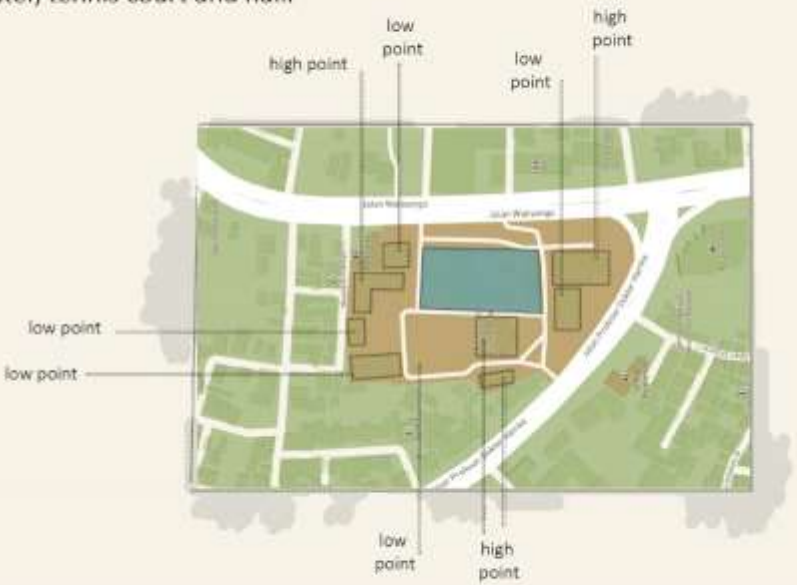
Site is in the UIN Walisongo Semarang (Campus I) area. The surrounding area of the site can bel devided into a commercial zone (R3), develoopment (R2), and lectures (R1).

EXISTING USES

The surounding existing buildings are recorat and media center on the east side, the WMC clinic and tennis court on the south side, the hall, guest house and daycare are on the west side. Furthermore on the north side there is landscape that is closed to the main road of Jakarta-Semarang.

MAYOR LAND FEATURES

The features that are high point in the neighborhood are the Rectorat building, guest hpuse and WMC Furthermore, the feature that are low point are media center, tennis court and hall.



SITE ANALYSIS

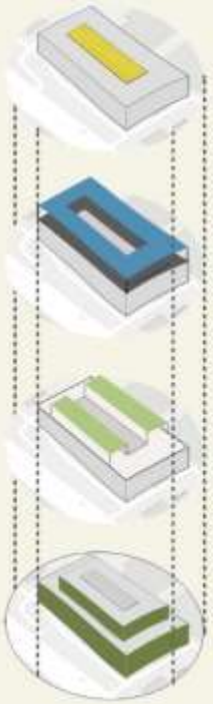
SUN AND HEAT

SI | EC | WS | WR | TR

- Arrangement of land and infrastructure on the application of the idea of solving the mass of the building and the use of the structure of the house on stilts and center void on the site.
- Climate regulation on the application of cross ventilation and void which can supply user comfort.

DATA

Maximum comfort level based on the intensity of lighting occurs at 06.00- 10.00 and 14.00-18.00, the uncomfortable level occurs at 10-14.00.



CENTER VOID

Besides maximizing the daylight to the landscape area, center void also used to conservating energy so the use of lamps over the building would be decreased.

PHOTOVOLTAIC ROOF

Utilize the climite in Semarang which is recieved much solar energy on the daylight to convert it into electrical energy.

ROOFTOP GARDEN

Maximixing the daylight onto the greenery that is put on the rooftop to decreased the heat that fall inside the building and gives the sense of relaxing.

BUILDING TERRACES

Creating terraces to make the open space on each floor. Its purposed is to control the micro-climate on the site.

KINETIC TRAYS / AUTOMATIC BLINDS

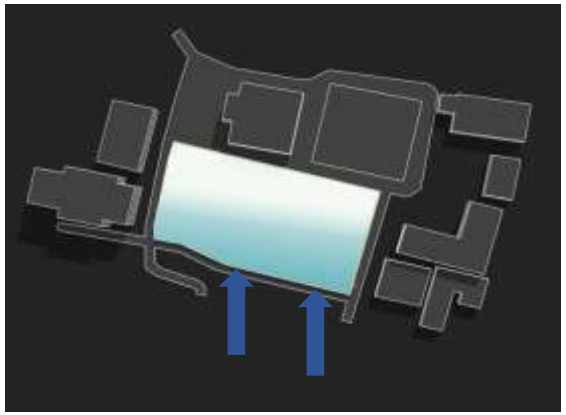
Designed to bridging between the interior and exterior, can push straight out, drawing in air from all sides around the windows panel.

PAINTING AND COATING

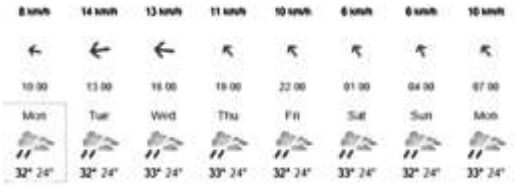
Using the photocromatic layers which has the workflow as the sunglasses. It has the ability to decrease the heat that comes into the building. Also using the thermocromic layers that can absorb the heat and light.

SITE ANALYSIS
Air Distribution and Pollution

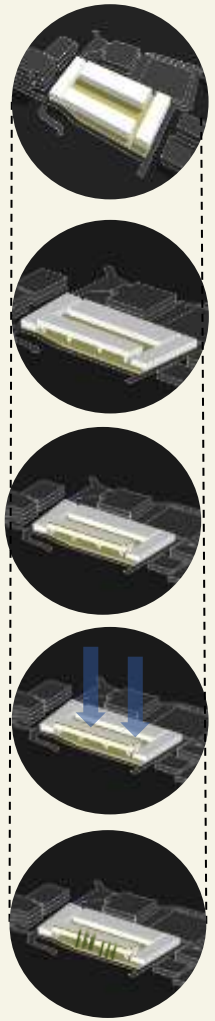
DATA



The site is located higher than Prof Hamka Road, and there is no wind barrier entering the northern aite.



- Arrangement of land and infrastructure on the application of the idea of solving the mass of the building and the use of the structure of the house on stilts and center void on the site.
- Climate regulation on the application of cross ventilation and void which can supply user comfort.



BREAK DOWN THE BUILDING MASS
The mass of the building is divided into four parts to maximize the cross ventilation. The mass are broken down by the function of the buildings.

SLIT STRUCTURE
The mass of the building in the north is increased
by using a stilt structure (*Rumah Panggung, Indonesian traditional house*) to insert a large flow of air originating from the north.

OPEN BALCONY
Putting balcony on every floors to decrease the weight of the wind that blows to the building and it also can be used as a place for greenery that supplies Oxygen inside the building.

CENTER VOID
There is a void on the center of the site to makes sure that every sides of the building get enough wind flown. The center void also can be used for landscape area which contains greenery.

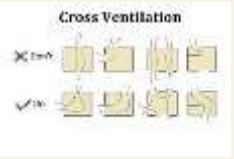
CROSS VENTILATION
To maintain the convenience for the users inside the building and minimizing the use of air conditioner.

PLANTS DIRECTOR
Put shrubs in groups to steer the wind.

Slit structure

West side

North side



Cemara

Heliconia

SITE ANALYSIS
Noise

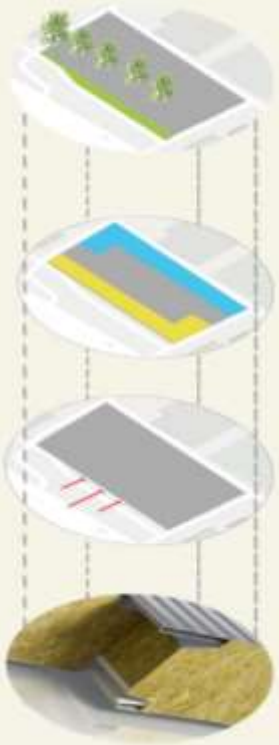
NOISE

Highest amount of noise is from the north side which comes from the voice of kerb vehicle such as the truck and bus crossing the main road of Jakarta-Semarang.

The noise from the east side is relatively high due to its location from the main road to the Sub-district Ngaliyan which id crossed by the resident's cars, motor cycles and bus. But the noise doesn't disturb to site because of the barrier and the high contour of the site.

SI | EC | WS | WR | TR

- Arrangement of land and infrastructure in applying the idea of laying buildings and zoning.
- The provision of vegetation can affect the microclimate on the site.



PROVIDING VEGETATION
The provision of vegetation as sound absorbers comes from the north, namely the highway that is passed by large vehicles.

Pucuk merah

Bougenville

The-tehan

ZONING
Put a building function that is tailored to the needs of quietness from noise sources. Facilities that require quiet are placed away from noise sources.

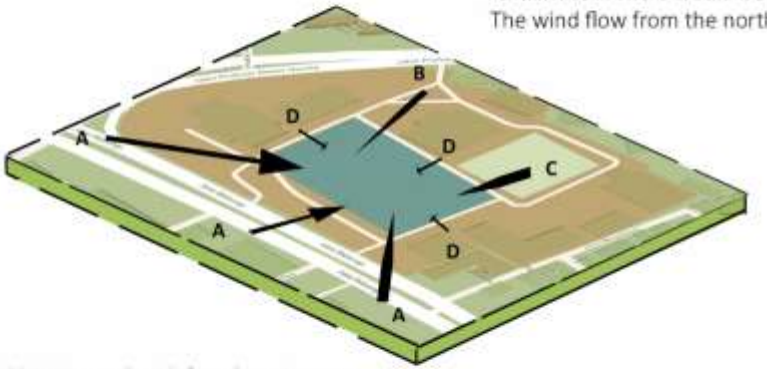
PLACEMENT
The building is located 20 meters from the highest noise sources. This has been achieved where the regulations regarding the GSB for the campus environment (20m) have been achieved.

MATERIAL
The use of smart materials that can reduce noise in rooms that require a high level of quietness.

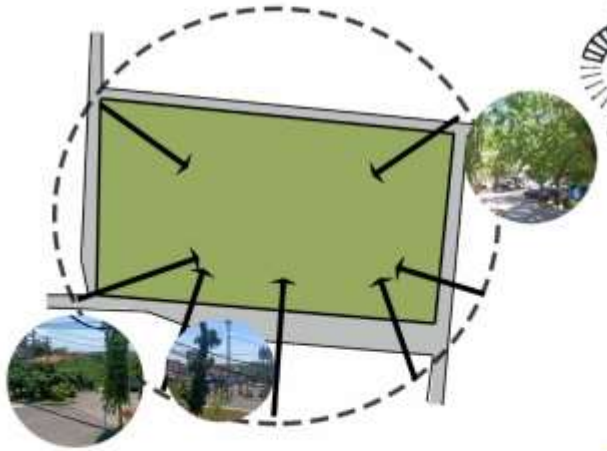
SITE ANALYSIS
View Into the Site

USER | CONSERVING ENERGY | MATERIALS | INFRASTRUCTURES

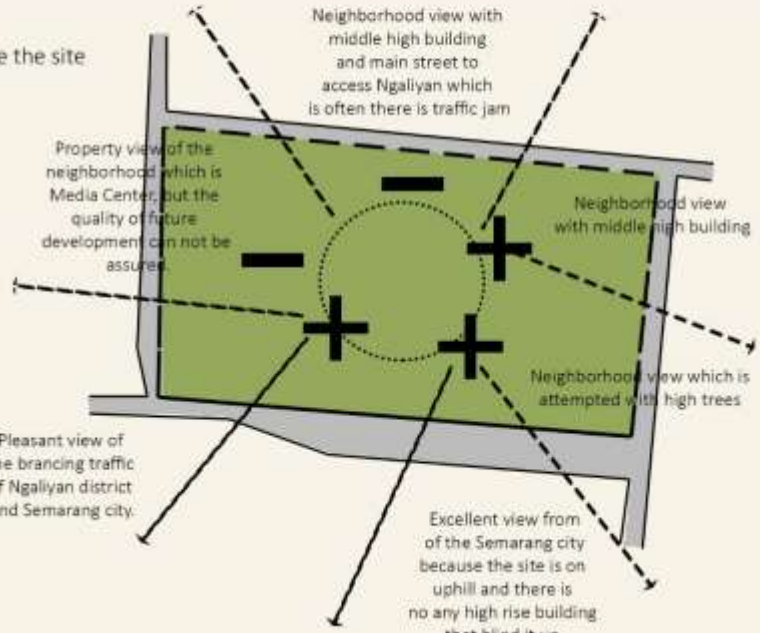
Application of principles:
Maximizing the wind energy into the building
furthermore there would be cross ventilation
The wind flow from the north is oriented inside the site

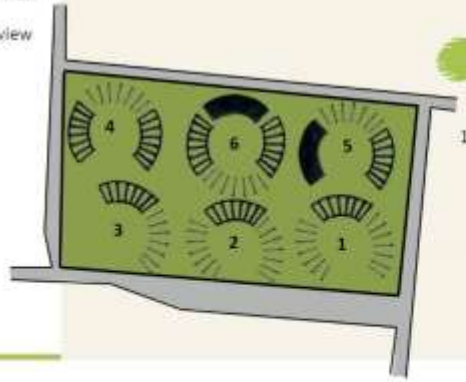


A Major view to the side from the main street
B Minor view to the side from the district
strret, covered by the up hills and gate of the campus
Crom sidewalk of the contextual site



SITE ANALYSIS
View From the Site



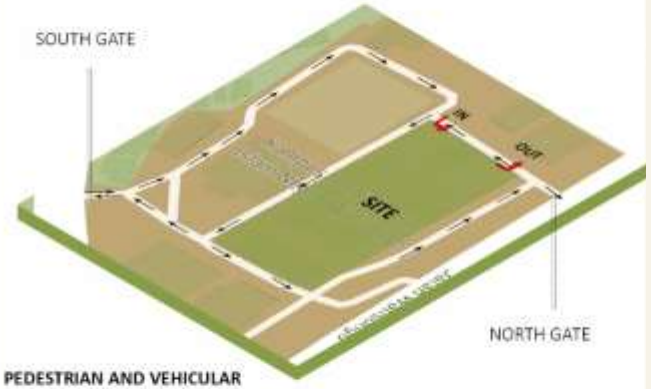


VIEW QUALITY FROM VARIOUS SITE POSITIONS

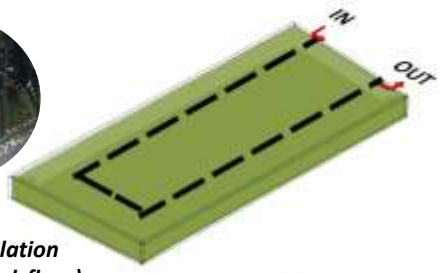
1 Excellent view of landscapping Semarang city from up hill
2 Excenllent view at the same point
3 Pleasant viw of branching traffic to Ngaliyan District
4. Middley negative view because the site is too far from the outside attraction
5. Middley view because there are just big trees covering the guest house
6. Negative view because it directly facing the high building(WMC)

SITE ANALYSIS

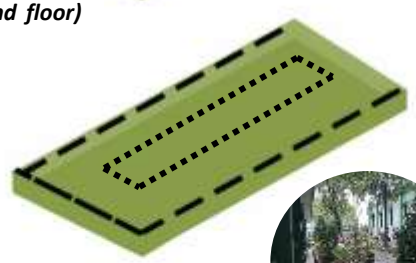
Circulation and Accessibility



PEDESTRIAN AND VEHICULAR ACCESSIBILITY



Vehicle circulation (Underground floor)



Pedestrian circulation (ground surface)

SI | E C | WS | WR | TR

- Arrangement of land and infrastructure in the application of the pedestrian track that surrounds the ground and the placement of the underground land as a parking area.
- Use of scrap material on the rest of the building to be used as a hardscape walking track element.
- Promote minimal motorized vehicle use with bicycle parking facilities on the ground floor.
- Maximum water absorption in the use of walking track materials that are capable of storing ground water

PEDESTRIAN CIRCULATION IN THE SITE

Designing the pedestrian track with greenery and landscaping to gain the attachment for the user to walk more. The materials used to cover the pedestrian track is compacted natural stone to make sure that the rainfall could be absorb to the ground soil.

PEDESTRIAN TRACK

The pedestrian track is surrounding the site and centered on the area of void (center landscape).

VEHICULAR CIRCULATION

The circulation of the vehicles from the area's accessibility going through the basement parking area for the motorcycle, cargo deck and cars. This is used to maximizing the land use.

PERSONAL DESIGN ANALYSIS, 2020

FUNCTIONAL ANALYSIS

SI | EC | WS | WR | TR

Land management and building infrastructure can support thermal comfort and reduce emissions.

Each function can turn into a place that applies renewable energy.

The function is directed to be able to manage waste before it is disposed or reprocessed.

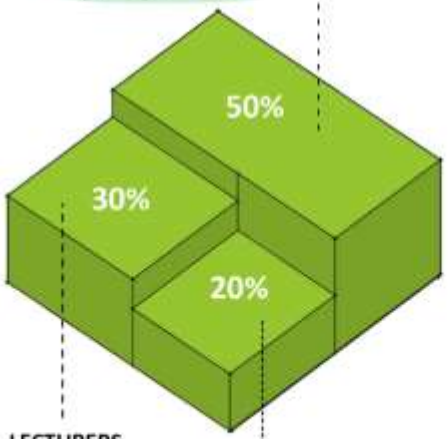
Water management that comes from each function which can be treated before released to the ground to reduce the adverse effects on the environment and energy processing.

Each building has an attraction function to use environmentally friendly vertical transportation.

USER ANALYSIS

Activity and Space

STUDENTS



LECTURERS

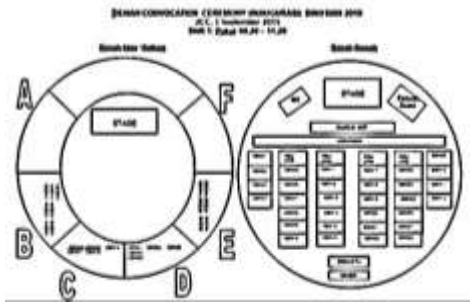
STAFFS

USER	ACTIVITY	SPACE
STUNDENT LECTURER	Shopping Exhibit Congress	Book store, mini mart, clothes shop Exhibition room Concention center
	Discuss Workout Hangout	Co-working space Gym Communal area
	Pray	Mosque
	Parking	Parking lot
STAFF	Store Administration	Storage Administration room
	Meeting	Meeting room
	Pray Take a rest	Mosque Rest area
	Parking	Parking lot
SUPPLIER DECKER	Telly Creck Decking Parking	Administration room Decking room Parking lot

QUANTITATIVE ANALYSIS

CONVENTION 2 UNITS

Prototype



Capacity: 200

Capacity + Ciculation 30% = Total

270+81 = 351 M2

Room	Space (m^2 / unit)	Unit/people	Extent (m^2)
Audience	1,2	200	240
Stage	2	10	20
Control			10
		Sum	270
		Circulation 30%	81
		Total	351

STUDENT RETAILS 4 UNITS

Prototype

Capacity: 100

Capacity + Ciculation 30% = Total

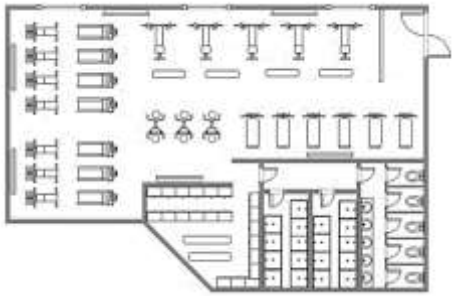
355 + 106,5 = 461,5 M2

Room	Space (m^2 / unit)	Unit	Extent (m^2)
Cashier	2,5	10	25
Display	20	10	200
		Sum	355
		Circulation 30%	106,5
		Total	461,5

QUANTITATIVE ANALYSIS

FITNESS AND GYM 2 UNITS

Prototype



Capacity: 60

Capacity + Ciculation 30% = Total

291 + 87,3 = 378,3 M2

Room	Space (m^2 / unit)	Unit	Extent (m^2)
Hall	20	2	40
Training room	100	2	200
Changing room	2,5	4	10
Lounge	18	2	36
Cashier	2,5	2	5
		SUM	291
		Circulation 30%	87,3
		Total	378,3

COFEE SHOP 3 UNITS

Prototype

Capacity: 50

Capacity + Ciculation 30% = Total

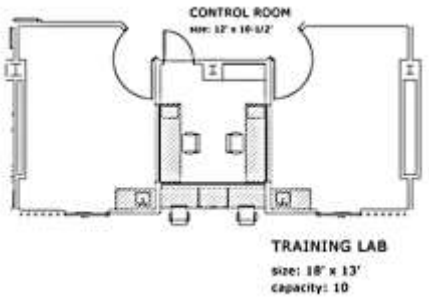
39,5 + 11,85 = 51,35 M2

Room	Space (m^2 / unit)	Unit/people	Extent (m^2)
Sitting Area	1,2	30	36
Counter	3,5	1	3,5
		Sum	39,5
		Circulation 30%	11,85
		Total	51,35

QUANTITATIVE ANALYSIS

TRAINING CENTER 1 UNIT

Prototype



Capacity: 200

Capacity + Ciculation 30% = Total

387 + 116,1 = 503,1 M2

MOSQUE 1 UNIT

Prototype

Capacity: 200

Capacity + Ciculation 30% = Total

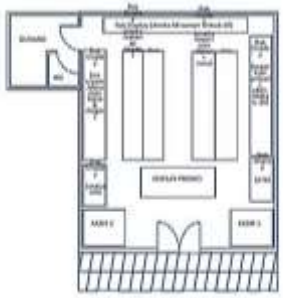
79,2 + 23,76 = 102,96 M2

Room	Space (m^2 / unit)	Unit/people	Extent (m^2)
Prayer	1,5	200	300
Ablution	15% prayer		45
Circulation	10%prayer		30
		Sum	375

QUANTITATIVE ANALYSIS

BOOKSTORE 1 UNIT

Prototype



Capacity: 200

Capacity + Ciculation 30% = Total

387 + 116,1 = 503,1 M2

Room	Space (m^2 / unit)	Unit/people	Extent (m^2)
Display	320	1	320
Cashier	3,5	2	7
Storage	50	1	50
Lobby	0,5	20	10
		Sum	387
		Circulation 30%	116,1
		Total	503,1

EXHIBITION 1 UNIT

Prototype

Capacity: 200

Capacity + Ciculation 30% = Total

620 + 116 = 806 M2

Room	Space (m^2 / unit)	Unit/people	Extent (m^2)
Lobby	0,5	100	50
Stands	9	60	540
Stage	2	10	20
Control			10
		Sum	620
		Circulation 30%	186
		Total	806

QUANTITATIVE ANALYSIS

PARKING AREA 1 UNIT

Prototype

Capacity: 200

Capacity + Ciculation 30% = Total

387 + 116,1 = 503,1 M2

Room	Space (m^2 / unit)	Unit/pople	Extent (m^2)
Display	320	1	320
Cashier	3,5	2	7
Storage	50	1	50
Lobby	0,5	20	10
		Sum	387
		Circulation 30%	116,1
		Total	503,1

LOADING DECK 1 UNIT

Prototype

Capacity: 2

Capacity + Ciculation 30% = Total

79,2 + 23,76 = 102,96 M2

Room	Space (m^2 / unit)	Unit	Extent (m^2)
Loading Dock	12	2	24
Storage	13	10	130
Parking	18	2	36
		Sum	190
		Circulation 30%	57
		Total	247

QUANTITATIVE ANALYSIS

SRAFF AND ADMINISTRATOR 1 UNIT

Prototype

Capacity: 100

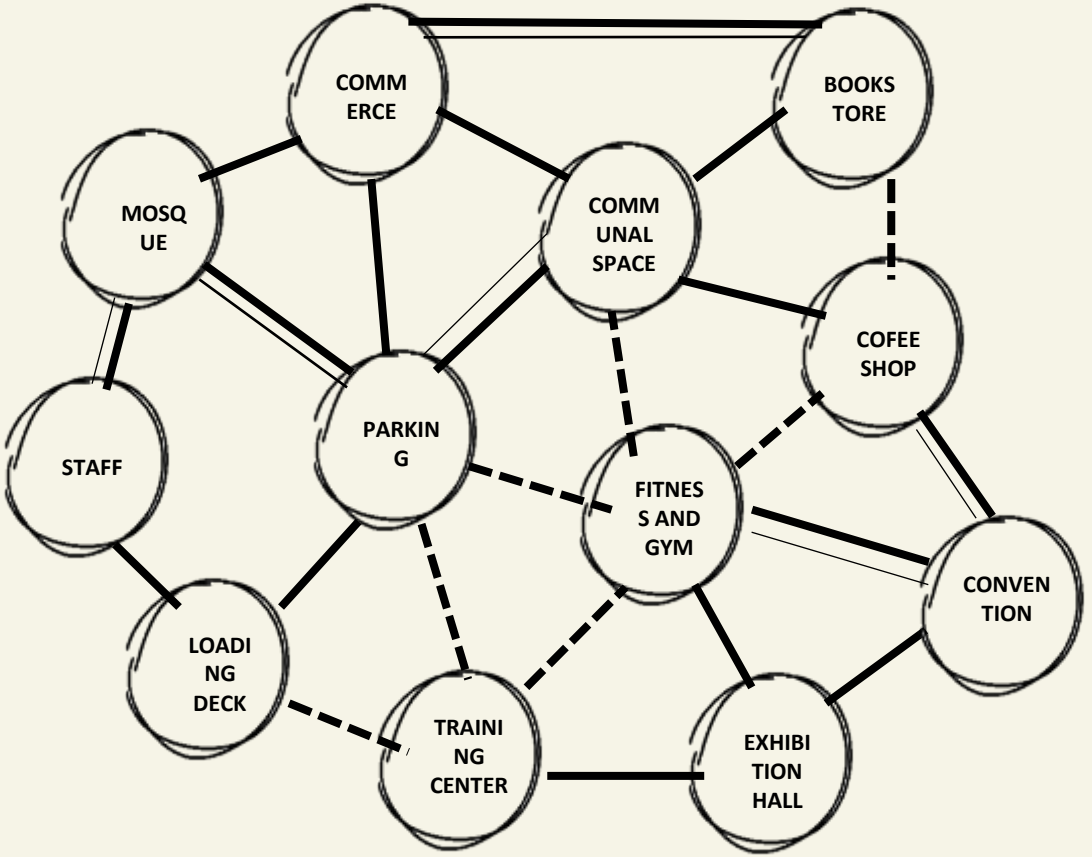
Capacity + Ciculation 30% = Total

79,2 + 23,76 = 102, 96 M2

Room	Space (m^2 / unit)	Unit/people	Extent (m^2)
Administration	4,5	2	9
Meeting room	18	1	18
General Manager	12	1	12
Staff	30	1	30
Pantry	5,4	1	5,4
Lavatory	1,2	4	4,8
		Sum	79,2
		Circulation 30%	23,76
		Total	102,96

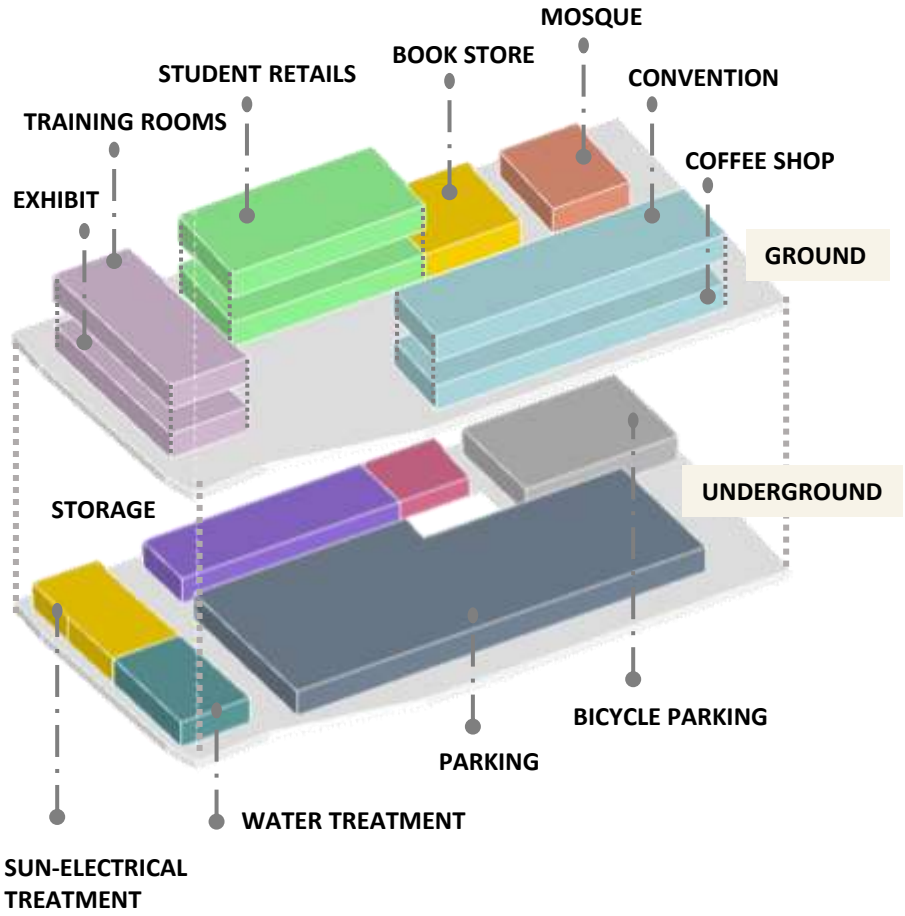
RELATIONSHIP DIAGRAM MACRO

- Arrangement of land and infrastructure on the application of the idea of solving the mass of the building and the use of the structure of the house on stilts and center void on the site.
- Climate regulation on the application of cross ventilation and void which can supply user comfort.
- Placement of water features on the site, which also functions as a communal space, as an alternative use of rainwater harvesting treatment.



Directly related
Not related
Distant related

ZONE PLAN MACRO



ROOM (TOAV 32,5)	TIAV	FORCED VENTILATION
Student Retails	28,6	Supplyventilation system
Bookstore	29,2	Supplyventilation system
Exhibition Room	30,5	Supplyventilation system
Training Rooms	31,8	Supply-exhaustventilation system
Gym Area	31,8	Supply-exhaustventilation system
Coffee shop	30,6	Supply-exhaustventilation system
Convention	31,7	Exhaustventilation system
Parking	26,6	Exhaustventilation system
Administration Room	27,2	Supply-exhaustventilation system
Underground Energy Treatment	27,3	Exhaustventilation system

Source: Thermal comfort calculation, personal analysis

FORECD VENTILATION

Widiyanto (2014:6) said that the fan doesn't decrease the air pressure but when it touched human skin, it will cool down psychologically.

SUPPLYVENTILATION SYSTEM

Work principle of the supplyventilation system is entering the fresh air into the room using the fan. This system is used for the room to increase the air pressure to prevent the infiltration.

EXHAUSTVENTILATION SYSTEM

Work principle of the exhaustventilation system is remove the hot air that comes from the room with the fan to decrease the air pressure, so the outside's air pressure can come into the room. In most cases, this system is used for the room which has the source of heat that causing the increase of the temperature for the room and the room is contaminated by the dirty air and it's though to receive the fresh air from the outside.

SUPPLY-EXHAUSTVENTILATION SYSTEM

The combination of the supplyventilation and exhaustventilation system to put and remove the air within the fan.

UTILITY ANALYSIS ELECTRICITY

Photovoltaic flat panel collector

Supply from power company (PLN)

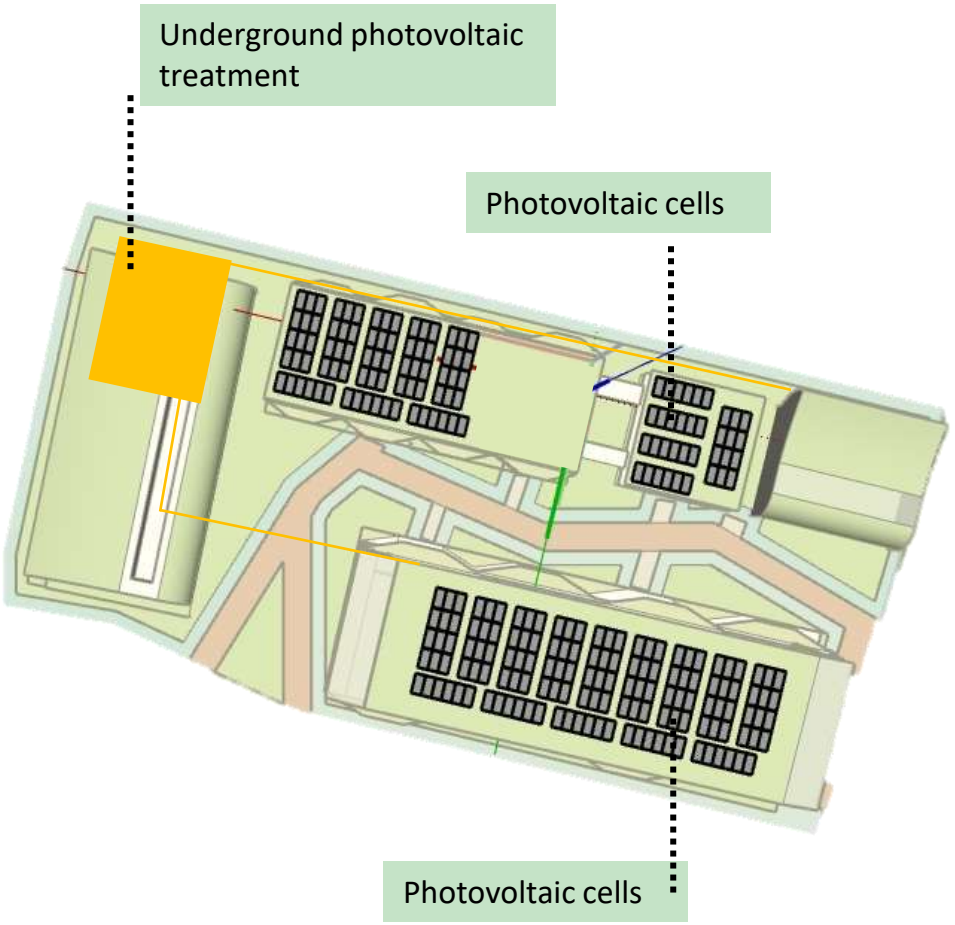
Solar generation meter

Campus connection cabinet (area)

Fuse box distribution

Supply to household appliances and lights

Mosque, student retails, fitness and gym, convention.

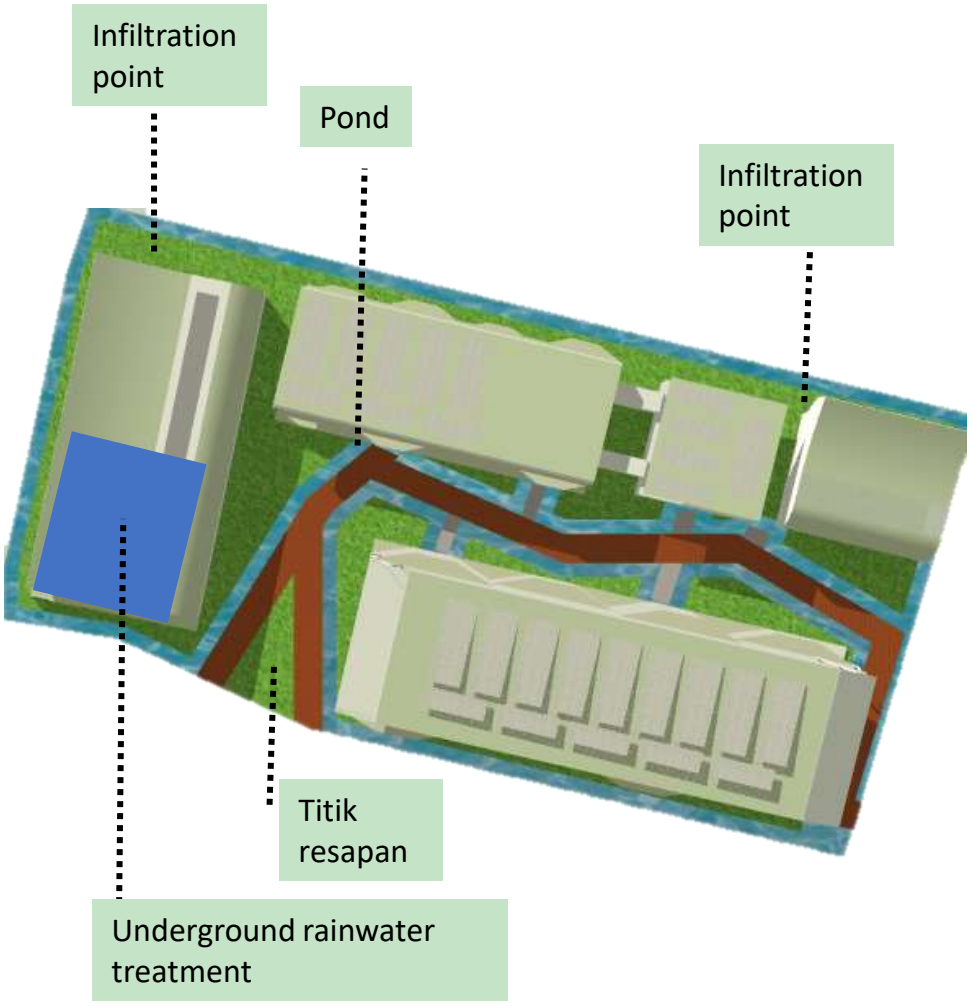


UTILITY ANALYSIS RAIN WATER

ROOF → ROOF RAINWATER PIPE → DIVERSION TUBE → BALL VALVE → HOLDING TANK → OTOLEVEL (connecting the pump) → OTORAIN (AUTOMATIC RAINWATER CONTROLLER)

Integrated the rainwater and PAM water to optimize distribution.

- WATERING THE GREENERY
- FLUSHING
- EMERGENCY



UTILITY ANALYSIS GREY WATER

SINK AND OTHER WATERWAYS

↓

GREYWATER GALLON TANK

↓

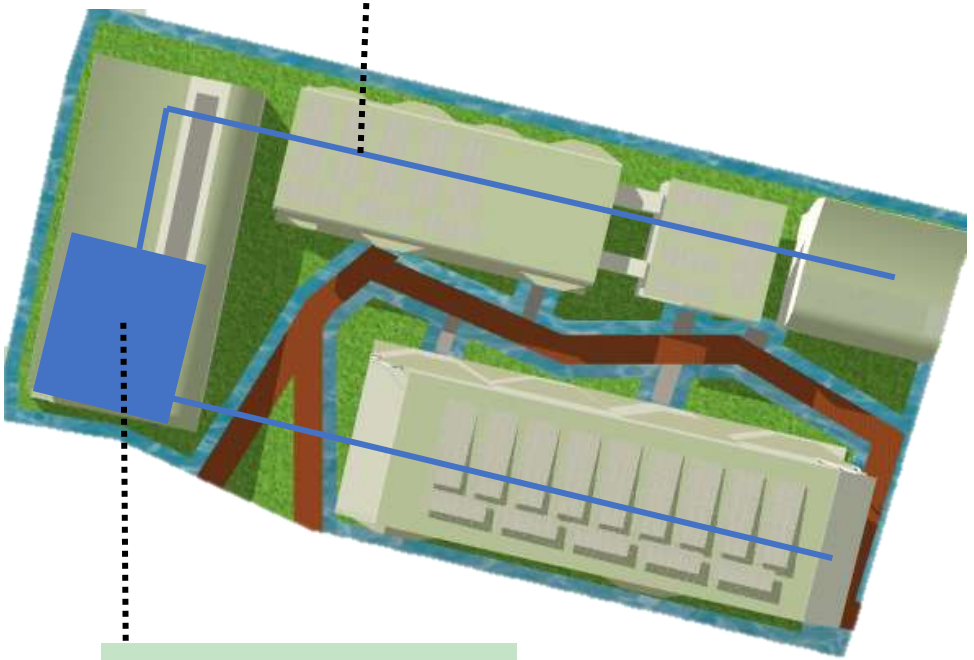
WETLAND

↓

SERIES DRIP LINE BENEATH WETLAND (horsetails roots consume organic matter in the water)

↓

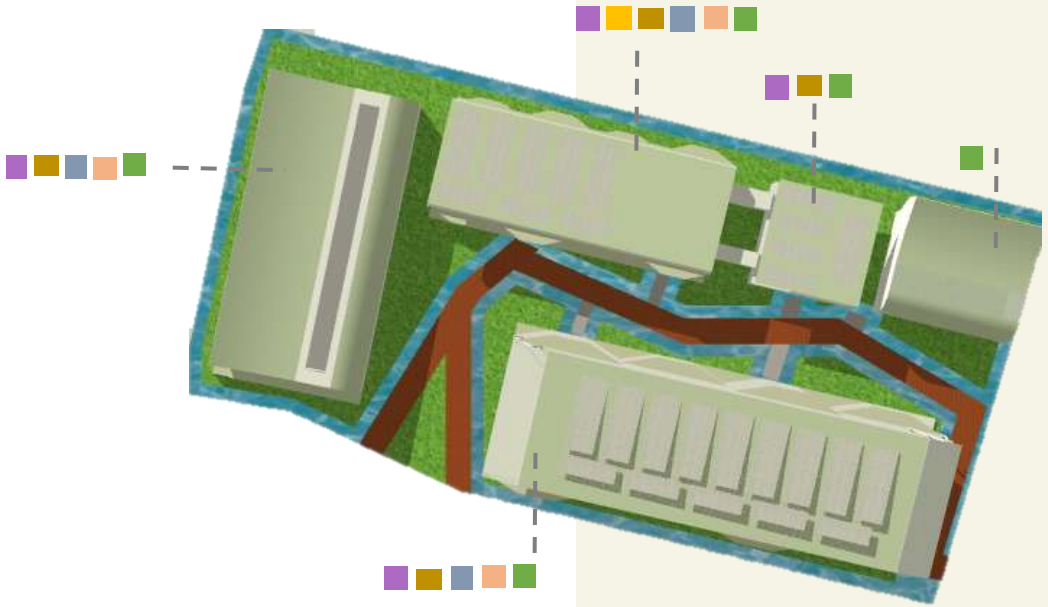
GROUNDWATER



UTILITY ANALYSIS WASTE

WASTE SORTING

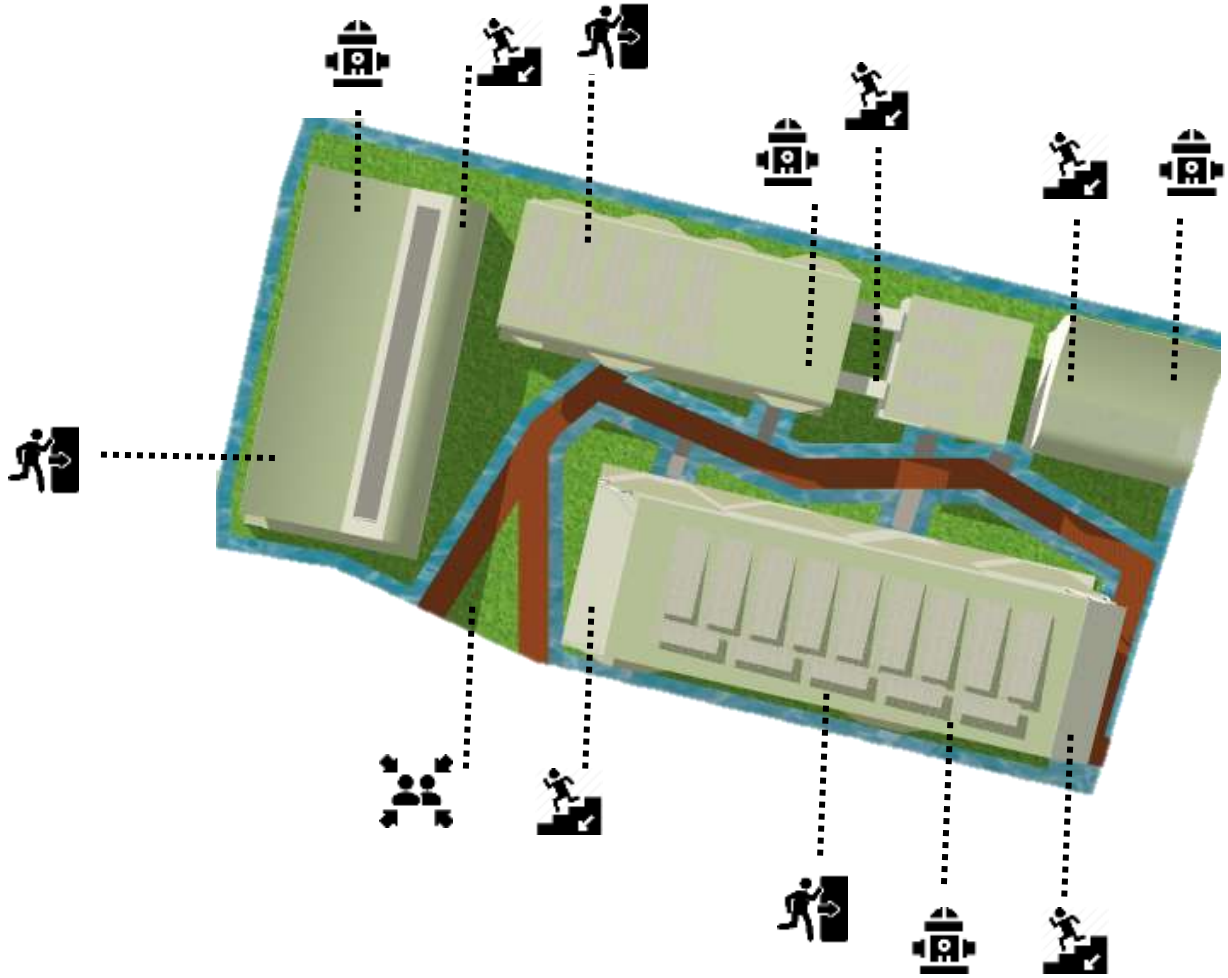
MIX RECYCLED	HAZARDOUS AND TOXIC	PAPER AND CARDBOARD	RESIDUE	OIL	ORGANIIC
WASTE MANAGEMENT (RECYCLED)	CLEAN THOROUGHLY & WASTE MANAGEMENT	WASTE MANAGEMENT (REUSED/RECYCLED)	ECOBRICK	SPECIFIC TRASH (BIOSIESEL)	COMPOST



EMERGENCY AND SAFETY

EVACUATION ROUTE.
Ramps as the EMERGENCY STAIRS.
MEETING POINT.

FIRE HYDRANT use the rainwater harvesting and supported by the PDAM water.

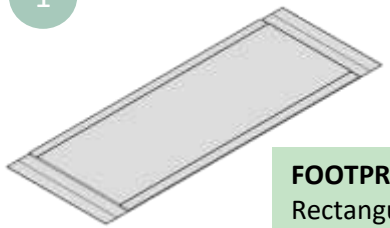


FORM ANALYSIS

Training center, coffee shop

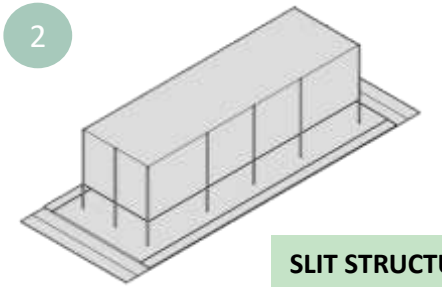
SI | EC | WS | WR | TR

1



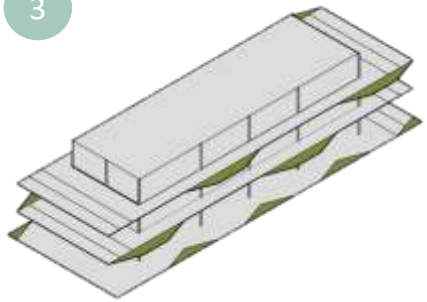
FOOTPRINT
Rectangular shape according to the processed space analysis.

2



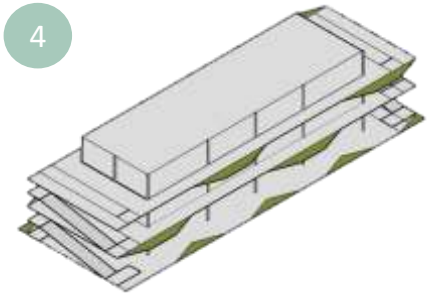
SLIT STRUCTURE
The ground floor functions as an open space to distribute the wind to other buildings behind it.

3



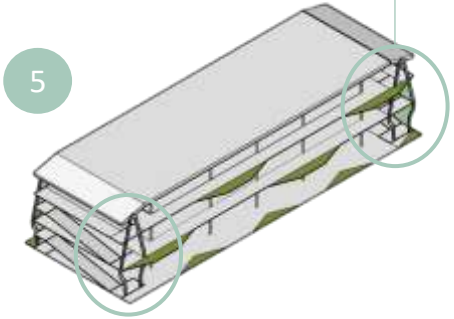
GREEN SPACE
Providing green space on each floor as a wind buffer and building microclimate controller.

4



RAMP
The appeal of vertical transportation in the form of a ramp located on the north-south side of the building.

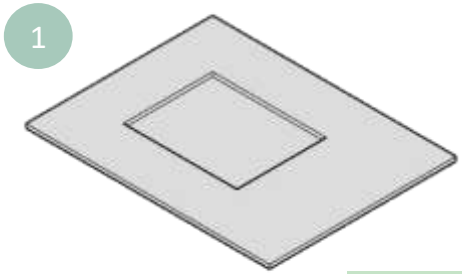
5



ADAPTING
Continuity with the campus environment by incorporating elements of the UIN Walisongo *"Gunungan"* campus logo.

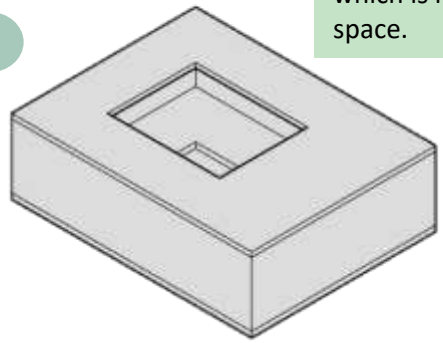
FORM ANALYSIS
Exhibit, convention, gym & fitness

1



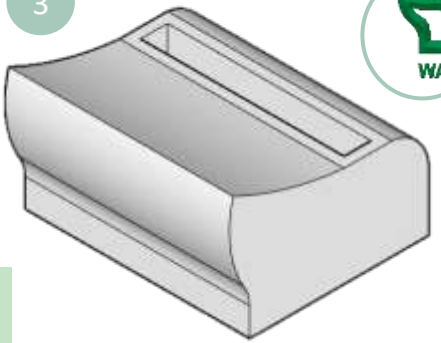
SITE
A rectangular shape that is in accordance with the analysis of space and the ground floor which is made into open space.

2



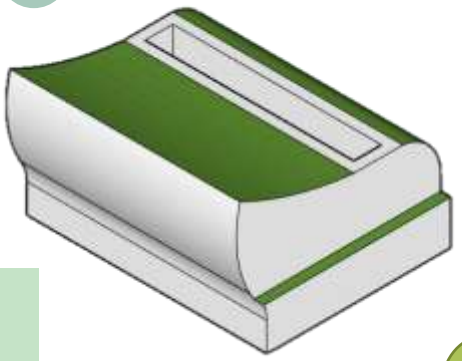
VOID
The provision of voids in the middle of the building which function as the entry point for lighting and also the attraction of vertical transportation in the form of a ladder that can be used as a communal space.

3



ADAPTING
Adjustment of the roof shape taken from the UIN Walisongo campus logo.

4



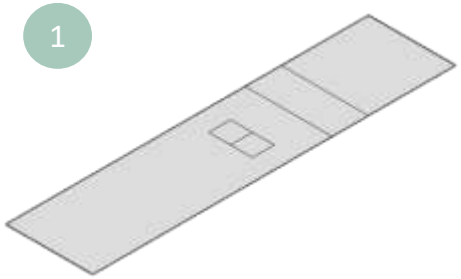
GREEN SPACE
Providing a green area on the roof and balcony as a microclimate regulator.

SI | EC | WS | WR | TR

FORM ANALYSIS

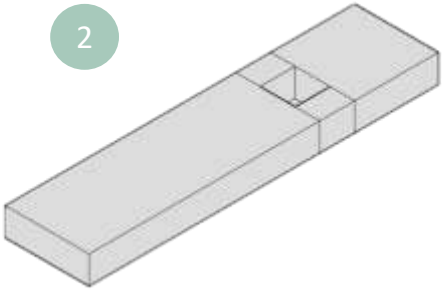
SI EC WS WR TR

1



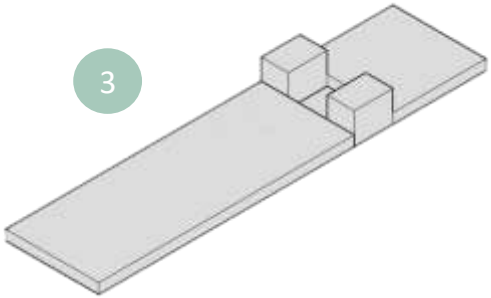
SITE
Rectangular shape according to the processed space analysis.

2



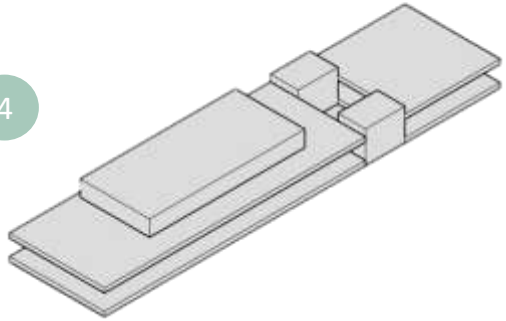
VOID
Void as the application of cross ventilation in buildings and dividers between student retails and bookstore buildings.

3



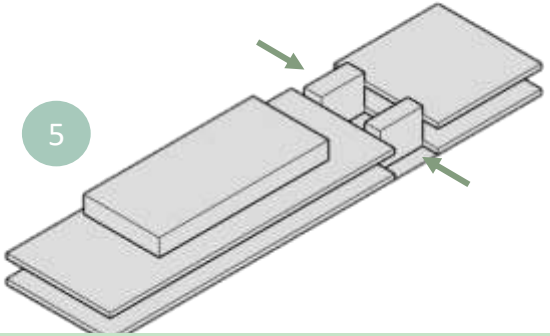
SLIT STRUCTURE
The ground floor is made into open space with the structure of the house on stilts for the thermal comfort of the building.

4



GREEN SPACE
Providing a balcony on each floor as a green space that functions as a regulator of the building's microclimate.

5



RAMP
The appeal of building vertical transportation in the form of a ramp to connect between buildings bookstore and student retails.

5. CONCEPT

CONCEPT

" THE GREEN EMBASSY "

A commercial space that can be a media campaign about green habit and green life style in accordance with the purpose of UIN Walisongo presented through a variety of settings in land and buildings.

Al-A'raf 31

Al-Hadid 25

Al-Quraish 2

1 ***EFFFECTIVE***

Vertical Transportation

Reduce the futility using the ramp to maximize and being disability friendly with the system of vertical transportation.

2 ***EFFISIEN***

Open Space

To use less forced ventilation, the open space used to make the thermal comfort of the building.

Green Balcony

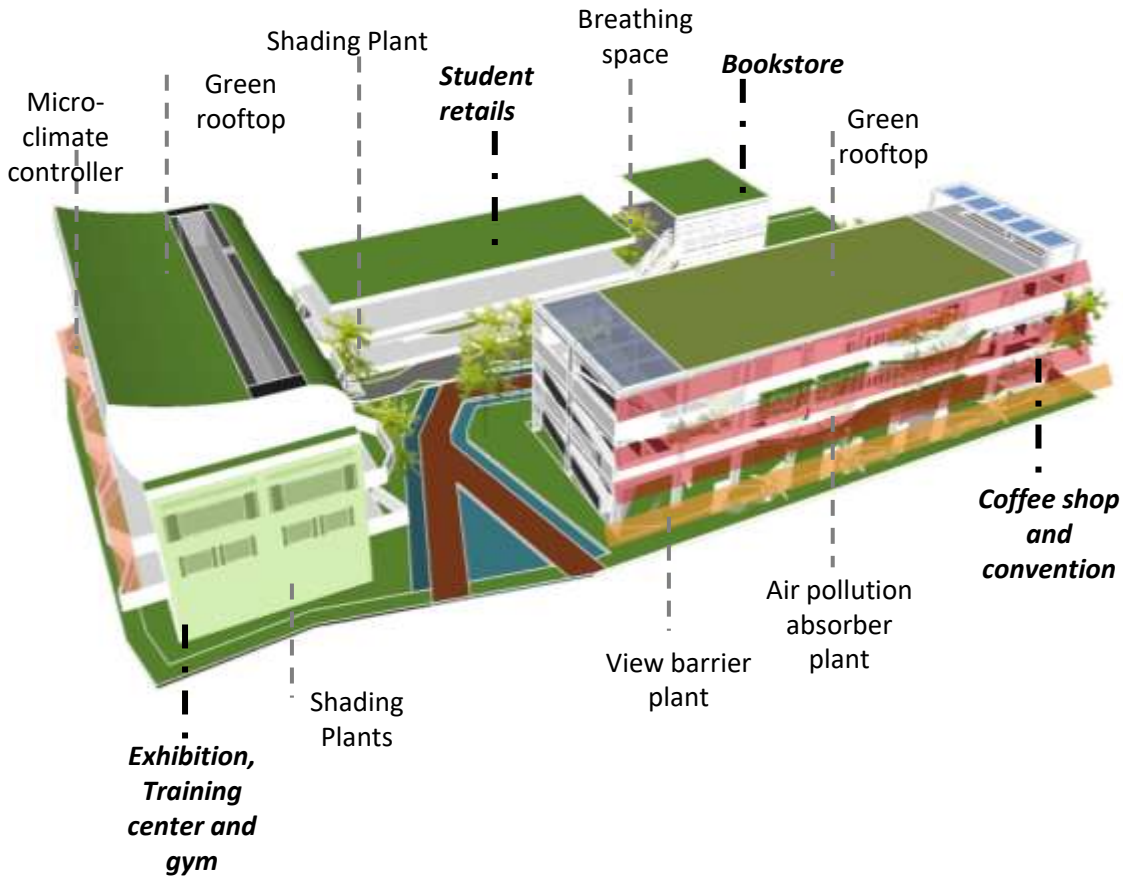
To make the source of fresh air and decrease the heat into the building.

3 ***COMFORTABILITY***

Natural Element

To share the awareness of the importance of green lifestyle to the users.

SITE CONCEPT



The main access to the site comes from the north gate of UIN Walisongo and the south gate as the secondary gate.

The human circulation on the site is surrounded by the ponds which is 0.5 m deep and has the function to hold the rainwater.
To utilize the contour, the vehicle's circulation is placed on the underground as the parking area and green energy treatment.

Beautifying the pedestrian track to attract people and share awareness to live with green lifestyle.

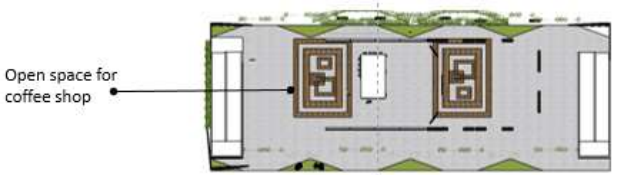
SITE CONCEPT

- The arrangement of the landscape on the site which is dominated by natural elements, such as shrubs and tall plants which can provide a comfortability effect on the site.
- The utilization of rainwater potential that is stored as a water feature on the site carries the principle of efficiency.

SITE CONCEPT

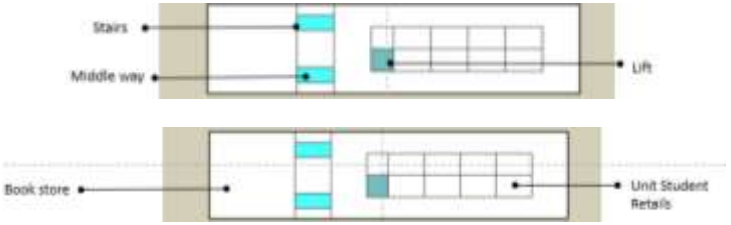
- The connectivity with the outside environment which is fully fill with the greenery to decrease the high temperature of the city.
- The bridge along the center pond to connect each building.

SPACE CONCEPT
Coffee shop



- Utilizing the open space area on the ground floor to be used as a coffee shop that implements a semi-outdoor system, this carries the principle of effective building land use.
- The semi-outdoor system is one of the alternatives in utilizing natural potential, both in the form of ventilation savings and artificial lighting, so that this carries the principle of effectiveness.
- The principle of comfortability is achieved through spatial planning patterns associated with soothing natural elements.

SPACE CONCEPT
Bookstore



- Spatial layout can be adjusted according to the needs applying the principle of effectiveness.
- The space gets sufficient lighting and ventilation because it is supported by a wide enough window opening by applying efficient principles.
- The principle of comfortability is achieved through spatial planning patterns associated with soothing natural elements.

SPACE CONCEPT
Training Center

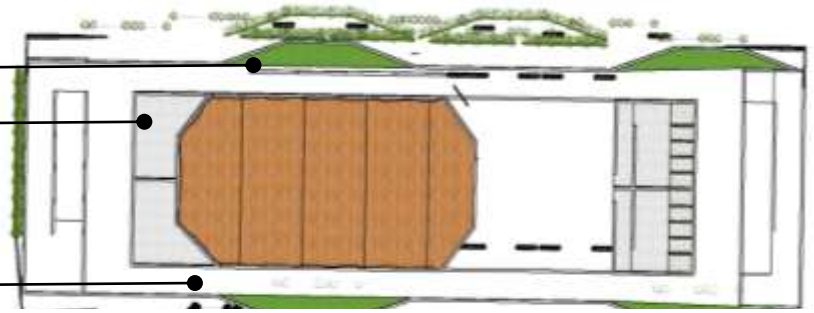
- Spatial layout can be adjusted according to the needs applying the principle of effectiveness.
- The space gets sufficient lighting and ventilation because it is supported by a wide enough window opening by applying efficient principles.
- The principle of comfortability is achieved through a spatial arrangement pattern associated with a soothing natural element (in the corridor).
- Corridors serve as natural partitions between the buildings.

SPACE CONCEPT

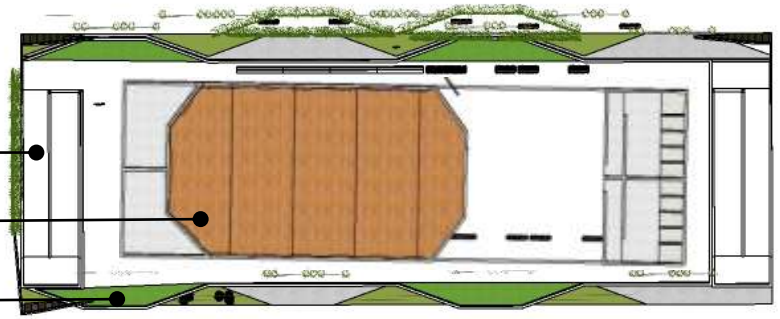
The vertical transportation system uses ramps located on two sides of the building to create an effective elevation system.

Corridors are provided with vegetation to act as natural air filters in buildings and reduce the temperature in the building.

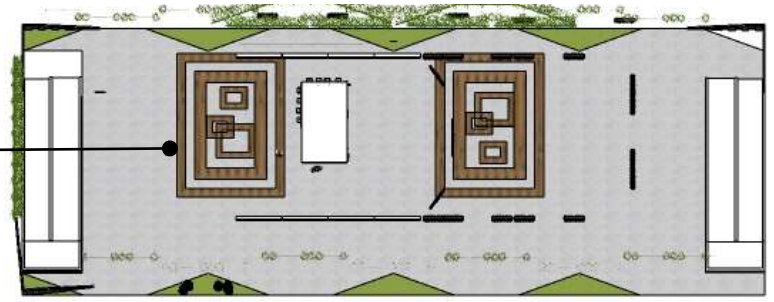
SPACE CONCEPT
Convention and Coffee Shop



Third floor

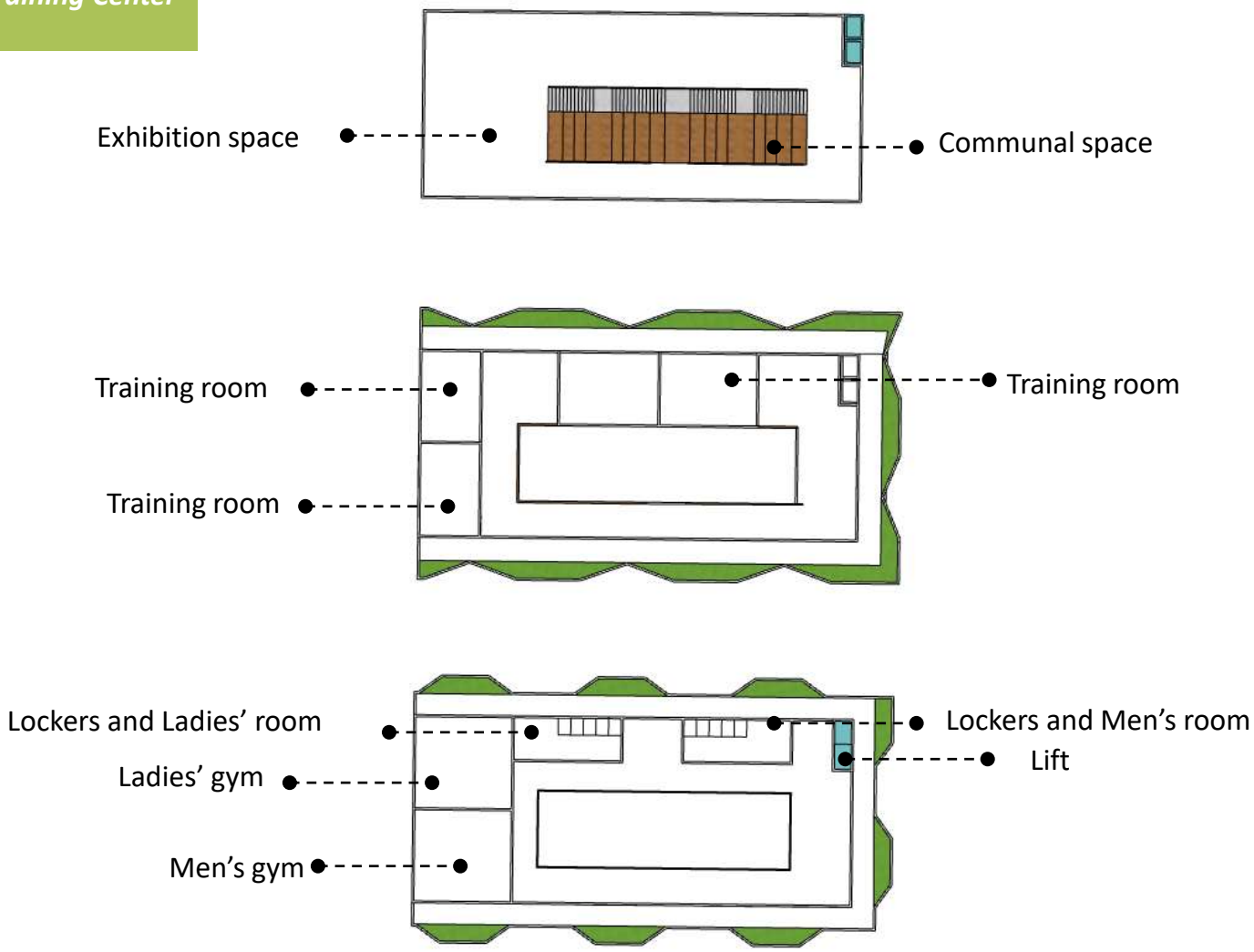


Second floor

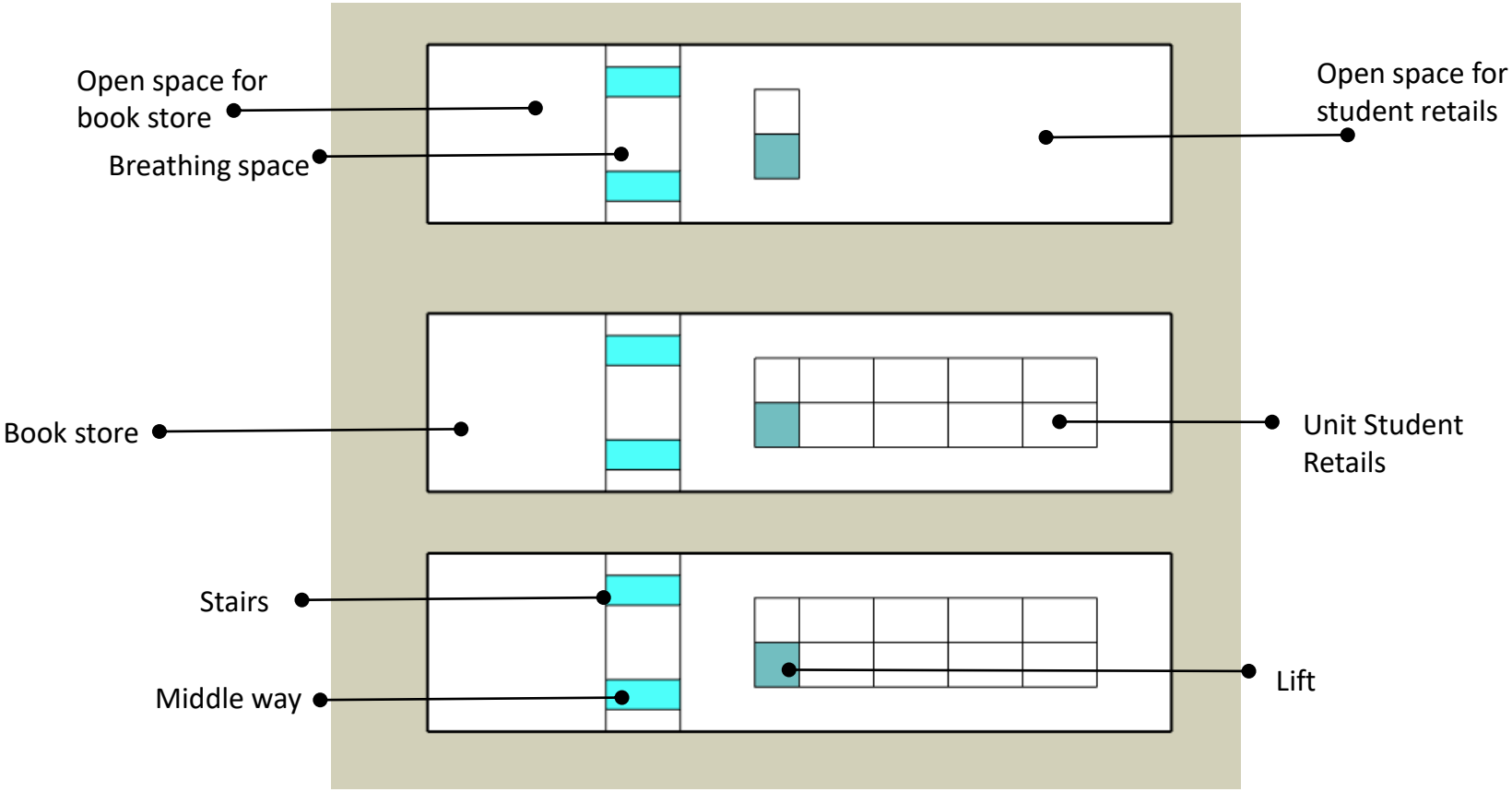


Ground floor

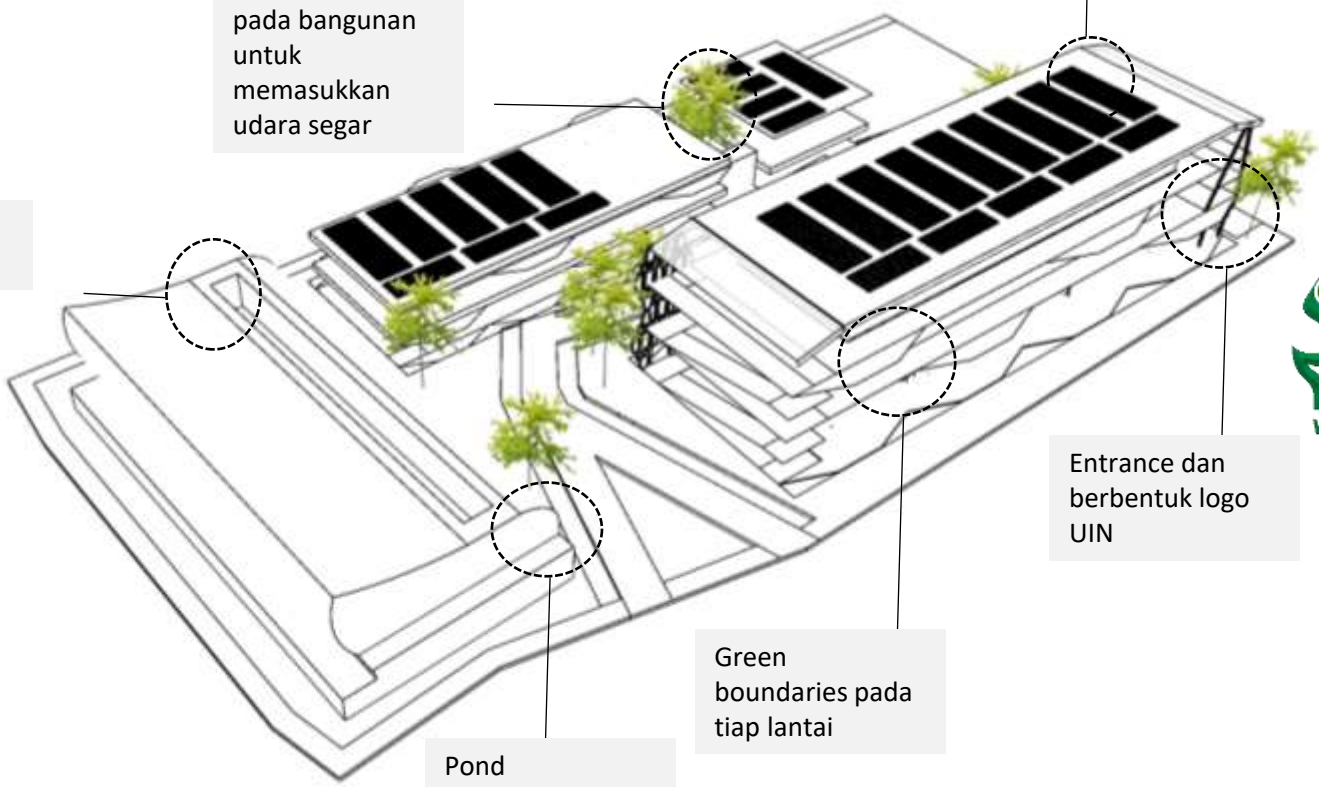
SPACE CONCEPT
Exhibition, Gym Training Center



SPACE CONCEPT
Student Retails & Bookstore



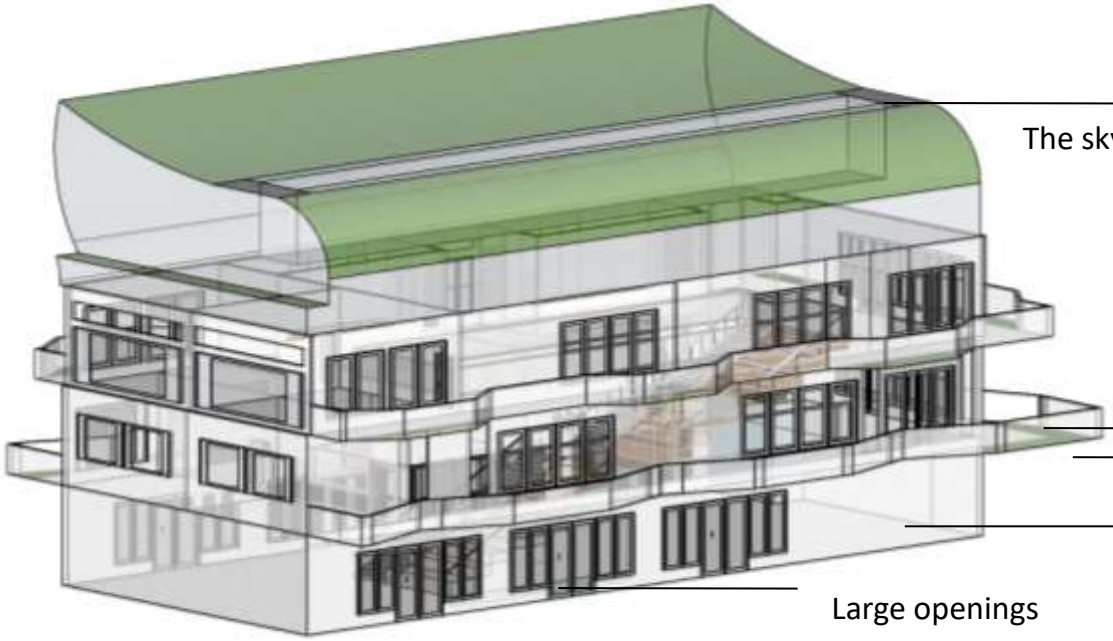
FORM CONCEPT



- Each building uses the concept of open space on the first floor to maximize the function of the building.
- Photovoltaic and green roof on each roof of the building to emphasize the principle of effectiveness.

FORM CONCEPT

The representation of UIN Walisongo logo



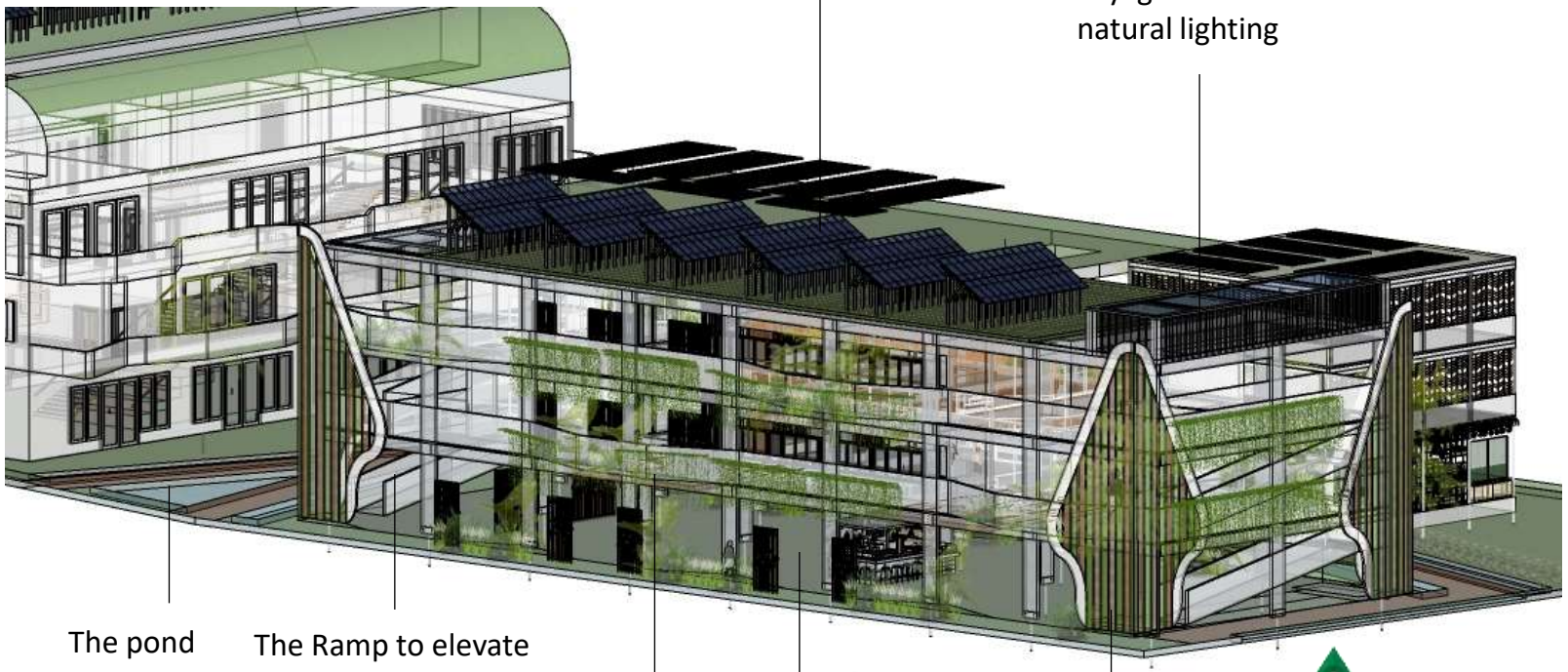
The skylight

Green area as the balcony

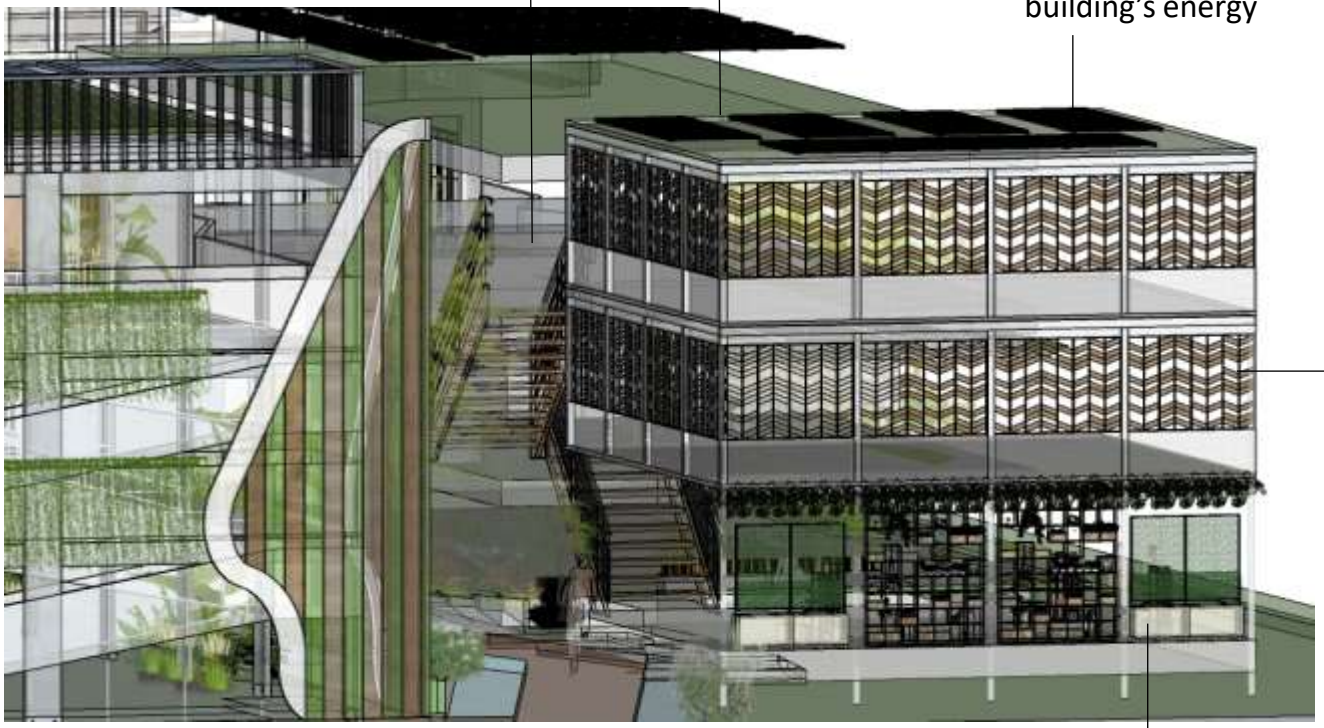
Open space for exhibition area

Large openings

FORM CONCEPT

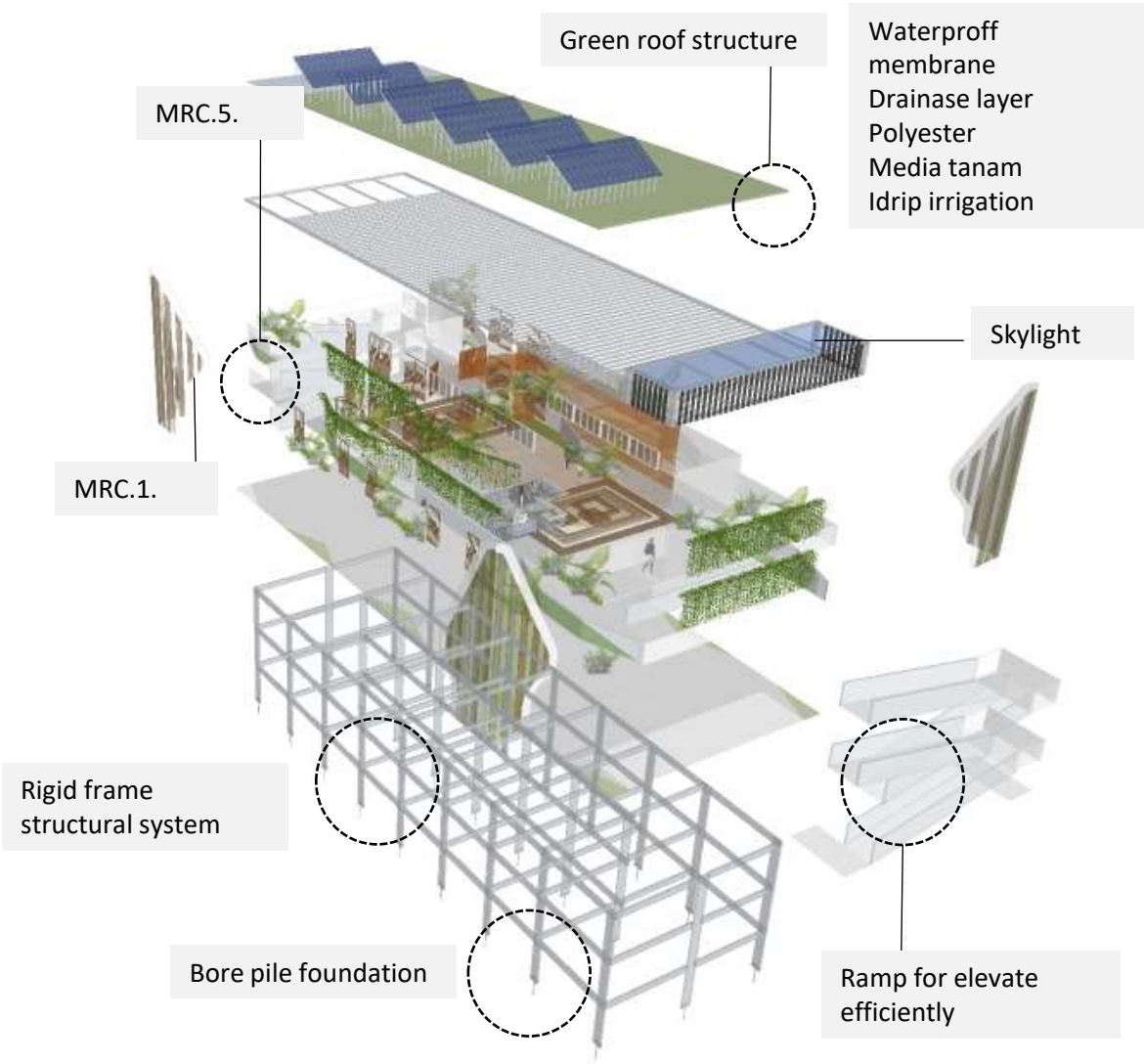


FORM CONCEPT



MRC. 5.
Prefab material (prefab material) in the form of precast concrete which is used to increase efficiency and reduce construction waste.

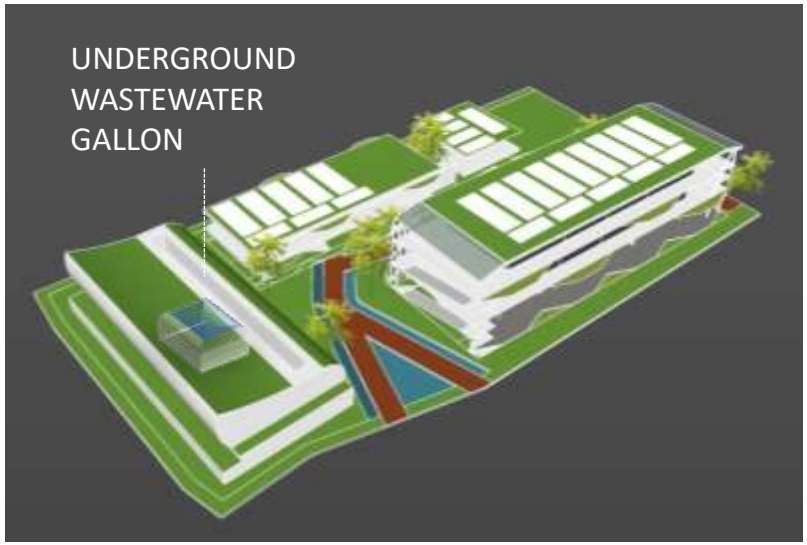
MRC.1.
Building and reuse materials derived from old building materials on site that are used to reduce the use of new raw materials and reduce waste.



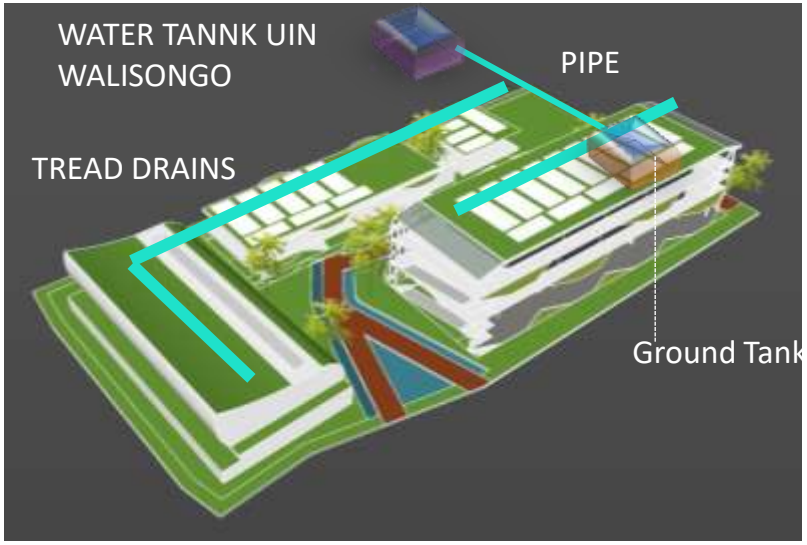
UTILITY CONCEPT
Rain Water

- The pond around the site functions as a rainwater reservoir before it is processed in the rainwater treatment ground tank.
- Utilizing rainwater to be reprocessed in the ground tank treatment, which is for watering plants, flushing toilets and fire emergency water.

UTILITY CONCEPT
Grey and Clean Water

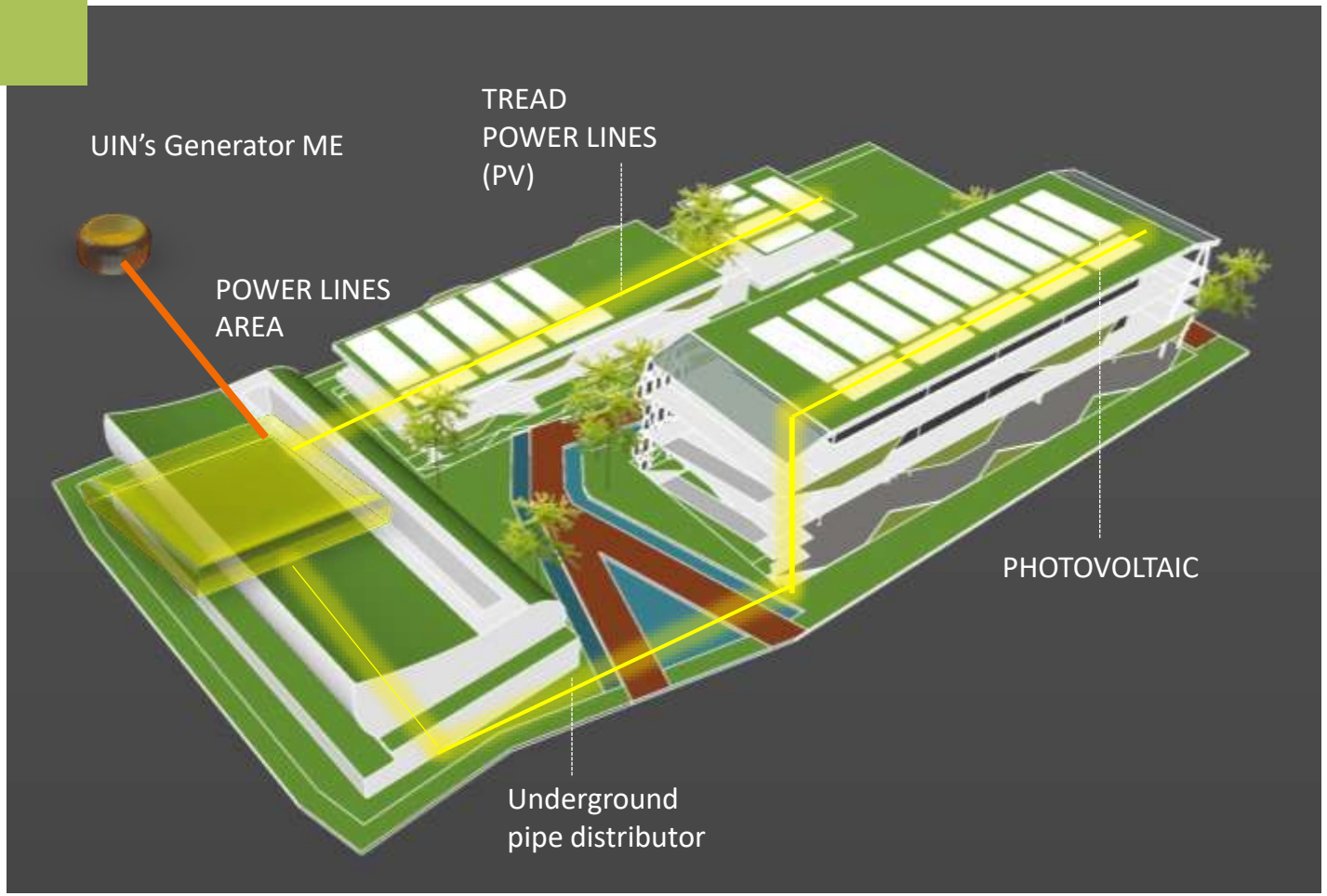


- Dirty water that comes from each building is flowed to the center of the dirty water tank to then be distributed to the wetland area and filtering the wetland until finally the water that goes to the ground is clean and uncontaminated.



- Clean water comes from PDAM which is stored in clean water tanks in the UIN Walisongo area before it's distributed to each site.

UTILITY CONCEPT
Rain Water



- The energy source obtained by photovoltaic is distributed to underground photovoltaic treatment which can support the electrical performance of buildings.
- The electricity source is also supported by PLN which is accommodated in the ME generator in the UIN Walisongo area to then be distributed to the site.

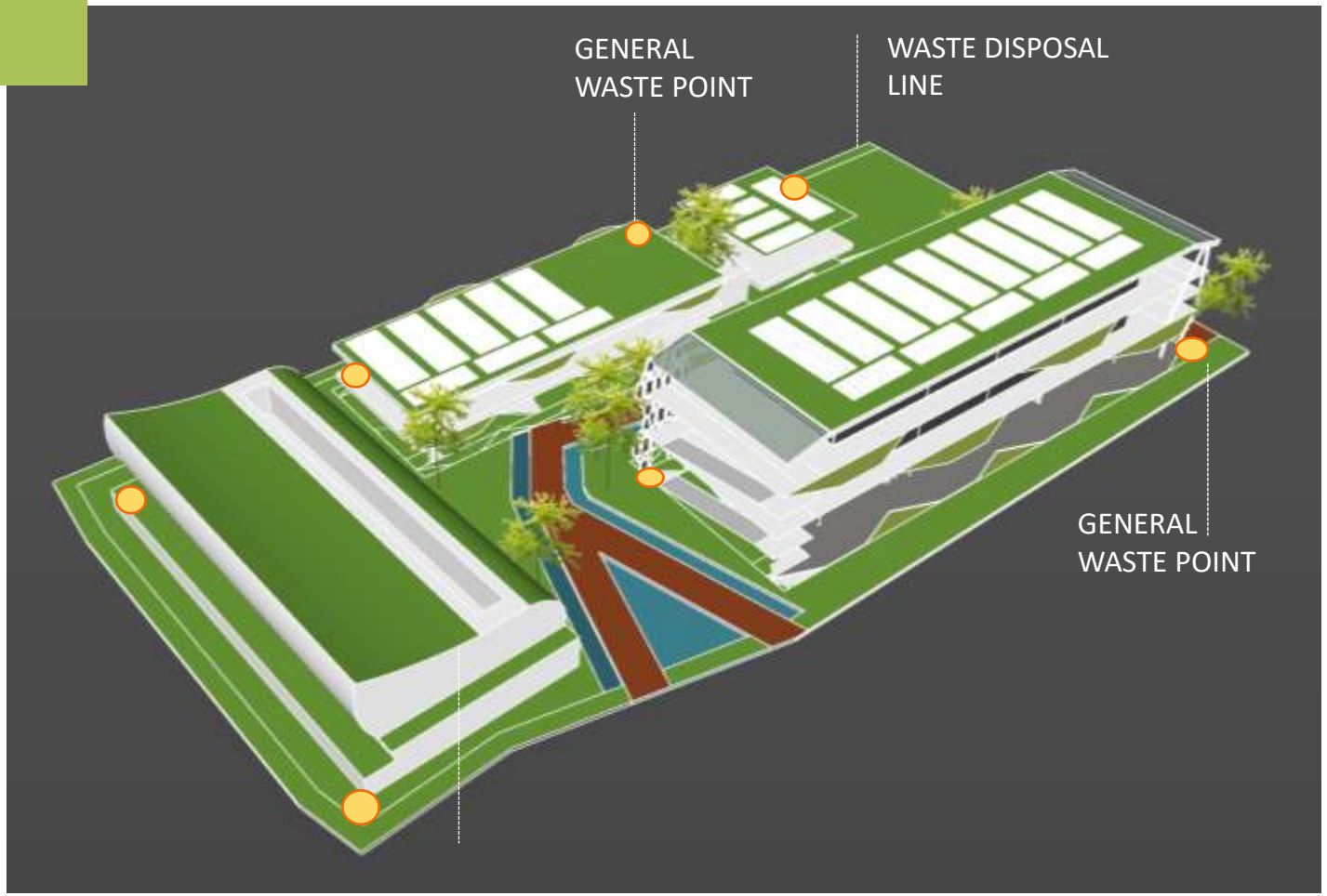
UTILITY CONCEPT
Waste Management

Waste

Waste sorting

Re-cycled

Bring to the landfills



- Sorting waste originating from each function of the building starting from the recycled mix, hazardous and toxic types, paper and cupboard, residue, oil and organic which is then managed by the UIN Walisongo campus area to be reprocessed.
- Public waste point as a medium for building users to be able to dispose of garbage according to its type in a spot that has a high activity intensity level.

6. CONCLUSION AND SUGGESTION

CLOSURE

Conclusion

The design of the UIN Walisongo Campus Business Center in Semarang is one of the development goals of the UIN campus which has the status of a Public Service Agency (BLU). Who has their own control over economic development. In addition, the design of this Business Center is also one of the achievements of the basic principles of campus development in addition to the fields of education and education, research and community service which is integrated with business development.

The use of the Green Architecture approach was chosen based on the status of UIN Walisongo itself which already has a Walisongo Eco-Green formation unit that focuses on strategies to become a smart and green campus campuss based on a sustainable development concept after UIN was selected as the 33rd winner in the UI Green Matric category. Indonesia.

Suggestion

In the process of working on the Designing Business Center of UIN Walisongo Semarang with Green Architecture Approach, it is still far from perfect. Therefore, further development of renewable technology and building design patterns must be further developed in order to achieve a design that can accommodate all needs and also take advantage of the natural potential that is still widely available in Semarang City in particular.

7. REFERENCES

REFERENCES

[1] Bappeda Kota Semarang. http://bappeda.semarangkota.go.id/v2/wp-content/uploads/2012/12/Lampiran-6-Ketentuan-Umum-Peraturan-Zonasi.pdf, accessed 30th March 2020.

[2] Bauer, Michael Peter mosle mishael schwarz. 2010. Green Building Guidebook for Sustainable Architecture.

[3] Brenda and Robert Vale. 1991. Green Architecture Design for Sustainable Future.

[4] Bullitt Website. https://bullittcenter.org/, accessed 1st April 2020.

[5] Dinas Kecamatan Ngaliyan. http://kecngaliyan.semarangkota.go.id/geografis-dan-penduduk, accessed 10th April 2020.

[6]Dinas Marga Kota Semarang. http://mapgeo.id/database_jalan_semarang/index.php/jalan, accessed 10th April 2020.

[7] DPRD Kota Semarang. https://dprd.semarangkota.go.id/packages/upload/file/f8NcP6k.pdf, accessed 9th April 2020.

[8] Ghada, Ragheb and friends. 2016. green Architecture a Concept of Sustainability.

[9] Ingenhoven Architect. https://www.archdaily.com/886215/green-heart-marina-one-singapore-ingenhoven-architects, accessed 14th April 2020.

[10] Keplinger, D. (1978). Designing new buildings of optimum shape and orientation. Habitat International, 3(5-6), 577–585.

[11] Kumparan. https://kumparan.com/indonesiago-digital/inilah-kelebihan-serta-fungsi-dari-coworking-space-yang-wajib-anda-ketahui-1543478519816983699, accessed 19th April 2020.

[12] Marina One Website. http://www.marinaone.com.sg/, accessed 14th April 2020.

[13] Marina One Singapore Website. https://marinaonesingapore.net/p/about-marina-one.html, accessed 14th April 2020.

[14] Ningsih, Dewi Handayani Untari. 2010. Analisa Optimasi Jaringan Jalan Berdasar Kepadatan Lalulintas di Wilayah Semarang dengan Berbantuan Sistem Informasi Geografi (Studi Kasus Wilayah Dati II Semarang), Vol.XV, No. 2, https://media.neliti.com/media/publications/241572-analisa-optimasi-jaringan-jalan-berdasar-e05b035b.pdf, accessed 12nd April 2020).

[15] Peraturan Daerah Kota Semarang. 2011. Nomor14 Tahun 2011 Tentang Rencana Tata Ruang Wilayah Kota Semarang Tahun 2011 – 2031. Semarang: Bappeda Kota Semarang.

[16] Pintos, Paula. 2019. Neo Geo Business Center Interiors / T+T Architects, (https://www.archdaily.com/919182/neo-geo-business-center-interiors-t-plus-t-architects, accessed 10 April 2020).

[17] Rector's Speech on UIN Walisongo Semarang's 50th Dies Natalis. 2020.

[18] Router, Martin. 2017. Marina One, Singapore – a Role Model and Proposal For How to Live and Work in Megacities, (Online), No. O-0288, (http://www.uia2017seoul.org/P/papers/Abstract/Design_Works/Oral/DW3-11/O-0288.pdf, accessed 13rd April 2020).

[19] Satu Data Kota Semarang. http://satudata.semarangkota.go.id/adm/file/20181029103651BanyaknyaPendudukMenurutMataPencariandiKecamatanNgaliyanTahun2017.pdf, accessed 10th April 2020.

[20] Tarigan, Azari Akmal. 2012. Tafsir Ayat-Ayat Ekonomi Al-Qur'an. Medan: Ciptapustaka Media Merintis.

ATTACHMENTS

ARCHITECTURAL DRAWINGS

ARSITEKTUR
UIN MALANG

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM
Jl. Gajayana No. 60 Malang

FACULTY
Science and Technology

DEPARTMENT
Architecture Engineering

PROJECT'S NAME
Deisgning Business Center of UIN Walisongo Semarang with Green Architecture Approach

STUDENT'S NAME
Nahdiya Bella Pertiwi

STUDENT'S ID NUMBER
17660118

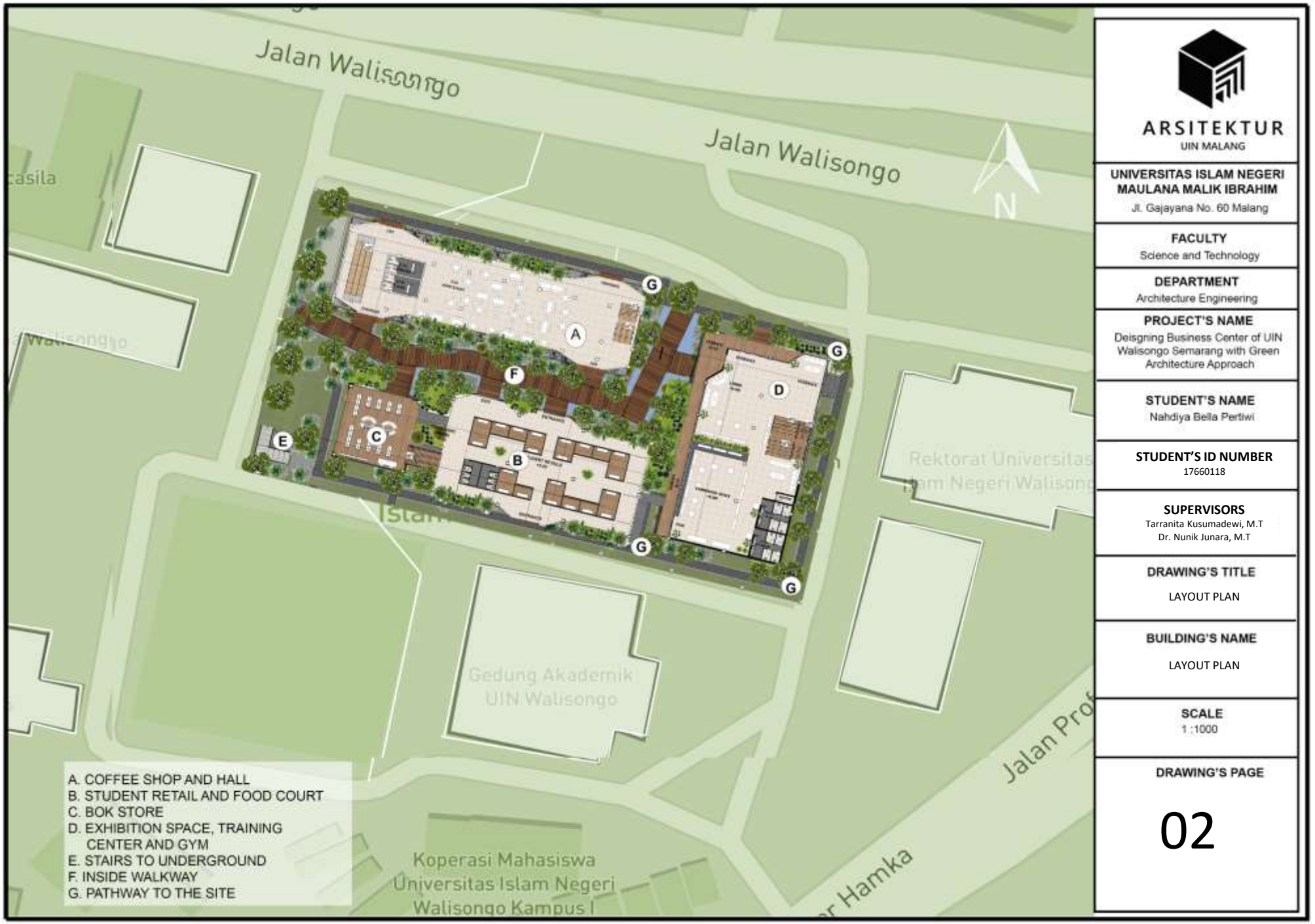
SUPERVISORS
Tarranita Kusumadewi, M.T
Dr. Nunik Junara, M.T

DRAWING'S TITLE
SITE PLAN

BUILDING'S NAME
SITEP PLAN

SCALE
1 :1000

DRAWING'S PAGE
01



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DRAWING'S TITLE
LAYOUT PLAN

BUILDING'S NAME
LAYOUT PLAN

SCALE
1 :1000

DRAWING'S PAGE
02

SITE NORTH ELEVATION

1 : 500

ARSITEKTUR
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DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
SITE NORTH ELEVATION

SCALE
1 : 500

DRAWING'S PAGE

03

SITE WEST ELEVATION

1 : 300

ARSITEKTUR
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DRAWING'S TITLE
SITE ELEVATION

BUILDING'S NAME
SITE WEST ELEVATION

SCALE
1 : 500

DRAWING'S PAGE

04

SITE AA' SECTION

1 : 600

ARSITEKTUR
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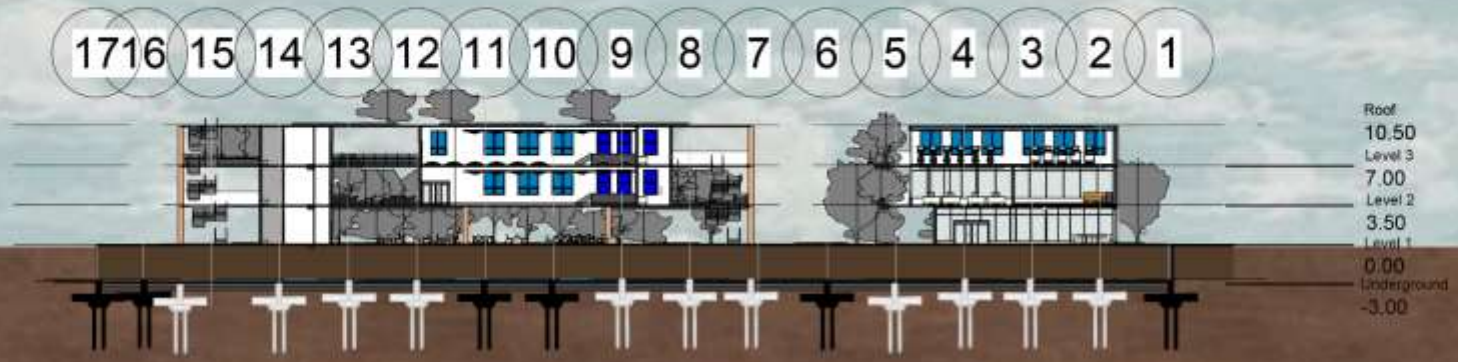
DRAWING'S TITLE
SECTION

BUILDING'S NAME
SITE AA' SECTION

SCALE
1 : 600

DRAWING'S PAGE
05



SITE BB' SECTION

1 : 600

ARSITEKTUR
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Dr. Nunik Junara, M.T

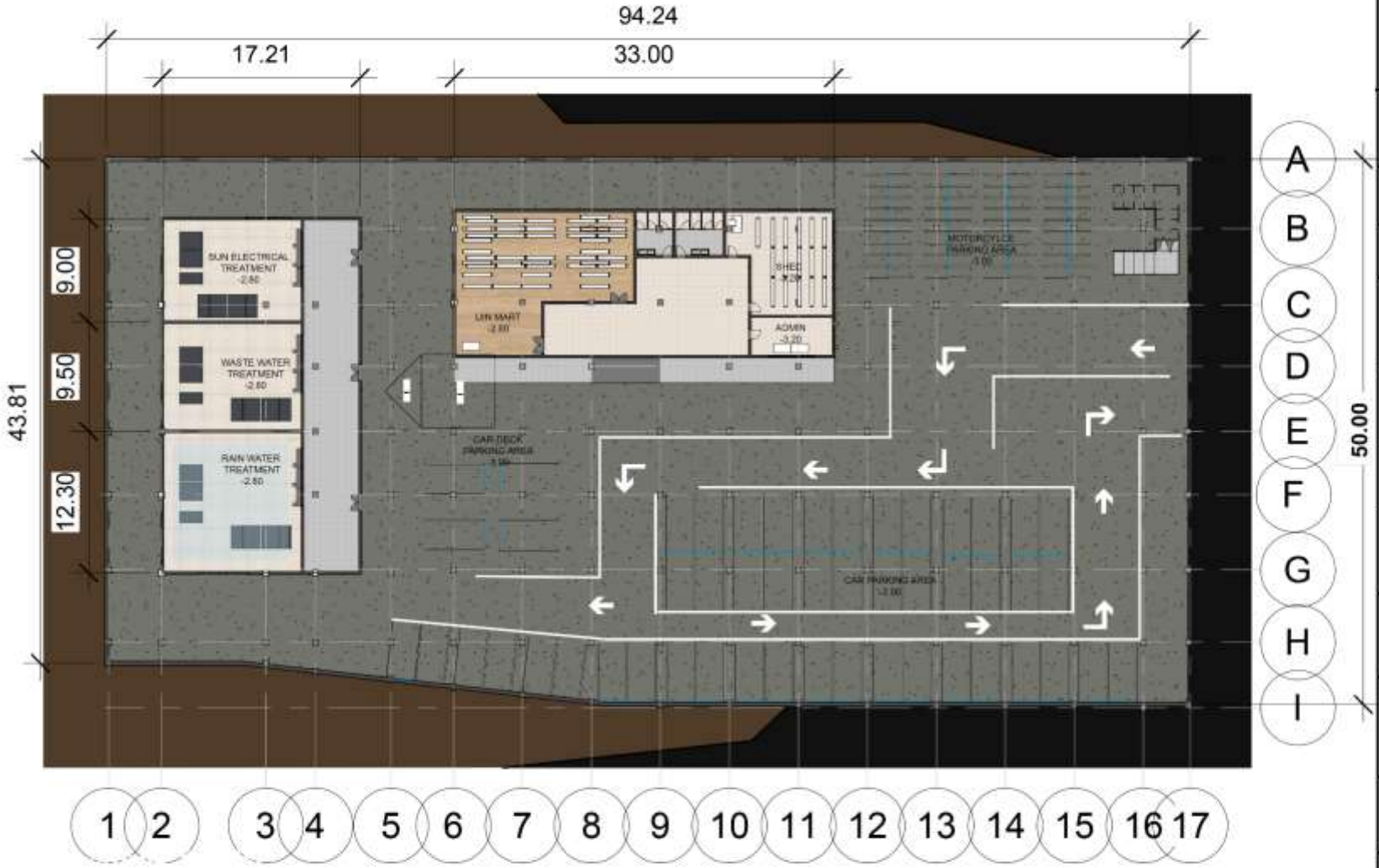
DRAWING'S TITLE
SECTION

BUILDING'S NAME
SITE BB' SECTION

SCALE
1 : 600

DRAWING'S PAGE

06



UNDERGROUND PLAN

1 : 250

ARSITEKTUR
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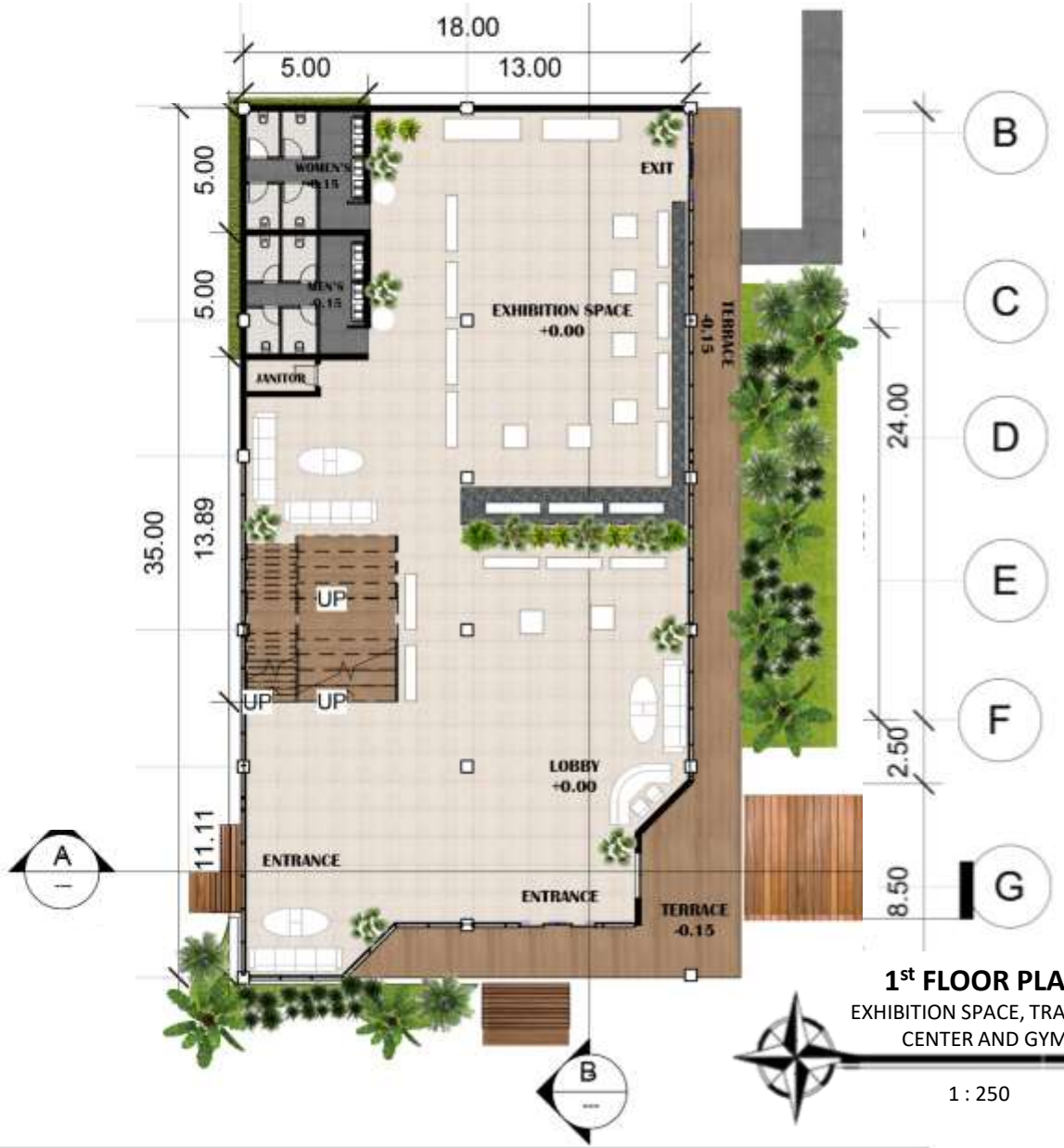
DRAWING'S TITLE
UNDERGROUND PLAN

BUILDING'S NAME
UNDERGROUND

SCALE
1 : 250

DRAWING'S PAGE
22



1st FLOOR PLAN

EXHIBITION SPACE, TRAINING CENTER AND GYM

1 : 250

ARSITEKTUR
UIN MALANG

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM
Jl. Gajayana No. 60 Malang

FACULTY
Science and Technology

DEPARTMENT
Architecture Engineering

PROJECT'S NAME
Deisgning Business Center of UIN Walisongo Semarang with Green Architecture Approach

STUDENT'S NAME
Nahdiya Bella Pertiwi

STUDENT'S ID NUMBER
17660118

SUPERVISORS
Tarranita Kusumadewi, M.T
Dr. Nunik Junara, M.T

DRAWING'S TITLE
1st FLOOR PLAN

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYM

SCALE
1 : 250

DRAWING'S PAGE
08

2nd FLOOR PLAN

EXHIBITION SPACE, TRAINING CENTER AND GYM

1 : 250

ARSITEKTUR
UIN MALANG

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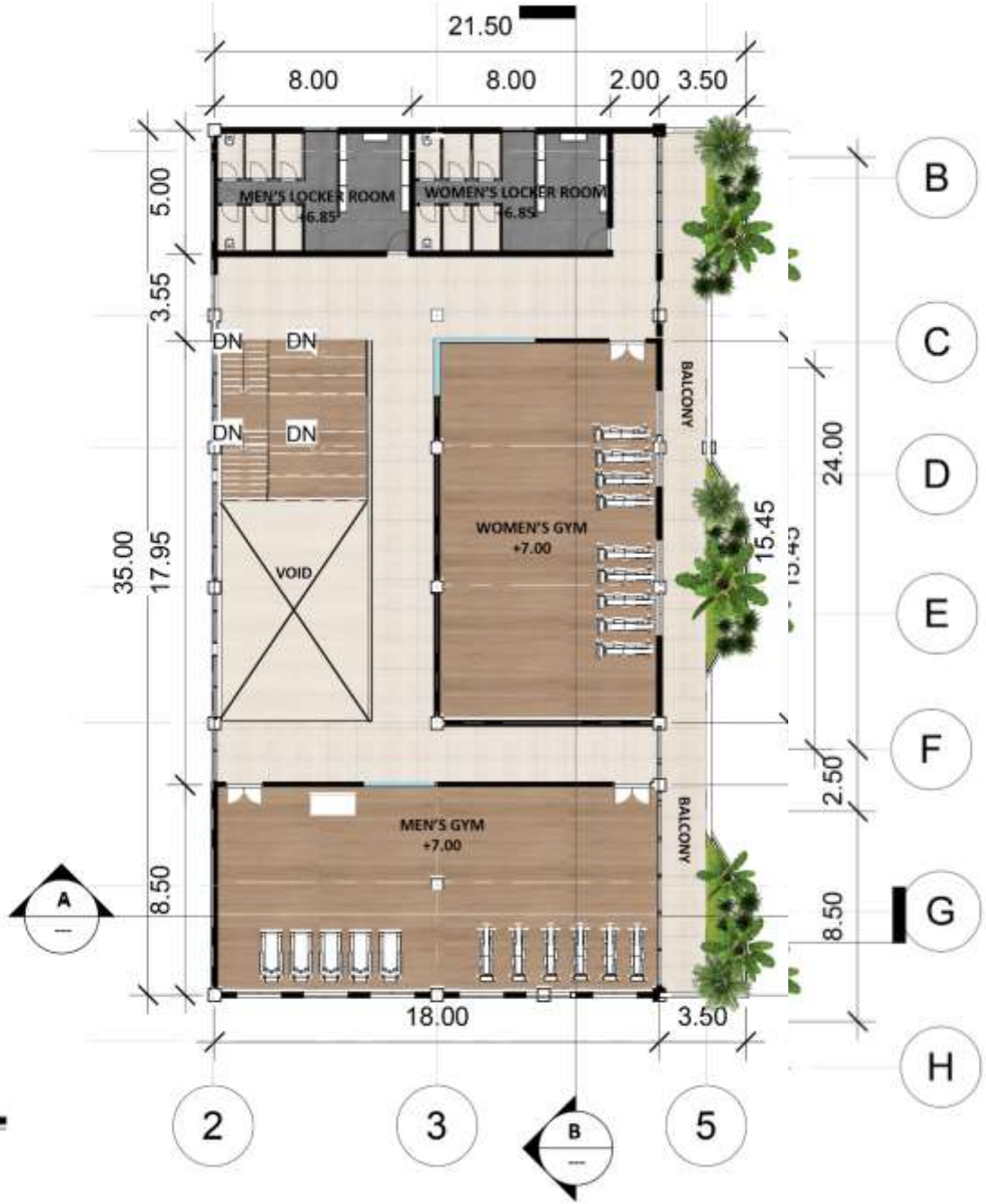
DRAWING'S TITLE
2nd FLOOR PLAN

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYM

SCALE
1 : 250

DRAWING'S PAGE
09



3rd FLOOR PLAN
EXHIBITION SPACE, TRAINING CENTER AND GYM
1 : 250

ARSITEKTUR
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DRAWING'S TITLE
3rd FLOOR PLAN

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYM

SCALE
1 : 250

DRAWING'S PAGE
10

NORTH ELEVATION

1: 250

EAST ELEVATION

1 : 250

ARSITEKTUR
UIN MALANG

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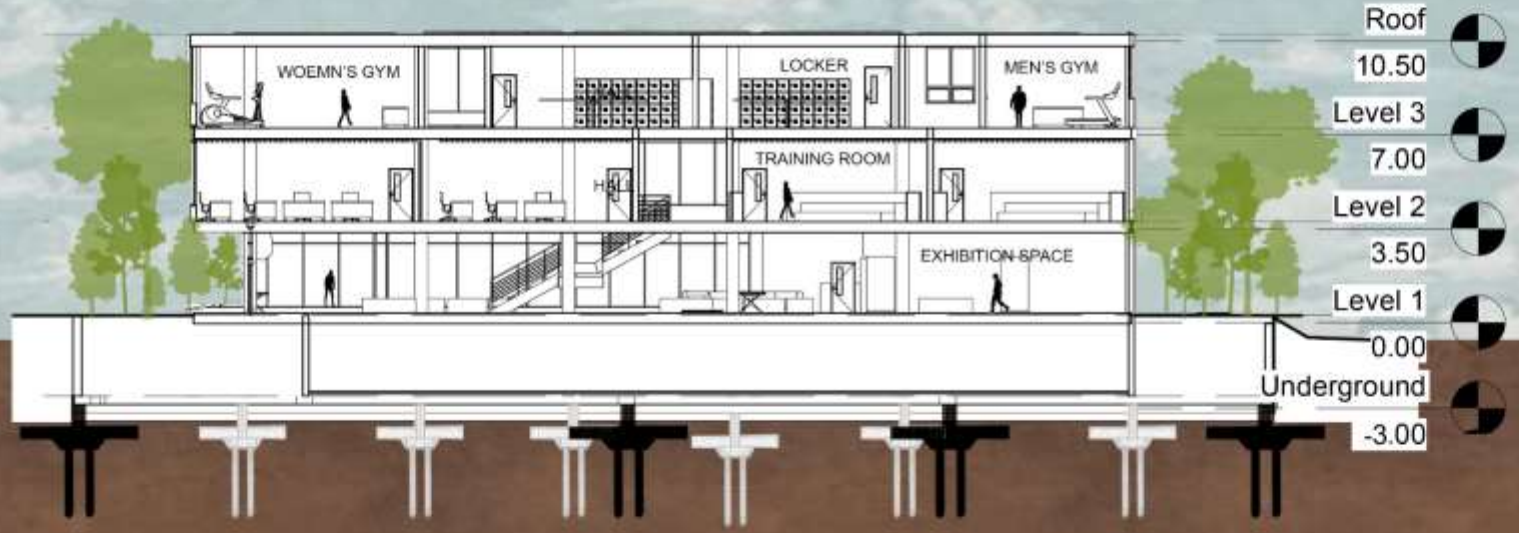
DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM

SCALE
1 : 250

DRAWING'S PAGE
11



BB' SECTION

1 : 250

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
BB'SECTION

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM

SCALE
1 : 250

DRAWING'S PAGE
12

AA' SECTION

1 : 250

ARSITEKTUR
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DRAWING'S TITLE
BB'SECTION

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM

SCALE
1 : 250

DRAWING'S PAGE
13

1st FLOOR PLAN

COFFEE SHOP AND HALL

1 : 250

ARSITEKTUR
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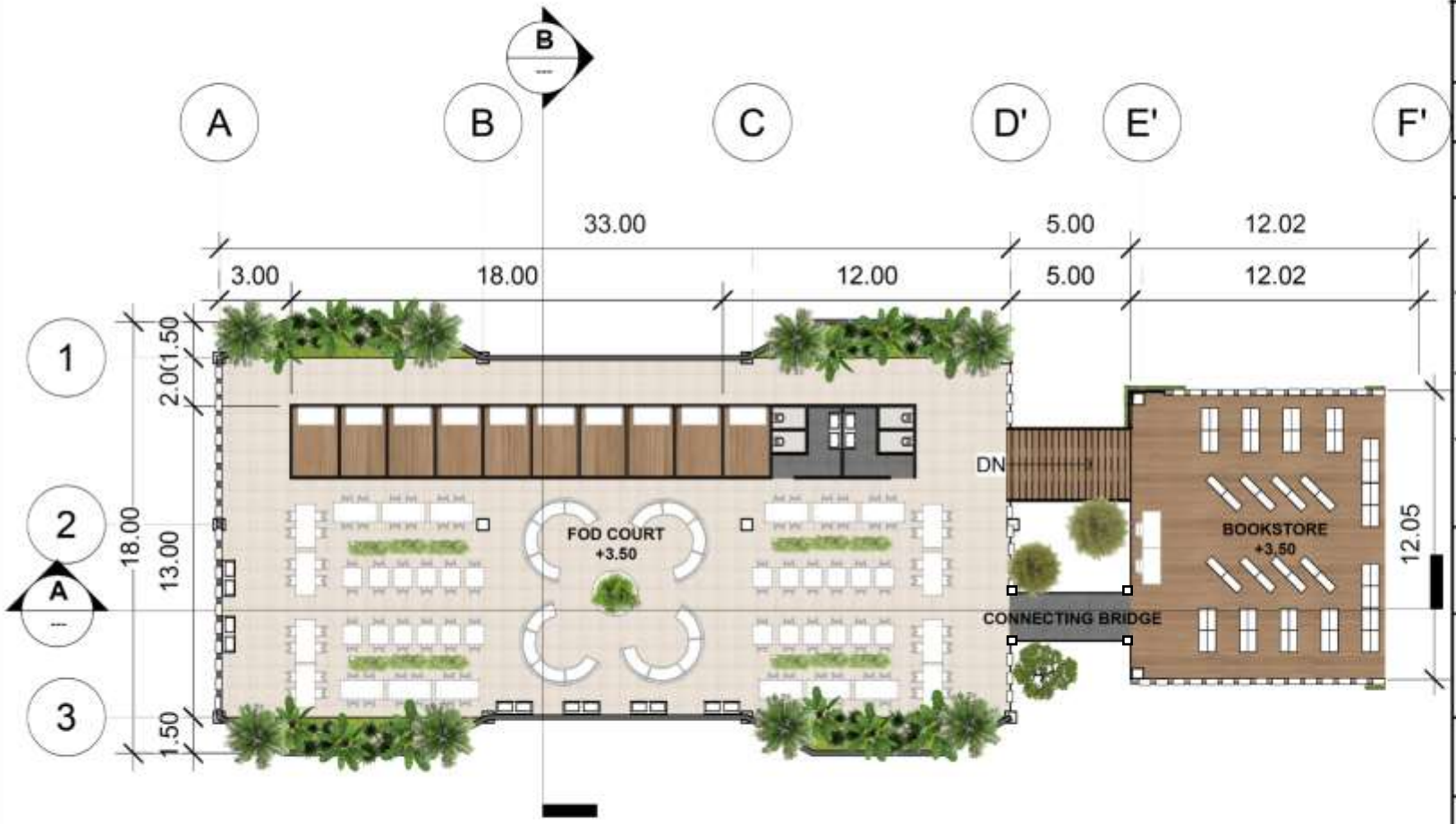
DRAWING'S TITLE
1st FLOOR PLAN

BUILDING'S NAME
COFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE
14



2nd FLOOR PLAN

COFFEE SHOP AND HALL

1 : 250

ARSITEKTUR
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DRAWING'S TITLE
2nd FLOOR PLAN

BUILDING'S NAME
COFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE
15

NORTH ELEVATION

1: 250

EAST ELEVATION

1 : 250

ARSITEKTUR
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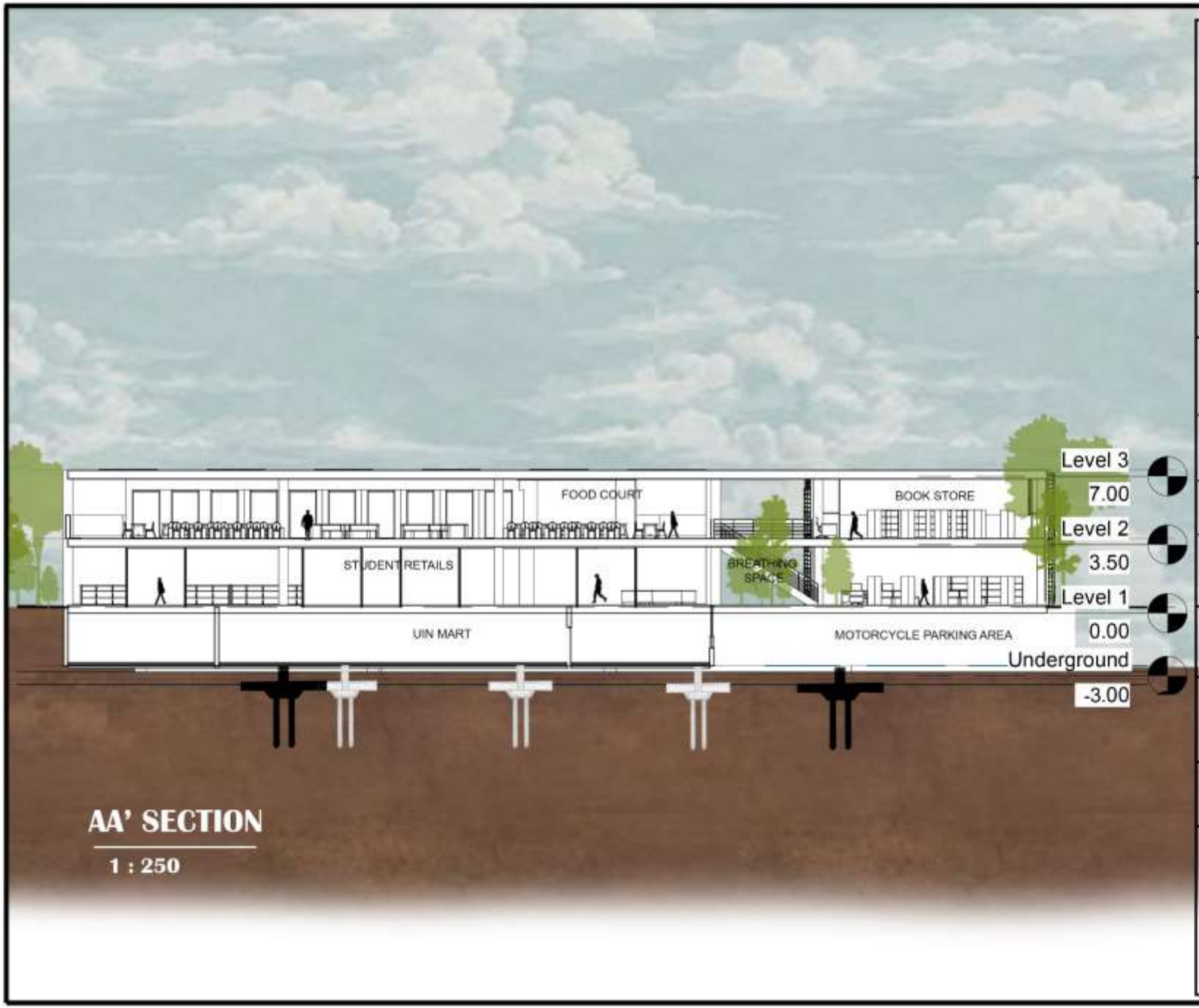
DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
STUDENT RETAILS, FOOD COURT AND BOOK STORE

SCALE
1 : 250

DRAWING'S PAGE

16



AA' SECTION

1 : 250

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
AA'SECTION

BUILDING'S NAME
STUDENT RETAILS, BOOK STORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE
17

BB' SECTION

1 : 250

ARSITEKTUR
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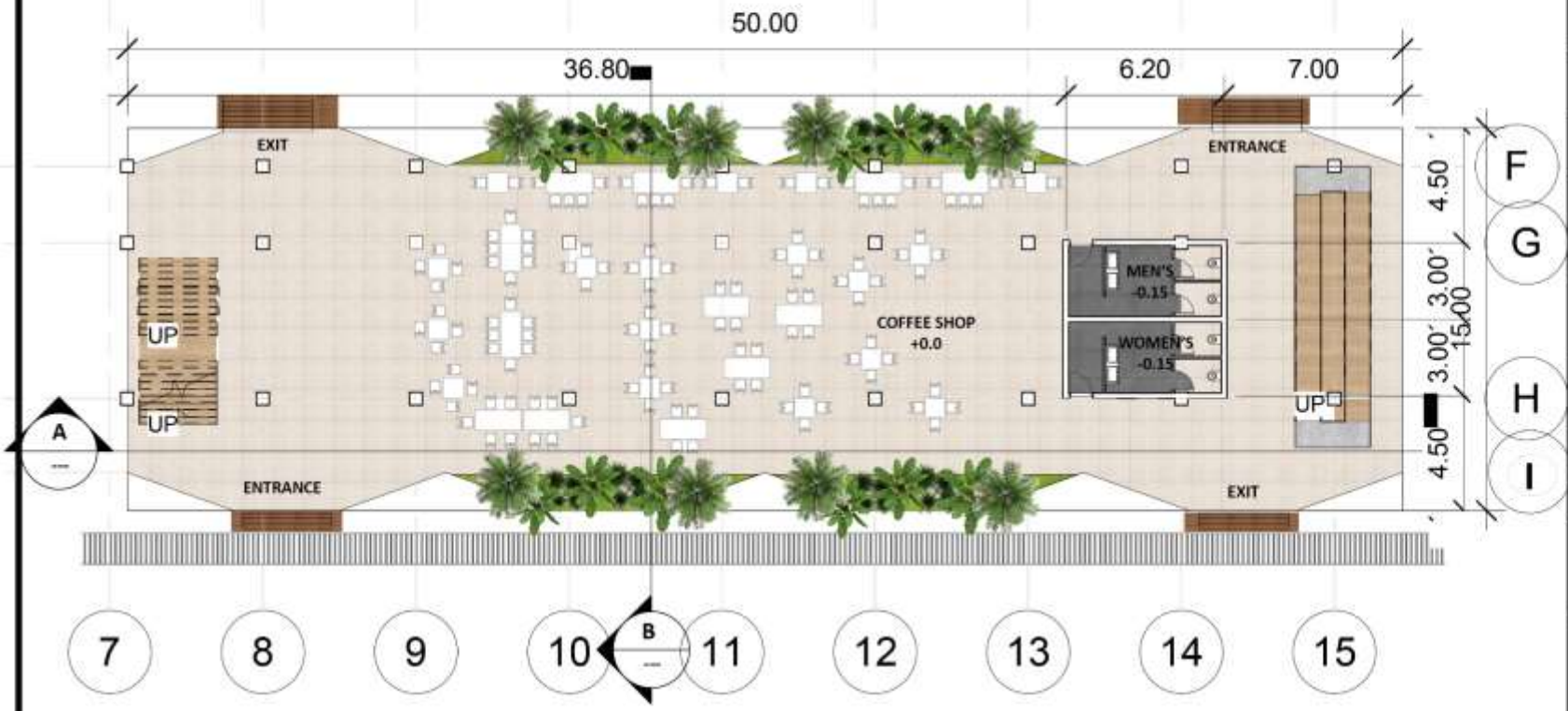
DRAWING'S TITLE
BB'SECTION

BUILDING'S NAME
STUDENT RETAILS, BOOK STORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE
18



1st FLOOR PLAN

COFFEE SHOP AND HALL

1 : 250

ARSITEKTUR
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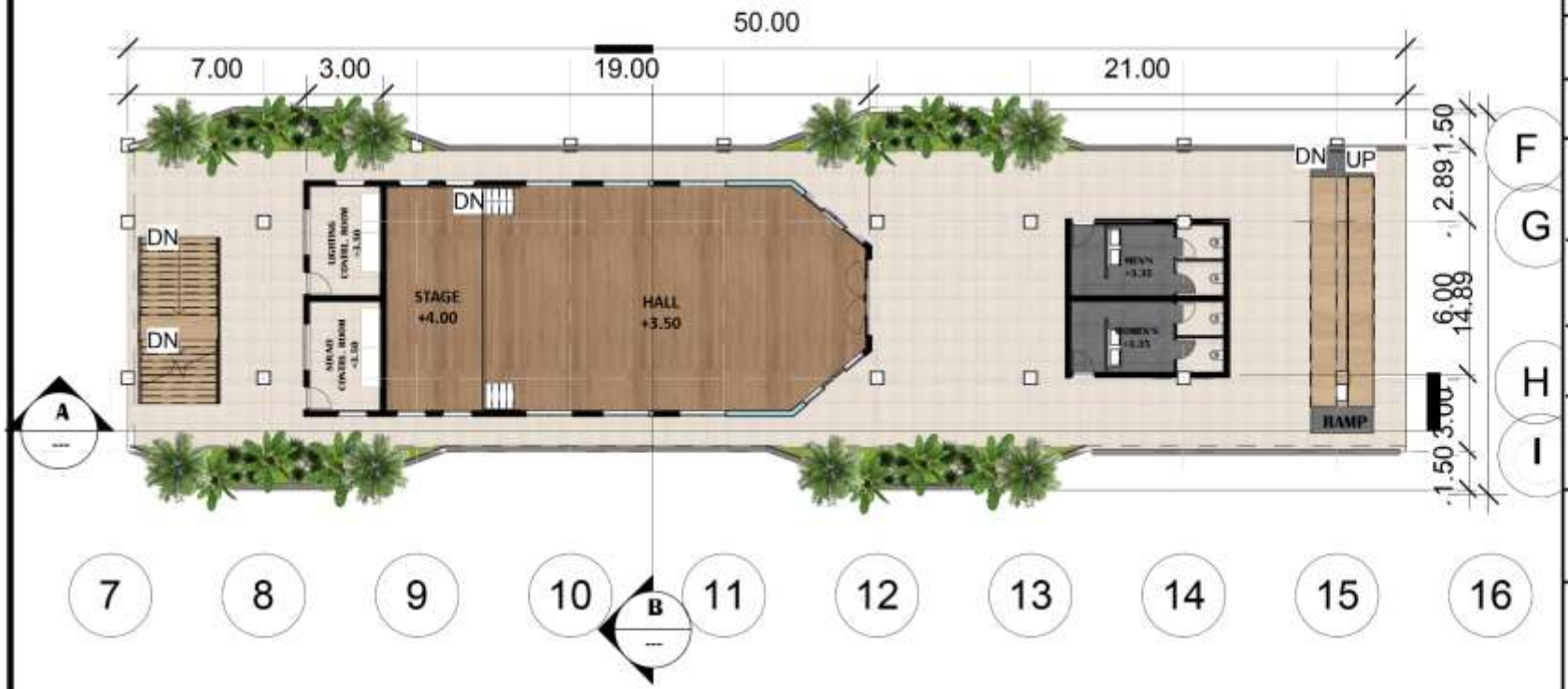
DRAWING'S TITLE
1st FLOOR PLAN

BUILDING'S NAME
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE
19



2nd FLOOR PLAN

COFFEE SHOP AND HALL

1 : 250

ARSITEKTUR
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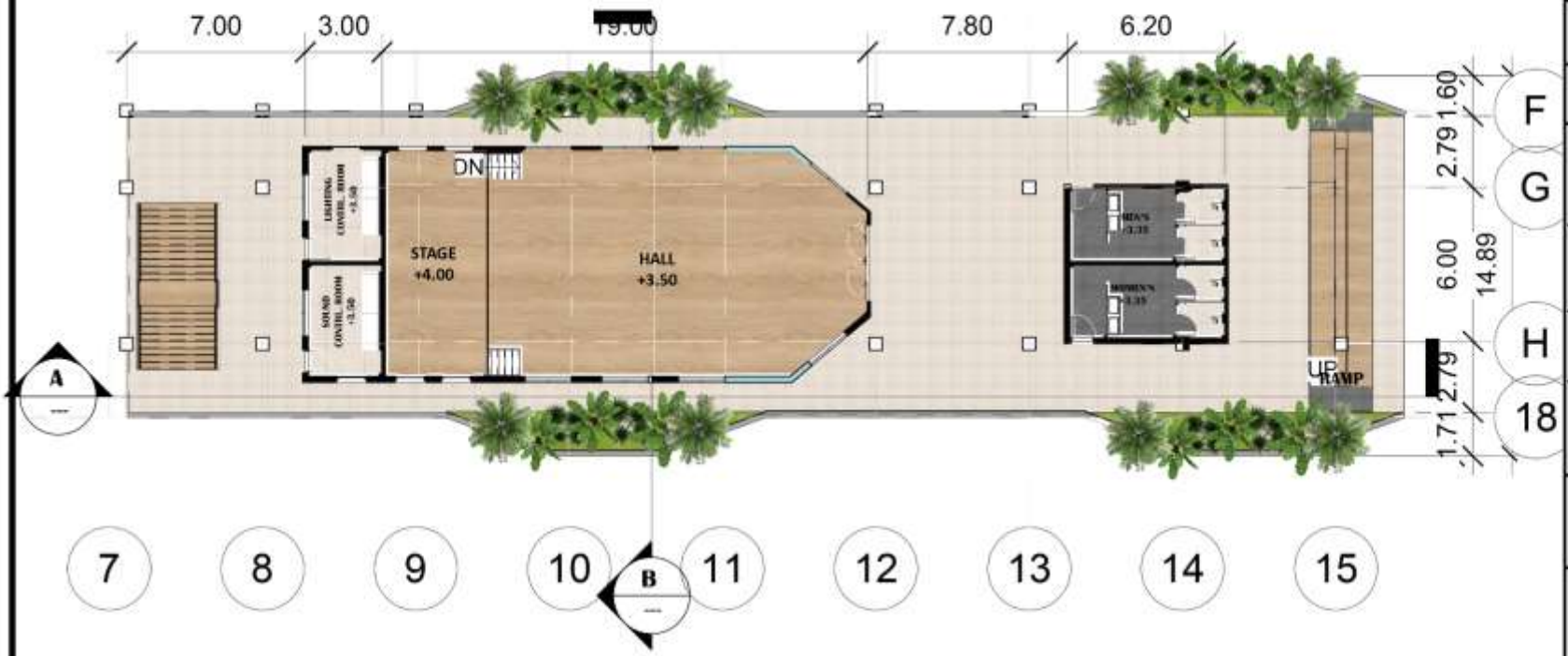
DRAWING'S TITLE
2nd FLOOR PLAN

BUILDING'S NAME
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE
20



3rd FLOOR PLAN
COFFEE SHOP AND HALL
1 : 250

ARSITEKTUR
UIN MALANG

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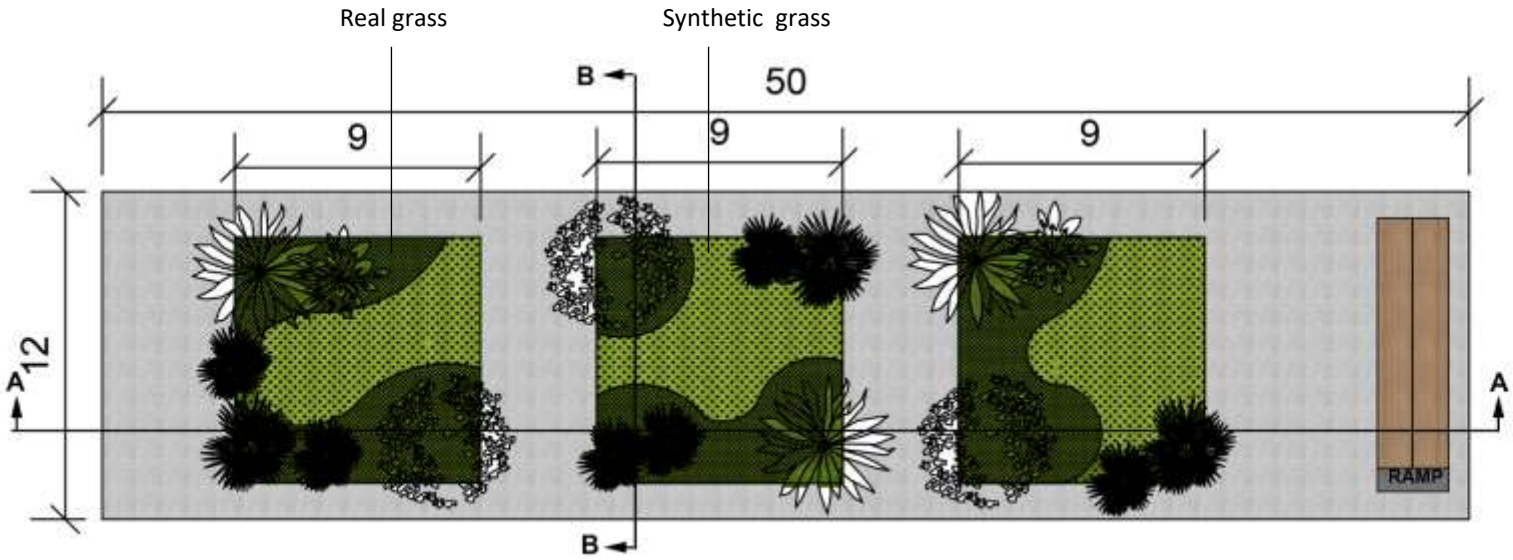
DRAWING'S TITLE
3rd FLOOR PLAN

BUILDING'S NAME
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE
21



ROOFTOP PLAN
COFFEE SHOP AND HALL
1 : 250

ARSITEKTUR
UIN MALANG

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Jl. Gajayana No. 60 Malang

FACULTY
Science and Technology

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17660118

SUPERVISORS
Tarranita Kusumadewi, M.T
Dr. Nunik Junara, M.T

DRAWING'S TITLE
ROOFTOP PLAN

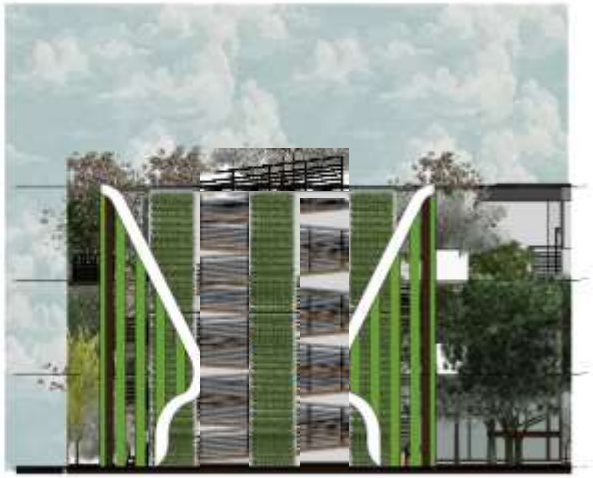
BUILDING'S NAME
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE
22

NORTH ELEVATION

1: 250



EAST ELEVATION

1 : 250

ARSITEKTUR
UIN MALANG

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM
Jl. Gajayana No. 60 Malang

FACULTY
Science and Technology

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DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE

23

AA' SECTION

1 : 250

ARSITEKTUR
UIN MALANG

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM
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FACULTY
Science and Technology

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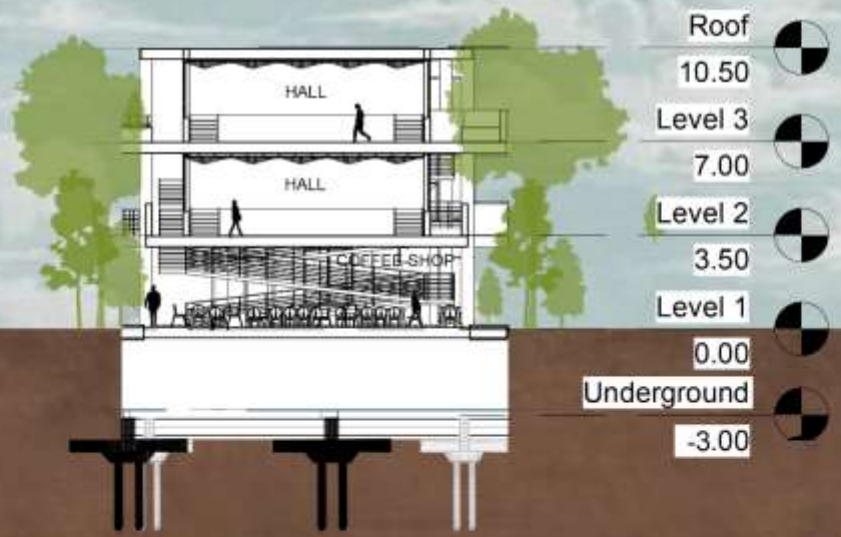
DRAWING'S TITLE
AA'SECTION

BUILDING'S NAME
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE

24



BB' SECTION

1 : 250

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
BB'SECTION

BUILDING'S NAME
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE

25

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
PERSPECTIVE

BUILDING'S NAME

SCALE

DRAWING'S PAGE

26

ARSITEKTUR
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PERSPECTIVE

BUILDING'S NAME

SCALE

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27

ARSITEKTUR
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DRAWING'S TITLE
PRESPECTIVE

BUILDING'S NAME

SCALE

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28

ARSITEKTUR
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PERSPECTIVE

BUILDING'S NAME

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ARSITEKTUR
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BUILDING'S NAME

SCALE

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DRAWING'S TITLE
ARCHITECTURAL DETAILS

BUILDING'S NAME
GREEN BALCONY

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ARSITEKTUR
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ARCHITECTURAL DETAILS

BUILDING'S NAME
GREEN BALCONY

SCALE

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DRAWING'S TITLE
PERSPECTIVE

BUILDING'S NAME

SCALE
1 : 250

DRAWING'S PAGE

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BUILDING'S NAME

SCALE
1 : 250

DRAWING'S PAGE

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ARSITEKTUR
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BUILDING'S NAME

SCALE
1 : 250

DRAWING'S PAGE

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ARSITEKTUR
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Architecture Engineering

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Deisgning Business Center of UIN Walisongo Semarang with Green Architecture Approach

STUDENT'S NAME
Nahdiya Bella Pertiwi

STUDENT'S ID NUMBER
17660118

SUPERVISORS
Tarranita Kusumadewi, M.T
Dr. Nunik Junara, M.T

DRAWING'S TITLE
ARCHITECTURAL DETAILS

BUILDING'S NAME
GREEN BALCONY

SCALE

DRAWING'S PAGE

37

ARSITEKTUR
UIN MALANG

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM
Jl. Gajayana No. 60 Malang

FACULTY
Science and Technology

DEPARTMENT
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ARCHITECTURAL DETAILS

BUILDING'S NAME
GREEN BALCONY

SCALE

DRAWING'S PAGE

38

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
PERSPECTIVE

BUILDING'S NAME

SCALE
1 : 250

DRAWING'S PAGE

39

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
PERSPECTIVE

BUILDING'S NAME

SCALE
1 : 250

DRAWING'S PAGE

40

LANDSCAPE DETAIL

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
LANDSCAPE DETAILS

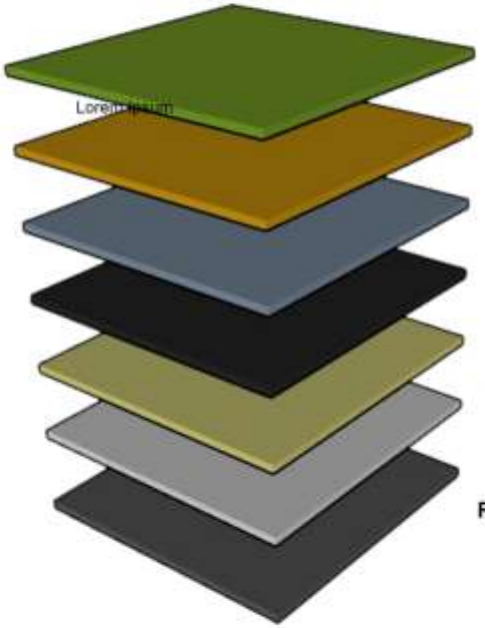
BUILDING'S NAME
SITE MEMBRANE DETAILS

SCALE

DRAWING'S PAGE

41

DETAIL GREEN ROOFTOP



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DRAWING'S TITLE
LANDSCAPE DETAILS

BUILDING'S NAME
GREEN ROOF DETAIL

SCALE

DRAWING'S PAGE

42

ARCHITECTURAL DETAIL

Eco Brick Wall exhibition in purpose to educate the visitors of the building

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DRAWING'S TITLE
ARCHITECTURAL DETAILS

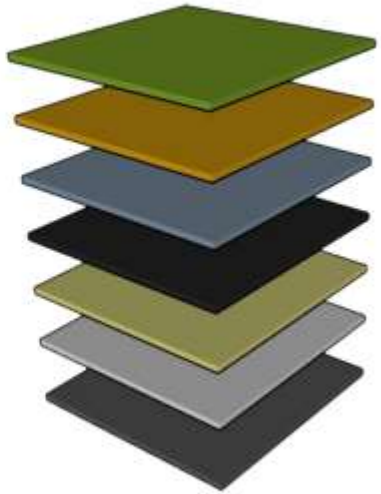
BUILDING'S NAME
ECO BRICK WALL

SCALE

DRAWING'S PAGE

43

DETAIL
GREEN BALCONY



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ARCHITECTURAL DETAILS

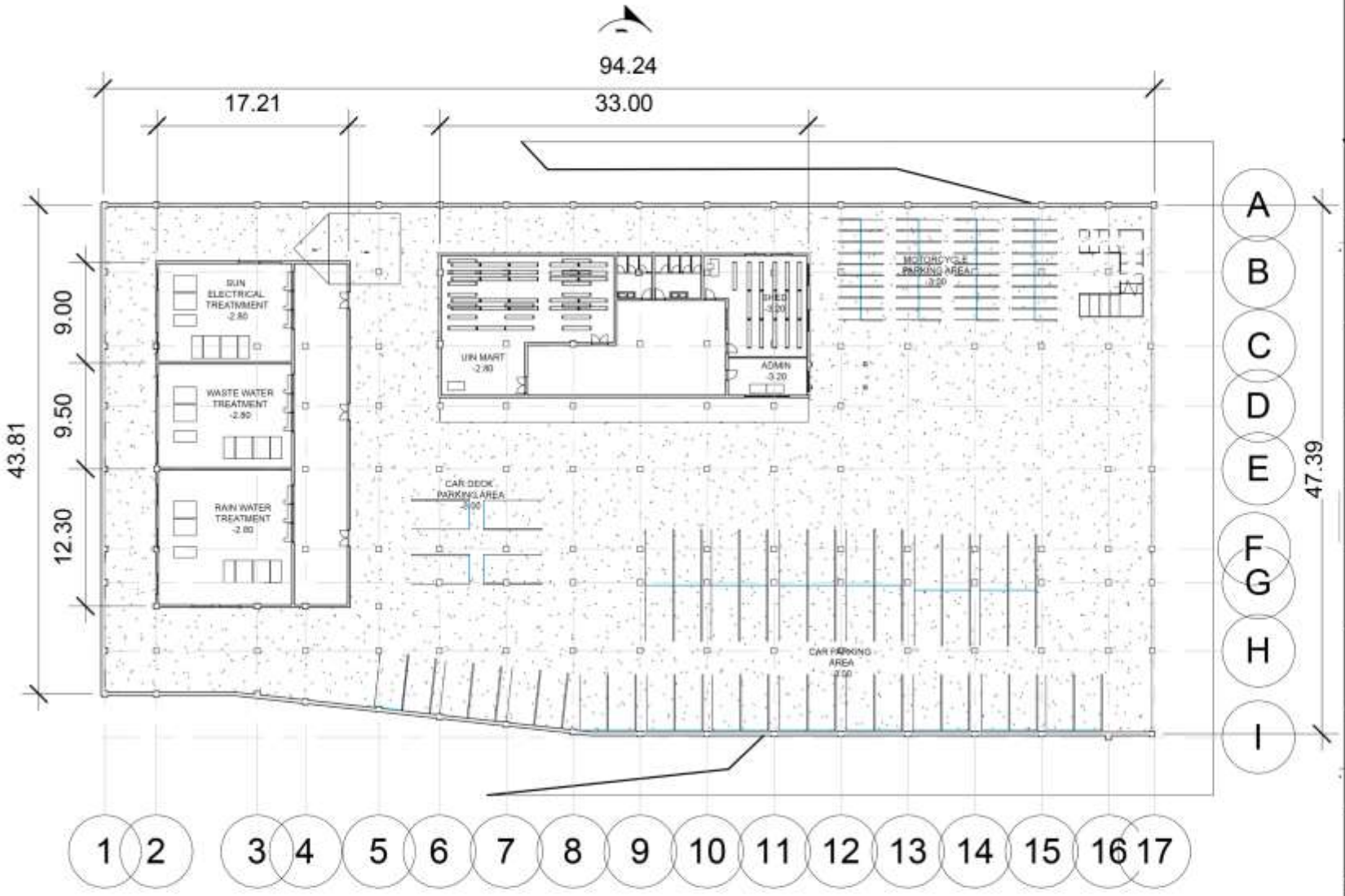
BUILDING'S NAME
GREEN BALCONY

SCALE

DRAWING'S PAGE

44

TECHINCAL DRAWINGS



FLOOR PLAN
UNDERGROUND
1 : 500

ARSITEKTUR
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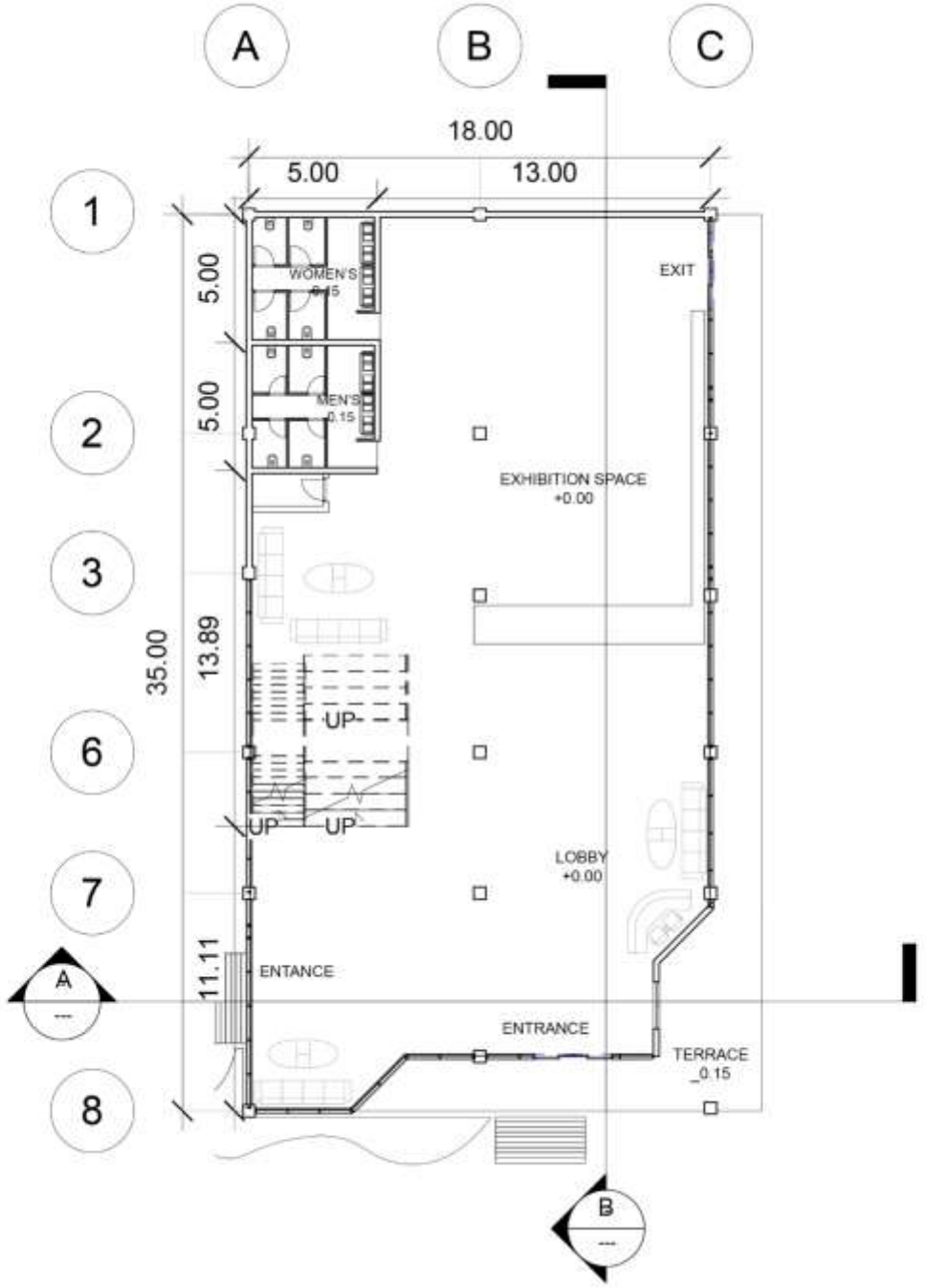
DRAWING'S TITLE
UNDERGROUNND FLOORPLAN

BUILDING'S NAME
UNDERGROUND

SCALE
1 : 500

DRAWING'S PAGE
45



FLOOR PLAN 1
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM
1 : 250

ARSITEKTUR
UIN MALANG

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM
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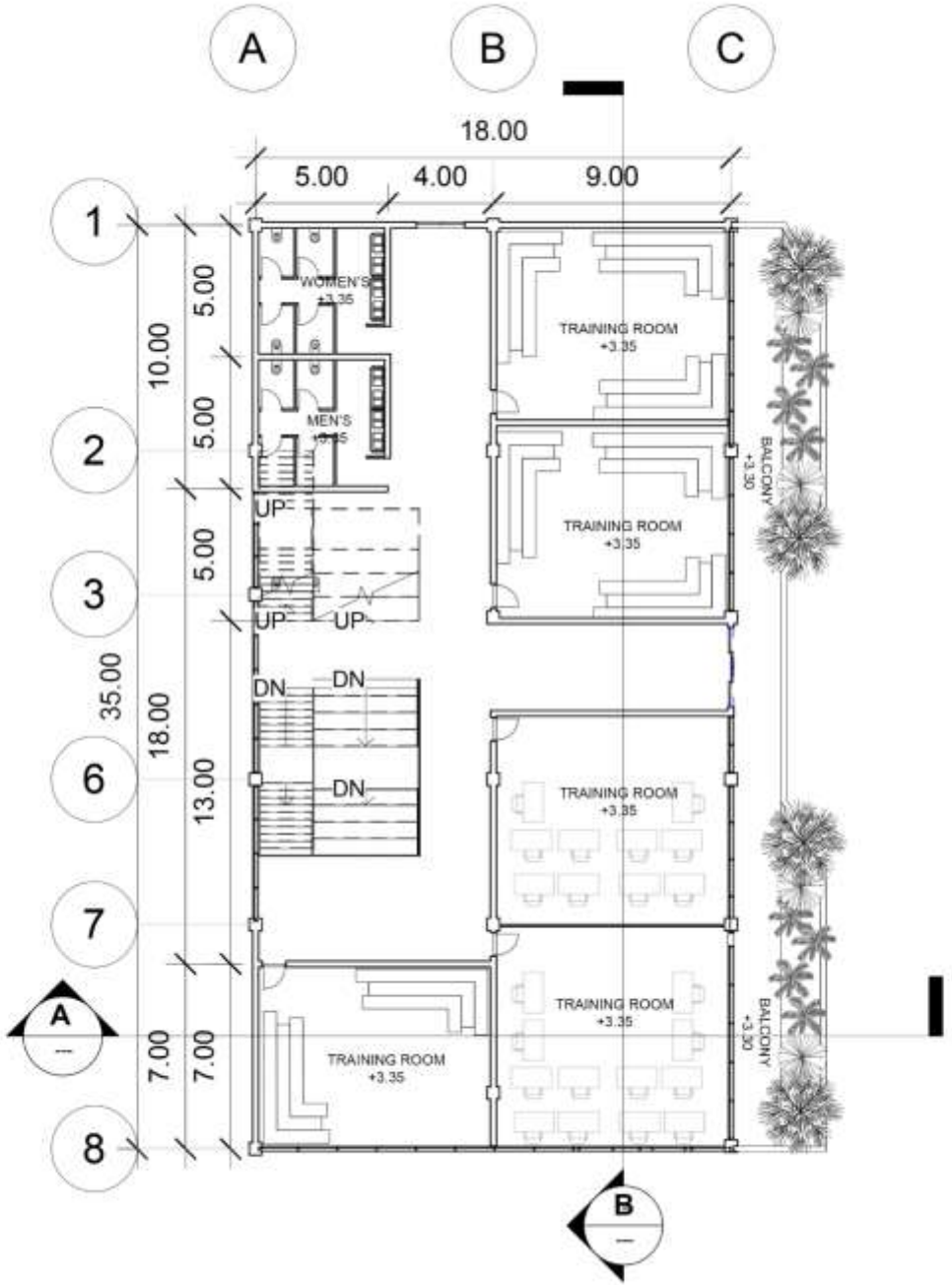
DRAWING'S TITLE
FLOOR PLAN 1

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM

SCALE
1 : 250

DRAWING'S PAGE
46



FLOOR PLAN 2
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM
1 : 250

ARSITEKTUR
UIN MALANG

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Science and Technology

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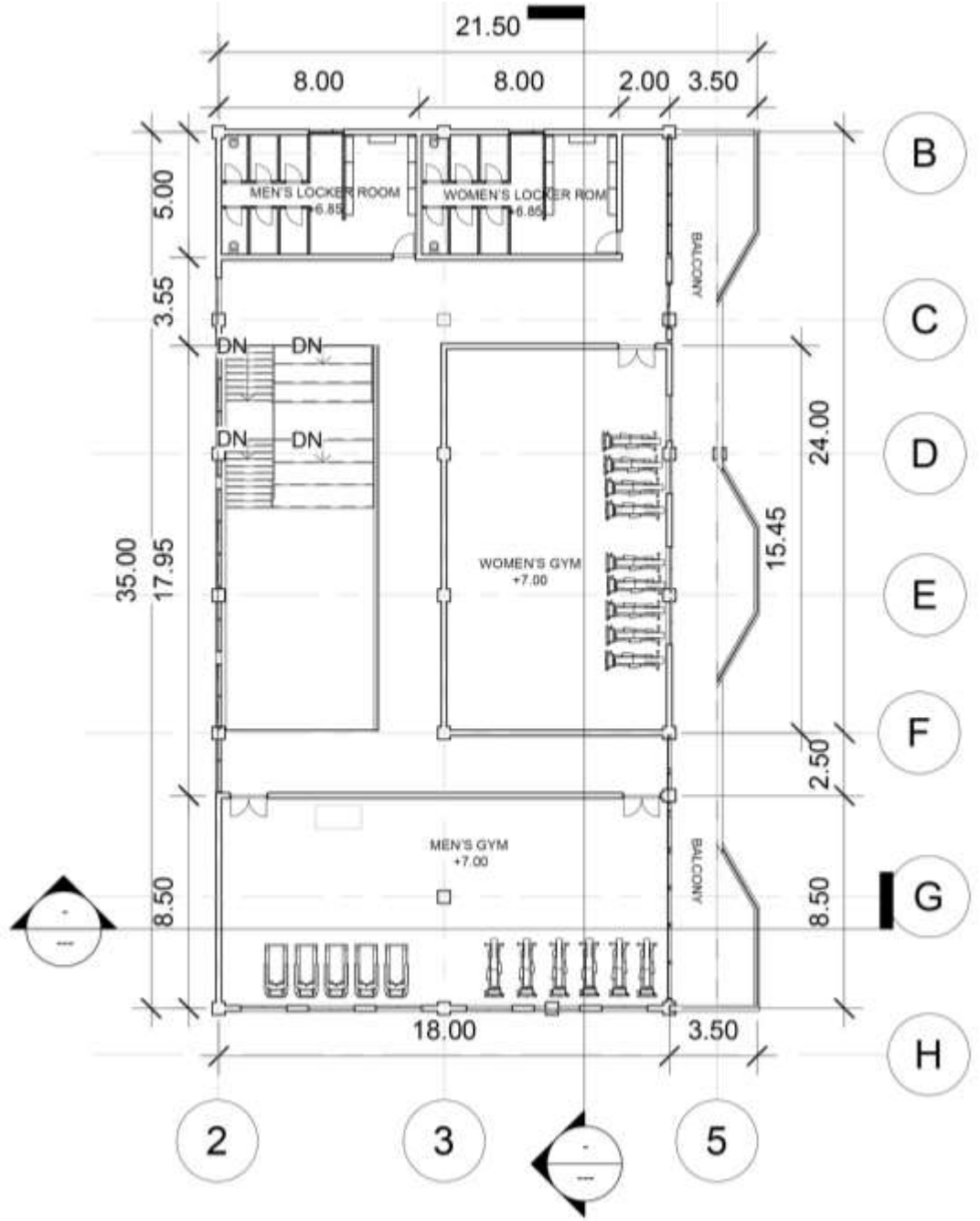
DRAWING'S TITLE
FLOOR PLAN 2

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM

SCALE
1 : 250

DRAWING'S PAGE
47



FLOOR PLAN 3
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM
1 : 250

ARSITEKTUR
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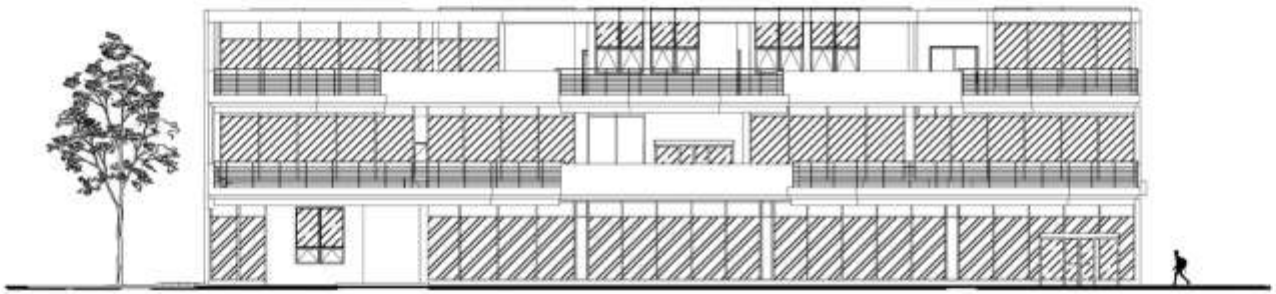
DRAWING'S TITLE
FLOOR PLAN 2

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYMNASIUM

SCALE
1 : 250

DRAWING'S PAGE
48



WEST ELEVATION
EXHIBITION SPACE, TRAINING CENTER AND GYM
1 : 250

ARSITEKTUR
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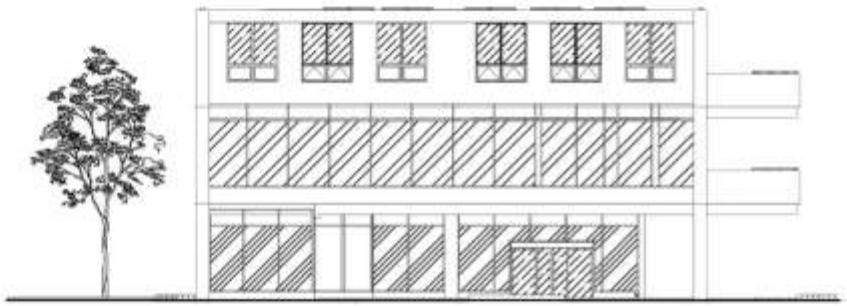
DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYM

SCALE
1 : 250

DRAWING'S PAGE
49



NORTH ELEVATION
EXHIBITION SPACE, TRAINING CENTER AND GYM
1 : 250

ARSITEKTUR
UIN MALANG

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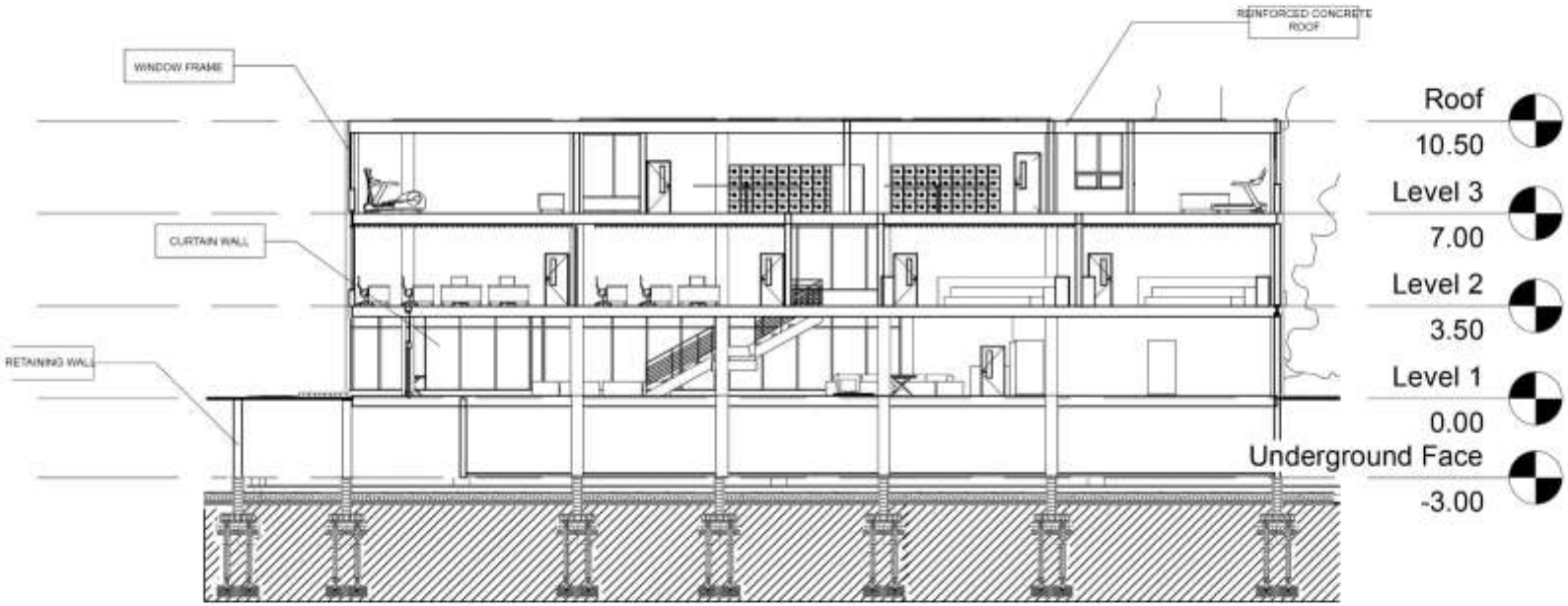
DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYM

SCALE
1 : 250

DRAWING'S PAGE
50



BB' SECTION
EXHIBITION SPACE, TRAINING CENTER AND GYM
1 : 250

ARSITEKTUR
UIN MALANG

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Tarranita Kusumadewi, M.T
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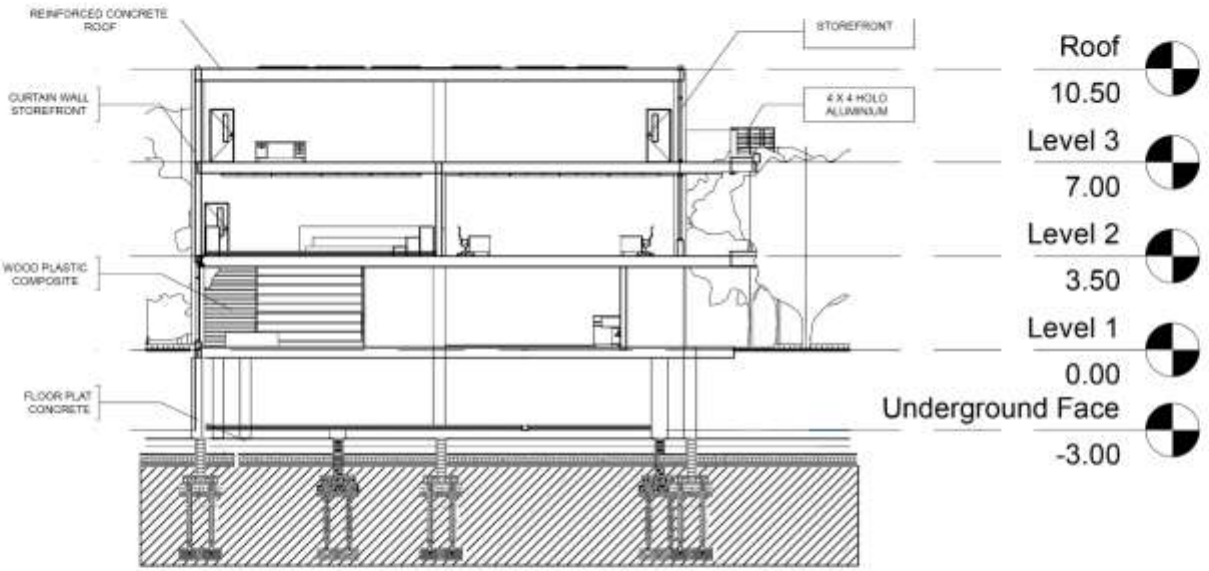
DRAWING'S TITLE
BB' SECTION

BUILDING'S NAME
EXHIBIION SPACE, TRAINING CENTER AND GYM

SCALE
1 : 250

DRAWING'S PAGE
51



AA' SECTION

EXHIBITION SPACE, TRAINING CENTER AND GYM

1 : 250

ARSITEKTUR
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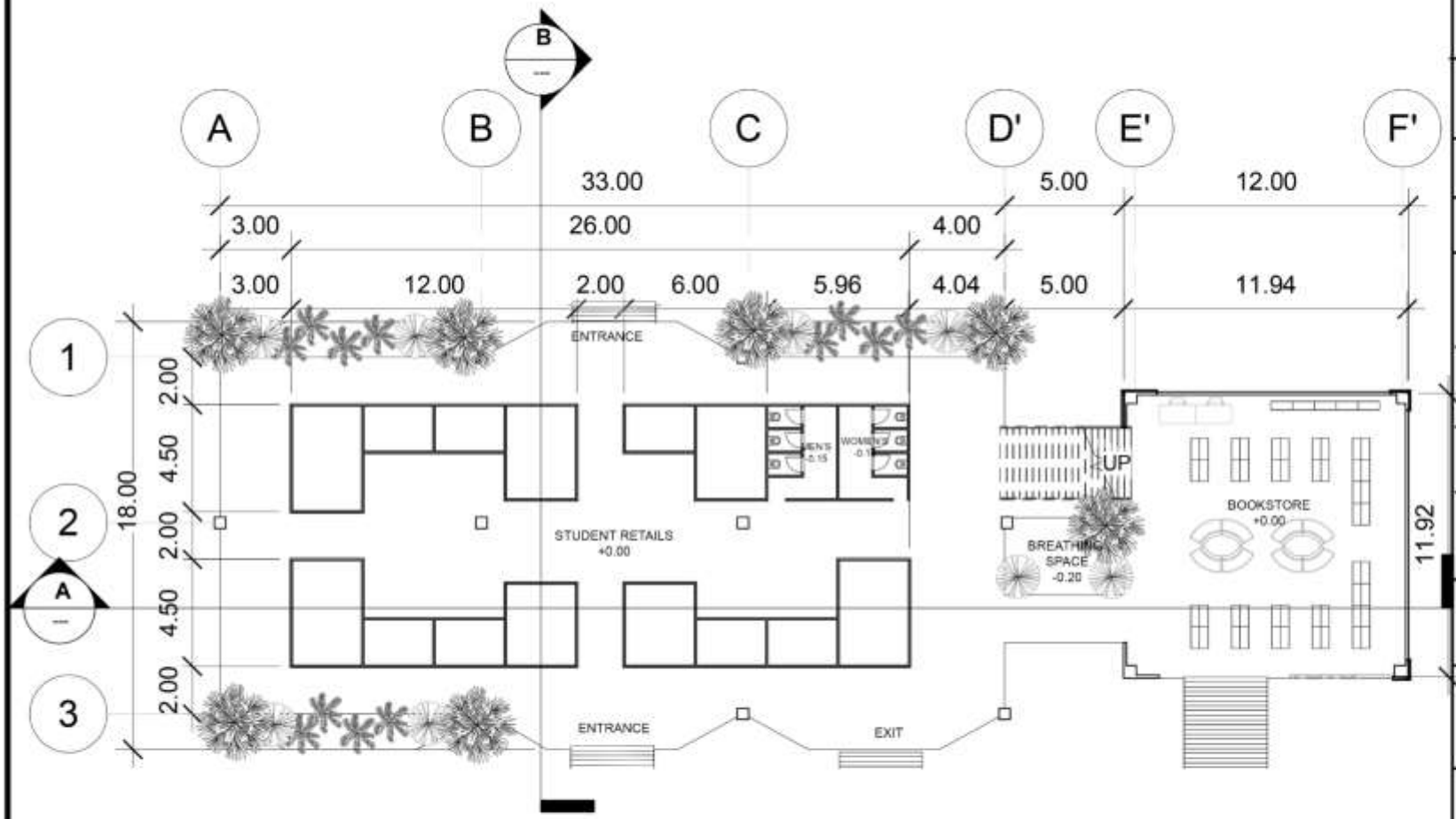
DRAWING'S TITLE
AA' SECTION

BUILDING'S NAME
EXHIBITION SPACE, TRAINING CENTER AND GYM

SCALE
1 : 250

DRAWING'S PAGE
52



FLOOR PLAN 1
STUDENT RETAILS , BOOKSTORE AND FOOD COURT
1 : 250

ARSITEKTUR
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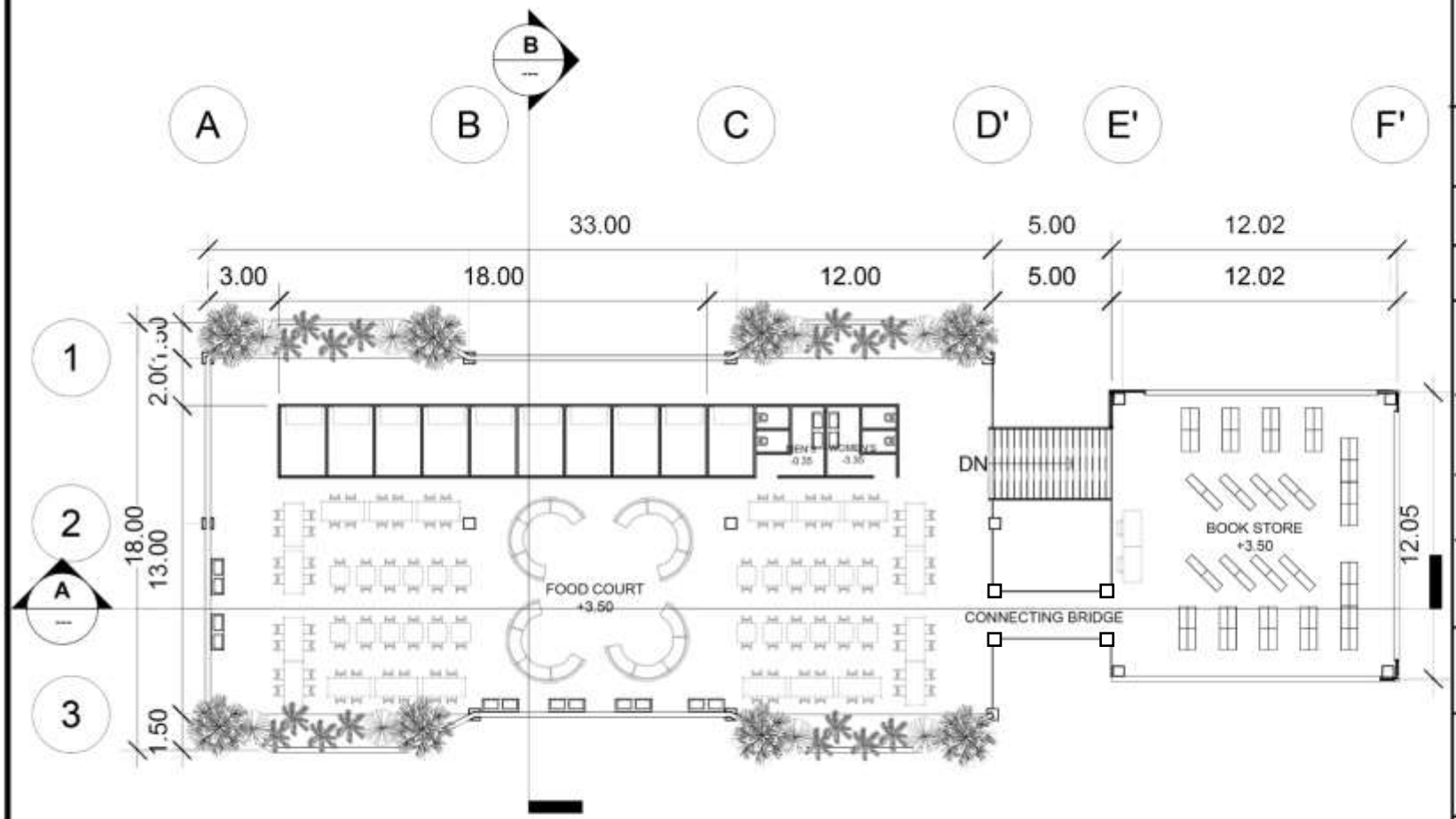
DRAWING'S TITLE
FLOOR PLAN 1

BUILDING'S NAME
STUDENT RETAILS , BOOKSTORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE
53



FLOOR PLAN 2
STUDENT RETAILS , BOOKSTORE AND FOOD COURT
1 : 250

ARSITEKTUR
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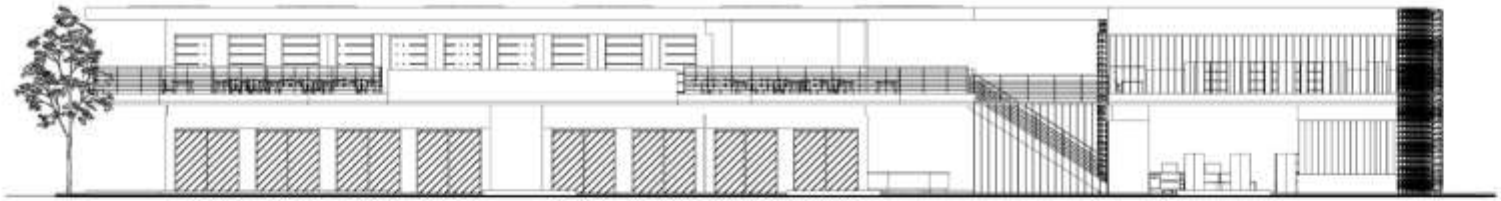
DRAWING'S TITLE
FLOOR PLAN 2

BUILDING'S NAME
STUDENT RETAILS , BOOKSTORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE
54



NORTH ELEVATION
STUDENT RETAILS, BOOKSTORE AND FOOD COURT
1 : 250

ARSITEKTUR
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ELEVATION

BUILDING'S NAME
STUDENT RETAILS, BOOKSTORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE
55

WEST ELEVATION
STUDENT RETAILS, BOOKSTORE AND FOOD COURT
1 : 250

ARSITEKTUR
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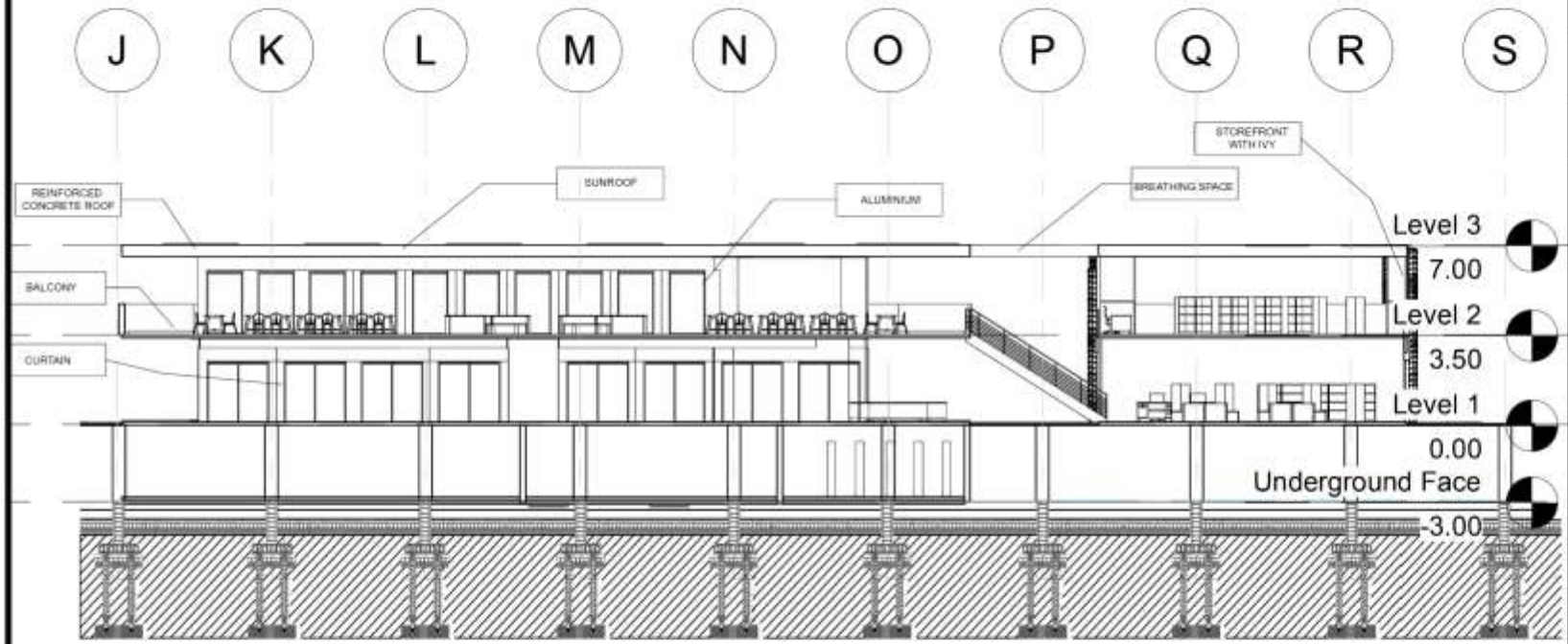
ELEVATION

BUILDING'S NAME
STUDENT RETAILS, BOOKSTORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE



AA' SECTION

STUDENT RETAILS, BOOKSTORE AND FOOD COURT

1 : 250

ARSITEKTUR
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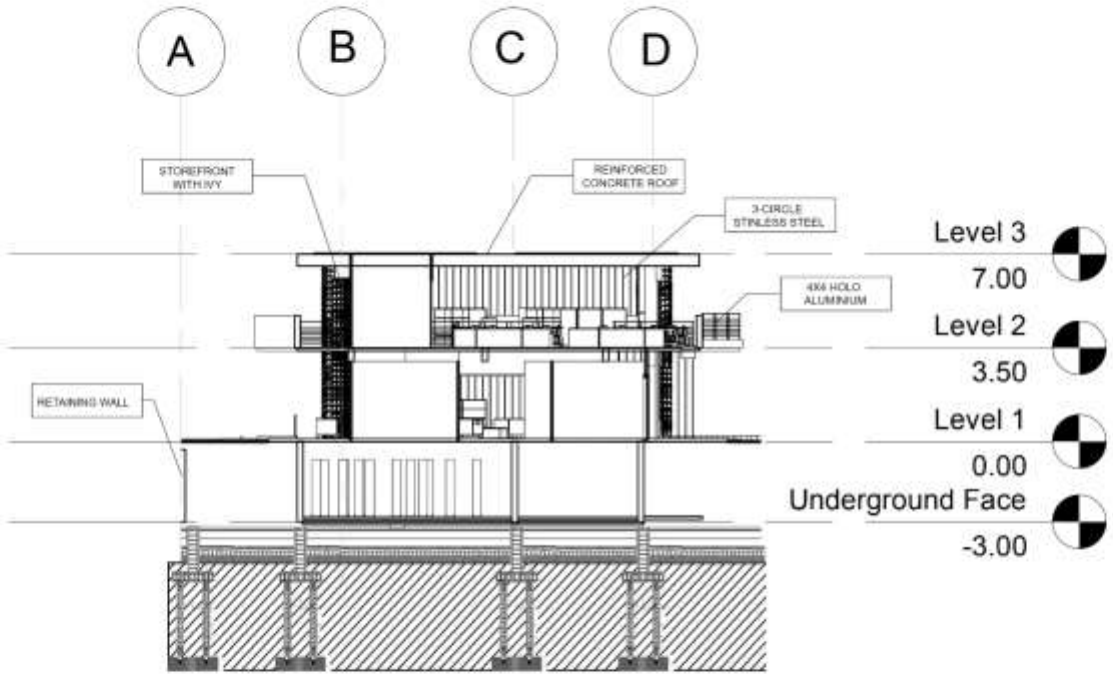
SECTION

BUILDING'S NAME
STUDENT RETAILS, BOOKSTORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE
56



BB' SECTION
STUDENT RETAILS, BOOKSTORE AND FOOD COURT
1 : 250

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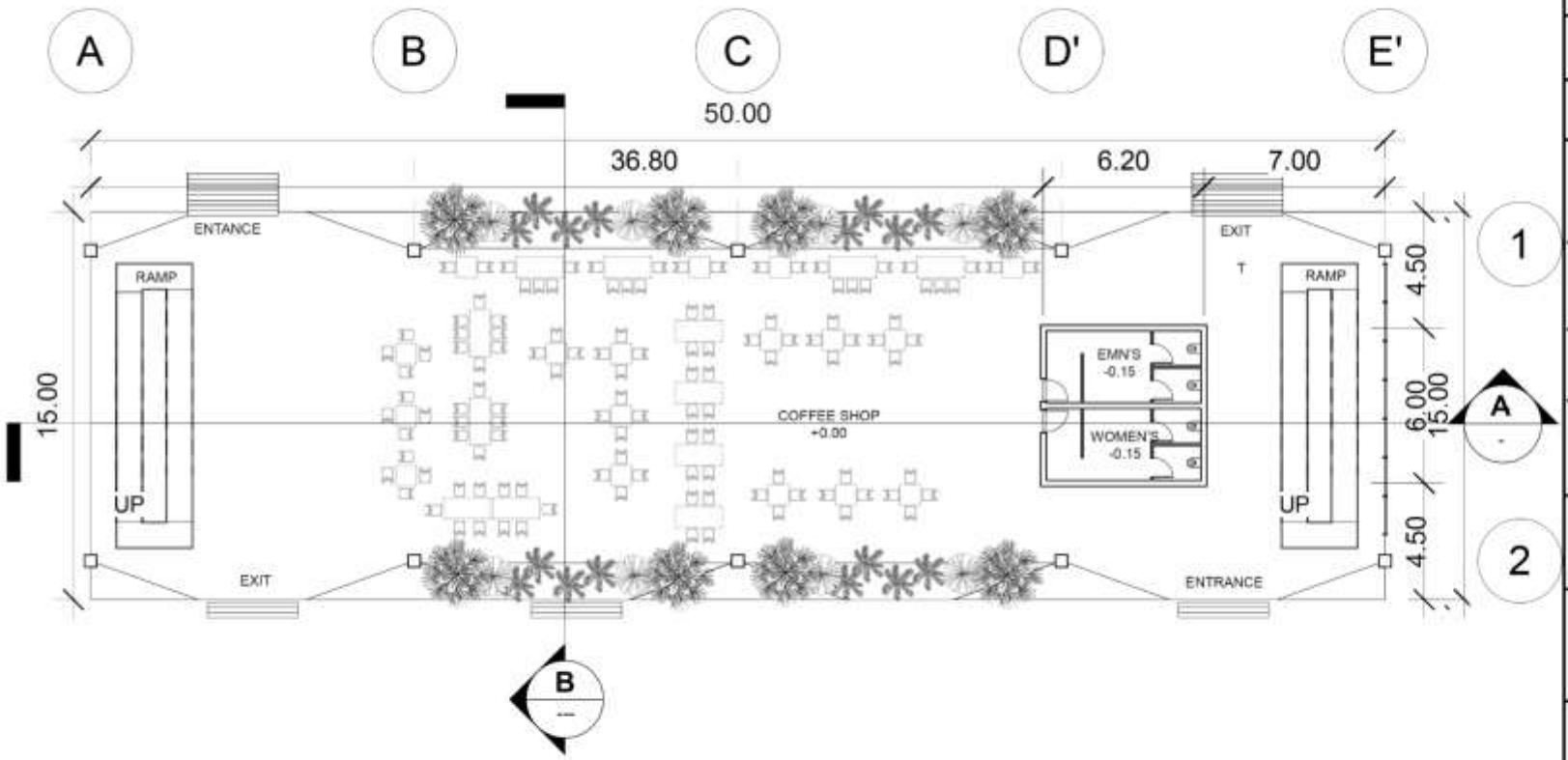
BUILDING'S NAME
STUDENT RETAILS, BOOKSTORE AND FOOD COURT

SCALE
1 : 250

DRAWING'S PAGE
57



FLOOR PLAN 1
COFFEE SHOP
AND HALL
1 : 250

ARSITEKTUR
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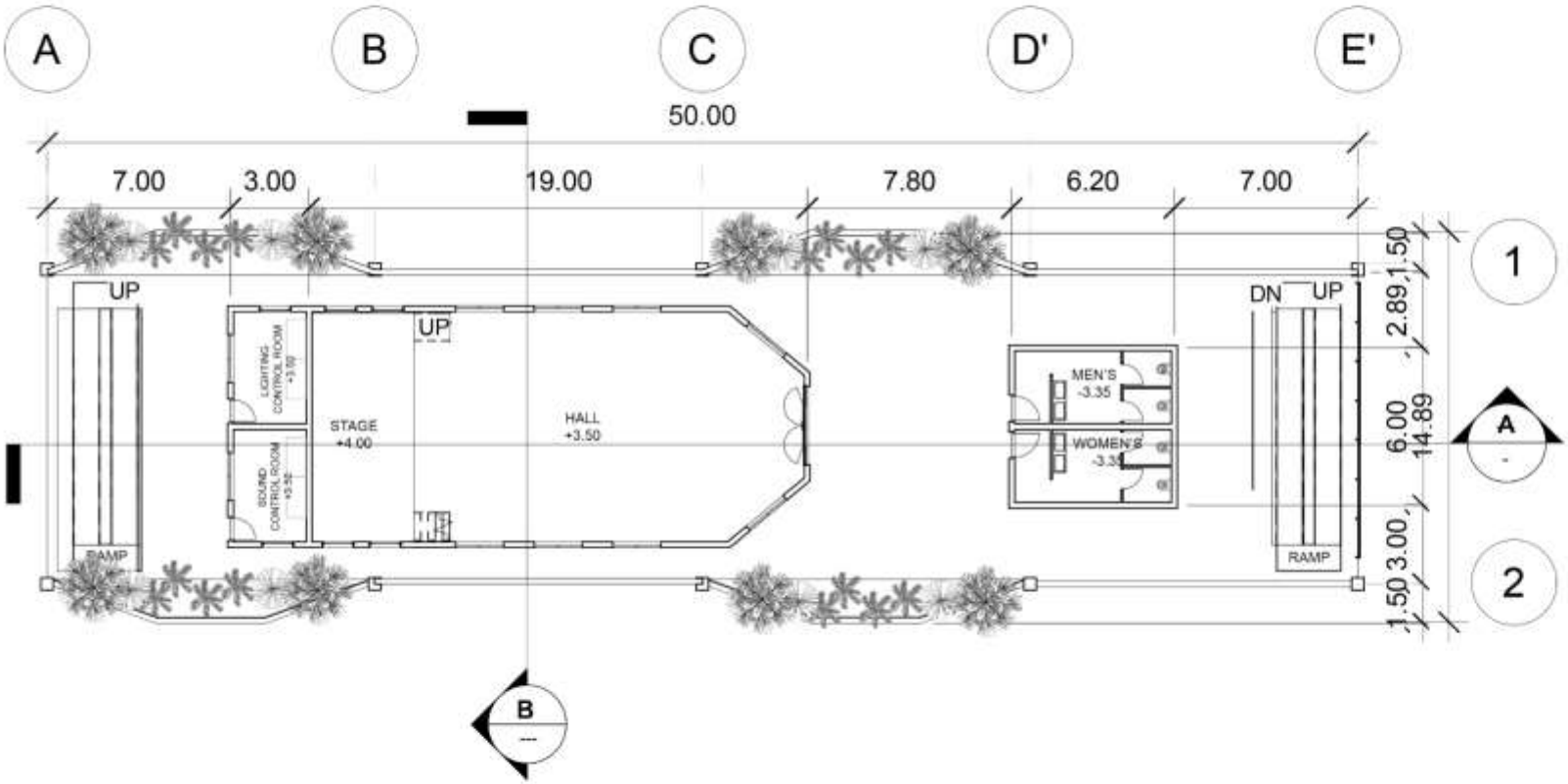
DRAWING'S TITLE
FLOOR PLAN 1

BUILDING'S NAME
COFFEE SHOP
AND HALL

SCALE
1 : 250

DRAWING'S PAGE
58



FLOOR PLAN 2
COFFEE SHOP
AND HALL
1 : 250

ARSITEKTUR
UIN MALANG

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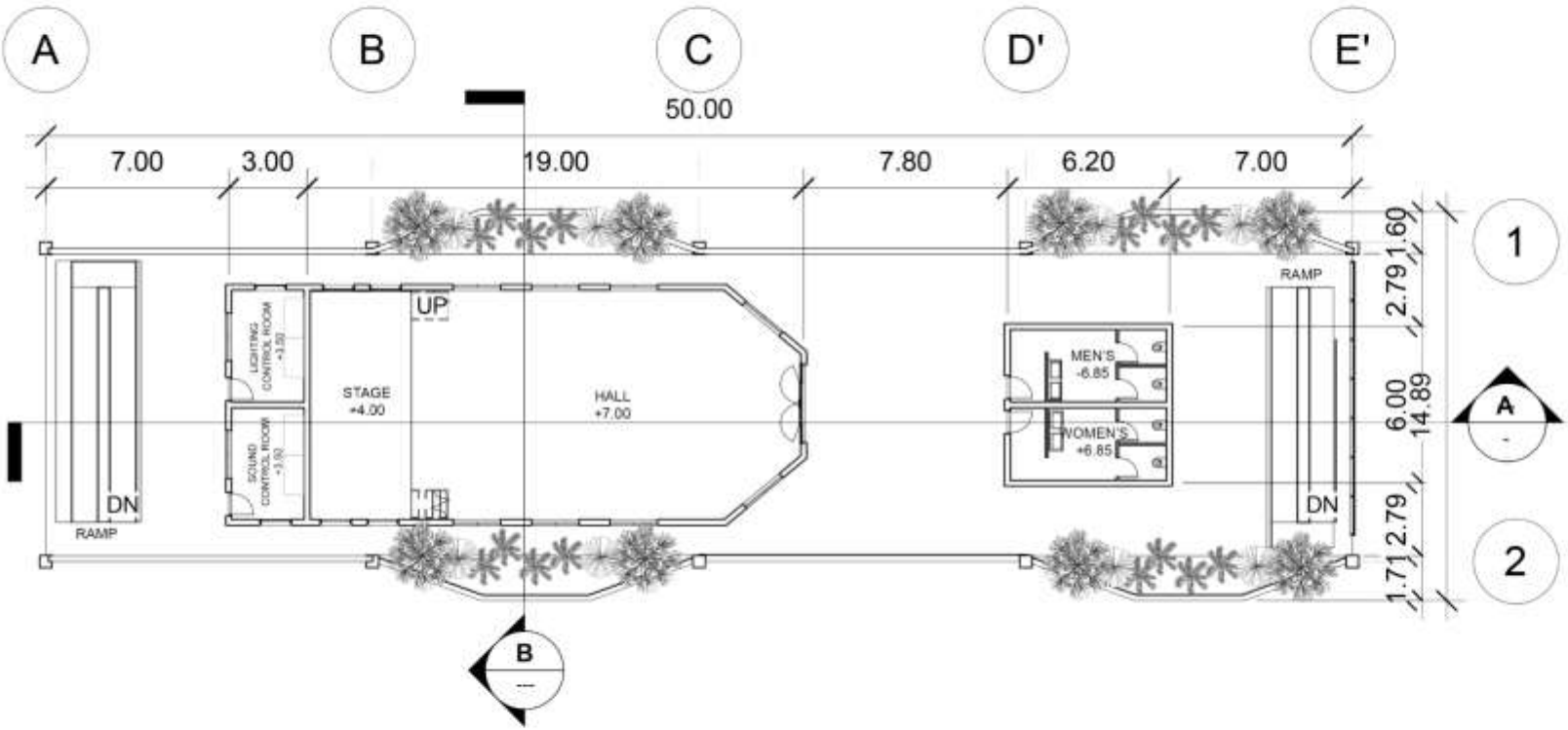
DRAWING'S TITLE
FLOOR PLAN 2

BUILDING'S NAME
COFFEE SHOP
AND HALL

SCALE
1 : 250

DRAWING'S PAGE

59



FLOOR PLAN 3

COFFEE SHOP
AND HALL

1 : 250

ARSITEKTUR
UIN MALANG

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Deisgning Business Center of UIN Walisongo Semarang with Green Architecture Approach

STUDENT'S NAME
Nahdiya Bella Pertiwi

STUDENT'S ID NUMBER
17660118

SUPERVISORS
Tarranita Kusumadewi, M.T
Dr. Nunik Junara, M.T

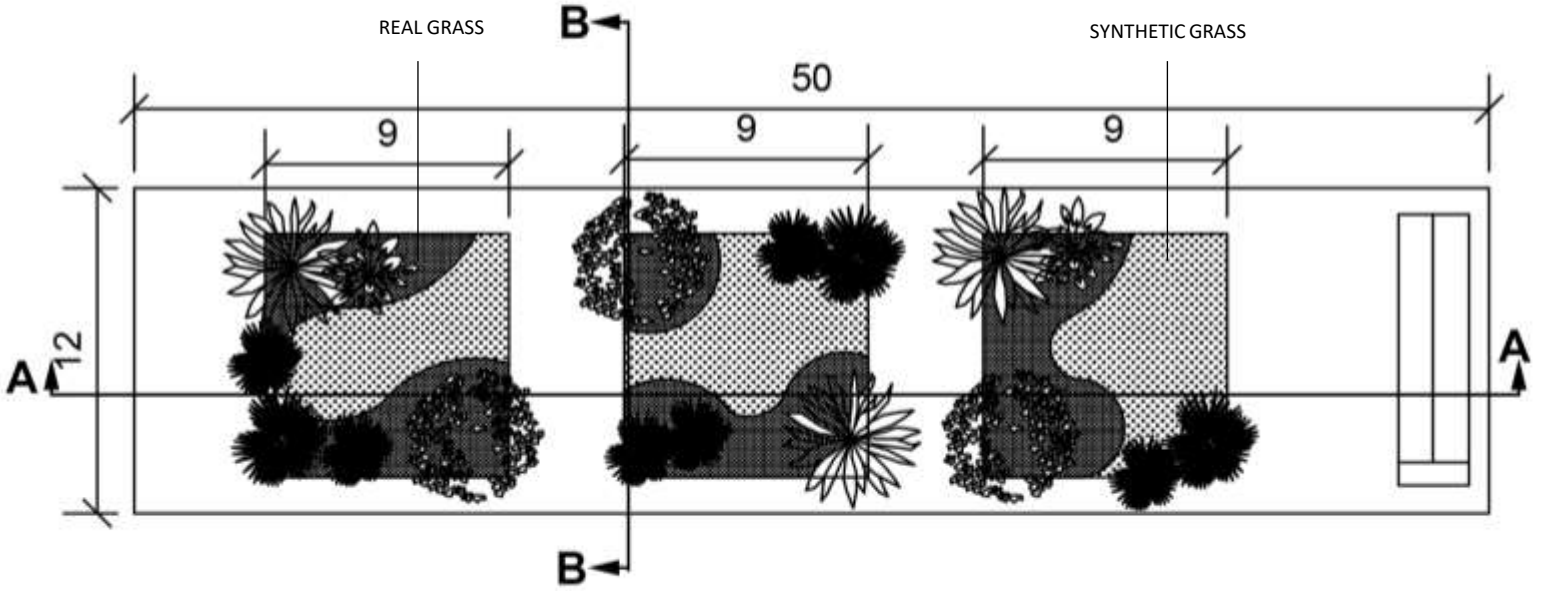
DRAWING'S TITLE
FLOOR PLAN 3

BUILDING'S NAME
COFFEE SHOP
AND HALL

SCALE
1 : 250

DRAWING'S PAGE

60



ROOFTOP PLAN

ROOFTOP ABOVE
COFFEE SHOP AND HALL

1 : 250

ARSITEKTUR
UIN MALANG

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM
Jl. Gajayana No. 60 Malang

FACULTY
Science and Technology

DEPARTMENT
Architecture Engineering

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DRAWING'S TITLE
ROOFTOP PLAN

BUILDING'S NAME
ROOFTOP ABOVE
COFFEE SHOP AND HALL

SCALE
1 : 250

DRAWING'S PAGE
61

NORTH ELEVATION
COFFEE SHOP
AND HALL
1 : 250

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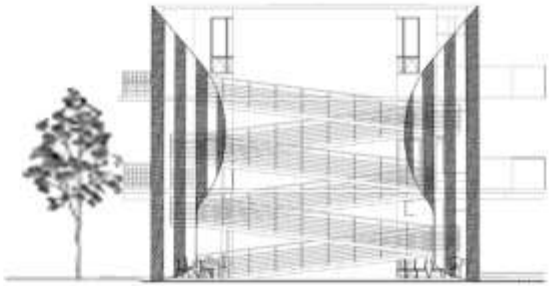
DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
COFFEE SHOP
AND HALL

SCALE
1 : 250

DRAWING'S PAGE
62



WEST ELEVATION
COFFEE SHOP
AND HALL
1 : 250

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
ELEVATION

BUILDING'S NAME
COFFEE SHOP
AND HALL

SCALE
1 : 250

DRAWING'S PAGE
63

AA' SECTION
COFFEE SHOP
AND HALL

1 : 250

ARSITEKTUR
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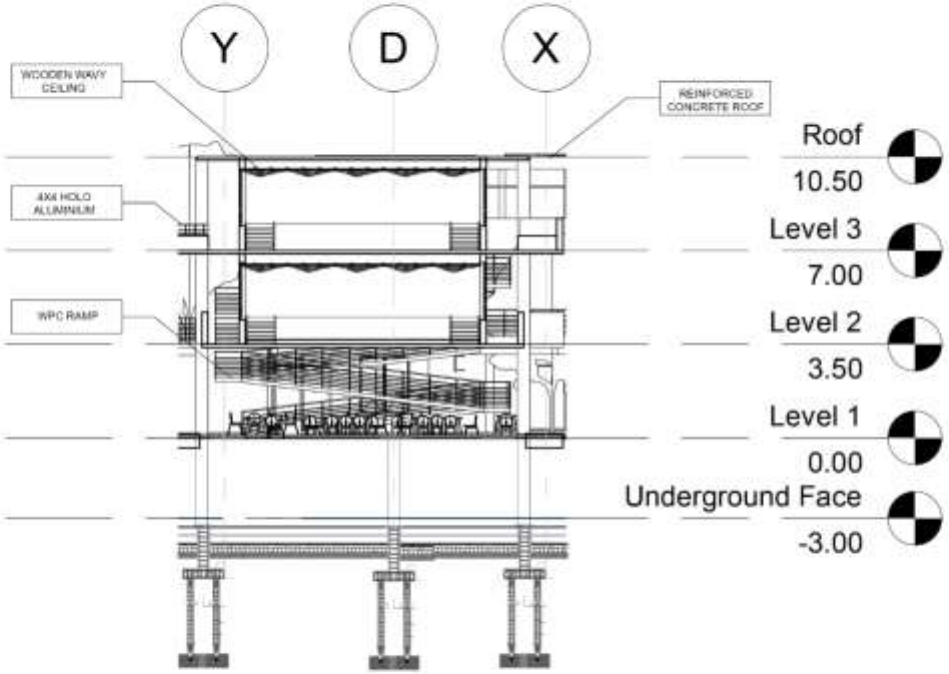
DRAWING'S TITLE
SECTION

BUILDING'S NAME
COFFEE SHOP
AND HALL

SCALE
1 : 250

DRAWING'S PAGE
64



BB' SECTION
COFFEE SHOP
AND HALL

1 : 250

ARSITEKTUR
UIN MALANG

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DRAWING'S TITLE
SECTION

BUILDING'S NAME
COFFEE SHOP
AND HALL

SCALE
1 : 250

DRAWING'S PAGE
65

LETTER OF PRINTING APROVAL

Andi Baso Mappaturi, M.T 19780630 200604 1 001	(Head Board of Examiner)
Aldrin Yusuf Firmansyah 19770818 200501 1 001	(Member 1 of Board of Examiner)
Tarranita Kusumadewi, M.T 19790913 200604 2 001	(Secretary (Supervisor/ Member II of Board of Examiner))
Dr. Nunik Junara, M.T 19710426 200501 2 005	(Member III of Board of Examiner (Co-Supervisor))

Hereby declare that:
Student's name: Nahdiya Bella Pertiwi
Student's ID Number : 17660118
Final Project Title: The Designing og Business Center of UIN Walisongo Semarang with Green Architecture Approach

Has conducted the editing process based on the correction notes from final project defense and is APPROVED to print this final project in the year od 2021. this statement is made for appropriate use.