

MuraKarya KotakAsa

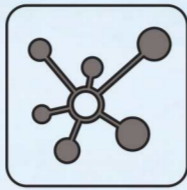
Dorm 'Oasis' Haven: Redefining Student Living through Sustainable Advancement

GREEN OASIS



Integrating eco-friendly systems, materials, water savings, and renewable energy for responsible, occupant-focused living spaces.

SEAMLESS CONNECTIVITY



Balancing safety, efficiency, student needs with private rooms, communal areas (workspaces, kitchens, lounges), and open green spaces for interactions.

SECURE HEAVEN



Promoting campus safety with illuminated pathways, stairs, security desks; fire preparedness allows swift movement.

ESSENCE SANCTUM

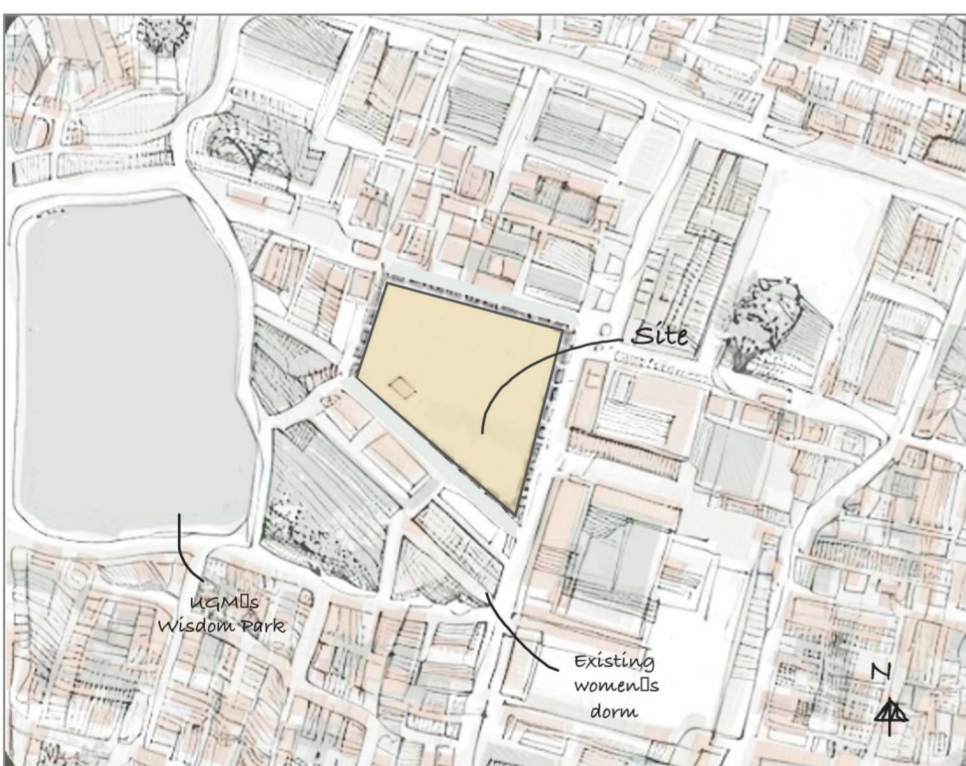


Elevating student well-being with improved indoor quality: acoustics, ventilation, and natural light emphasis.



"Stands as a resplendent oasis, captivating the senses while promoting a greener and socially responsible way of life."

UGM'S EPICENTER, DENSE ENVIRONS



Dorm 'Oasis' Haven: A term "signifying" the MuraKarya KotakAsa's purpose & its green atmosphere, positioned amidst UGM's high-density facilities in the heart of the campus.

LOCALLY ROOTED, GLOBALLY RESPECTED



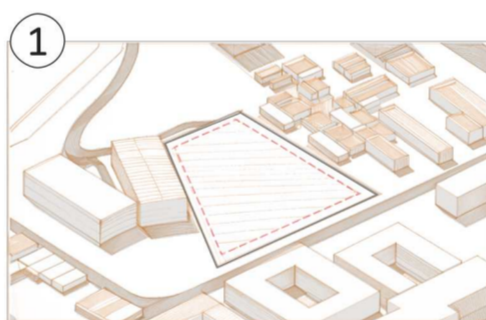
Embodying UGM's core values and embracing the essence through:

Simple Inclusive Green
Contextual & Efficient Design

A vibrant community where diverse students connect, excel academically, and celebrate culture, making UGM world-renowned.

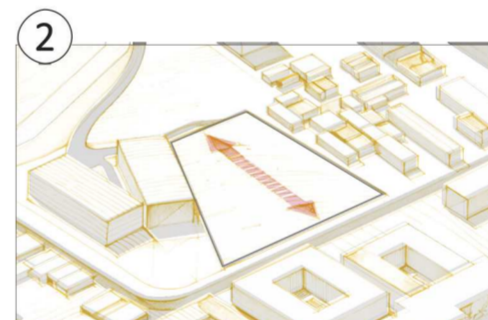
Oasis, a vibrant sanctuary, cultivates students' sustainable journeys with eco-conscious features and meticulous facilities. This oasis-themed dormitory fosters academic, social, and environmental development, harmonizes nature with contemporary amenities, and empowers students to lead an eco-conscious lifestyle to minimize environmental impact through innovative solutions that optimize building performances. As a result, happy residents thrive, radiating positive energy, & inspiring others, defining "MuraKarya KotakAsa".

CONSTRUCTING WITH EMPATHY & ECO-MINDED

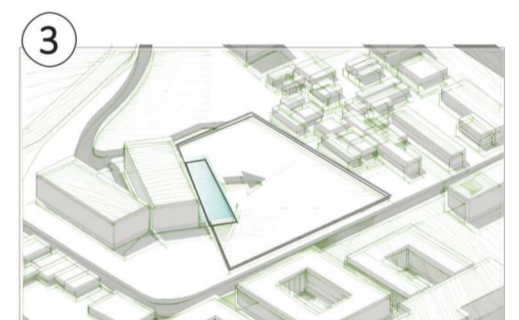


SEAMLESS APPROACH

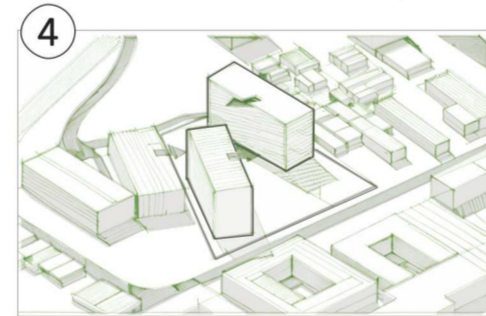
Directly across from the UNY campus, the site is easily accessed from the west. Avoids an intimidating impression on the environment while optimizing views, light, and air flows, maximizing south-north orientations.



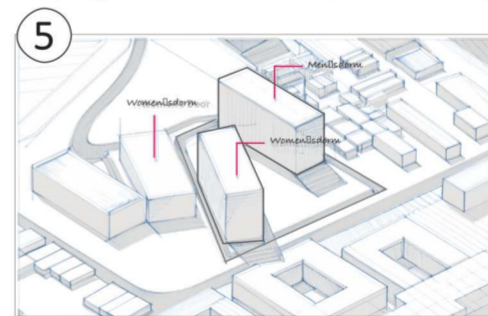
SUN-FOCUSED ALIGNMENT



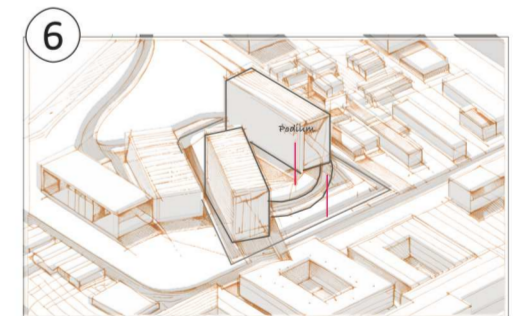
ENRICHING VIEWPOINT



UNLOCKING SITE POTENTIALS



HARMONIUS & SECLUDED SPACES



MINIMALIST CIRCULAR BOND

It ensures efficient room allocation along the site axis, resulting in a minimal footprint. To maintain users' privacy, Men's and Women's (new and existing) dormitories are located away, connected by a circular podium.



Indonesia
DfGE Design
Competition 2023

MuraKarya KotakAsa

DFGE-23-0071

1/6

Site Area : ± 10.073 m²
 Building Area : ± 15.317 m²
 Occupancy : 1-2 persons / room
 Total capacity : 432 (216 / tower) individuals
 Floor : 8+1 semi-basement

GREEN SPACES AND ACTIVITIES, ELEVATING NEW SCHOLARS WITH EMOTIONAL SUPPORT

This oasis-themed student dormitory prioritizes a 70% reduction in the building footprint, creating vast green open spaces that enhance the sense of connection among residents. By maximizing green open areas, the dormitory fosters a strong community atmosphere, creating an ideal environment to engage and thrive, especially for the new students that tend to need more adaptation and friends.

DYNAMIC, RHYTHMIC, GREEN

1. **BASIC FORM**
Basic building's design originates from a simple box/kotak shape.
2. **VARYING UNITS**
Single and double types units form a dynamic façade arrangement.
3. **RHYTHM**
Some are removed to let the air flows through corridors
4. **GREEN POCKET**
Replaced with green pockets for communal spaces
5. **GREEN WALL**
Harmoniously chaotic green wall adds foliage lush to the building

30%

BUILDING FOOTPRINT
[2.955 m²]



SITE & PODIUM PLAN

1. Plaza garden
2. Multifunctional open space
3. Women's dorm
4. Men's dorm
5. Communal space
- A. Drop off
- B. Atrium garden
- C. Lobby
- D. Seating area
- E. Minimarket
- F. Storage minimarket
- G. Fotocopy
- H. Coworking space
- I. Cafeteria
- J. Kitchen
- K. Musholla
- L. Toilet
- M. Firefighting shaft
- N. Storage

STUDENT SANCTUARY LAYOUT

The typical floorplan features communal areas, kitchen, and laundry facilities, prioritizing safety with fire shafts, lifts, and stairs to meet student needs and ensure protection.

BASEMENT LAYOUT

Car : 4 (special designation)
 Motorbike : 290



1. Pump room
 2. GWT & RWT
 3. Panel room
 4. Lift (accessible from upper ground level)
- Car parking lot can be replaced by motorbike (if necessary)



TYPICAL PLAN

- O. Lift lobby
- P. Lift
- Q. Communal area (green pocket)
- R. Kitchen
- S. Washing area
- T. Drying area
- U. ME Room
- V. Firefighting shaft

SIMPLE, OPEN, RESPONSIVE

The building façade's designed to be simple for efficiency and to blend with the existing UGM buildings. The east and west-facing walls are designed to be more massive, while the north and south sides are designed to be open, adjusted to sunlight and the surrounding landscape. The 1st podium is pilotis, promoting seamless connections with the environment, enhancing airflow and sunlight integration.



SOUTH ELEVATIONS



NORTH ELEVATIONS



WEST ELEVATIONS



EAST ELEVATIONS

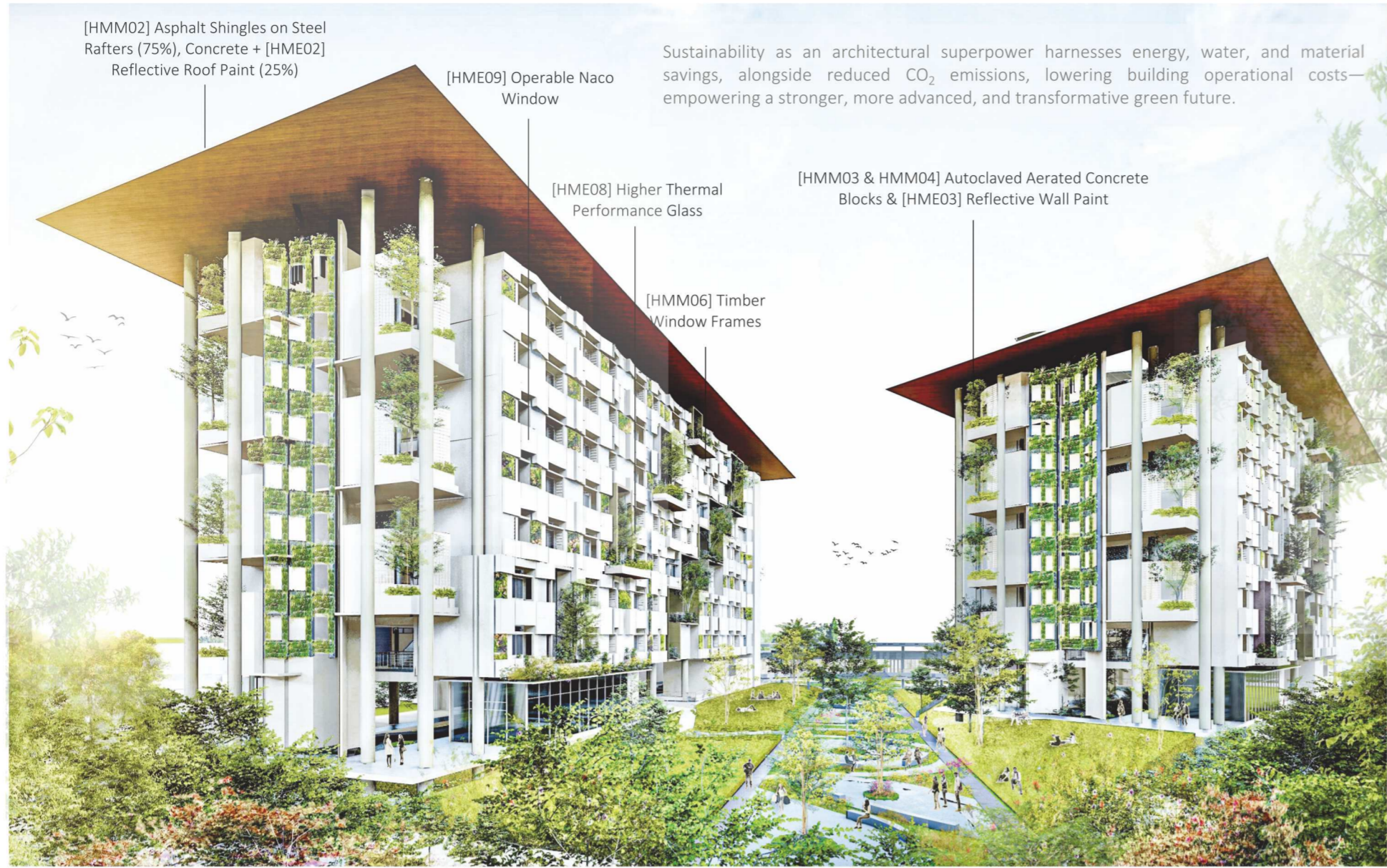


Indonesia
 DfGE Design
 Competition 2023

MuraKarya KotakAsa

DFGE-23-0071

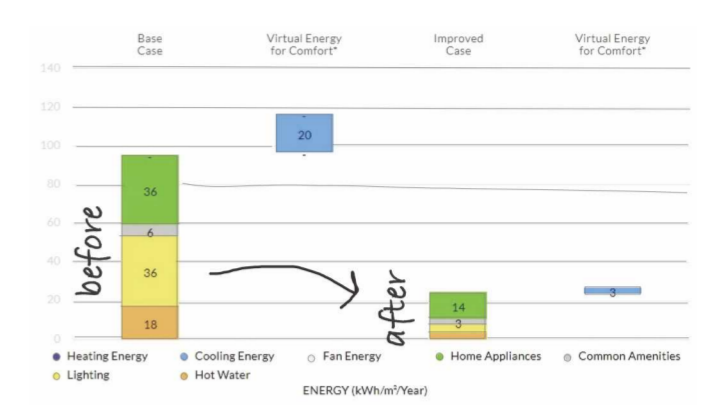
2/6



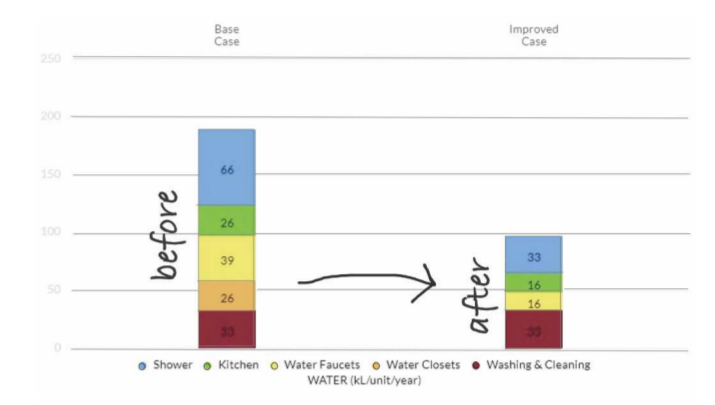
Sustainability as an architectural superpower harnesses energy, water, and material savings, alongside reduced CO₂ emissions, lowering building operational costs—empowering a stronger, more advanced, and transformative green future.

SUSTAINABILITY IS A "SUPERPOWER" IN ARCHITECTURE

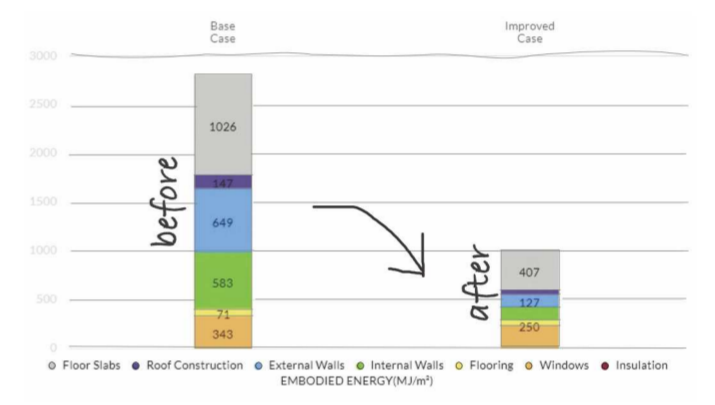
ENERGY SAVINGS
76,67 % Drastically lowers energy usage in appliances, lighting, fans, and cooling.



WATER SAVINGS
50,26 % Slower flow in showers, faucets, and more, leading to significant water savings.



MATERIAL SAVINGS
65,79 % Eco-friendly materials significantly cut material use in floors, roof, walls, and windows



Incremental Cost : Rp 36.157.000,-/unit
 Payback in Years : 8,03 years
 Carbon emissions : 138.82ton CO₂ per year
 CO₂ Savings : 409,72 ton CO₂ per year



The Green Pocket as a communal area that promotes social interactions such as discussions and relaxation through its inviting atmosphere.



The skylight features in the roof ensure abundant natural light and promote air circulation, ensuring proper ventilation in the corridors and bedroom units.

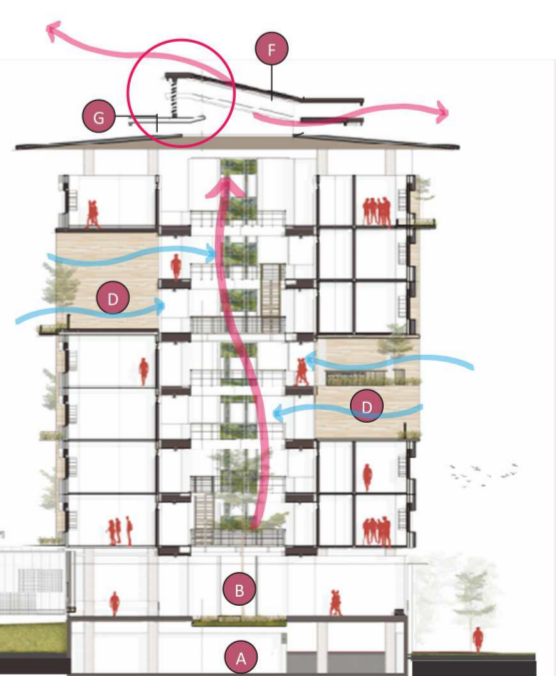


Designed with incorporates advanced airflow systems to optimize natural ventilation, creating a continuous and refreshing breeze throughout the space.



BREATHING ARCHITECTURE

Hot air move up and out of the building through the skylight roof's openings. Hot air that leaves will be replaced by fresh air through the buildings' green pockets.

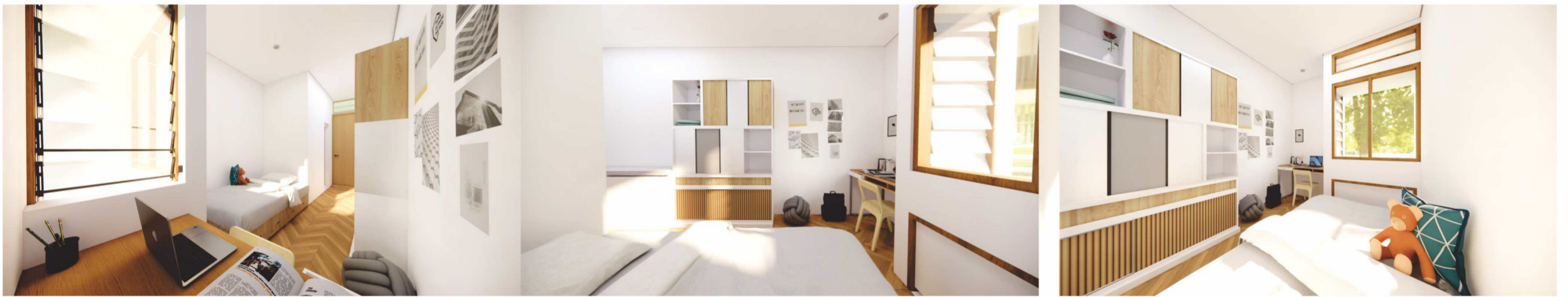
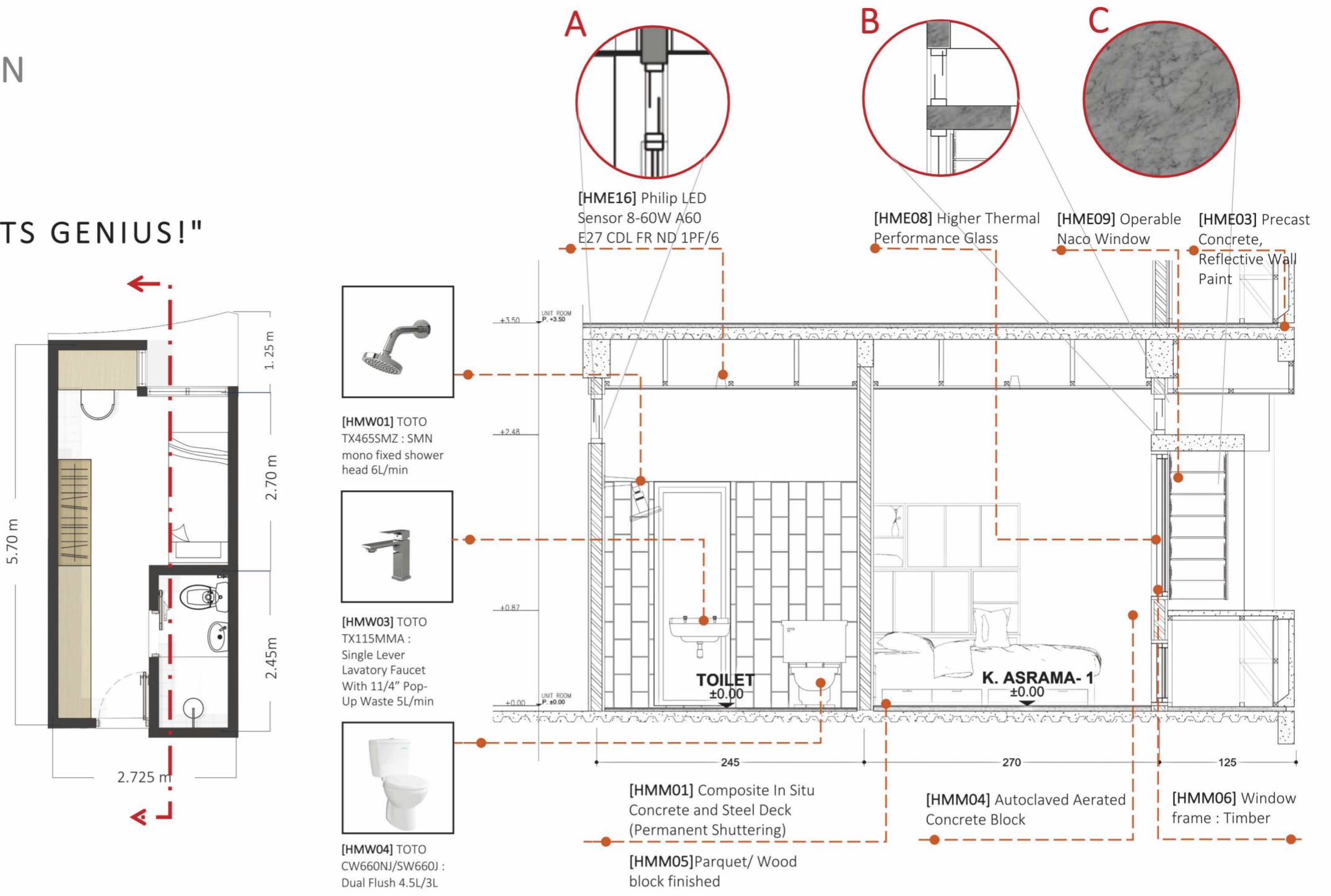


SINGLE UNIT PLAN

Gross area : ±16m²

"WHERE GREEN MEETS GENIUS!"

Oasis Haven Dormitory Room, where sustainability meets comfort, creating an ideal living environment for students. Step into a space carefully crafted to promote relaxation, productivity, and eco-conscious living. Soft, earthy tones and natural materials that exude a sense of tranquility. Large windows allow ample natural light to fill the room, reducing the need for artificial lighting during the day and purifying the air for a refreshing atmosphere. The flooring is made of reclaimed wood, meticulously refurbished to retain its original charm while reducing environmental impact. The furniture follows a minimalist design, featuring multifunctional pieces that maximize space efficiency.

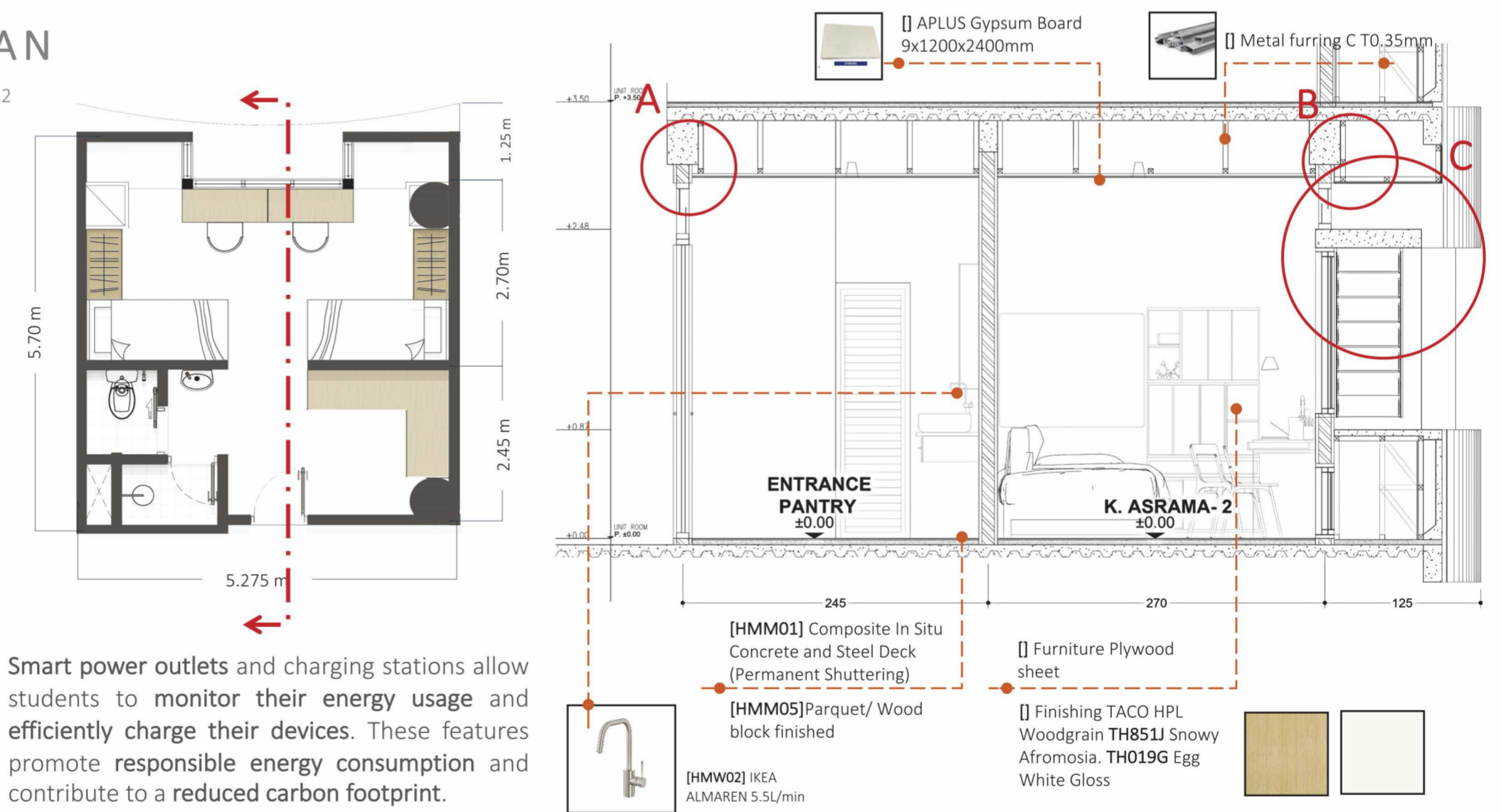


DOUBLE UNIT PLAN

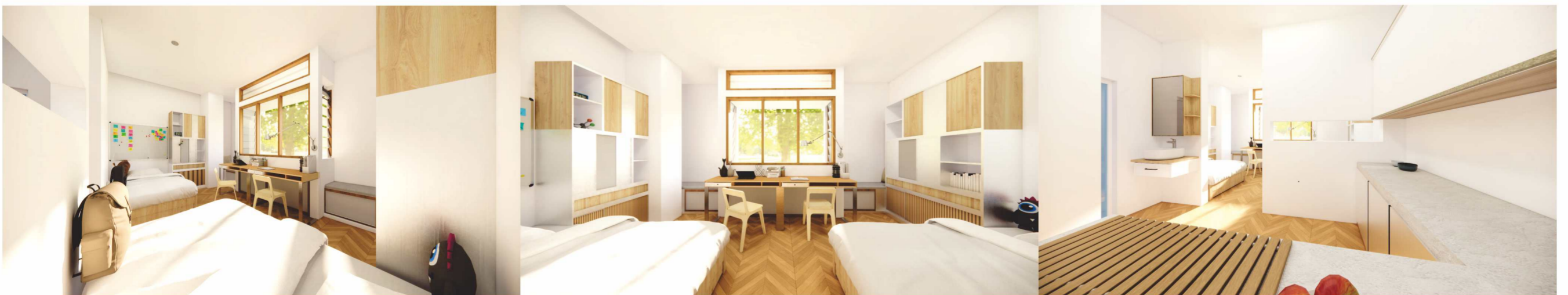
Gross area : ±28.7 m²

WHEN GREEN LIVING BLOSSOMS

The study corner is designed carefully crafted to optimize concentration and productivity. It features a spacious and ergonomic desk, designed for comfort during long study sessions. Ample natural light fills the study corner through large windows, enhancing the room's overall ambiance and reducing the need for artificial lighting. A window-side seating area with a cozy cushion provides students with a comfortable spot for reading or taking breaks between study sessions.



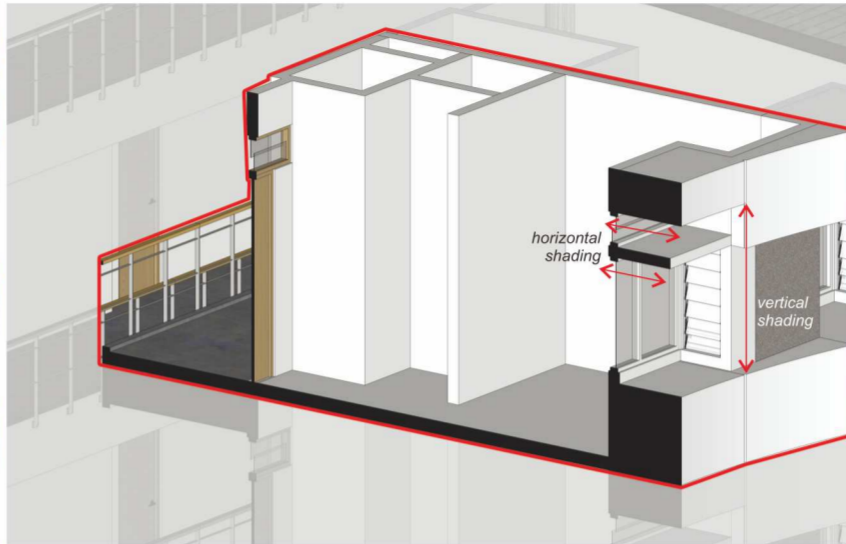
Smart power outlets and charging stations allow students to monitor their energy usage and efficiently charge their devices. These features promote responsible energy consumption and contribute to a reduced carbon footprint.



EDGE - Energy



	Window Area	Gross Wall Area	WWR	[HME01] TOTAL WWR 21.8%
North Elevation	521.76 m2	1799.17 m2	29%	
South Elevation	471.34 m2	1788.64 m2	26.5%	
East Elevation	99 m2	928.854 m2	10.6%	
West Elevation	99 m2	928.854 m2	10.6%	
Total	1191.1 m2	5445.5 m2		



[HME04] External Shading Device
 Every unit has its window offset 80 cm to the inside so they had their own fixed shading device. There are 3 type of opening in every module facade, a) Operable window facing north/south; b) Boven to accommodate natural lighting (pass on sunlight reflection from the overhang) and ventilation; c) Operable naco window to provide natural ventilation facing perpendicular to the facade to prevent solar heat gain. With the overhang, this building has AASF of 0.45

1. Communal Balcony

Communal area which functionally accommodates the activities of dormitory users such as interacting with fellow residents, studying together, or just studying. Space with double height maximizes ventilation to create a stacked effect on the building. This area is also a vertical link with the stairs for alternative circulation besides the elevator

2. Corridor Stairs

An alternative circulation besides the elevator to make it easier for occupants to move floors with not too many floors. These accommodations can increase the intensity of the interaction and liven up the activity

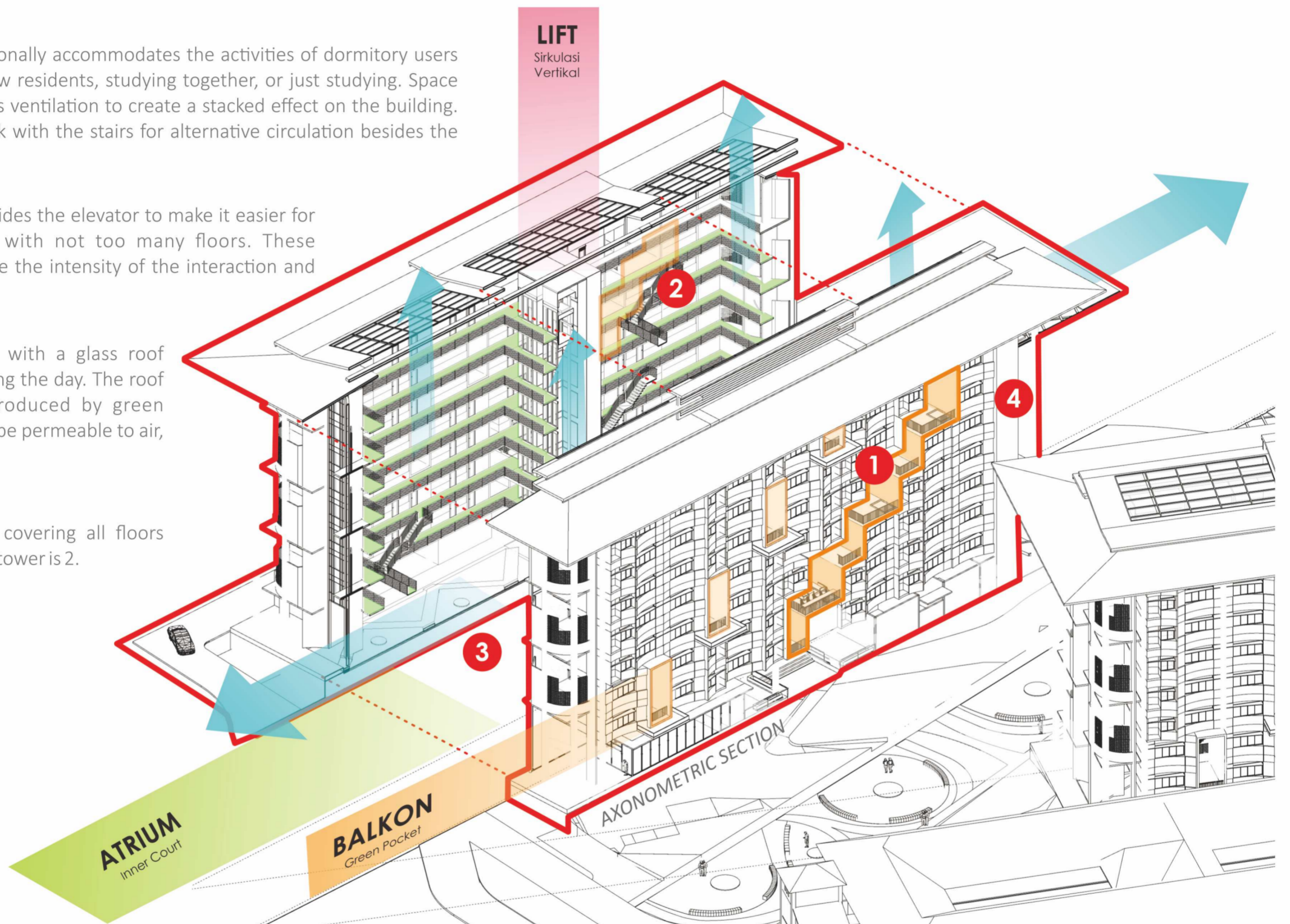
3. Atrium

The atrium of the building with a glass roof provides natural lighting during the day. The roof gaps and stacked effect produced by green pockets allow the building to be permeable to air, maximizing natural ventilation

4. Fire Protection Shaft

Emergency accommodation covering all floors with the number of shafts per tower is 2.

76.67%
Energy Savings



[HME20] Solar Photovoltaics

The dormitory building has wide roof with minimum slope to maximizing solar panel to get optimum solar light gain. It provides 60% of the energy needed with 58.5% roof area occupancy.

[HME09] Natural Ventilation

Every floor level has its own green pocket which can be used as communal area and primary functioning as building opening for the building to 'breathe'. Whilst the building has atrium to provide vertical air circulation, the pocket act as cross horizontal air circulation and maximizing the air circulation stacked effect

[HME16-18] Lighting Energy Savings

The building has skylight roof to provide corridor and common area natural lighting for daytime. The corridor has lighting control to automatically dim out if there is sufficient natural lighting from the skylight. Light bulb used for all rooms are eco-energy saving such as sylvania 8.5W (equivalent to 60 W incandescent lamp) for unit module, and phillip indoor cfl light bulbs (23 wWequivalent to 100 W for the common area.



Indonesia
DfGE Design
Competition 2023

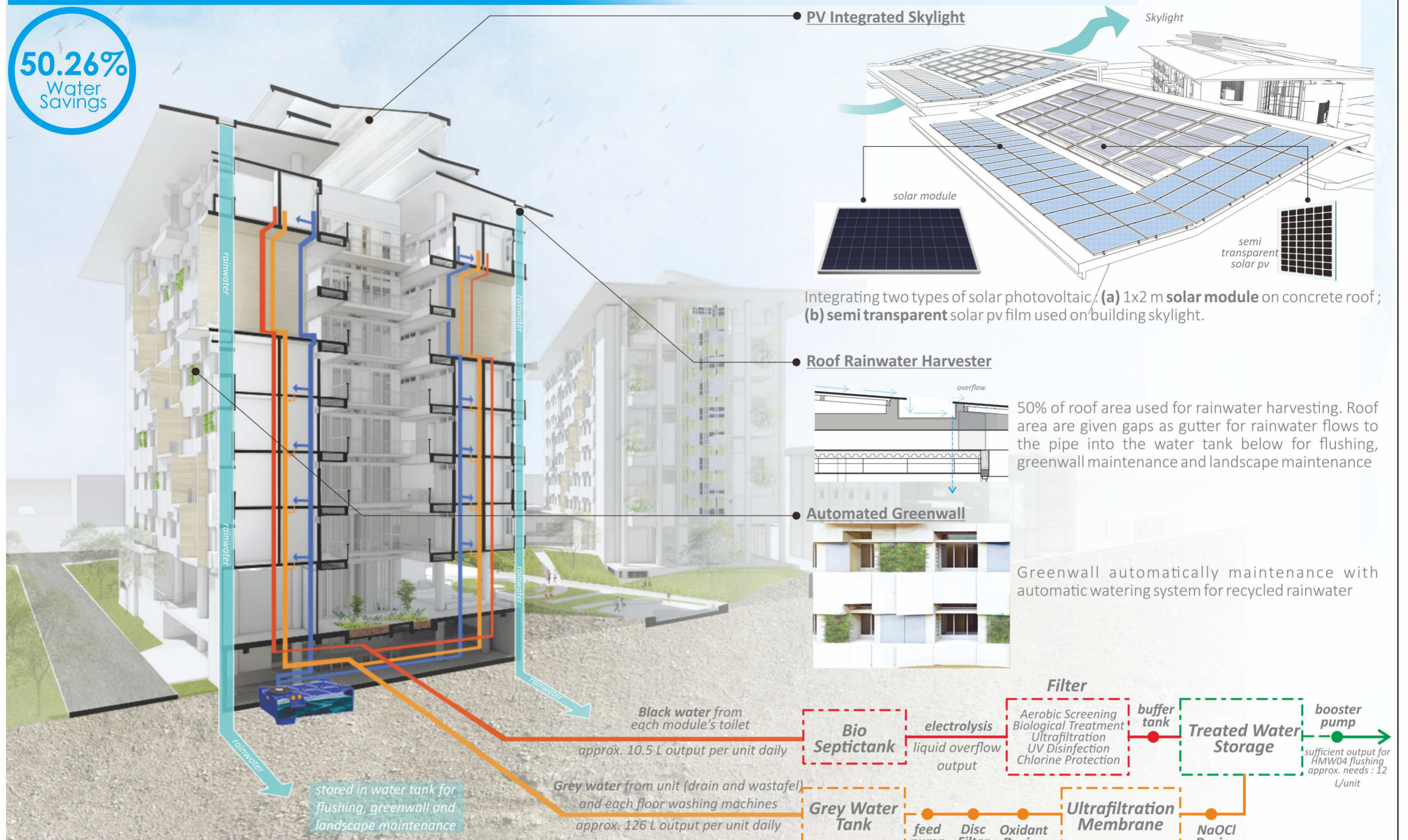
MuraKarya KotakAsa

DFGE-23-0071

5/6

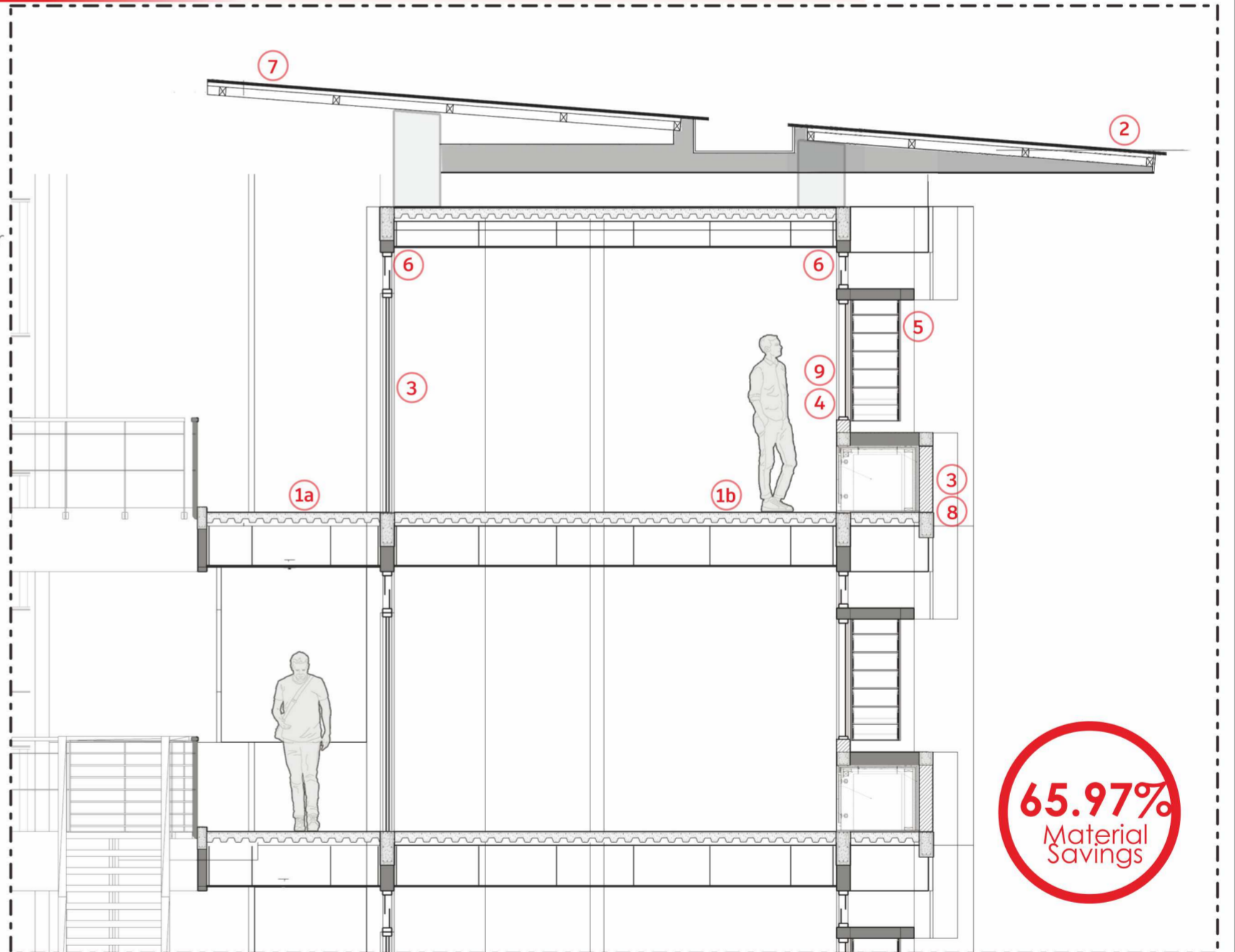
EDGE - Water

50.26%
Water Savings



EDGE - Material

- [HMM01] Composite In Situ Concrete and Steel Deck (Permanent Shuttering)**
Fasten building process using steel deck as base structure for concrete flooring. Steel deck increasing efficiency instead of using wooden formwork and strengthening the structure at a time
 a. **[HMM05] Finished Concrete Floor**
Inexpensive, durable, and low maintenance finishing. (15%)
 b. **[HMM05] Parquet Finishes**
Warm and friendly material for dorm. (85%)
- [HMM02] Asphalt Shingles on Steel Rafters**
Asphalt shingles only need minimum slope of 2:12. This is really optimum for solar panel installation that needs flatter surface for maximum sunlight gain.
- [HMM03 & HMM04] Autoclaved Aerated Concrete Blocks**
Lighter compared to common brick wall. AAC block also easier to assembly just using instant mortar means faster building process
- [HMM06] Timber Window Frames**
Timber used as window frame for its earthy texture, giving 'home' impression, and also functioning as a sound absorber.
- [HME09] Operable Naco Window**
Perpendicular facing to the facade ensure natural ventilation and avoid rain.
- [HME09] Boven**
Ensuring unit module cross ventilation. Exterior boven pass on sunlight reflection from the overhang to give ceiling natural lighting
- [HME02] Reflective roof paint**
Roof coating with albedo of 0.7 for the RC + skylight roof
- [HME03] Reflective wall paint**
Wall coating with albedo of 0.7
- [HME08] Higher Thermal Performance Glass**
Using higher thermal performance glass : Solarbon 60 with U-value of 0.25 W/m² and SHGC of 0.4. Higher thermal performance glass gave unit module sufficient natural lighting with minimum solar gain



EDGE - Carbon Offset



Carbon emissions payment to PLN → PLN Green Strategy Implementation → Ownership of REC transferred from PLN

To get a net zero energy building the strategy used is to pay the amount of the building's carbon emissions (103,82) to the relevant agency (PLN) which will later be used to develop renewable energy