International Undergraduate Program in Architecture

# Design of an Inclusive Rental Student Apartment With an Approach of Islamic Values Near Universitas Islam Indonesia, Candi Winangun Sleman, Yogyakarta

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# Design of an Inclusive Rental Student Apartment With an Approach of Islamic Values Near Universitas Islam Indonesia, Candi Winangun Sleman, Yogyakarta

# Perancangan Apartemen Mahasiswa Sewa Inklusif Dengan Pendekatan Nilai-Nilai Islam di Dekat Universitas Islam Indonesia, Candi Winangun Sleman, Yogyakarta

# APPROVAL SHEET

Final Architecture Design Studio entitled: Design of an Inclusive Rental Student Apartment With an Approach of Islamic Values Near Universitas Islam Indonesia, Candi Winangun Sleman, Yogyakarta

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# Abstract

Students can utilize education as a powerful tool to influence the world. This makes students the foundation of any country, and how they are educated will determine how far the country advances. Additionally, students are molded by their living circumstances in addition to their educational environments. Students spend a lot of time in different types of student housing, which can have an impact on their physical and emotional health. The majority of student housing is purpose-built as a place to live with little assistance. Nevertheless, it is vital that these areas encourage social contact and are inclusive to all students, regardless of gender, size, age or level of disability. In response to the neighbouring university, the student apartment reflect the Islamic values of Universitas Islam Indonesia while simultaneously meeting the need for inclusive accommodation. Traditional Islamic teachings and customs include principles that can be used directly in the domestic sphere. The following are three key principles that arise from these guidelines: privacy, modesty and hospitality. The arrangement of inclusive areas and domestic conduct within each Islamic home, as well as the design of Islamic homes, are all significantly influenced by these three principles when taken together.

*Keywords*: inclusive, rental, student, apartment, Islamic

Mahasiswa dapat memanfaatkan pendidikan sebagai alat yang ampuh untuk mempengaruhi dunia. Hal ini menjadikan mahasiswa sebagai fondasi negara mana pun, dan bagaimana mereka dididik akan menentukan seberapa jauh negara tersebut maju. Selain itu, mahasiswa dibentuk oleh keadaan hidup mereka selain lingkungan pendidikan mereka. Mahasiswa menghabiskan banyak waktu di berbagai jenis hunian mahasiswa, yang dapat berdampak pada kesehatan fisik dan emosional mereka. Mayoritas hunian mahasiswa dibangun khusus sebagai tempat tinggal dengan sedikit bantuan. Namun demikian, sangat penting bahwa area-area ini mendorong kontak sosial dan inklusif bagi semua mahasiswa, tanpa memandang jenis kelamin, ukuran, usia atau tingkat kecacatan. Menanggapi universitas terdekat, apartemen mahasiswa mencerminkan nilai-nilai Islam Universitas Islam Indonesia sekaligus memenuhi kebutuhan akomodasi yang inklusif. Ajaran dan adat istiadat Islam tradisional mencakup prinsip-prinsip yang dapat digunakan secara langsung di ranah domestik. Berikut ini adalah tiga prinsip utama yang muncul dari pedoman ini: privasi, kerendahan hati, dan keramahan. Penataan area inklusif dan perilaku domestik di dalam setiap rumah Islam, serta desain rumah Islam, semuanya secara signifikan dipengaruhi oleh ketiga prinsip ini ketika disatukan.

*Kata kunci*: inklusif, sewa, mahasiswa, apartemen, Islami

# Statement of Authenticity

I declare that all parts of this work are my own work except the work mentioned in the reference and there is no assistance from other parties in whole or in part in the process of making it. I also declare that there is no conflict of intellectual property rights over this work and submit it to the Department of Architecture, Universitas Islam Indonesia to be used for educational and publication purposes.

Yogyakarta | August 3, 2022

Abhista Abrar Irawan

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# chapter

# 1

# Students’ living environments

Students can utilize education as a powerful tool to influence the world. This makes students the foundation of any country, and how they are educated will determine how far the country advances.

Additionally, students are molded by their living circumstances in addition to their educational environments. Students spend a lot of time in different types of student housing, which can have an impact on their physical and emotional health.

The majority of student housing is purpose-built as a place to live with little assistance. Nevertheless, it is vital that these areas encourage social contact and are inclusive to all students, regardless of gender, size, age or level of disability.

# Clients

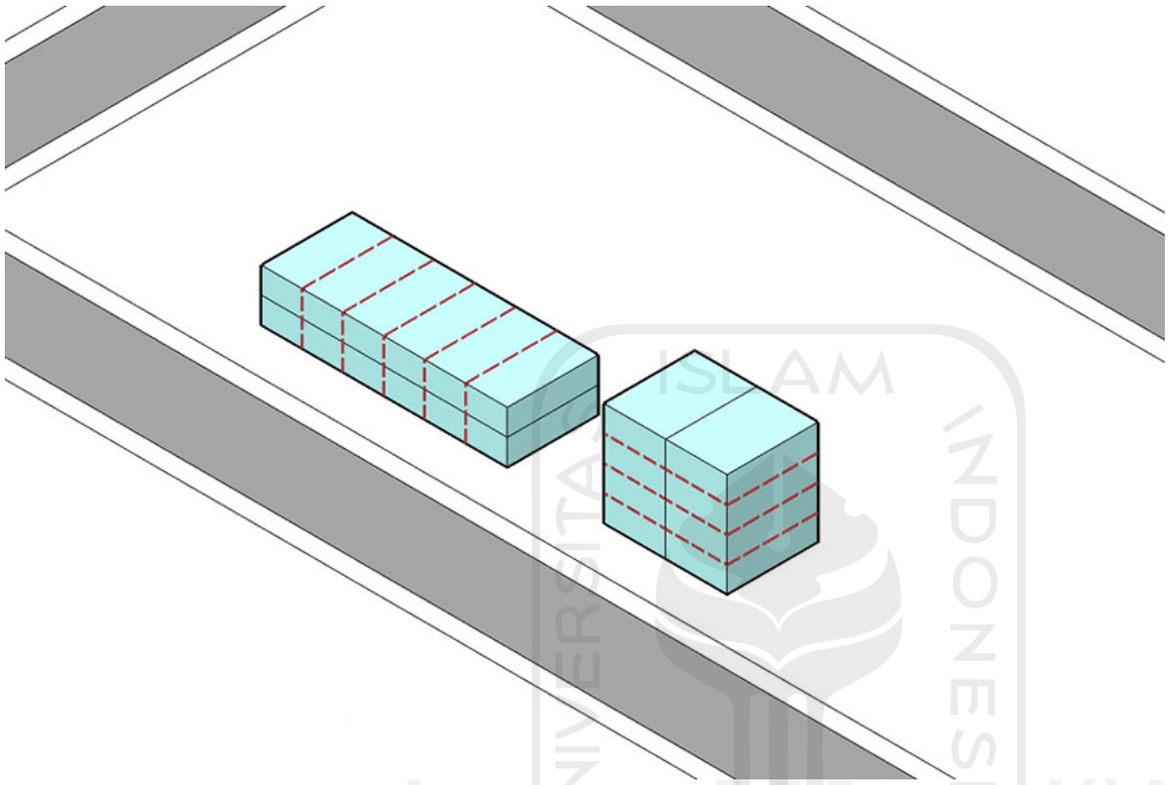
The clients are those who own vacant land and want to turn it into a profitable business around Universitas Islam Indonesia (UII) by developing student apartments on it.

**student apartment**

*noun*
a room or set of rooms fitted especially with housekeeping facilities and usually leased as a dwelling

https://www.merriam-webster.com/dictionary/apartment

A multi-story building that is predominantly residential and comprises separate living units (apartments), on all or most of the levels, is referred to as a “apartment building.” It is usual for apartment buildings to have commercial purposes on the ground and/or lower levels in specific places, such as city centers and metros.



Apartment buildings are distinguished by horizontally divided levels for residential units. Apartment buildings can be distinguished from multi-story houses where the units are divided by vertical walls because of this.

Apartments can be arranged on more than one floor even though they are divided horizontally.

Parking spaces and outdoor areas can be shared by apartments. On-building car parking is often found in basements or underneath buildings, as well as behind other uses on the ground floor or on levels above the ground floor.

Student residences are often off-campus and not affiliated with any university. As these flats are rented by the bed, not the unit, students share units, with each individual having their own bedroom but sharing common spaces.

*Rental Housing Types and Typical Characteristics*

| feature | Dormitories | Student Apartments | Apartments | Boarding Houses |
|---|---|---|---|---|
| off-campus | | ✓ | ✓ | ✓ |
| gendered | ✓ | ✓ | | |
| rented by the bed | ✓ | ✓ | | |
| include utilities | ✓ | | | ✓ |
| include meals | ✓ | | | ✓ |
| private bathroom | | optional | ✓ | optional |
| private kitchen | | optional | ✓ | optional |
| furnished | ✓ | ✓ | | ✓ |

# Business Model

Population growth, urbanization, and a growing student population all impact the need for adequate housing, albeit only briefly during the study period.

**Tabel** 11 **Migran Risen menurut Kabupaten/Kota dan Alasan Utama Pindah dari Tempat Tinggal 5 Tahun yang Lalu**

***Table*** ***Recent Migrant by Regency/Municipality and Main Reasons to Move from Residence 5 Years Ago***

| Kabupaten/Kota *Regency/Municipality* | Alasan Utama Pindah/*Main Reasons to Move* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pekerjaan *Work* | Mencari Pekerjaan *Looking for Work* | Pendidikan *Education* | Perubahan Status Perkawinan *Change of Marital Status* | Ikut Suami/Istri/ Orangtua/Anak *Following Husband/Wife/ Parent/Child* | Ikut Saudara Kandung/ Famili Lain *Following Sibling/Other Relatives* | Perumahan *Housing* | Keamanan *Security* | Relokasi/Bencana/ Kerusakan Lingkungan *Relocation/ Disaster/ Enviromental Damage* | Lainnya *Others* | Jumlah *Total* |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| Kabupaten/*Regency* | | | | | | | | | | | |
| Kulon Progo | 3 302 | 270 | 2 501 | 246 | 11 217 | 495 | 505 | - | - | 2 764 | 21 300 |
| Bantul | 12 040 | 937 | 15 321 | 1 504 | 32 740 | 636 | 8 267 | - | - | 2 598 | 74 043 |
| Gunung Kidul | 1 838 | 1 160 | 333 | 527 | 10 788 | 1 103 | 714 | - | - | 1 094 | 17 557 |
| Sleman | 16 377 | 1 553 | 45 191 | 3 925 | 36 034 | 1 094 | 5 291 | - | 1 032 | 2 007 | 112 504 |
| Kota/*Municipality* | | | | | | | | | | | |
| Yogyakarta | 9 841 | 1 125 | 35 436 | 1 266 | 11 485 | 56 | 541 | 167 | - | 910 | 60 827 |
| Jumlah/*Total* | 43 398 | 5 045 | 98 782 | 7 468 | 102 264 | 3 384 | 15 318 | 167 | 1 032 | 9 373 | 286 231 |

19

With 45,191 migrants coming to Sleman for educational purposes, the huge demand for such housing makes it a worthy investment.

In accordance with this, the business model is short-term rental property, i.e., a student apartment that charges by the bed and rents out each bedroom while requiring students to sign a lease.

Given its proximity to Universitas Islam Indonesia, which is a little far from the urban area, the price is cheaper than land close to the university neighborhood in the city center.

Therefore, while the economic front is being addressed, reliance on architects and designers has increased to achieve a high-standard spatial design for student apartments.

*What role can architects play in achieving improved living quality in student apartments?*

# inclusive student apartment

Inclusive design entails creating designs that are accessible to a large number of individuals, regardless of gender, size, age, or disability. This is not just a noble notion; it is a necessary requirement for effective design and execution.

Design can minimize end-user stress and offer a setting where everyone feels comfortable and welcome by building inclusive spaces and implementing elements that meet the requirements and comfort of individuals from all walks of life.

Inclusive design is essential for social equality, but it is also smart business. An inclusive approach to architecture can assist individuals in seizing significant opportunities for business growth through designs that are accessible to all market groups.

When designing an inclusive student apartment, architects must first understand where the barriers are and who they influence.

*Is there anything that prevents certain groups of students from feeling comfortable? Is it possible for them to live in a certain accommodation and be welcomed?*

# Barriers to Entry

The major objective of an inclusive student apartment is to make the building as welcoming as possible with no disabling barriers that would hinder some students from residing there.

Students should be able to participate in daily activities in an equitable and independent way by removing barriers that exist in the accommodation.

Barriers to entry in student apartment involves three main exclusions:

- gender
- cost and quality
- accessibility

Together, these three restrictions prevent certain groups of students from living in certain accommodations; for example, female students are not allowed to live in student dormitories reserved exclusively for males.

# Gender exclusion

In conventional off-campus student housing near colleges and universities, only students of the same gender are housed together.

Concern for student safety and security as well as maintaining visual privacy between students of different genders are cited as the main justifications for these gendered spaces.

However, the use of gendered spaces requires appropriate strategies if student housing is to be inclusive while upholding student safety and security.

Gender inclusive student apartment

Regardless of their gender identification, students have the choice to live in rooms or flats in gender-inclusive student apartment.

Gender-inclusive student apartment creates opportunities for interaction, conversation, and areas that are not dominated by one gender.

# Cost and quality exclusion

The process by which students are excluded from housing due to a discrepancy between the desired quality of space and the expenses associated with it is known as cost and quality exclusion.

In some cases, rising costs and demand for lodging may have resulted in a compromise in space quality:

- lack of facilities
- lack of properly functioning equipment
- structural deficiencies
- inadequate plumbing and air conditioning

Maintaining a balance between quality and quantity becomes more challenging as maintaining the quality of space is sometimes dictated by economic concerns.

In such circumstances, architects and designers must prioritize economical design to build cost-effective student housing.

Finding ways to create affordable and aesthetically acceptable designs is the difficulty.

# Accessibility exclusion

Currently, most student apartments are built with significant barriers for students with disabilities. Sometimes there are steps at every entrance, as well as corridors and openings that are too small for wheelchairs to pass through.

This lack of accessibility implies that students with mobility disabilities are at a disadvantage in their social life and in the housing market because most students in the country live in such places.

The goal is to promote a barrier-free environment as a result.

For students with disabilities, access to barrier-free surroundings is a crucial part of social inclusion. In order to build a fully inclusive student apartment, it improves their involvement, mobility, and engagement.

**based on the neighbouring university**

Architecture should be relevant to the time and place in which it is developed, but also standing out. The design responds to its surroundings by preserving what is already present.

It was critical that the student residences be designed in conjunction with the nearby university, Universitas Islam Indonesia.

`UII's vision`

The establishment of Universitas Islam Indonesia as Rahmatan Lil 'Alamin, an internationally renowned institution dedicated to Islamic quality and ideals in education, research, community service, and da'wah.

*In response to the neighbouring university, how can a student apartment reflect the Islamic values of Universitas Islam Indonesia while simultaneously meeting the need for inclusive accommodation?*

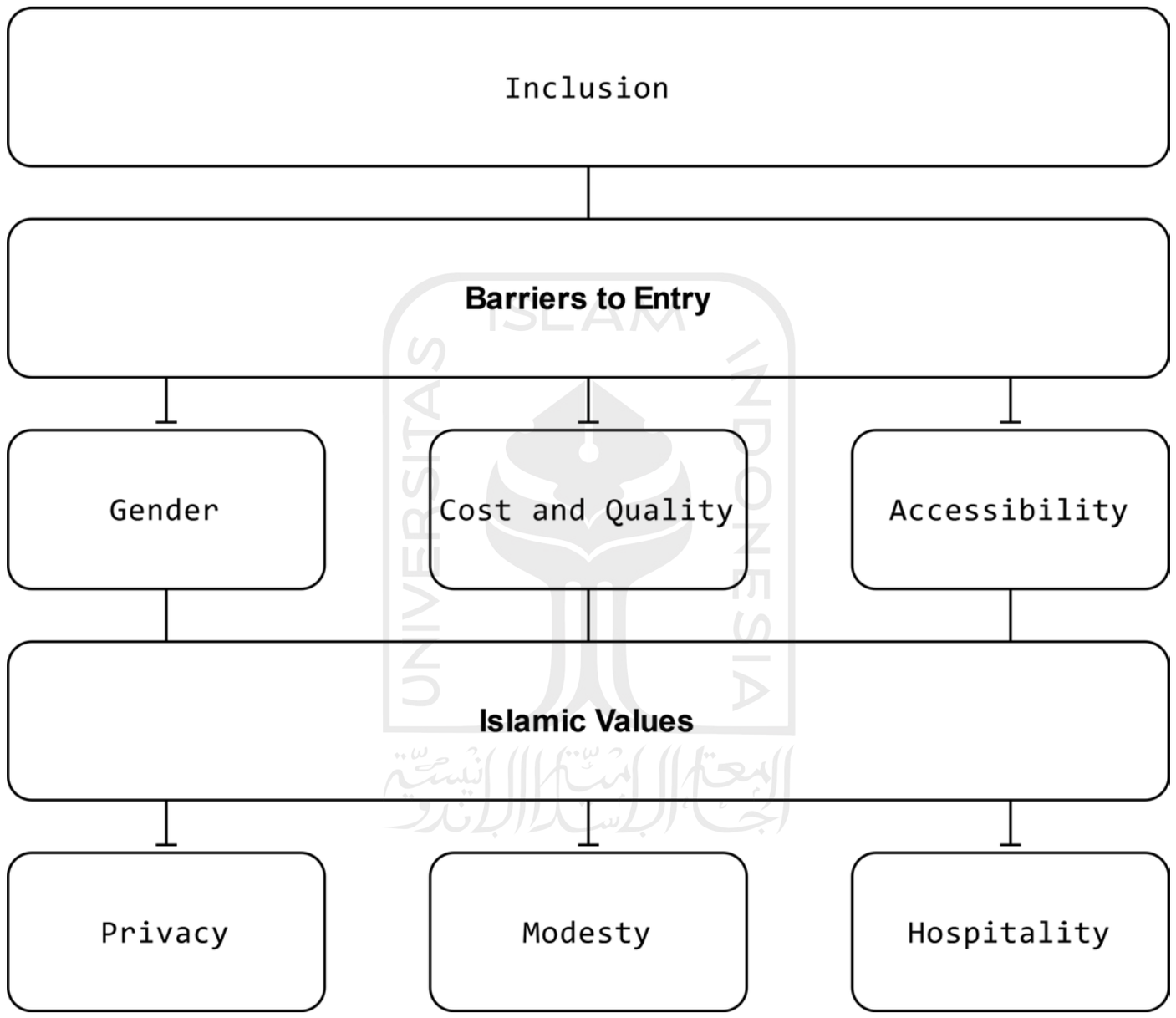
# Islamic values in architecture

Traditional Islamic teachings and customs include principles that can be used directly in the domestic sphere.

The following are three key principles that arise from these guidelines (Othman et al., 2014; Omer, 2010; Mortada, 2011, as cited in Othman et al., 2014):

- privacy, a secure and private space for personal and family sanctuary;
- modesty, a house with space for religious rituals and activities, further defined by humility in design through inexpensive and sustainable design;
- hospitality, a house with the potential to extend hospitality to neighbors and strengthen ties with the community.

The arrangement of inclusive areas and domestic conduct within each Islamic home, as well as the design of Islamic homes, are all significantly influenced by these three principles when taken together.

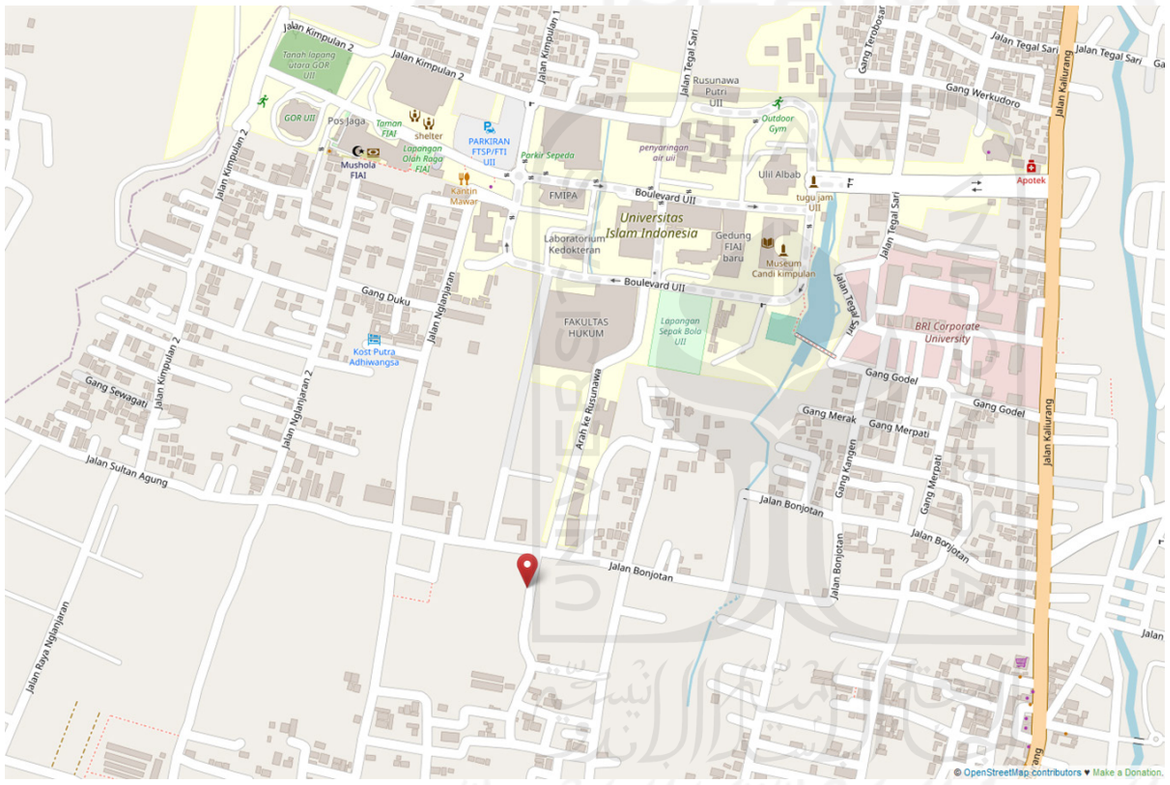

Inclusion
Barriers to Entry
Gender
Cost and Quality
Accessibility
Islamic Values
Privacy
Modesty
Hospitality

# chapter

# 2

# Site

*Candi Winangun Sleman, Yogyakarta 55581*




The site is located 900 m from Universitas Islam Indonesia and adjacent to a large green space.

The site is located close to the surrounding universities which is an advantage to the location of the provision.

The location of the property, which is adjacent to green space and is a little bit distant from the metropolitan area, allows for seclusion and comfort. The surrounding trees and foliage provide a pleasing backdrop for the site design.

- Coordinates: 7°41’33.0”S 110°24’44.0”E
- Area: 3084.5 $m^2$
- Building Coverage Ratio: 60%
- Floor Area Ratio: 1.8

| KDB Maksimum | | | | | |
|---|---|---|---|---|---|
| Umum | | | Resapan Air | | |
| Arteri | Kolektor | Lokal/ Lingkungan | Arteri | Kolektor | Lokal/ Lingkungan |
| 60% | 60% | 60% | 50% | 50% | 50% |

| KLB Maksimum | | | | | |
|---|---|---|---|---|---|
| Umum | | | Resapan Air | | |
| Arteri | Kolektor | Lokal/ Lingkungan | Arteri | Kolektor | Lokal/ Lingkungan |
| 1.8 | 1.8 | 1.8 | 1.5 | 1.5 | 1.5 |

| KDH Minimum | Tata Bangunan | | | |
|---|---|---|---|---|
| | Fungsi Jalan | | | |
| | Arteri | Kolektor | Lokal | Lingkungan |
| 28% | 29 m | 17,5 m | Lokal dengan rencana lebar jalan 15 m sempadan = 11,5 m; Lokal dengan rencana lebar jalan 12 m sempadan = 9 m; Lokal dengan rencana lebar jalan 10 m sempadan = 8 m | Lingkungan dengan rencana lebar jalan 8 m sempadan = 6 m; Lingkungan dengan rencana lebar jalan 7 m sempadan = 5,5 m; Lingkungan dengan rencana lebar jalan 6 m sempadan = 5 m; Lingkungan dengan rencana lebar jalan 5 m sempadan = 4,5 m; Lingkungan dengan rencana lebar jalan 4 m sempadan = 4 m; Lingkungan dengan rencana lebar jalan 3 m sempadan = 3,5 m; Lingkungan dengan rencana lebar dibawah 3 m tidak dikenakan sempadan jalan |

| KTB | | | | | |
|---|---|---|---|---|---|
| Umum | | | Resapan Air | | |
| Arteri | Kolektor | Lokal/ Lingkungan | Arteri | Kolektor | Lokal/ Lingkungan |
| 60% | 60% | 60% | 50% | 50% | 50% |

*Note*. From https://simtaru.slemankab.go.id/

## indoor health and comfort

*Recommended minimum light levels*

| room function | Light Levels (Lux) |
|---|---|
| terrace | 60 |
| living room | 120-250 |
| dining room | 120-250 |
| workspace | 120-250 |
| bedroom | 120-250 |
| bathroom | 250 |
| kitchen | 250 |

*Note*. From SNI 03-6575-2001

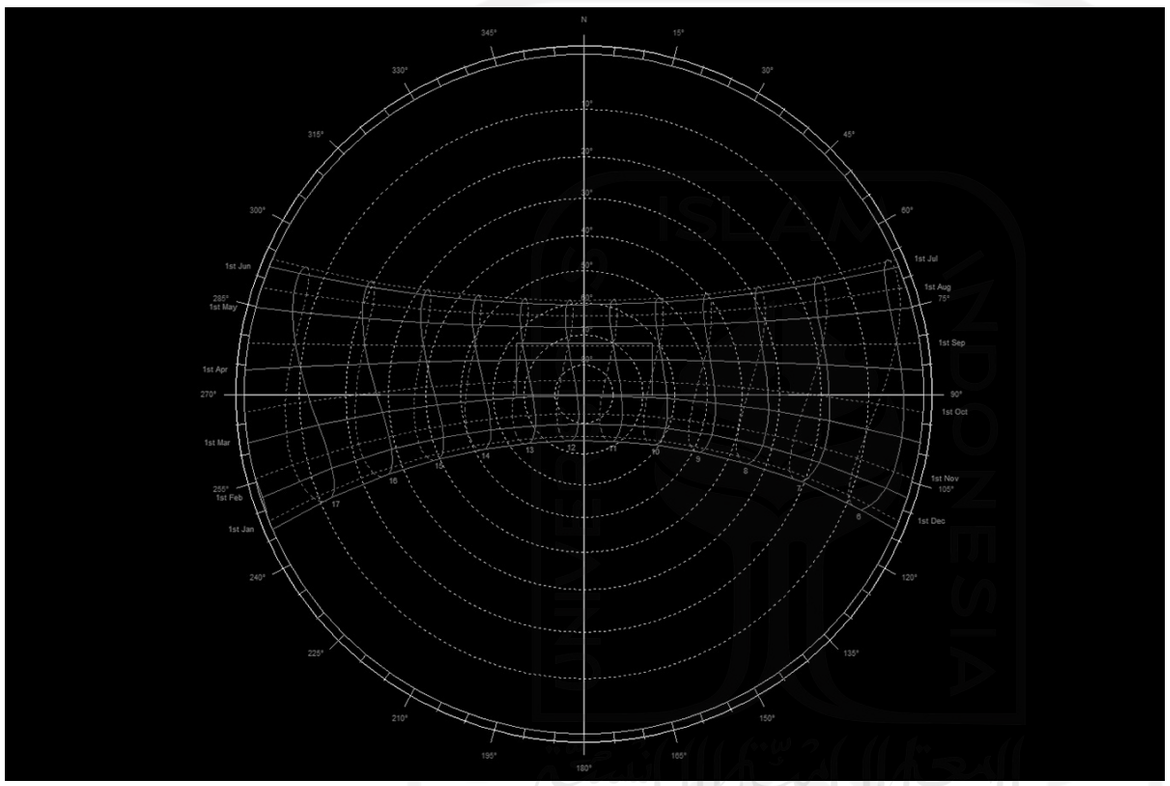
Allow as much natural light as possible while minimizing excessive heat loss, gain, and glare.

*Noise exposure limits*

| room function | Recommended Sound Levels | |
|---|---|---|
| | Good (dBA) | Maximum (dBA) |
| shared space | 40 | 55 |
| playroom | 35 | 40 |
| kitchen | 40 | 50 |
| service room | 40 | 50 |
| bedroom | 45 | 55 |

*Note*. From SNI 03-6386-2000

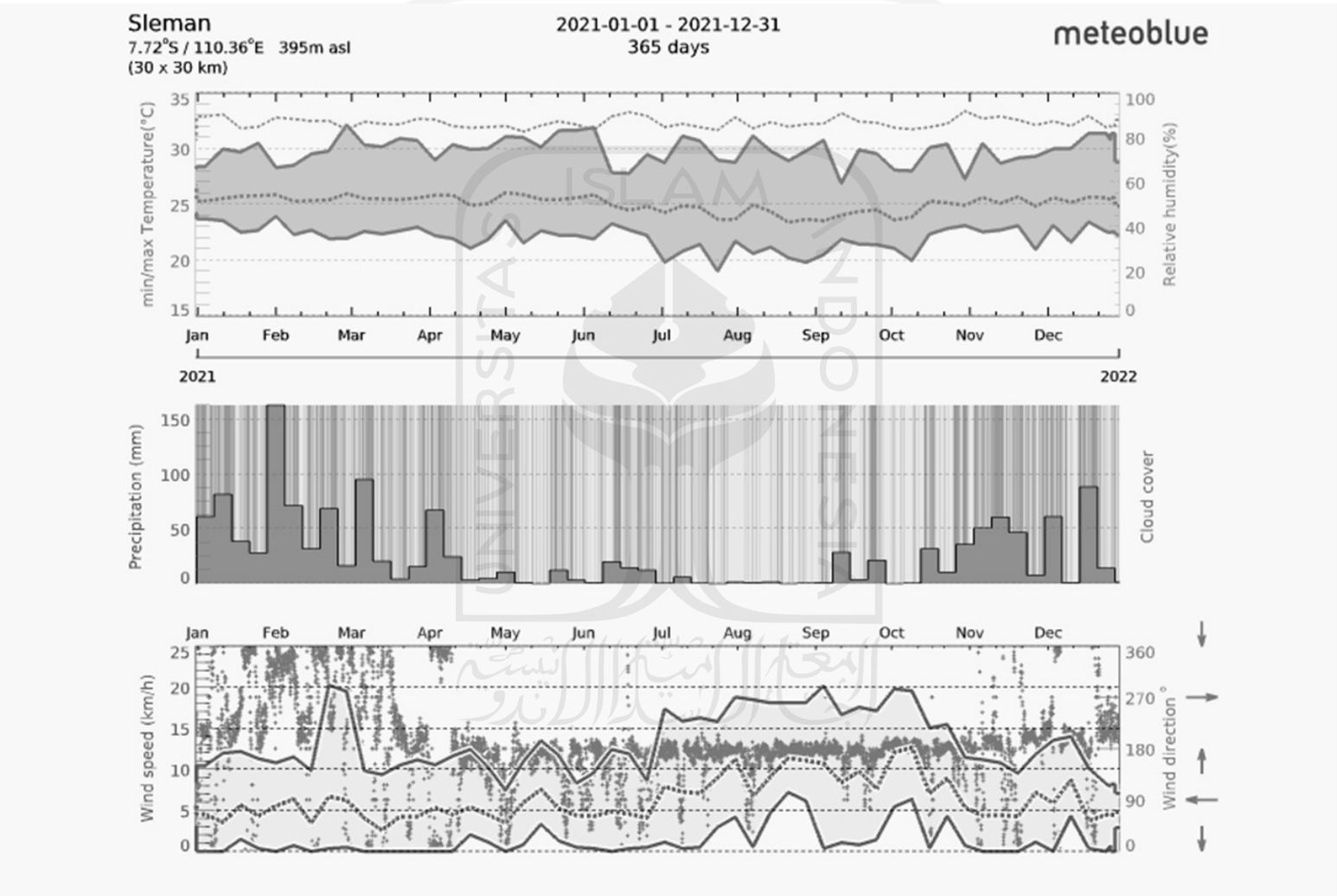
## SUN CHARTS




*Note*. The sun's path in this range is such that a substantial quantity of solar radiation falls on the east and west-facing facades, making sun shielding problematic.

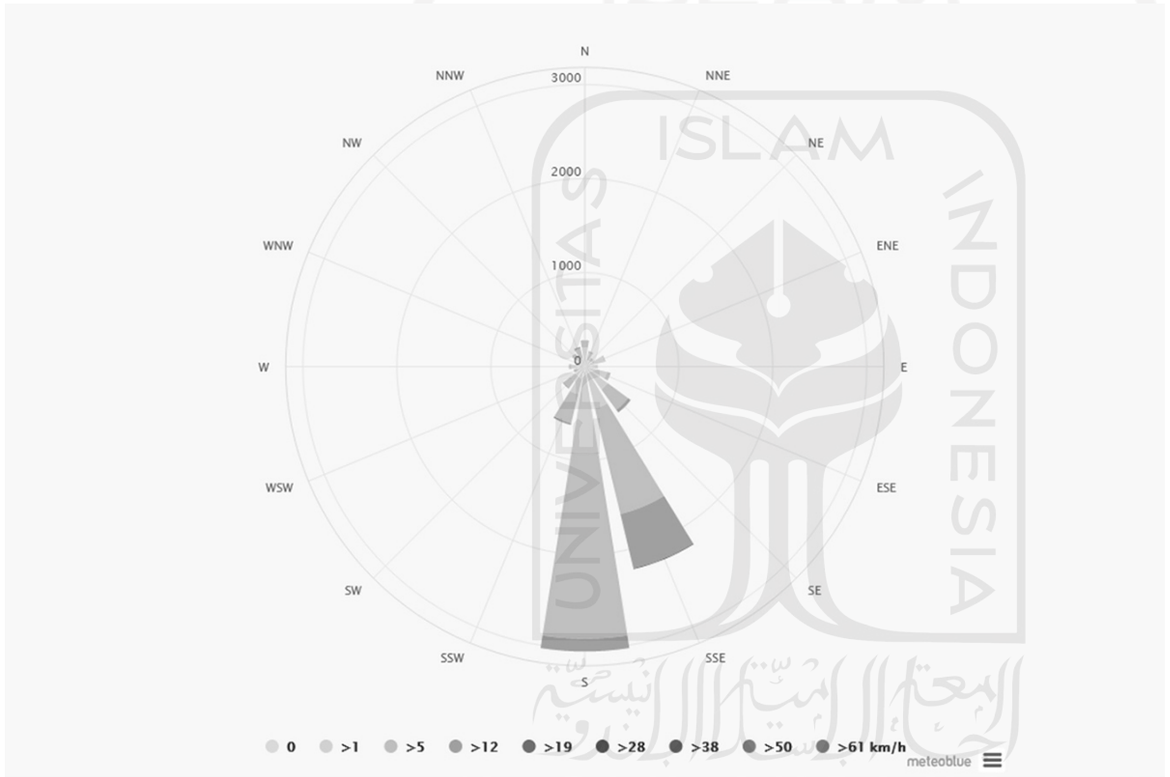
As a result, the best building orientation and form are those that increase the north- and south-facing facades (which can be readily sheltered by overhangs) while minimizing the east- and west-facing facades.

## climate & weather data




*Note*. From https://www.meteoblue.com/

*Wind rose*




*Note*. The wind rose represents the number of hours per year that the wind blows from the designated direction. From https://www.meteoblue.com/

A large number of winds blow from South (S) to South-Southeast (SSE).

The orientation of buildings in hot-humid zones is very important, and the basic rules are: limit east- and west-facing facades and consider prevailing local winds.

# Privacy

Residents’ privacy ensures that they may relax and unwind from the pressures and obligations of the outside world. Protecting privacy at home is essential for promoting peaceful and effective living situations.

In traditional Islamic homes, there are four layers of privacy:

- privacy between neighboring dwellings,
- privacy between men and women,
- privacy between family members within the home
- individual privacy

Controlling visibility through visual privacy, noise transmission through acoustic privacy, and odor control through olfactory privacy are examples of privacy needs.

**Visual privacy**

The design considerations are as follows:

External

- Windows and buildings of comparable height do not directly face opposite neighbours.
- Windows with wooden lattice screens on higher levels (mashrabiya)
- Windows with simple apertures above eye level (approx. 1.75 m high) on the lower levels
- The entrance is positioned away from the main road and does not face the neighbours on the other side.

Internal

- Men and women living areas are divided to protect the safety and privacy of women.
- The courtyard provides a microclimate and shields the neighbour's interior living space from view.

**Acoustical privacy**

External

- Noises shouldn’t be allowed to enter through floors, walls, or roofs into nearby houses or streets, especially those of women.

Internal

- The interior space is divided into three zones for privacy: men, women, and services (linked through the courtyard).
- Thick walls and thick materials such as mud bricks, stones, and boulders are used.

**Olfactory privacy**

Internal

- To disinfect the house and prevent guests from smelling cooking odors, use oud (agarwood) incense.

**spectrum of privacy**

In his book “The Environment and Social Behavior,” American social psychologist Irwin Altman explores the key elements in feelings of attachment to place.

These ideas allude to the complex emotions present in each area that control how various zones will operate according to human behavior.

The spectrum are as follows:

`Public`

describes areas that can be easily reached by the general public at any time of the day or night

`Semi-public`

is a form of area where, compared to public spaces, a greater degree of control is exercised when access is permitted

`Semi-private`

are areas in urban areas that tend to be private and people will only enter if they have a good reason to do so

`Private`

are intended for use by the occupants of the property only

# Modesty

The psychological attribute known as modesty, or haya in Arabic, is characterized by remaining courteous and modest without necessarily having low self-esteem or confidence.

Islamic rules place a strong emphasis on home design requirements to ensure the following:

- balance of neighbourhood wealth by not displaying one's wealth through extravagant home spending
- private areas for schools and religious activities

**External modesty: humility in design**

According to Prophet Muhammad's way of life, humility in design is founded on the idea that a home serves as the cornerstone of society. His Medina home was constructed with a basic rectangular plan and outside walls composed of plain cloth and palm fibers.

The use of inexpensive locally available materials rather than imported materials is an example of design humility, which is the basis for frugal and ecological living.

**Internal modesty spaces: areas for religious activities**

Every Muslim home should have a place to pray. Many households have a dedicated prayer area close to the living room and have an accessible bathroom for ablutions or cleaning.

According to traditional Islamic beliefs, a Muslim who owns a home should decorate its interior with non-idolatrous items, not expensive gold or statues resembling humans or animals, such as flowers and embroidered textiles.

# Hospitality

The importance of sharing with others and showing kindness to strangers are both directly related to hospitality.

Islam strongly encourages social engagement and the development of neighbourly ties to build social unity among Muslims and others.

Islam views the home as the foundation for providing hospitality and fostering bonds with family and community.

**Accessibility**

The strategy is to figure out how to create a design that gives everyone equitable access to opportunities and resources.

For students, with or without disabilities, to grow comfortably and accurately understand the various functions of place, accessible apartments are essential.

Since some of the students who will live here may have disabilities, making the place safe and accessible should be a major focus.

It is clear that students, especially those with disabilities, need social engagement and community support to feel included in society.

*How can design play a role in creating a social apartment for students?*

**CO-LIFE**

Collaboration is the cornerstone of co-living. Living together in a location that gives them social connections with their peers is at the core of co-living.

The plan intends to question how we view student living areas and how they may be made more united and collaborative.

Design should create connections in a variety of ways, but most importantly the development of environments that encourage student connection, community and involvement.

*UII's vision*

The establishment of Universitas Islam Indonesia as Rahmatan Lil 'Alamin, an internationally renowned institution dedicated to Islamic quality and ideals in education, research, community service, and da'wah.

## rahmatan lil 'alamin

Islam is a religion of Rahmatan Lil 'Alamin, which is often used to imply that Islam is a religion sent to compassionately govern the entire cosmos or environment.

The idea that Allah created everything and gave nature to humans to take care of is a common idea among Muslims.

Humans are stewards or guardians (khulafa' in Arabic), and they will be held accountable for their stewardship of the environment on the Day of Judgment.

*How can design be environmentally conscious while also improving living quality in student apartments?*

# inclusive ecology

*Creating Space for Nature in the Apartment*

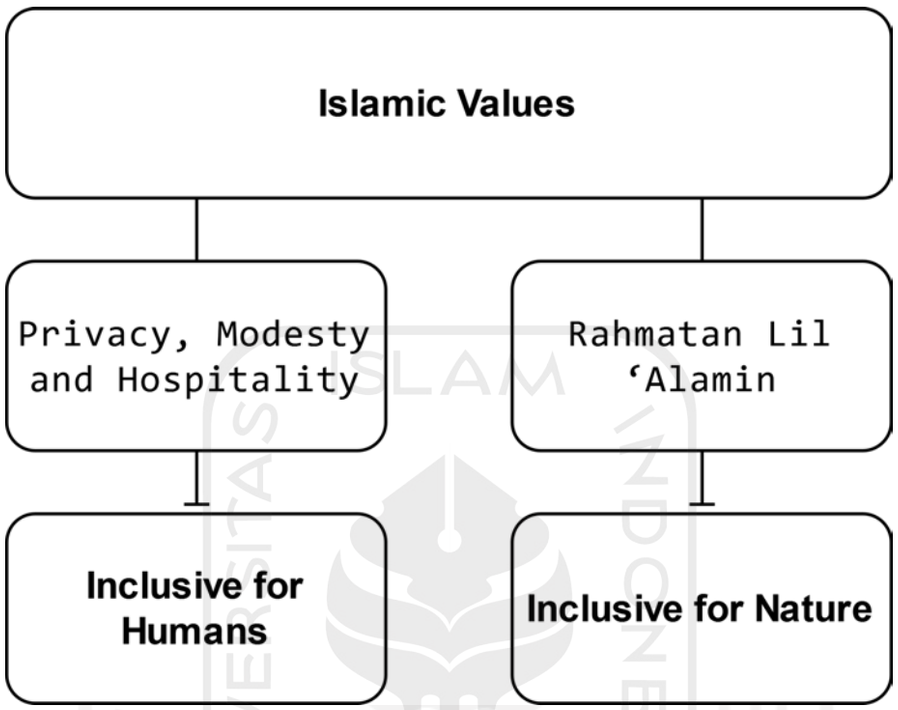
The focus of inclusion talks is always on humans. But it is important to remember that a variety of species live in the environment. Hence, a truly inclusive place should incorporate natural elements into its design.

Nature-inclusive building means that we consider the impact on the natural environment when we build, include natural features into the construction process, and apply it to the building and its surroundings.

Common natural features are as follows:

- water
- vegetation
- sunlight
- natural materials

We have a greater chance of protecting the environment if we incorporate plants, flowers and trees into our living areas. Scientific research also shows that using more natural elements in living and working environments can improve human health and well-being.


Islamic Values
Privacy, Modesty and Hospitality
Rahmatan Lil ‘Alamin
Inclusive for Humans
Inclusive for Nature

# DESIGN DEVELOPMENT

**Inclusive Student Apartment**

specs

- Category: Apartment
- City: Sleman
- Country: Indonesia
- Area: 3084.5 $m^2$

The whole premise of the project revolves around creating student accommodation that is inclusive and involves Islamic values in architecture

# Solo Studio

Studio apartments are one-room houses that combine the living room, kitchen, and bedroom into one space.

The wall between the living room and bedroom does not exist in an open floor design, and the wall may or may not divide the kitchen area. However, there is one exception, which is the bathroom.

The facilities are as follows:

- bedroom
- kitchen
- living area
- bathroom

**Accessibility** / hospitality

Many apartments lack wheelchair accessibility or were not built with disabled tenants in mind.

Landlords and property managers can easily attract these tenants by providing apartments that are handicapped and wheelchair accessible.

A handicapped-accessible apartment is one that has been renovated to make it easier for people who are wheelchair-bound, use a scooter or walker, or have limited mobility to enter and live in the residence.

The amenities are as follows:

- Common spot
- Communal study space and library
- Handicap accessible; elevator
- Laundry
- Underground parking

# mashrabiya

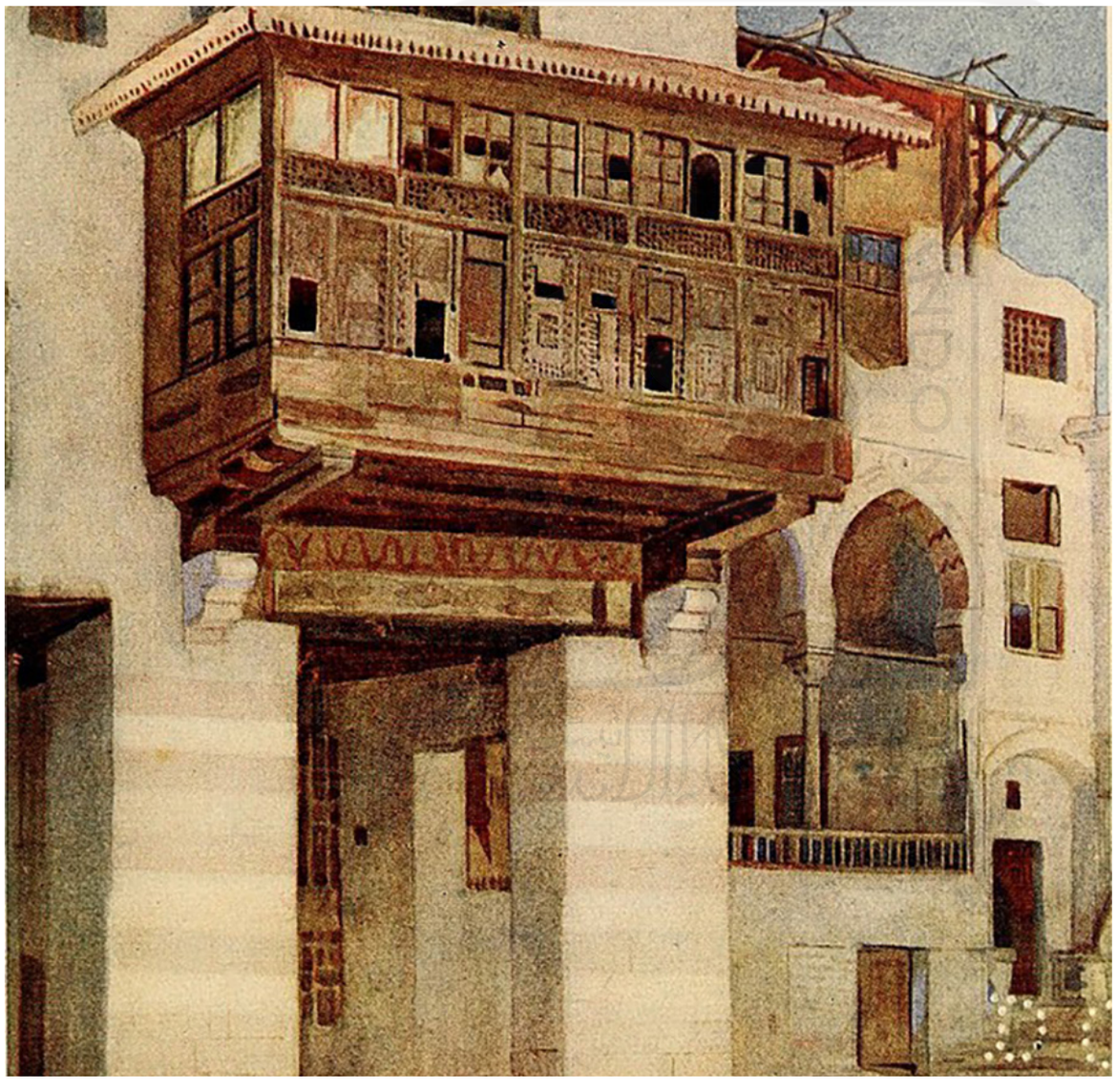
As mashrabiya is a cool, shady location where people can drink water from clay pots, the name “mashrabiya” comes from the Arabic word “sharab,” which means “drink.”

Others contend that the name derives from “mashrafiya,” which means “an observation area” and explains why it was frequently used to refer to a little, projecting wooden balcony seen in homes.

In the Middle East, the delicate mashrabiya has long provided reliable defense against scorching sunshine.

These days, this classic Islamic window component with its wooden latticework can be utilized to cover entire buildings as a private area, giving vertical gardens and a sunshading mechanism for cooling.

*ancient mashrabiya*



*re-interpretation of the mashrabiya*

**Privacy**

To maintain subtlety and let cool air through the facade, window screens are frequently found facing the street.

The strong intensity of the lighting outside and the subtle dark screen inside the louvers provide the opportunity to observe the surroundings while remaining invisible.

It so promotes the Islamic culture’s need for privacy.

**Inclusive Ecology** / vertical gardens

These systems let plants to grow on the aforementioned latticework through the development of mashrabiya capable nourishing plant species.

As an environmental diffuser, this soft layer blocks direct sunlight and keeps the inside area from being overexposed to the outside without the feeling of isolation.

The holes in the mashrabiya screens provide constant air flow and cooling for the interior from a thermal perspective.

# **Students' social spaces** / hospitality

**Common spot**

Common spot will serve as inhabitants' second living room by providing connection, community, and involvement.

They can gather with friends and enjoy meals there. It will foster ties with others, and the apartment's community will expand.

**Study space and library**

As they have for years, study spaces and libraries are essential to students' educational experiences today.

A library communicates a dedication to academics and a pledge to parents that they are sending their students to a reputable university. Libraries are frequently iconic structures in prominent campus sites.

However, the benefits extend well beyond the university.

It fulfills very useful functions as locations for studying, finding peace, and sharing resources.

*In hot-humid zones, the shape should be as open as possible to allow natural ventilation. At the same time, however, sun protection is essential and all possible measures should be taken to provide it.*

# Courtyard

A courtyard is an inner, open area that is usually found in the middle of a building and is surrounded by high walls or structures.

When it comes to Islamic architecture, creating these inside spaces that are influenced by the outdoors involves much more than just letting in some light and air.

## Privacy

Courtyard in Islamic architecture is known as the “architecture of the veil” because it places a strong emphasis on the interior, hidden regions that are not visible from the outside.

The addition of a courtyard provides sufficient separation from neighbours so that they cannot see directly into the interior dwelling areas.

The courtyard may be utilized as pause points between areas; the visible link remains, but there are auditory and visual buffers that split up the spaces, providing a stronger sense of separation when needed.

**Modesty**

These techniques are modest and, in addition to satisfying privacy concerns, Muslims refrain from bragging publicly about their financial success, resulting in an architectural contrast between facade and interior.

The residence is left unadorned from the exterior to project modesty and security while fending off judgment or attention from onlookers.

The courtyard, on the other hand, is a beautifully decorated area with elaborate designs and details on the furnishings, tiles, and window cornices.

**Inclusive Ecology**

By letting in more natural light, the courtyard serves to reduce the need for artificial lighting. Natural light can enter adjacent rooms by creating a courtyard to break up the arrangement of the apartment.

As the front and back windows are sometimes placed far apart, there is frequently relatively little cross ventilation (via breeze) within an apartment. The courtyard is helpful here.

*Semi-basement parking can be used to maximize the landscape on the ground*

# Semi-basement parking

Semi-basement parking is structured parking that is partially underground and covered by a partial basement of another building or structure.

Semi-basements, by their very nature, need less waterproofing, substructure, and excavation than complete underground parking.

**Privacy**

The ground floor of a semi-basement is always elevated above street level.

Residential buildings benefit from this since the elevated height provides a better view of the street while preventing privacy concerns in ground floor rooms.

# AREA PROGRAMME

The space ideas are as follows:

- Spaces to live: 70%
- Spaces to collaborate: 10%
- Spaces for leisure: 10%
- Ancillary spaces: 10%

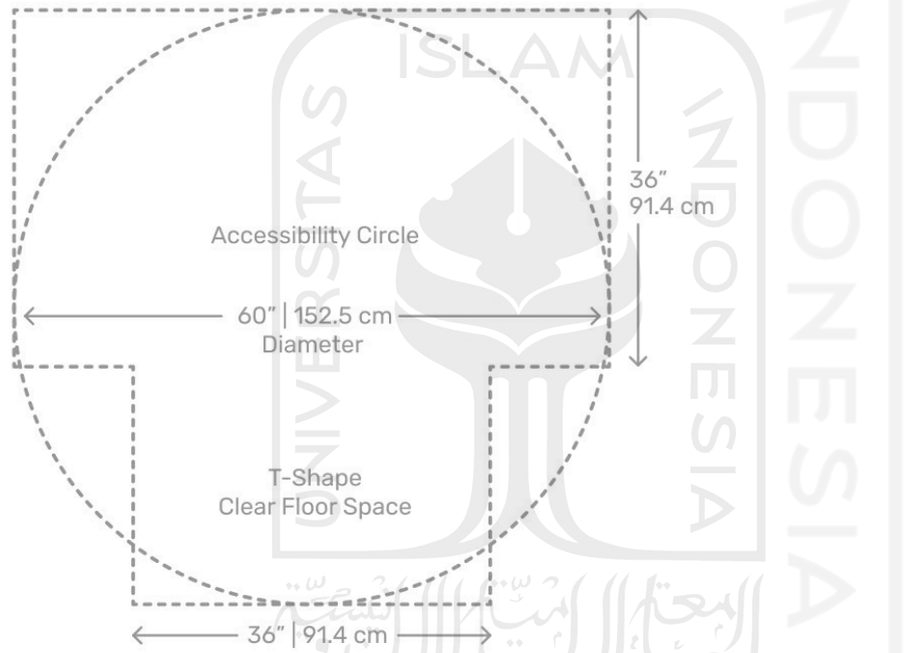
Facilities must be provided to accommodate beds in single studios with attached bathrooms.

Required amenities such as common areas and shared study rooms, as well as cleaning and laundry services are available to help students adapt to their new apartments.

Parking spaces for vehicles to be included partially underground.

## dimensions guideline

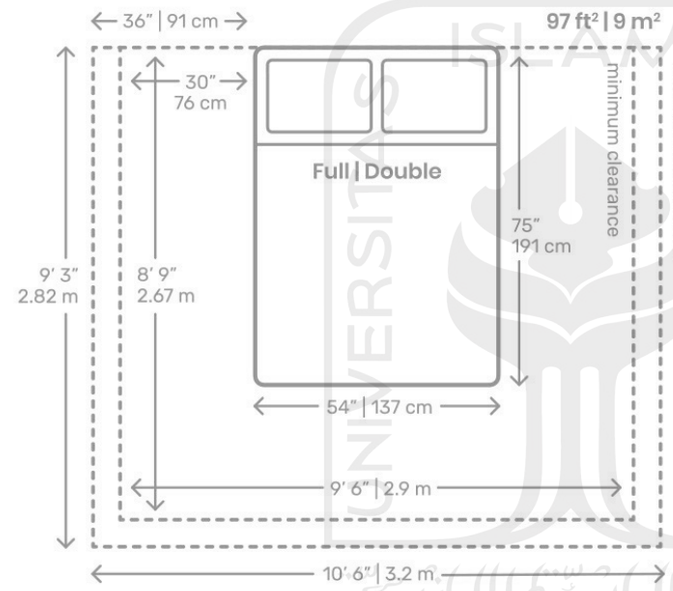
*Accessible Clear Floor Space*




Accessible rooms must feature a turning circle or a T-shaped turning area, both of which must have enough internal unobstructed floor space for a wheelchair to turn 180 degrees.

Doors cannot swing into the required free area of the accessible room and must have a minimum width of 81.3 cm.

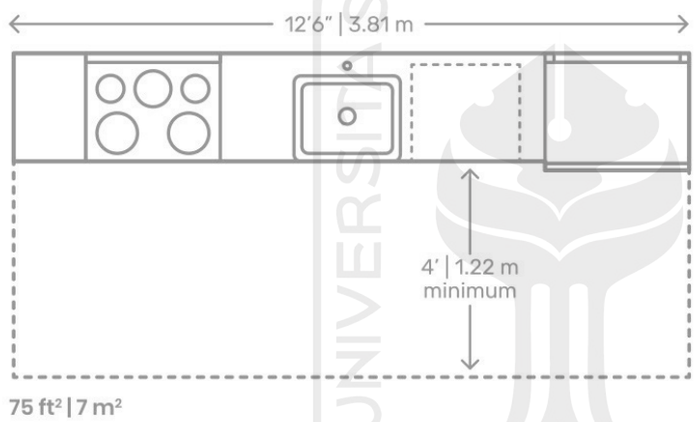
*Full (Double) Bedrooms*




Full-sized beds, usually referred to as double beds, are designed to accommodate two people or a person who prefers a little extra space.

One of the most popular bed kinds, full sized beds give more versatility for various user types and spatial configurations.

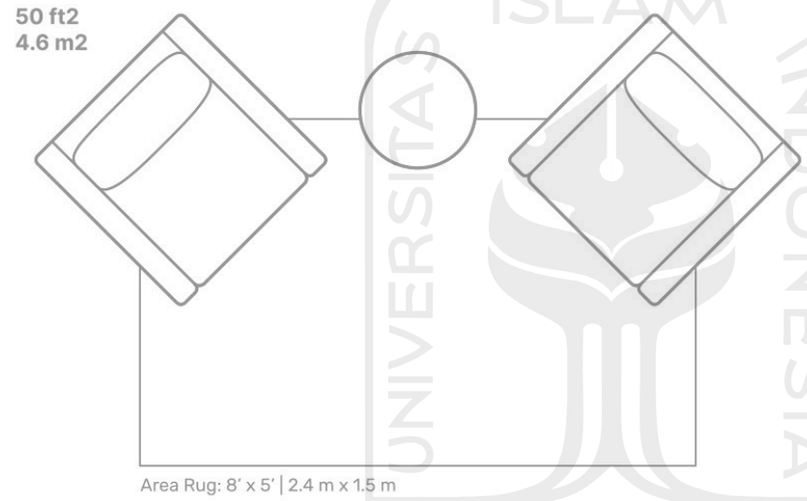
*Single Row Galley Kitchens*




Space-saving designs called single row galley kitchens integrate kitchen fittings into a single, well-proportioned linear bar.

Single Row Galley Kitchens need an adjacent zone for user access, much like Two Row Galley Kitchens.

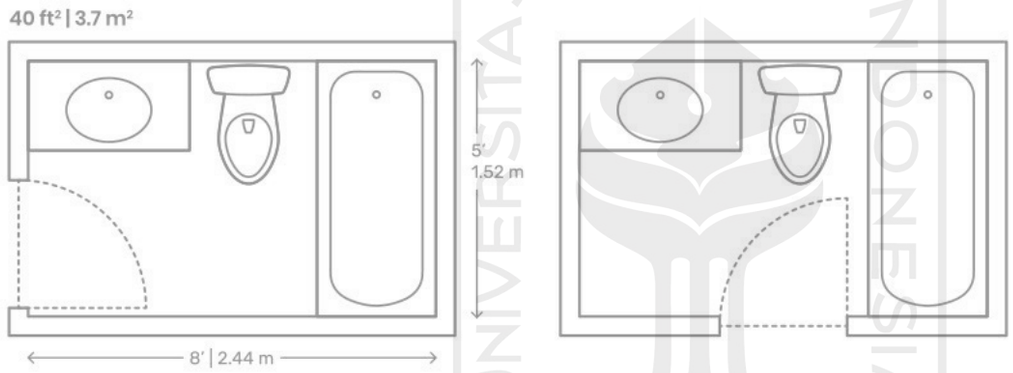
*Living Rooms*




Two symmetrical or asymmetrical armchairs are used in the Armchair Pair seating arrangement.

The benefit is that they may be arranged differently, such facing one another or in a room's corner. Additionally, this configuration works well in small places.

*Full Bath - Side*




The fixtures in a bathroom with a side layout are arranged along a single wall and include a toilet, sink, and bathtub/shower combo.

The full-bath side, which is frequently proportioned with a width based on a normal alcove bathtub, offers an effective and useful clearing area for simple utilization of all fixtures.

# PRECEDENT

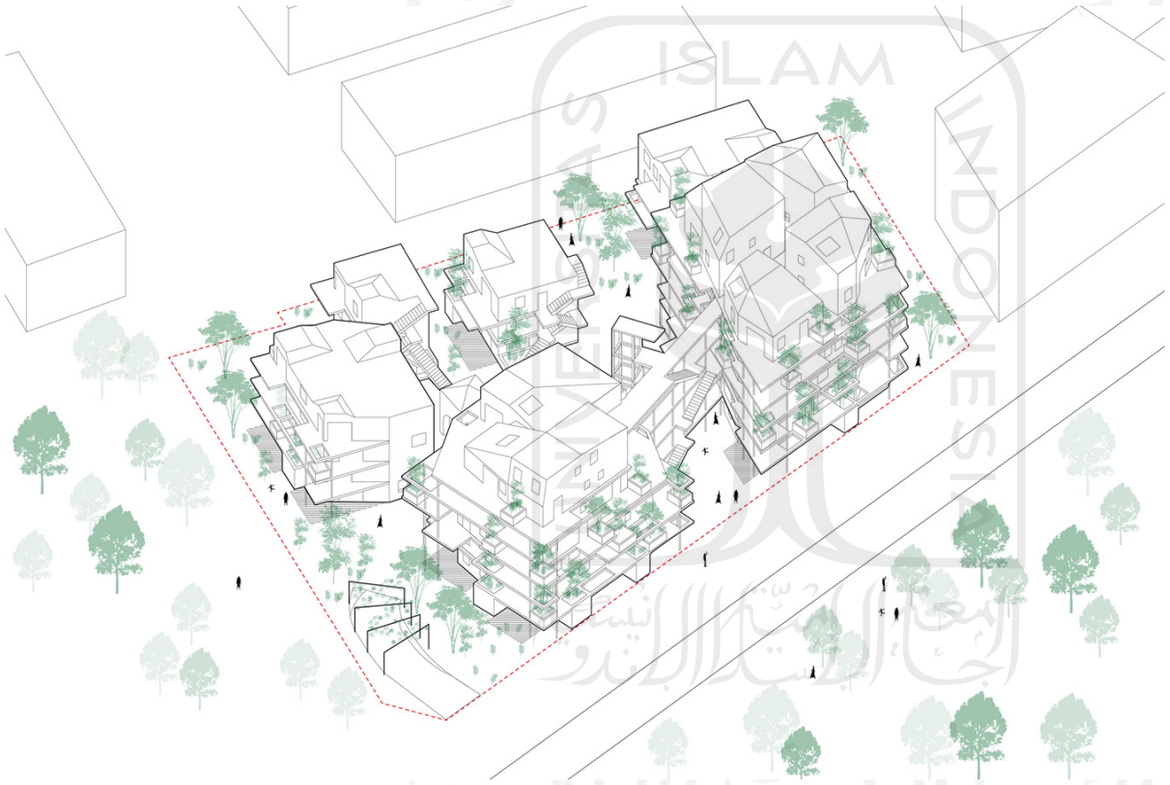
**Riverview Complex** / APA Wojciechowski Architects

The large glass façades of the buildings were separated between upper and lower segments to allow greater light exposure for the apartments.

To shorten the supply chain, the location factor was considered when selecting materials and was reflected in working with a Polish brick factory located close to Łódź.

To improve the riverfront landscape experience and to guarantee inhabitants’ privacy, the inner courtyard was raised above the street level.

**Toulouse ZAC Saint-Martin Residential Complex** / Aldric Beckmann Architectes



The aim of the architect is to design a landscaping item that blends in with the existing patterns and the surrounding vegetation.

The project is centered on the following tenets:

- By using green facades and gardens as the central feature of the block, create a green oasis
- Imagining a creative form for the story
- Circulate vertically with a focus on a single outside point
- Utilize locally sourced materials and environmentally friendly construction techniques

## **Bruz Utopia Housing** / Champenois Architectes

The UTOPIA residence is a sizable building with a bow that is exposed to the public garden, quietly situated on a slope of land.

Here, locals may converse with neighbours, stroll along gangways strung from the treetops, and enjoy weather-protected views of the Bruz countryside.

Residents of the flats always have a double exposure that brings sunshine and lovely views, as well as a sizable balcony shielded by white glass.

**Naman Retreat the Babylon** / VTN Architects

The resort’s privacy is increased by the green layer’s visual barrier, which separates it from the road.

A vertical concrete lattice system with green vines covers the facade, blocking direct sunlight but allowing wind to blow through.

The facade serves as a buffer zone to reduce thermal radiation and is heat resistant, allowing plants to thrive there.

## **Nest Apartment** / TVARY

The two-bedroom apartment has been transformed into a spacious open-plan home.

The main living area, which doubles as a dining room, gym, studio, virtual reality game room, and tranquil retreat, is furnished with lightweight, readily transportable furniture.

**Asahi Facilities Hotarugaike Dormitory KAEDE** / Takenaka Corporation

To meet the scale of the nearby residences, the architects split the building volume into six as a three-story building with a decreased height.

The building volumes were organized around the courtyard by the architects, who also created a shared area between them.

This will provide the area with breezes and light while serving as a second living room for the residents.

In addition, the architects divided the space into two small private rooms and a common kitchen where they could prepare meals.

## **A Private Reading Room** / atelier tao+c

It serves as a team’s private reading area and a communal study space for pals.

Four distinct resting areas and reading corners in the 70 $m^2$ spaces promote varied reading movements.

There are several tiny study tables to sit and work, a sofa to unwind and chat, a common conference table, and a reading room to meditate.

# Design objectives

- Privacy: keep students safe and separate the private from the public while maintaining privacy
- Economical: the proposed design should provide affordable options for student housing
- Modular: to promote equality, modular recommends that units are of the same size
- Accessible: the area should allow unrestricted access for all types of students and establish a welcoming and safe environment
- Social: the plan should provide areas for student engagement, get-togethers and activities
- Ecological: the plan should assist students in coexisting with nature

The design objectives settle itself around the following DESIGN STRATEGY:

- By using a courtyard, create “architecture of the veil”
- Arrange the studio apartments around the courtyard, and create a common spot between them
- Concentrate green space around the balcony
- Concentrate vertical circulation, elevators and stairs, around the building’s four sides
- Employ locally-sourced materials and modular building techniques

The detailed explanation can be found in pages 34-44

The solo studio facilities are as follows:

- bedroom
- kitchen
- living area
- bathroom

The amenities are as follows:

- Common spot
- Study space and library
- Handicap accessible; elevator
- Laundry room
- Semi-basement parking

# chapter

# 3

# spectrum of privacy

The ever-changing nature of human behavior will necessitate design solutions that provide an appropriate range from private to public, which we refer to as the spectrum.

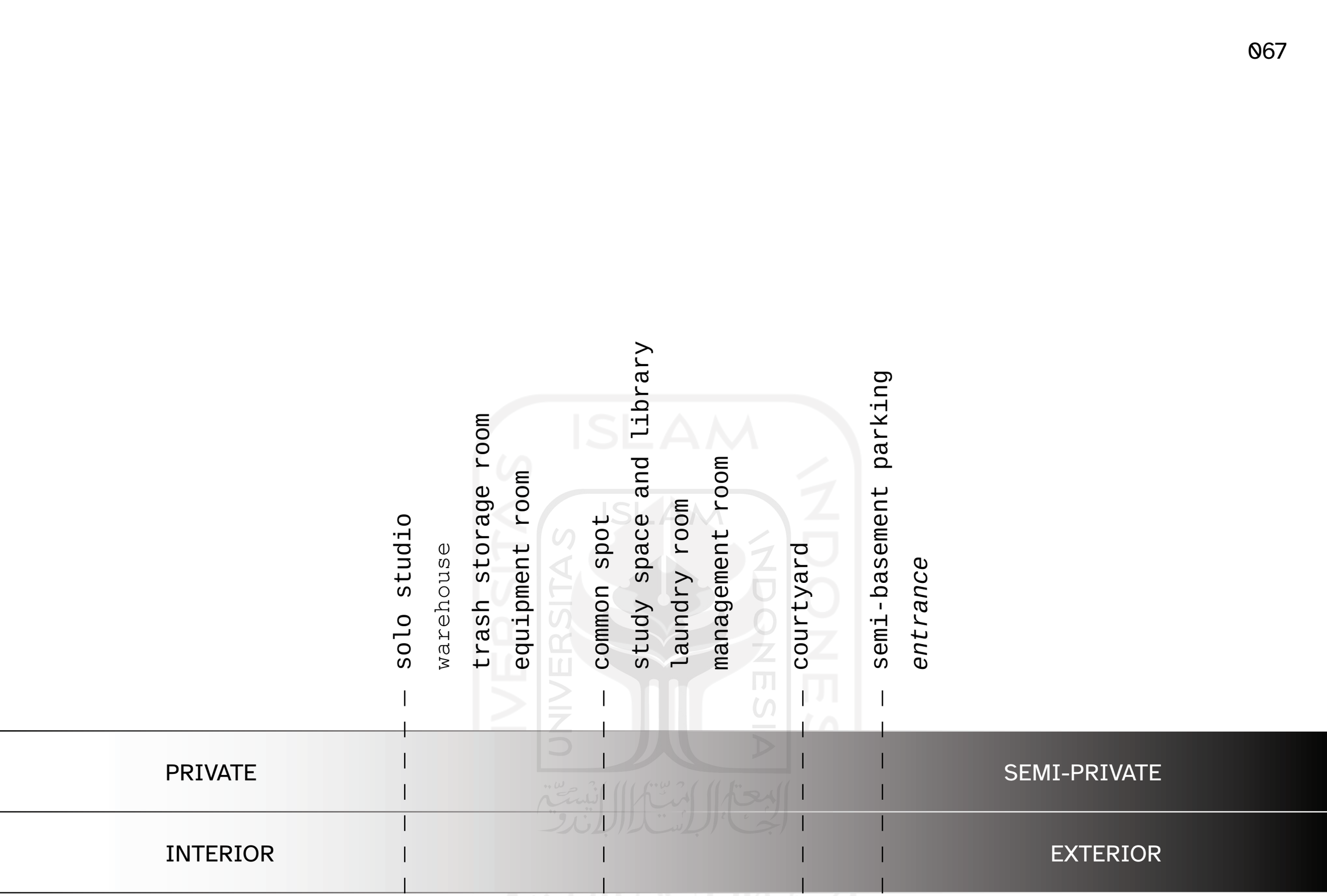
The spectrum are as follows:

- Public
- Semi-public
- Semi-private
- Private

The detailed explanation can be found in page 26

*room and spectrum of privacy*

| room function | spectrum |
|---|---|
| solo studio | private |
| common spot | semi-private |
| study space and library | semi-private |
| courtyard | semi-private |
| laundry room | semi-private |
| semi-basement parking | semi-private |
| management room | semi-private |
| warehouse | private |
| trash storage room | private |
| equipment room | private |




The program distributes the areas in the building from semi-private to private. The public is involved in semi-private portions of the program. The private areas are less accessible and are mostly used by staff and individual residents.

# room program

*room program*

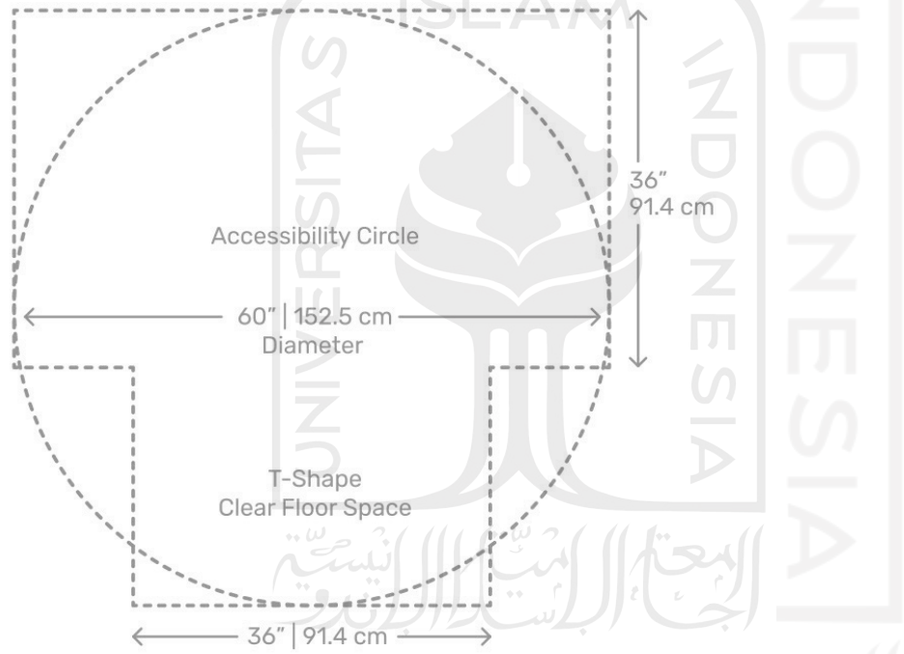
| room function | quantity | standard dimensions | area ($m^2$) | total area ($m^2$) |
|---|---|---|---|---|
| **solo studio / type 1** | 42 | | 24.3 | 1020.6 |
| double beds | 1 | 2.4 $m^2$ by D | 2.4 | 2.4 |
| kitchen | 1 | 7.0 $m^2$ by D | 5.0 | 5.0 |
| living area | 1 | 4.6 $m^2$ by D | 10.9 | 10.9 |
| bathroom | 1 | 3.7 $m^2$ by D | 3.7 | 3.7 |
| **solo studio / type 2** | 30 | | 24.3 | 729.0 |
| double beds | 1 | 2.4 $m^2$ by D | 2.4 | 2.4 |
| kitchen | 1 | 7.0 $m^2$ by D | 6.4 | 6.4 |
| living area | 1 | 4.6 $m^2$ by D | 9.7 | 9.7 |
| bathroom | 1 | 3.7 $m^2$ by D | 3.7 | 3.7 |
| **solo studio / type 3** | 5 | | 32.4 | 162.0 |
| double beds | 1 | 2.4 $m^2$ by D | 2.4 | 2.4 |
| accessible kitchen | 1 | 8.1 $m^2$ by D | 6.4 | 6.4 |
| accessible living area | 1 | 4.6 $m^2$ by D | 15.8 | 15.8 |
| accessible bathroom | 1 | 4.9 $m^2$ by D | 4.9 | 4.9 |

| room function | quantity | standard dimensions | area ($m^2$) | total area ($m^2$) |
|---|---|---|---|---|
| **common spot** | 14 | | 615.6 | 615.6 |
| balcony | 10 | | 1360.8 | 1360.8 |
| **study space and library** | 1 | | 129.6 | 129.6 |
| **courtyard** | 1 | | 615.6 | 615.6 |
| **laundry room** | 1 | | 16.2 | 16.2 |
| **semi-basement parking** | 1 | | 2332.8 | 2332.8 |
| motorcycle | 47 | 1.5 $m^2$ by N | 3.6 | 169.2 |
| car | 73 | 12.5 $m^2$ by N | 14.4 | 1051.2 |
| **management room** | 1 | | 24.3 | 24.3 |
| **warehouse** | 1 | | 24.3 | 24.3 |
| **trash storage room** | 1 | | 8.1 | 8.1 |
| **equipment room** | 1 | | 32.4 | 32.4 |

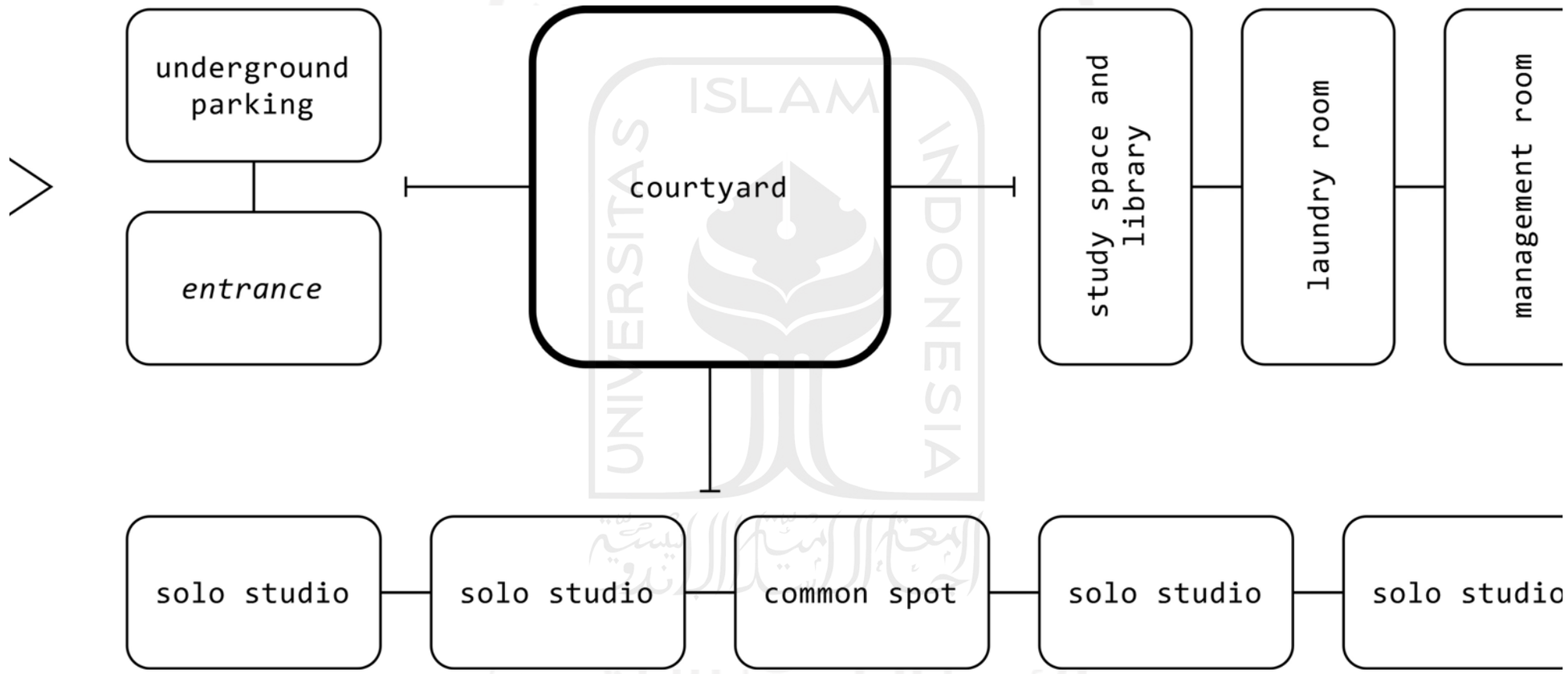
standard

- N: Neufert Architects' Data
- D: dimensions.com

*accessible clear floor space for a wheelchair*



*relationships of rooms*




adjacencies

This diagram displays both the general relationships among programs and the relationships between each program and the courtyard.

The study area and library, as well as the courtyard, washing room, and administration room, are open to the public, although the solo studio and common area are private.

semi-basement

- laundry room
- semi-basement parking
- equipment room

ground floor

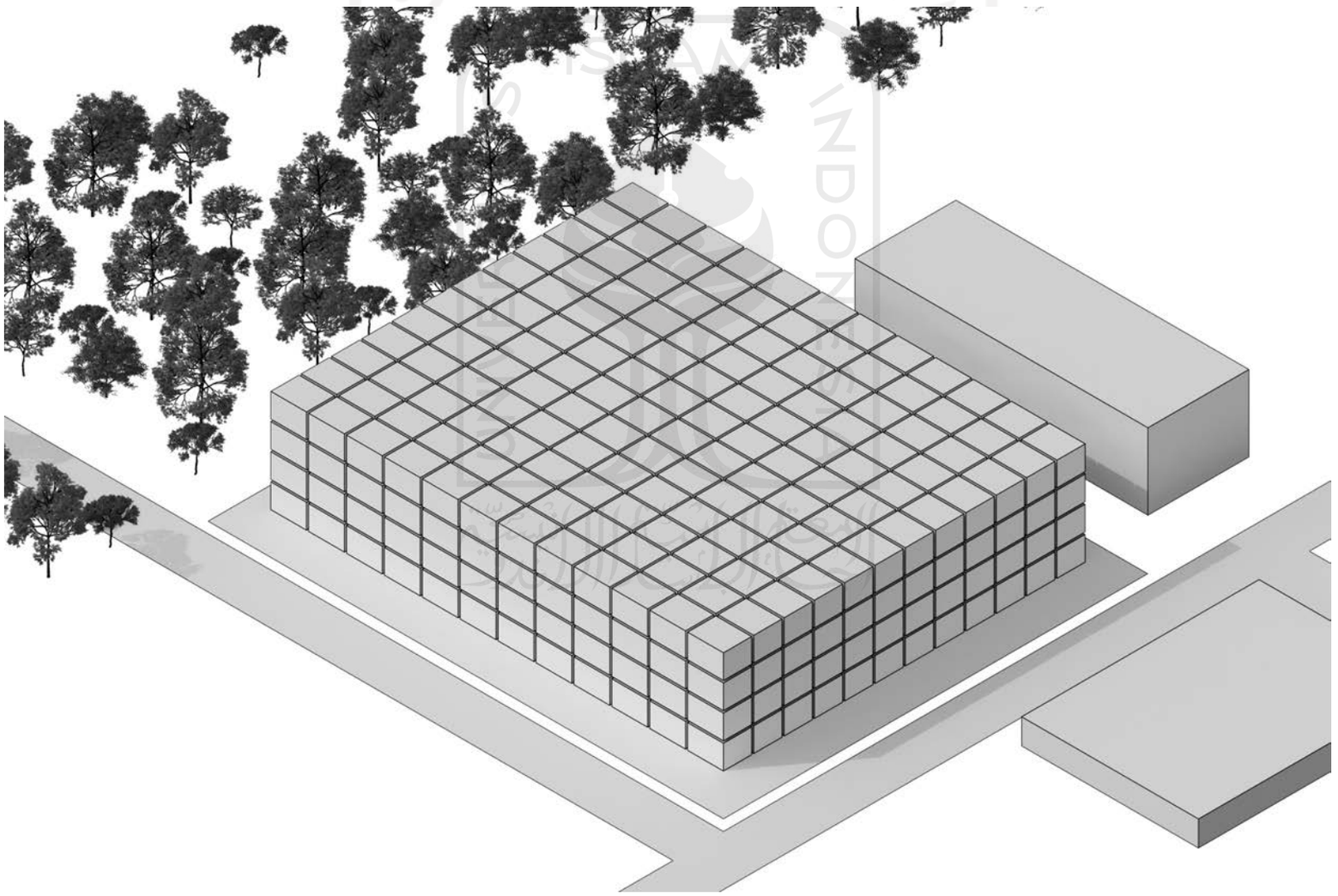
- solo studio
- students' social spaces / common spot
- students' social spaces / study space and library
- courtyard
- management room
- warehouse
- trash storage room

1-3F

- solo studio
- students' social spaces / common spot
- balcony

# Concept Sequence Diagrams

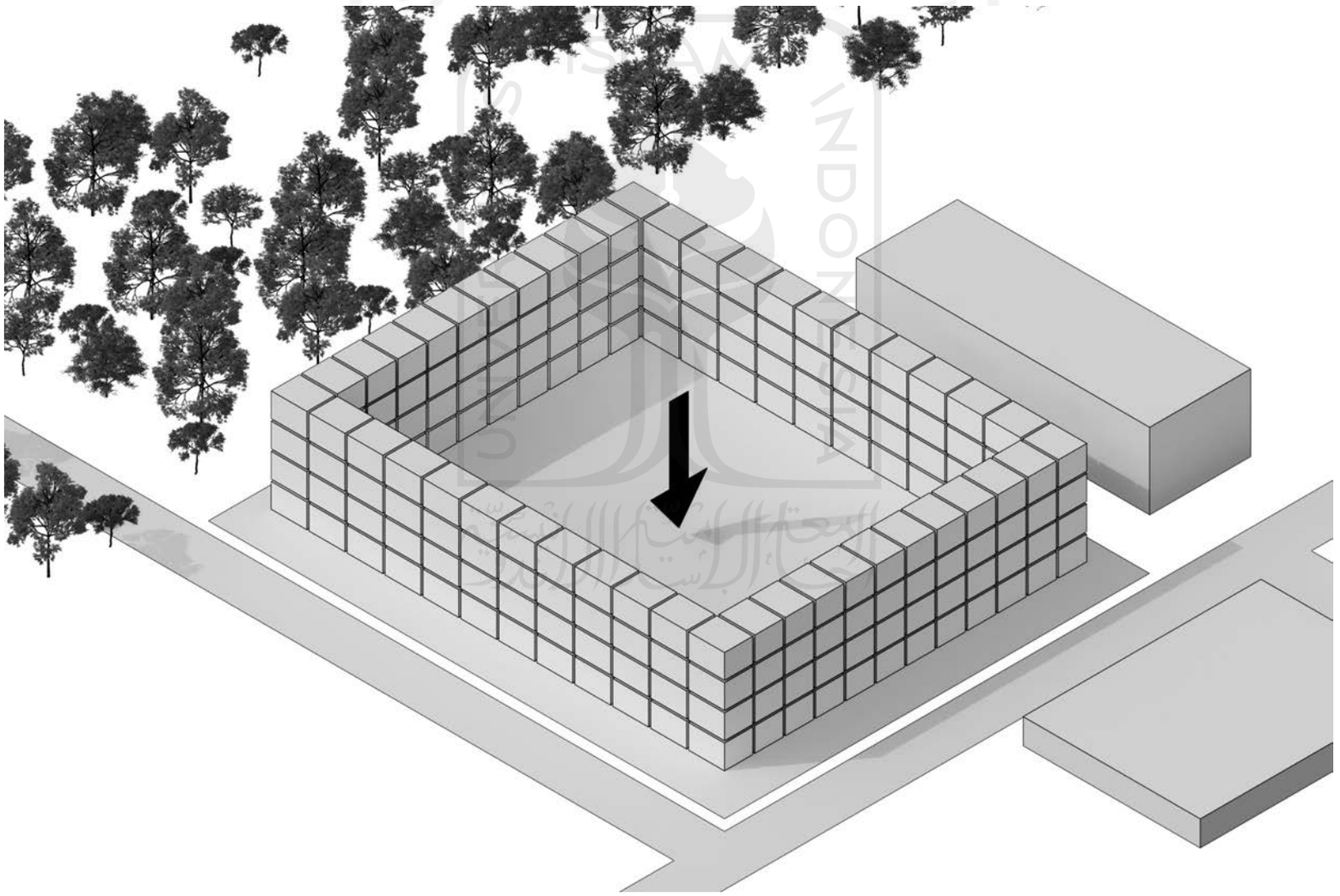
**BUILDING VOLUME** / modular



Maximum building volume considering 5 m setbacks

Using or engaging modules to create a building base and connection with the surrounding environment

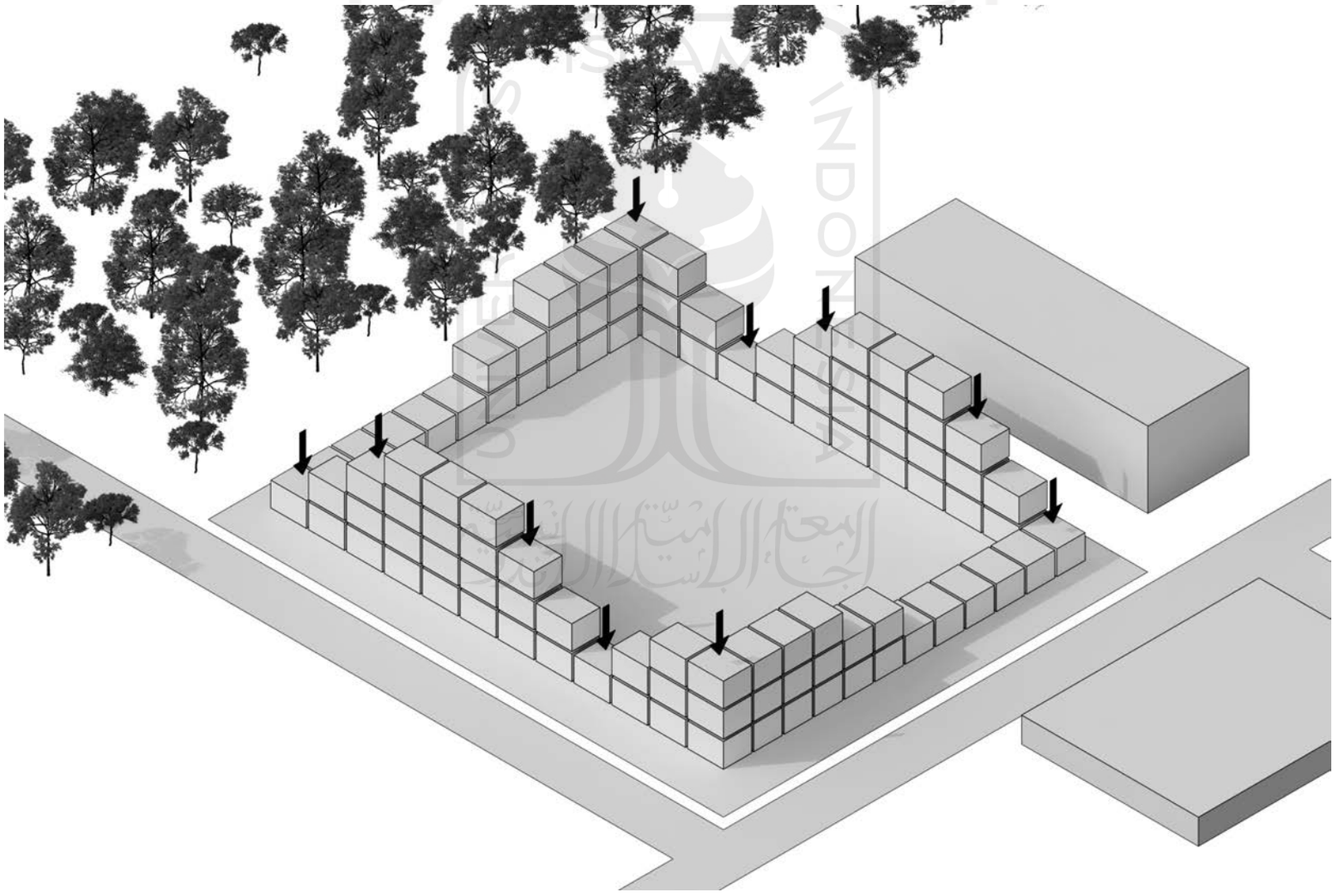
**COURTYARD** / privacy and inclusive ecology



Reconfiguring building volumes into enclosed Courtyard complexes

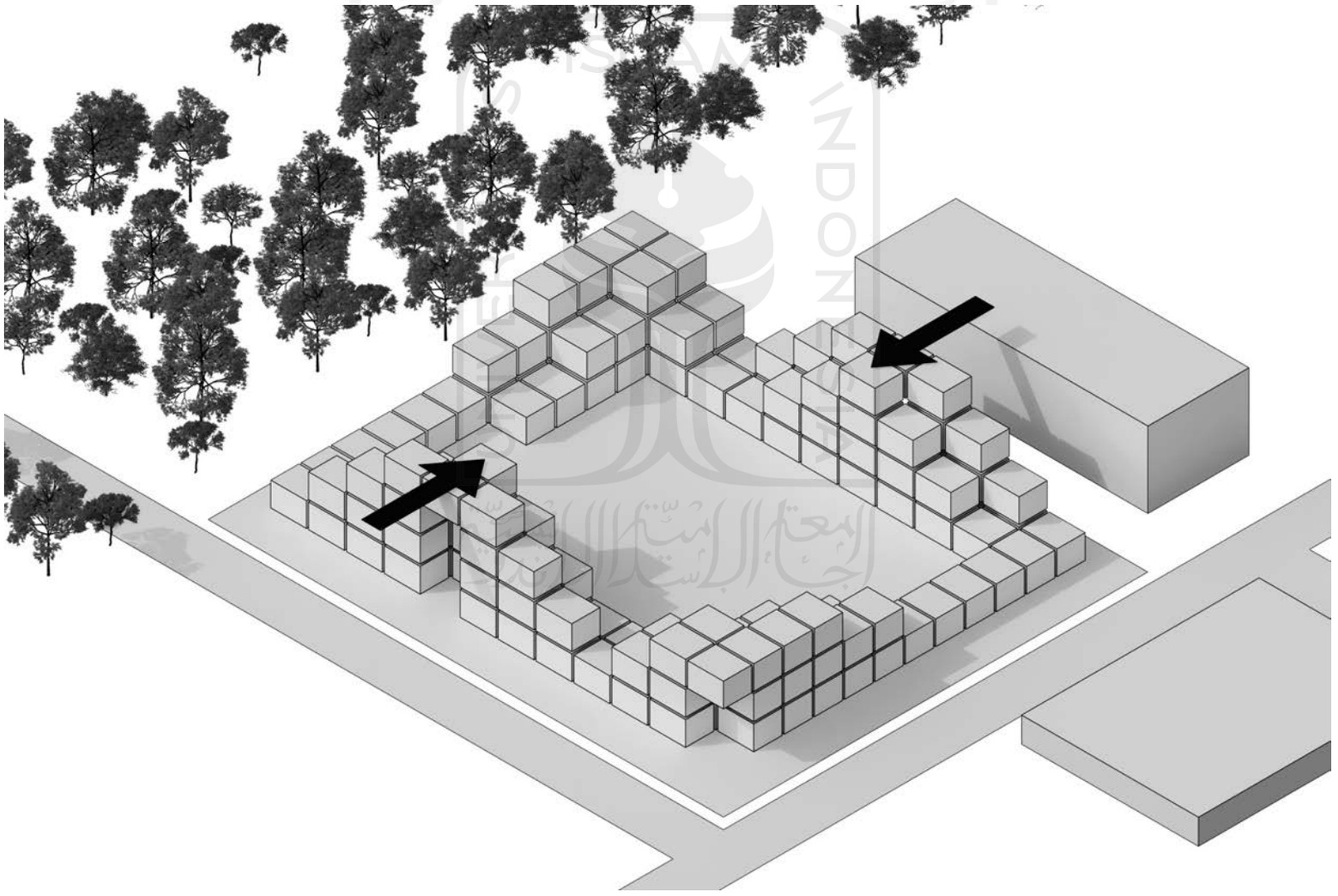
- Privacy: acts as a moment of pause to separate spaces; “architecture of the veil”, inner spaces that are not visible from the outside
- Inclusive Ecology: allows maximum sunlight and ventilation and landscape connections

## **BUILDING VOLUME ADJUSTMENT** / modesty



Adjusting the height of each building volume so that it subtly matches the surrounding greenery, as well as the existing houses

**BUILDING VOLUME ADJUSTMENT** / hospitality



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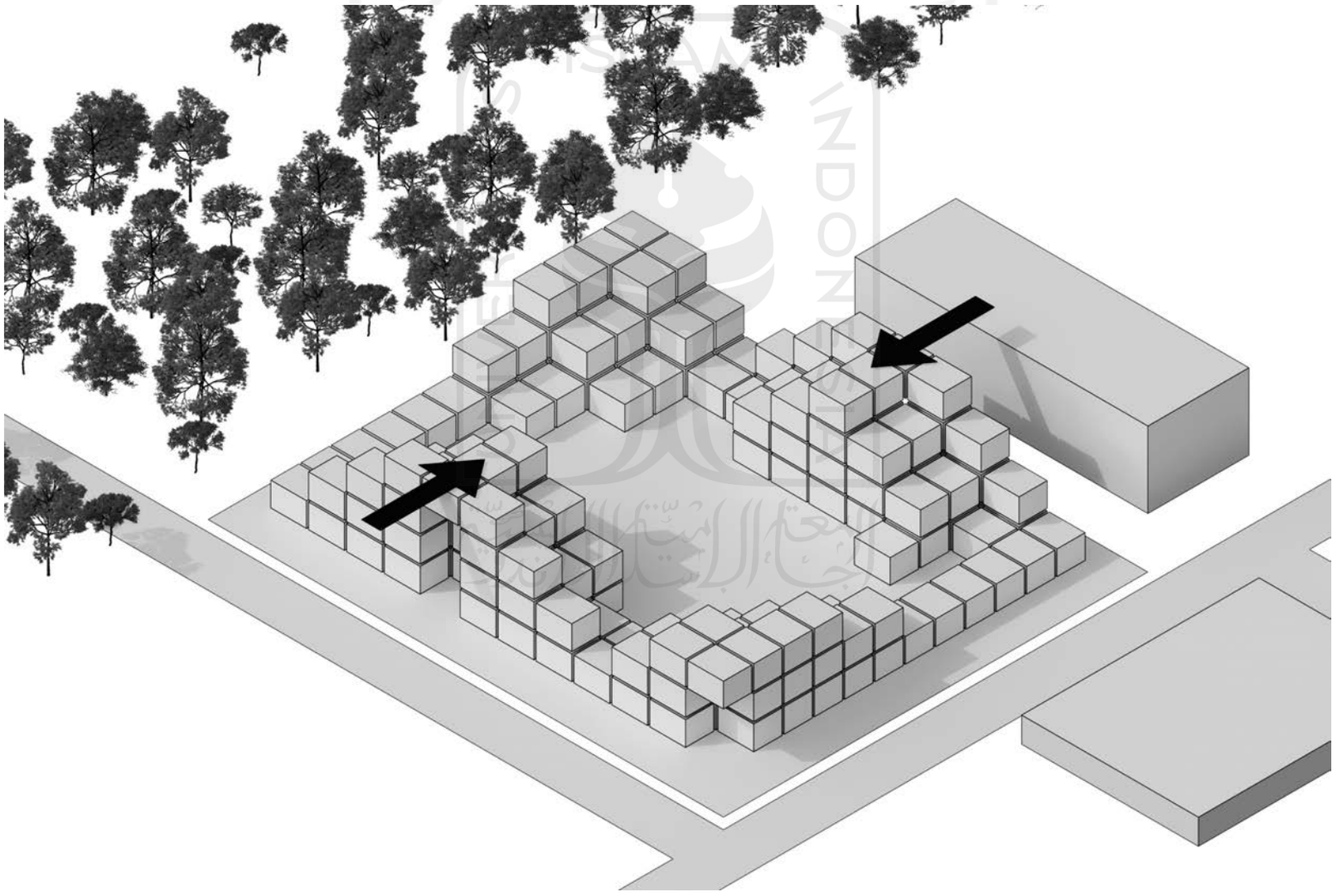

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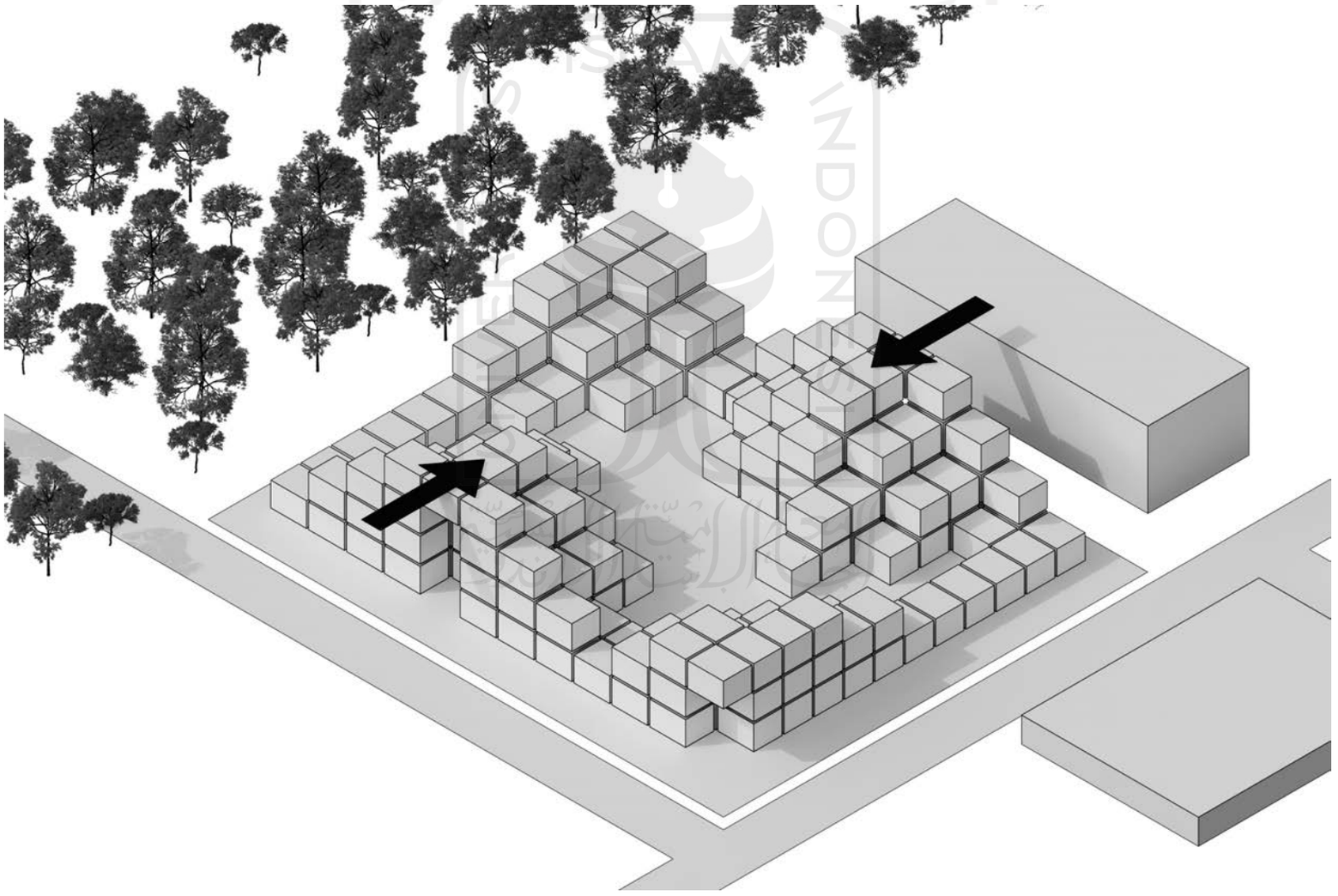

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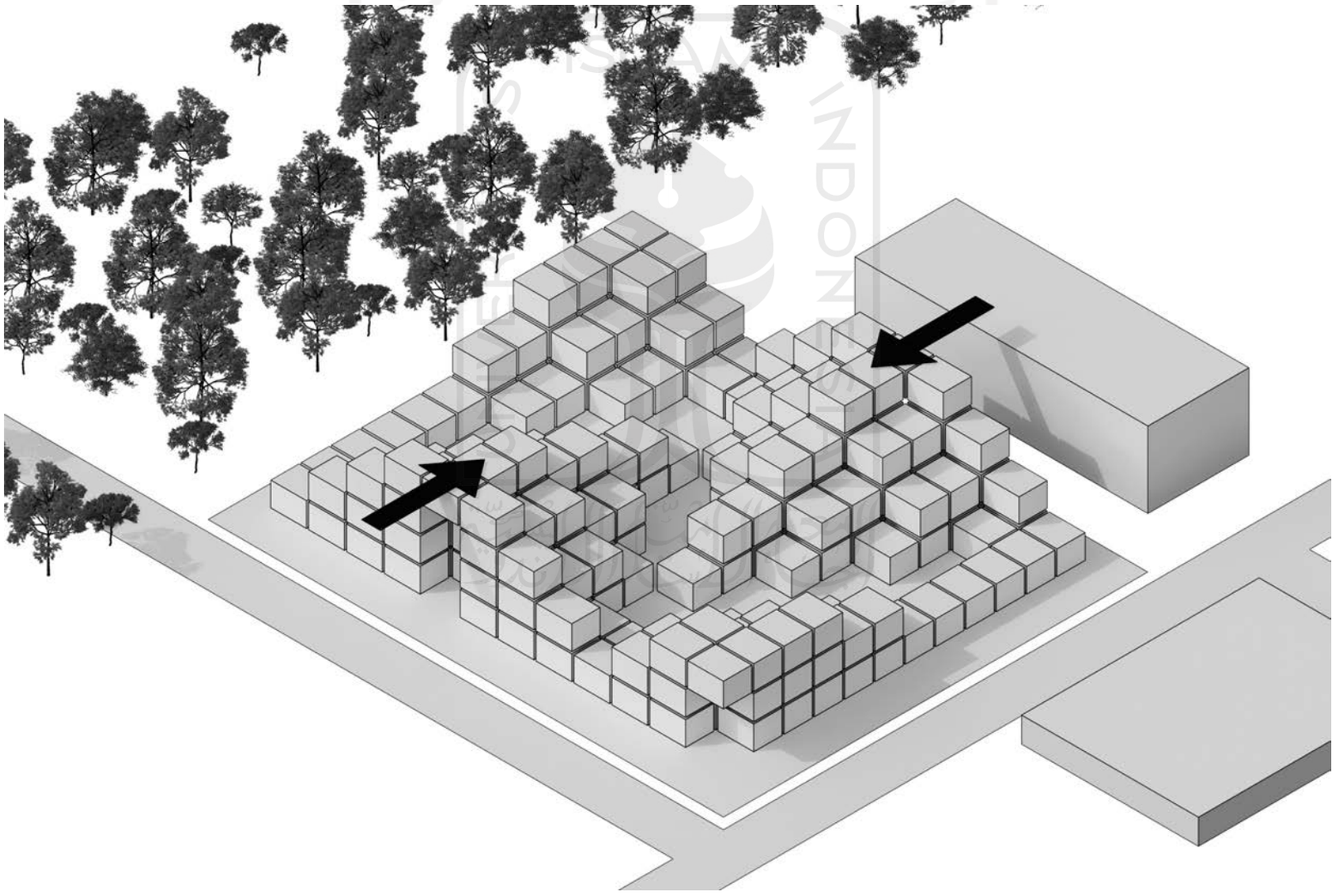

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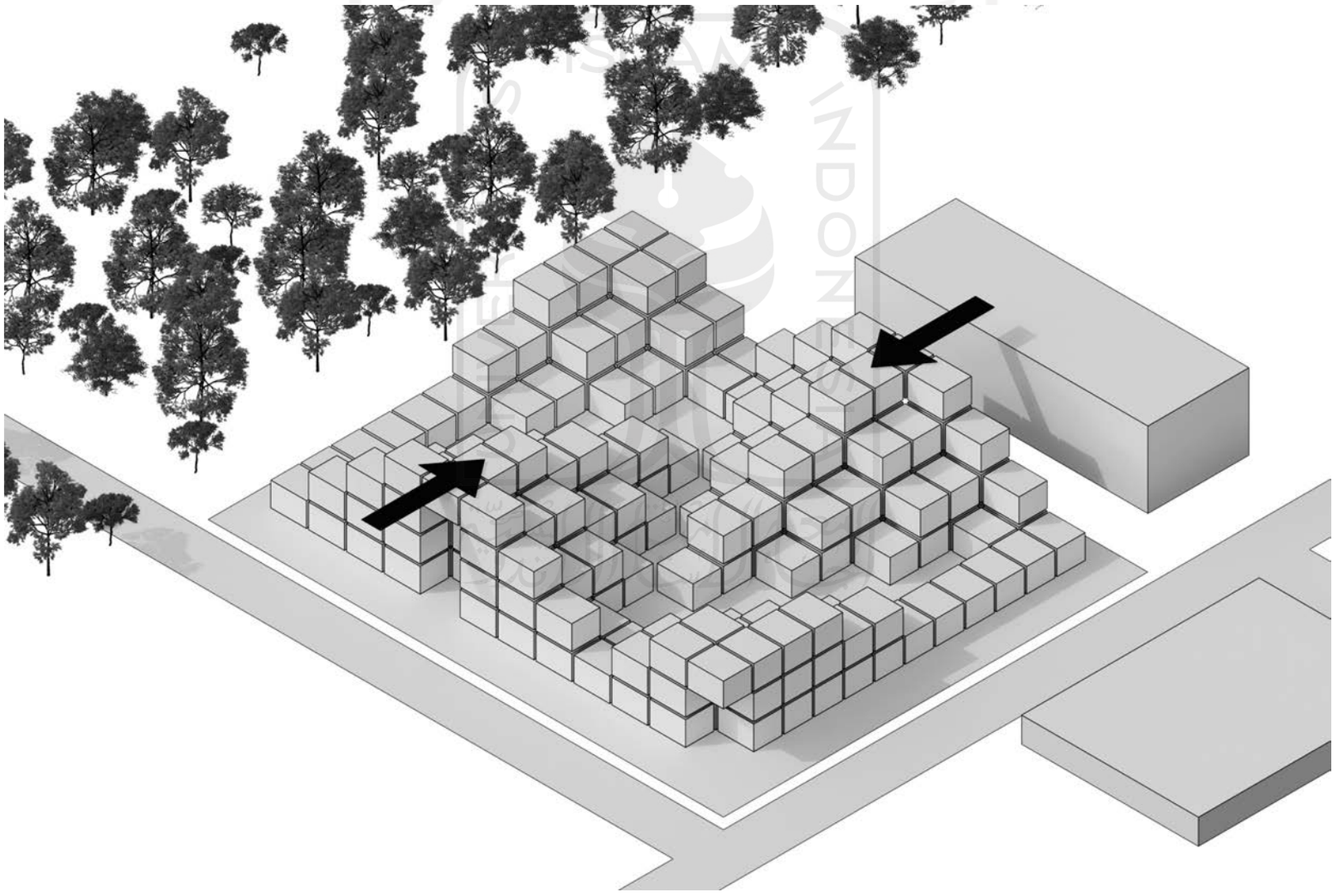
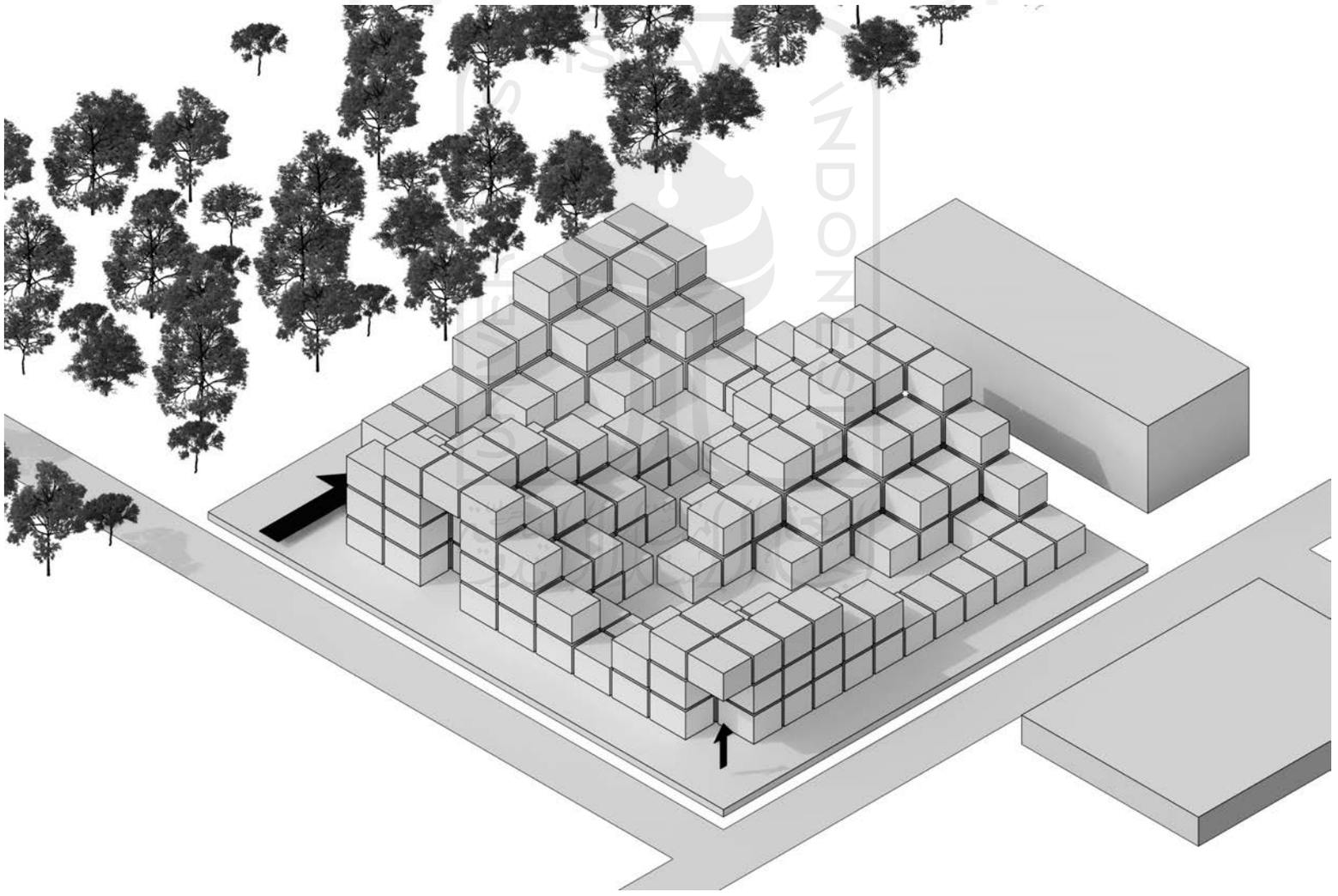


5. Reconfiguring the building volume into a number of level areas that resemble a series of steps

Terraced volume promotes social interaction and the formation of neighbourly connections in order to foster social harmony among students

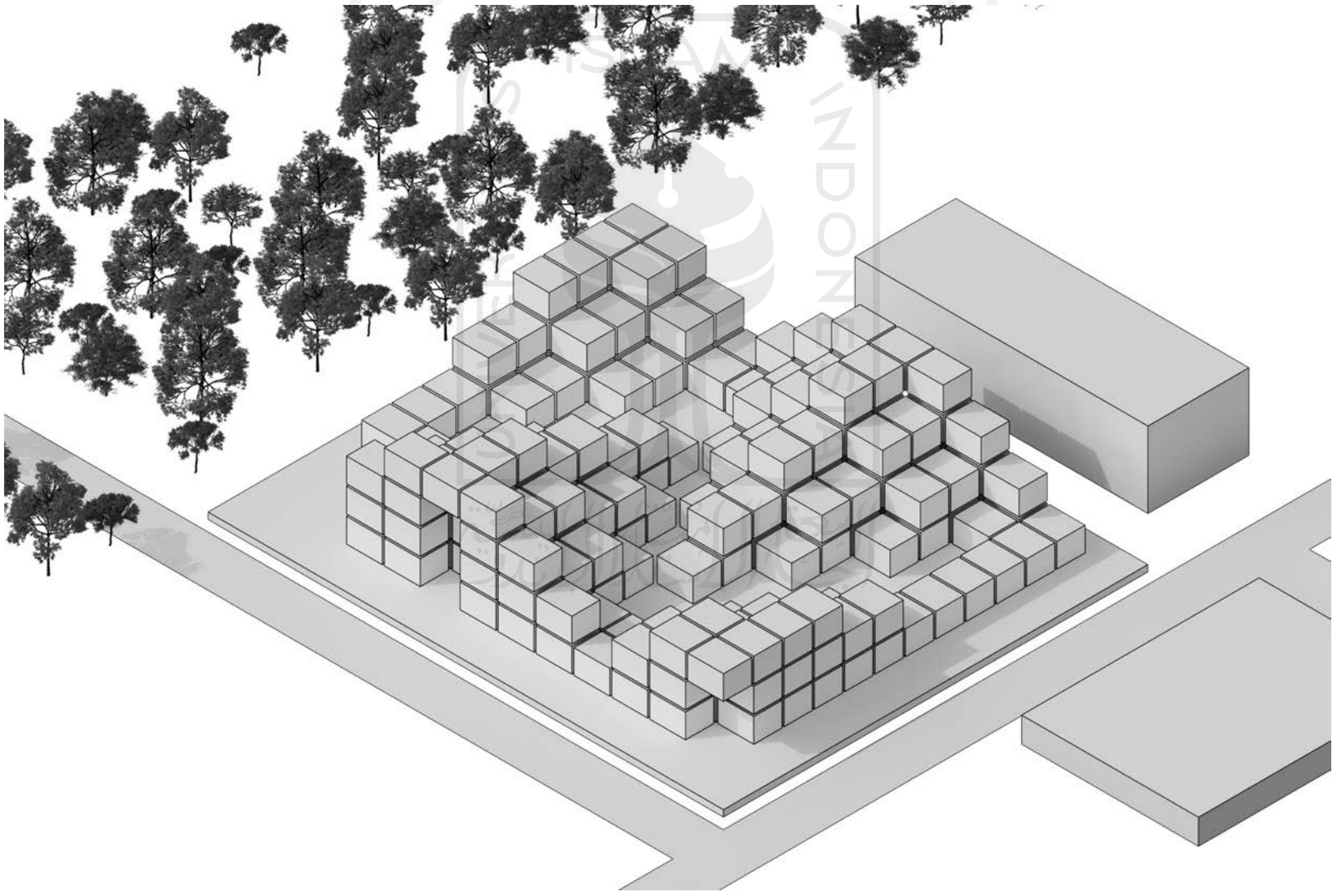
## **SEMI-BASEMENT PARKING AND** ELEVATED **COURTYARD** / privacy



Semi-basement parking always results in a courtyard elevated above street level

The raised levels help avoid privacy issues to the ground floor areas while offering greater views to the street

## STUDENT APARTMENT



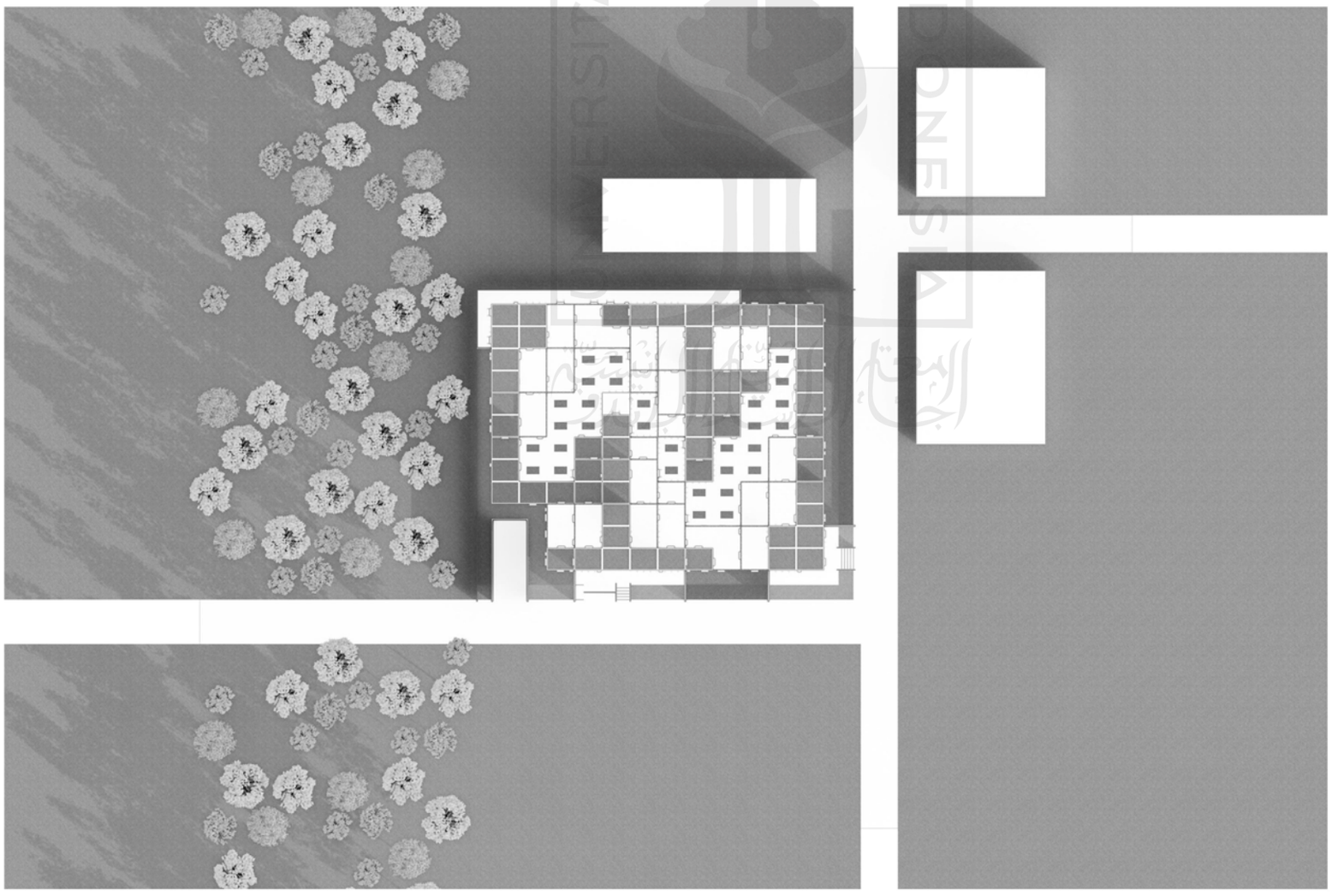
The whole premise of the project revolves around creating student accommodation that is inclusive and involves Islamic values in architecture

# chapter

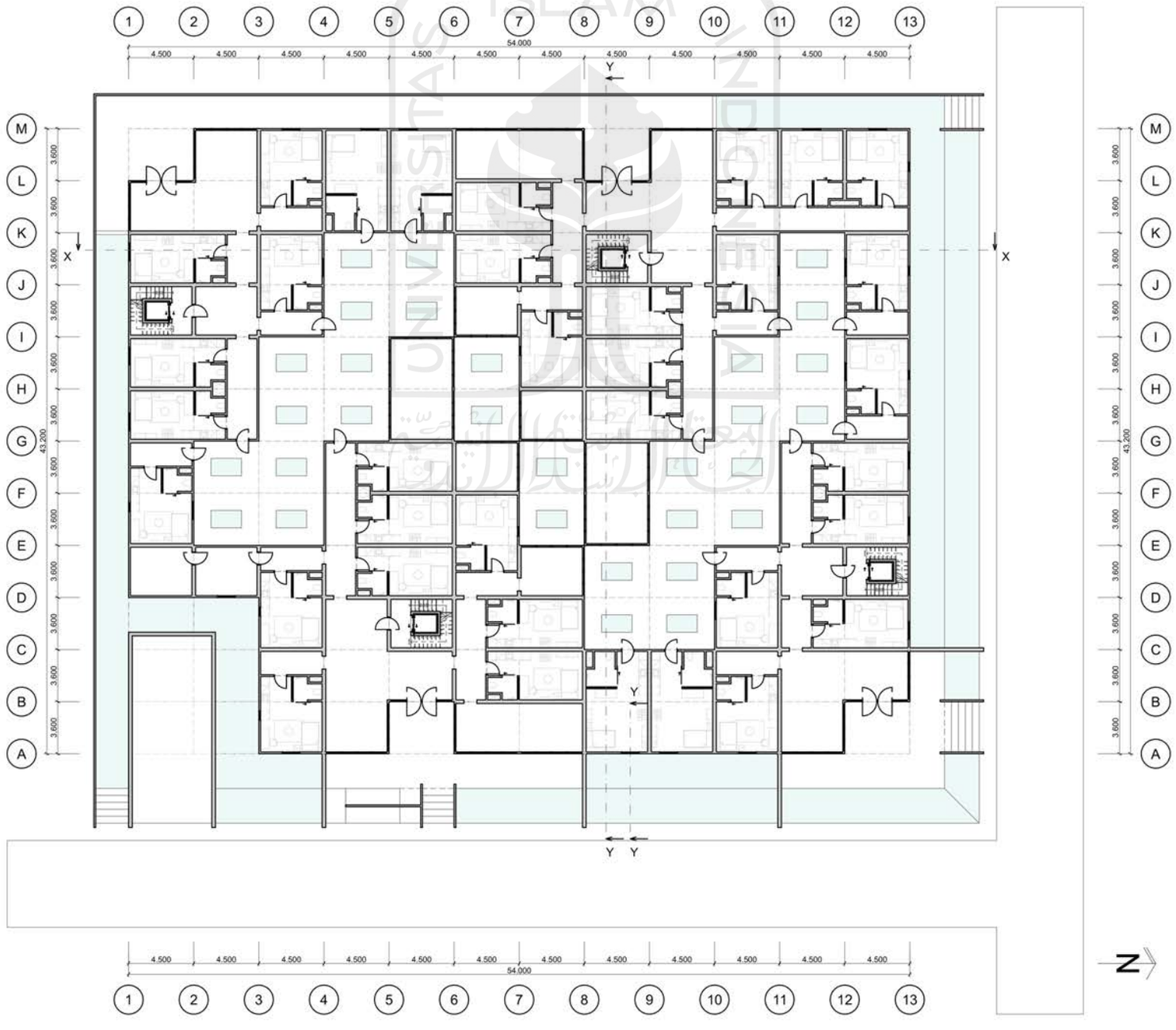
# 4

# technical drawing

## Context Plan



## Site Plan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3.600
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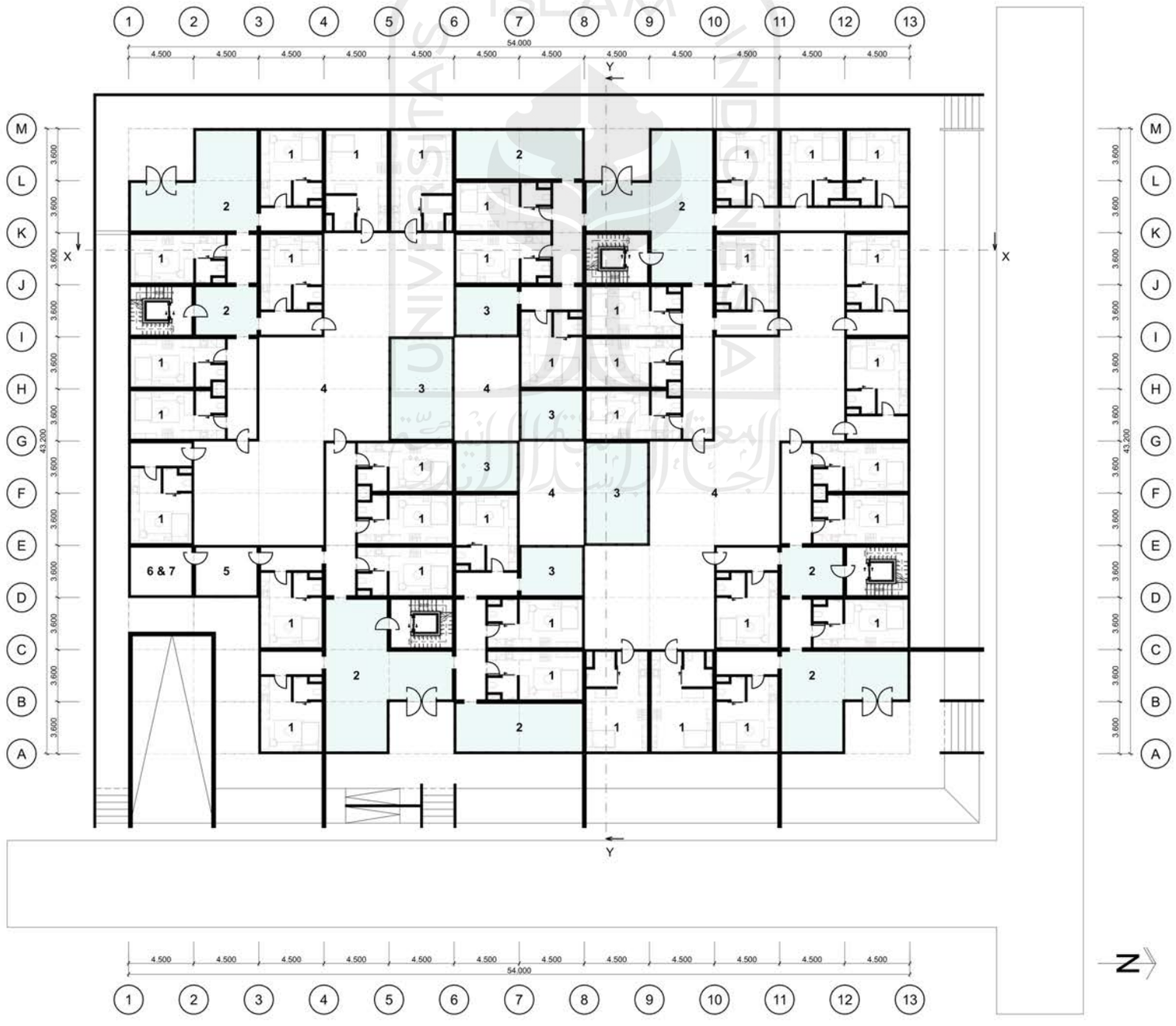
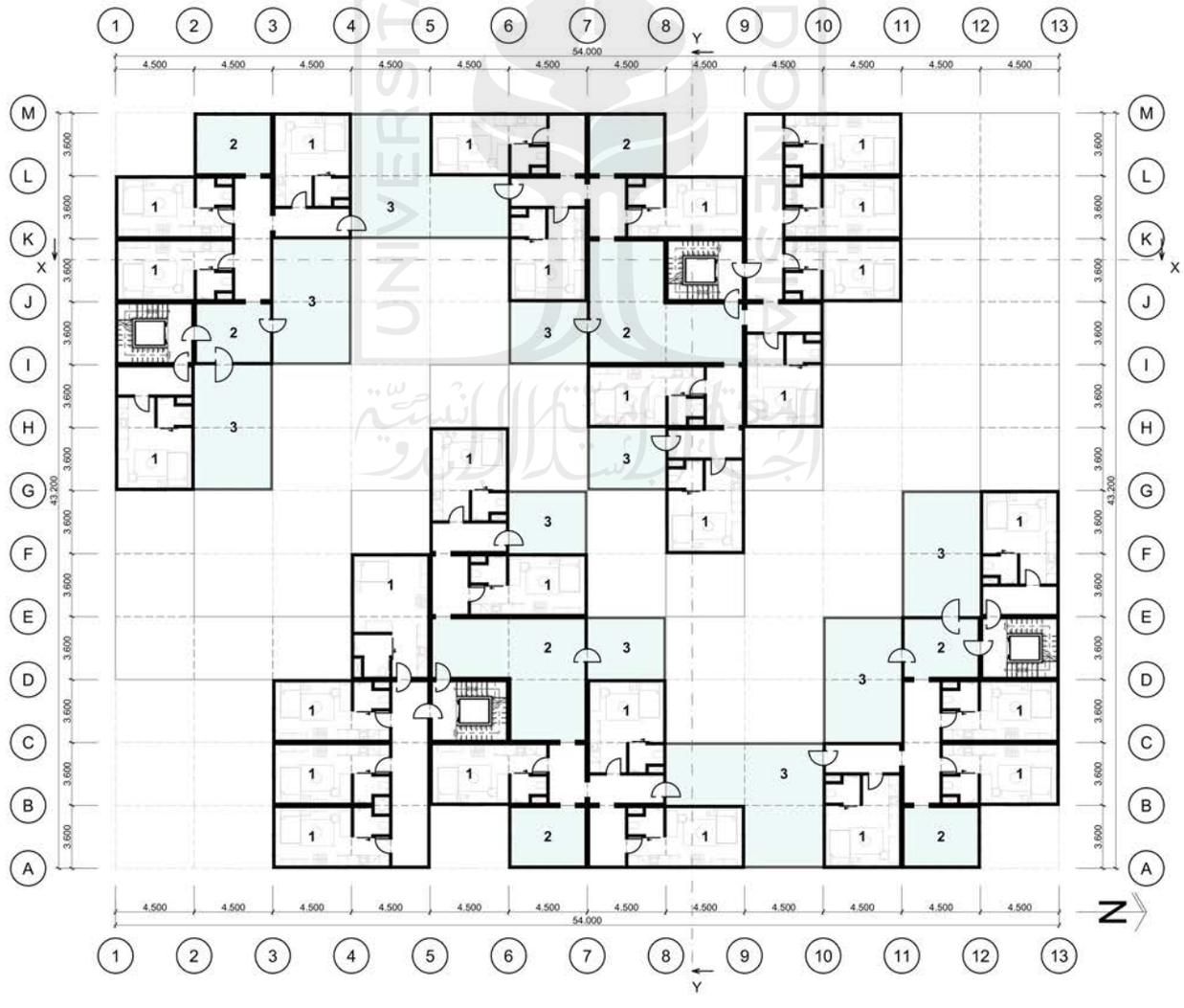
N

## Ground Floor Plan

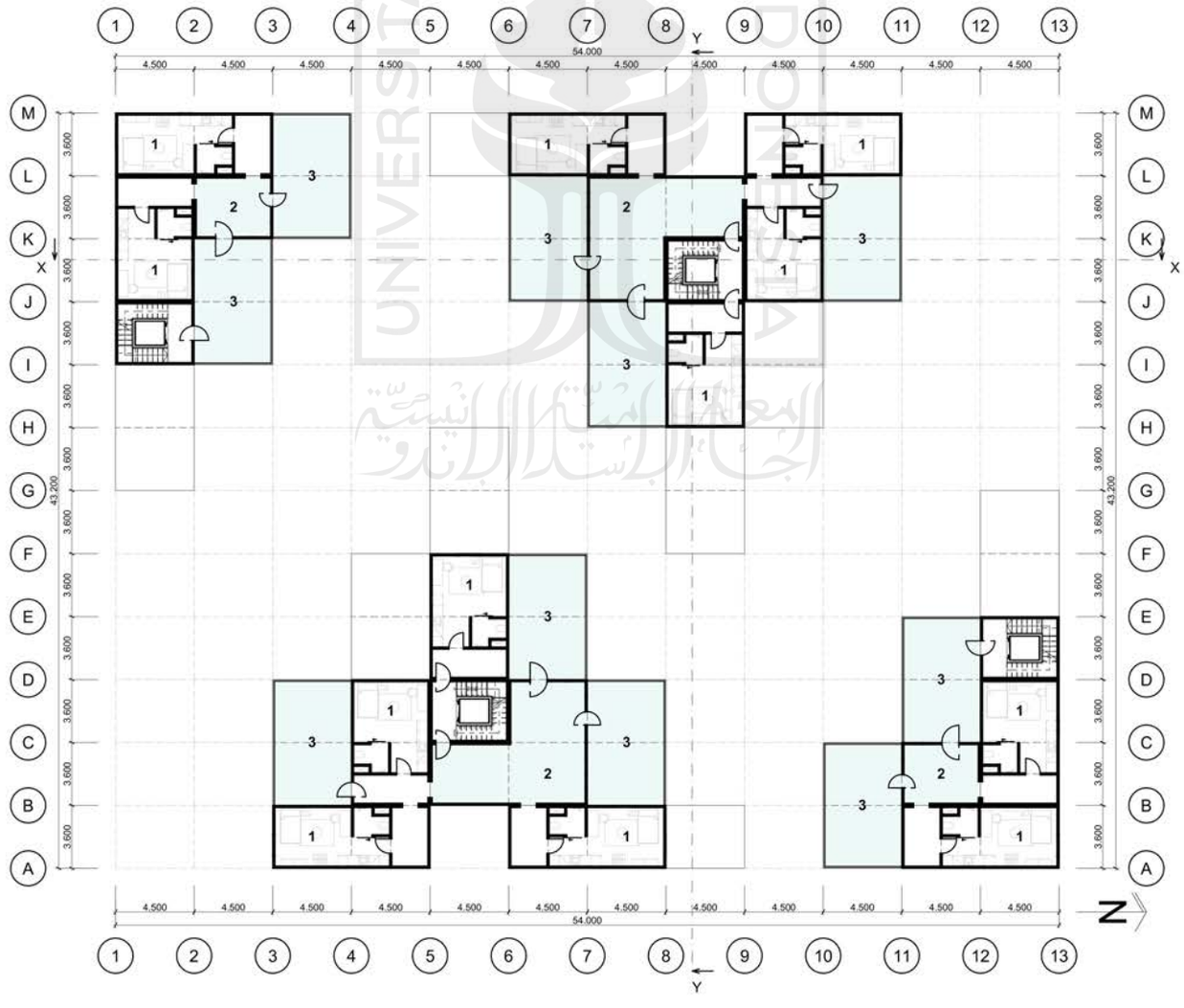



1. **solo studio**
2. **common spot**
3. **study space and library**
4. **courtyard**
5. **management room**
6. **warehouse**
7. **trash storage room**

## First Floor Plan

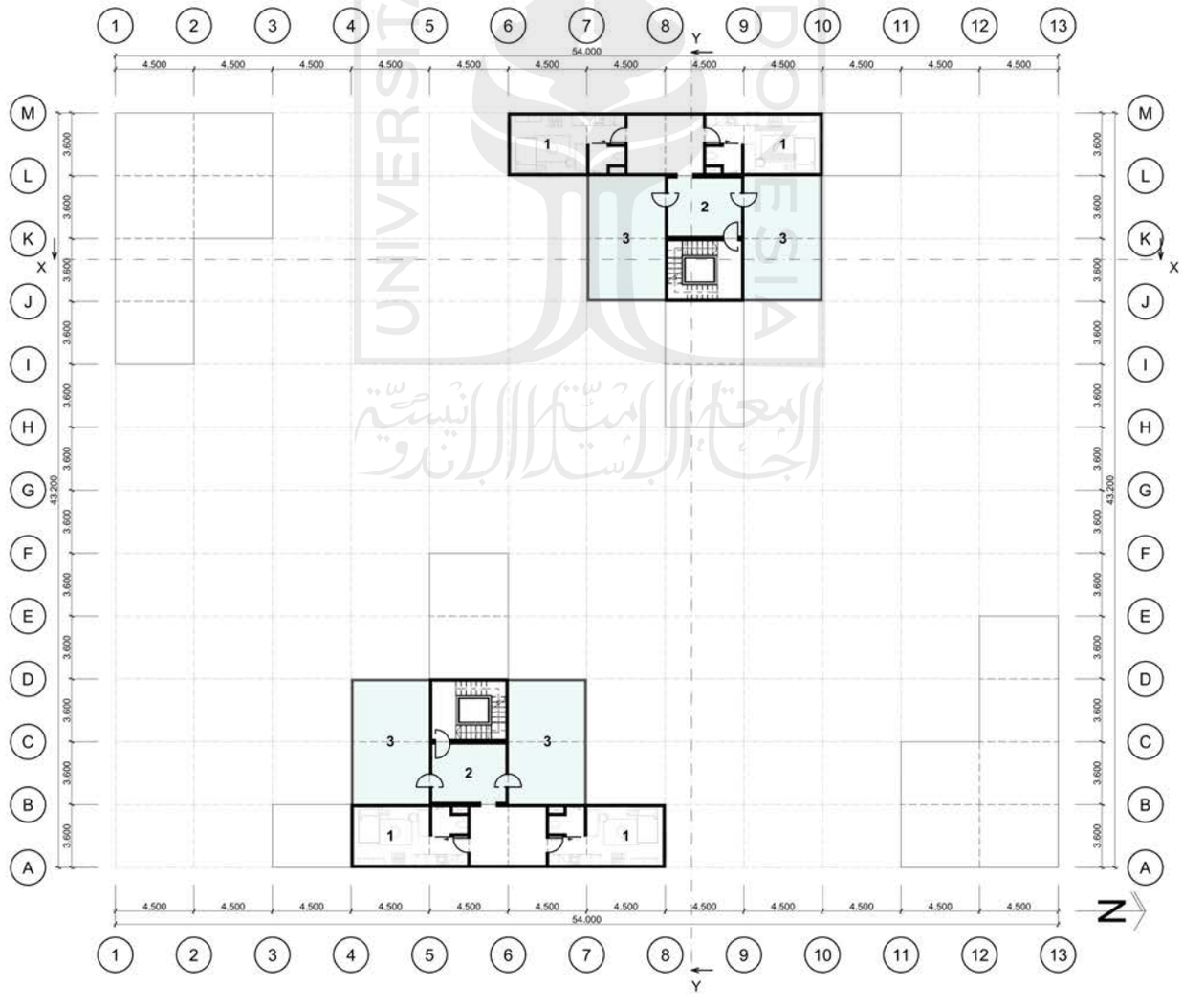


## Second Floor Plan



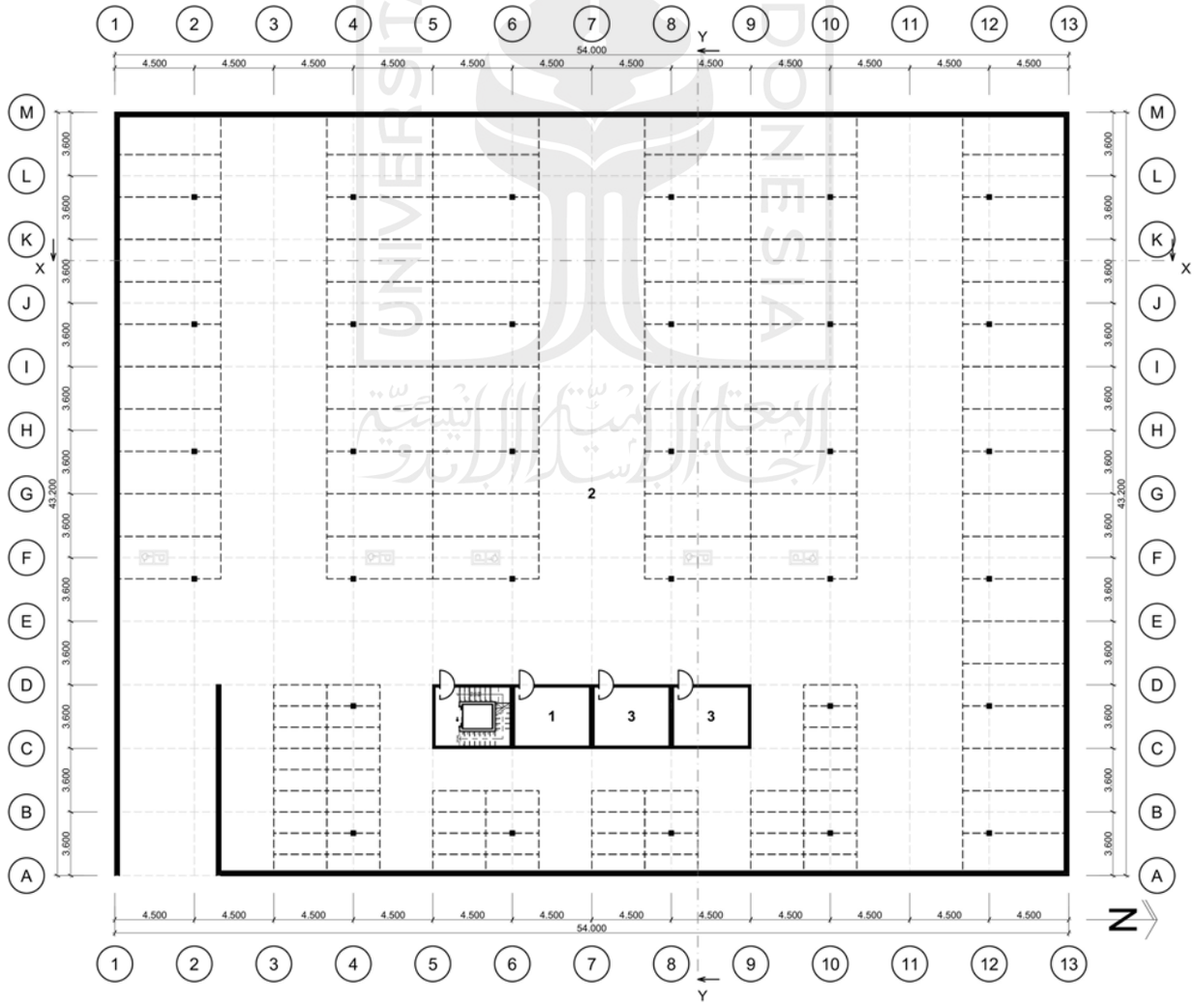

1. **solo studio**
2. **common spot**
3. **balcony**

## Third Floor Plan



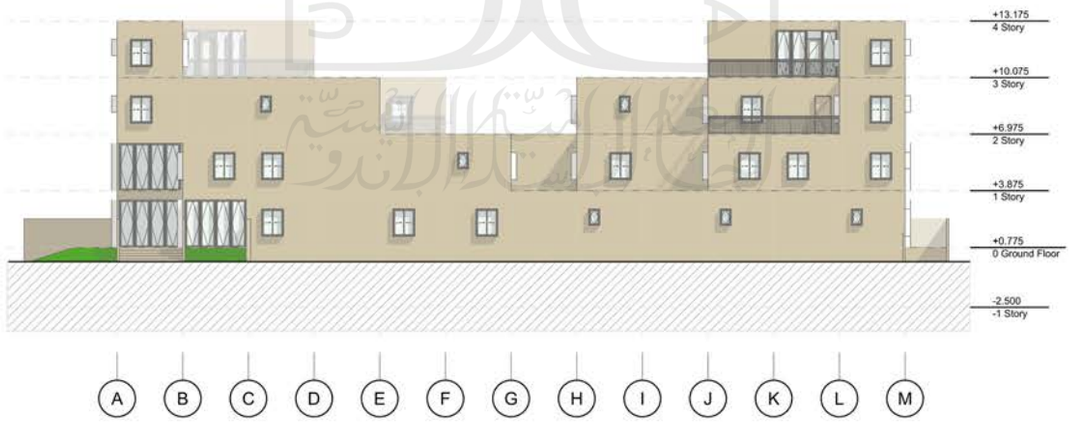

1. **solo studio**
2. **common spot**
3. **balcony**

## Semi-basement Plan



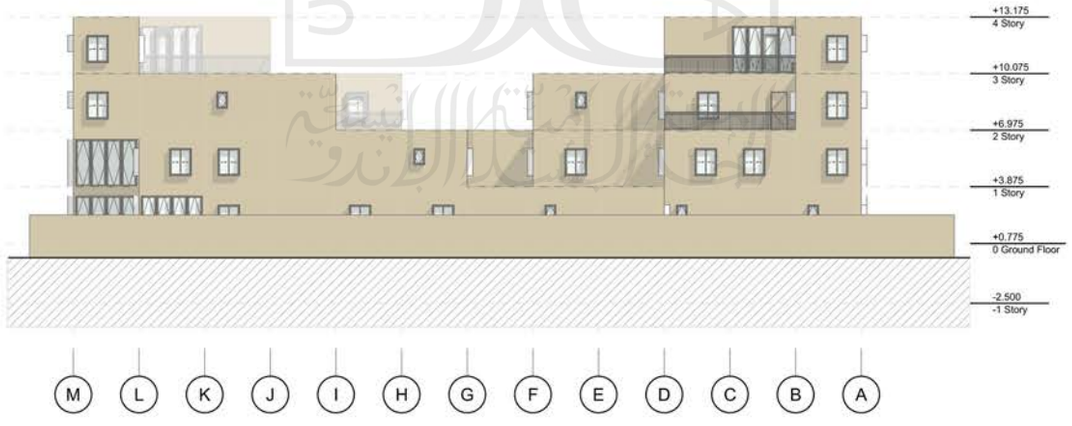

1. **laundry room**
2. **semi-basement parking**
3. **equipment room**

**North Elevation**



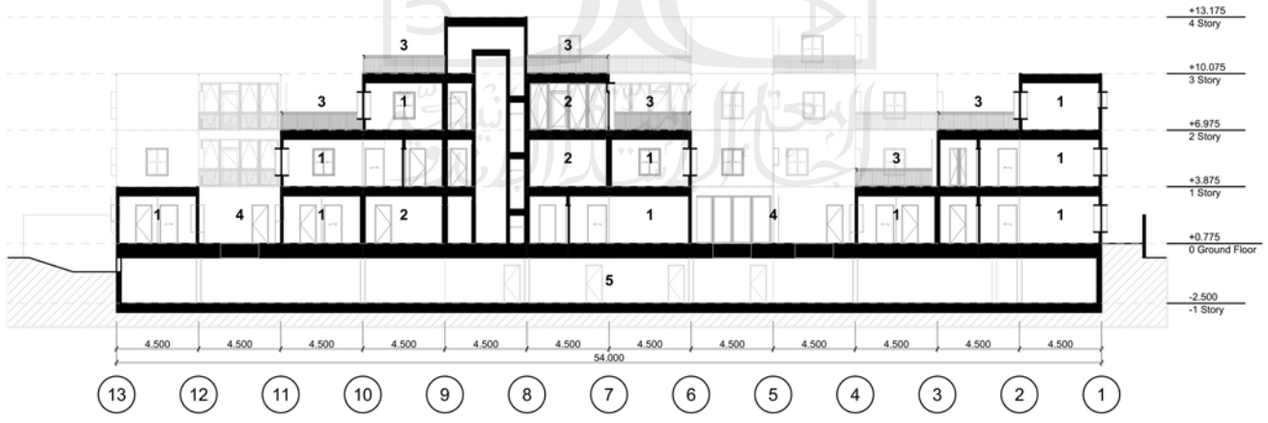
**East Elevation**

**South Elevation**



**West Elevation**

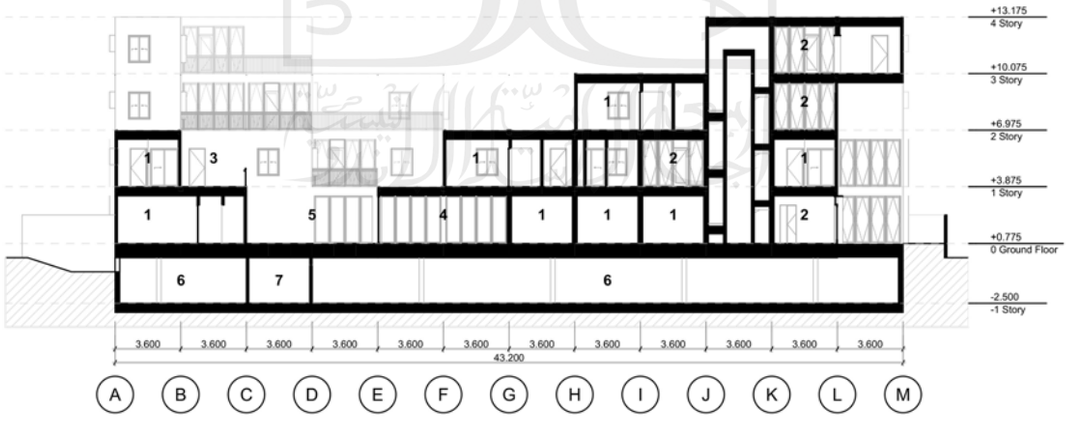
## X-X Section



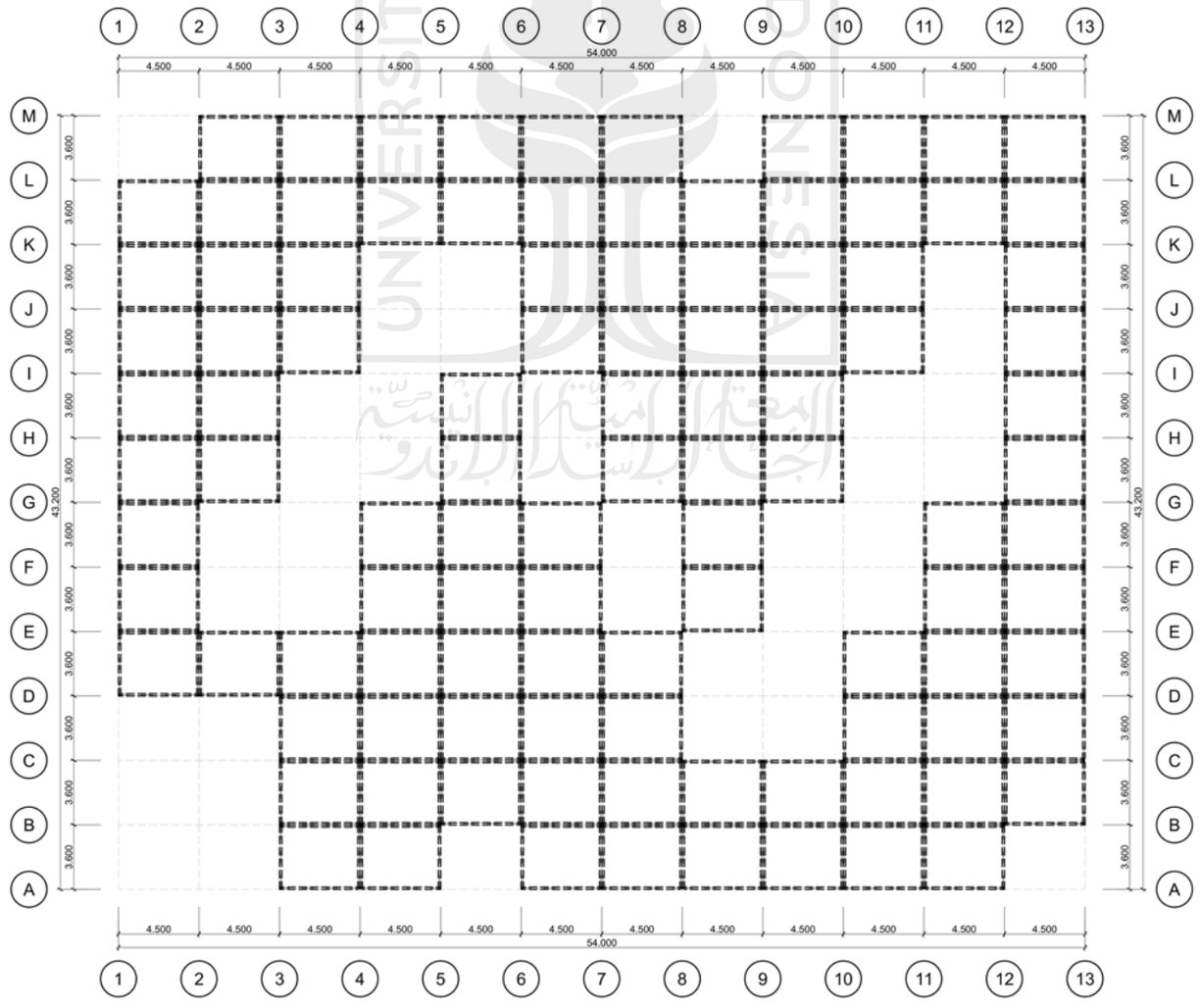

1. **solo studio**
2. **common spot**
3. **balcony**
4. **courtyard**
5. **semi-basement parking**

## Y-Y Section

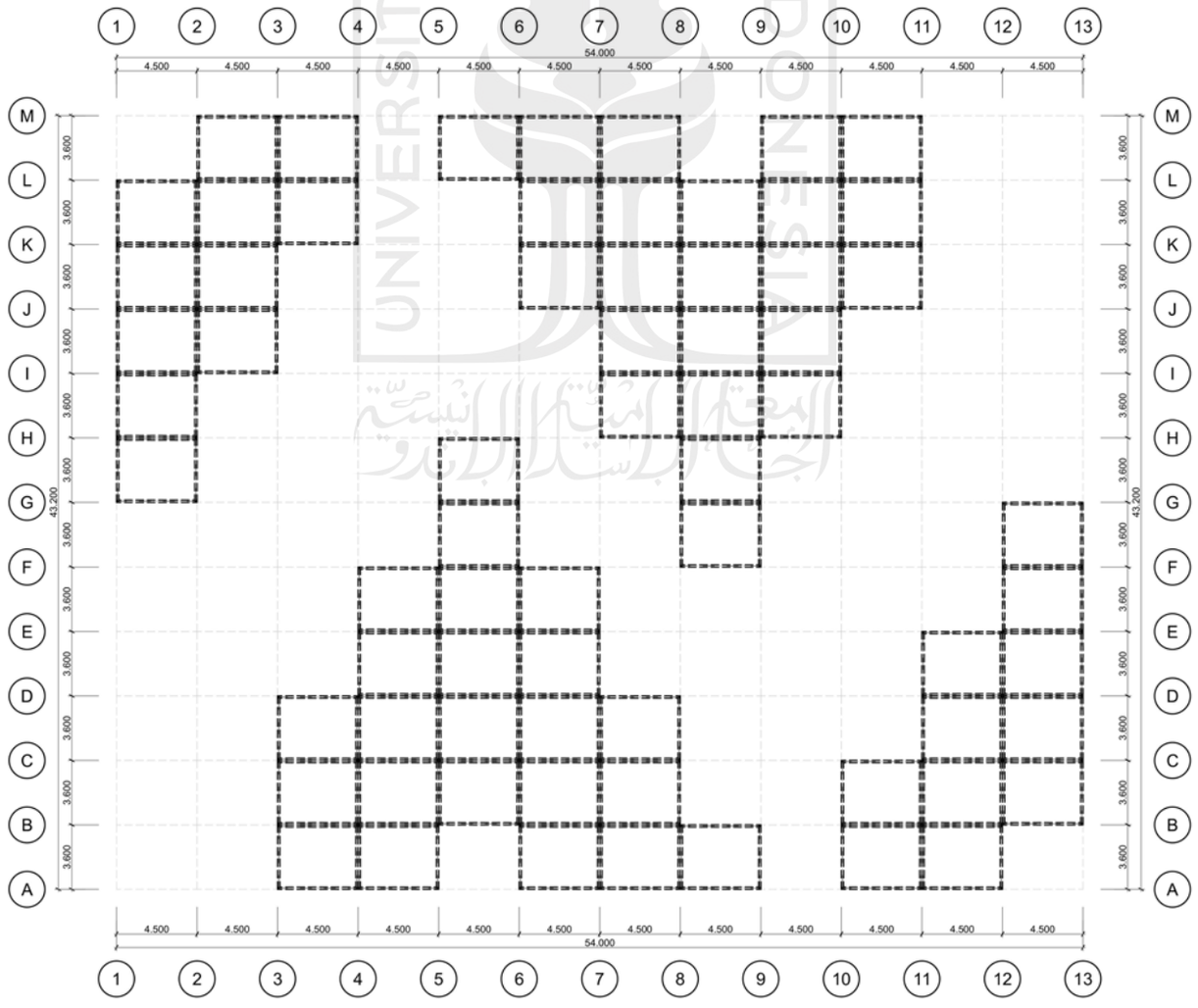
1. **solo studio**
2. **common spot**
3. **balcony**
4. **study space and library**
5. **courtyard**
6. **semi-basement parking**
7. **equipment room**



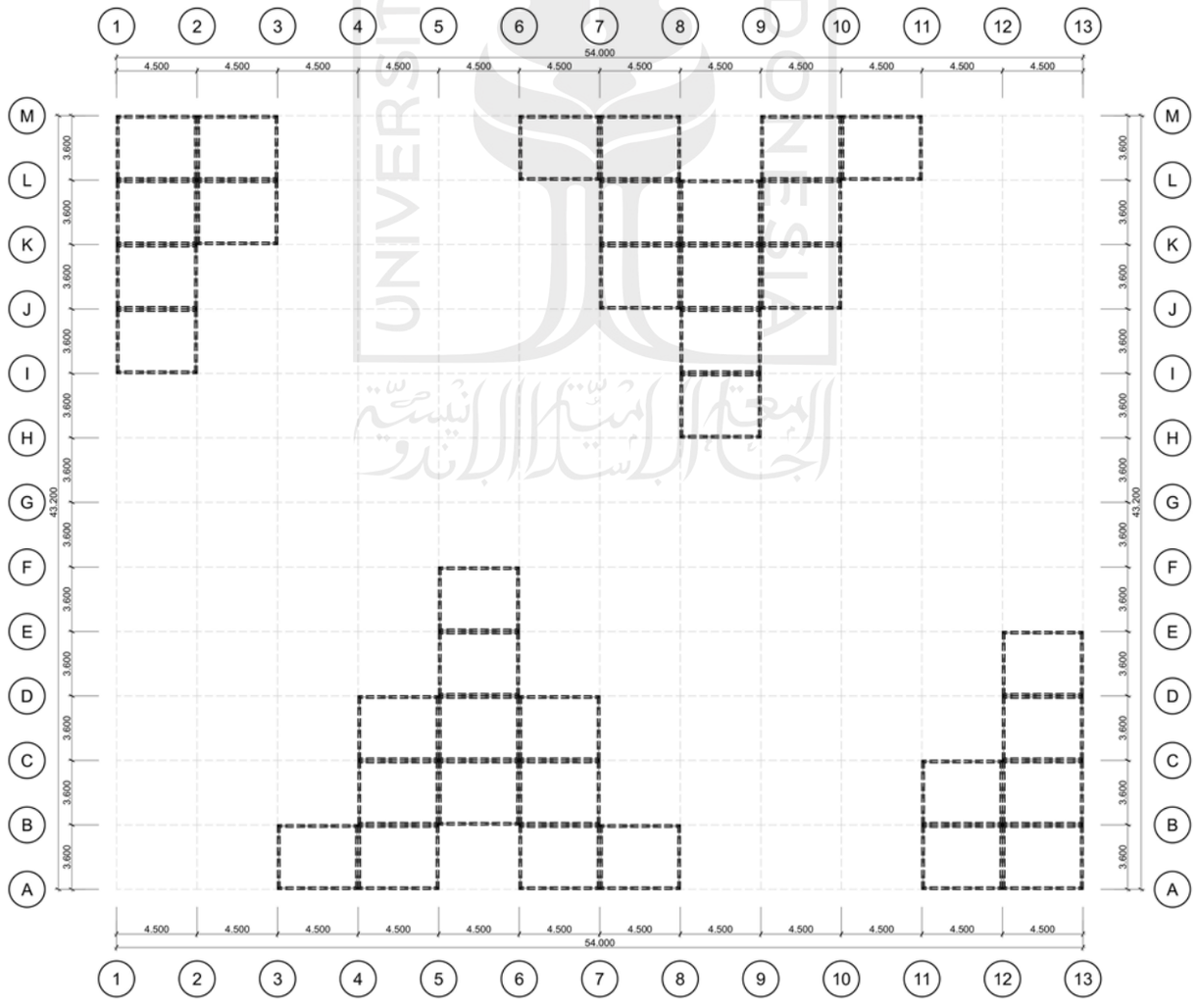
## Ground Floor Structural Plan



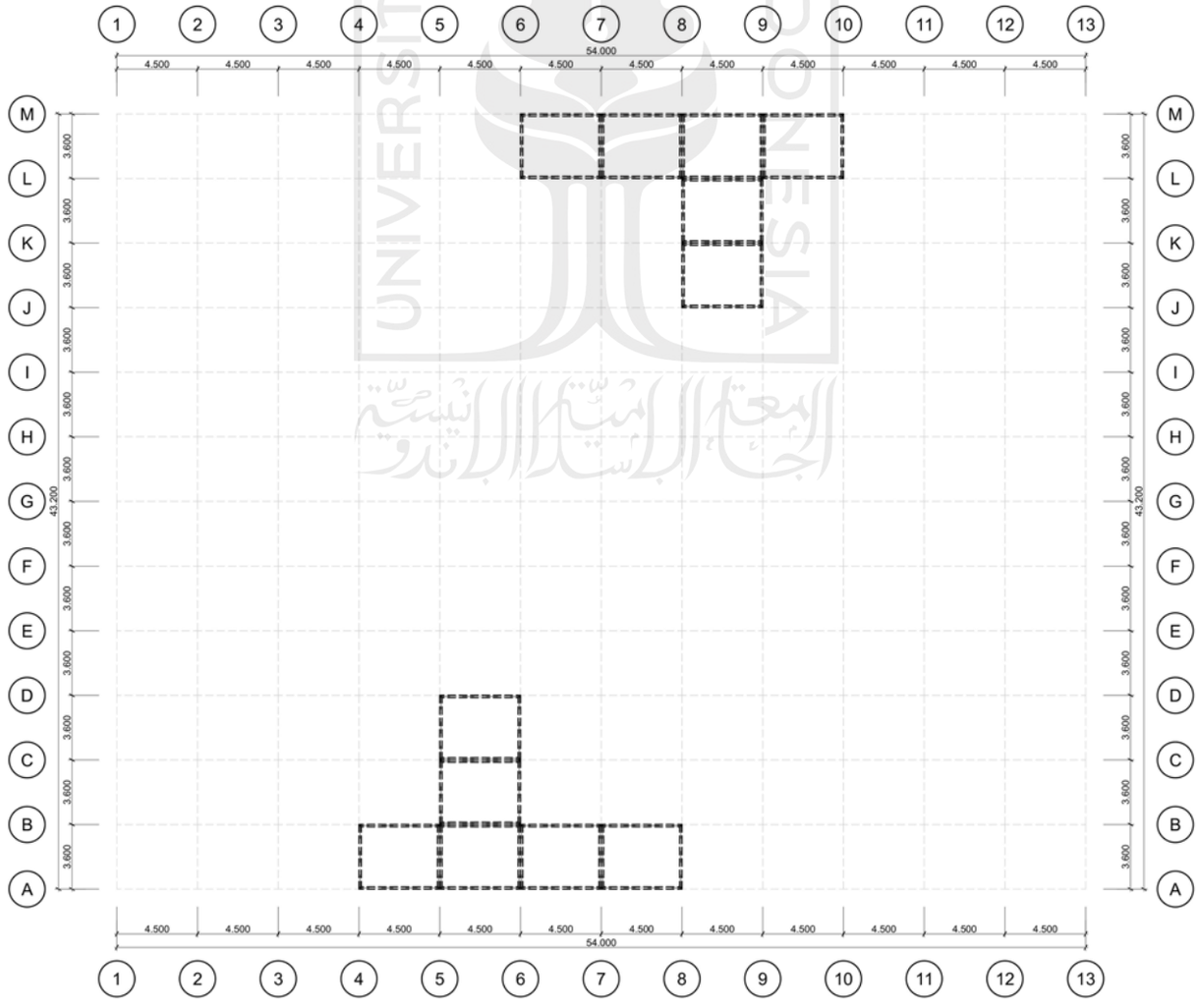
## First Floor Structural Plan



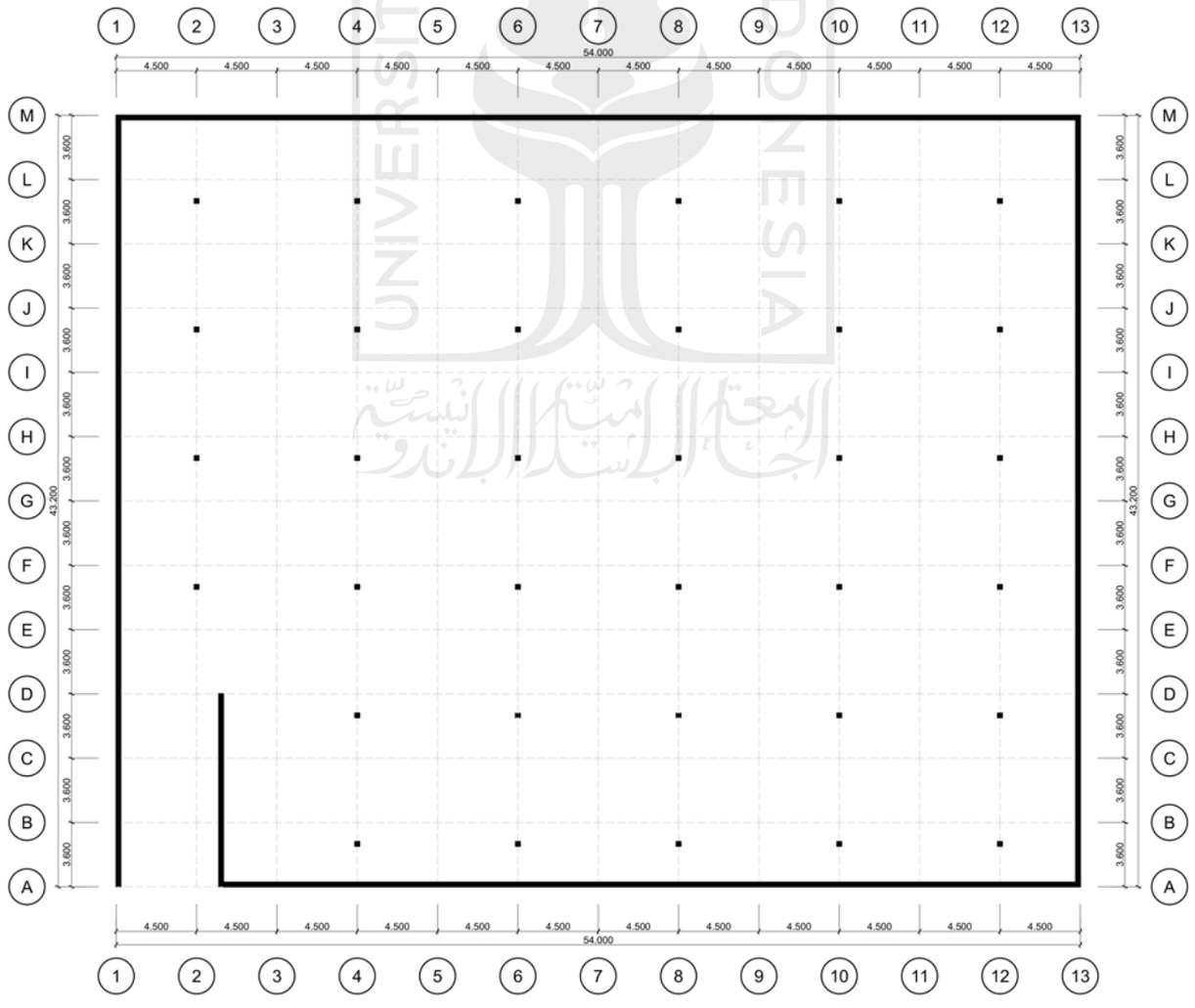
## Second Floor Structural Plan



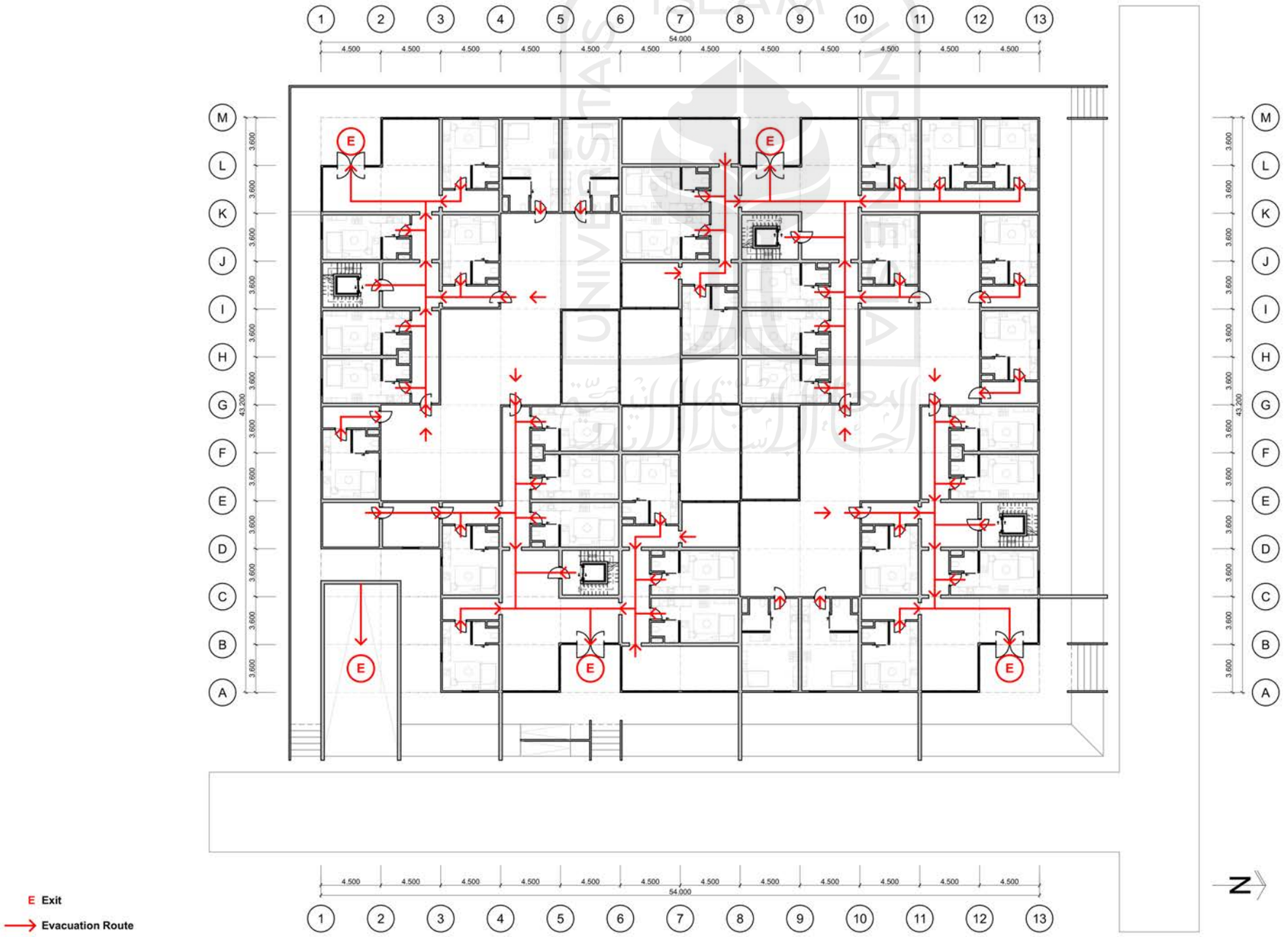
## Third Floor Structural Plan



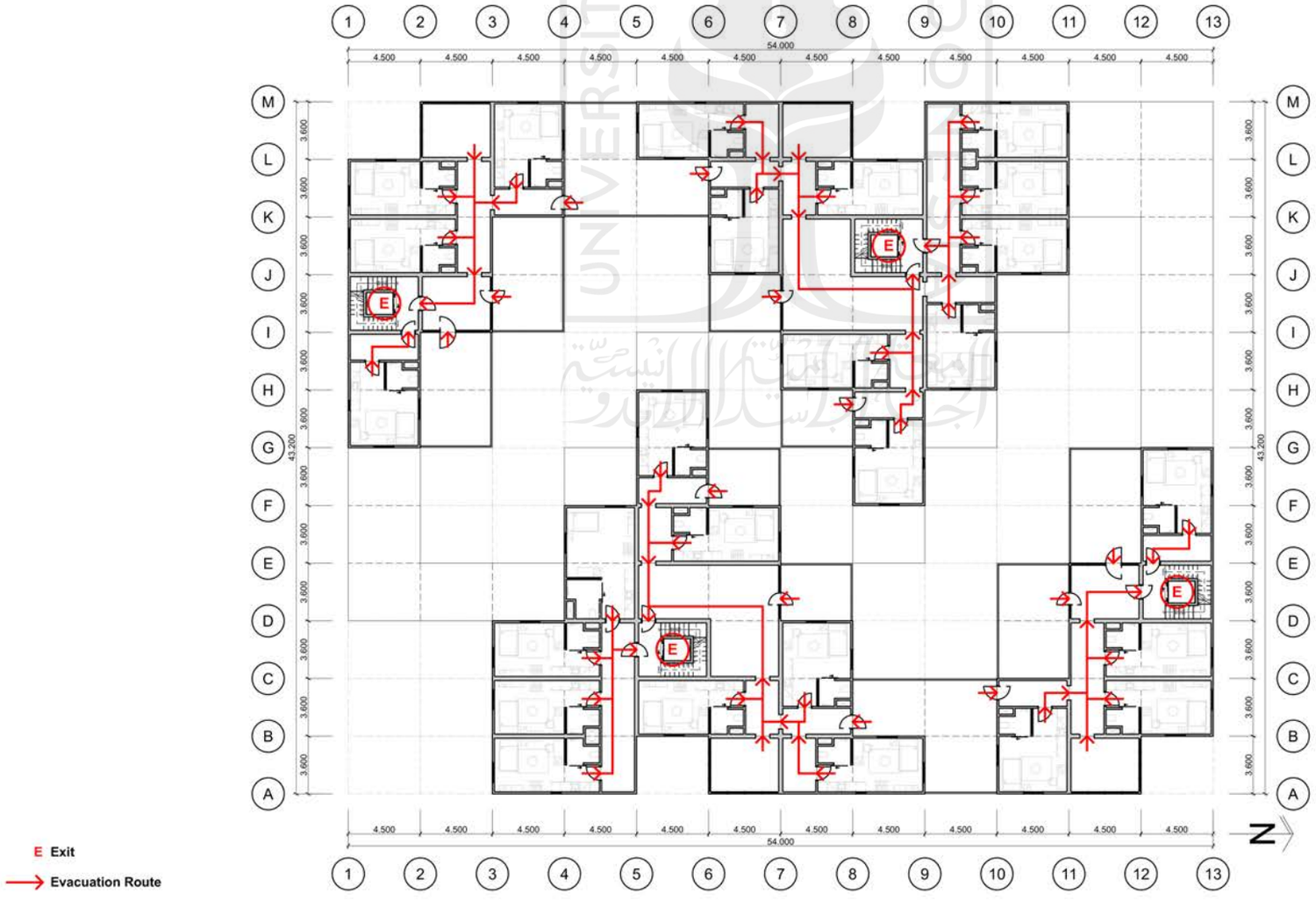
## Semi-basement Structural Plan



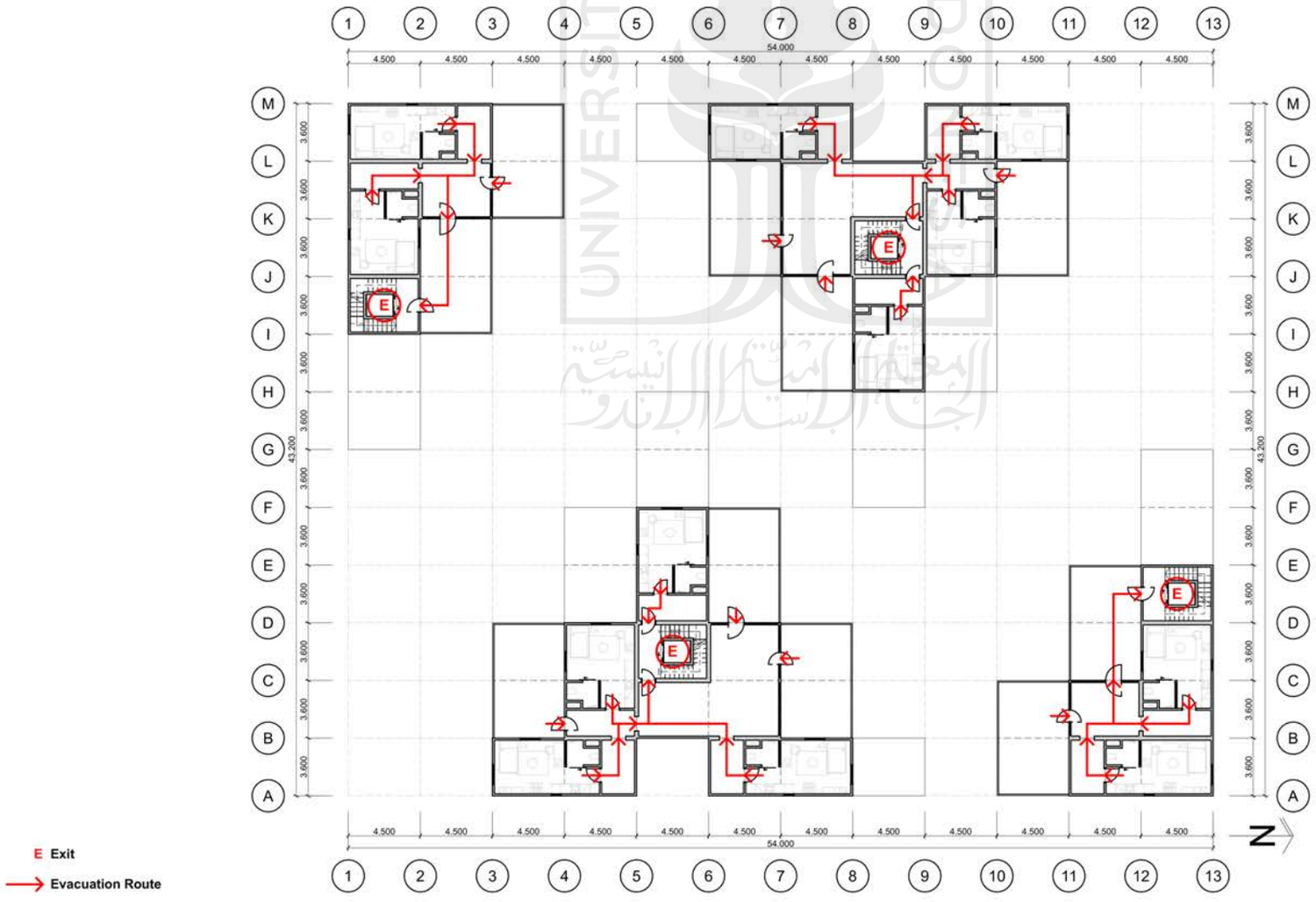
## Ground Floor Fire Plan



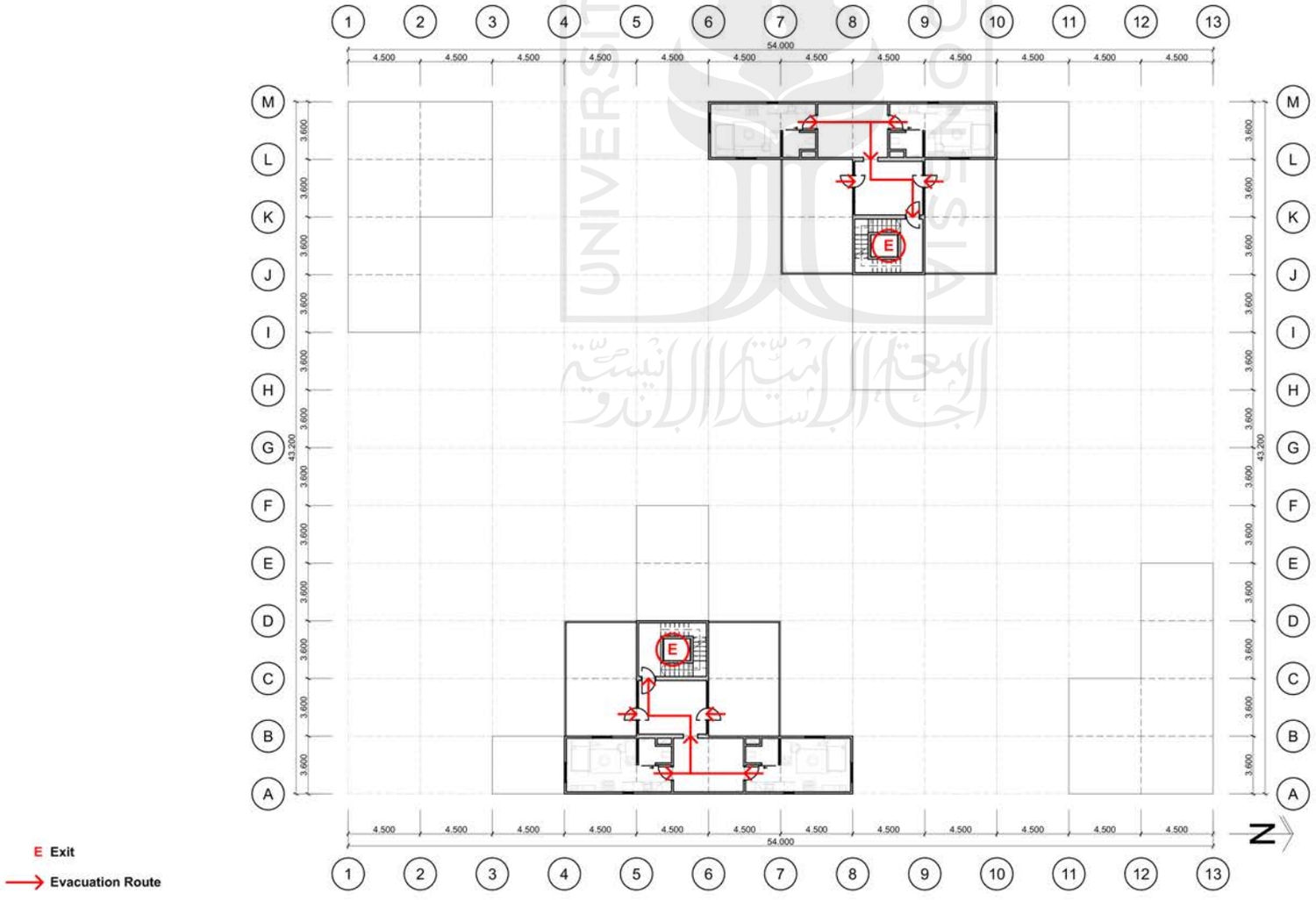
## First Floor Fire Plan



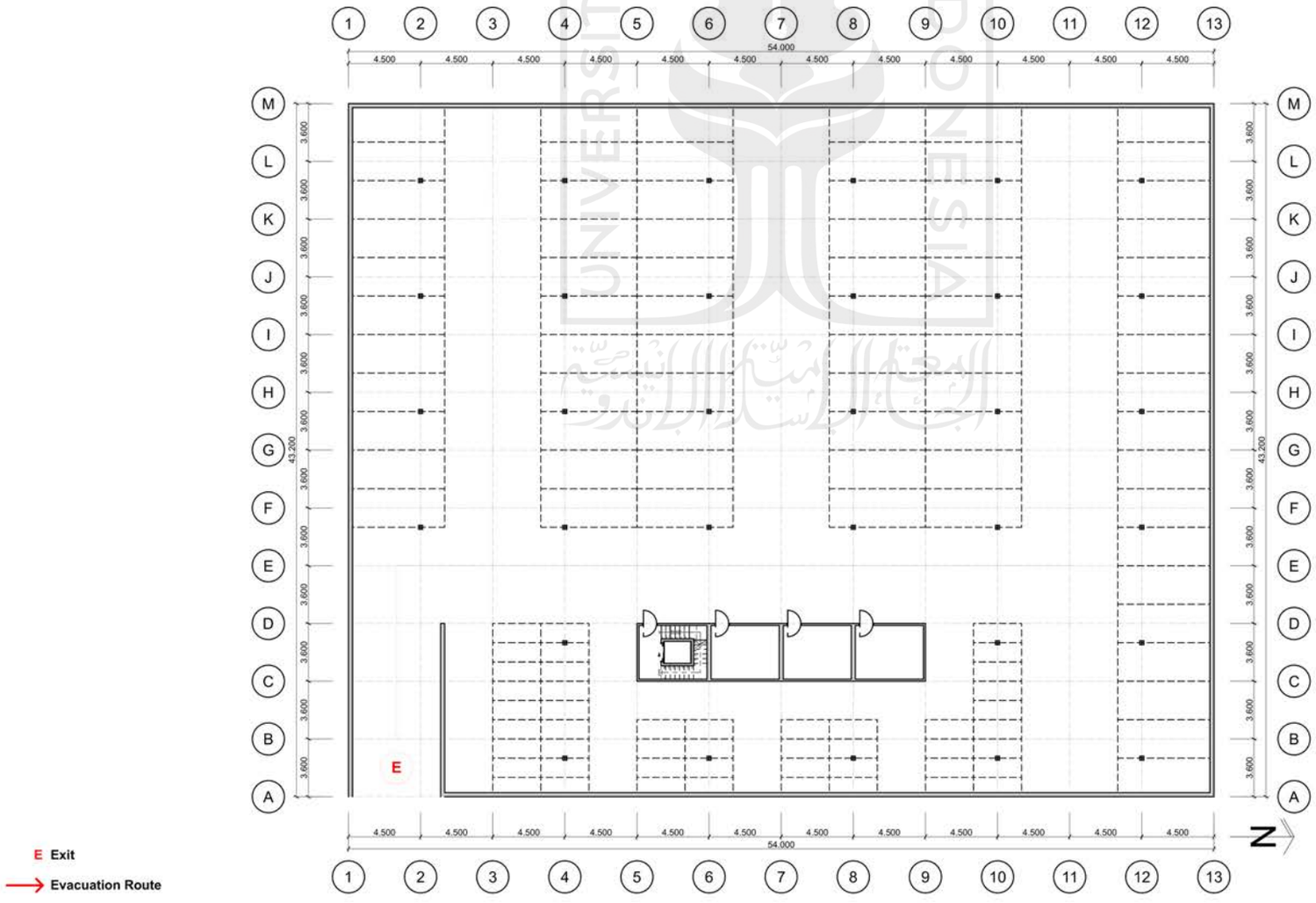
## Second Floor Fire Plan



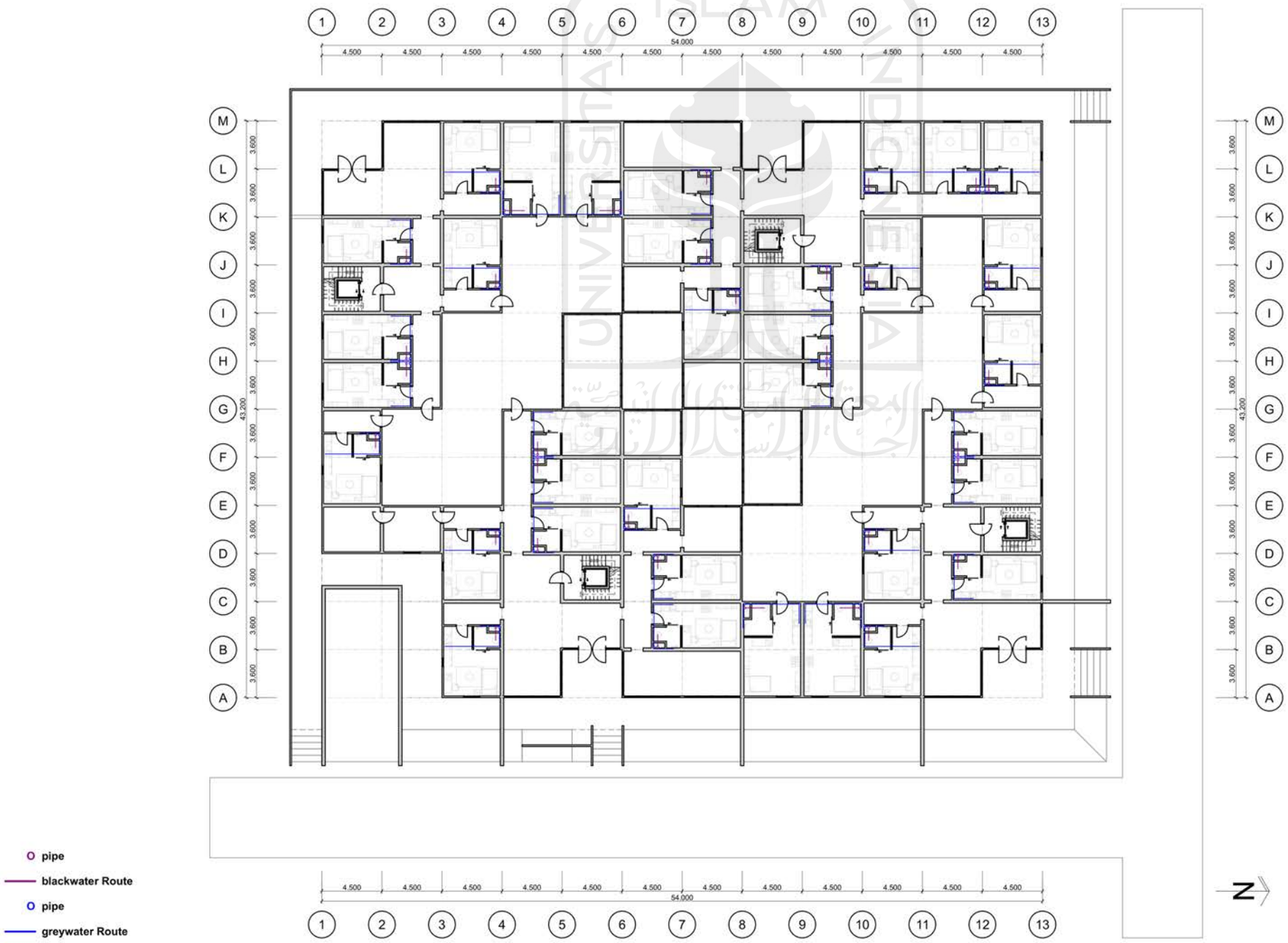
## Third Floor Fire Plan



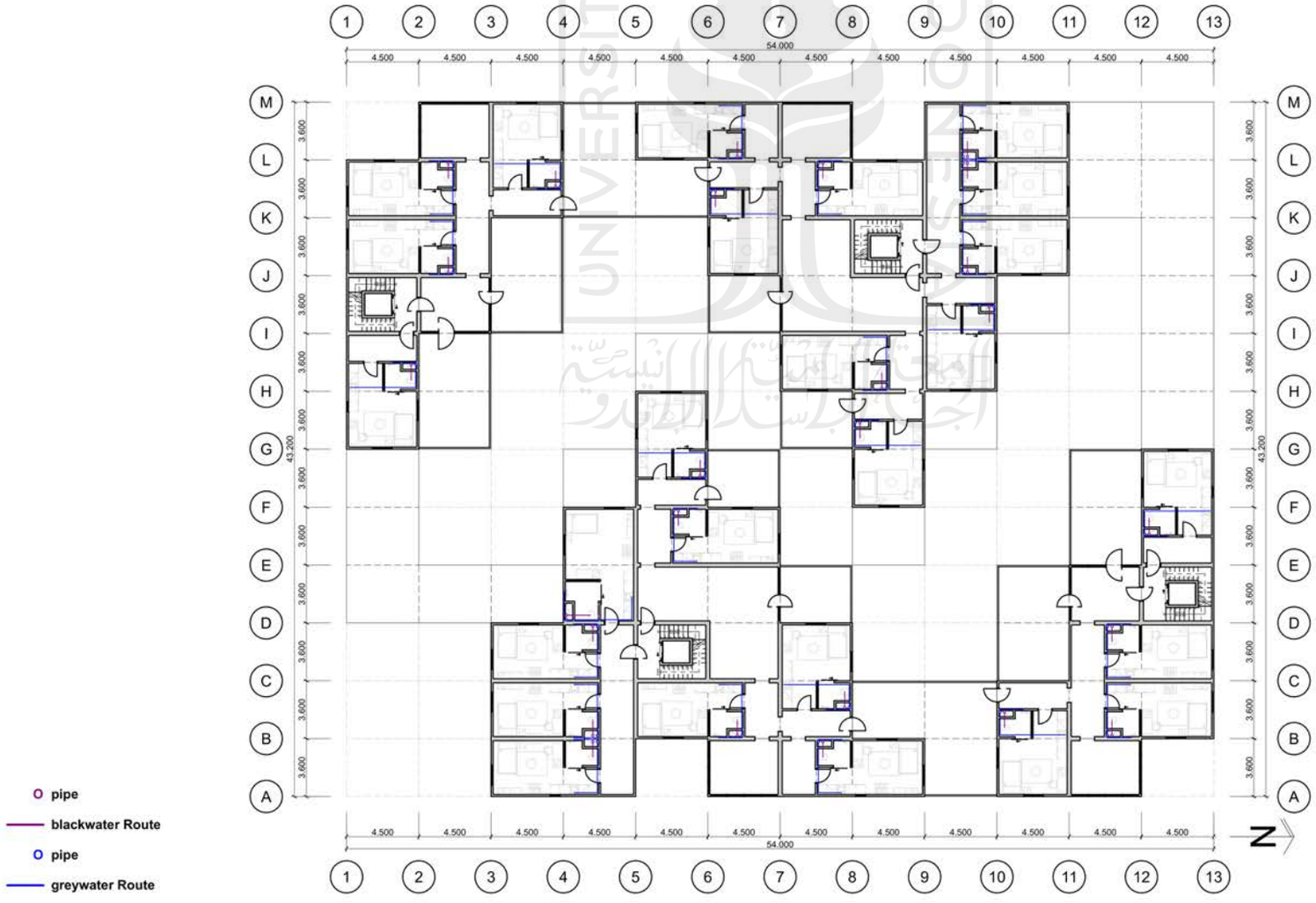
## Semi-basement Fire Plan



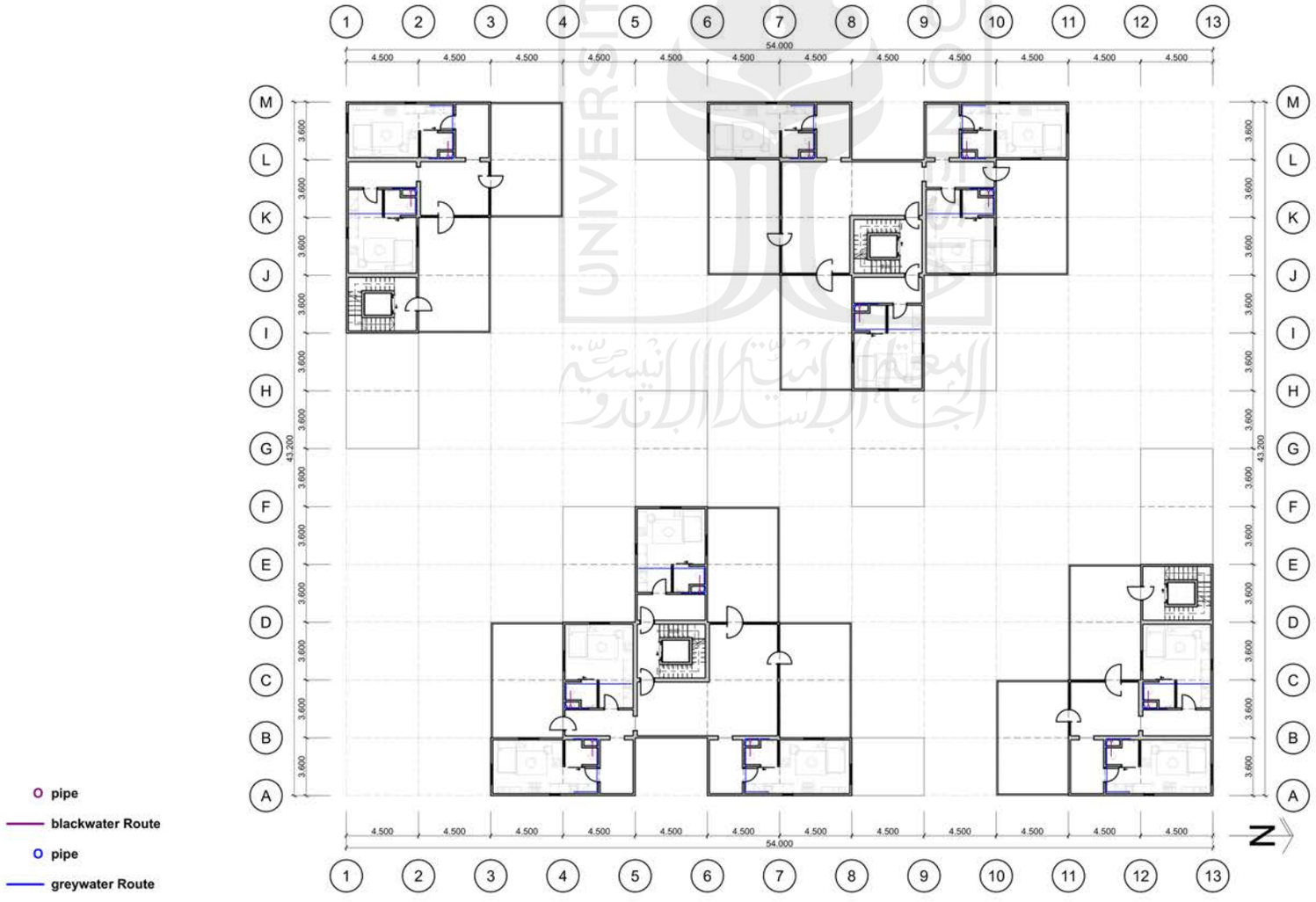
## Ground Floor Plumbing Plan



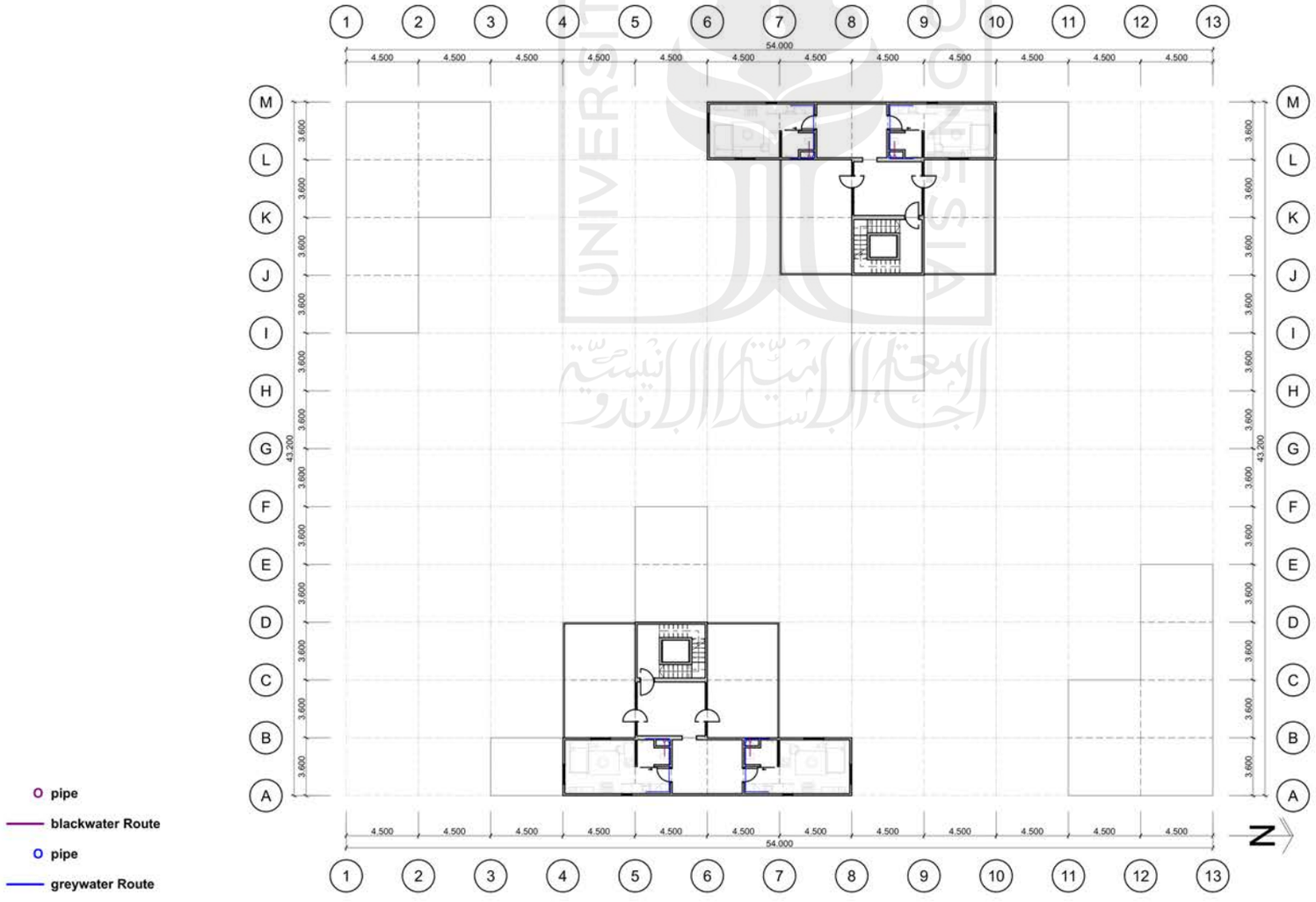
## First Floor Plumbing Plan



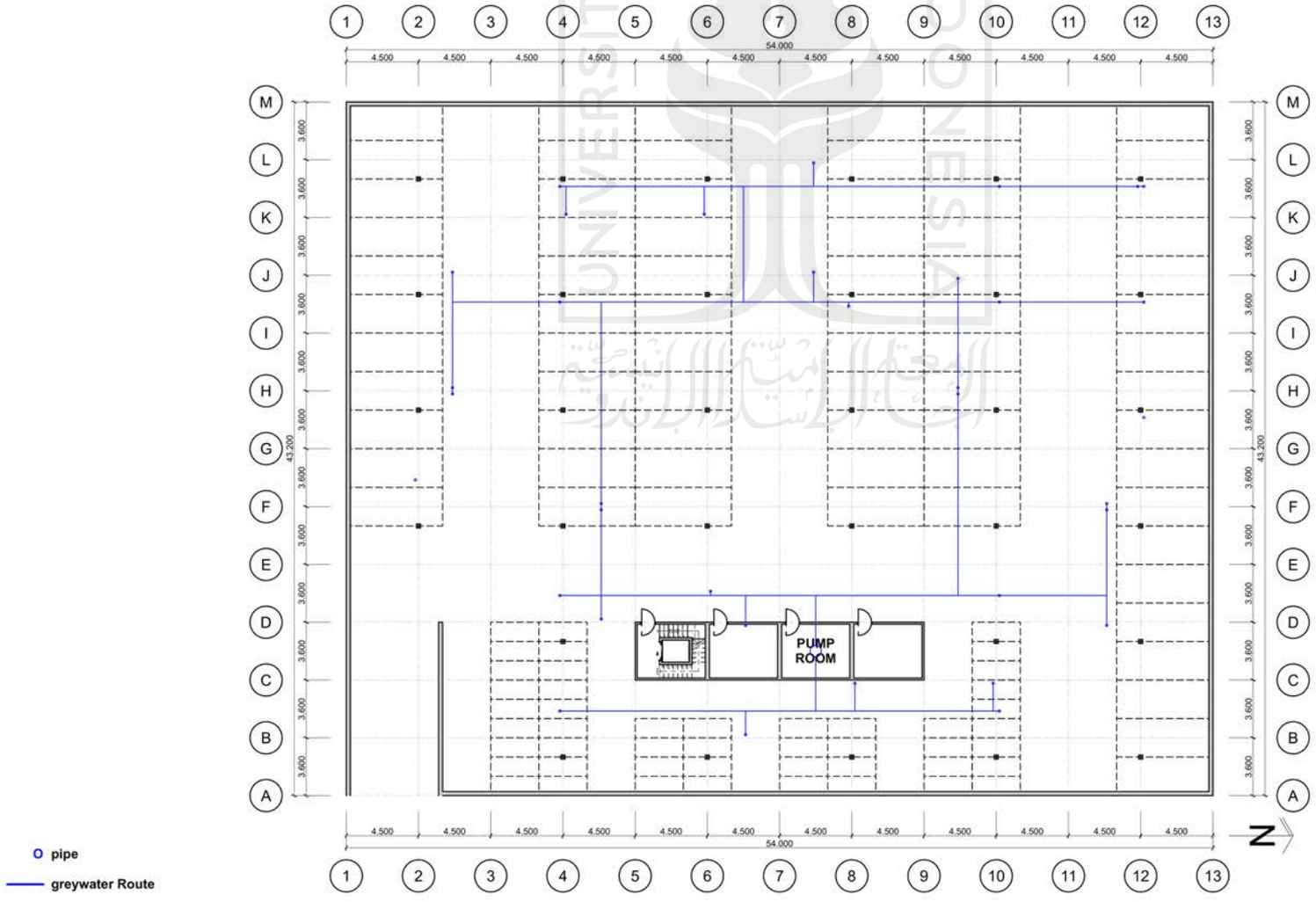
## Second Floor Plumbing Plan



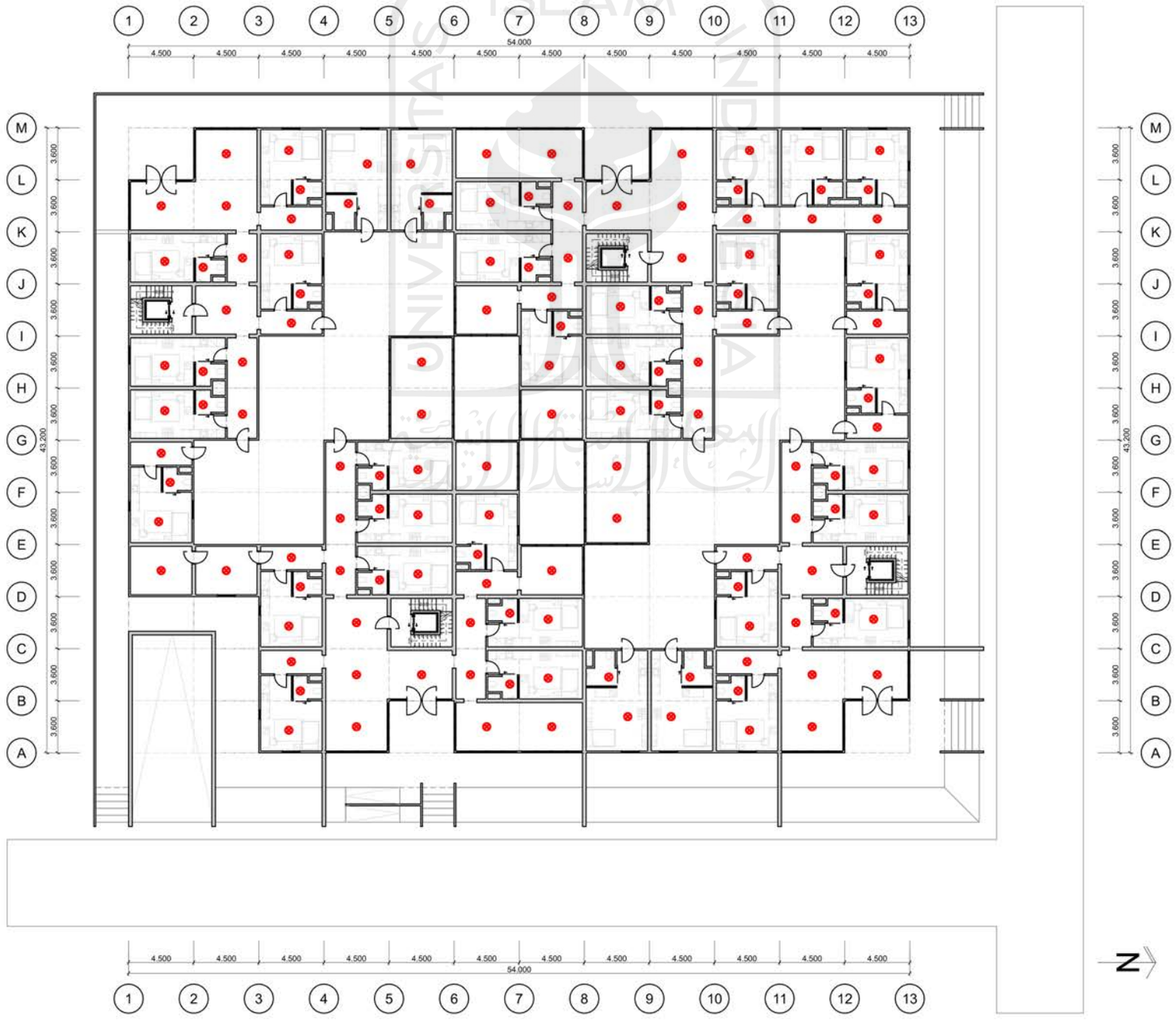
## Third Floor Plumbing Plan



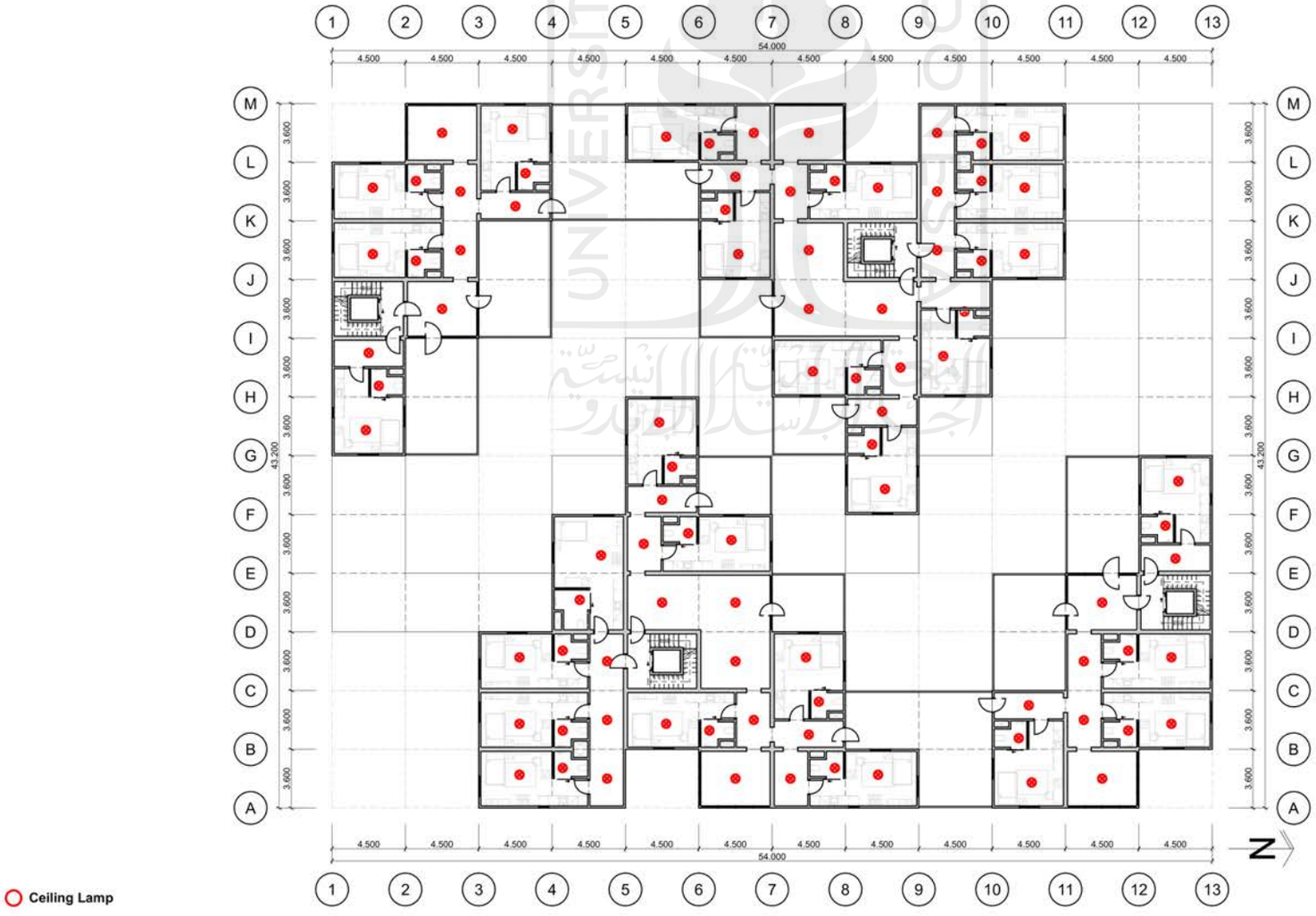
## Semi-basement Plumbing Plan



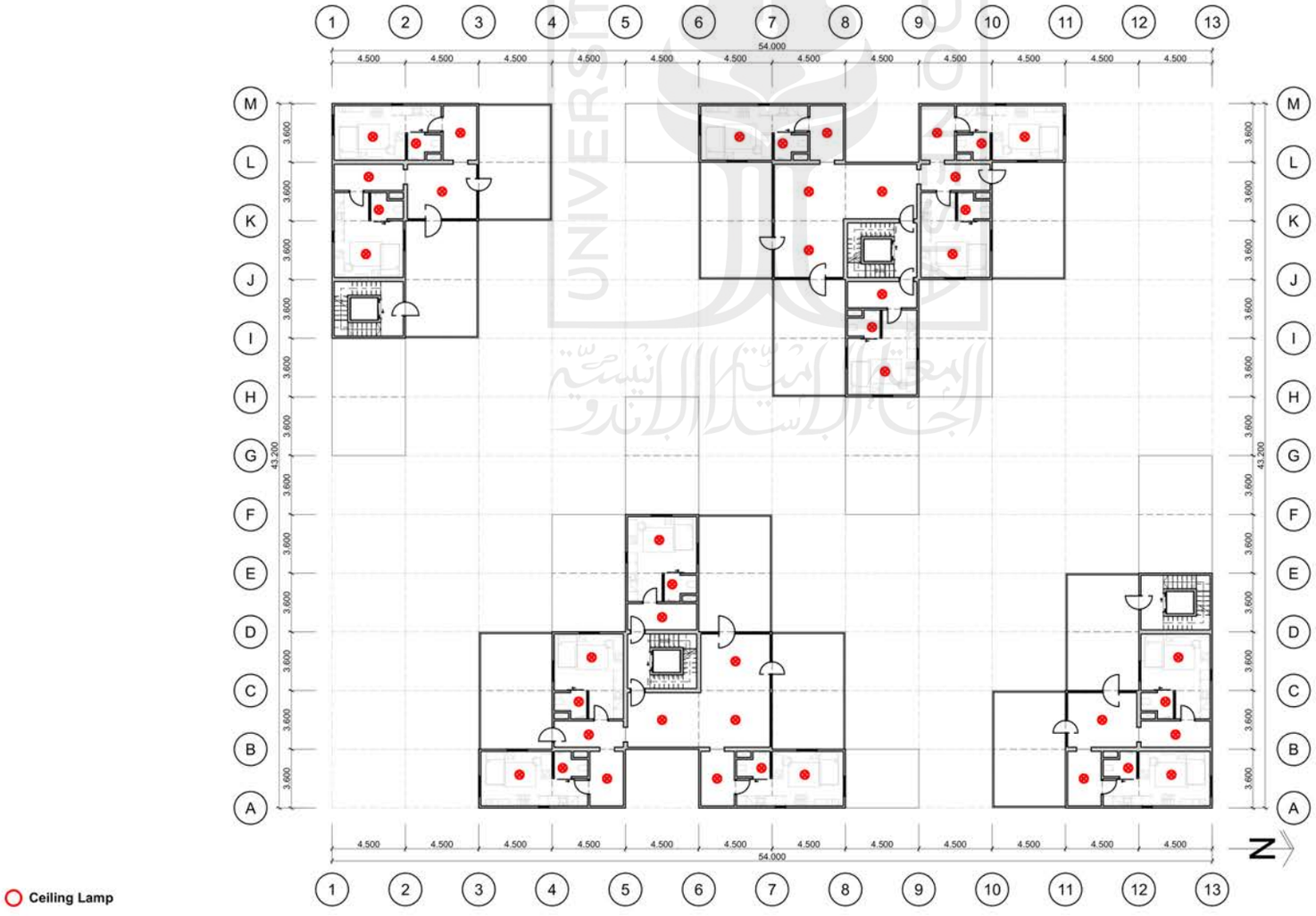
## Ground Floor Lighting Plan



## First Floor Lighting Plan

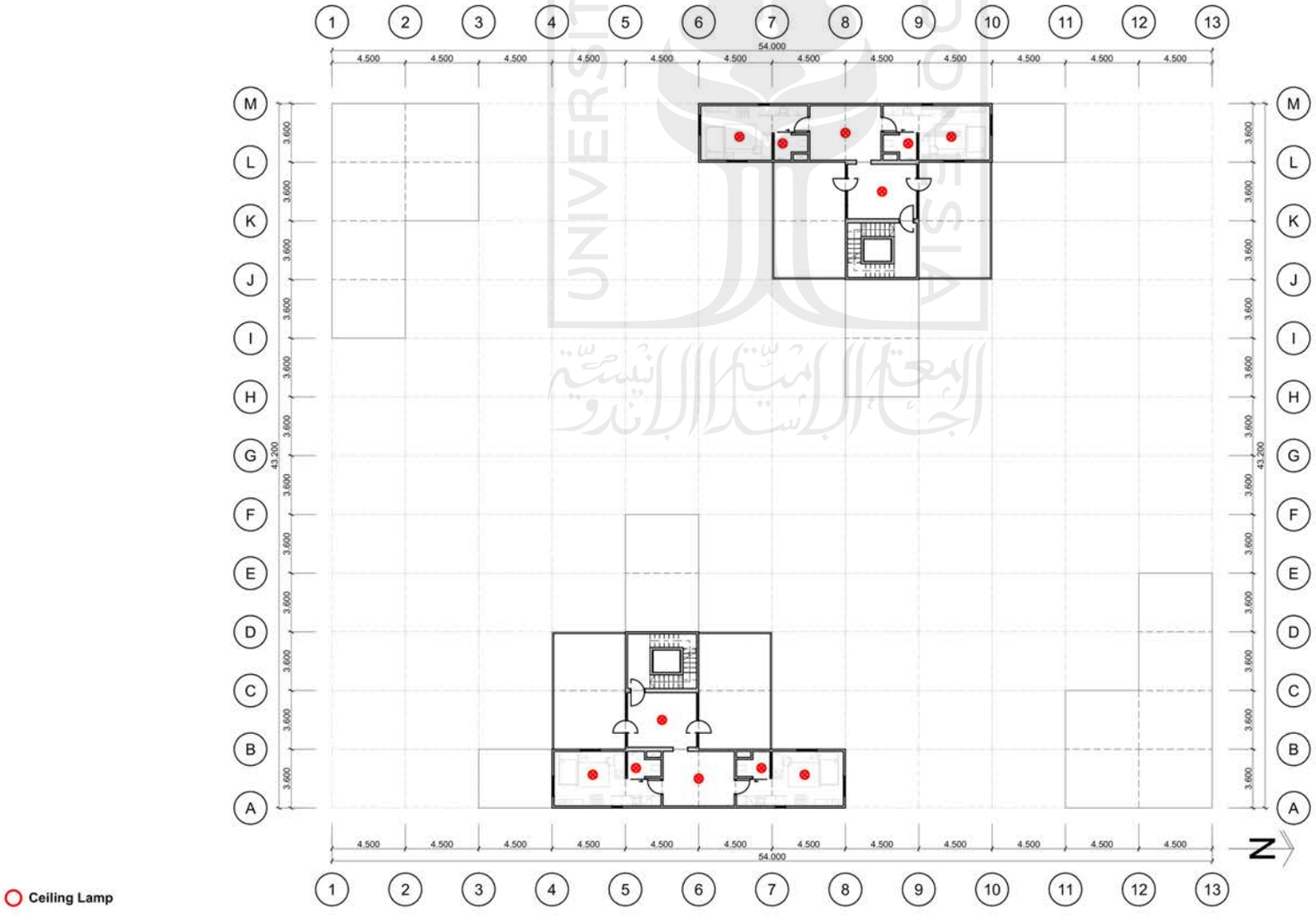


## Second Floor Lighting Plan



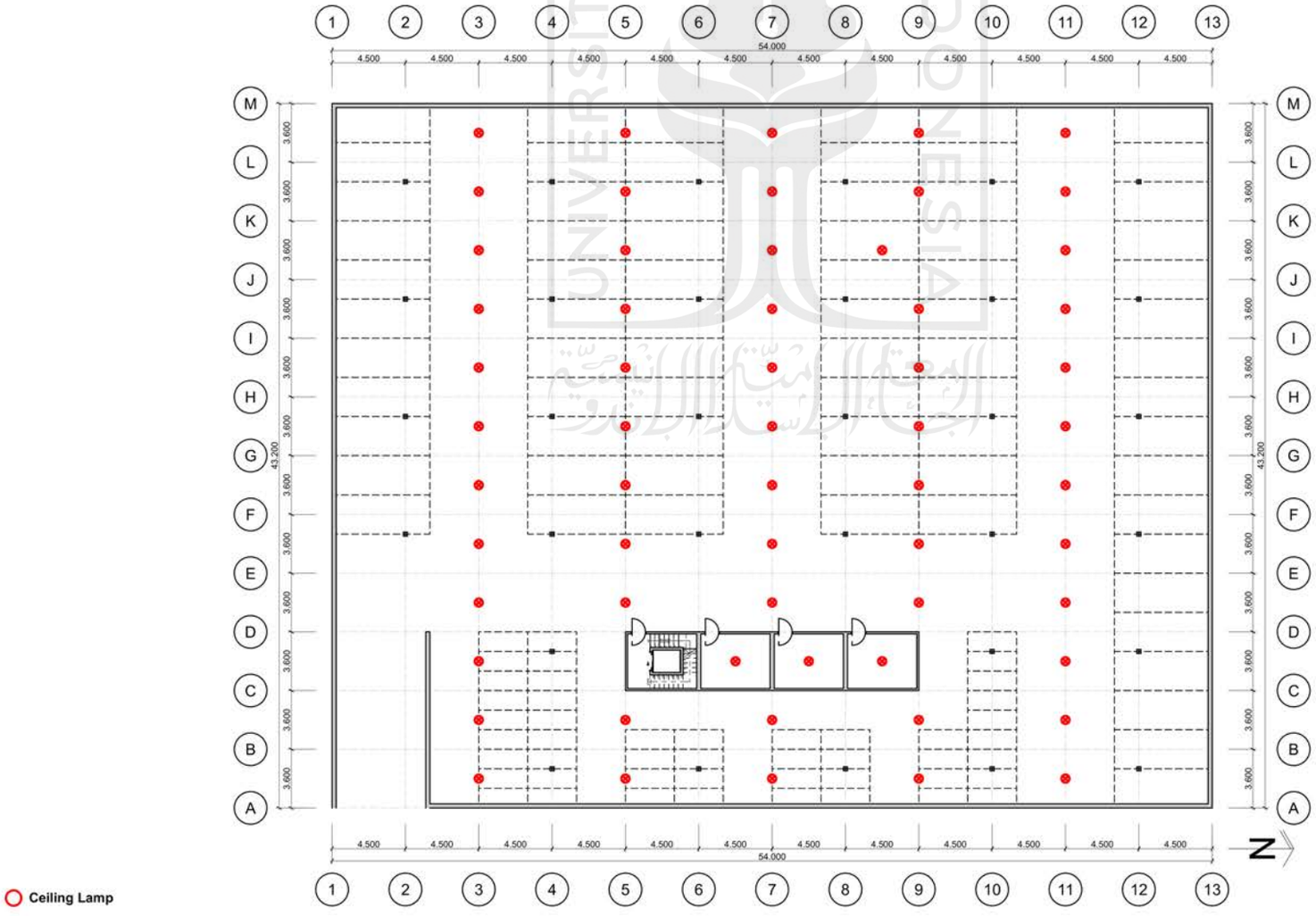

Ceiling Lamp

## Third Floor Lighting Plan

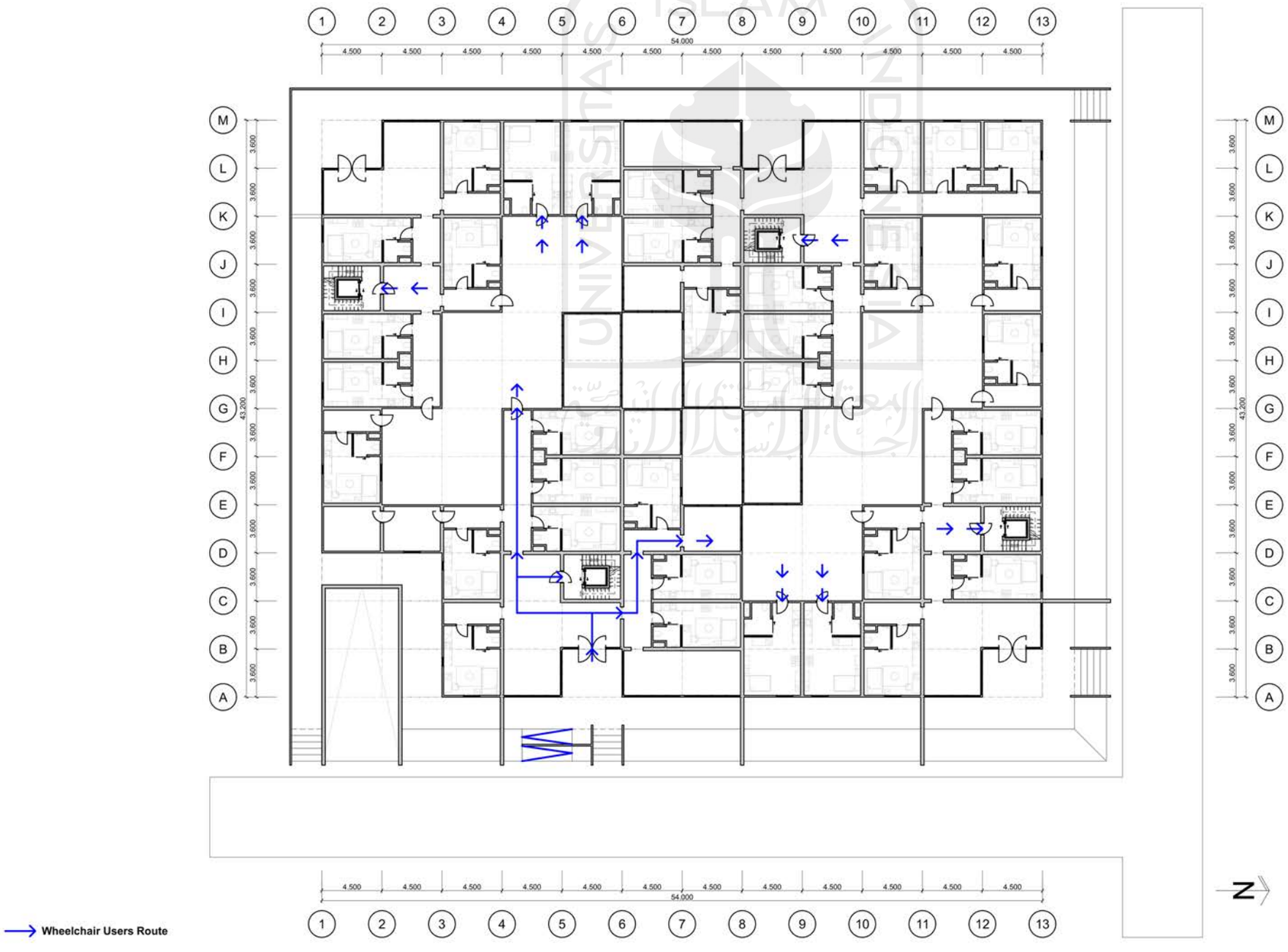



Ceiling Lamp

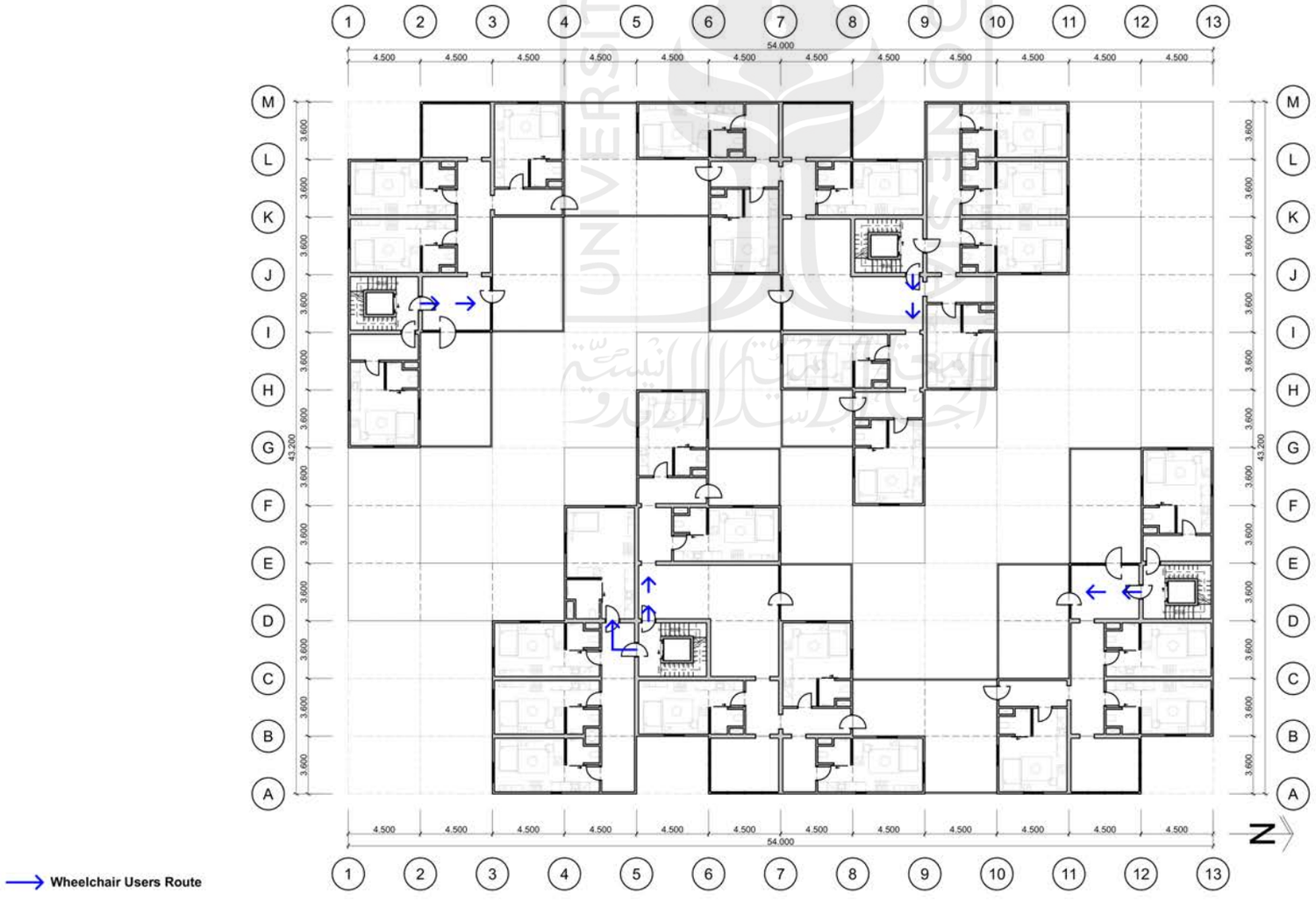
## Semi-basement Lighting Plan



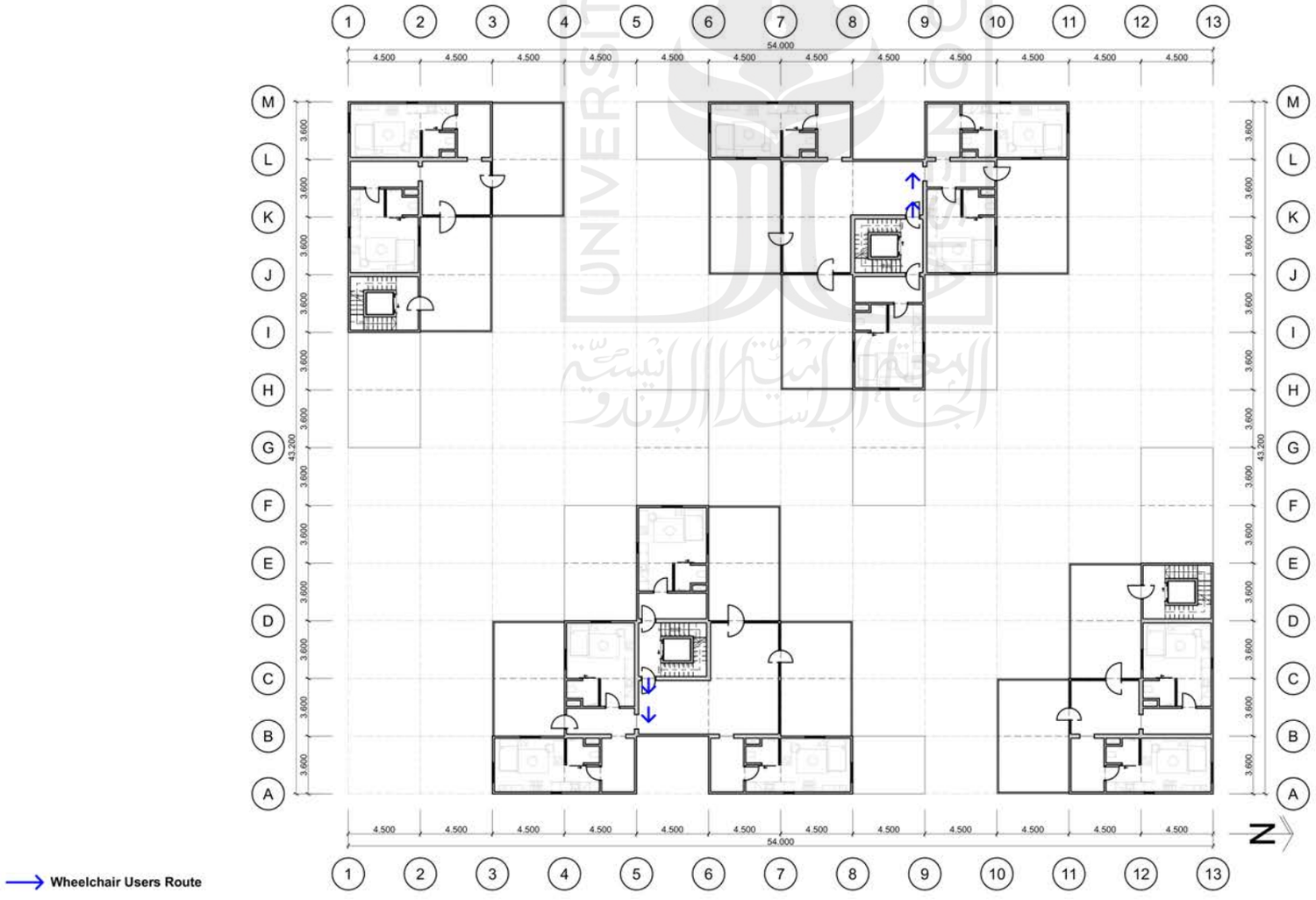
## Ground Floor Barrier-free Plan



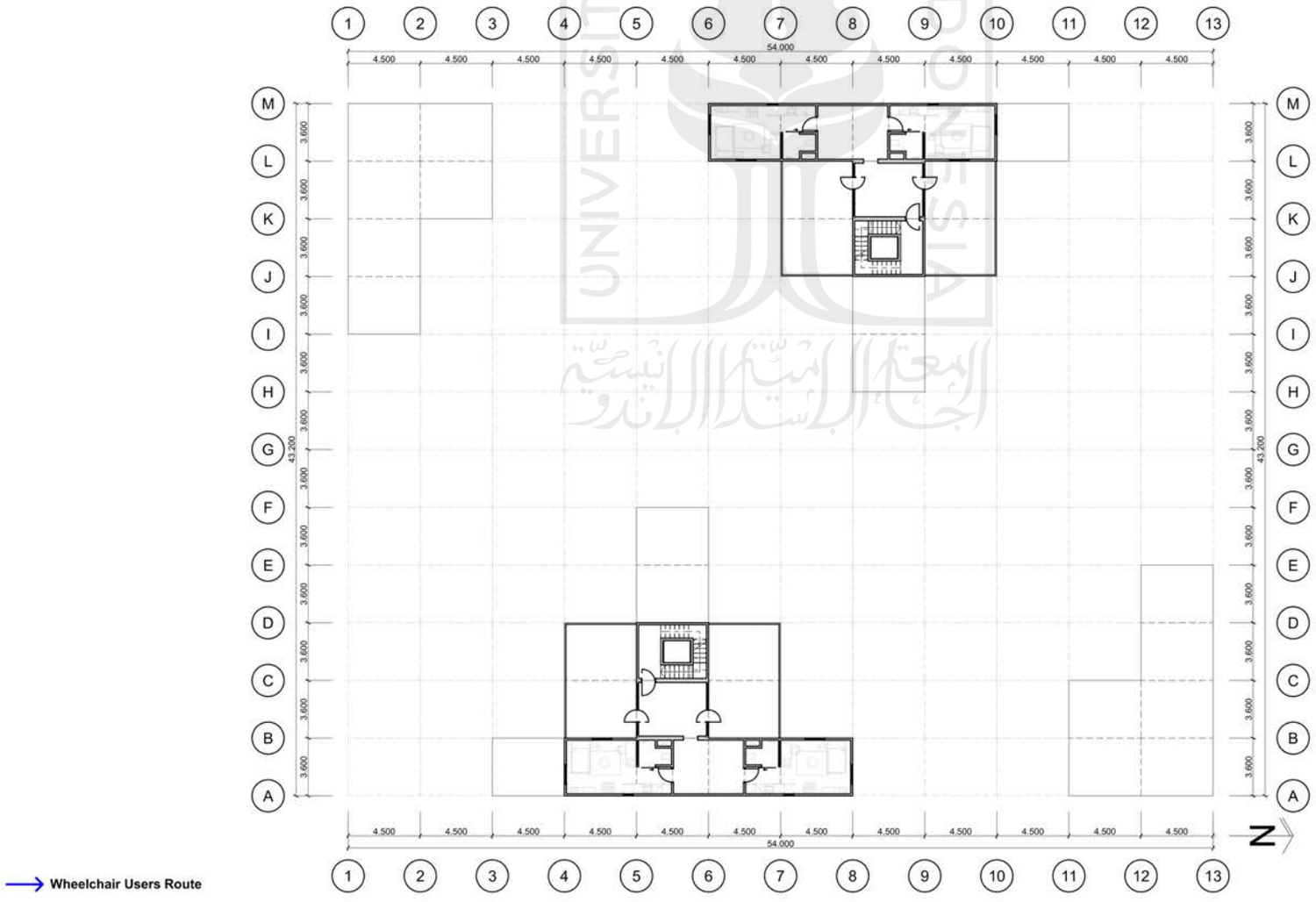
## First Floor Barrier-free Plan



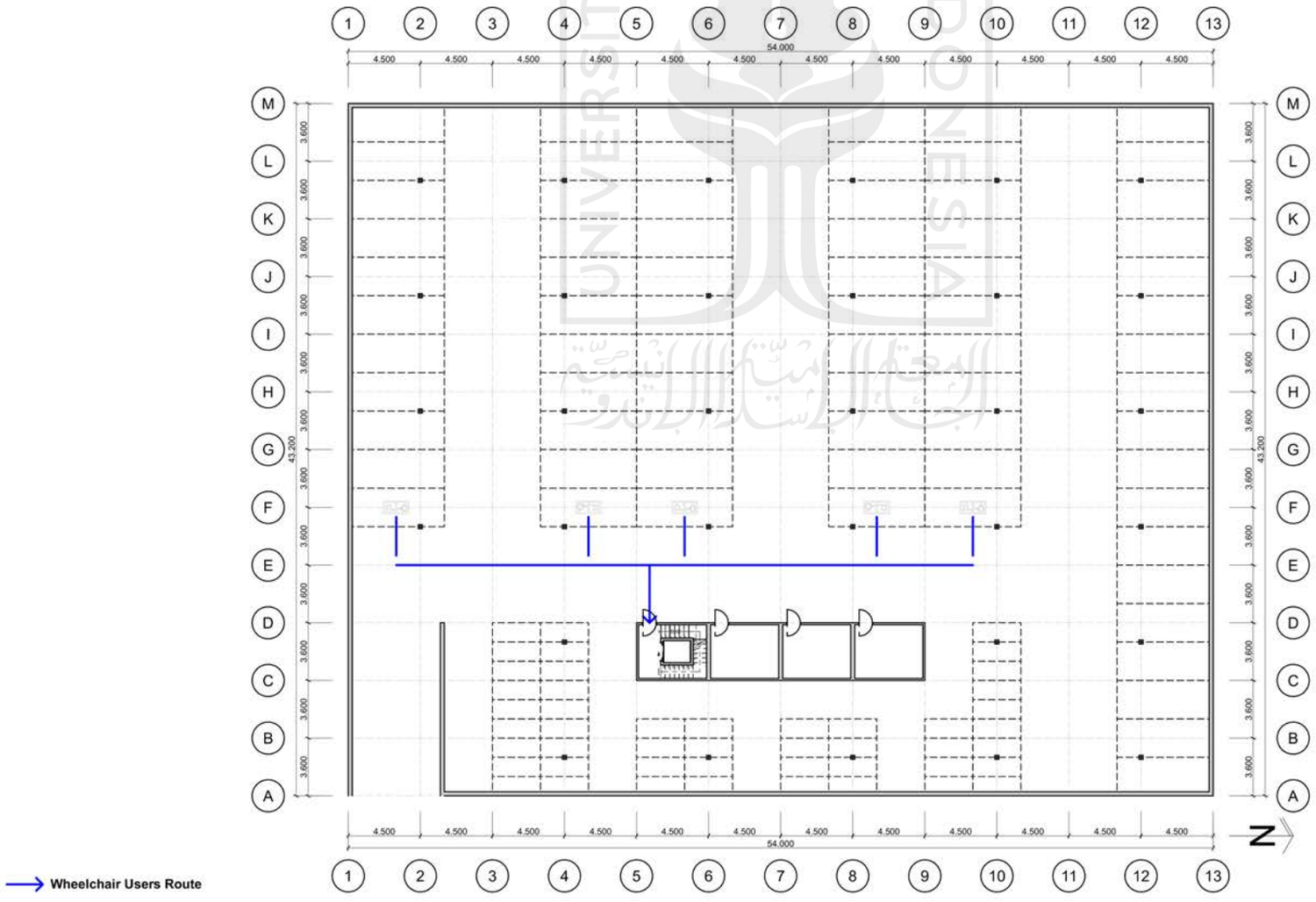
## Second Floor Barrier-free Plan



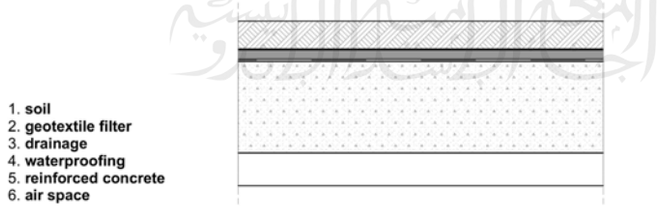
## Third Floor Barrier-free Plan



## Semi-basement Barrier-free Plan

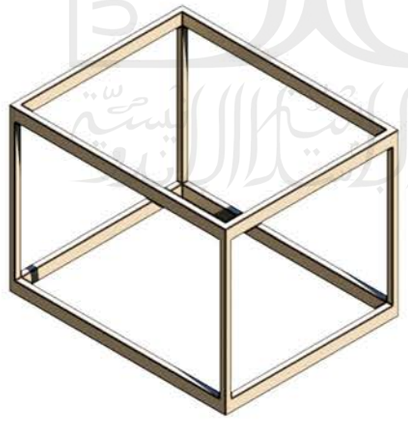


**Extensive Green Roof Detail**



1. soil
2. geotextile filter
3. drainage
4. waterproofing
5. reinforced concrete
6. air space

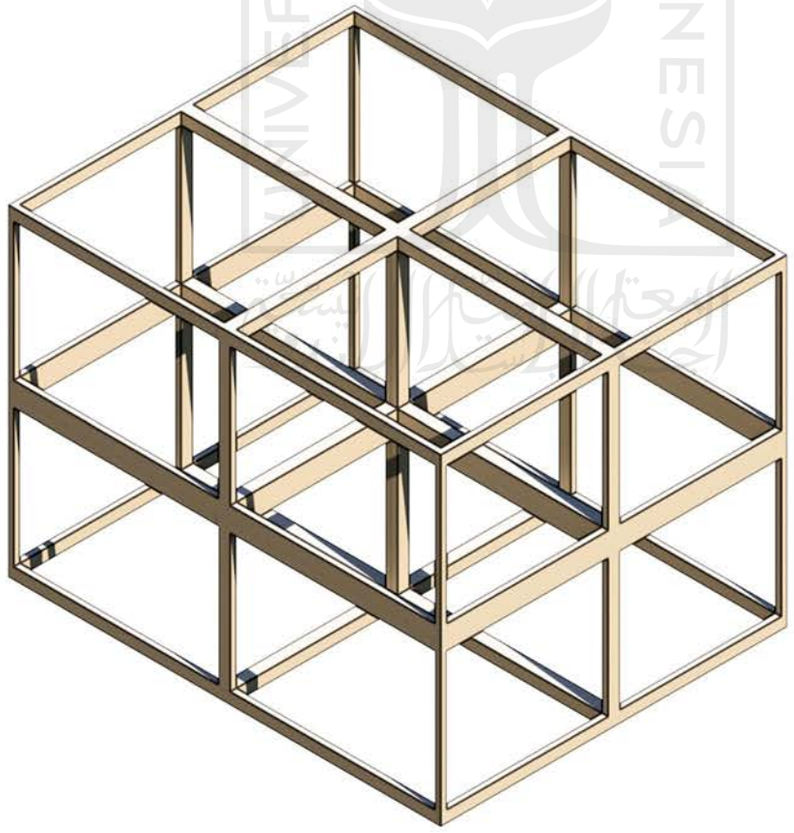
**Module Detail**



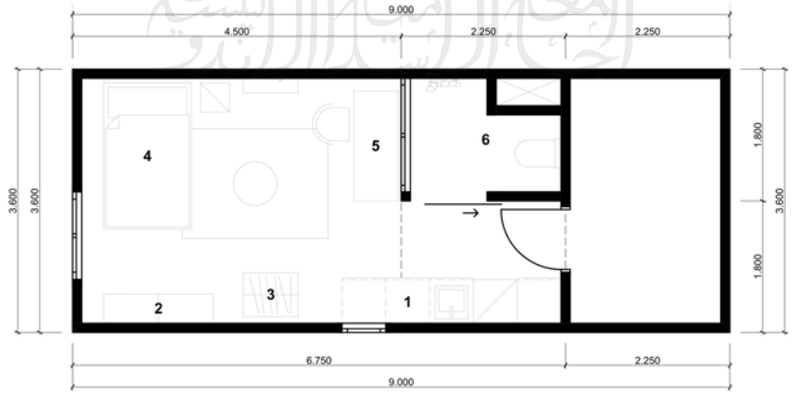
4.5 m x 3.6 m x 3.1 m

Concrete - PREFABRICATED

**Module Detail**

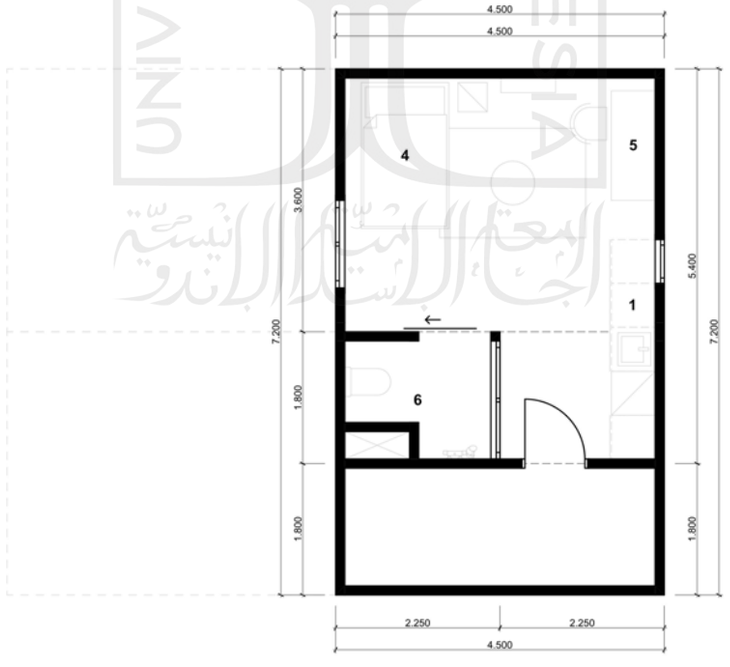


**Room 01 Type Detail**



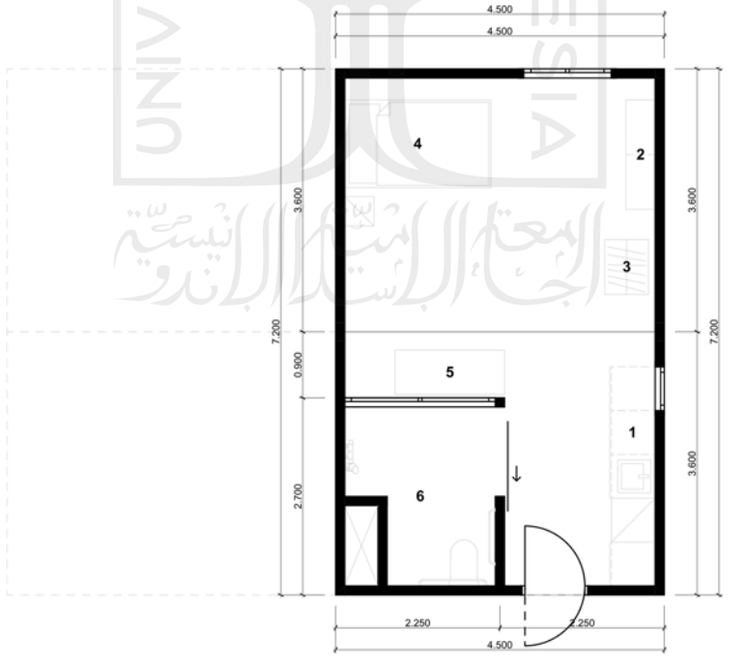

1. **kitchen**
2. **wall panels**
3. **storage**
4. **bed**
5. **study table**
6. **bathroom**

**Room 02 Type Detail**



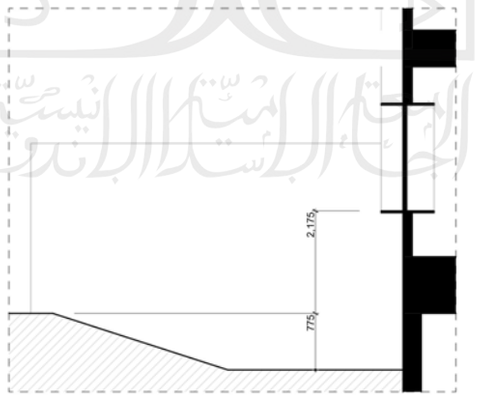

1. **kitchen**
2. **wall panels**
3. **storage**
4. **bed**
5. **study table**
6. **bathroom**

## Room 03 Type Detail

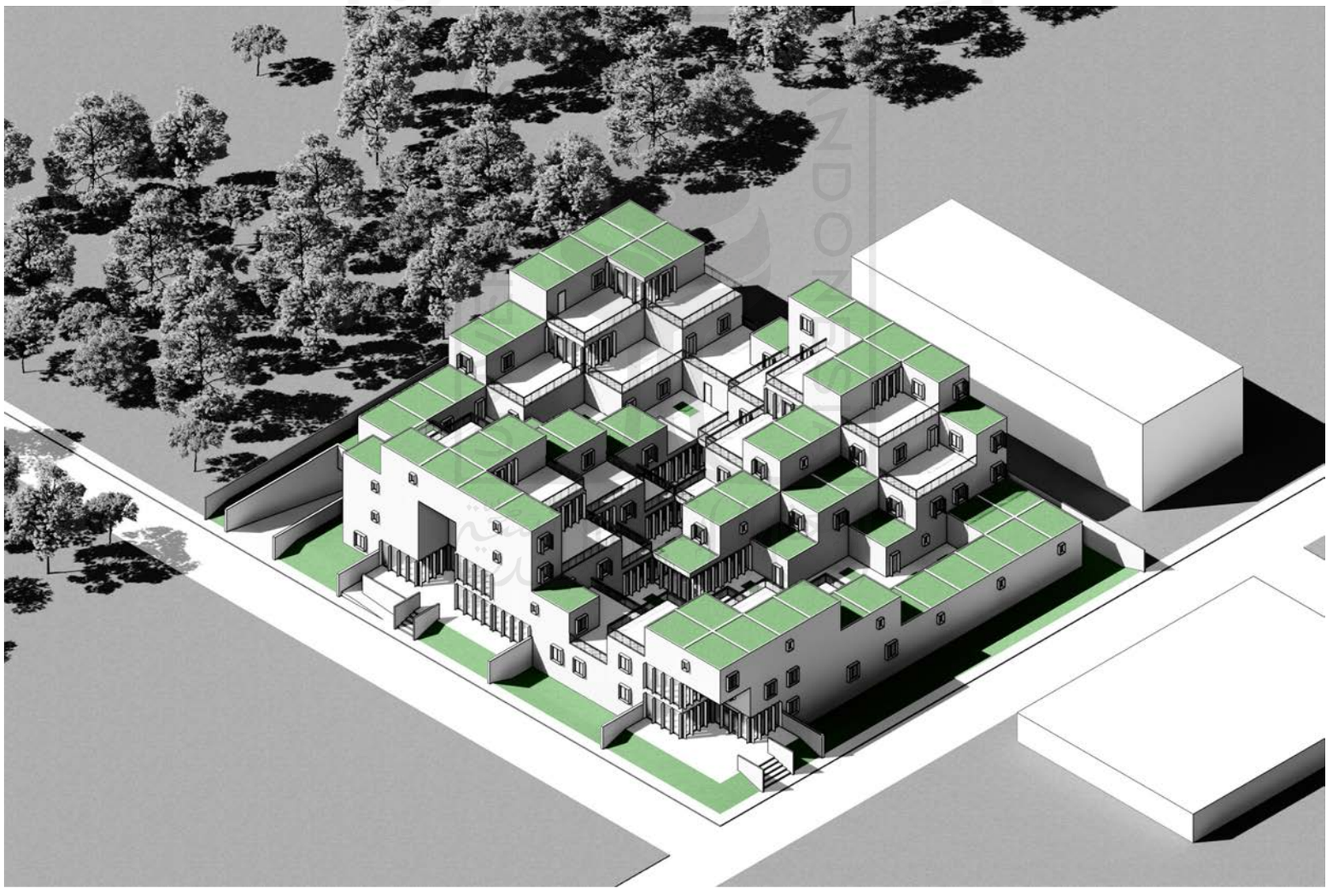



1. **kitchen**
2. **wall panels**
3. **storage**
4. **bed**
5. **study table**
6. **bathroom**

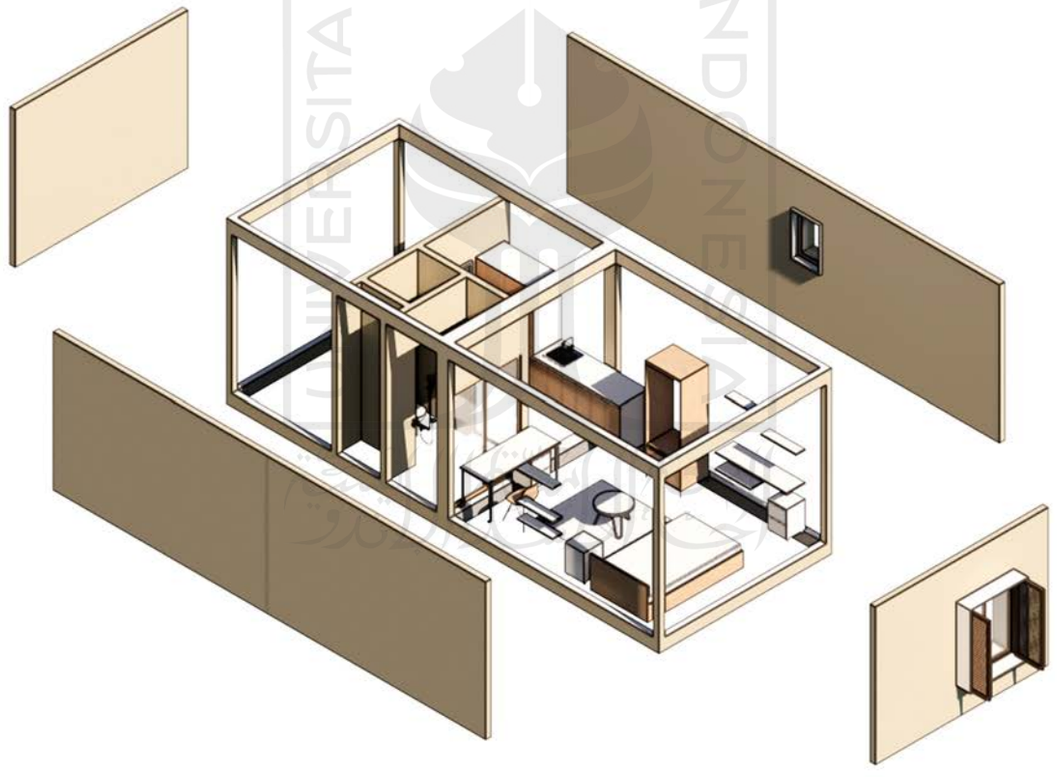
**window height Detail**



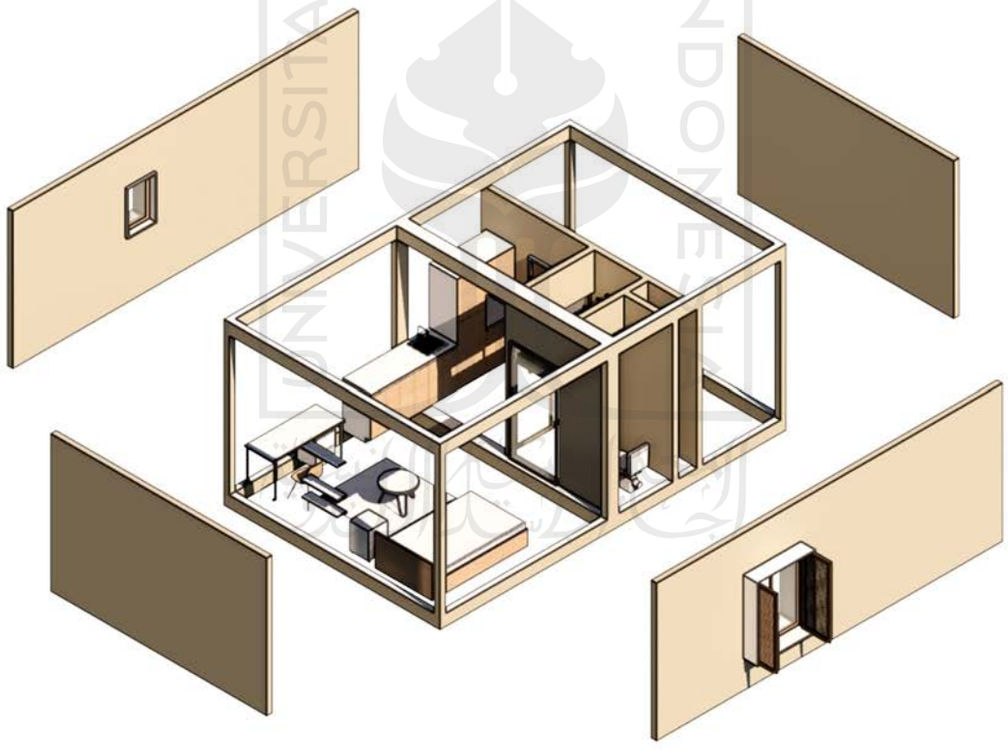
**render**



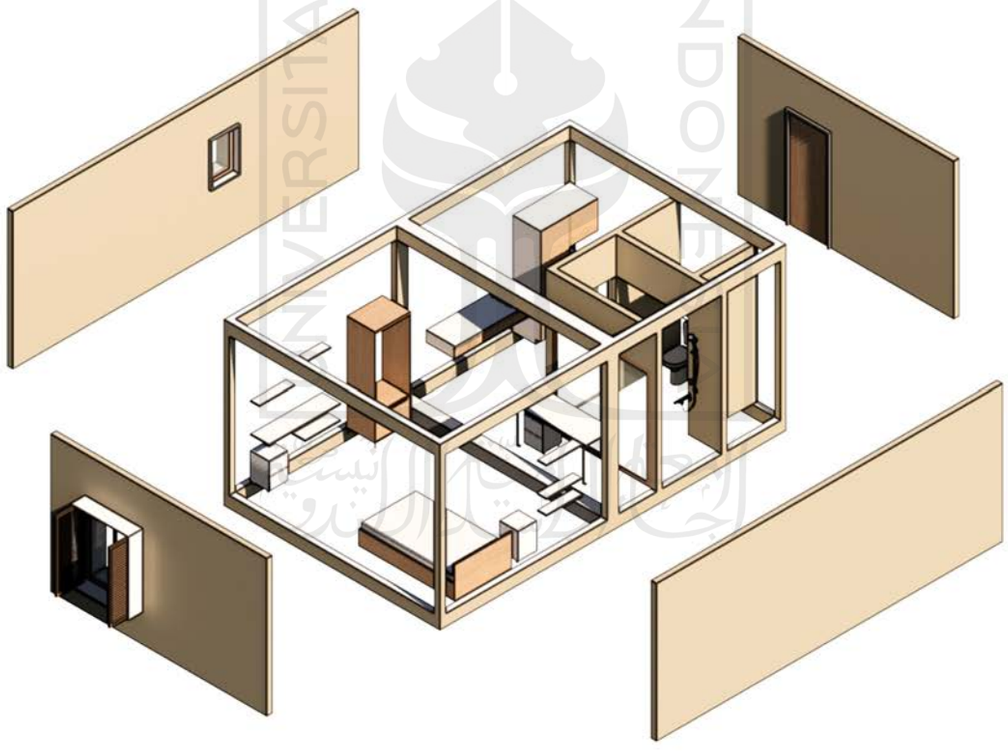
**Room 01 Type Detail**

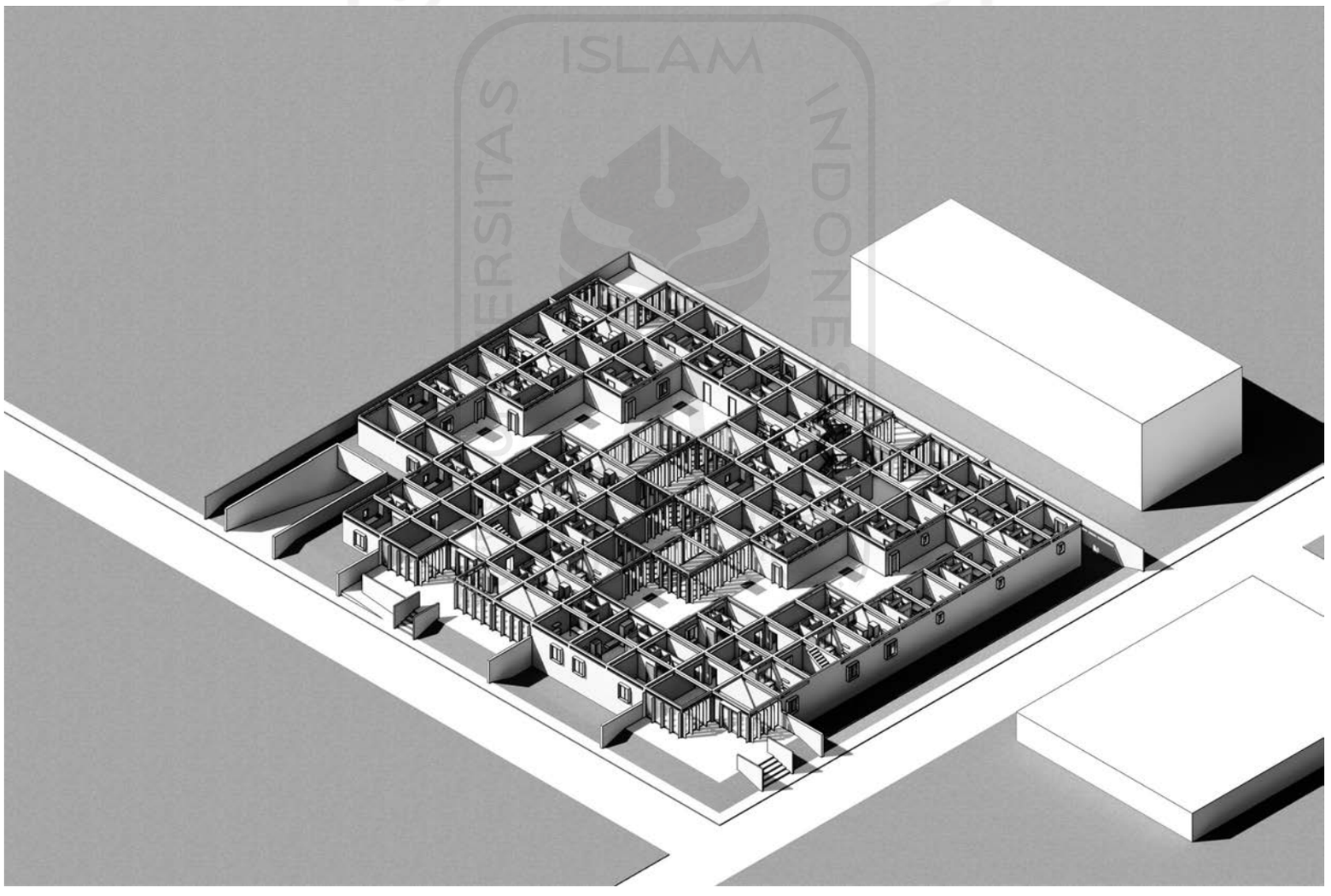


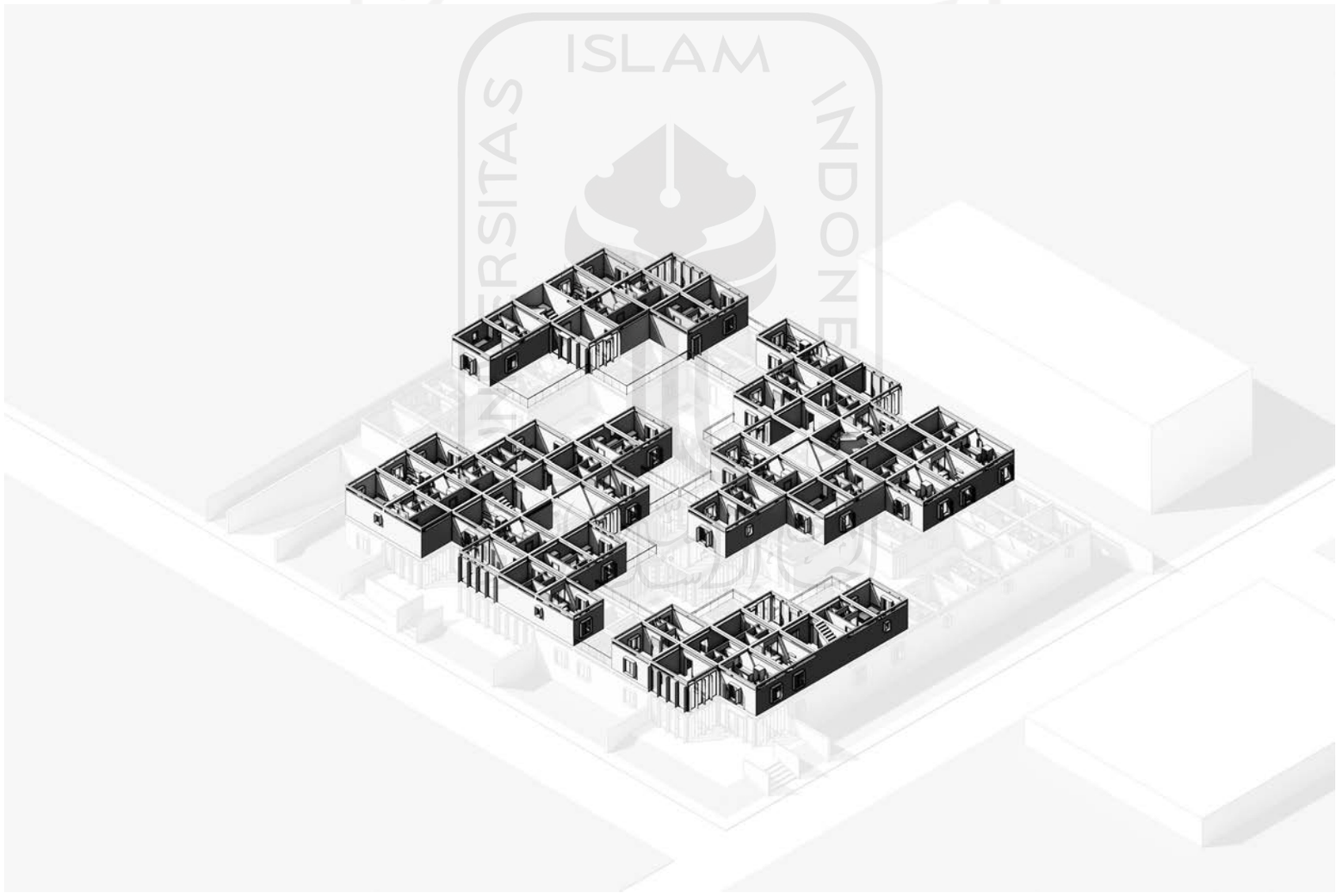
**Room 02 Type Detail**

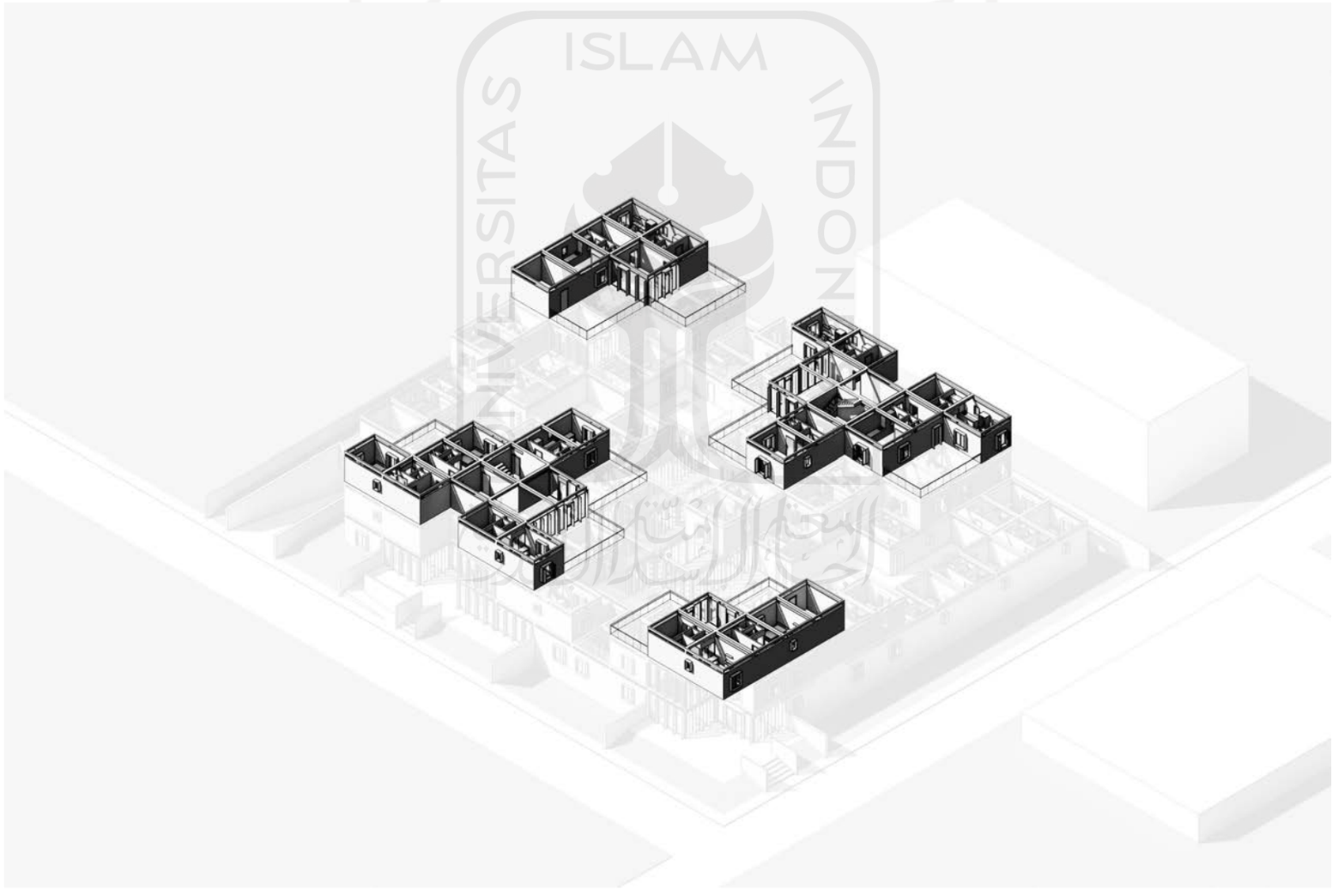


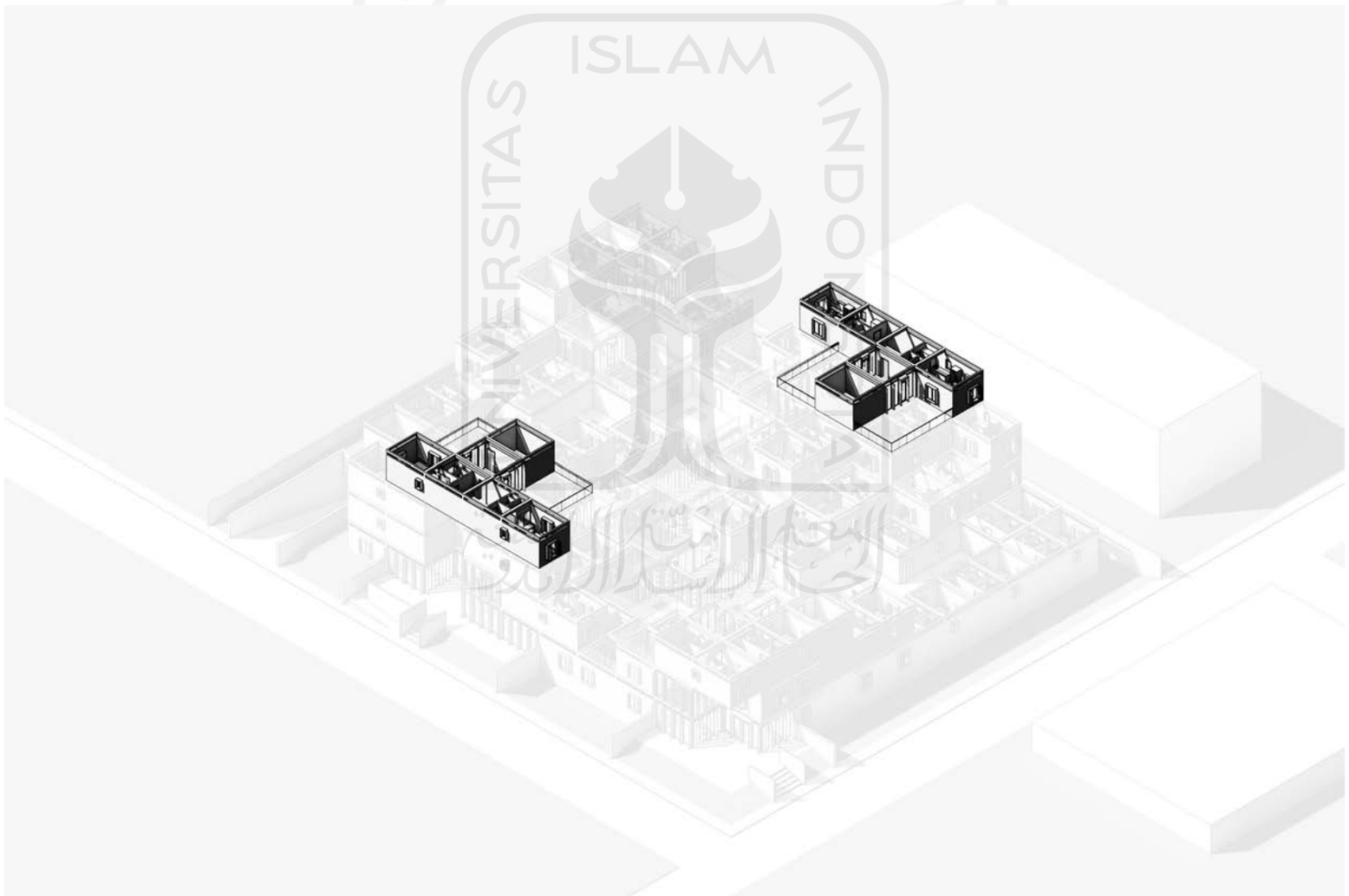
**Room 03 Type Detail**











other render can be found in page 155-162

# chapter

# 5

# EVALUATION

**Privacy between genders ?**

Originally, the area was to be divided into a male and female area, and this division created privacy.

However, during the comprehensive evaluation, it was suggested that potential residents could live in a location of their choosing without making a division to create gender-inclusive student housing.

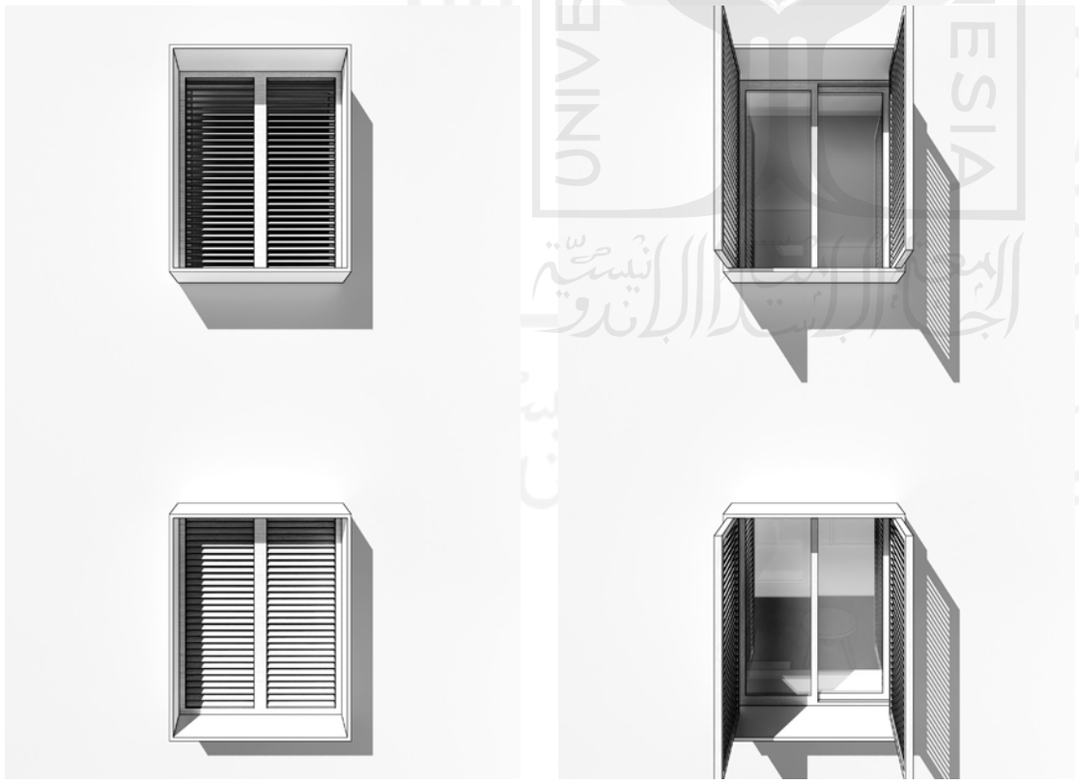
*Gender-inclusive student housing creates opportunities for interaction and conversation, as well as areas that are not dominated by one gender.*

Without division, privacy is provided by thick walls for soundproofing and mashrabiya-inspired windows with operable privacy screens (shutters).

**Architectural style and natural ventilation ?**

Although influenced by the Islamic values of traditional Middle Eastern homes, the apartment has large windows that can be opened for natural ventilation.

Natural ventilation and privacy are achieved simultaneously through a combination of open windows and closed privacy screens.



**Welcoming ?**

Mr. Arif suggested building a canopy to make the apartment more welcoming.

However, in the same evaluation, Mr. Arif noted that the void at the entrance combined with the size of the apartment is sufficient to make it welcoming without a canopy.

**Evacuation routes ?**

The problem of evacuation routes, i.e., the lack of exits, was solved by installing additional exits at the back of the apartment.

The detailed drawing can be found in page 102-106

**Plumbing ?**

The problem of plumbing, i.e., the lack of shaft connections, was solved by installing additional shafts that allow various utilities to pass through.

The detailed drawing can be found in page 107-111

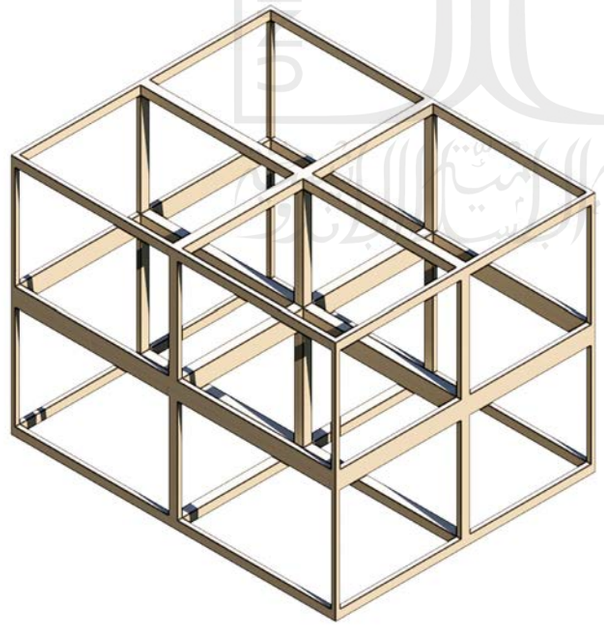
**Wheelchair user route ?**

The problem of accessibility for wheelchair users, i.e., the lack of elevators, was solved by installing additional elevators near the stairs, which allows wheelchair users to reach higher levels.

The detailed drawing can be found in page 117-121

**Module Detail ?**

The modules consist of prefabricated frame structures, columns and beams, which are then assembled on site with walls and interiors.



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# attachment

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**SURAT KETERANGAN HASIL CEK PLAGIASI**

Nomor: 1866677592/Perpus./10/Dir.Perpus/IV/2022

*Bismillaahirrahmaanirrahiim*

*Assalamualaikum Wr. Wb.*

Dengan ini, menerangkan Bahwa:

| | |
|---|---|
| Nama | : Abhista Abrar Irawan |
| Nomor Mahasiswa | : 18512117 |
| Pembimbing | : Ir. Tony Kunto Wibisono, M.Sc. |
| Fakultas / Prodi | : Teknik Sipil dan Perencanaan / Arsitektur |
| Judul Karya Ilmiah | : Design of an Inclusive Rental Student Apartment With an Approach of Islamic Values Near Universitas Islam Indonesia, Candi Winangun Sleman, Yogyakarta |

Karya ilmiah yang bersangkutan di atas telah melalui proses cek plagiasi menggunakan **Turnitin** dengan hasil kemiripan (*similarity*) sebesar **2 (Dua) %.**

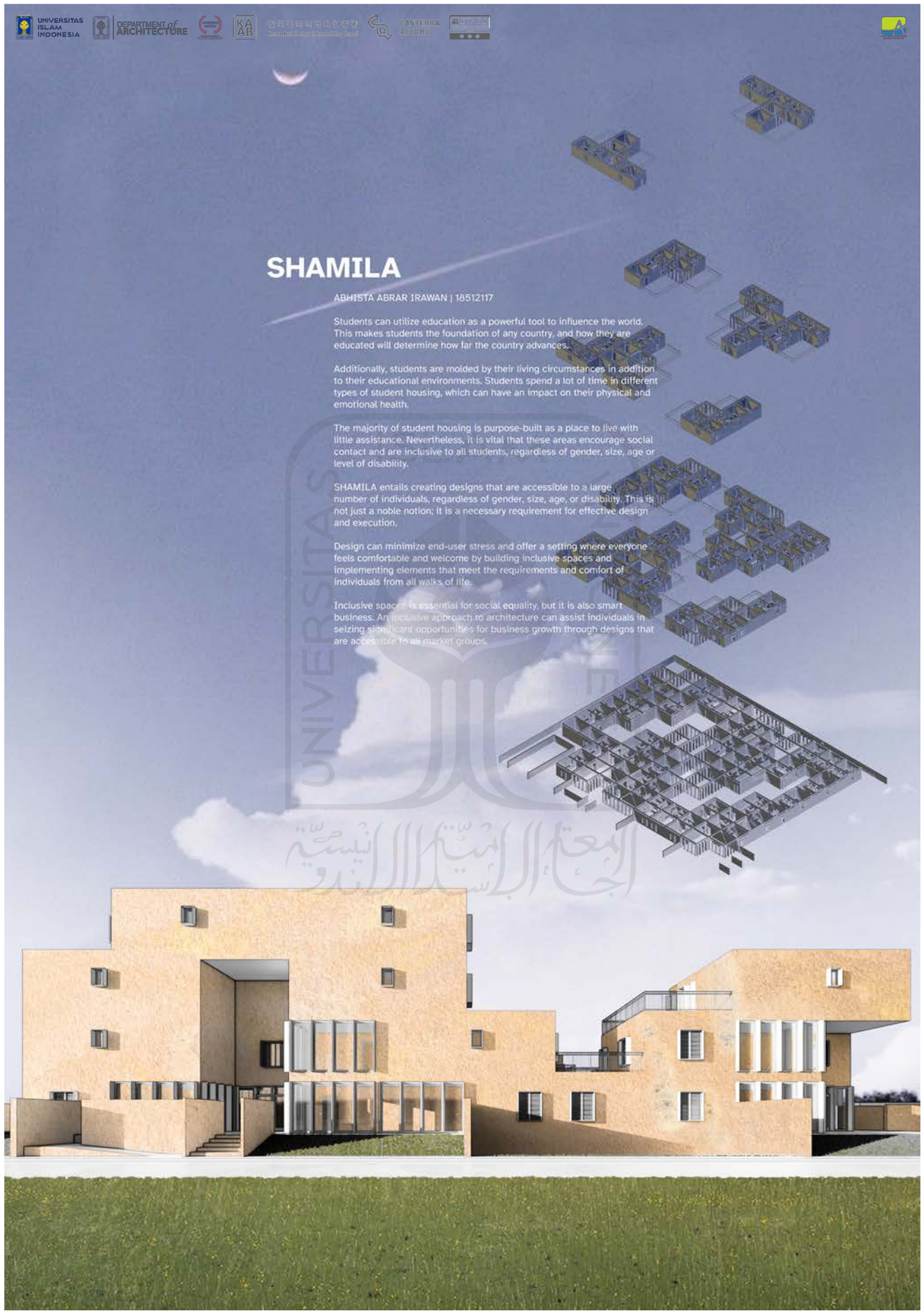
Demikian Surat Keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

*Wassalamualaikum Wr. Wb.*

Yogyakarta, 7/5/2022
Direktur

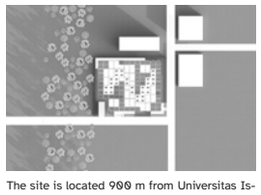
UNIVERSITAS ISLAM INDONESIA
DIREKTORAT PERPUSTAKAAN
YOGYAKARTA

Joko S. Prianto, SIP., M.Hum


UNIVERSITAS ISLAM INDONESIA
DEPARTMENT of ARCHITECTURE
KAAB
CANBERRA ACCORD
SHAMILA
ABHISTA ABRAR IRAWAN | 18512117
Students can utilize education as a powerful tool to influence the world. This makes students the foundation of any country, and how they are educated will determine how far the country advances.
Additionally, students are molded by their living circumstances in addition to their educational environments. Students spend a lot of time in different types of student housing, which can have an impact on their physical and emotional health.
The majority of student housing is purpose-built as a place to live with little assistance. Nevertheless, it is vital that these areas encourage social contact and are inclusive to all students, regardless of gender, size, age or level of disability.
SHAMILA entails creating designs that are accessible to a large number of individuals, regardless of gender, size, age, or disability. This is not just a noble notion; it is a necessary requirement for effective design and execution.
Design can minimize end-user stress and offer a setting where everyone feels comfortable and welcome by building inclusive spaces and implementing elements that meet the requirements and comfort of individuals from all walks of life.
Inclusive space is essential for social equality, but it is also smart business. An inclusive approach to architecture can assist individuals in seizing significant opportunities for business growth through designs that are accessible to all market groups.

Candi Winangun Sleman, Yogyakarta 55581

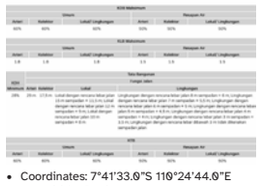
**Context Plan**



The site is located 900 m from Universitas Islam Indonesia and adjacent to a large green space.

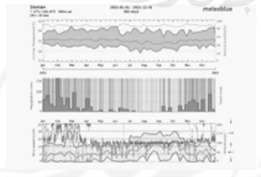
The location of the property, which is adjacent to green space and is a little bit distant from the metropolitan area, allows for seclusion and comfort. The surrounding trees and foliage provide a pleasing backdrop for the site design.

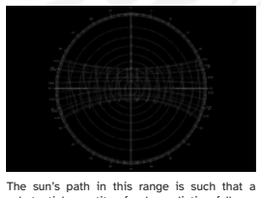
https://simtaru.slemankab.go.id/



- Coordinates: 7°41'33.0"S 110°24'44.0"E
- Area: 3084.5 m2
- Building Coverage Ratio: 60%
- Floor Area Ratio: 1.8

**climate & weather data**





The sun's path in this range is such that a substantial quantity of solar radiation falls on the east and west-facing facades, making sun shielding problematic.

- Use external shading systems whenever possible.
- Use horizontal elements for openings facing south and north.
- Use egg-crate elements on windows facing east and west.
- Prioritize shading of windows facing east and –especially – west.

The clients are those who own vacant land and want to turn it into a profitable business around Universitas Islam Indonesia (UII) by developing student apartments on it.

**Business Model**

Population growth, urbanization, and a growing student population all impact the need for adequate housing, albeit only briefly during the study period.

With 45,191 migrants coming to Sleman for educational purposes, the huge demand for such housing makes it a worthy investment.

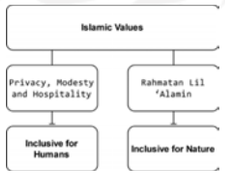
In accordance with this, the business model is short-term rental property, i.e., a student apartment that charges by the bed and rents out each bedroom while requiring students to sign a lease.

**based on the neighbouring university**

It was critical that the student residences be designed in conjunction with the nearby university, Universitas Islam Indonesia.

- privacy, a secure and private space for personal and family sanctuary;
- modesty, a house with space for religious rituals and activities, further defined by humility in design through inexpensive and sustainable design;
- hospitality, a house with the potential to extend hospitality to neighbors and strengthen ties with the community.

The arrangement of inclusive areas and domestic conduct within each Islamic home, as well as the design of Islamic homes, are all significantly influenced by these three principles when taken together.



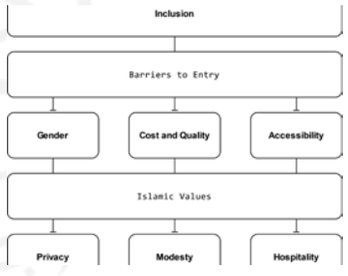

**inclusive student apartment**

The major objective of an inclusive student apartment is to make the building as welcoming as possible with no disabling barriers that would hinder some students from residing there.

Students should be able to participate in daily activities in an equitable and independent way by removing barriers that exist in the accommodation.

- gender
- cost and quality
- accessibility

Together, these three restrictions prevent certain groups of students from living in certain accommodations; for example, female students are not allowed to live in student dormitories reserved exclusively for males.




*UII's vision*

The establishment of Universitas Islam Indonesia as Rahmatan Lil 'Alamin, an internationally renowned institution dedicated to Islamic quality and ideals in education, research, community service, and da'wah.

Islam is a religion of Rahmatan Lil 'Alamin, which is often used to imply that Islam is a religion sent to compassionately govern the entire cosmos or environment.

**inclusive ecology**

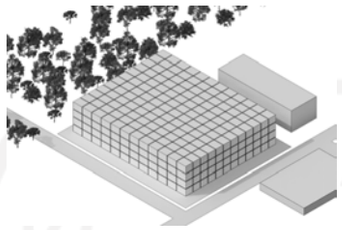
The focus of inclusion talks is always on humans. But it is important to remember that a variety of species live in the environment. Hence, a truly inclusive place should incorporate natural elements into its design.

## 01

**BUILDING VOLUME** / modular

Maximum building volume considering 5 m setbacks

Using or engaging modules to create a building base and connection with the surrounding environment

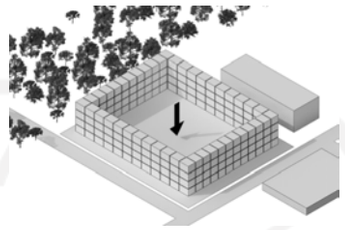


## 02

**COURTYARD** / privacy and inclusive ecology

Reconfiguring building volumes into enclosed Courtyard complexes

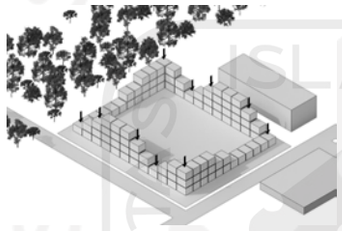
- Privacy: acts as a moment of pause to separate spaces; "architecture of the veil", inner spaces that are not visible from the outside
- Inclusive Ecology: allows maximum sunlight and ventilation and landscape



## 03

**BUILDING VOLUME ADJUSTMENT** / modesty

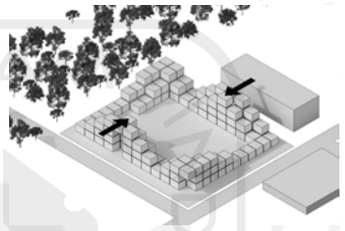
Adjusting the height of each building volume so that it subtly matches the surrounding greenery, as well as the existing houses



## 04

**BUILDING VOLUME ADJUSTMENT** / hospitality

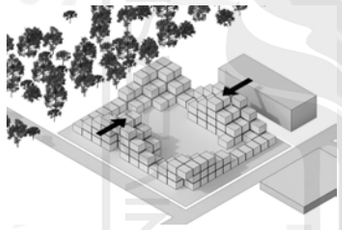
a.



## 05

**BUILDING VOLUME ADJUSTMENT** / hospitality

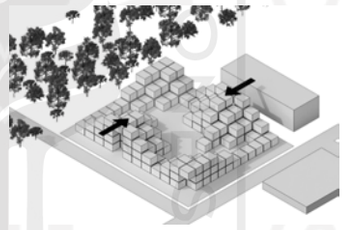
b.



## 06

**BUILDING VOLUME ADJUSTMENT** / hospitality

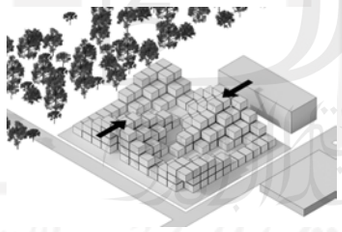
c.



## 07

**BUILDING VOLUME ADJUSTMENT** / hospitality

d.

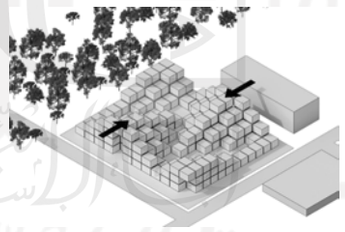


## 08

**BUILDING VOLUME ADJUSTMENT** / hospitality

[e.] Reconfiguring the building volume into a number of level areas that resemble a series of steps

Terraced volume promotes social interaction and the formation of neighbourly connections in order to foster social harmony among students and others

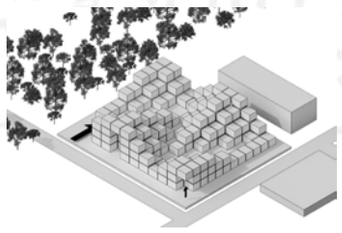


## 09

**SEMI-BASEMENT PARKING AND ELEVATED COURTYARD** / privacy

Semi-basement parking always results in a courtyard elevated above street level

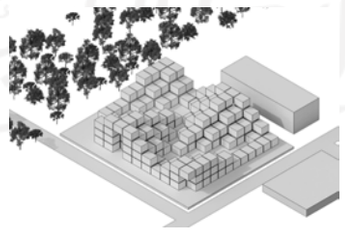
The raised levels help avoid privacy issues to the ground floor areas while offering greater views to the street



## 10

**STUDENT APARTMENT**

The whole premise of the project revolves around creating student accommodation that is inclusive and involves Islamic values in architecture



`semi-basement`

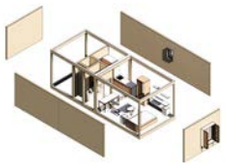
- laundry room
- semi-basement parking
- equipment room

`ground floor`

- solo studio
- students' social spaces / common spot
- students' social spaces / study space and library
- courtyard
- management room
- warehouse
- trash storage room

`1-3F`

- solo studio
- students' social spaces / common spot



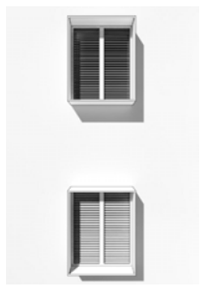
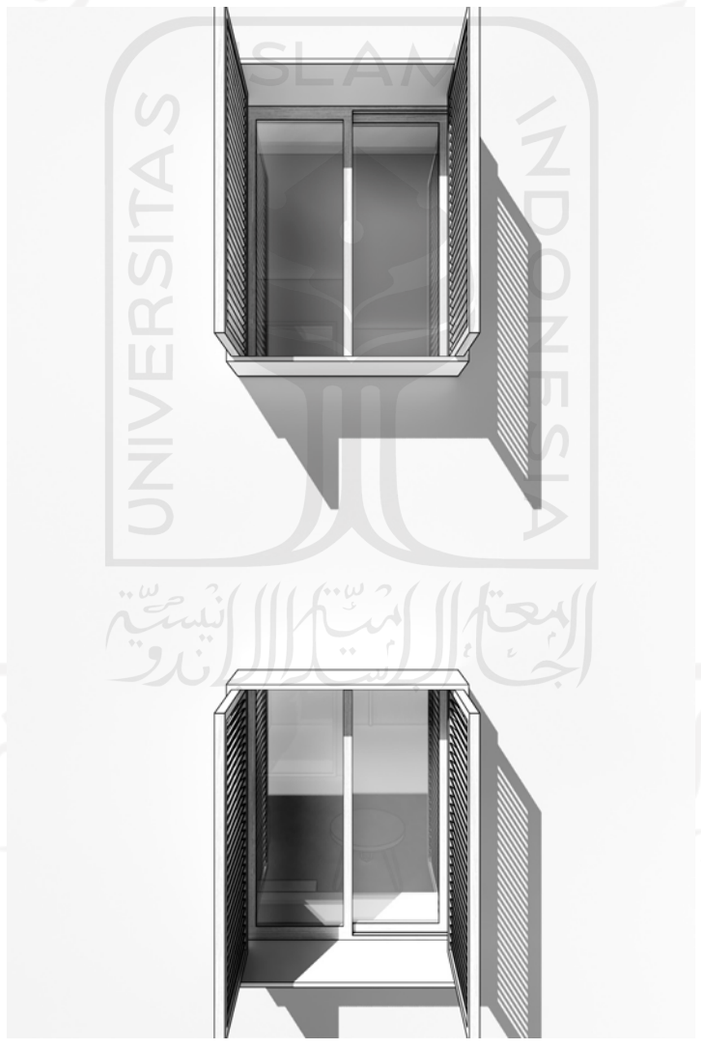
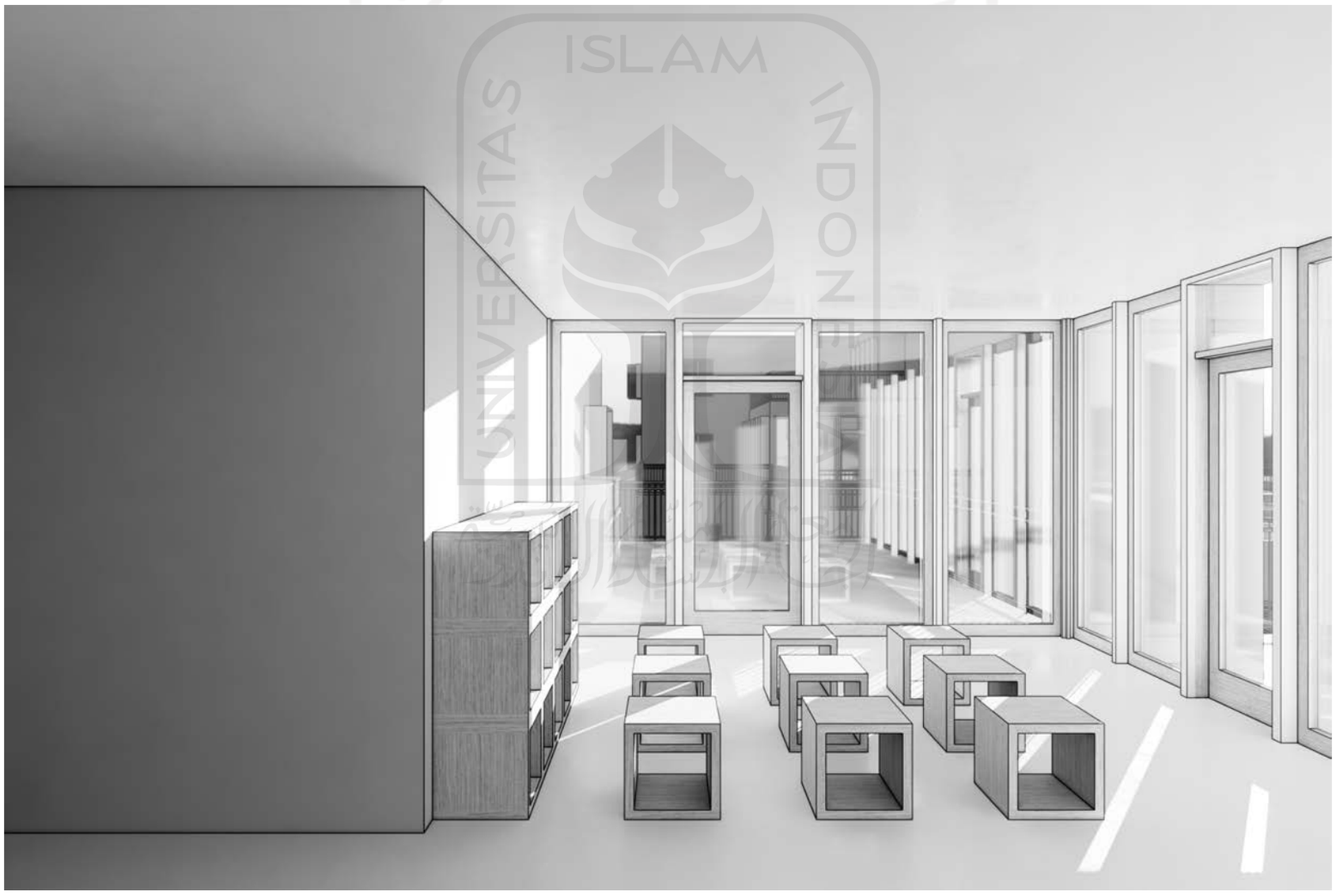
**Room 01 Type**

24 m²

**Room 02 Type**

24 m²

**Room 03 Type** / wheelchair users

32 m²

**North Elevation** **East Elevation** **South Elevation** **West Elevation**