Edition 2024 Helsinki

The Co **[HAB]**

L.S. Raheja School of Architecture, Mumbai, India

Presentation no: 19

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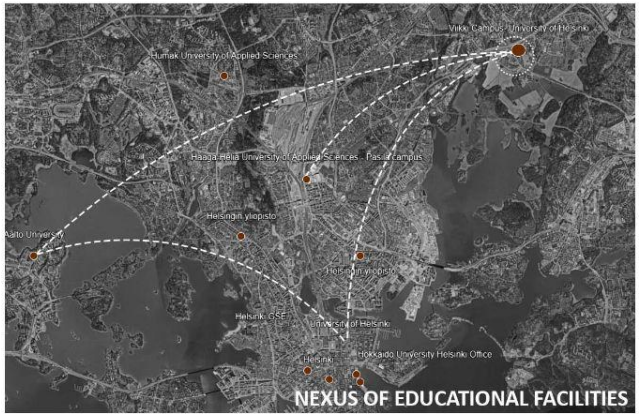
It all began with a set of questions about a completely unfamiliar yet exciting context...
Here's a journey that involved a lot of learning and unlearning through design and details

The VISION

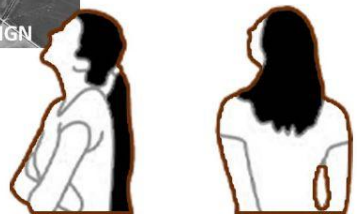
"Helsinki's blend of design, nature, and culture creates a unique urban experience unlike any other."

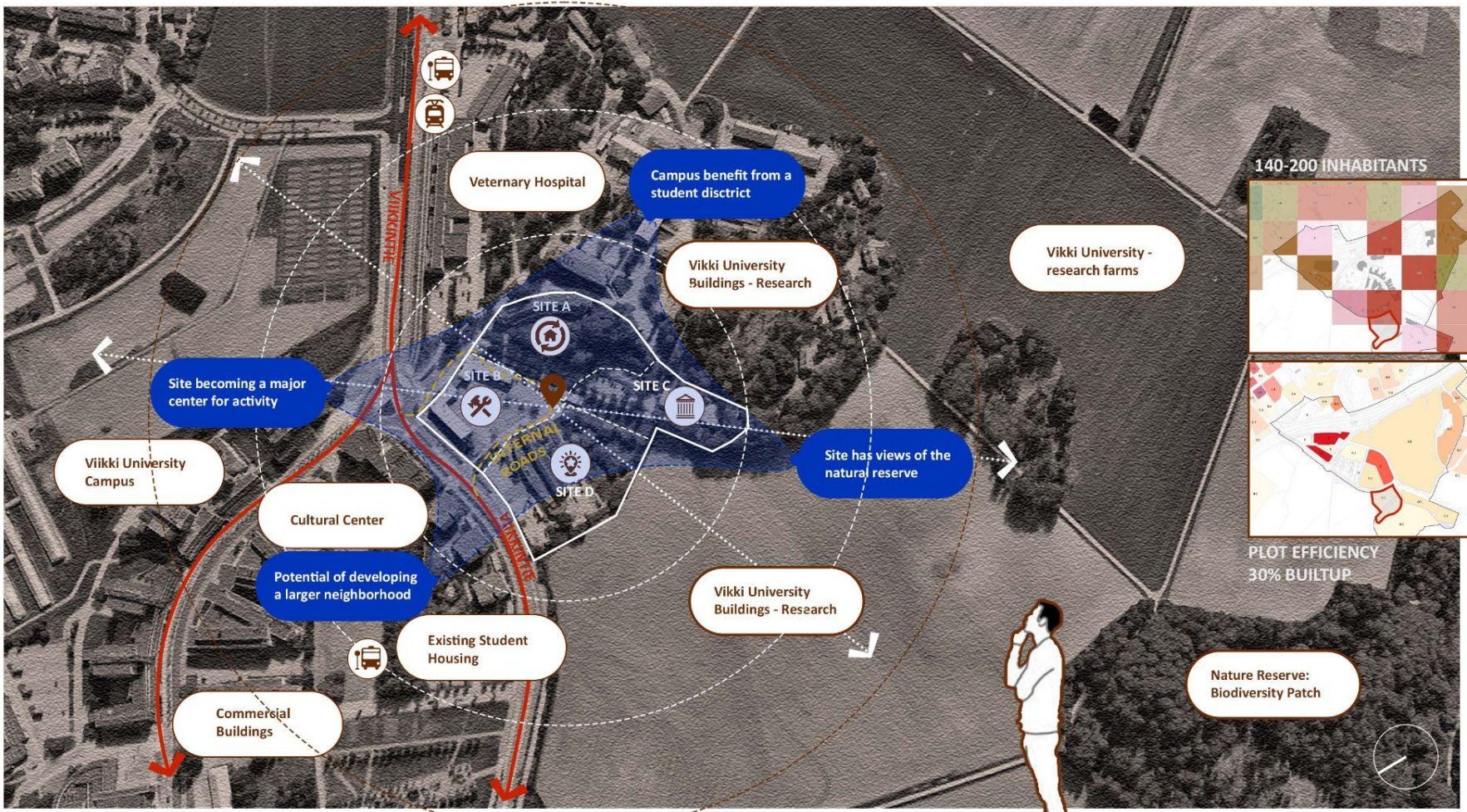
Reimagining urban living : inspired by Helsinki's ethos.

The housing design strives to merge contemporary architecture with the city's natural charm and rich cultural heritage

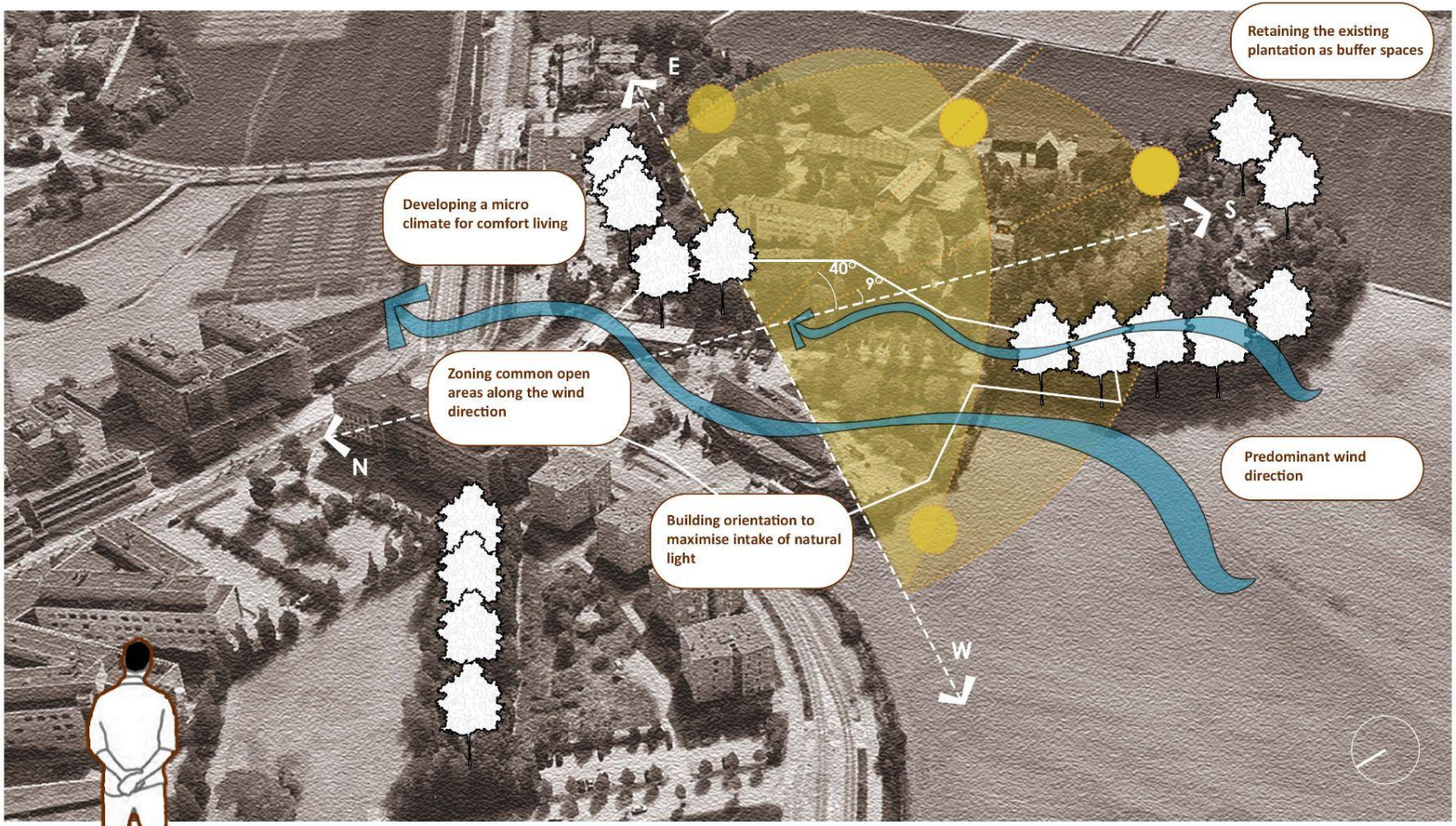


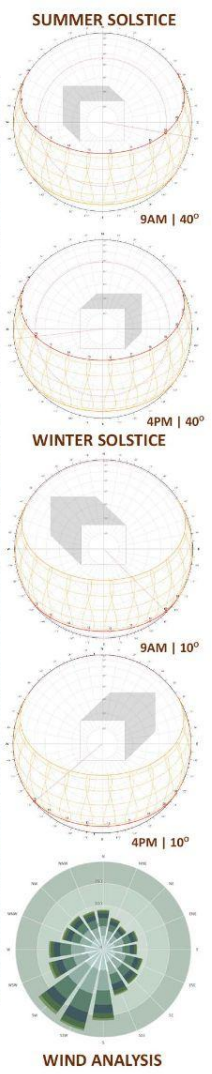
CONTEXT ANALYSIS Understanding the potential impact and reach of the proposal at an urban level



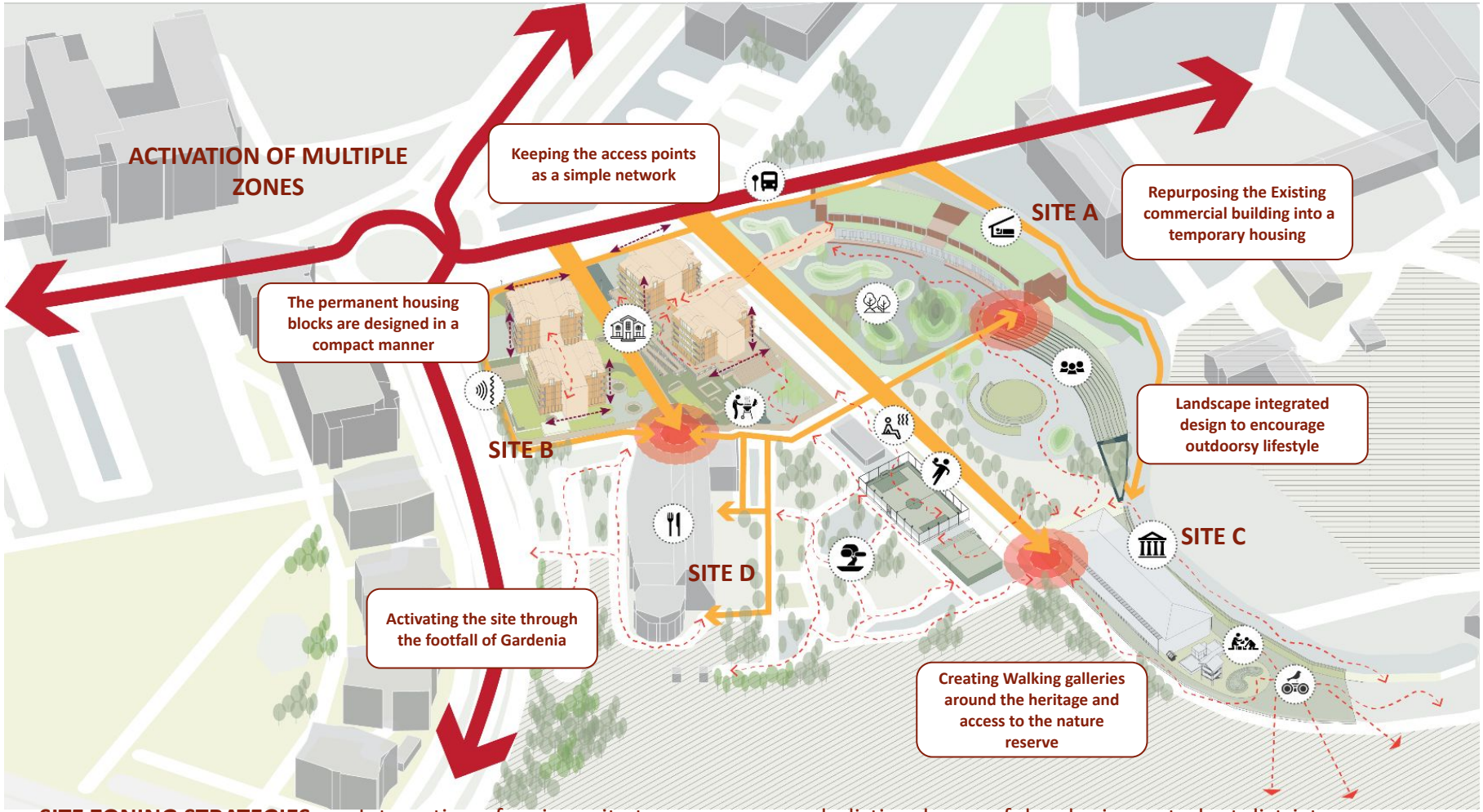


DELAYERING THE SITE With an idea of the existing surroundings the design can be planned



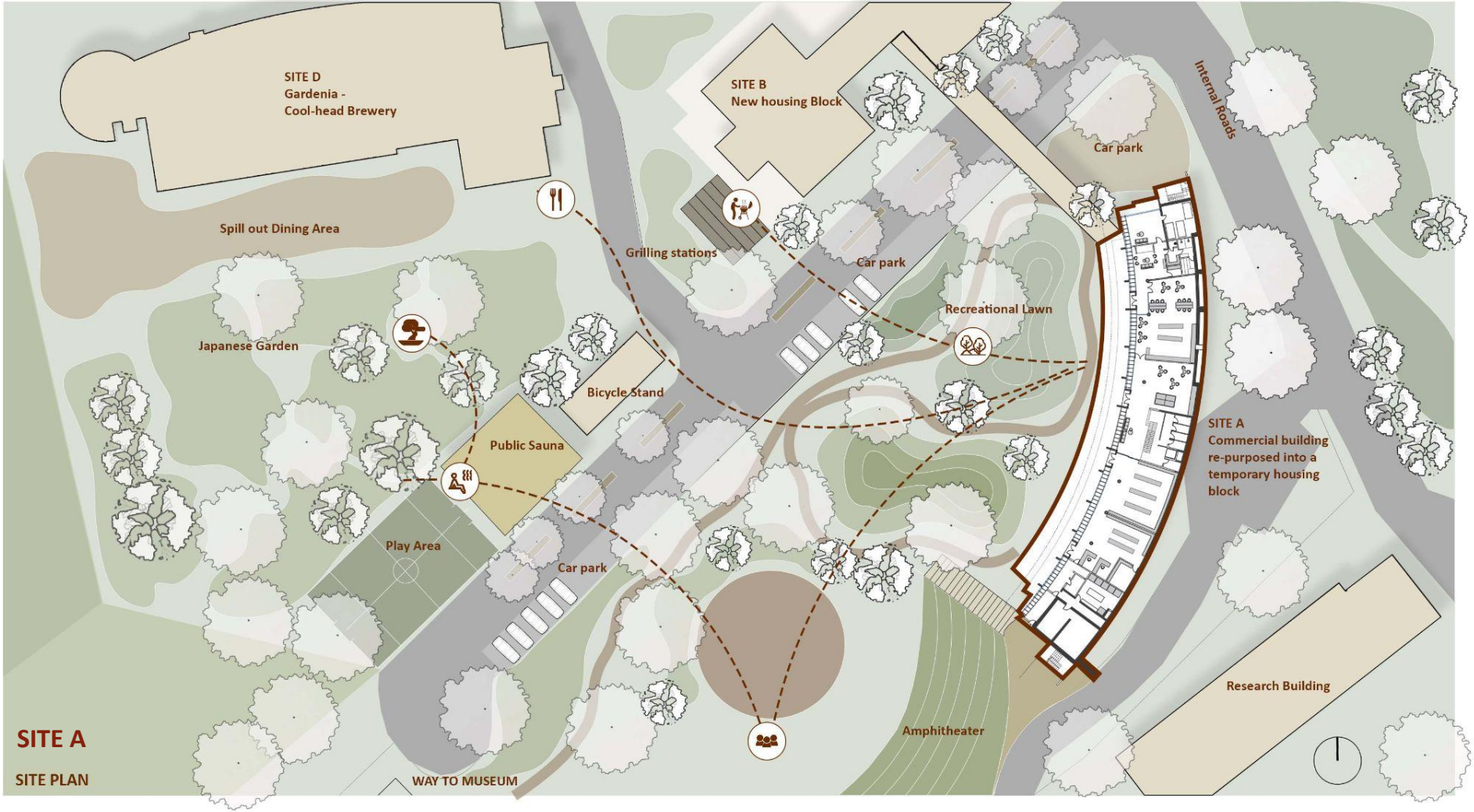


MICRO CLIMATE ANALYSIS Step 01 to achieve energy efficiency is to work with the micro climate

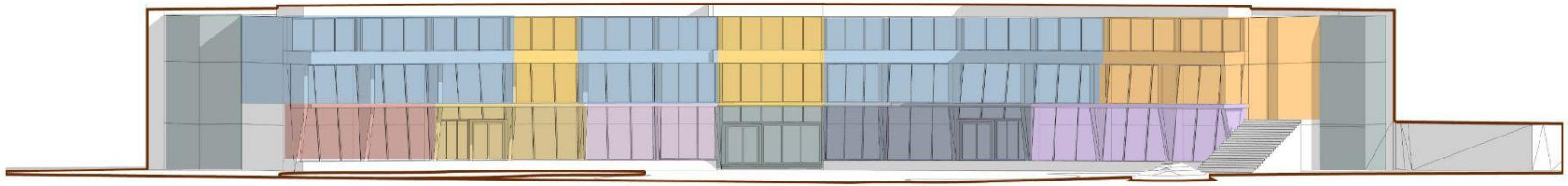


SITE ZONING STRATEGIES Integration of various site to propose one wholistic scheme of developing a student district

The shell of the building is revitalized to create a lively accommodation for visiting students and researchers.

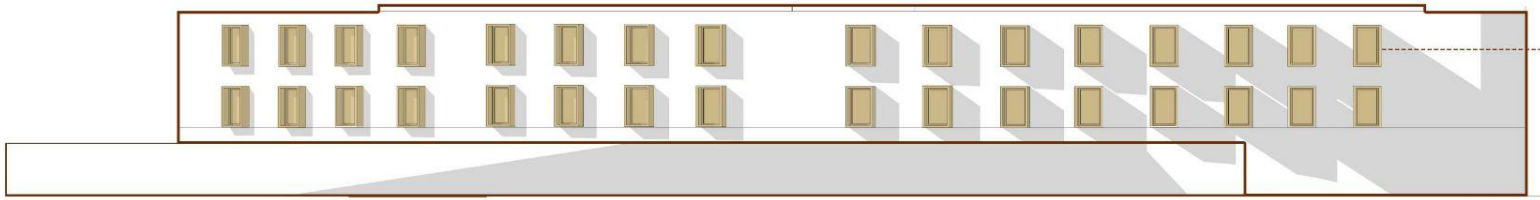

SITE D
Gardenia -
Cool-head Brewery
SITE B
New housing Block
Internal Roads
Car park
Spill out Dining Area
Grilling stations
Car park
Recreational Lawn
Japanese Garden
Bicycle Stand
Public Sauna
SITE A
Commercial building
re-purposed into a
temporary housing
block
Play Area
Car park
Research Building
Amphitheater
WAY TO MUSEUM
SITE A
SITE PLAN

FORM AND MASSING EXLPORATION



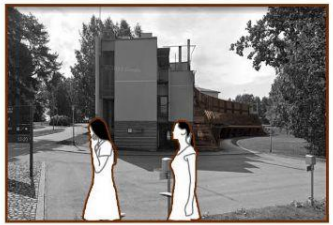
Housing Dorms | Vertical Circulation and services | Sauna | Library | Common Work Spaces | Indoor Play Area | Super Mart | Services | Canteen

FRONT ELEVATION



REAR ELEVATION

ELEVATIONS



Modification of front facade based on the changed internal planning

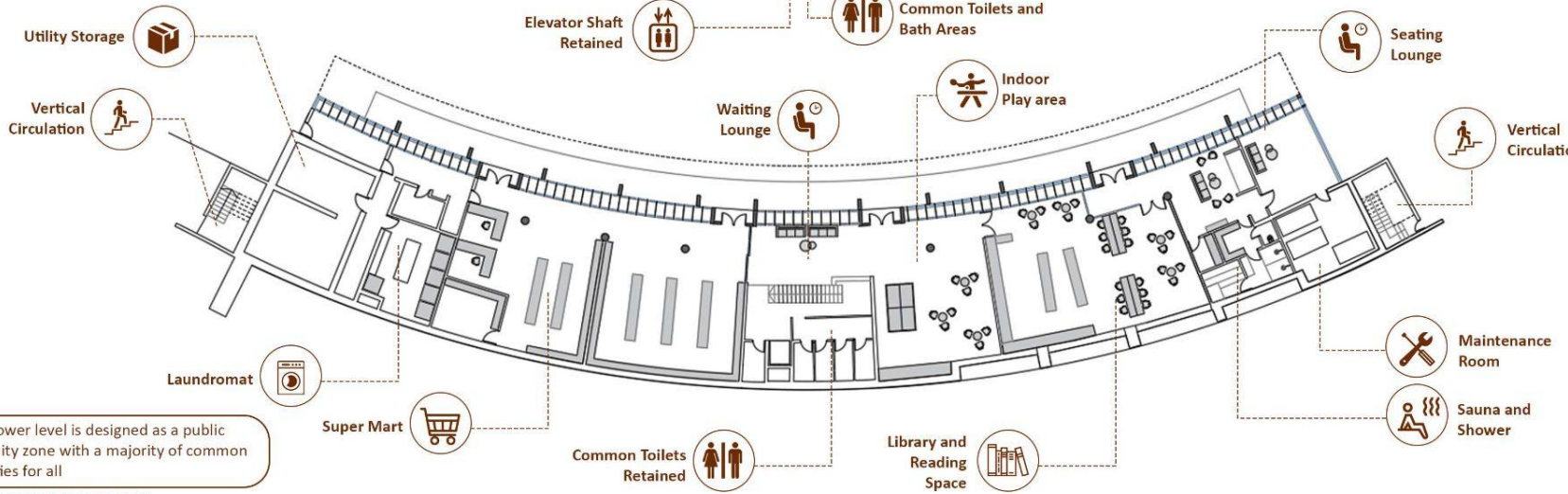
Overall site circulation regulated as per proposed design

Rear Facade windows retained and reused.

MODIFIED FLOOR PLANS

Utilizing the existing structural grid to modify the internal planning with minimal intervention

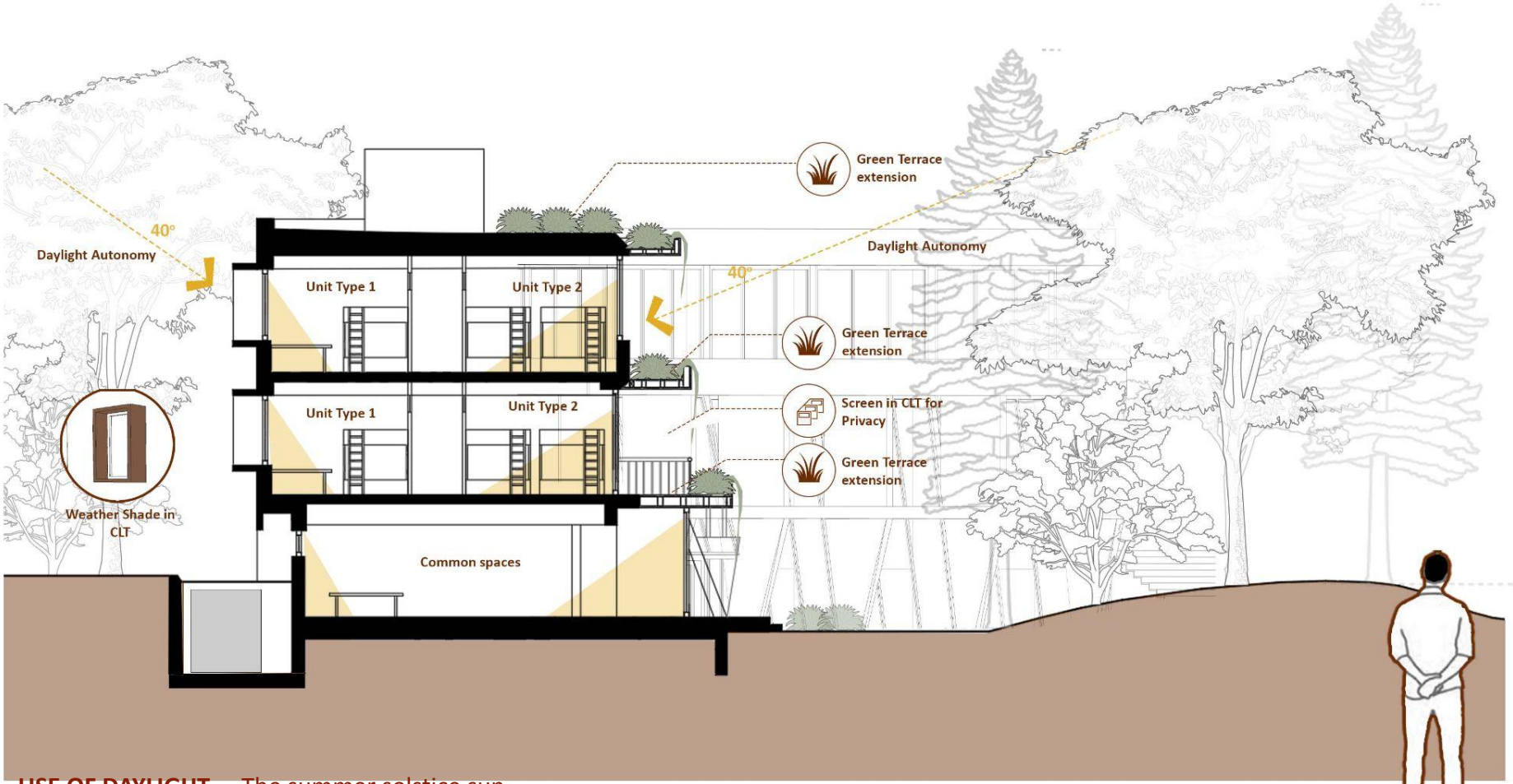
TYPICAL FLOOR PLAN



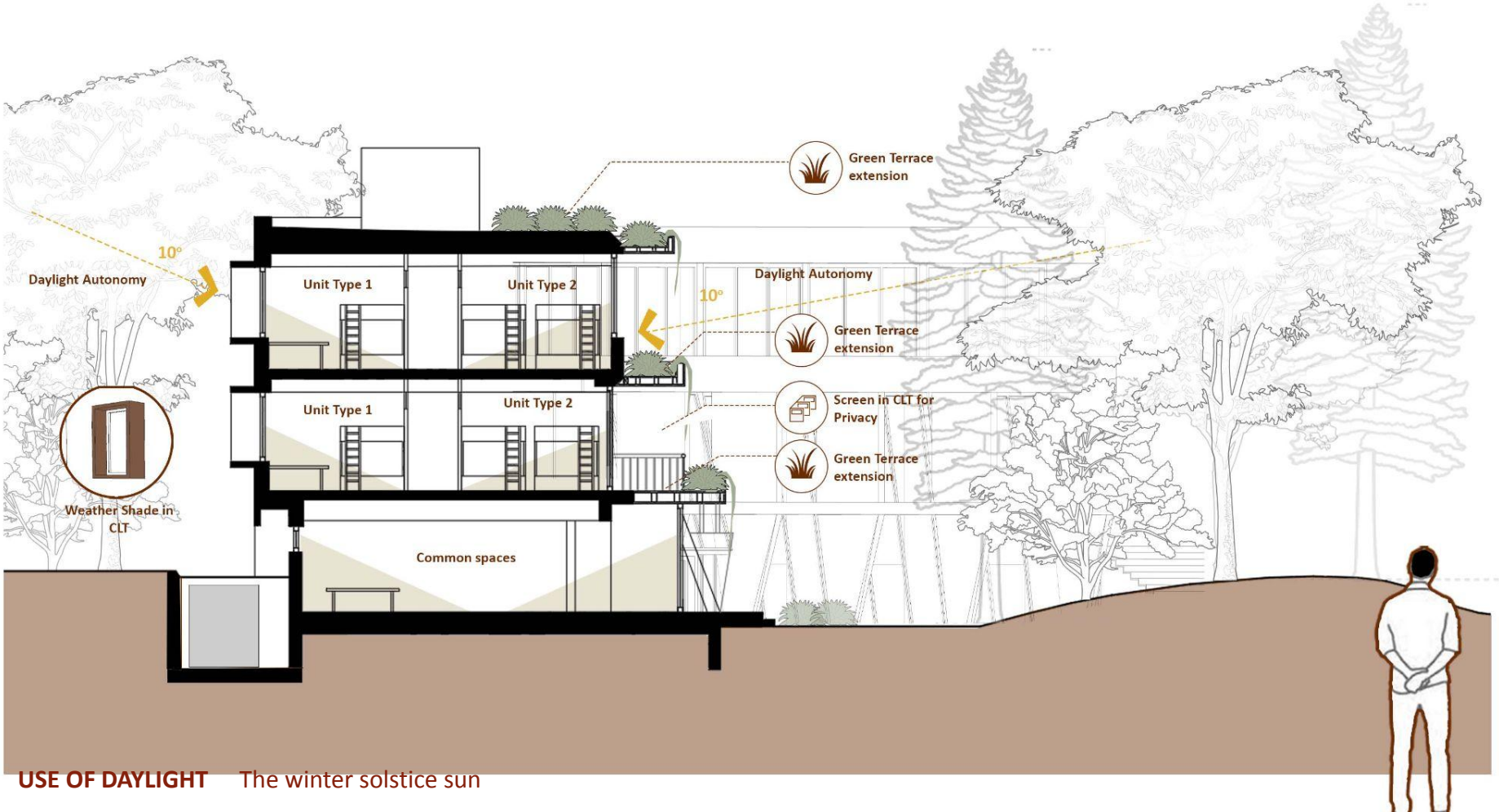
The lower level is designed as a public amenity zone with a majority of common facilities for all

GROUND FLOOR PLAN

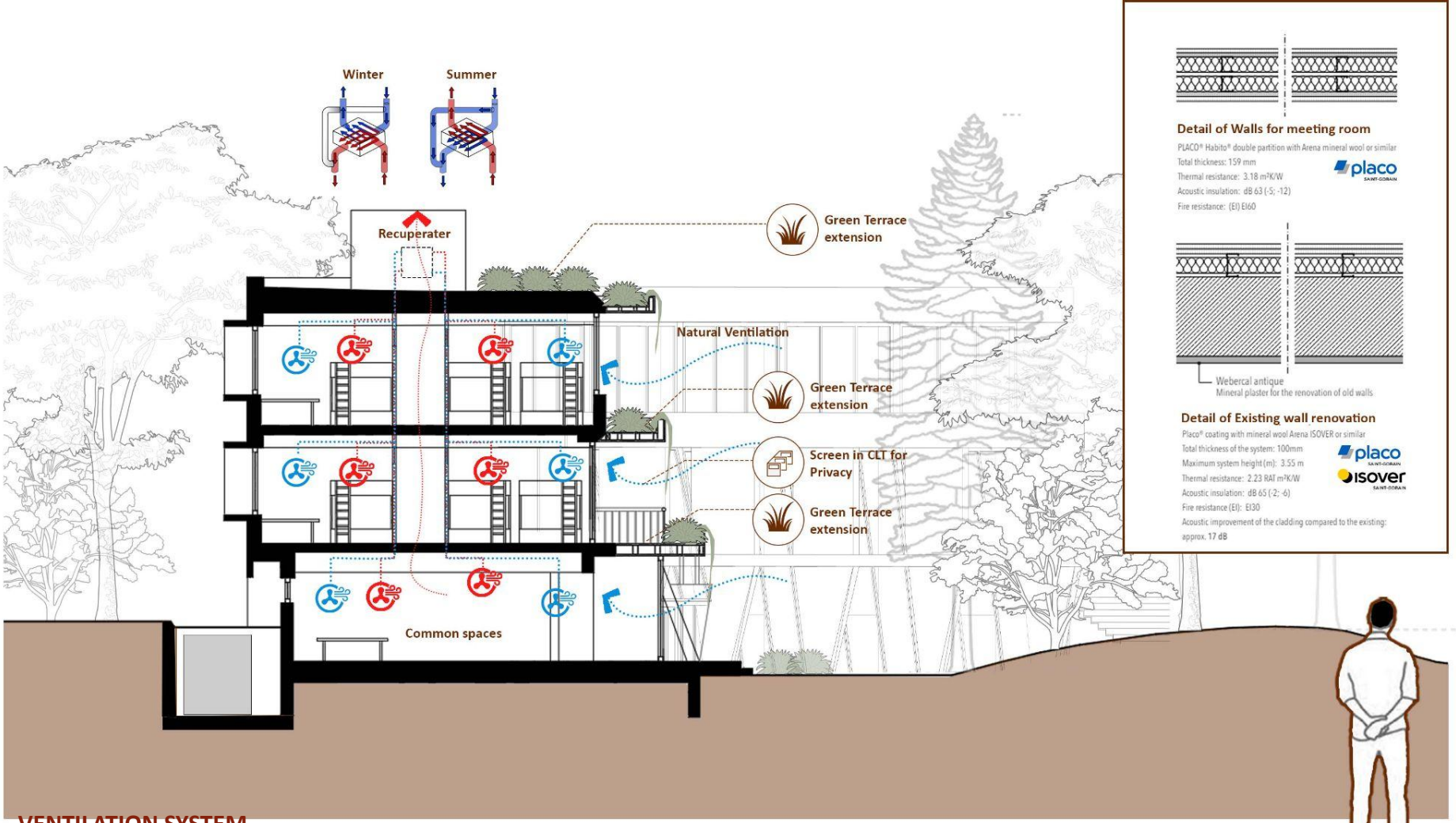
The front facade is made accessible with minimal extensions. Thus, accommodating the balconies for the dorms.



USE OF DAYLIGHT The summer solstice sun

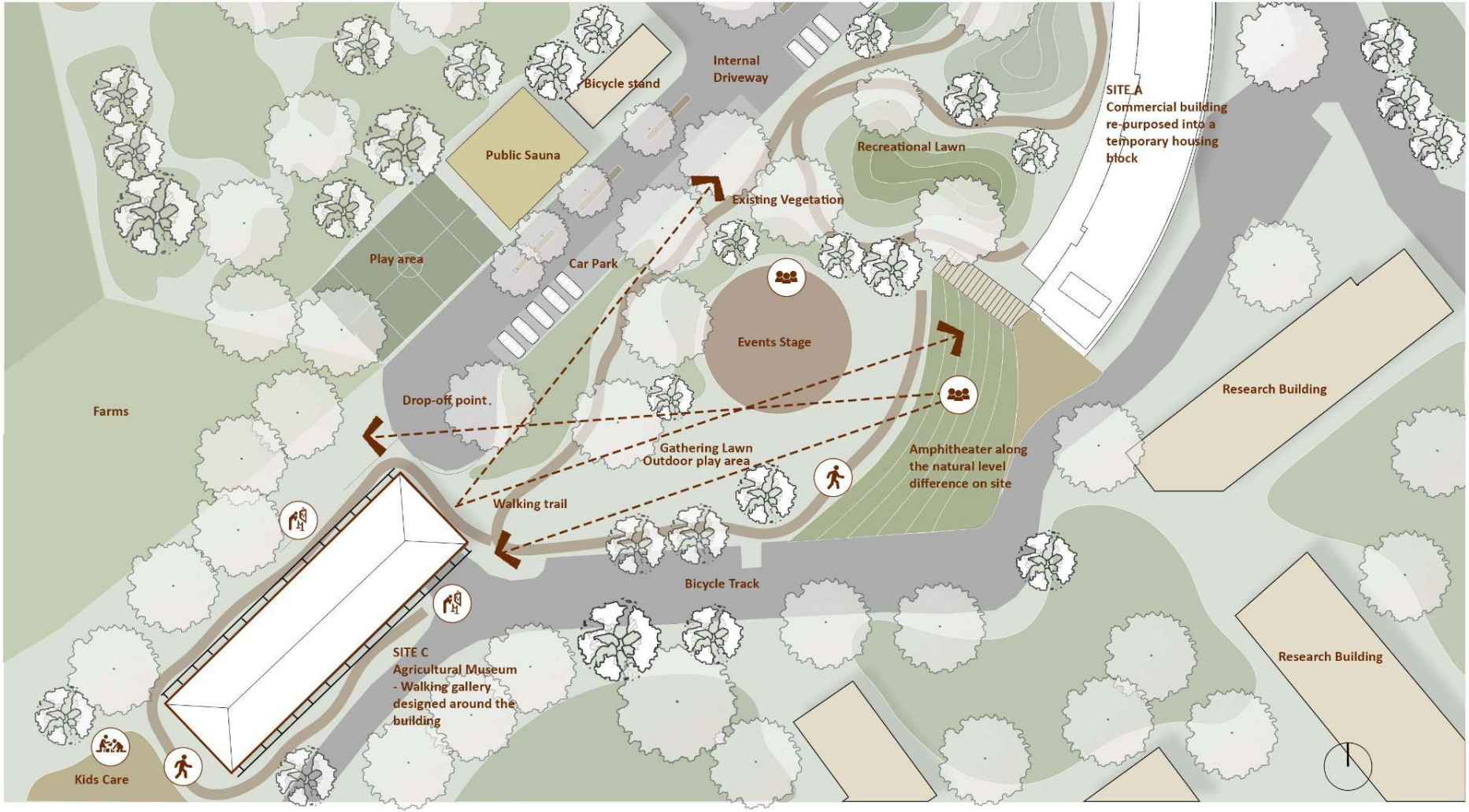


USE OF DAYLIGHT The winter solstice sun



VENTILATION SYSTEM

A view from the accessible shared balcony space overlook the recreational sone and the museum building.

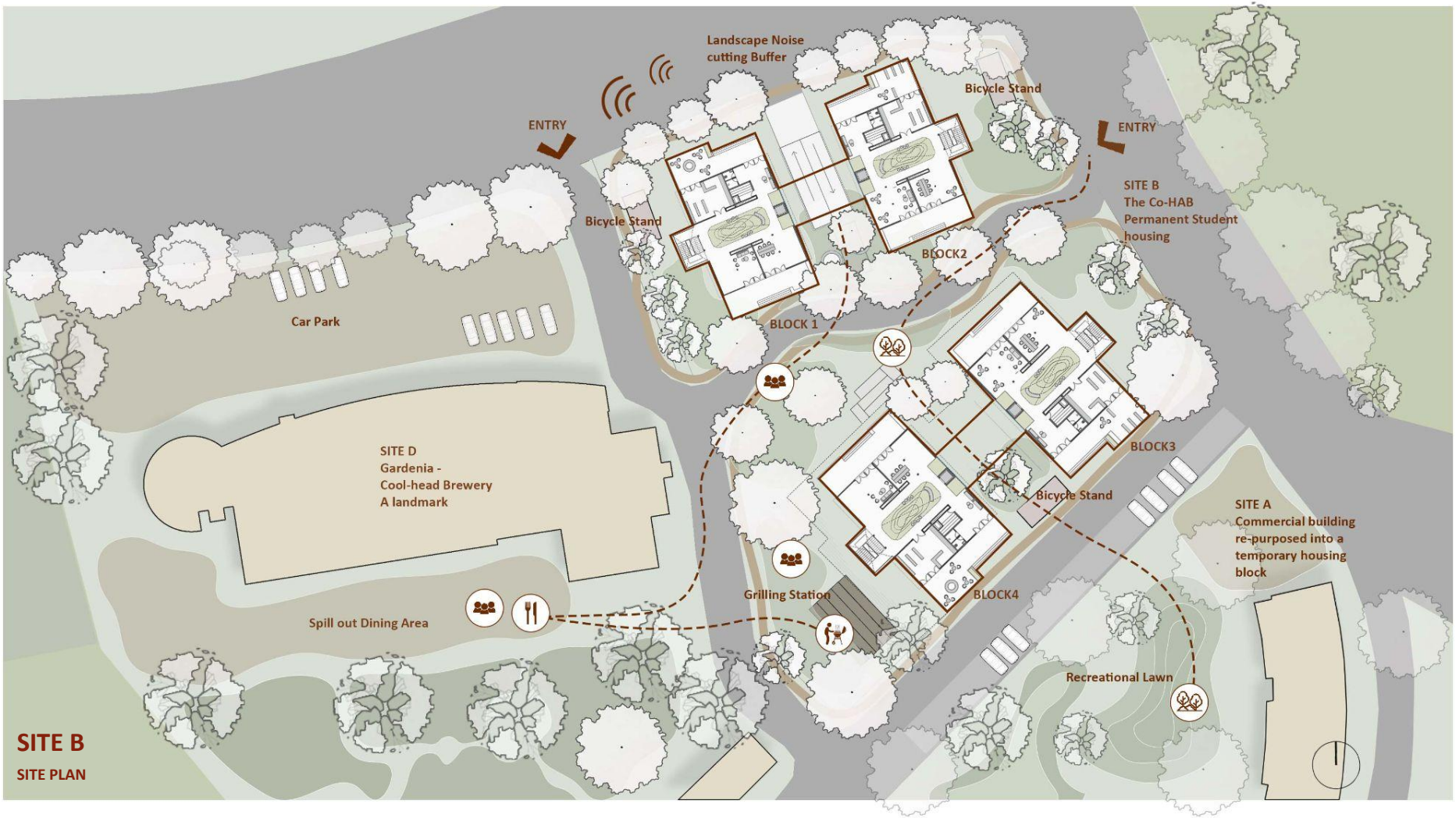

Internal Driveway
Bicycle stand
Public Sauna
SITE A
Commercial building re-purposed into a temporary housing block
Recreational Lawn
Existing Vegetation
Play area
Car Park
Events Stage
Farms
Drop-off point.
Research Building
Gathering Lawn
Outdoor play area
Amphitheater along the natural level difference on site
Walking trail
Bicycle Track
SITE C
Agricultural Museum
- Walking gallery designed around the building
Research Building
Kids Care

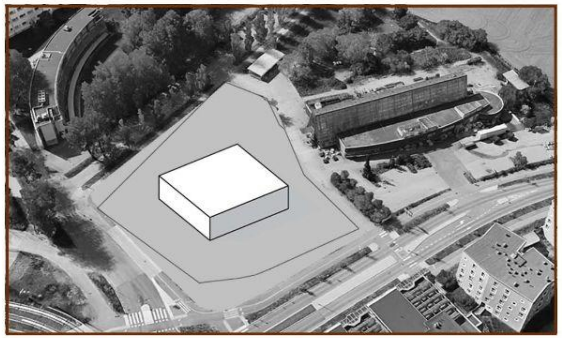
A view of the common amphitheatre created for social gatherings and student events.

A view of the landscape amphitheatre being a social breather space for the students.

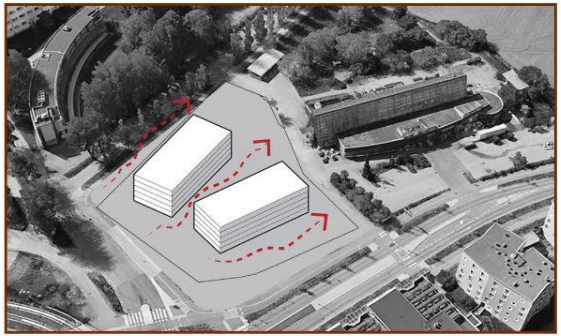
A view depicting open air amphitheatre opening the students up for various activity possibilities

A view depicting the outdoor gallery created for the museum for social stimulation

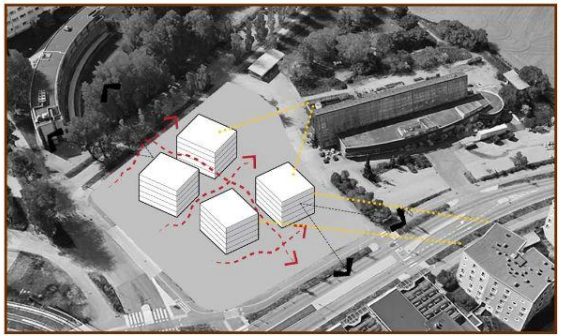

Landscape Noise
cutting Buffer
ENTRY
ENTRY
Bicycle Stand
Bicycle Stand
SITE B
The Co-HAB
Permanent Student
housing
BLOCK2
BLOCK 1
Car Park
SITE D
Gardenia -
Cool-head Brewery
A landmark
BLOCK3
Bicycle Stand
SITE A
Commercial building
re-purposed into a
temporary housing
block
Grilling Station
BLOCK4
Spill out Dining Area
Recreational Lawn
SITE B
SITE PLAN



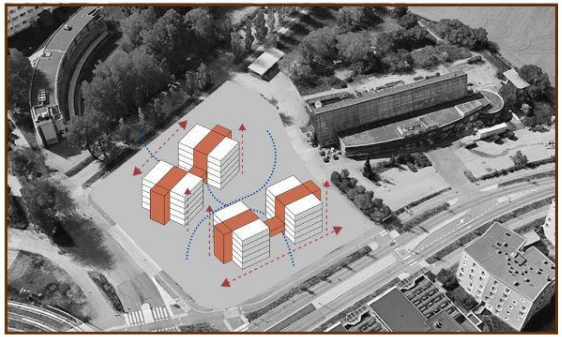
As per the plot efficiency parameter, 30% of the site is used for the housing blocks, thus optimizing on the footprint.



The permissible area is further strategically deconstructed into equal masses spaced along the boundaries of the site to create various accesses.

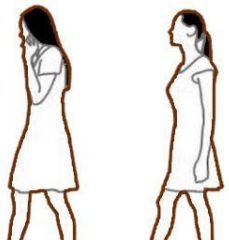


To achieve an efficient massing the blocks have further been divided into compact wings with a designated grid. Keeping a reference to the building heights in the immediate context.



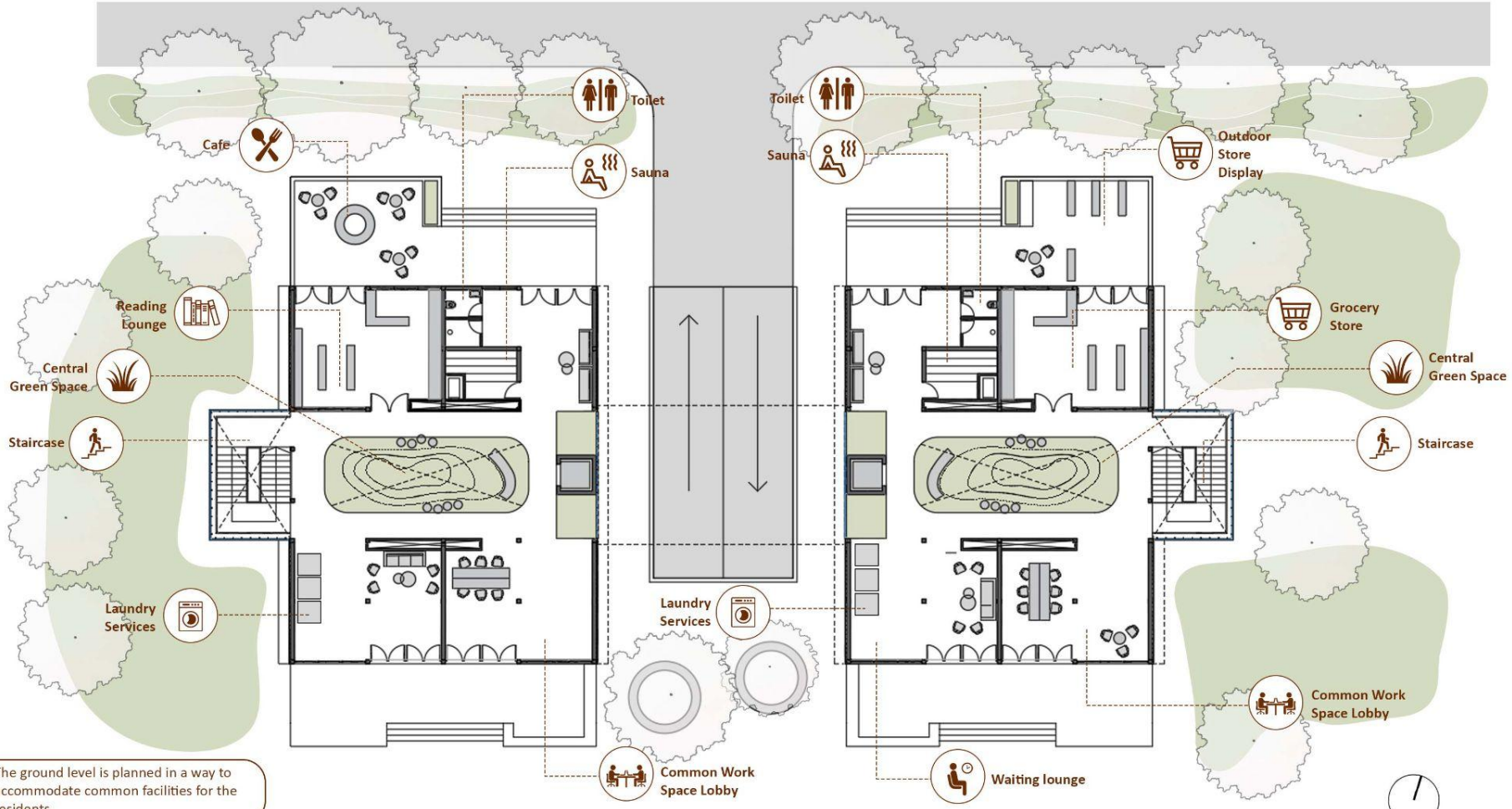
Circulation cores integrated as solarium to bind the blocks and create accessibility across the wing.

Landscape pockets integrated along the housing blocks utilizing different aspects of the site.



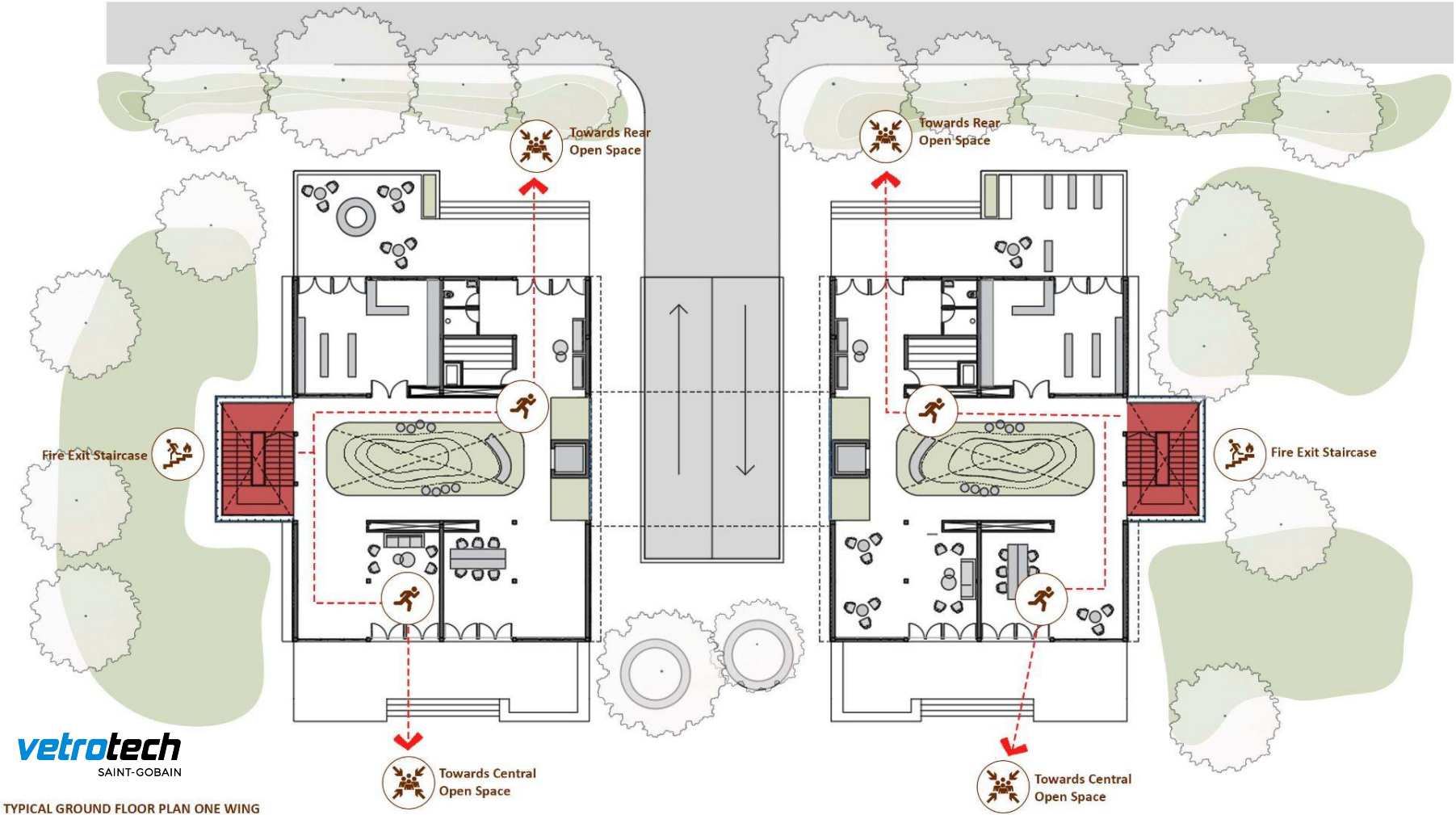
STRATEGIZING THE MASSING Achieving a compact massing to make it energy efficient

An overview of the common areas created in between the housing wings



The ground level is planned in a way to accommodate common facilities for the residents.

TYPICAL GROUND FLOOR PLAN ONE WING

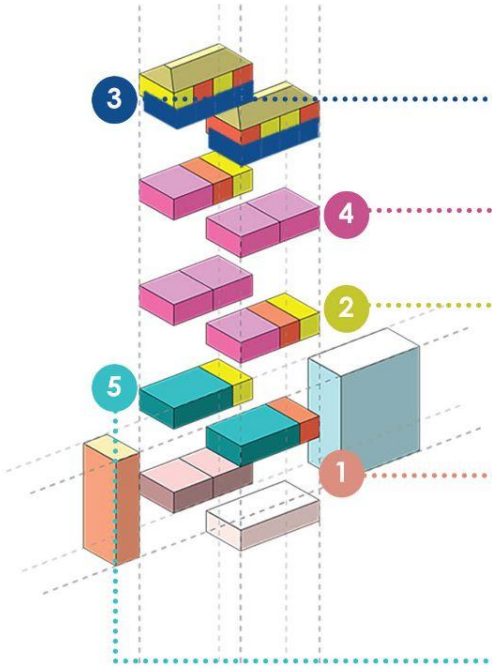


vetrotech
SAINT-GOBAIN

TYPICAL GROUND FLOOR PLAN ONE WING

An overview of how the greens play an important role in the design of the common accessible zones

THE UNIT TYPOLOGIES AND MASSING



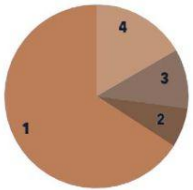
UNIT TYPE 5 |50 SQ.M

UNIT TYPE 1
|25 SQ.M

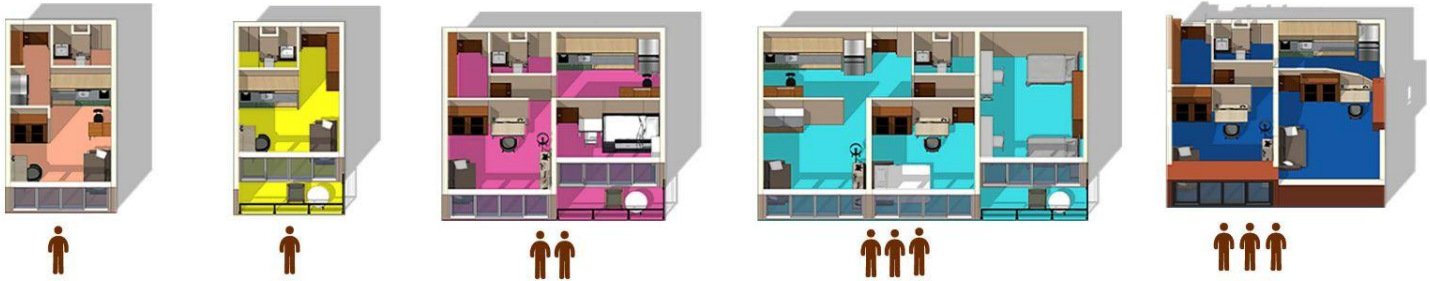
UNIT TYPE 2 |25 SQ.M

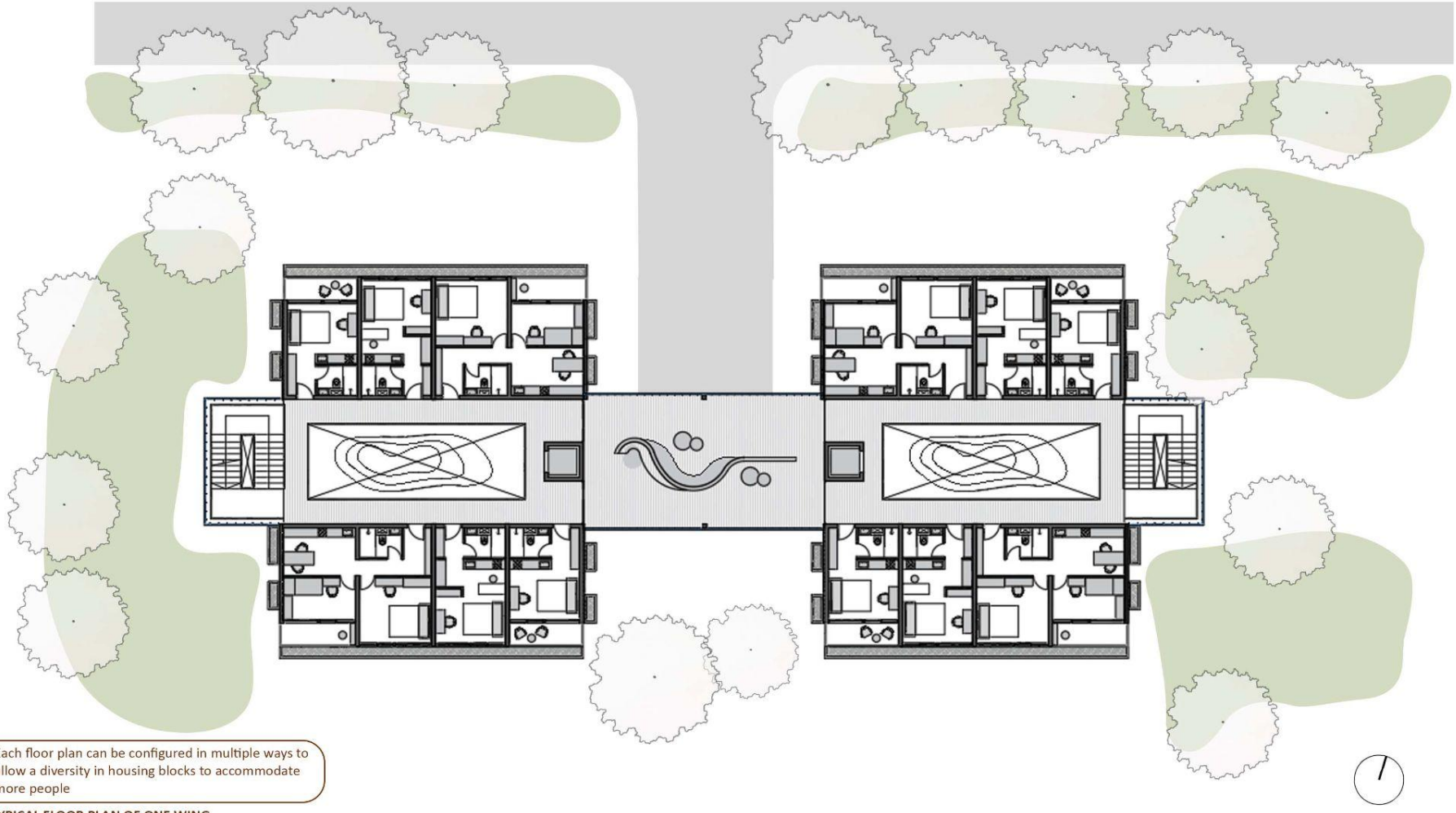
UNIT TYPE 3 |50 SQ.M

UNIT TYPE 4 |75 SQ.M



1. Living units
2. Common areas
3. Access and circulation
4. Commerce and co-working spaces

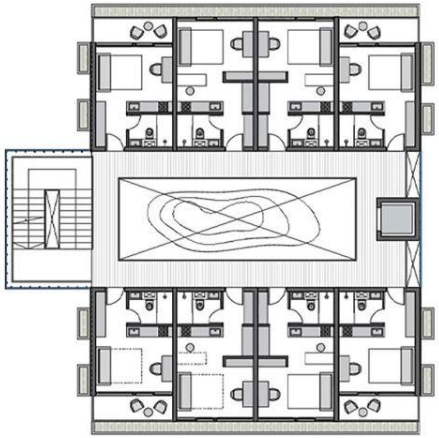




Each floor plan can be configured in multiple ways to allow a diversity in housing blocks to accommodate more people

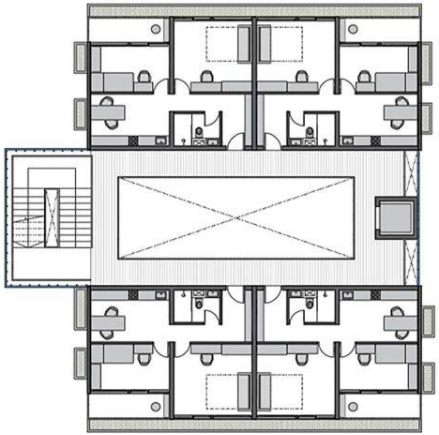
TYPICAL FLOOR PLAN OF ONE WING

An overview of central common space looking over the greens and common areas.



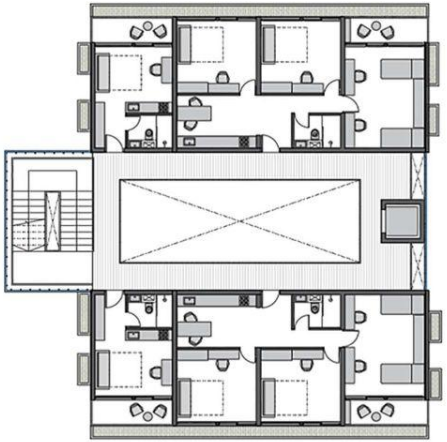
CONFIGURATION 01

The floor plan here is a combination of UNIT TYPE 1 and UNIT TYPE 2. Following the grid the floor plans have been designed to achieve a certain modularity in the overall design keeping a futuristic vision.



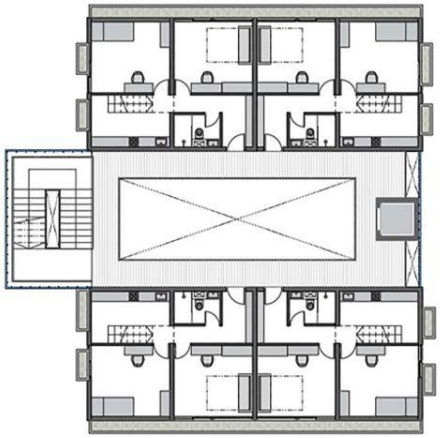
CONFIGURATION 02

The floor plan here comprises mainly of UNIT TYPE 3. As the requirement for dual accommodation units is more, one floor plate is dedicated for the these units in each block.



CONFIGURATION 03

The floor plan is a combination of UNIT TYPE 1 and UNIT TYPE 4. Each floor can be configured based on the density anticipated at the time of construction. Thus, allowing a more user centric design.



CONFIGURATION 04

The floor plan consists of the UNIT TYPE 5, which is also the top most floor. The higher floors have greater capacity. The units here also have aloft bedroom space to efficiently utilize the space.

LAYOUT CONFIGURATIONS Achieving a compact floor plate design by trying out permutations

A view of one of the accommodation units created for housing

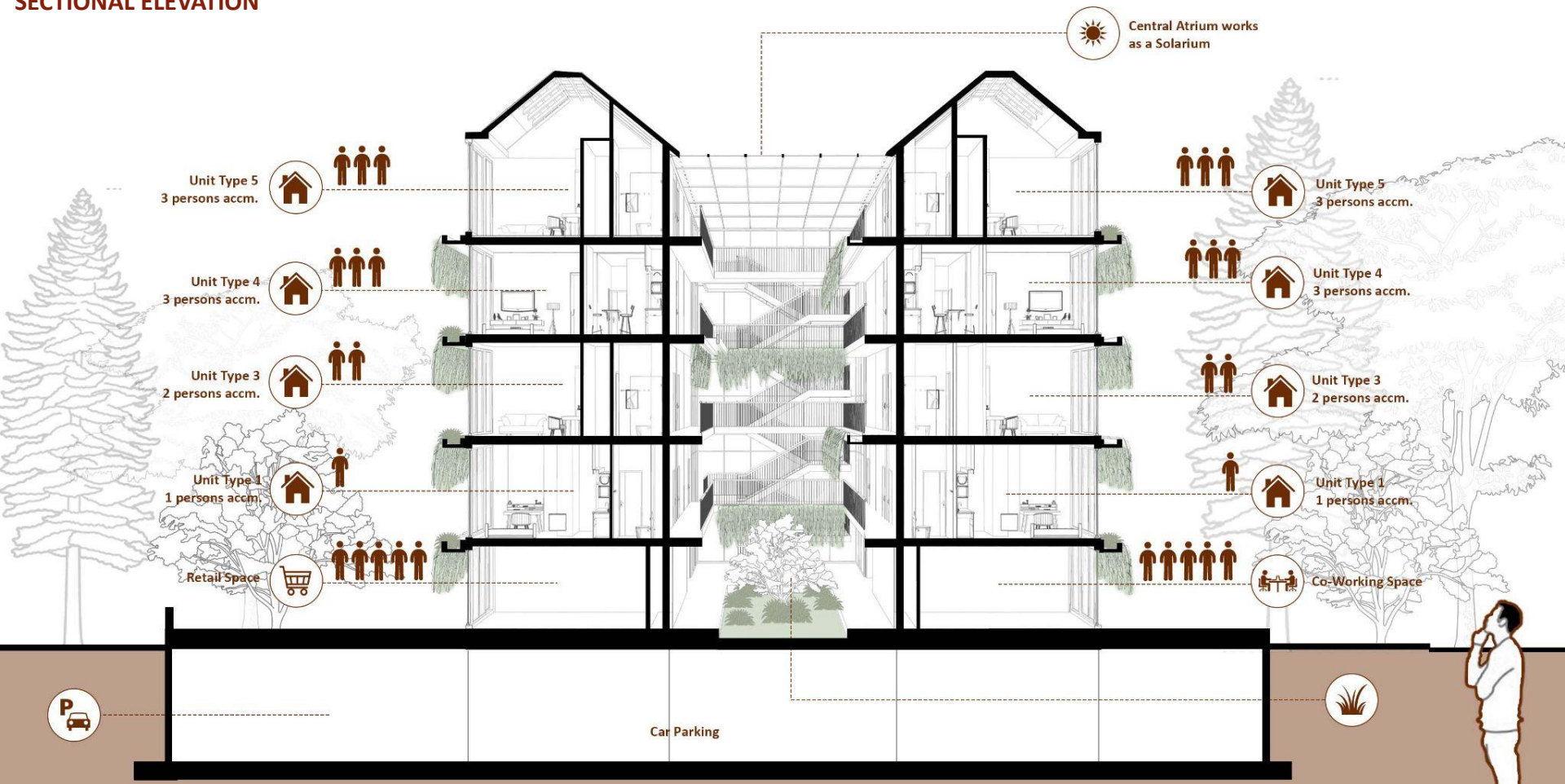
A view of the compact and optimal space usage in one of the accommodation housing units

A view depicting the housings wing heights to the width of the in between pathways

An overview depicting the housing wings height to width ratio for optimum space usage.

A view depicting the housing vertical circulation overlooking the common areas.

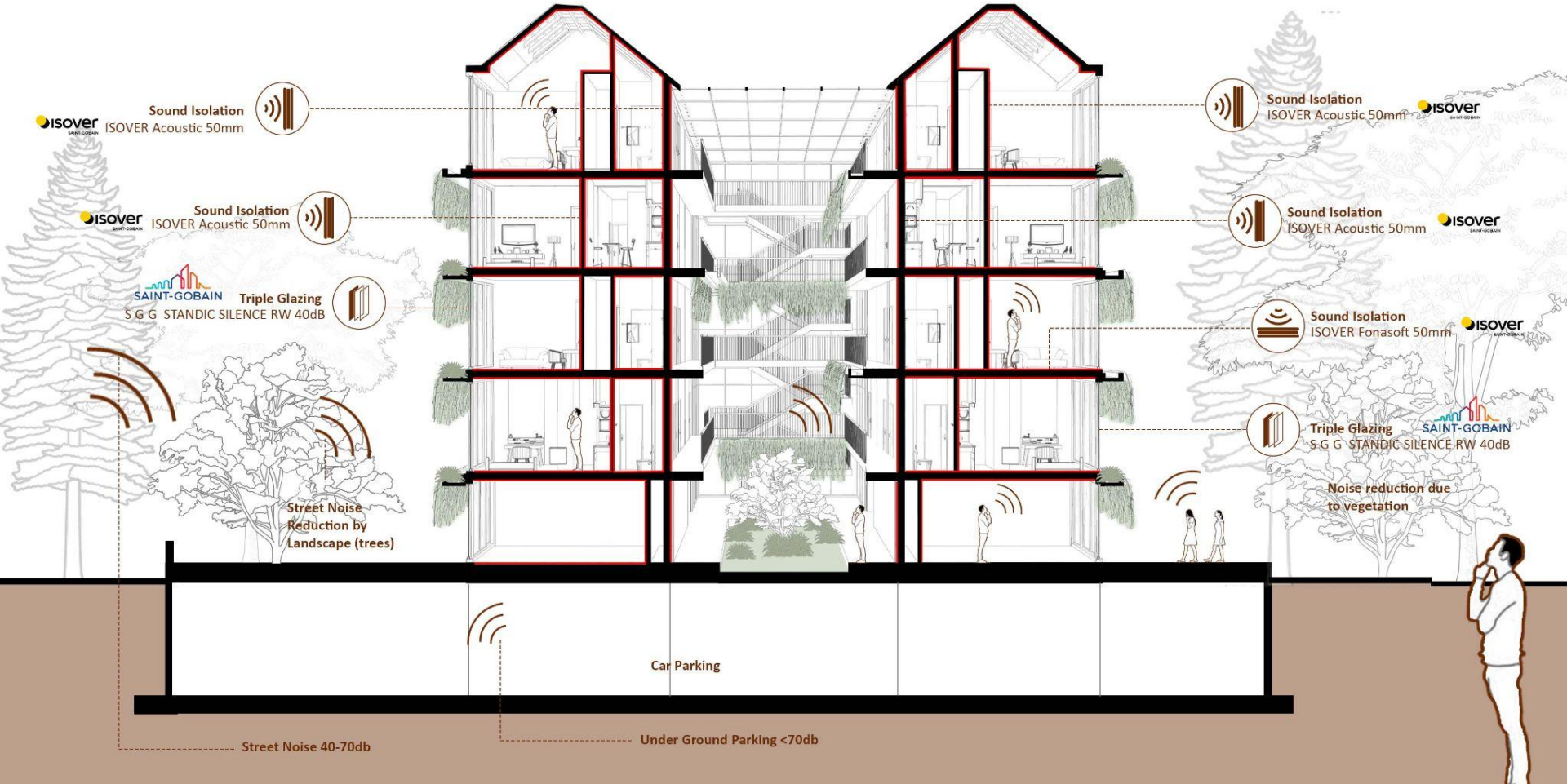
SECTIONAL ELEVATION



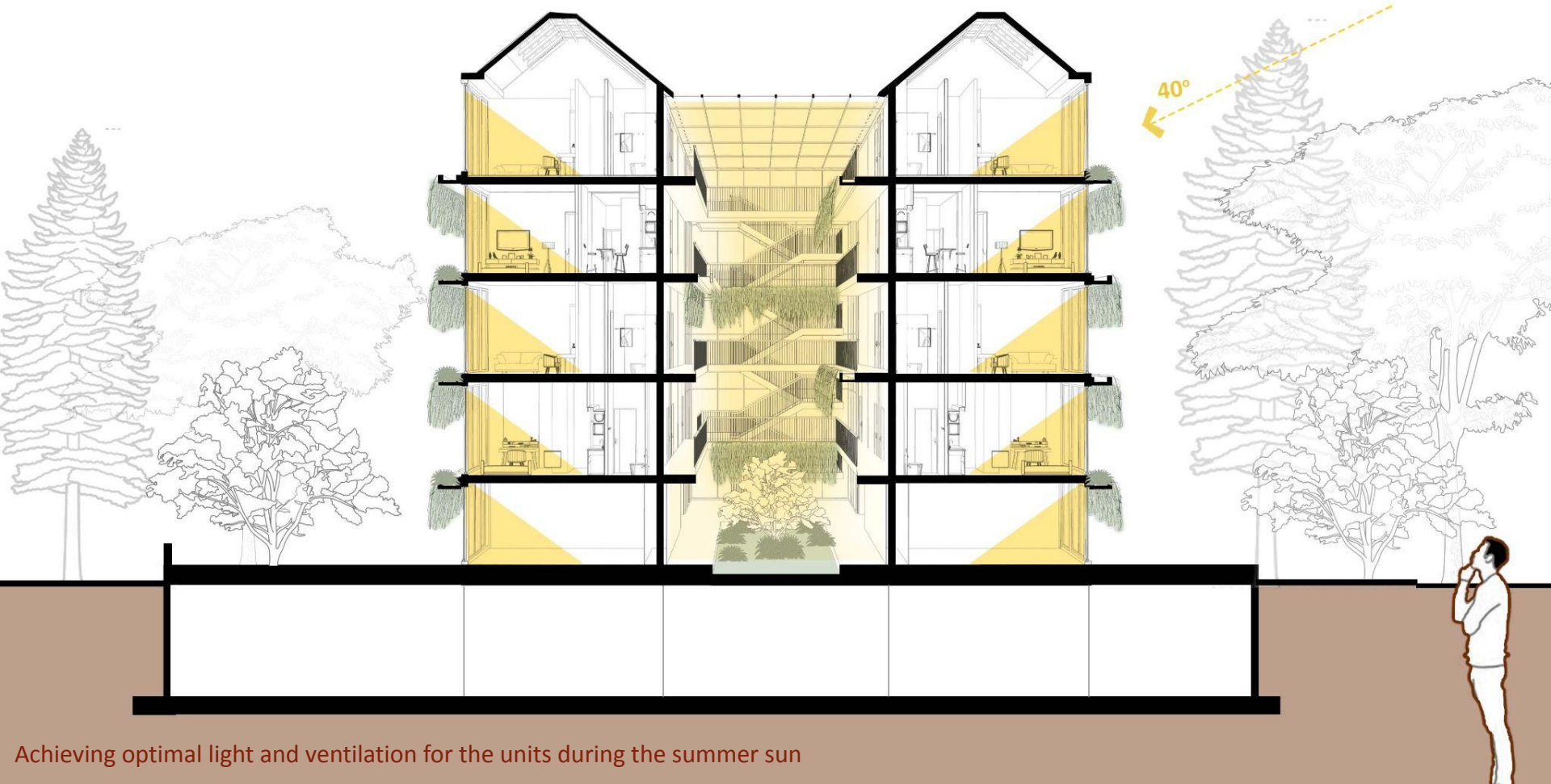
Achieving a compact space usage strategy for the users

SECTIONAL ELEVATION

Achieving a smart facade design for the users

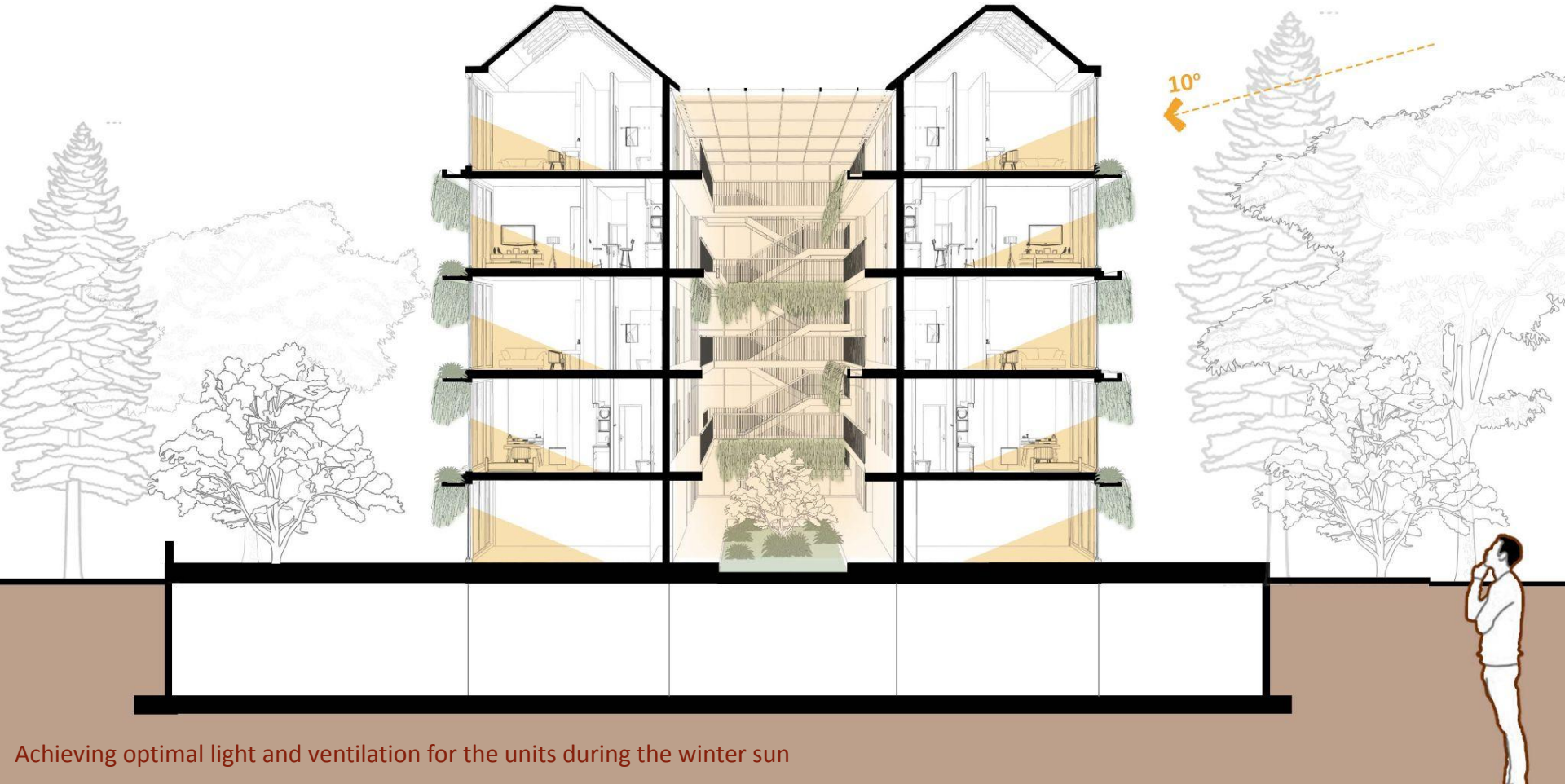


SECTIONAL ELEVATION



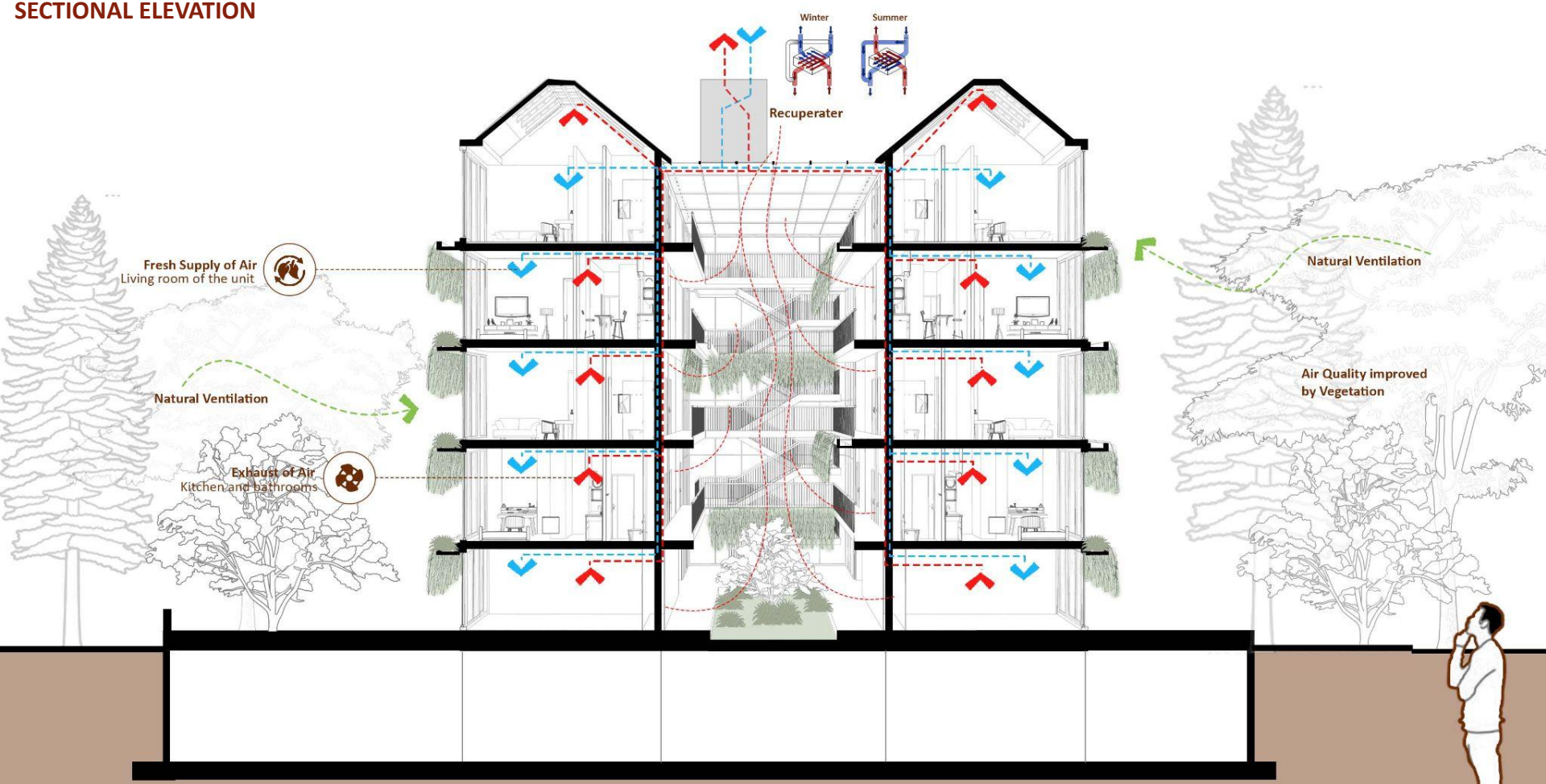
Achieving optimal light and ventilation for the units during the summer sun

SECTIONAL ELEVATION



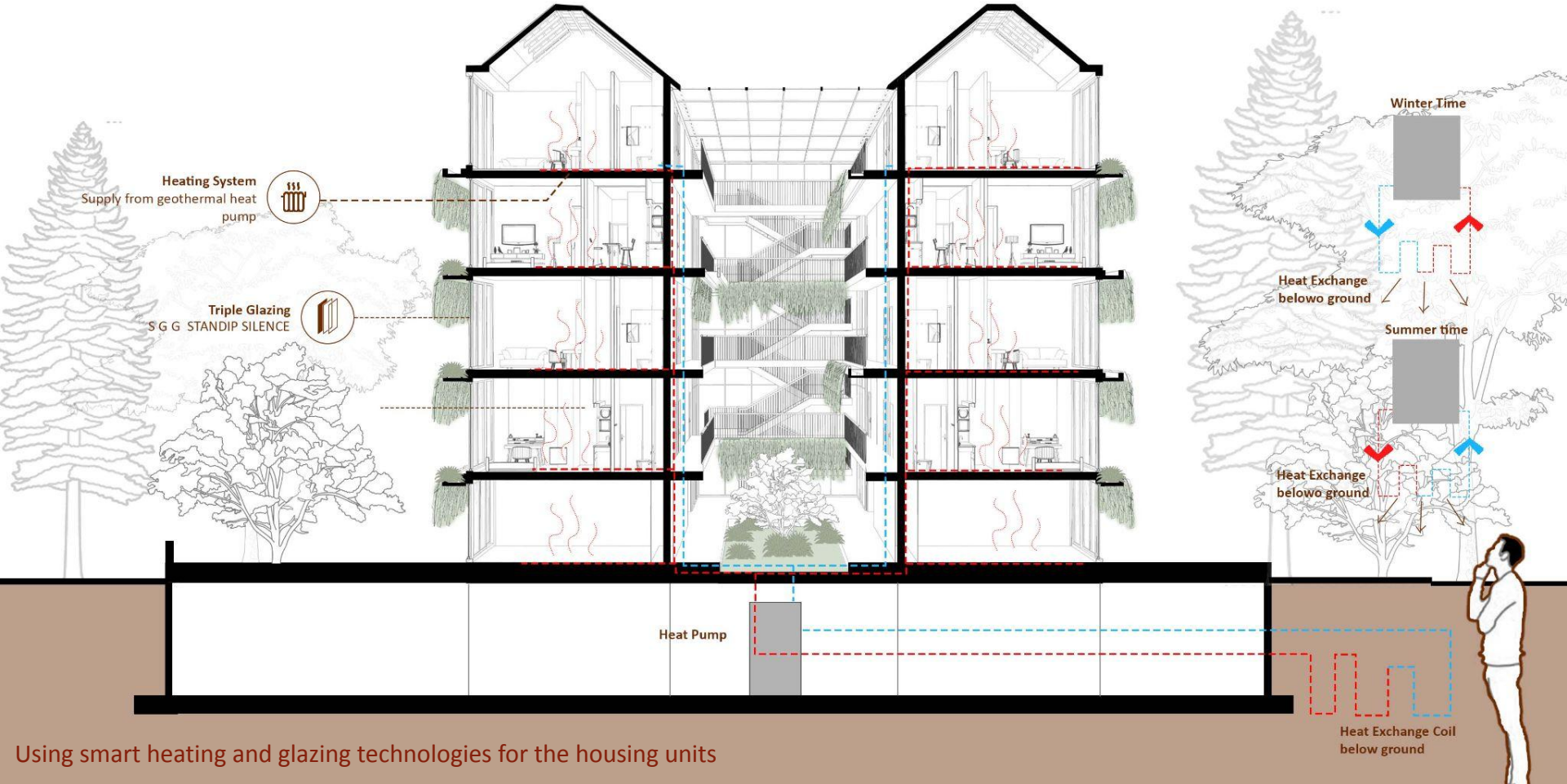
Achieving optimal light and ventilation for the units during the winter sun

SECTIONAL ELEVATION

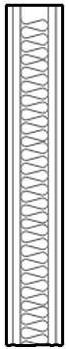


Achieving mechanically conditioned environment inside the housing environments

SECTIONAL ELEVATION



Using smart heating and glazing technologies for the housing units

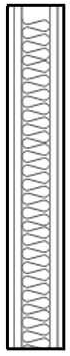


Detail of Bathroom Partition

12.5 mm PROGYP PPF BA (PLACO) Laminated Plaster Board.

50mm thk ISOVER APT ARENA

12.5mm GLASROC X (PLACO) x 2

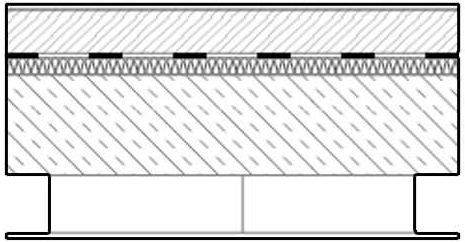


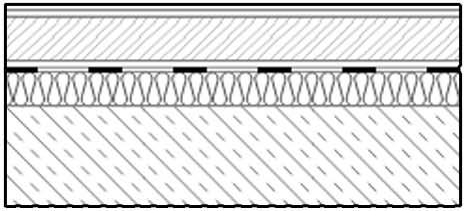
Detail of Internal Partition

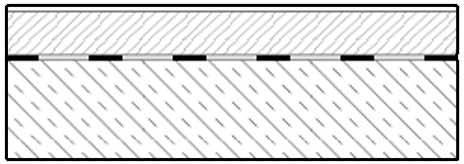
12.5 mm PROGYP PPF BA (PLACO) Laminated Plaster Board.

50mm thk ISOVER APT ARENA

12.5 mm PROGYP PPF BA (PLACO) Laminated Plaster Board.







Detail of Floor

10mm Finishing
65 mm WEBERFLOOR BASE Screed
WEBERDRY pure seal waterproofing membrane
25mm ISOVER Acoustic Insulation Arena PF
150mm CHRYSO EniroMIX ULC Low Carbon concrete Solution
Air Gap
12.5 PROGYP PPF BA
Standard Laminated Plaster Board (Fire Resistant)

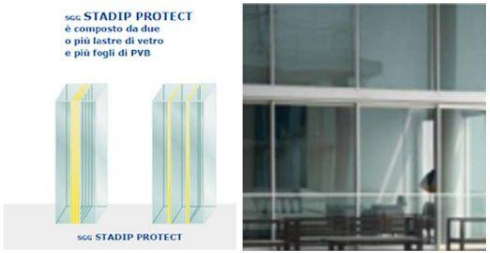
Detail of Roof

10mm Finishing
Adhesive Mortar
65 mm WEBERFLOOR BASE Screed
WEBERDRY Pure Fabric 110G
WEBERDRY pure seal aqua polyurethane waterproofing membrane
50mm ISOVER 175 Roofing Panel (Thermoacoustic)
150mm CHRYSO EniroMIX ULC Low Carbon concrete Solution

Detail of Balcony

10mm STONE
65mm WEBERFLOOR flow liguid Screed Mortar
4 mm WEBERDRY FEEL waterproofing
150mm CHRYSO EniroMIX ULC Low Carbon concrete Solution

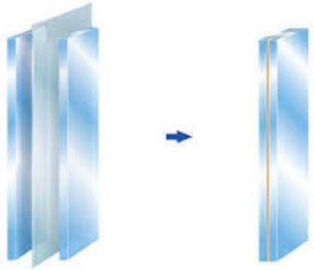
DETAILS



STADIP PROTECT + PLANITHERM

External (common areas and rretails spaces)

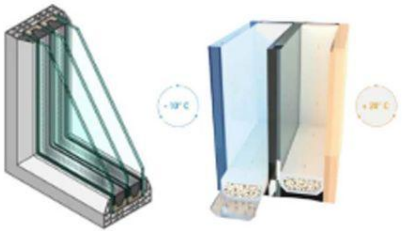
Providing Protection against injury, vandalsim, UV Light. Used for Guarding.
Energy efficient Glass for Comfortable Places.
Limits the the heat transfer by radiation.
Helps creating an Airtight solution.



STADIP SILENCE TGU + PLANITHERM

External (Residential units Road side)

Effectively Keeps out intrusive sounds ensuring sounds, ensuring comfortable living experience.
Visual and aesthetic pattern glass transmits light, dispersing it ever so subtly.



ECLAZ TGU + SWISS PACER ULTIMATE

Internal (Residential units)

Aesthetic, thermal insulation, solar gains, natural light, ECLAZ enables to achieve the highest energy efficiency requirements

ISSOL WHITE PV PANEL

Facade (Central Atrium)

Fully tempered laminated safety glass. It is equiped with photovoltaic hgh-efficiency mono crystalline cells.

DETAILS

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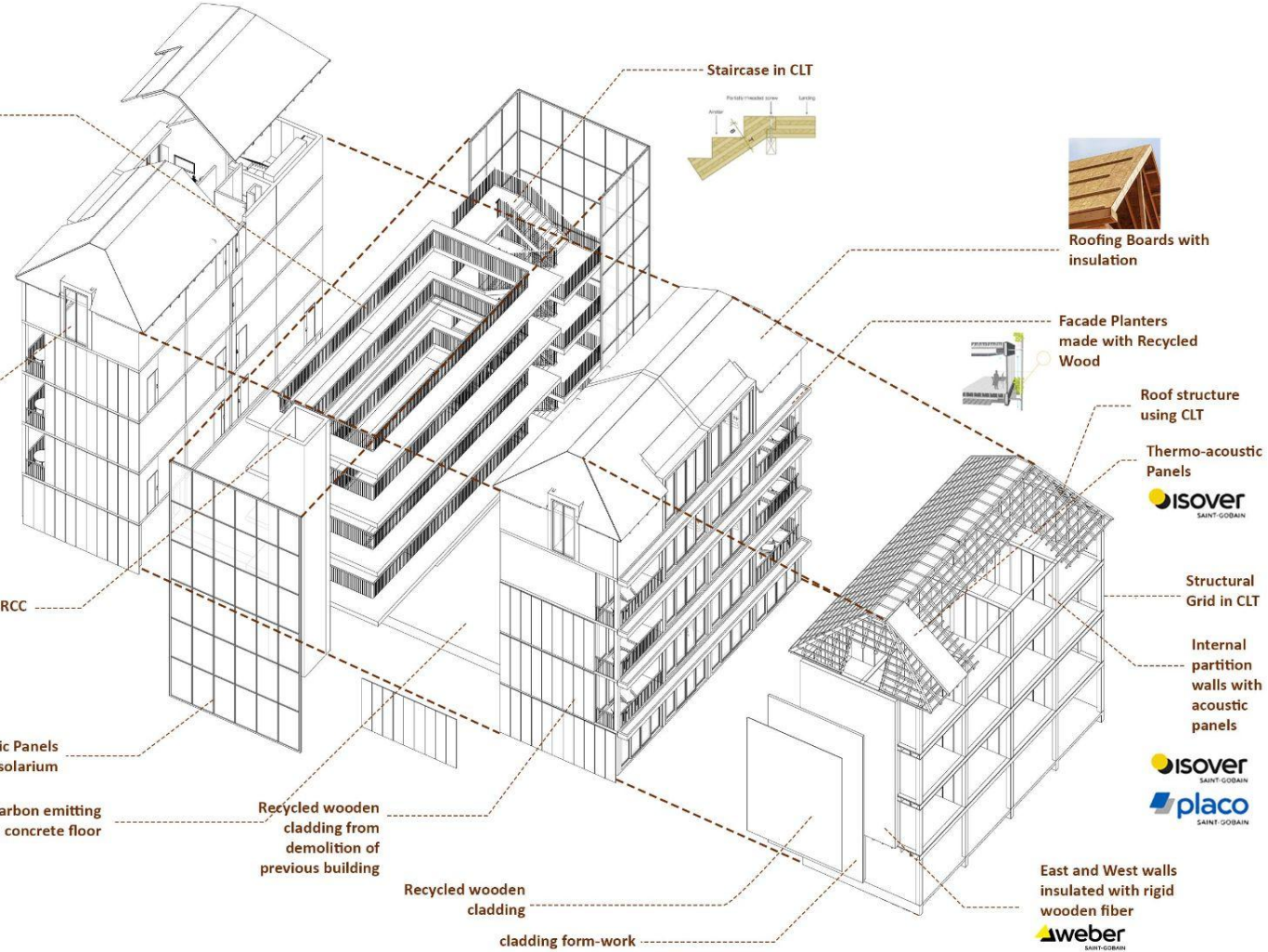
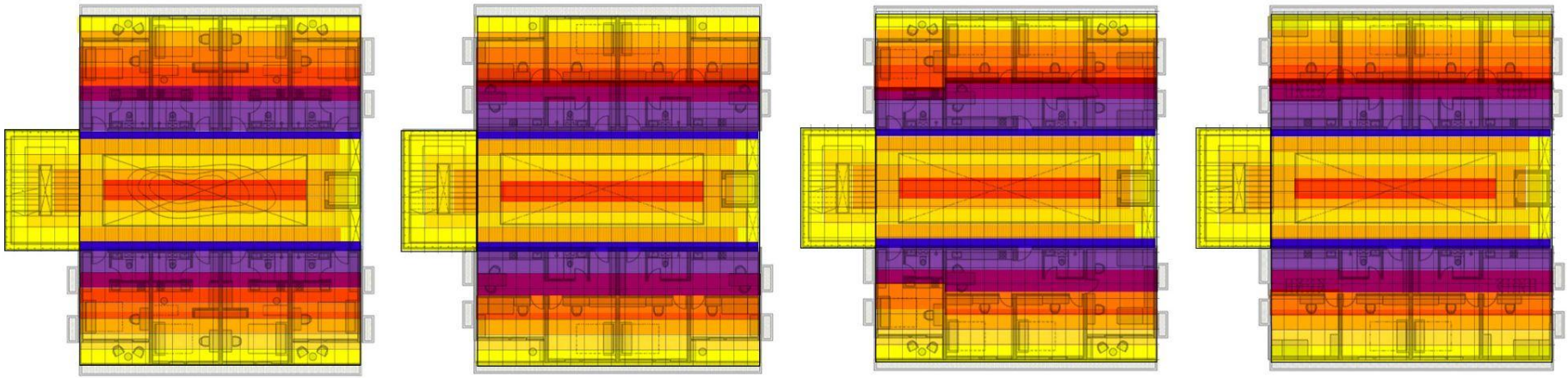
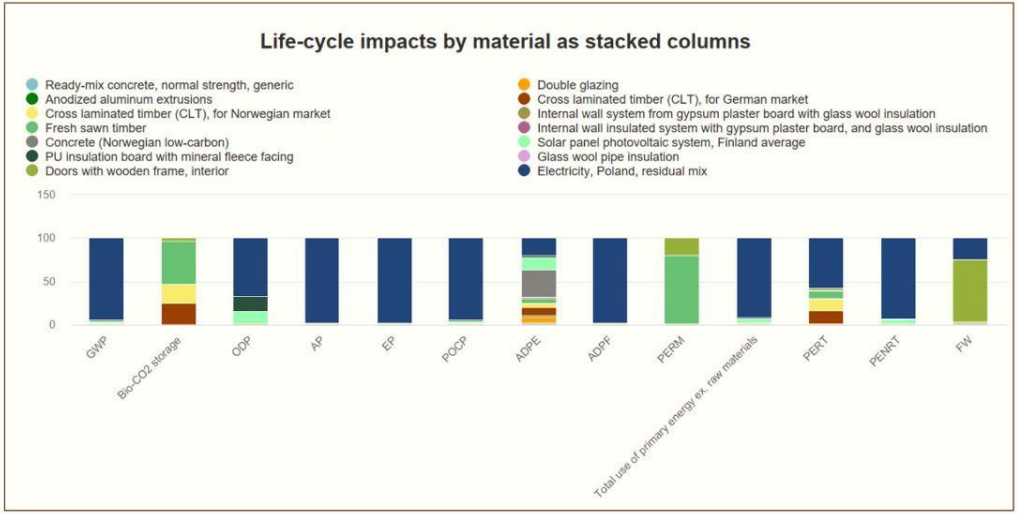
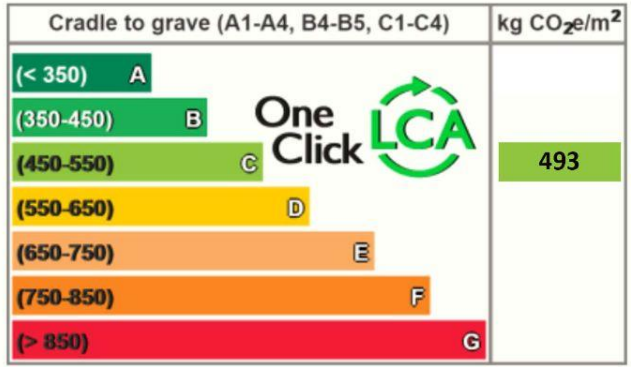

Recycled Metal Railings
Staircase in CLT
Roofing Boards with insulation
Facade Planters made with Recycled Wood
SAINT-GOBAIN
TGU Glazing system
Roof structure using CLT
Thermo-acoustic Panels
ISOVER
ULTIBAT
Elevator Shaft in RCC
Structural Grid in CLT
Internal partition walls with acoustic panels
ISSOL
Photo voltaic Panels for central solarium
ISOVER
placo
ULTIBAT
Low carbon emitting concrete floor
Recycled wooden cladding from demolition of previous building
Recycled wooden cladding
East and West walls insulated with rigid wooden fiber
cladding form-work
weber

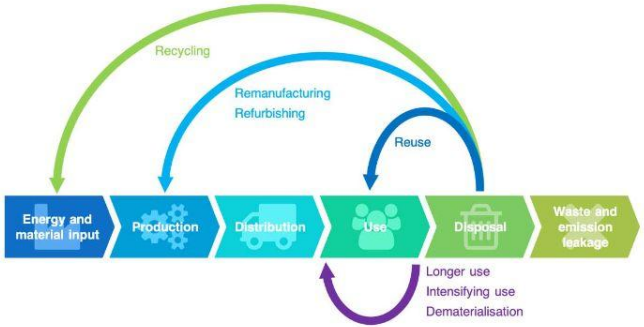


DAYLIGHT ANALYSIS Achieving optimal natural lighting conditions for the housing units

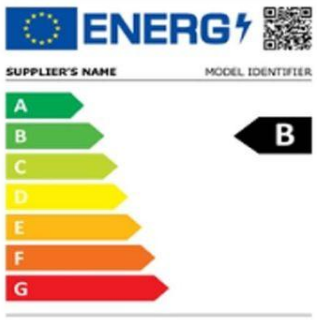


CO2 FOOTPRINT





ENERGY EFFICIENCY



Propose Equipment Energy Consumption Standarization

+ Use of PV Photovoltaic Panels along the common core

Reducing 80% of the energy consumption during the operating time

LCA analysis

The Co **[HAB]**

Architectural Scale

Material Scale Investigation

An Urban Level Impact

The Larger Picture!

THANK YOU!