



**ARCHITECTURE STUDENT CONTEST**  
**20<sup>th</sup> INTERNATIONAL EDITION, NORD ISÈRE 2025**

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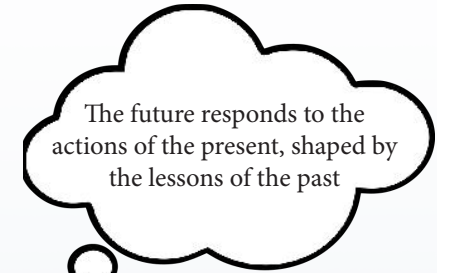
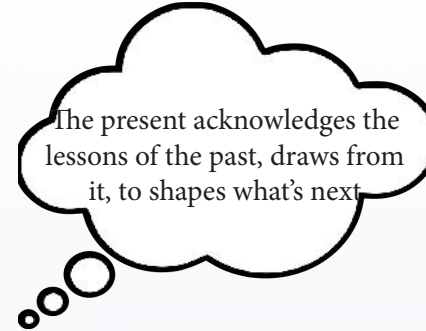
Oluwabusolami Adesoji  
*Nigeria*

# DIALOGUE

Past Informs

Present Transforms

Future Responds



*This project stages a conversation between past, present, and future.*

The site at Chimilín responds to present needs while preserving its identity through renovation, while that of Villafontaine merges modern, energy-efficient design with its urban regeneration history. Connected regionally through creative hubs like Lyon, both sites demonstrate that the future is not built by erasing the past, but by engaging with it — using it as a guide to **inform** designs that meet current needs, creating a **transformation** that **responds** to evolving contexts.

# Site Context and Analysis

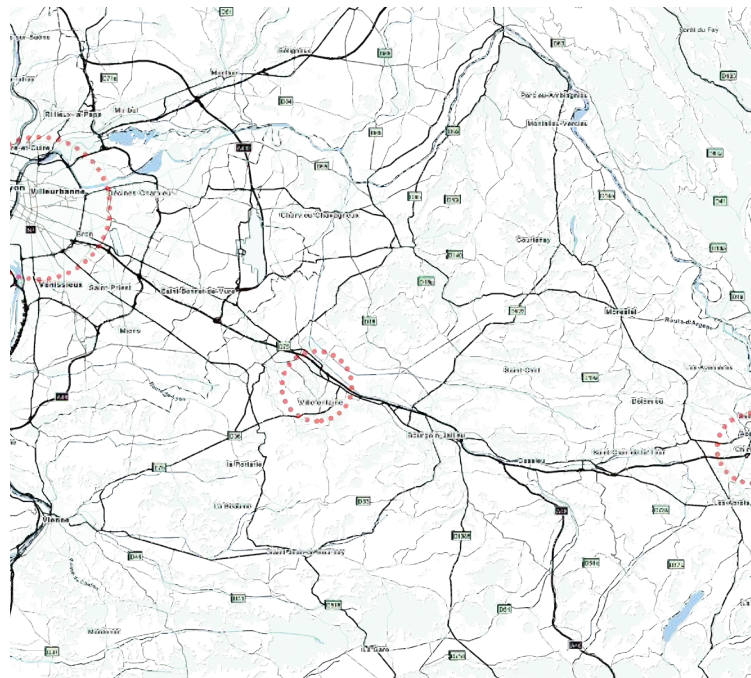
This project is situated in the metropolitan region of Lyon, France, specifically within the towns of Villefontaine and Chimilin. The study considers two distinct sites, one designated for new construction in Villefontaine and the other for renovation in Chimilin



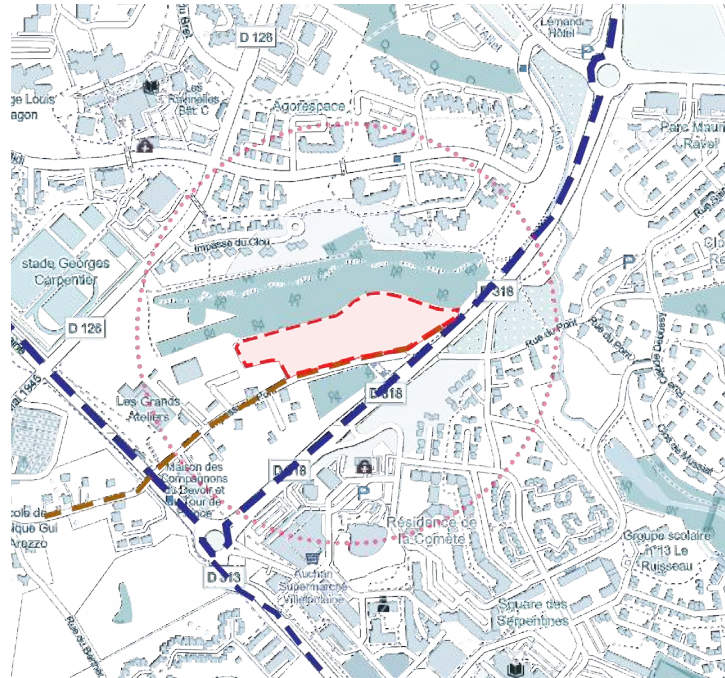
*Regional connection between Lyon, Villefontaine, and Chimilin,*

*Villefontaine new construction site, located near Les Grands Ateliers, surrounded by dense residential and institutional developments.*

*This smaller town context offers a different scale of intervention — one rooted in fabric repair, heritage, and revitalization.*



Lyon - Villefontaine - Chimilin **Dialogue**



Context task Site - New construction



Context task Site - Renovation, Chimilin

- Context task sites
- Main street
- collector street
- Rural greens

# CONNECTING CITIES THROUGH TIME

(PAST | PRESENT | FUTURE)

This project explores the architectural and cultural dialogue across the Nord-Isère region, shaped by the Lyon-Turin high-speed railway — a vital link between tradition and modernity. The network connects Chimilin’s adaptive reuse efforts, Villefontaine’s progressive educational initiatives, and the region’s evolving focus on mobility and sustainability.

Guided by the belief that the **past informs** the present, the design honors historical craftsmanship and cultural heritage, integrating them into modern architectural strategies. The **present transforms** by embracing innovation — in design, transportation, and environmental responsibility. In doing so, the project allows the **future to respond** dynamically, creating spaces that evolve with changing societal and ecological needs.

Through the seamless exchange of knowledge, culture, and technology, this vision builds on the past to shape a resilient, sustainable, and meaningful future for Nord-Isère.



Sociability

Tourism

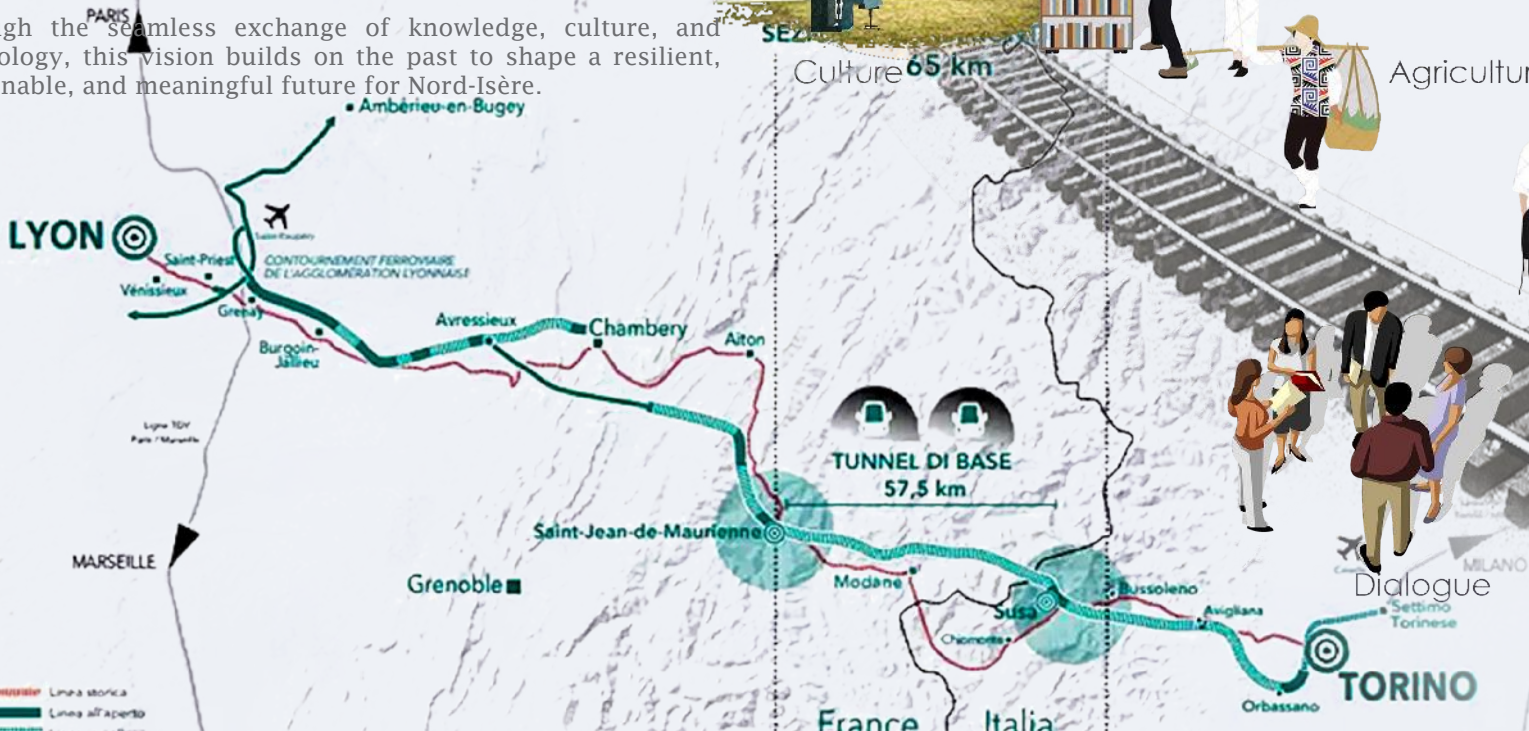


Culture 65 km

Agriculture



Textile production



Two Sites, One Journey



# A - RENOVATION

Reimagination of an abandoned school into a vibrant community centre

ARCHITECTURE  
STUDENT  
CONTEST



“The Greenest building is one that already exists.”

— Carl Elefante , 2018 AIA President.

Architecture Student Contest – France 2025

SAINT-GOBAIN



## DIALOGUE

Our proposal is centered on the concept of Dialogue—a living, breathing exchange between people, spaces, and time, where adaptation is constant, and the built environment evolves alongside human experience

The masterplan embodies this idea by creating a network of interactions that blur the boundaries between the inside and outside, the individual and collective, and the built and natural environment.

### ILLUSTRATIVE MASTERPLAN Scale 1:500



- ① Entry
- ② Carpark / bicycle park
- ③ Outdoor Sitout
- ④ Breakout / Multipurpose Space
- ⑤ Garden
- ⑥ Garden
- ⑦ Breakout / Mainhall
- ⑧ Outdoor Performance Space
- ⑨ Exit
- HEAT PUMP

#### Past | Present | Future

The design deeply embraces landscape as a social and cultural connector, inspired by France's tradition of outdoor living.

The design embraces accessibility and vibrant public spaces, inspired by France's historical tradition of social gathering, while responding to the influx of young families by fostering community interaction, shared experiences, and seamless mobility.

PV panels on the roof and a heat pump on the ground improve energy efficiency, supporting modern sustainability and adapting to future environmental needs

## DEMOLITION , ADAPTIVE REUSE AND NEW CONSTRUCTION

### DEMOLITION

These indicate obsolete walls and partitions removed to enhance spatial flow and accommodate new functions, ensuring minimal waste and structural disruption during the building's evolution.

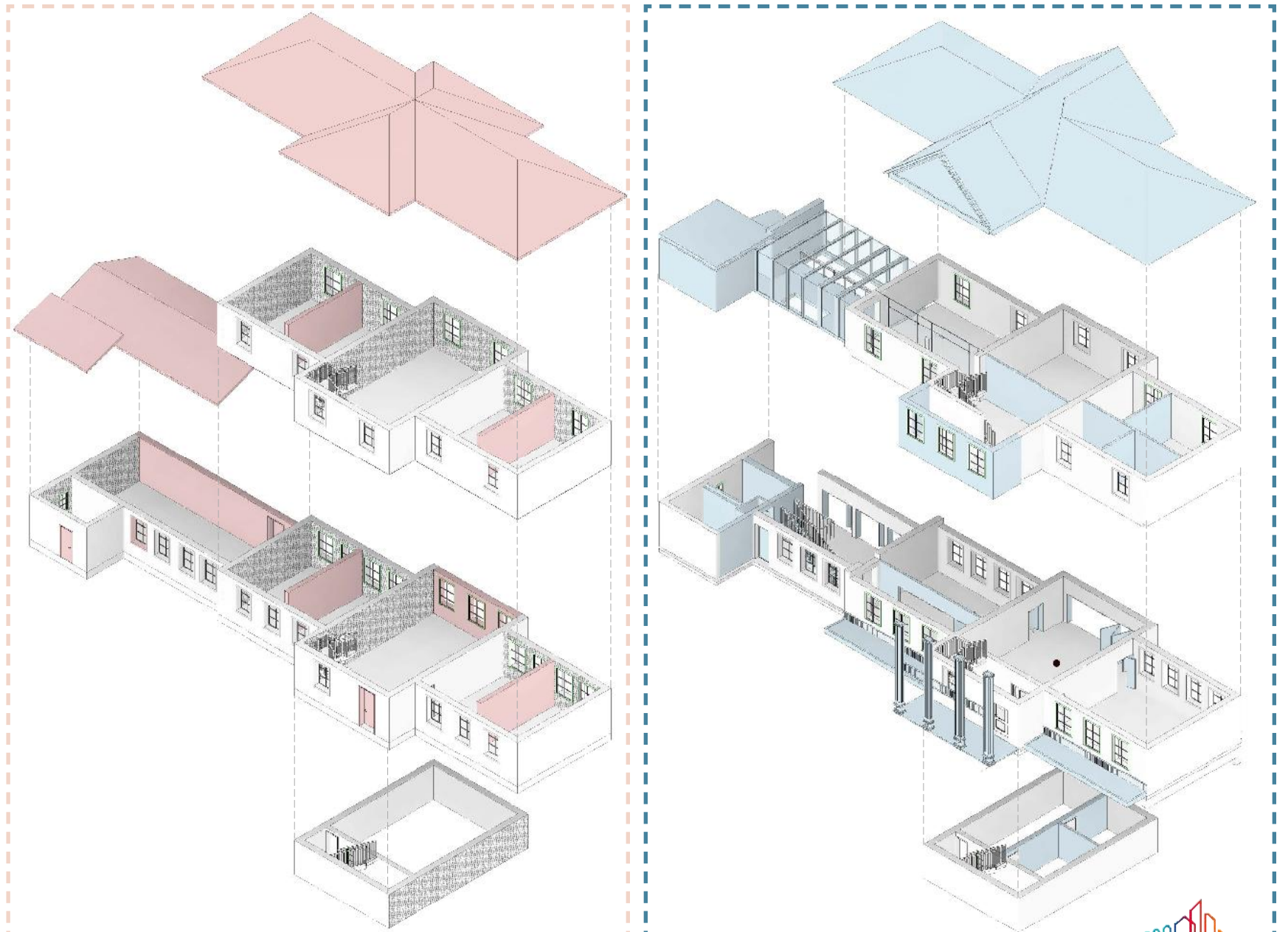
### ADAPTIVE REUSE

Key foundational elements, are preserved to maintain structural integrity and respect the building's original character.

These elements serve as anchors for the new spatial narrative, allowing a dialogue between past use and future function.

### NEW CONSTRUCTION

New insertions redefine spatial zones, fostering flexibility and connection. Designed to be lightweight, reversible, and sustainable, they align with the renovation's adaptive approach.

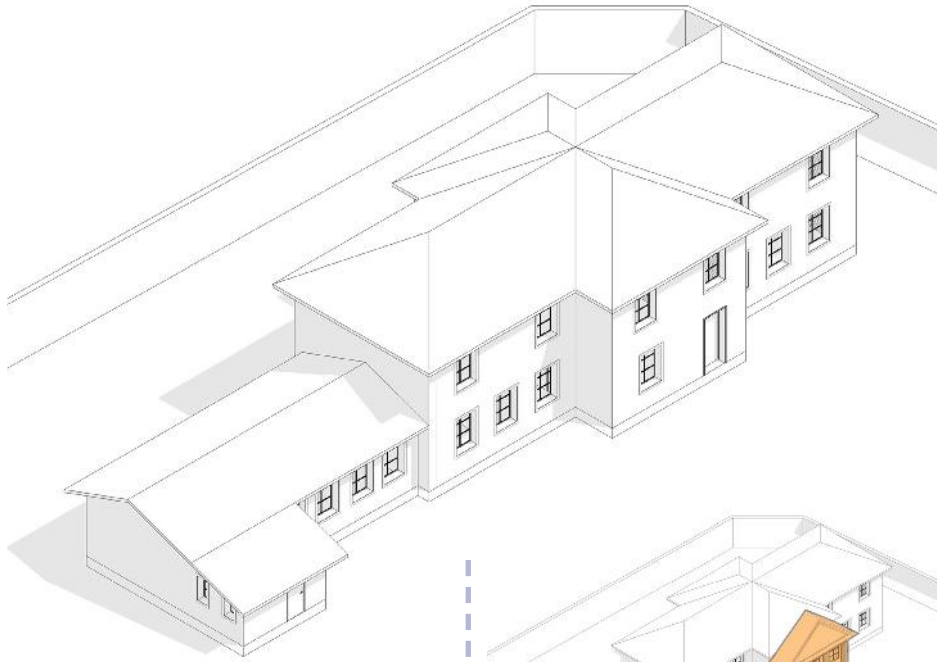


## ANALYSIS HIGHLIGHTS

**Sustainability:** The use of recycled and local materials, combined with passive design elements like the collapsible glass, ensures long-term environmental benefits and resource efficiency.

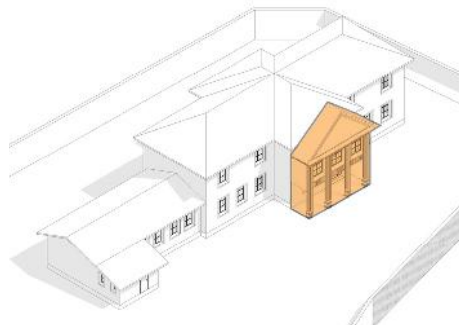
**Embodied Carbon:** Material choices (Glass solutions, precast concrete) and efficient construction techniques reduce the carbon footprint from manufacturing and transportation.

**Operational Carbon:** Natural ventilation, solar potential, and water-saving features significantly lower energy and water-related carbon emissions during the building's use.



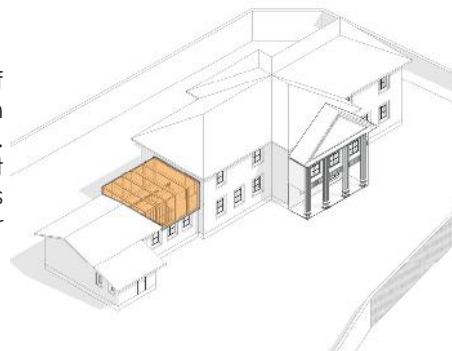
### FORM ANALYSIS

*The form analysis delivers a sustainable design that minimizes embodied carbon through material efficiency, reduces operational carbon with passive and renewable strategies, and supports a vibrant community space.*

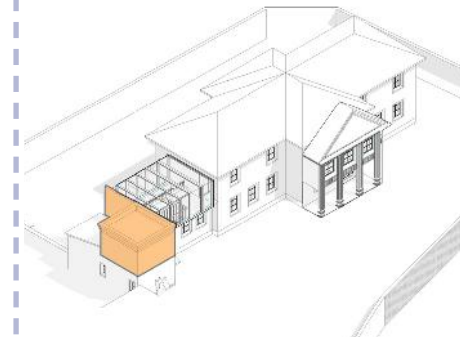


Extension at the front allows for the addition of classical column.

The collapsible glass roof and wall offers insulation during cooler months. During warmer months, it opens, to allow the users enjoy sunlight and fresh air



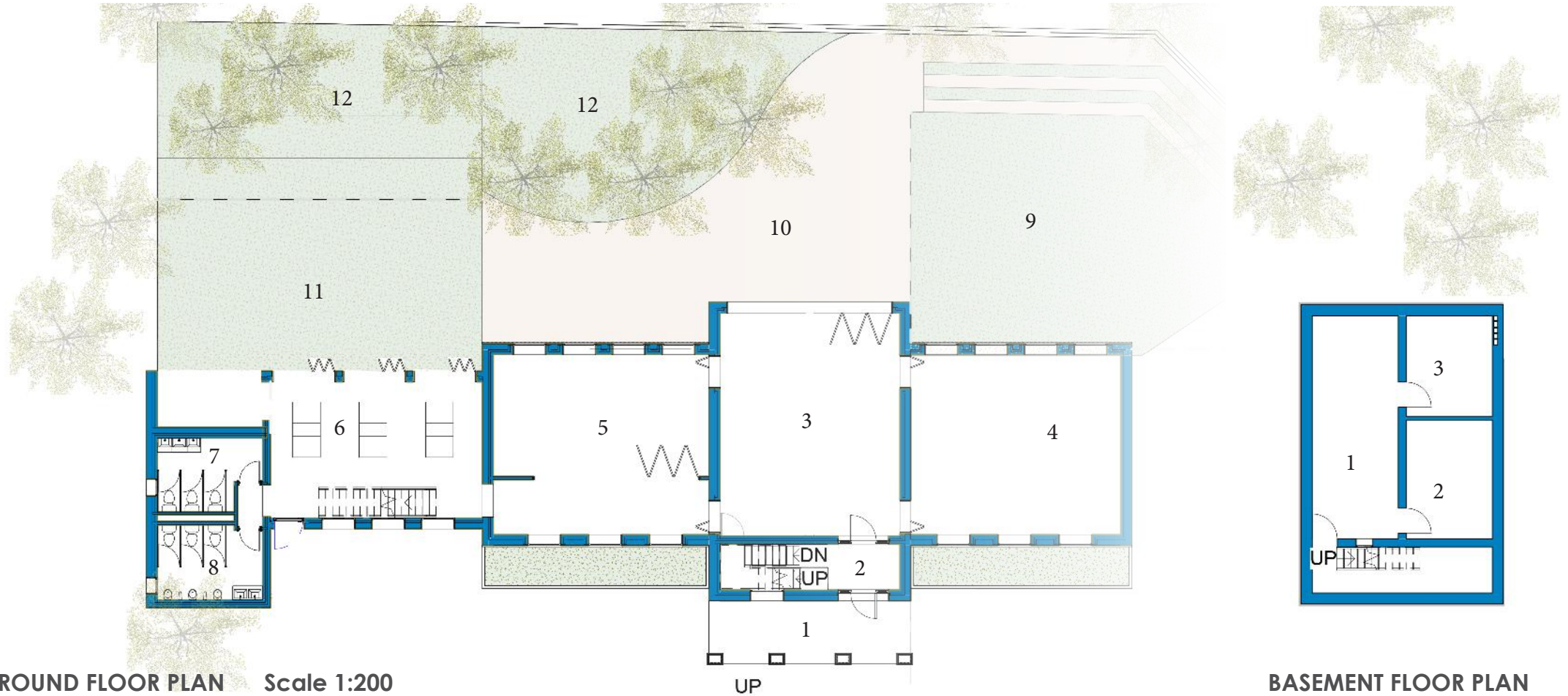
A new roof to accommodate changes made to the building form



Toilets added for ease of use and efficiency.







**GROUND FLOOR PLAN** Scale 1:200

- |                               |  |
|-------------------------------|--|
| 1 ENTRY PORCH                 | 7 RESTROOM-F                               |
| 2 LOBBY                       | 8 RESTROOM-M                               |
| 3 MAIN LOUNGE/<br>PREFUNCTION | 9 OUTDOOR PERFORMANCE SPACE - AMPHITHEATRE |
| 4 SEMINAR ROOM                | 10 BREAKOUT- MAIN HALL                     |
| 5 MUSEUM                      | 11 ENTRY PORCH                             |
| 6 MULTI-PURPOSE SPACE         | 12 GARDEN                                  |

**BASEMENT FLOOR PLAN** Scale 1:200

- |                |
|----------------|
| 1 WINE STORAGE |
| 2 SERVICE ROOM |
| 3 STORAGE      |

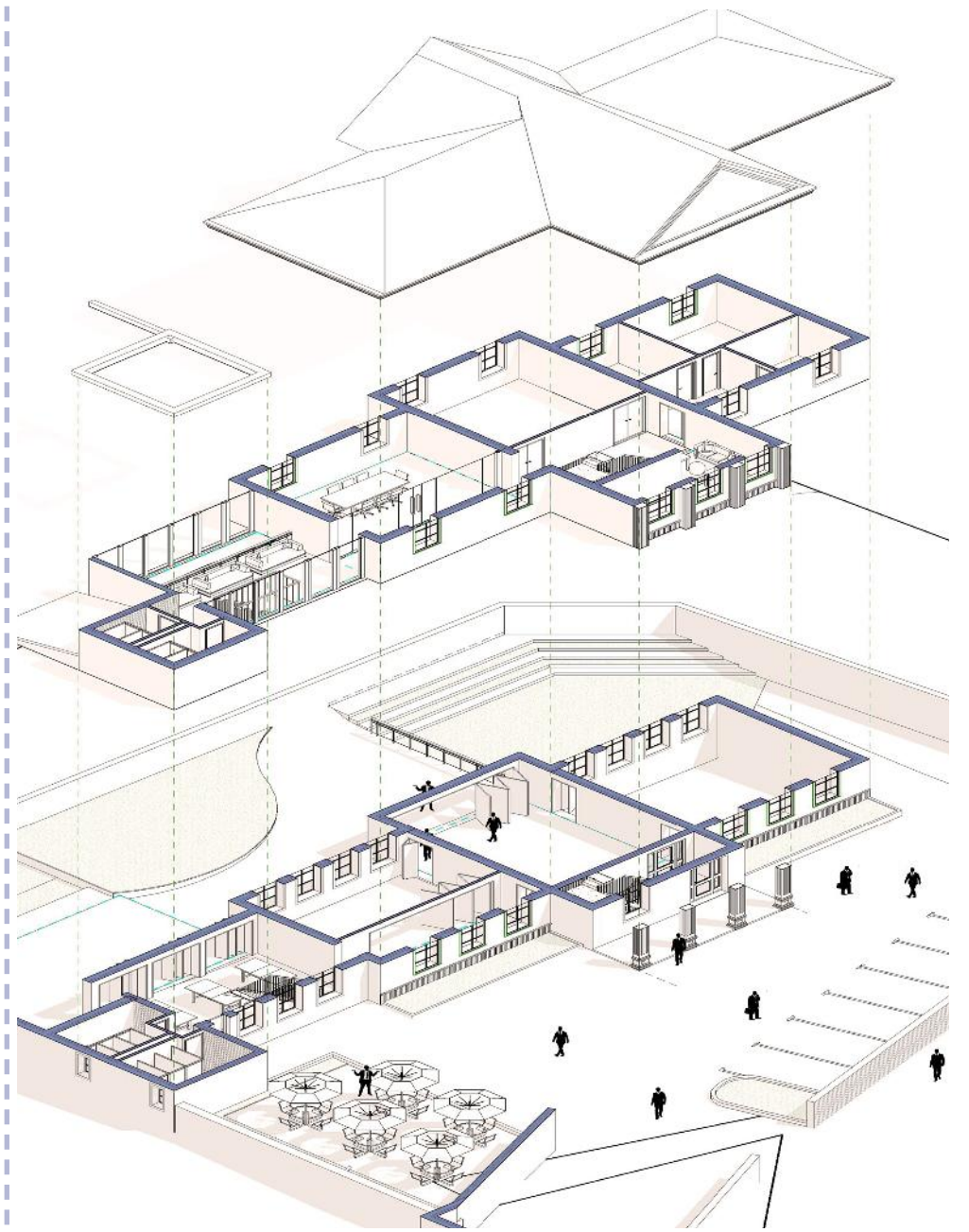


**FIRST FLOOR PLAN** Scale 1:200

- 1 RECEPTION
- 2 STAIR
- 3 OFFICE LOBBY
- 4 OFFICE
- 5 CONFERENCE
- 6 MEETING ROOM
- 7 RESTROOM-F
- 8 RESTROOM-M
- 9 BREAKOUT

**ATTIC PLAN** Scale 1:200

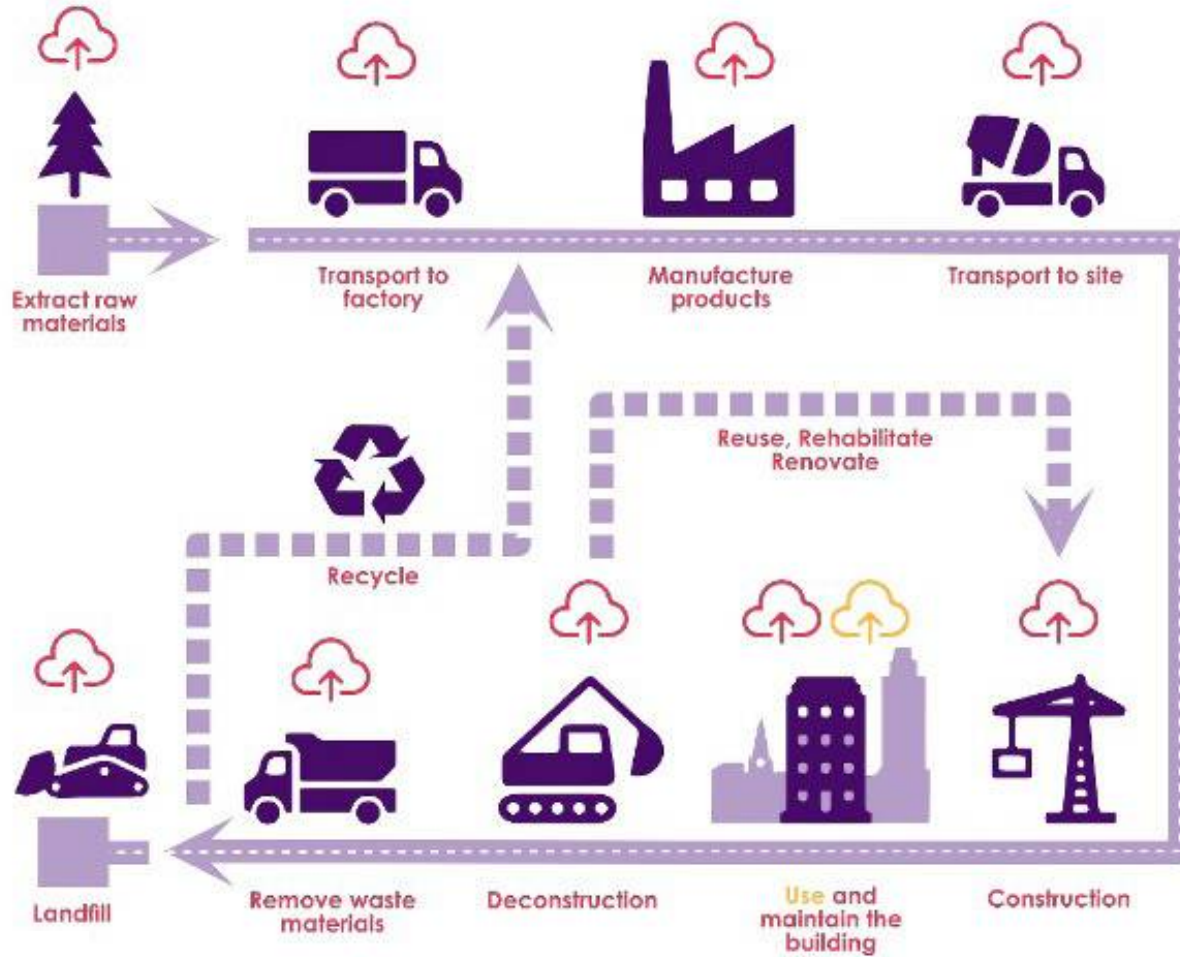
1 AHU/HEATERS







# Embodied Carbon in Life Cycle



24. Sources of Embodied Carbon

# B - NEW CONSTRUCTION

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Architecture Student Contest – France 2025

SAINT-GOBAIN

# TECHNICAL STRATEGIES (SUSTAINABILITY APPROACH & ENERGY STUDIES)

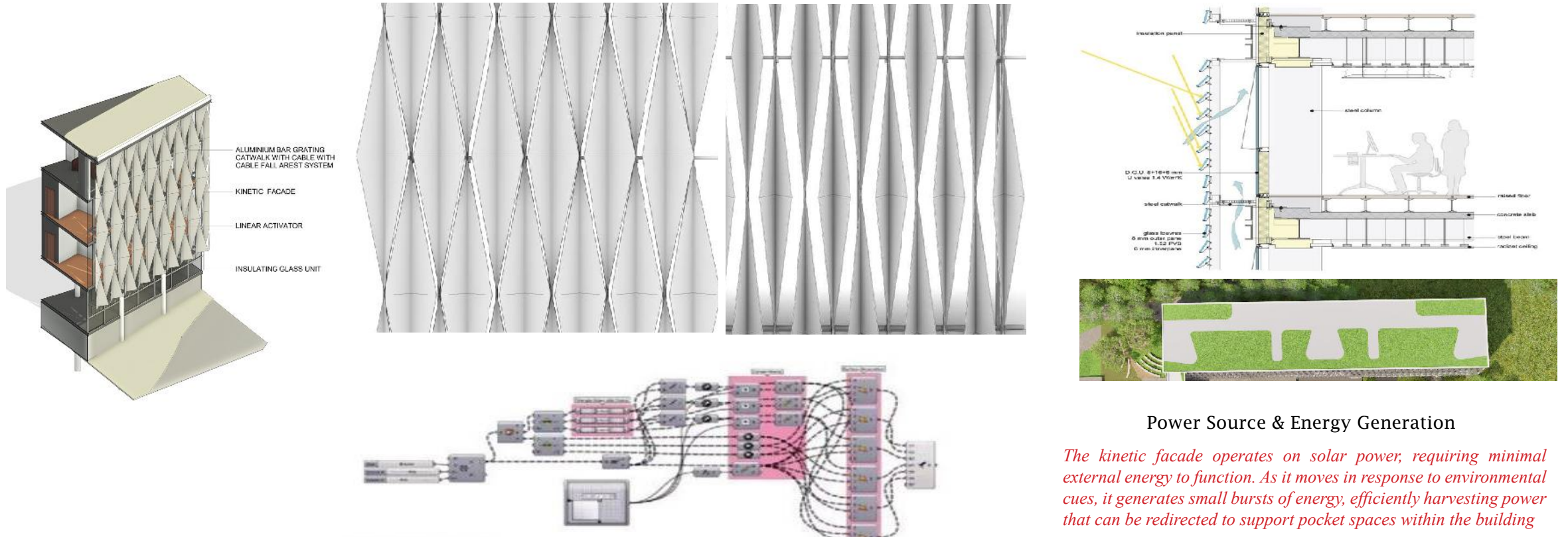
## SUSTAINABILITY APPROACH (Past Informs | Present Transforms | Future Responds)

### KINETIC FACADE (FOR THERMAL COMFORT & ENERGY GENERATION)

Historically, architecture was largely static, relying on materiality and ornamentation to create visual interest. Buildings did not dynamically respond to environmental conditions, meaning sun shading and ventilation were often achieved through fixed elements like overhangs, louvers, or deep-set windows.

However, we have integrated modern kinetic facades that actively respond to the surroundings, engaging in a continuous dialogue with environmental factors such as **sunlight, temperature, and airflow**. These adaptive systems modulate interior conditions, reducing energy demand while enhancing comfort.

We have created a coded system connected to sensors that detect environmental cues—sunlight intensity, temperature shifts, and airflow changes. These triggers prompt dynamic responses in the facade, adjusting openings or closures in real time. This not only enhances functionality but also gives the building a continuously evolving aesthetic throughout the day.



*The kinetic facade operates on solar power; requiring minimal external energy to function. As it moves in response to environmental cues, it generates small bursts of energy, efficiently harvesting power that can be redirected to support pocket spaces within the building*

# TECHNICAL STRATEGIES (SUSTAINABILITY APPROACH & ENERGY STUDIES)

## ENERGY STUDIES

(Past Informs | Present Transforms | Future Responds)

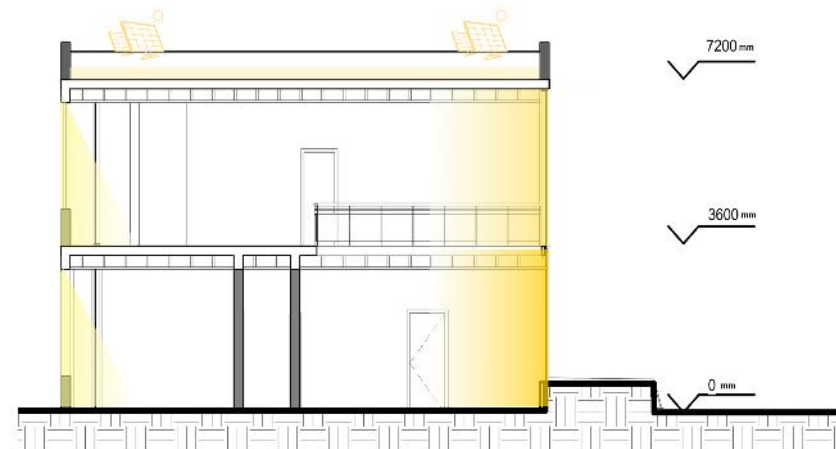
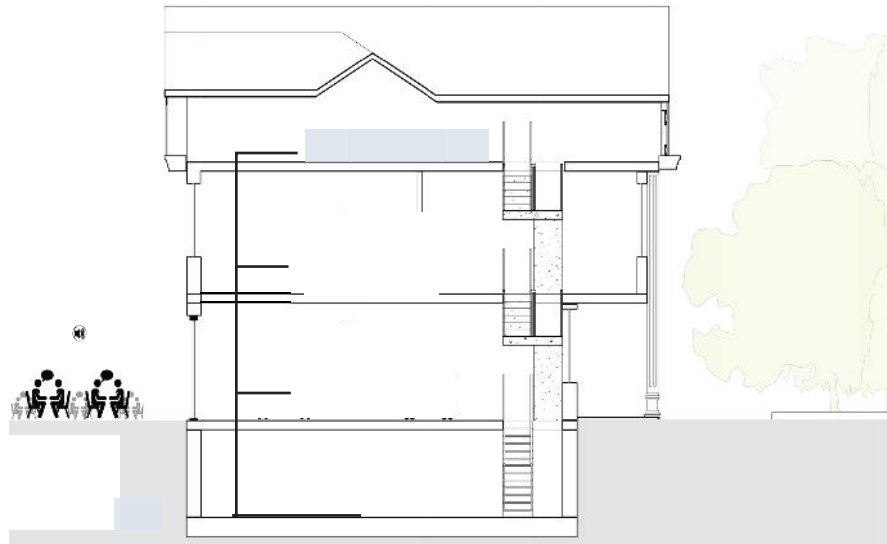
### HEAT PUMP (REDUCTION OF CARBON EMISSION)

#### AIR TO WATER HEAT PUMP.

The electrification of heat through heat pumps, where the electricity to operate the heat pumps comes from renewable sources, is seen as a key technology in cutting carbon emissions.



The heat pump works by transferring thermal energy to provide hot water, heating, and cooling. It extracts heat from the surrounding air or ground and distributes it where needed. Heated water is sent to radiators, which warm indoor spaces, while conditioned air flows through the air handling unit (AHU) for ventilation. For localized temperature control, fan coil units adjust heating or cooling in specific rooms. A plant room in the attic houses key system components that regulate and optimize performance. This setup ensures efficient energy use while maintaining indoor comfort year-round.



### BENEFITS

- › Can provide heating, cooling and sanitary hot water.
- › Heat is transferred between the building and outside air using a refrigerant gas & water.
- › Can reach high enough water temperatures to serve the needs of most applications.

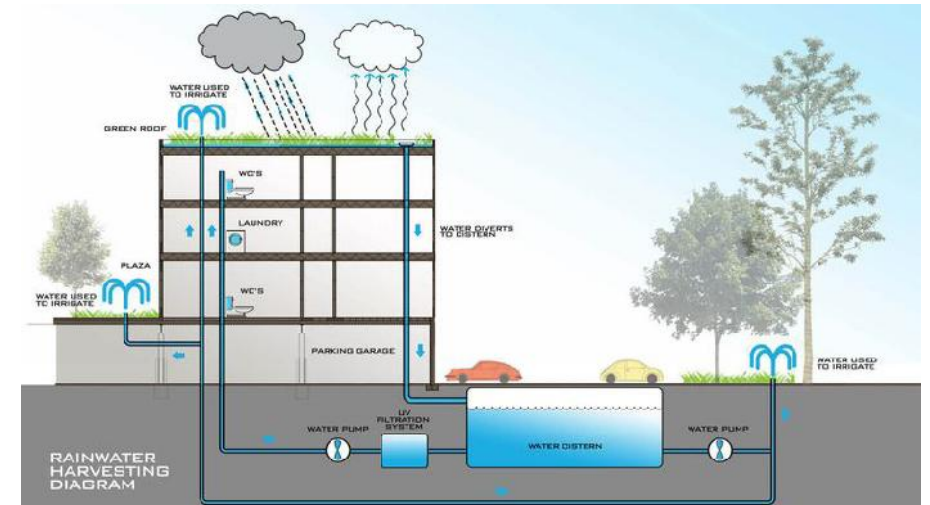
# TECHNICAL STRATEGIES (SUSTAINABILITY APPROACH & ENERGY STUDIES)

## SUSTAINABILITY APPROACH (Past Informs | Present Transforms | Future Responds)

### GREEN ROOF (FOR ROOF FARMING, CIRCULARITY, WATER CONSERVATION)

Planting has long been an integral part of life in France, where agricultural traditions emphasize sustainability. Farmers have long practiced crop rotation and soil enrichment, ensuring fertile lands for vineyards, orchards, and wheat fields

We have introduced an extensive green roof garden using a raised bed system to promote urban farming. The produce grown here can be harvested and prepared in the cafeteria, fostering a direct farm-to-table experience. Additionally, the roof serves as a vital component of water conservation, efficiently managing rainfall and irrigation. This thoughtful integration enhances sustainability, creating a **closed-loop** system where natural resources are utilized efficiently, allowing all elements to work in harmony

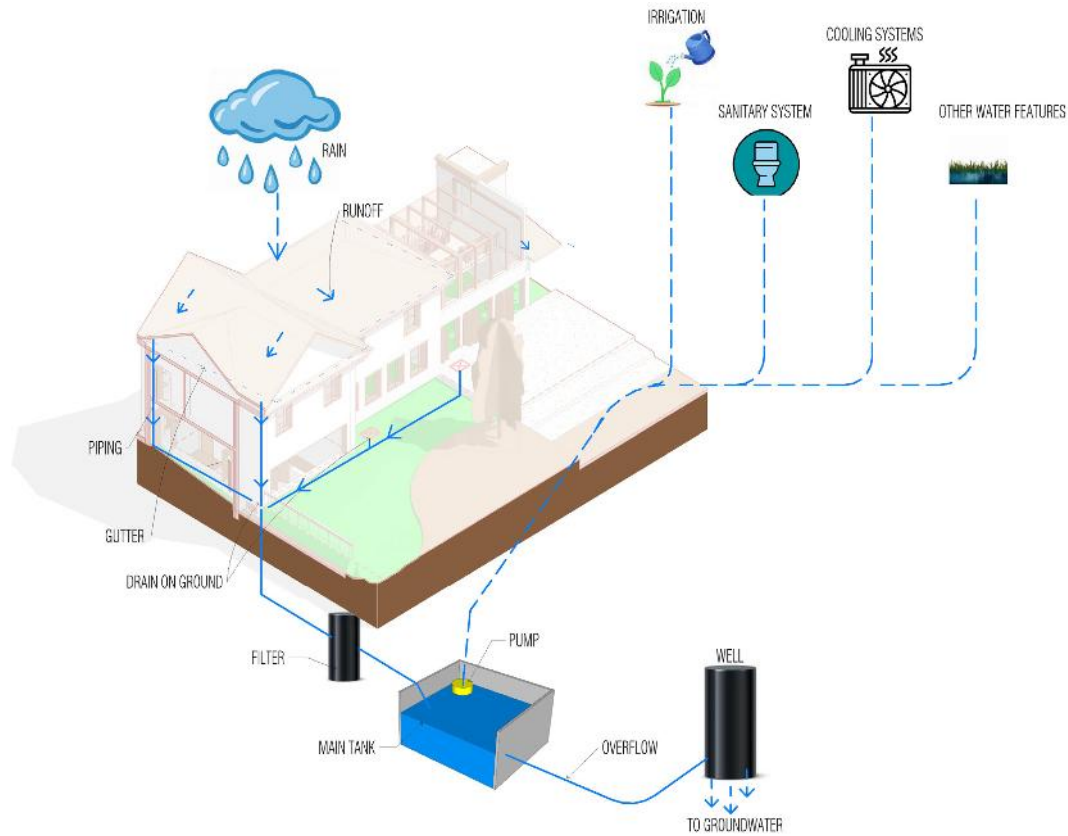


*The farm will serve as a continuous means of connecting with nature, cultivating fresh food, and appreciating the beauty of a garden—an approach deeply rooted in French cultural values. Beyond its aesthetic and social benefits, it will also function within a closed-loop system, ensuring sustainability and resource efficiency in the long run*

# TECHNICAL STRATEGIES (SUSTAINABILITY APPROACH & ENERGY STUDIES)

## SUSTAINABILITY APPROACH (Past Informs | Present Transforms | Future Responds)

### RAIN WATER CONSERVATION & LANDSCAPING (CHIMLIN)



*The rainwater conservation strategy for CHIMLIN integrates efficient collection, storage, and reuse methods. Rainwater is harvested from the roof, directed through gutters and piping, and stored in a main tank. This water is then distributed for irrigation, sanitary systems, cooling, and other essential functions.*

*Complementing this, the thoughtfully designed green areas help combat climate change by improving air quality, reducing heat island effects, and serving as natural carbon sinks that absorb CO<sub>2</sub> and filter pollutants.*

# TECHNICAL STRATEGIES (SUSTAINABILITY APPROACH & ENERGY STUDIES)

## SUSTAINABILITY APPROACH (Past Informs | Present Transforms | Future Responds)

### INDOOR AIR QUALITY

Indoor air quality has long been an integral part of creating comfortable and healthy environments. Over time, its role within Indoor Environmental Quality Systems (IEQS) has become even more refined, ensuring a balance between fresh air circulation, pollutant control, and energy efficiency.

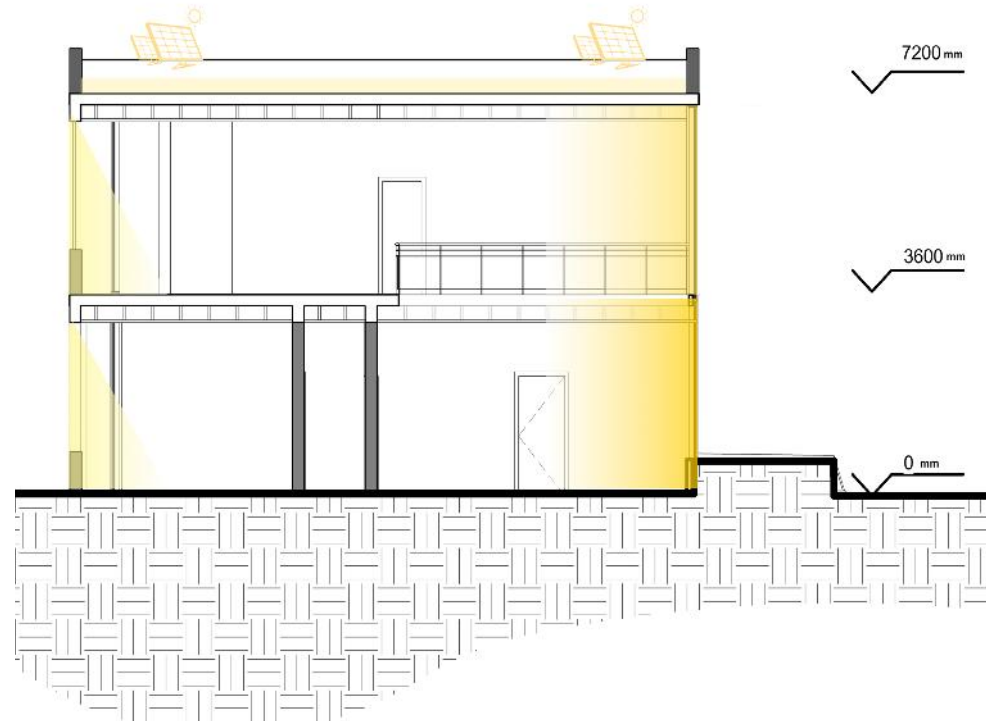
To ensure optimal indoor air quality, a ventilation air handling unit has been introduced to regulate airflow throughout the space. During colder seasons like winter and summer, this system filters outdoor air, maintaining a fresh and controlled environment. In milder periods such as spring and autumn, windows remain open to maximize natural ventilation, reducing the need for mechanical systems and enabling free cooling.

### CO2 MONITORS

CO<sub>2</sub> monitors are strategically placed in active spaces, such as main halls, to continuously track air quality and ensure proper ventilation.

### SAINT GLOBAIN PRODUCTS

Additionally, selected building materials and products stated earlier, feature minimal VOC emissions, limiting exposure to volatile organic compounds and contributing to a healthier indoor atmosphere

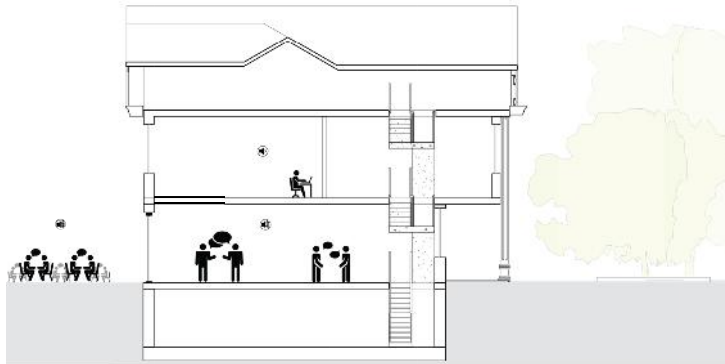


# TECHNICAL STRATEGIES (SUSTAINABILITY APPROACH & ENERGY STUDIES)

## SUSTAINABILITY APPROACH (Past Informs | Present Transforms | Future Responds)

### NATURAL DAYLIGHT STRATEGY

The ground floor is the most active part of the building, with a large multi-purpose hall occupying much of the space. To reduce the acoustic impact from this busy area, the design incorporates sound-insulating wall and floor slabs. These elements help contain the noise, ensuring that the upper floors — where offices and conference rooms are located — remain quiet and conducive for focused work and meaningful conversations.



#### PERFORMANCES

Type / Color

Ug-Value\*  
[W/m2K]

Light  
Transmission TL\*\*  
[%]

Solar Factor  
(g-value)\*\* [%]

Outside  
reflection\*\* [%]

Inside  
reflection\*\* [%]

Standard build-up CLIMAPLUS® 6/16/4 mm - coating on face 2, 90% Argon

COOL-LITE® XTREME 61/29 (II) on PLANICLEAR®	1.0	61	29	11	14/15***
COOL-LITE® XTREME 61/29 (II) on DIAMANT®	1.0	62	29	11	14/15***

Standard build-up CLIMATOP® 6/12/4/12/4 mm - coating on face 2 + PLANITHERM® XN on face 5, 90% Argon

COOL-LITE® XTREME 61/29 (II) on PLANICLEAR®	0.7	55	27	13	16/17***
COOL-LITE® XTREME 61/29 (II) on DIAMANT®	0.7	57	27	13	17/18***

Standard build-up CLIMATOP® 6/12/4/12/4 mm - coating on face 2 + ECLAZ® on face 5, 90% Argon

COOL-LITE® XTREME 61/29 (II) on PLANICLEAR®	0.7	56	27	13	16/17***
COOL-LITE® XTREME 61/29 (II) on DIAMANT®	0.7	58	27	13	17/18***

The adopted glass is the COOL-LITE® XTREME 61/29 (II) on PLANICLEAR®.

The u-value is 0.7 W/m2.K and it is clear glass to maximize daylight.

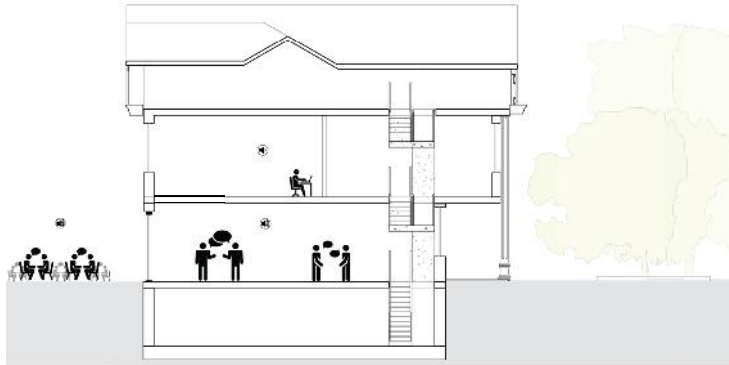
# TECHNICAL STRATEGIES (SUSTAINABILITY APPROACH & ENERGY STUDIES)

## SUSTAINABILITY APPROACH (Past Informs | Present Transforms | Future Responds)

### ACOUSTIC COMFORT

Calculation for acoustic STC for internal partition using the Gipro products and insulation.

The ground floor is the most active part of the building, with a large multipurpose hall occupying much of the space. To reduce the acoustic impact from this busy area, the design incorporates sound-insulating wall and floor slabs. These elements help contain the noise, ensuring that the upper floors — where offices and conference rooms are located — remain quiet and conducive for focused work and meaningful conversations.



STC Calculator

Use the STC Calculator to find the STC Rating of your wall by filling out the form below. Use our resources below to find more effective ways to improve your STC Rating, or use the STC Calculator to determine alternate wall designs.

STUD TYPE  
 Metal Stud (25 gauge)  Metal Studs (20 gauge EC)  Metal Stud (30 gauge)  Wood Stud (2x4)  Wood Stud (2x6)  Staggered Stud  Double Stud

STUD SIZE  
 3.5" x 8"  4"

STUD SPACING  
 16" oc  24" oc

DRYWALL LAYERS  
 1/2" Each Side  5/8" Each Side  2x 5/8" Drywall One Side, 1/2" Other Side  2x 5/8" Drywall Each Side

RESILIENT CHANNEL  
 No Resilient Channel  Resilient Channel

INSULATION  
 None  Fiberglass  Mineral Wool

SOUND MEMBRANES  
 None  Wall Dikler Lite One Side  Wall Dikler Lite Each Side  Wall Dikler One Side  Wall Dikler Each Side  Wall Dikler FRC One Side  Wall Dikler FRC Each Side

Your Approximate STC Rating is:

60

Requirement From Brief : 53db

Attained STC and Reason : 60db

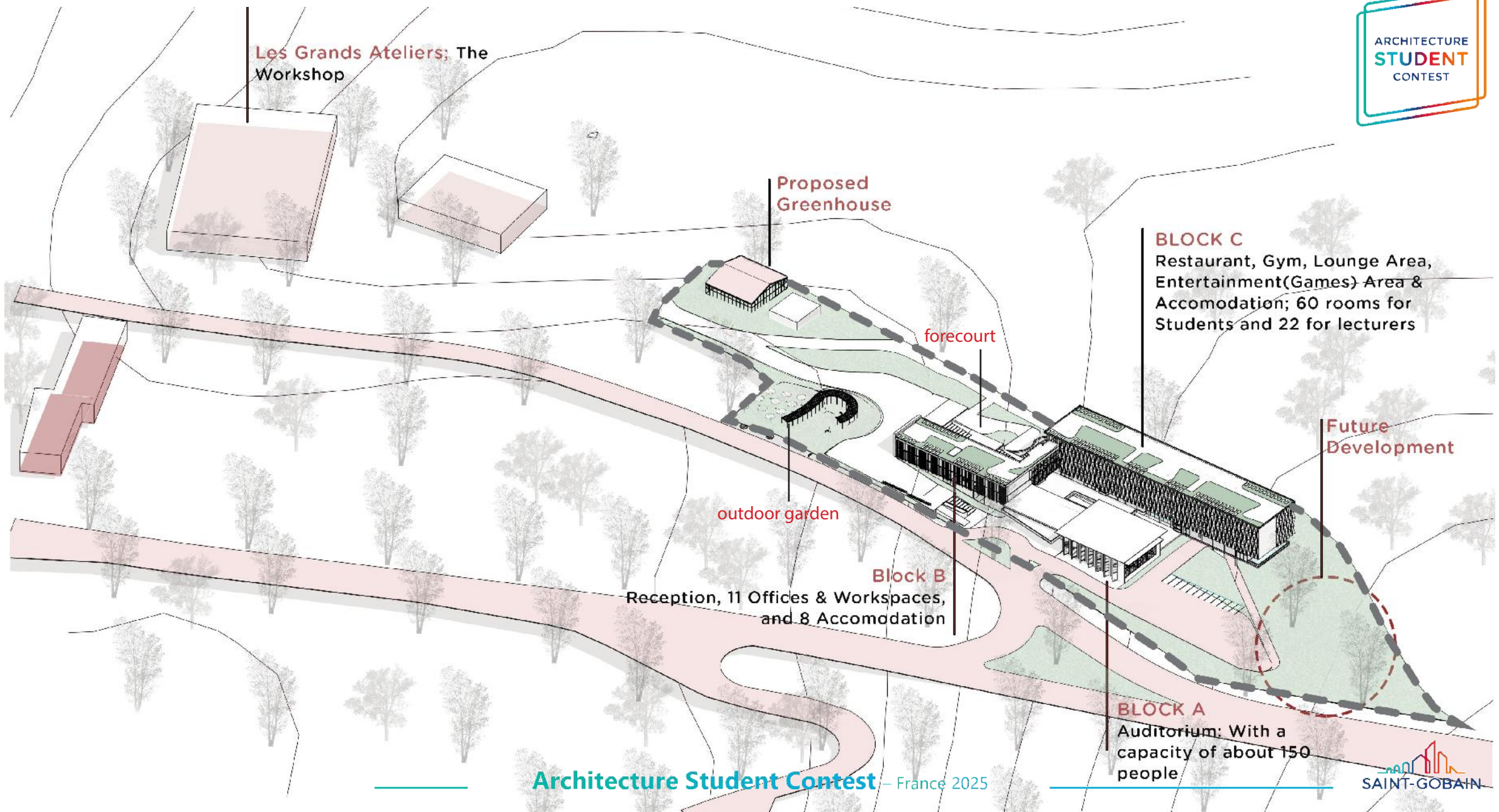
Target STC		STC
Adjacencies		
Hotel Room	Hotel Room	55
	Corridor	50
Residence (Apartment or Condo)	Residence (Apartment or Condo)	50
	Corridor	50
Residence or Hotel	Retail	60
Retail	Retail	50
Standard Office	Standard Office	45
Executive Office	Executive Office	50
	Conference Room	50
Conference Room	Admin, Admissions	45
Office or Conference Room	Corridor	50
Mechanical Room	Occupied Area	60
Movie Theater	Movie Theater	65
Hospital Room	Hospital Room	45
	Classroom, Corridor, or Classroom	50
	Restroom	53
Classroom	Electrical or Mechanical Room	60
	Dining, Corridor	60
Music Drama	Restroom	53
Entry	Teachers Support or Waiting Rooms	45

### FIRE SAFETY

All Saint Gobain Products used are fire rated

# B - NEW CONSTRUCTION





Les Grands Ateliers; The Workshop

Proposed Greenhouse

**BLOCK C**  
Restaurant, Gym, Lounge Area, Entertainment (Games) Area & Accomodation; 60 rooms for Students and 22 for lecturers

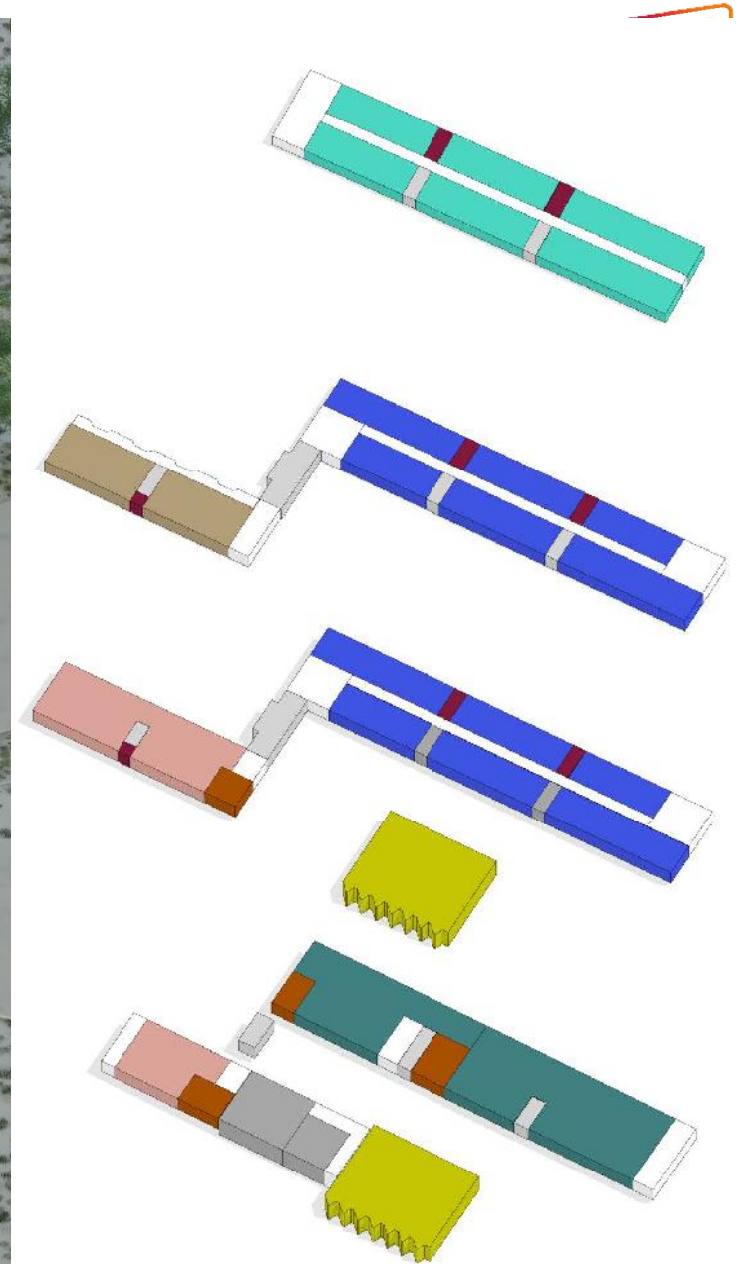
Future Development

outdoor garden

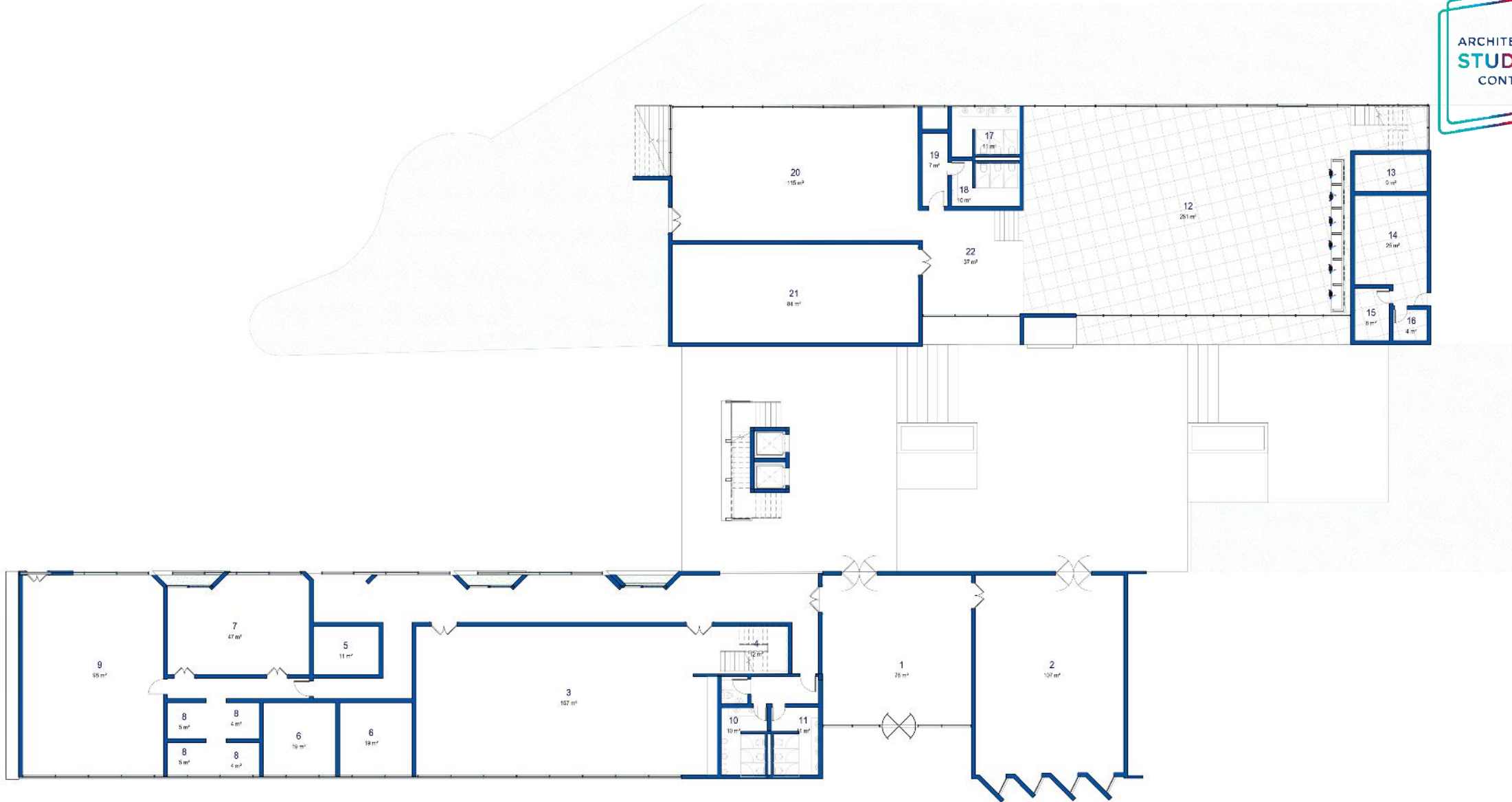
forecourt

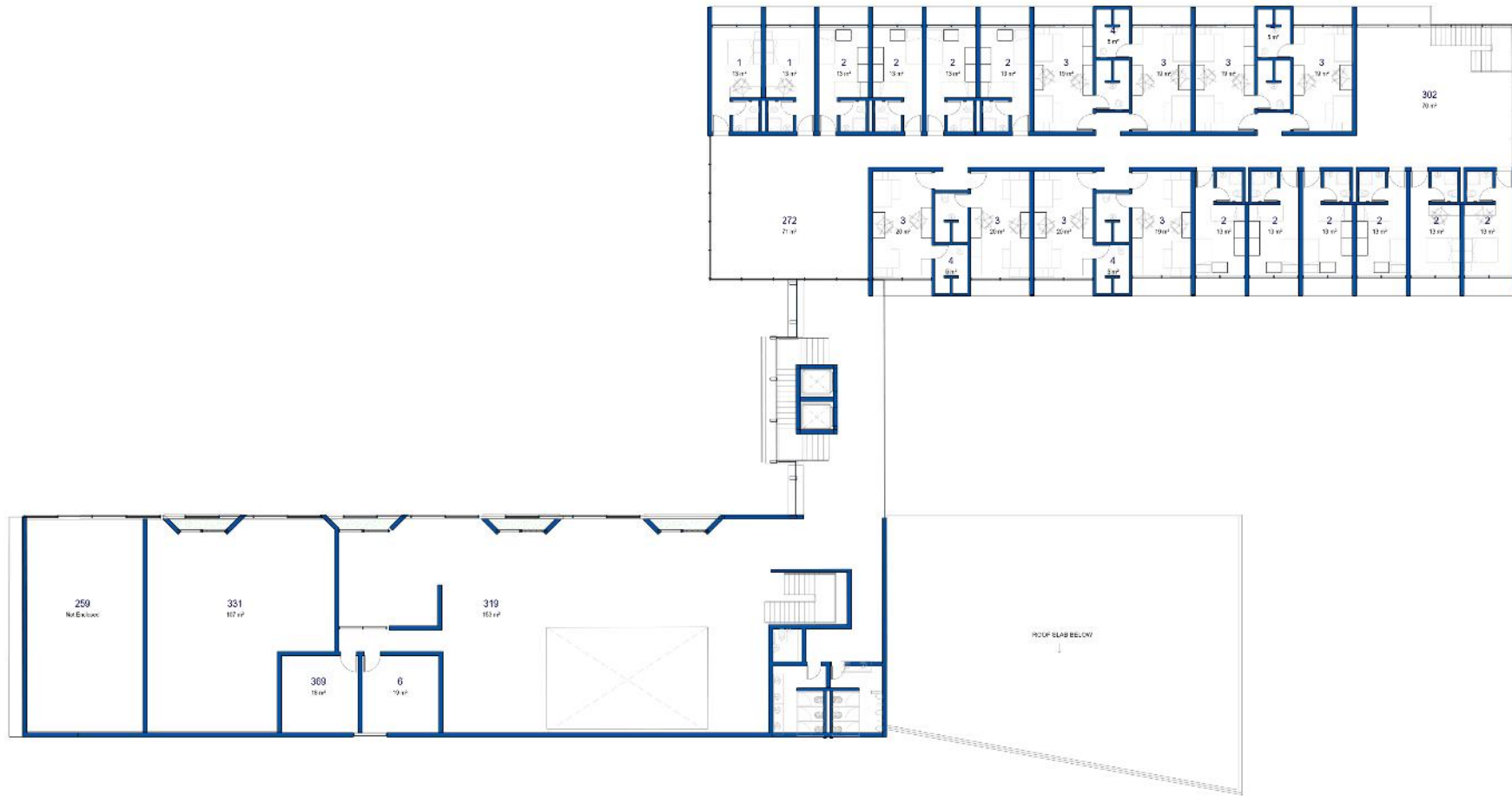
**Block B**  
Reception, 11 Offices & Workspaces, and 8 Accomodation

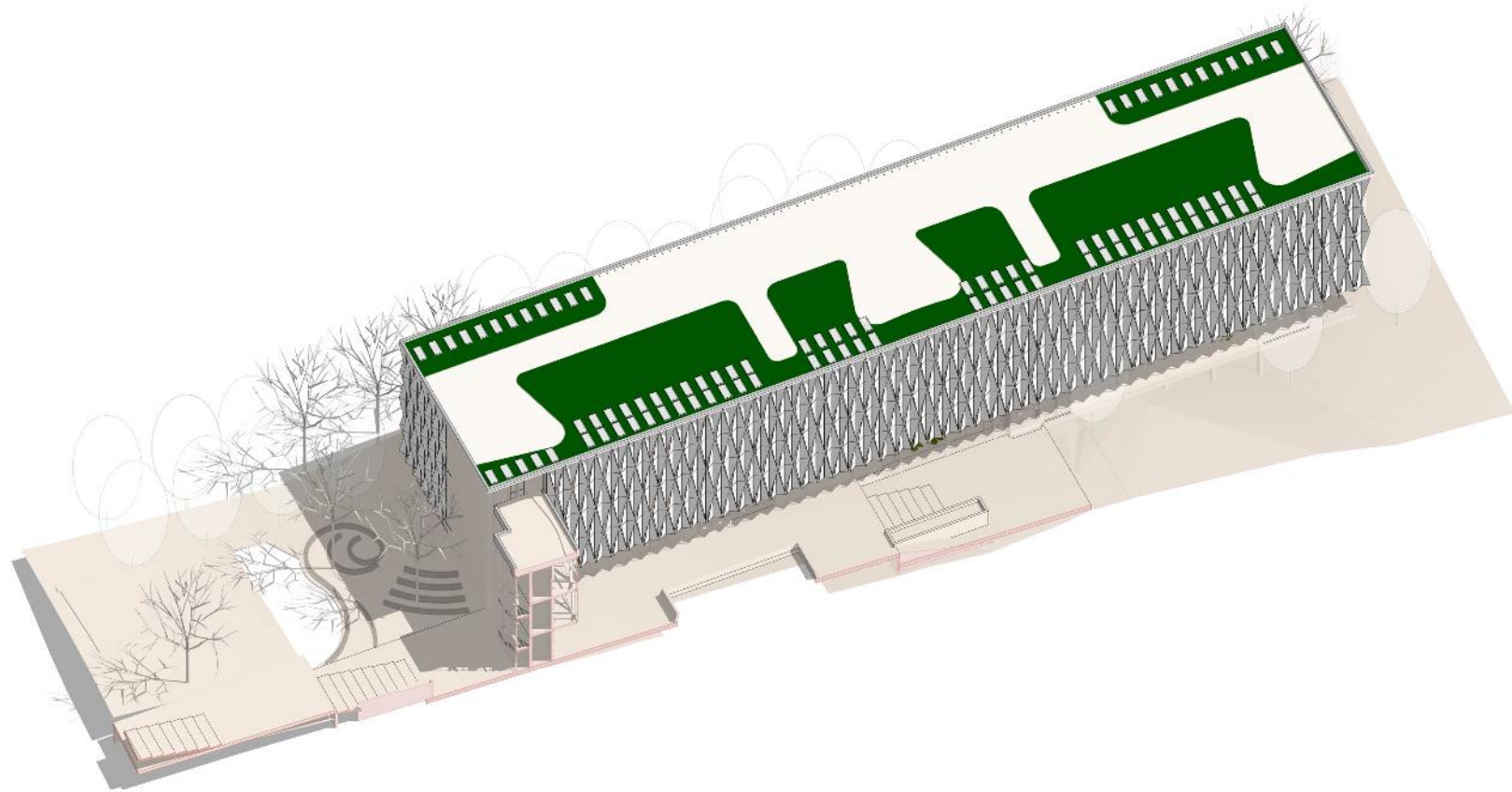
**BLOCK A**  
Auditorium: With a capacity of about 150 people

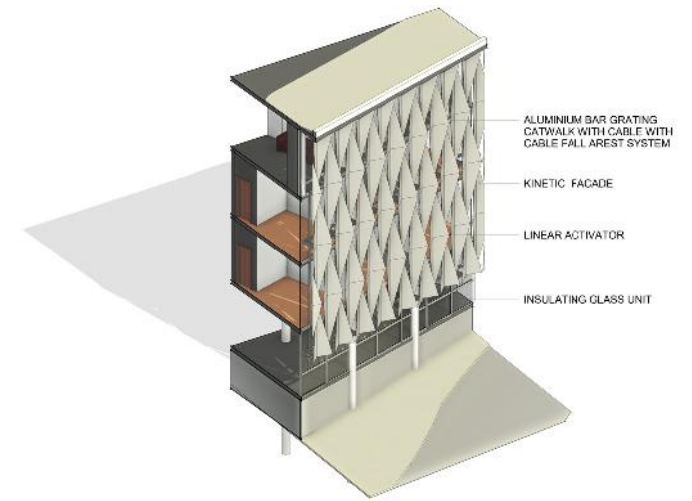
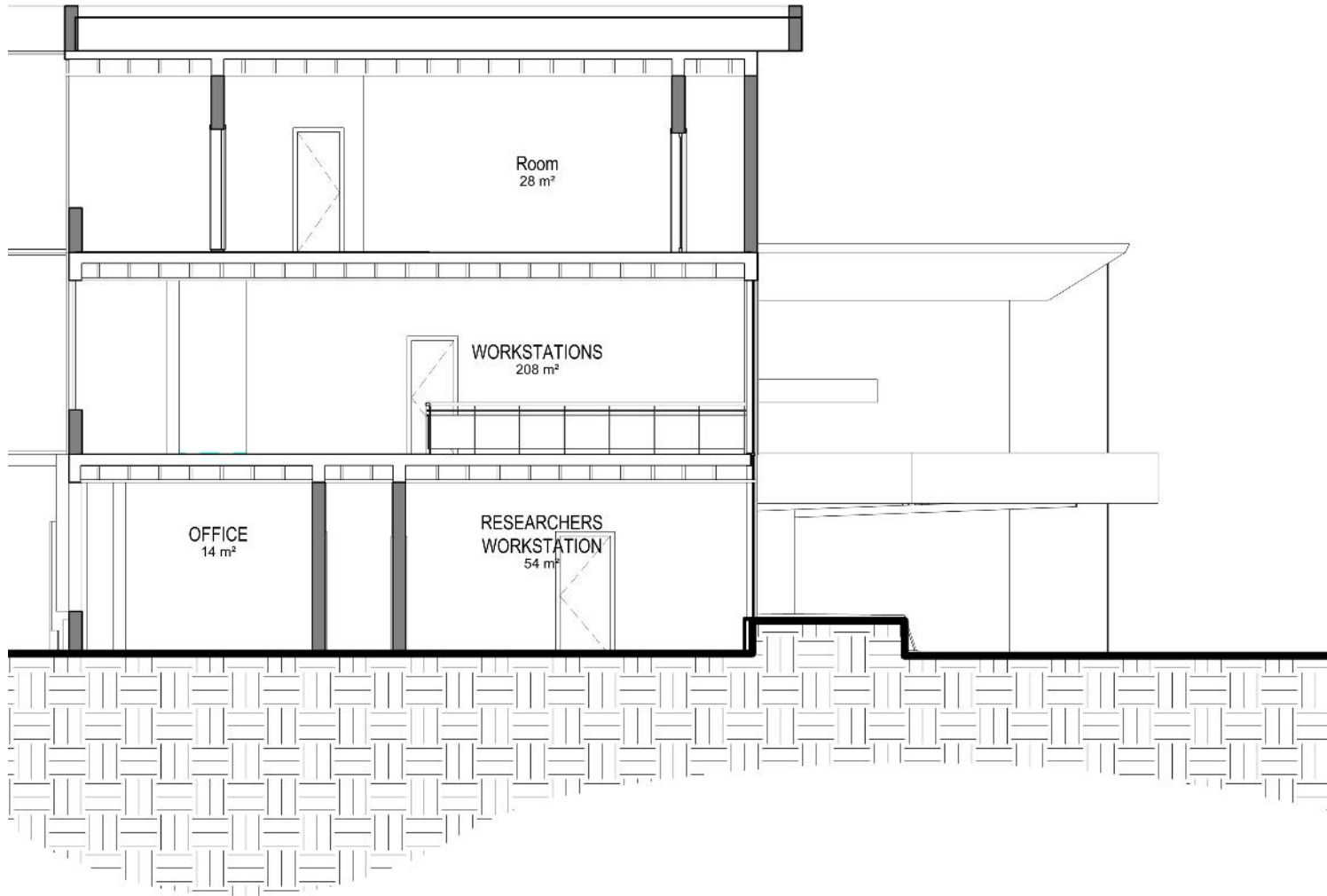






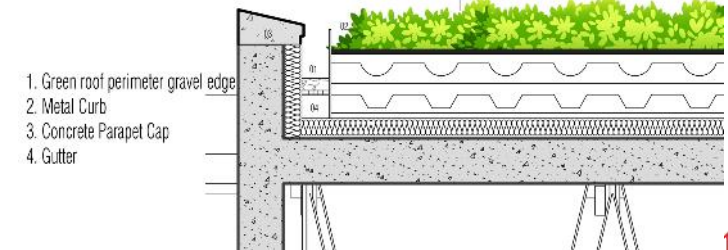


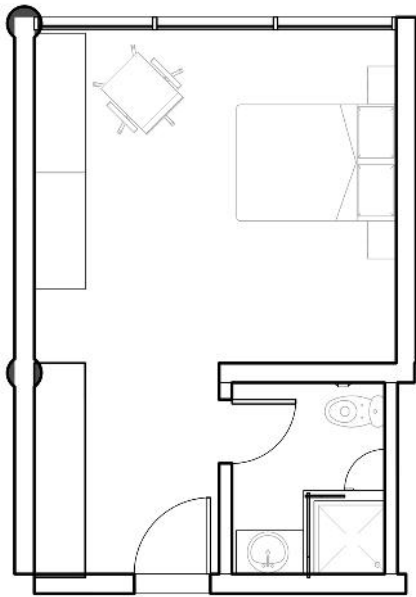




GREEN ROOF LAYERS FROM BELOW

- Green Roof Plants
- Soil
- Moisture portals
- Standard Modules
- Temp, stormwater detention
- Waterproofing membrane
- Bonding Adhesive
- Insulation
- Cemfree concrete slab





 **ecophon**  
SAINT-GOBAIN

 **glassolutions**  
SAINT-GOBAIN

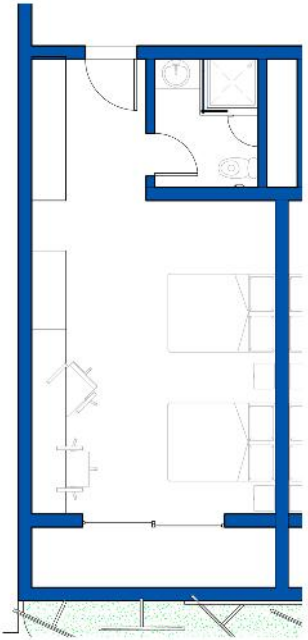
 **weber**  
SAINT-GOBAIN

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 **isover**  
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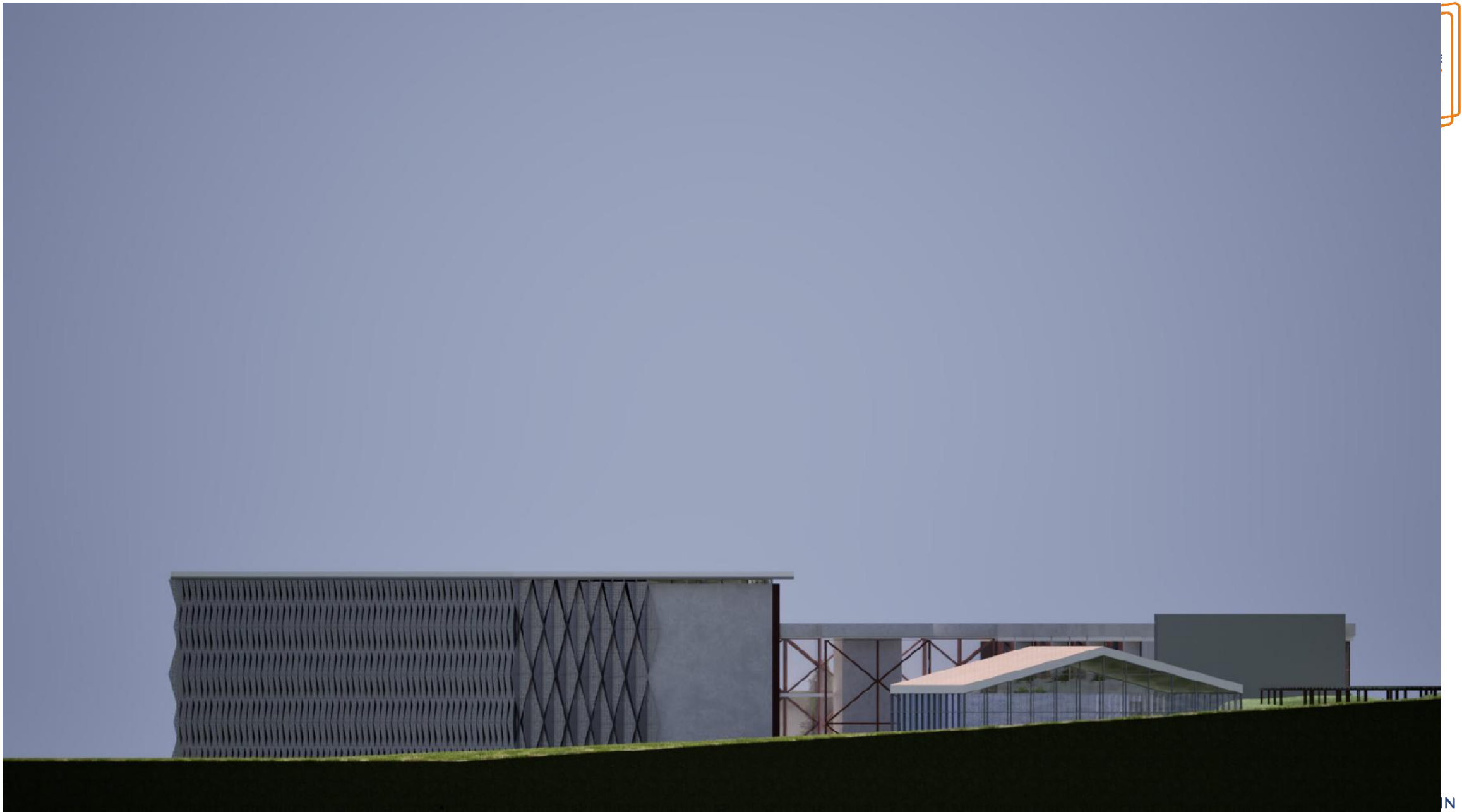
















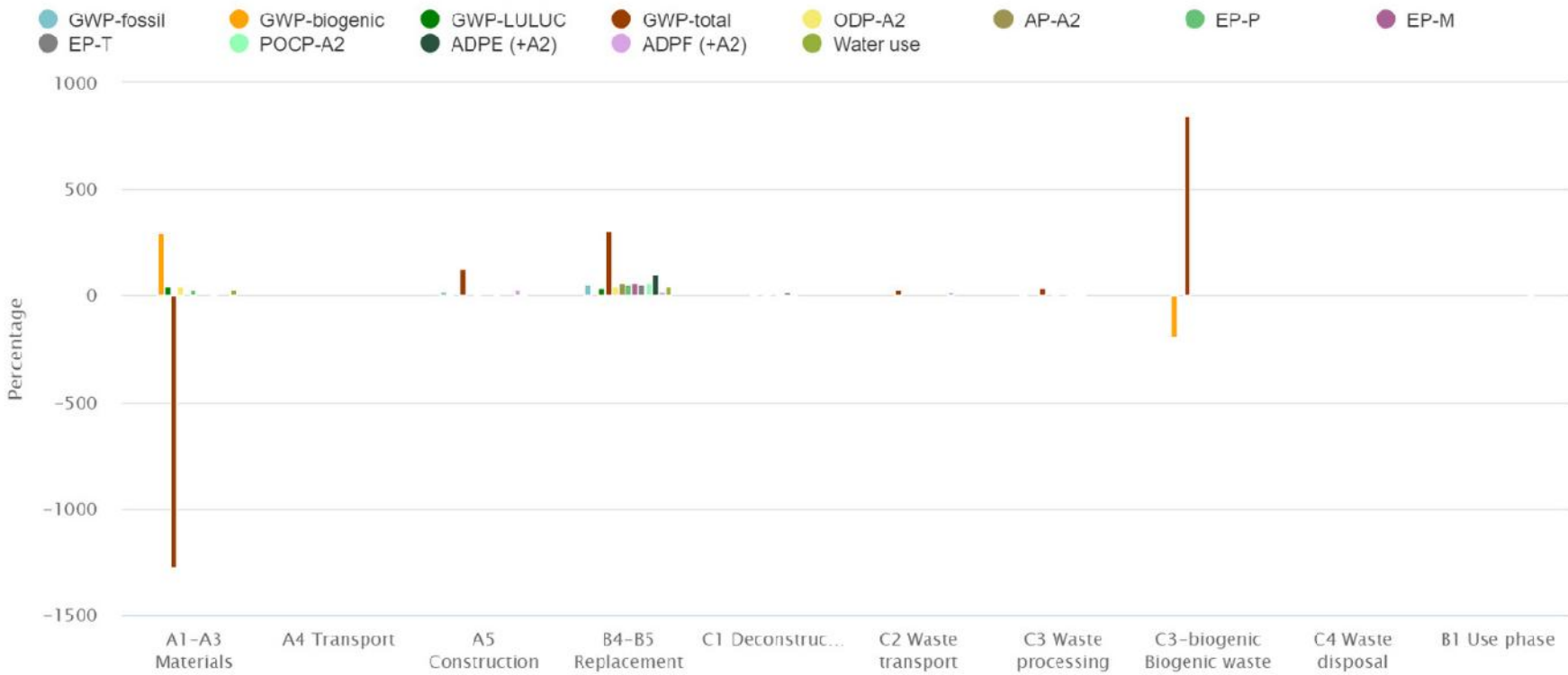




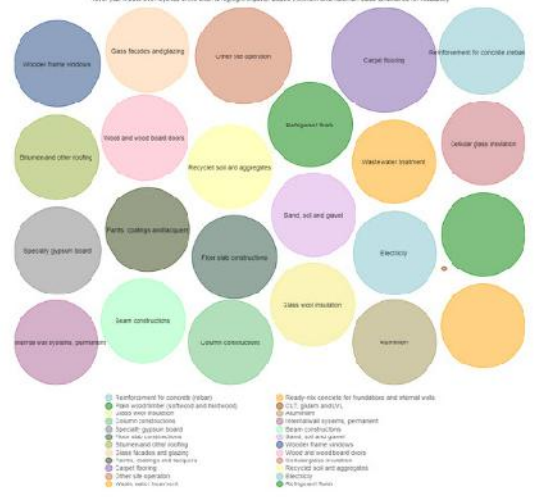


# LIFE - CYCLE ANALYSIS

## Results by life-cycle stage



Bubble chart, total life-cycle impact by resource type and subtype. Global Warming Potential total



Cradle to grave (A1-A4, B4-B5, C1-C4)		kg CO <sub>2</sub> e/m <sup>2</sup>
< 350	A	193
350-530	B	
530-710	C	
710-890	D	
890-1070	E	
1070-1250	F	
> 1250	G	

One Click LCA