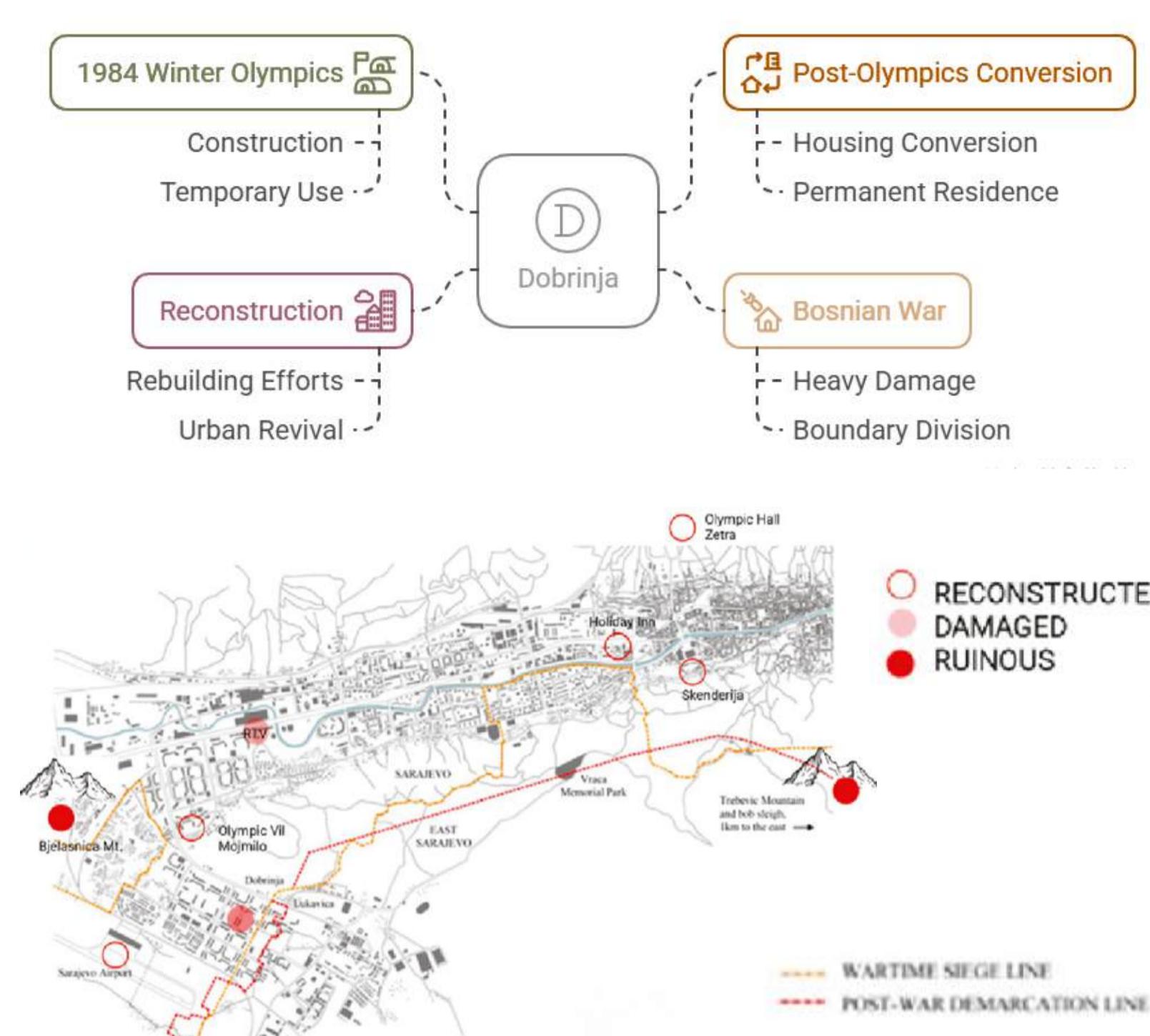


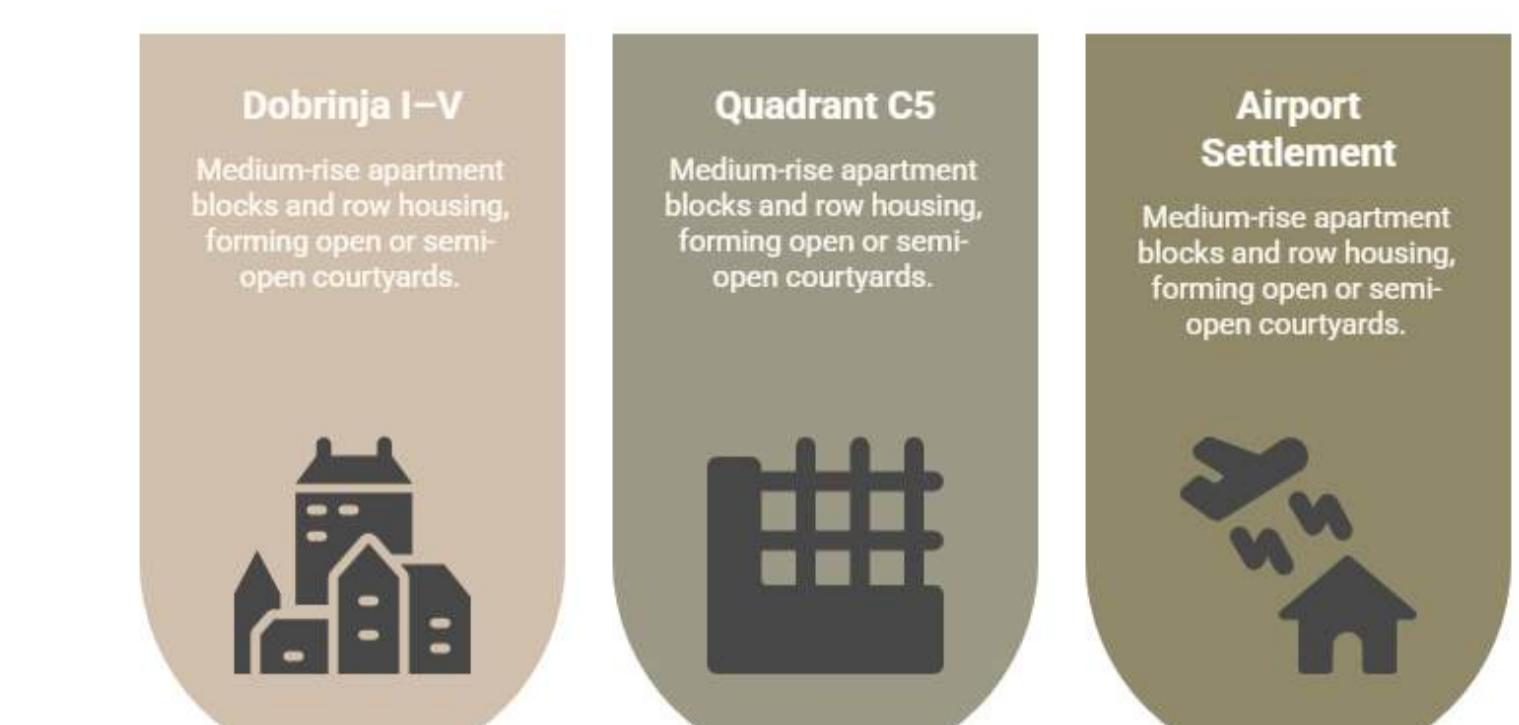
ANALYSIS

HISTORY

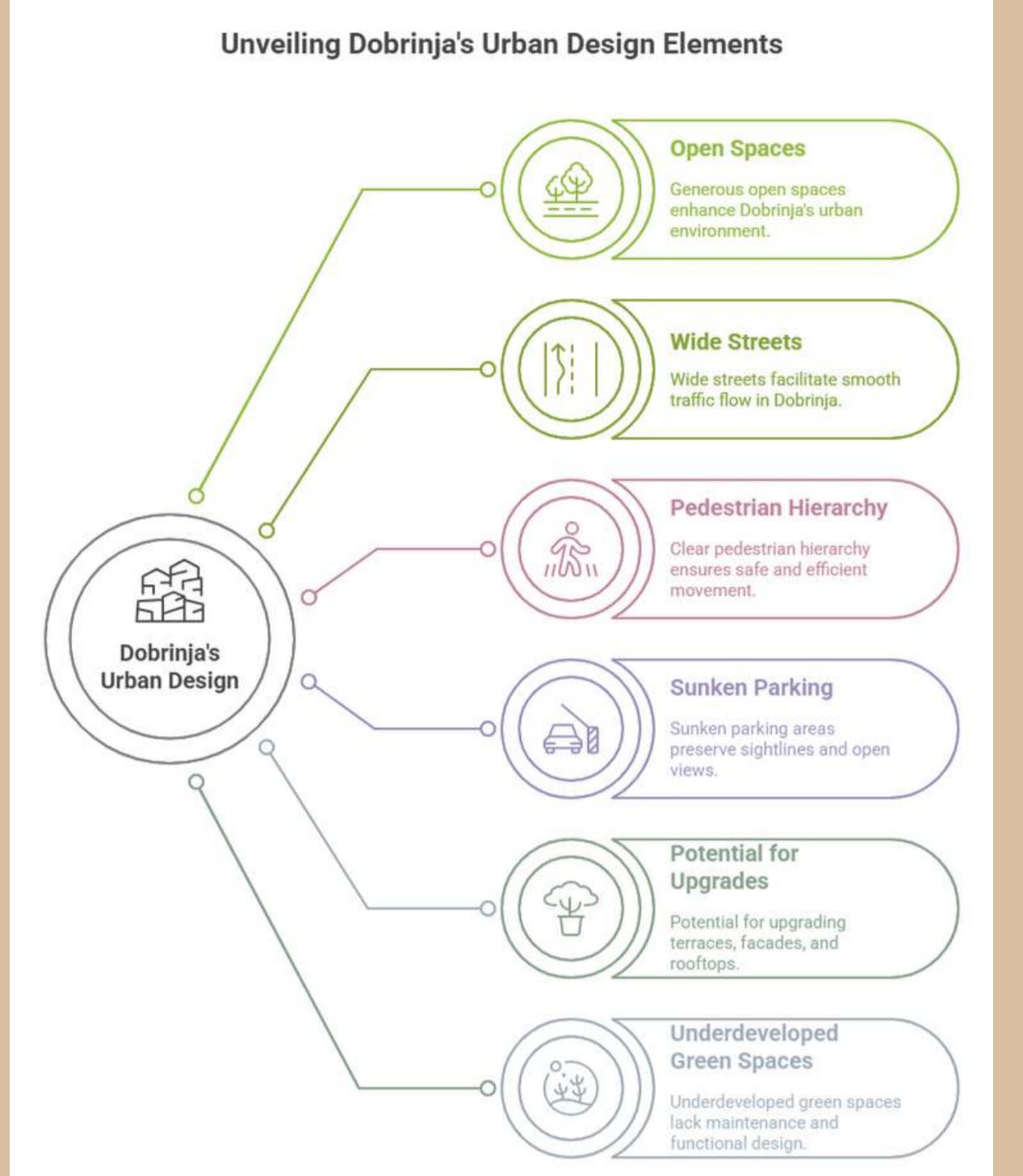
Dobrinja: A neighborhood's transformation



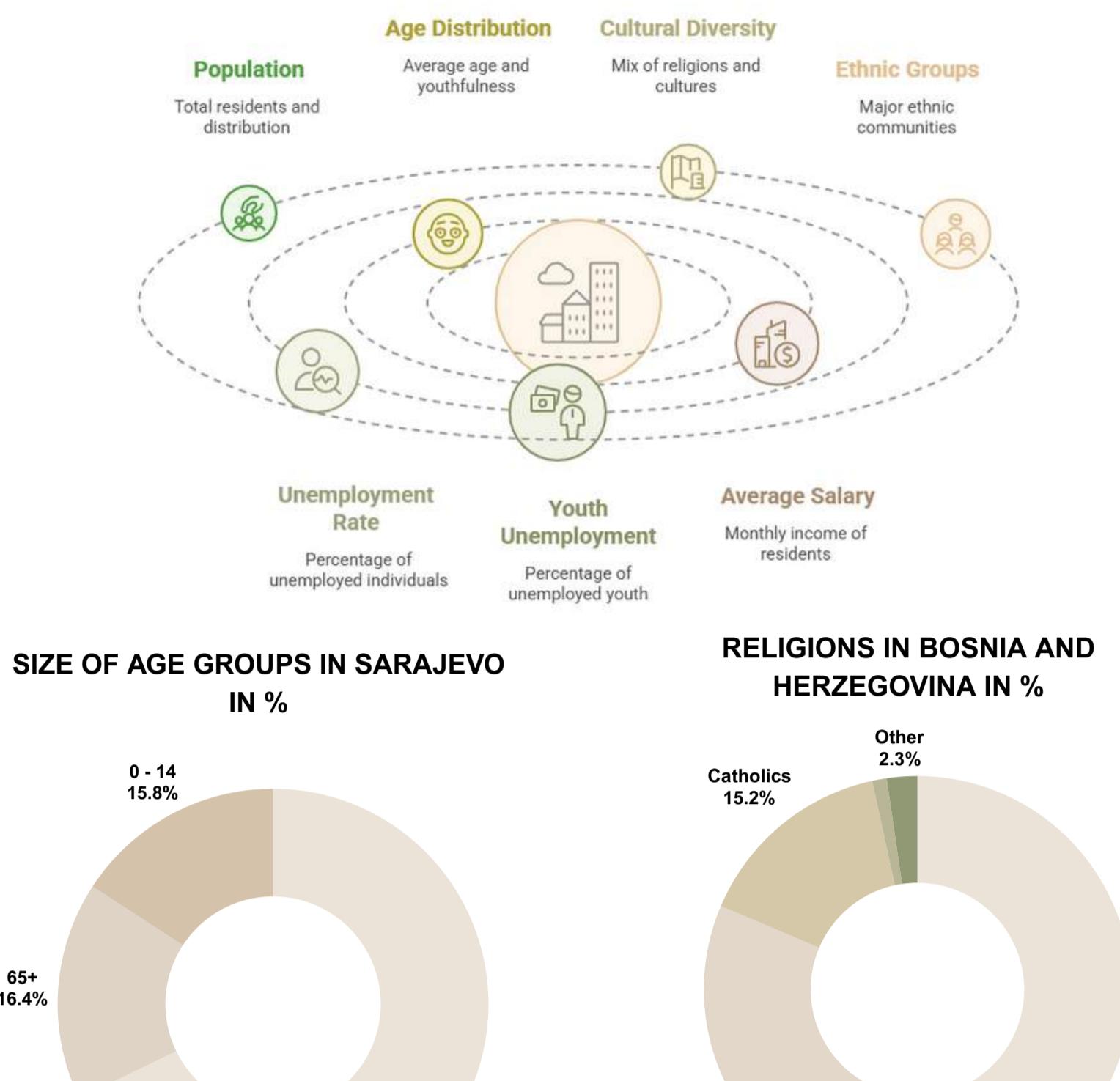
NEIGHBORHOOD STRUCTURE



SPATIAL ANALYSIS

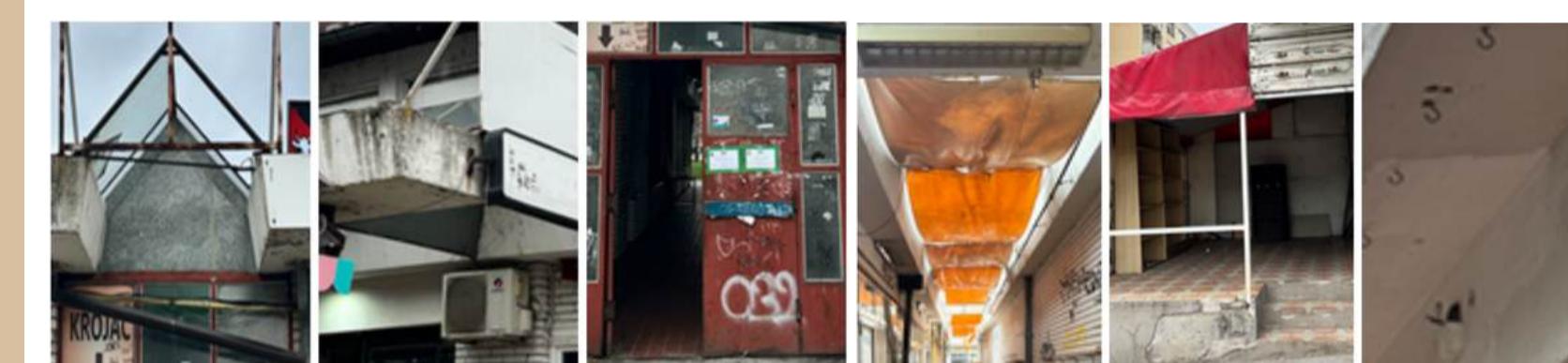


DEMOGRAPHIC PROFILE



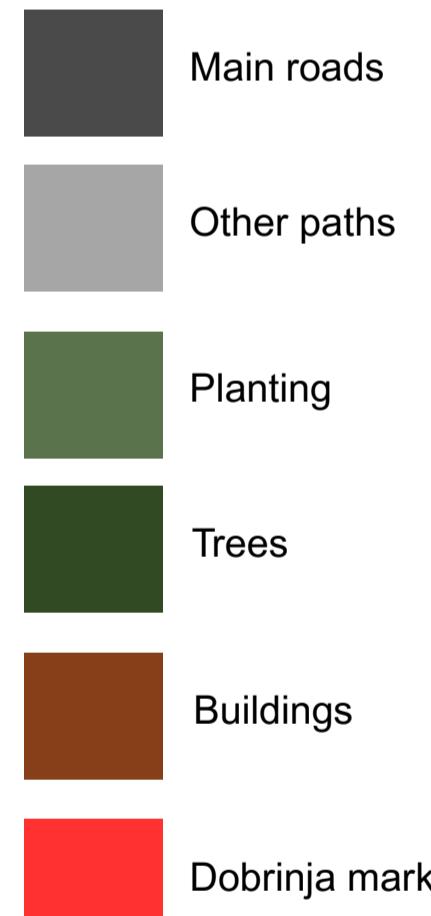
CURRENT BUILDING

Factors Leading to the Need for Renovation

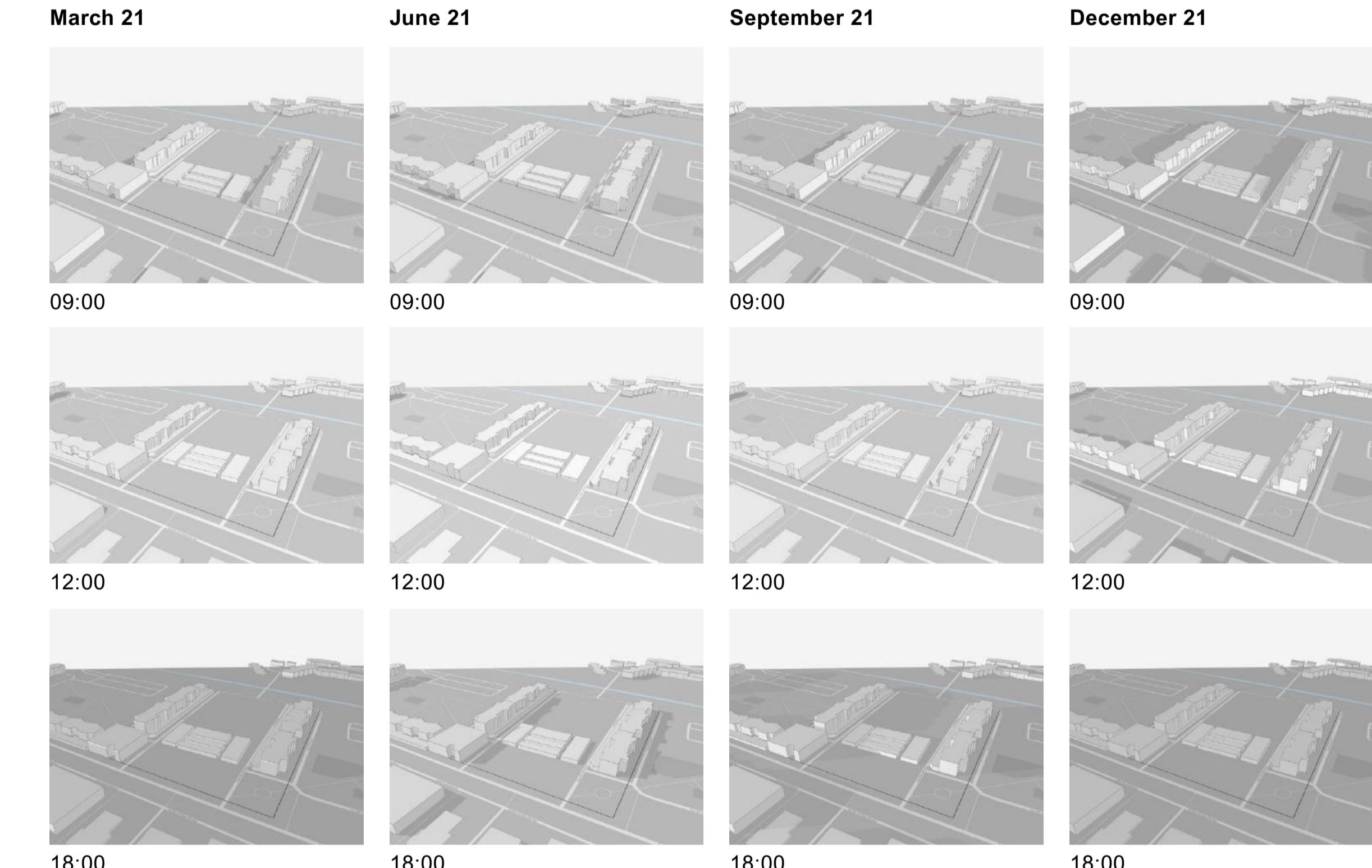


LOCATION

Situated in the southwest of Sarajevo, right next to the international airport, Dobrinja is well-connected yet slightly removed from the city center. It's served by several main roads and public transportation, including trolleybuses and buses. This makes it easily accessible while retaining a somewhat self-contained feel; residents have many services close by, reducing the need to travel far.



SOLAR STUDY

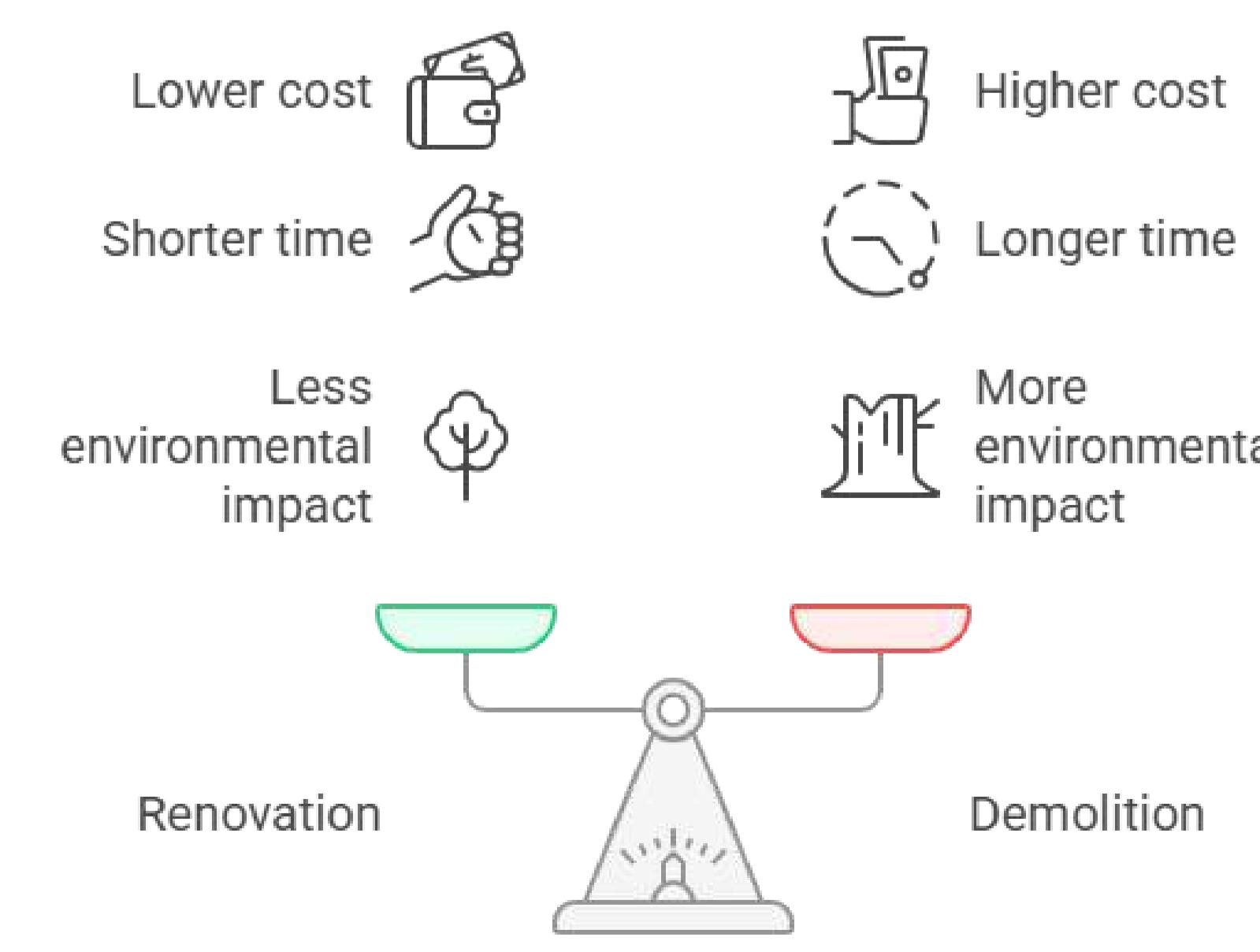


CURRENT ENVIRONMENT

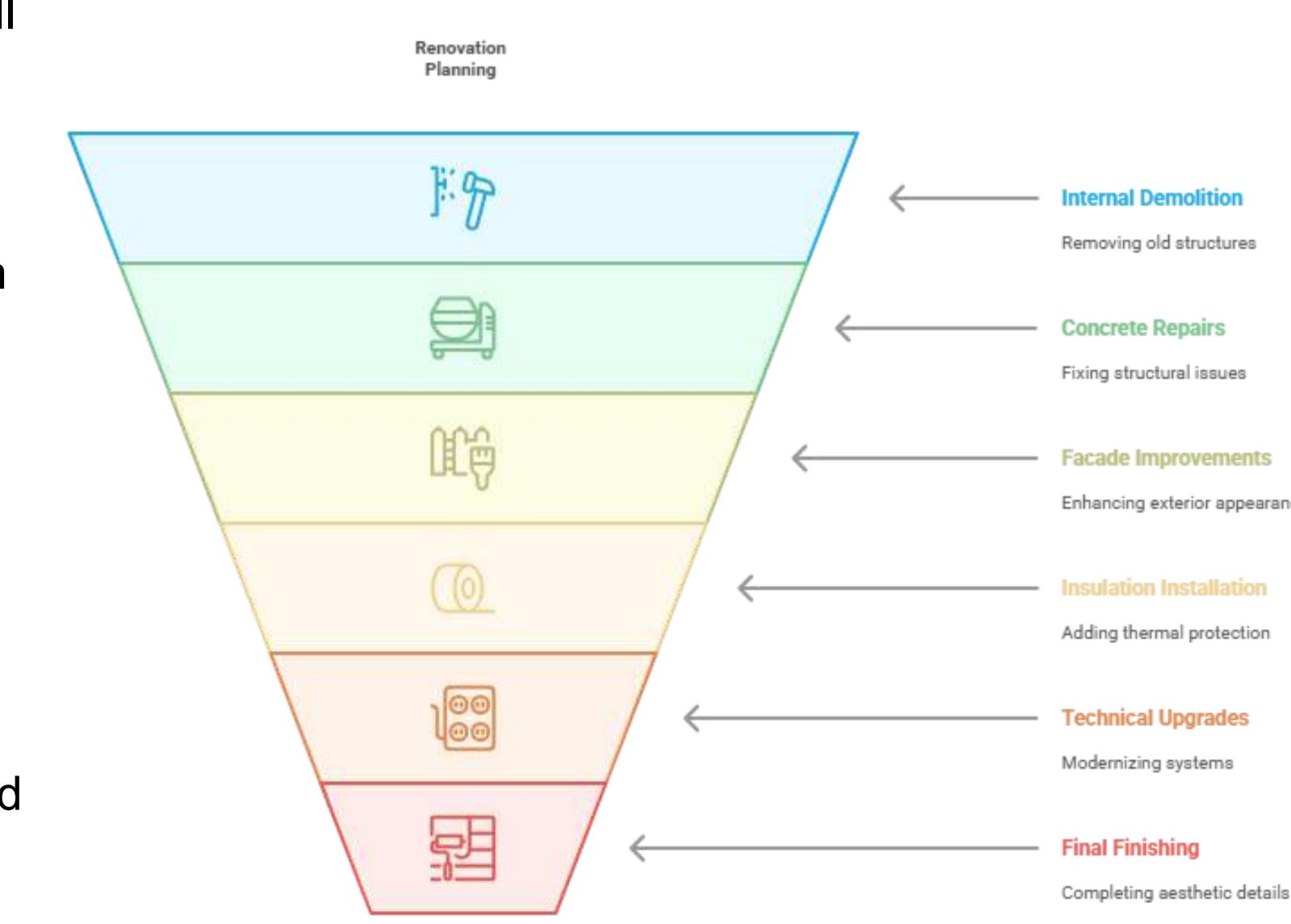


DEMOLITION OR RENOVATION?

The choice between demolition and renovation is a difficult one in this case. The choice is to renovate because there are more positive aspects to it, while demolition has more negative aspects, such as: costs, space for construction, duration, and noise pollution. Therefore, the choice to renovate is more advantageous in this case than demolition and new construction.



The renovation will follow a phased execution plan, starting with internal demolition and concrete repairs, followed by facade improvements, new insulation, and upgraded installations. Safety barriers and signage will be used during construction.

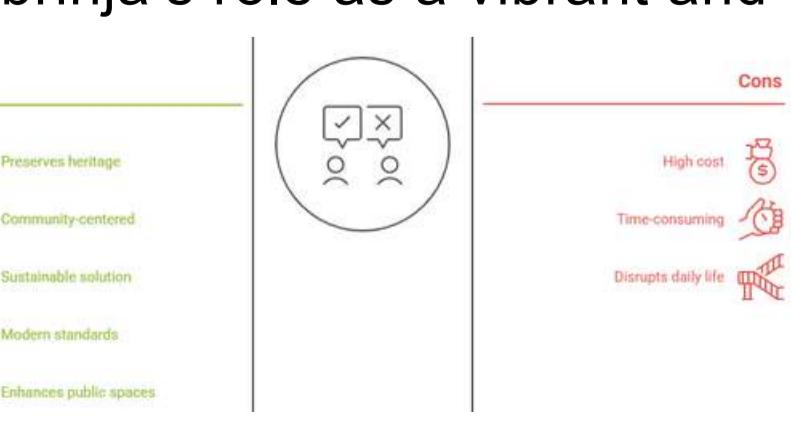


SOURCES

Bosnië en Herzegovina in cijfers en grafieken (wekelijks bijgewerkt) | AlleCijfers.nl. (2025, June 16). AlleCijfers.nl. <https://allecijfers.nl/land/bosnie-en-herzegovina/> • City of Sarajevo. (n.d.). Dobrinja. • City of Sarajevo. (n.d.). Dobrinja. • Het klimaat van Sarajevo - klimaatinfo Sarajevo. (n.d.). <https://klimaatinfo.nl/klimaat/bosnie-en-herzegovina/sarajevo/> • Lampe, R. J., Pickering, Paula, Malcolm, & R. N. (2025, June 17). Bosnia and Herzegovina | Facts, Geography, History, & Maps. Encyclopedia Britannica. <https://www.britannica.com/place/Bosnia-and-Herzegovina/People> • Largest cities by population 2025. (n.d.). worldpopulationreview.com/cities/ • 'Net als sociale cohesie, zou innovatie in de kern moeten gaan over ontmoeting, uitwisseling en wederzijds begrip.' (n.d.). TU Delft. <https://www.tudelft.nl/innovative-impact/pioneering-technologies/net-als-sociale-cohesie-zou-innovatie-in-de-kern-moeten-gaan-over-ontmoeting-uitwisseling-en-wederzijds-begrip/> • Turković Jurić, E., Lizio, A., & Universität Sarajevo, Architektonik fakultet Univerziteta u Sarajevu, Katedra za arhitektonsko projektovanje. (2025). Regeneracija stanovanja XX stoljeća - UNEP-WCMC & European Commission. (2020). BOSNIA AND HERZEGOVINA COUNTRY OVERVIEW TO AID IMPLEMENTATION OF THE EUTR - Versus. (n.d.). Sarajevo | 136 feiten en hoogtepunten. VERSUS. <https://versus.com.nl/sarajevo/> • Wikipedia contributors. (2025a, March 23). Sarajevo Canton. Wikipedia. https://en.wikipedia.org/wiki/Sarajevo_Canton • Wikipedia contributors. (2025b, June 22). Sarajevo - Wikipedia. <https://en.wikipedia.org/wiki/Sarajevo> • Wikipedia contributors. (2024, June 23). Dobrinja. Wikipedia. <https://en.wikipedia.org/wiki/Dobrinja>

CONCLUSION

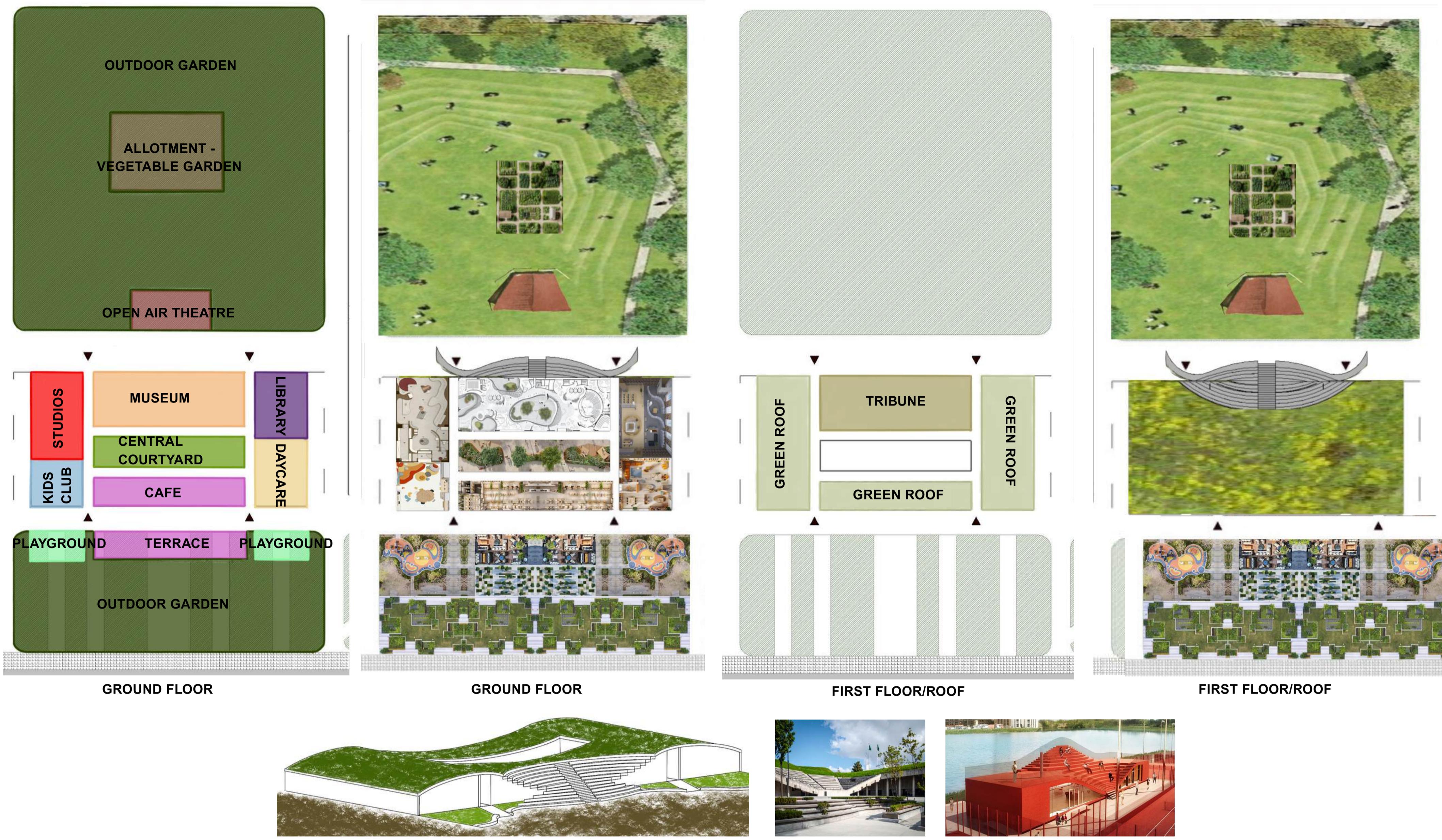
Dobrinja's transformation from an Olympic village to a resilient urban neighborhood reflects its enduring spirit and historical significance. While the market complex currently stands as a symbol of neglect, the decision to renovate rather than demolish offers a sustainable and community-centered solution. Through careful planning and phased improvements, the market will be restored to meet modern standards of safety, accessibility, and energy efficiency. This renovation not only preserves the neighborhood's structural heritage but also enhances its public spaces, reinforcing Dobrinja's role as a vibrant and livable district in Sarajevo.



VARIANTS AND SOLUTIONS

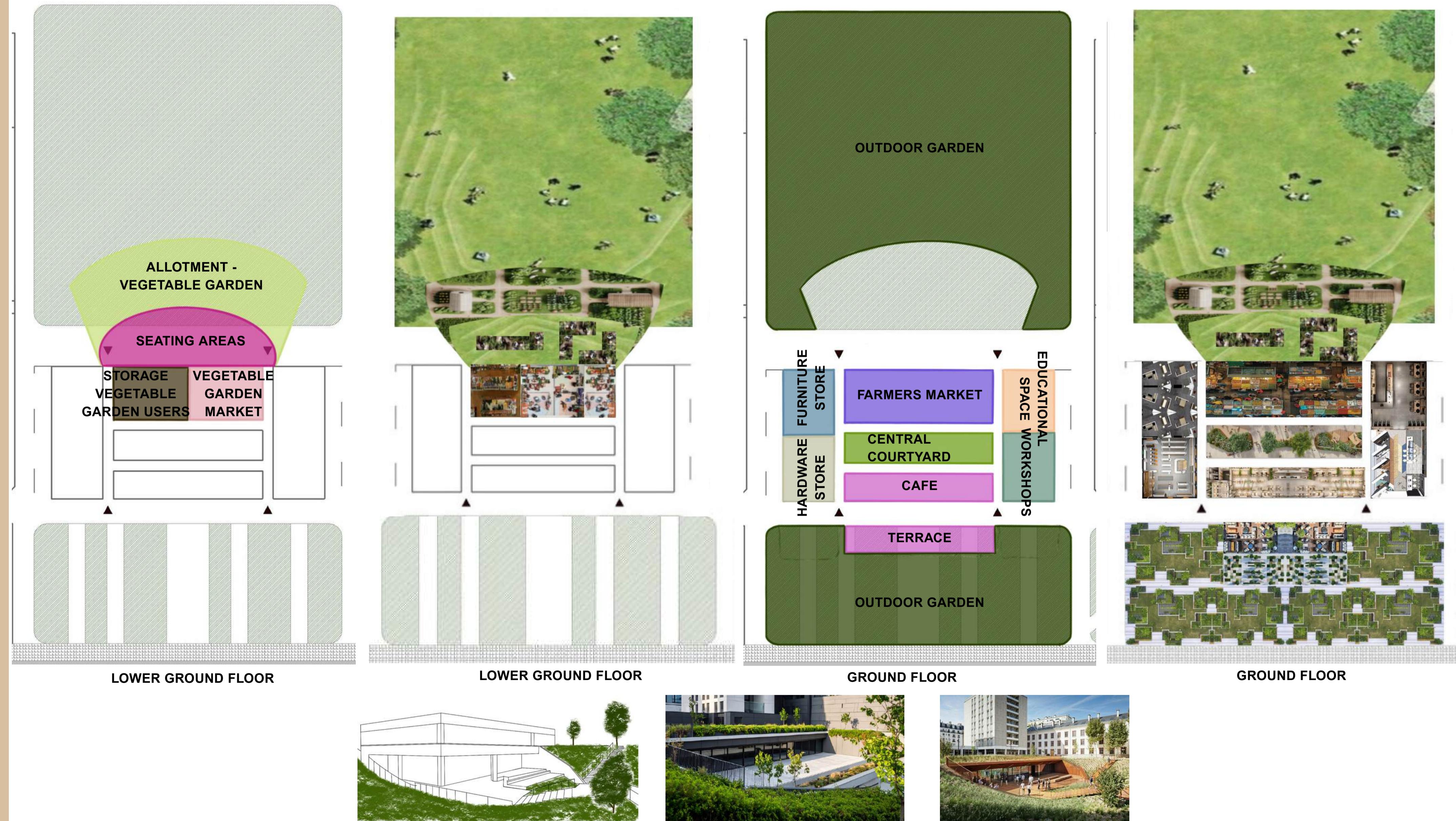
VARIANT 1 - THE FLAME OF DOBRINJA

The Flame of Dobrinja refers to the Olympic flame, a symbol of hope and unity.



VARIANT 2 - THE MARKET OF OPPORTUNITIES

The Market of Opportunities represents a place where potential is realized and growth is fostered.



COMPARISON

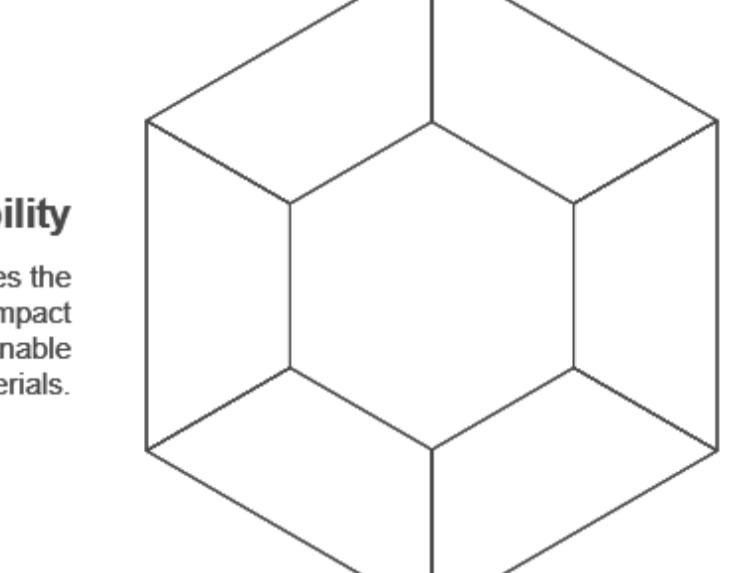
| | -- | - | + | ++ |
|----------------|----|---|---|----|
| Cohesion | | | | |
| Usability | | | | |
| Context | | | | |
| Feasibility | | | | |
| Sustainability | | | | |
| Design Quality | | | | |

| | -- | - | + | ++ |
|----------------|----|---|---|----|
| Cohesion | | | | |
| Usability | | | | |
| Context | | | | |
| Feasibility | | | | |
| Sustainability | | | | |
| Design Quality | | | | |

Architectural Design Evaluation

Design Quality

Assesses the architectural merit and visual appeal of the building.



Internal Logic

Focuses on the logical distribution and connection of functions within the design.

Sustainability

Measures the environmental impact and use of sustainable materials.

Usability

Assesses the practicality and accessibility of the building's spaces.

Feasibility

Evaluates the financial and structural viability of the design.

Context

Examines the building's integration with its urban environment and public interaction.

EXECUTION 1

Outdoor Features

Completing garden, theater, and playground



Furnishing Spaces

Carpentry work with local materials



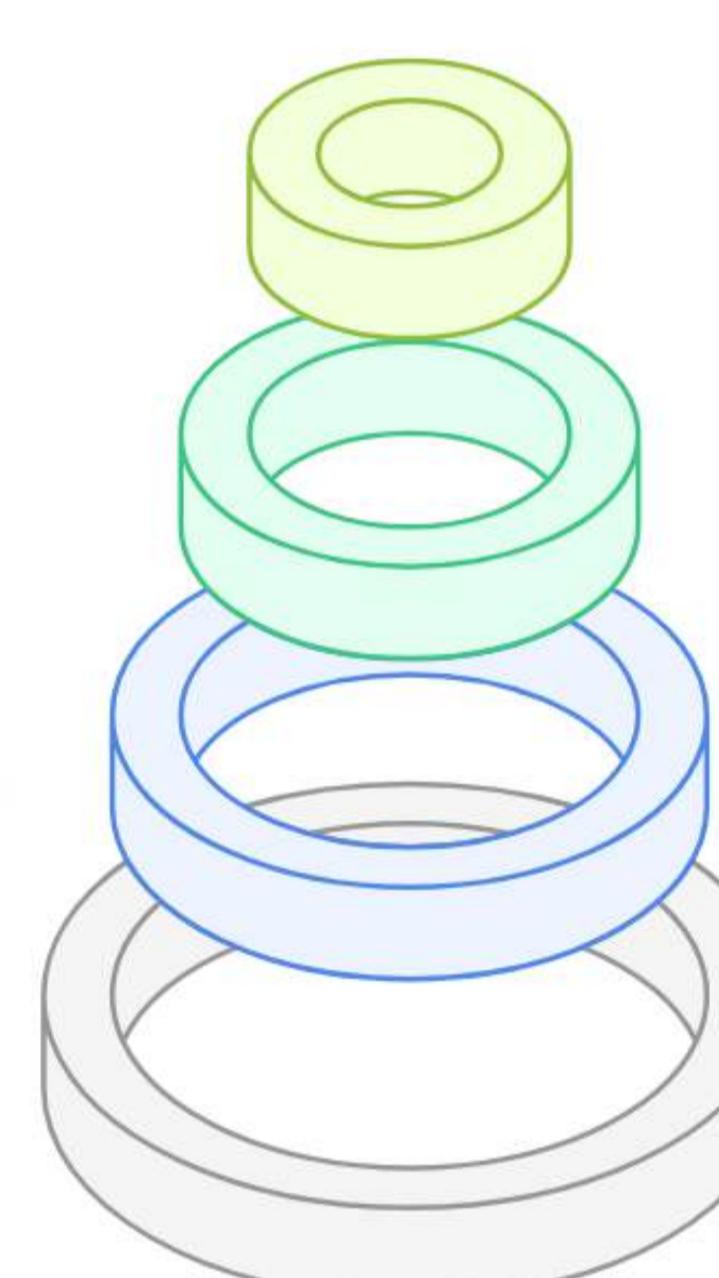
Wall Renovation

Applying plaster and floor screed



Building Stripping

Removing old materials and structures



EXECUTION 2

Inside-Out Construction Process

Terrace

Final space-saving construction



Carpentry & Stage

Building structures and stage creation

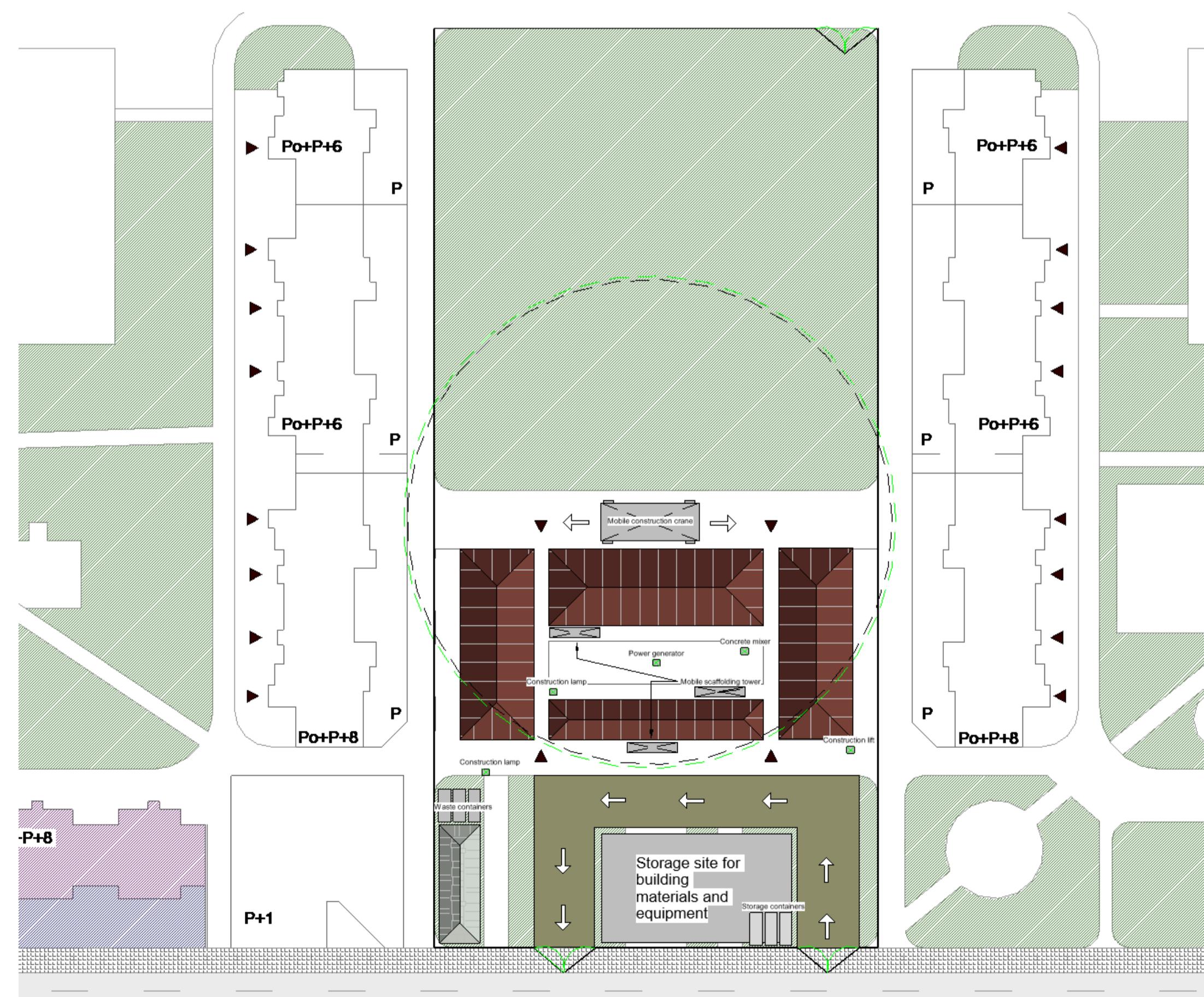


Demolition

Middle building removal and ground preparation



SITE LAYOUT



SOURCES

Bosnië en Herzegovina in cijfers en grafieken (wekelijks bijgewerkt) | AlleCijfers.nl. (2025, June 16). AlleCijfers.nl. <https://allecijfers.nl/land/bosnie-en-herzegovina/> • City of Sarajevo. (n.d.). Dobrinja. • City of Sarajevo. (n.d.). Dobrinja. • Het klimaat van Sarajevo - klimaatinfo Sarajevo. (n.d.). <https://klimaatinfo.nl/klimaat/bosnie-en-herzegovina/sarajevo/> • Lampe, R. J., Pickering, Paula, Malcolm, & R. N. (2025, June 17). Bosnia and Herzegovina | Facts, Geography, History, & Maps. Encyclopedia Britannica. <https://www.britannica.com/place/Bosnia-and-Herzegovina/People> • Largest cities by population 2025. (n.d.). worldpopulationreview.com. <https://worldpopulationreview.com/cities/> • 'Net als sociale cohesie, zou innovatie in de kern moeten gaan over ontmoeting, uitwisseling en wederzijds begrip.' (n.d.). TU Delft. <https://www.tudelft.nl/innovatie-impact/pioneering-tech/articles/net-als-sociale-cohesie-zou-innovatie-in-de-kern-moeten-gaan-over-ontmoeting-uitwisseling-en-wederzijds-begrip/> • Turković Jurić, E., Lize, A., & Univerzitet u Sarajevu, Arhitektonski fakultet Univerziteta u Sarajevu, Katedra za arhitektonsko projektovanje. (2025). Regeneracija stanovanja XX stoljeća - UNEP-WCMC & European Commission. (2020). BOSNIA AND HERZEGOVINA COUNTRY OVERVIEW TO AID IMPLEMENTATION OF THE EUTR - Versus. (n.d.). Sarajevo | 136 feiten en hoogtepunten. VERSUS. <https://versus.com.nl/sarajevo> • Wikipedia contributors. (2025a, March 23). Sarajevo Canton. Wikipedia. https://en.wikipedia.org/wiki/Sarajevo_Canton • Wikipedia contributors. (2025b, June 22). Sarajevo - Wikipedia. <https://en.wikipedia.org/wiki/Sarajevo> • Wikipedia contributors. (2024, June 23). Dobrinja. Wikipedia. <https://en.wikipedia.org/wiki/Dobrinja>

THE CHOSEN VARIANT

LOGISTICS

Circular route The driving route is circular.

One-way traffic The traffic is only in one direction.

Just-in-time delivery Delivery happens just in time.

FINANCIAL OVERVIEW

General Site cost overview

| Cost Category | Amount(€) |
|--|------------------|
| Supervisory and Support Staff | 50.560,00 |
| Welfare Facilities for Site Workers | 3.153,48 |
| Construction Site Setup and Management | 17.139,10 |
| Transport & Logistics | 3.642,39 |
| Temporary Connections | 1.848,95 |
| Use of Small Equipment | 1.453,50 |
| Total | 77.797,42 |

EXECUTION

Construction Site Management Strategies

- 1 Noise pollution management: Managing noise reduces community disturbance despite inefficiency.
- 2 Just-in-time delivery: Efficient delivery minimizes community disruption.
- 3 Traditional construction methods: Familiar methods are inefficient but have minimal impact.
- 4 Efficient site layout: Optimized layout enhances efficiency with minimal community effect.

Sustainable Renovation Strategies

- 1 Wood Fiber Insulation: Wood Fiber Insulation is low-cost and sustainable.
- 2 LED Lighting: LED Lighting is cost-effective and highly sustainable.
- 3 Local Stone Use: Local Stone Use is low-cost but less sustainable.
- 4 Green Roofs: Green Roofs are high-cost with limited sustainability.

WALL CONSTRUCTION

180 MM WOOD FIBER INSULATION BOARD
 $\rightarrow RC \approx 4.5 M^2 \cdot K/W$ (AT $\Lambda = 0.040 W/M \cdot K$)

180 MM CONCRETE
 $\rightarrow RC \approx 0.10 M^2 \cdot K/W$

12 MM WOOD BATTEN
 $\rightarrow RC \approx 0.09 M^2 \cdot K/W$

28 MM CAVITY (UNVENTILATED)
 $\rightarrow RC \approx 0.18 M^2 \cdot K/W$

RCTOTAL =
 $4.5 + 0.10 + 0.09 + 0.1 = 4.87 M^2 \cdot K/W$

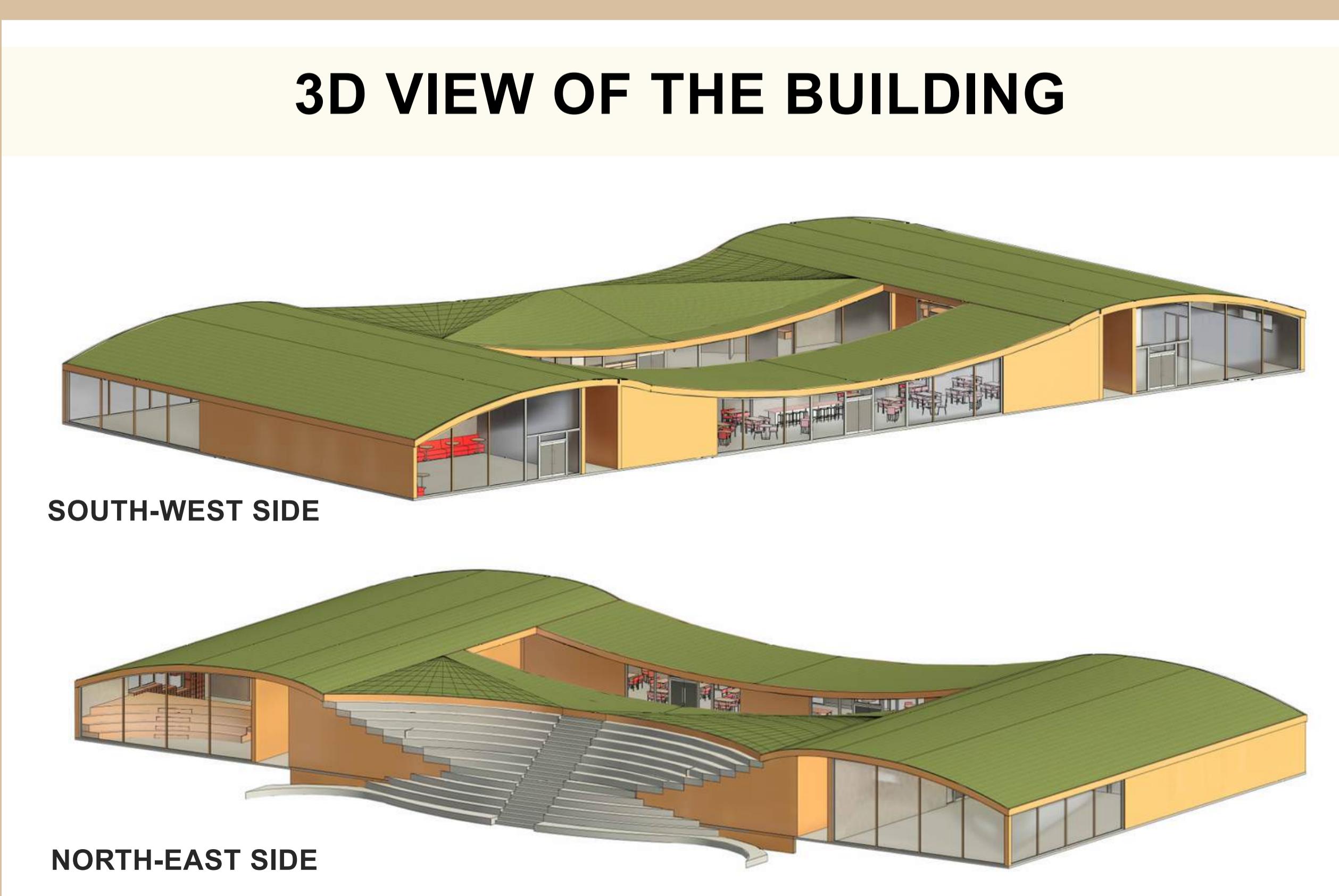
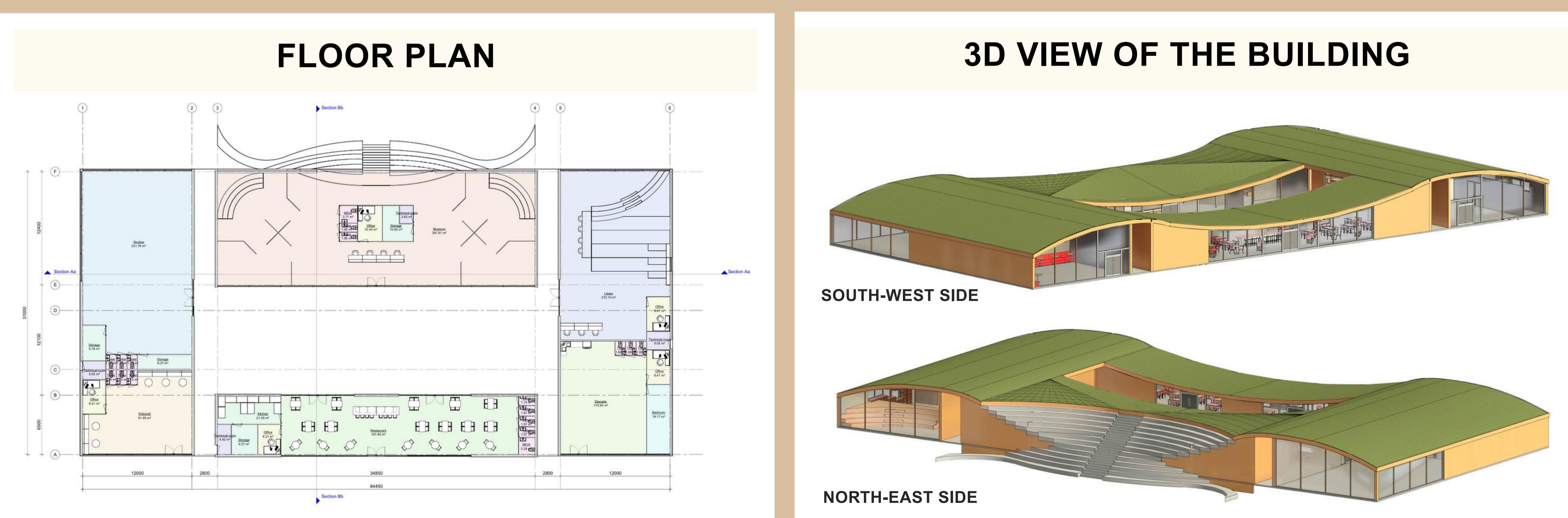
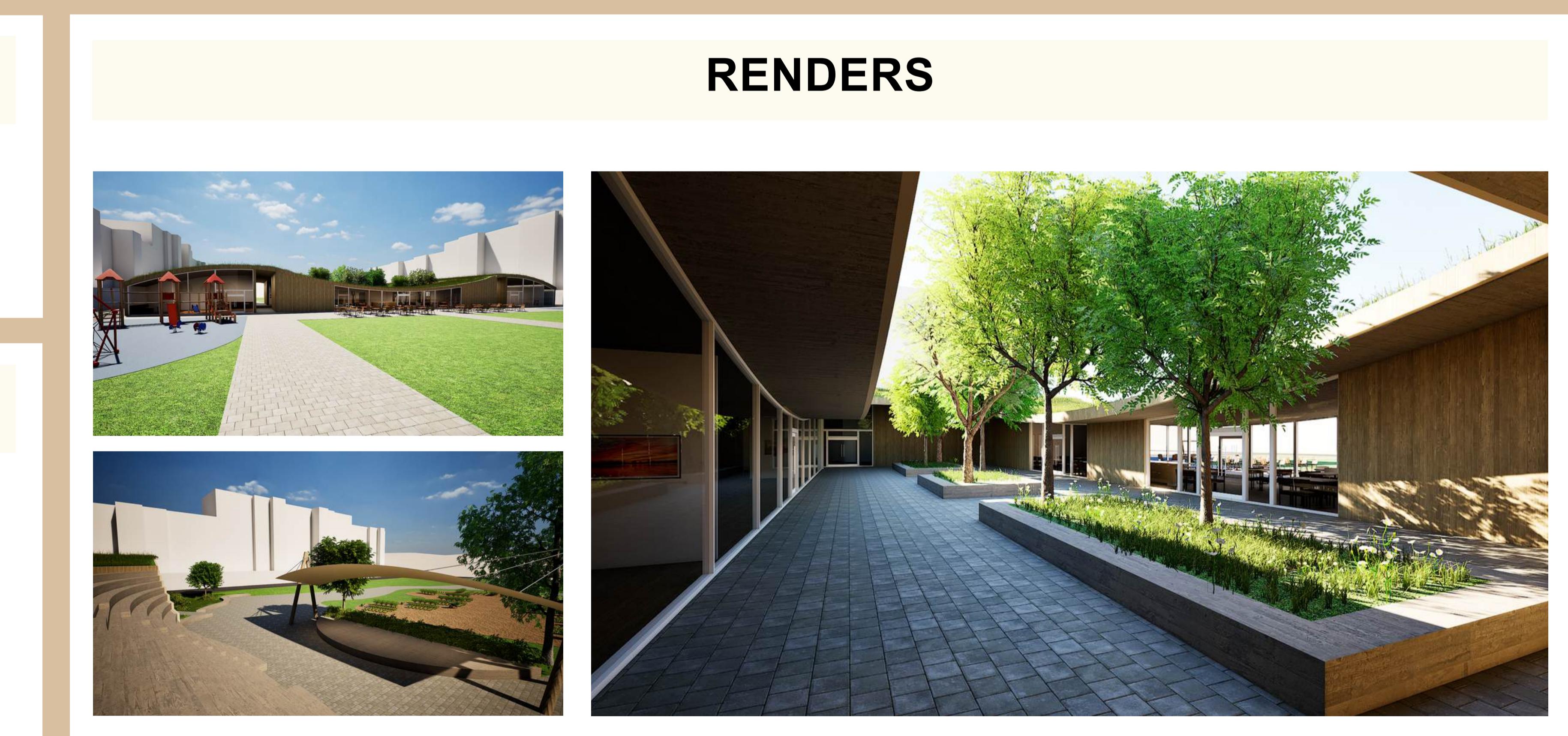
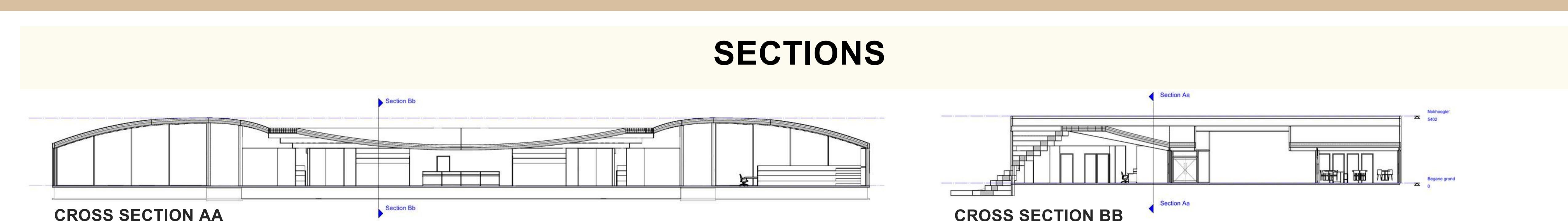
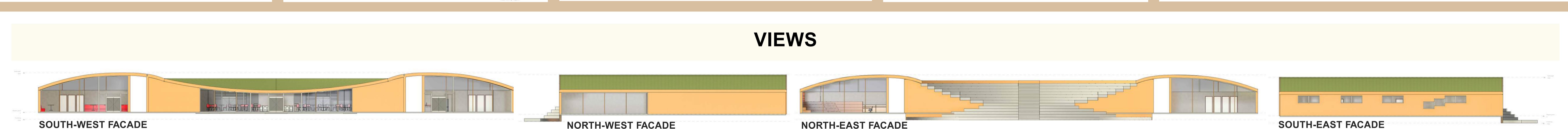
CONSTRUCTION

Legend:

- Current Structure:** Brick, Concrete, Supporting roof and stands, Glass facade, Unknown, Concrete, Insulation.
- New Structure:** Brick, Concrete, Supporting roof and stands, Glass facade, Unknown, Concrete, Insulation.

Annotations:

- 1 **Fire compartment:** A fire compartment is a larger division within a building designed to contain a fire for a specific duration, limiting its spread.
- 2 **Sub-fire compartment:** A sub-fire compartment is a smaller division within a fire compartment, designed to spread and providing extra protection.
- 3 **Protected sub-fire compartment:** A protected sub-fire compartment offers enhanced safety, allowing occupants to safely refuge during a fire, while maintaining a well-fit path for safe building evacuation during a fire or emergency.
- 4 **Escape route:** The escape route is a clearly defined, well-fit path for safe building evacuation during a fire or emergency.



Bosnië en Herzegovina in cijfers en grafieken (wekelijks bijgewerkt) | AlleCijfers.nl. (2025, June 16). AlleCijfers.nl. <https://allecijfers.nl/land/bosnie-en-herzegovina/> • City of Sarajevo. (n.d.). Dobrinja. • City of Sarajevo. (n.d.). Dobrinja. • Het klimaat van Sarajevo - klimaatinfo Sarajevo. (n.d.). <https://klimaatinfo.nl/klimaat/bosnie-en-herzegovina/sarajevo/> • Lampe, R. J., Pickering, Paula, Malcolm, & R. N. (2025, June 17). Bosnia and Herzegovina | Facts, Geography, History, & Maps. Encyclopedia Britannica. <https://www.britannica.com/place/Bosnia-and-Herzegovina/People> • Largest cities by population 2025. (n.d.). worldpopulationreview.com/cities/ • 'Net als sociale cohesie, zou innovatie in de kern moeten gaan over ontmoeting, uitwisseling en wederzijds begrip.' (n.d.). TU Delft. <https://www.tudelft.nl/innovate-impact/pioneering-tech/articles/net-als-sociale-cohesie-zou-innovatie-in-de-kern-moeten-gaan-over-ontmoeting-uitwisseling-en-wederzijds-begrip/> • Turkić Jurić, E., Lize, A., & Univerzitet u Sarajevu, Arhitektonski fakultet Univerziteta u Sarajevu, Katedra za arhitektonski projektovanje. (2025). Regeneracija stanovanja XX stoljeća - UNEP-WCMC & European Commission. (2020). BOSNIA AND HERZEGOVINA COUNTRY OVERVIEW TO AID IMPLEMENTATION OF THE EUTR - Versus. (n.d.). Sarajevo | 136 feiten en hoogtepunten. VERSUS. <https://versus.com.nl/sarajevo/> • Wikipedia contributors. (2025a, March 23). Sarajevo Canton. Wikipedia. https://en.wikipedia.org/wiki/Sarajevo_Canton • Wikipedia contributors. (2025b, June 22). Sarajevo - Wikipedia. <https://en.wikipedia.org/wiki/Sarajevo> • Wikipedia contributors. (2024, June 23). Dobrinja. Wikipedia. <https://en.wikipedia.org/wiki/Dobrinja>

SOURCES

Samenwerkingscontract

1. Regelmatig met betrekking tot de onderlinge communicatie, zowel mondeling als schriftelijk en via telefoon en e-mail.
Alles wordt gecommuniceerd tijdens de lessen. Wanneer er zich een probleem voordoet of wanneer er iets dringends gemeld moet worden dan kan dat via de app beproken worden.

2. Gedragregels over het naleven van de afspraken, het bijwonen van de vergaderingen, het uitvoeren van de afspraken:
Afspraken worden altijd nageleefd, wordt door iemand niet gedaan dan hangen daar consequenties aan (zie sancties). Hetzelfde geldt voor de aanwezigheid bij de groepsvergaderingen die tijdens elke les gehouden worden.
Uiteraard wordt er van ieder student verwacht dat hij/zij zijn taken uitvoert, wanneer dit niet gebeurd zal er overlegd worden en de opties bekeken worden.

3. Inzet en houding (ambitieuze niveau, streven qua prestatie, houding ten aanzien van kritiek): onze groep streeft naar een 7,5, dit betekent dat iedereen inzet toont in zijn best ervoor moet. Feedback en kritiek moeten altijd positief zijn en gehanteerd worden en moet met een open houding ontvangen worden. Feedback wordt niet gezien als een negatieve punt, maar eerder als een leerpunkt.

4. Sancties: welke sanctie na hoeveel waarschuwingen:
Sanctie 1e waarschuwing: in gesprek tijdens de vergadering en probleem wordt besproken. Hierbij worden opties en oplossingen voorgesteld en geketen hoe het voorkomen kan worden.
Sanctie 2e waarschuwing: wederom in gesprek tijdens de vergadering, hierop wordt duidelijk gemaakt dat dit de laatste waarschuwing is en dat hierna een echte sanctie wordt gebruikt.
Sanctie definitief uit de groep gezet worden.

5. Besluitvorming: via consensus of bij meerderheid van stemmen:
Onze groep streeft naar een consensus. Werd dit niet bereikt dan tellen de meeste aantal stemmen.

6. Invulling van het groepsoverleg:
Elke les hebben we een vergadering met alle groepsleden, hierin wordt besproken wat er de afgelopen lessen gedaan is door iedereen en wat er voor de komende les van iedereen verwacht wordt.

The first task I completed was drafting a collaboration agreement. This agreement outlined the arrangements we made to ensure the project would proceed in a clear and structured way. It included specific rules regarding absence and failing to meet certain commitments. By creating this agreement, our group immediately had clarity about the expectations and responsibilities within the collaboration.

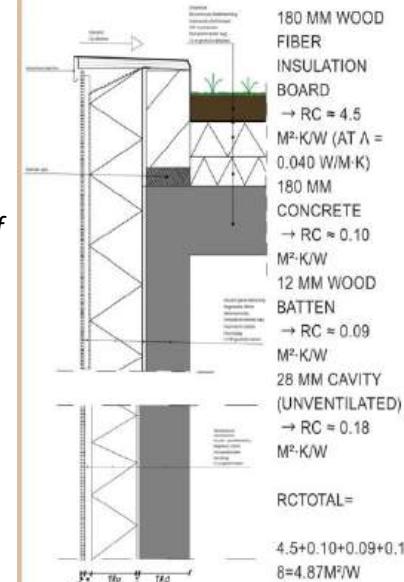


After we had decided as a group to go with renovation, the designers continued and created two different design proposals. I then assessed the feasibility of both options and gave my advice on the final project choice. I

recommended *The Flame of Dobrinja* as the better option, mainly because *The Market of Opportunities* included the use of a basement, and since we had no information about the foundation, we couldn't determine whether this was structurally possible.

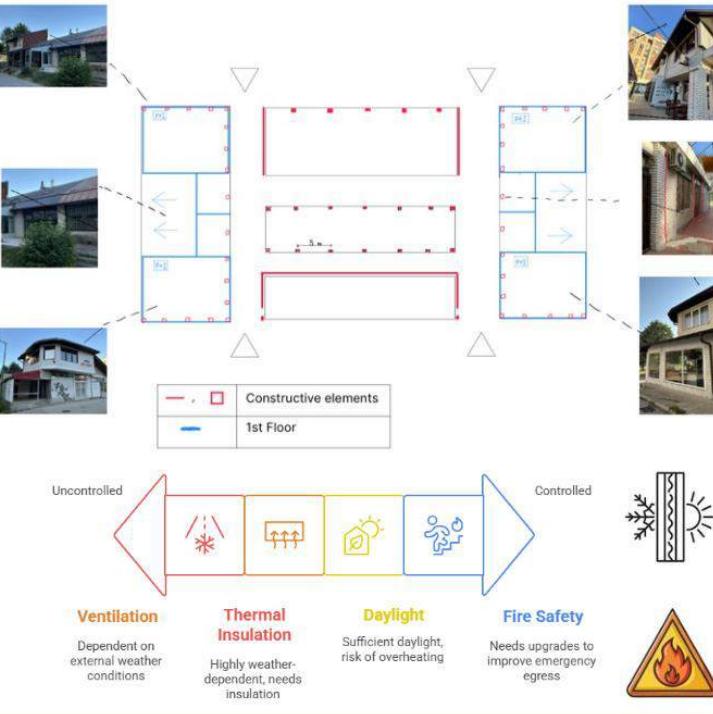
Additionally, Option 1 (The Flame of Dobrinja) was more compatible with the existing structure.

WALL CONSTRUCTION



After selecting the preferred design option, I continued by exploring what would be a logical wall structure and a suitable roof structure. In the end, we chose a wall construction consisting of a concrete load-bearing wall. This also made it possible to construct the roof using in-situ cast concrete. Since the roof has a curved shape, this was the most logical solution. Additionally, I performed a simplified thermal resistance (Rc) calculation for the wall structure to determine whether it would meet the requirements. For this, I used the Dutch building regulations, which set the minimum Rc-value at 4.7 m²·K/W.

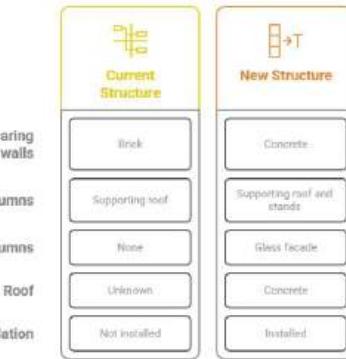
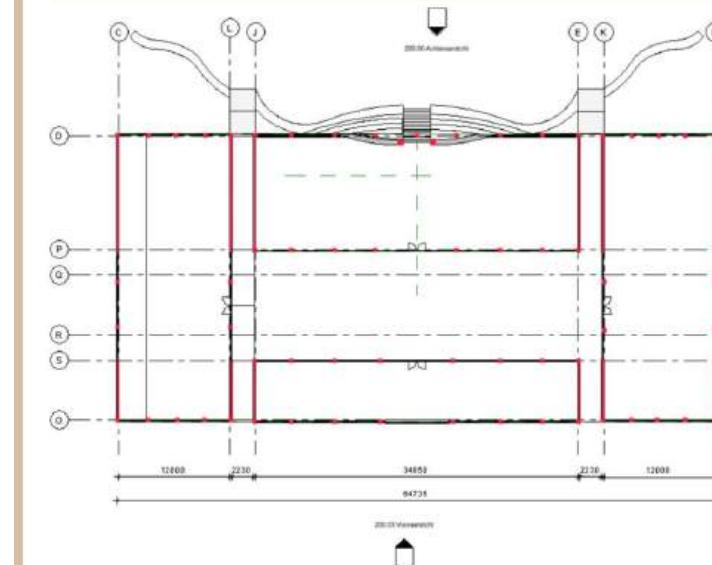
CURRENT CONSTRUCTION



First, I looked into the current situation. Initially, there was little information available, and we didn't know much about the structure. In the second week, we received additional information from Aida about the building, including some details about its current state. After discussing with fellow students and the executors in our group, we came to the following conclusion: the structure consists of a brick construction with brick columns. In some places, an extra floor has been added, and a pavilion-like structure has been built in the center. The pavilion has little impact on the overall structure and is constructed differently from the four other buildings.

I also conducted research into the building's quality, focusing mainly on the building physics aspects. This revealed that the building is significantly outdated and requires major improvements to meet current standards. For example, it needs insulation, a proper ventilation system, and a better way to improve daylight access in the public corridor.

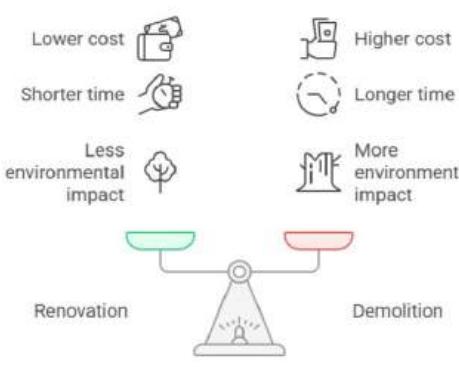
CONSTRUCTION



Finally, I examined the structure of the new building, and a few key observations immediately stood out. The first floor of the building was removed, which significantly reduces the load on the supporting structure, meaning it now only has to carry the roof. I concluded the following: the sides of the building consist of load-bearing concrete walls, while a concrete frame between them supports the roof. This design considerably reduces the spans and allows the grandstand to be easily supported. Additionally, the glass facade includes columns that also bear part of the roof load.

DEMOLITION OR RENOVATION?

The choice between demolition and renovation is a difficult one in this case. The choice is to renovate because there are more positive aspects to it, while demolition has more negative aspects, such as: costs, space for construction, duration, and noise pollution. Therefore, the choice to renovate is more advantageous in this case than demolition and new construction.



After analyzing the structure, I started looking into the options for the new design. We had two main approaches for addressing the building. The first option was to demolish the existing structure and build an entirely new one. The second option was to renovate the current building, preserving the structural elements while implementing improvements and maintaining the overall layout of the market.

In the end, we decided as a group that renovation was the best option. From a structural perspective, this was also a suitable choice, as the current structure is sufficient to serve as the foundation for a new and improved version of the building