

FUTURE PROOF DOBRINJA RESEARCH IDEAS ELABORATION

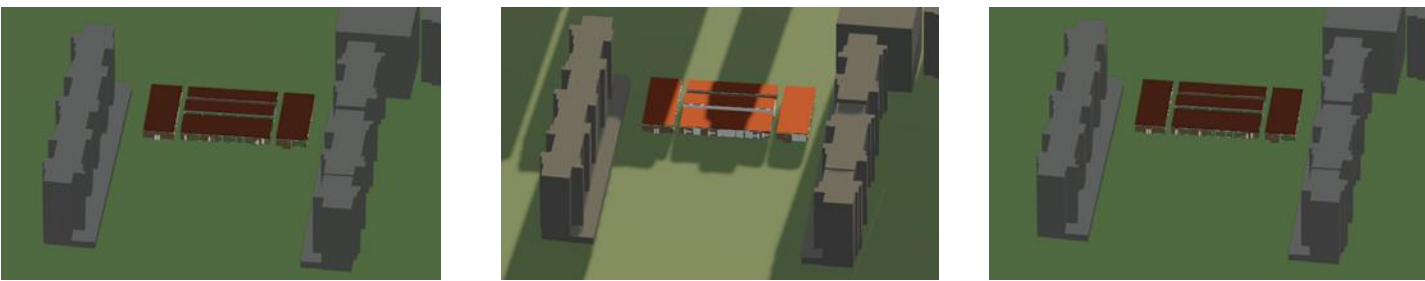
GROUP 2

SUN STUDY

Winter



Spring



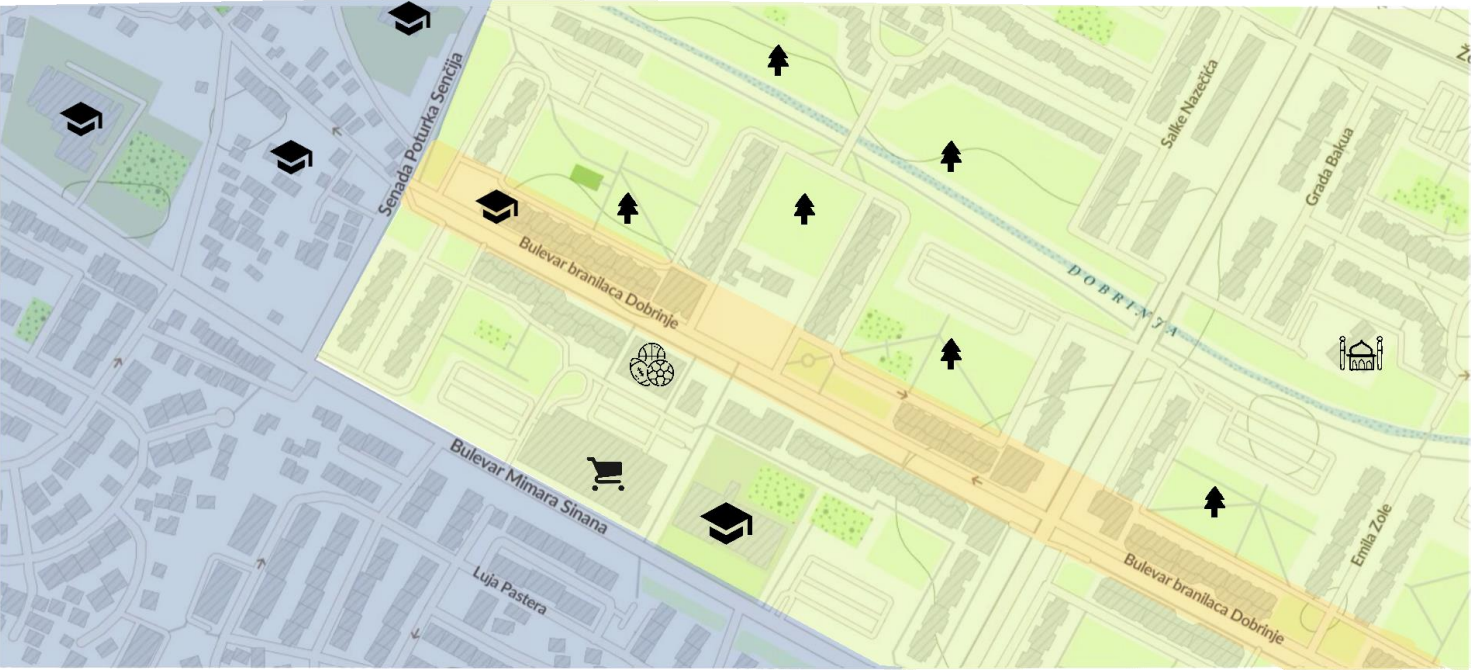
07:00 AM

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5).

BUILDING FUNCTIONS IN THE AREA



- Residential and commercial area
- Collective housing
- Individual housing
- Stores
- Schools
- Sports
- Parks
- Mosque

**Conclusion**, due to of the lack of social facilities, the market can be revitalized into a **multifunctional social space** that will **boost social interaction**. for example, a community centre (workshops/events) or a cultural hub (cinema/gallery) The unkempt **park behind can also be used as an extension of the market**. This way the shopping mall is not the only large social hub. 1).

AVAILABLE BUILDING METHODS

	A. Reinforced Concrete + masonry	B. Autoclave Aerated Concrete	C. Prefabricated Concrete	D. Earthen Construction	E. Wood Frame Construction
	-- - + ++	-- - + ++	-- - + ++	-- - + ++	-- - + ++
Sustainability					
Costs					
Logistical efficiency					
Construction time					
Preparation time					
Flexibility					
Nitrogen and CO <sub>2</sub> emissions during construction					
Aesthetics					
Re-usability					

For the renovation of Dobrinja Market, **wood frame construction** is the best method. It is lightweight, sustainable, and causes minimal noise and disruption, important in a busy residential area. Most parts are prefabricated, making on-site work fast and clean. The walls are well insulated with natural materials like flax and wood fiber, providing comfort without large heating or cooling systems. Because the structure is light, existing foundations usually remain unchanged. Wood framing is a smart, eco-friendly way to improve Dobrinja's buildings. 2).

SUN STUDY

ARCHITECTURE STYLES IN THE AREA



7A).

Socialist Modernism

Name: **Dobrinja Olympic Village**  
Years of construction: **1982-1983**  
Present condition: **Rebuilt** out ruins, presently **good condition** 7B).



8A).

Yugoslav structuralism

Name: **Woonblokken Dobrinja I-III**  
Years of construction: Dobrinja I & II: **1983** Dobrinja III: end of **1980s**  
Present condition: **Post-war** damage was **repaired**, presently still **in use** 8B).



9A).

Postmodern Functionalism

Name: **Papagajka Building**  
Years of construction: **1982-1990**  
Present condition: **Post-war** damage was **repaired**, presently still **in operation** 9B).



10A).

Brutalism

Name: **Sarajevo Radio & Television (RTV) Building**  
Years of construction: **1975-1983**  
Present condition: Good, still **in operation** 10B).

MATERIALIZATION



PVC window frame 11).



Bitumen roofing 12).



Metal sheet 13).



Concrete structue 14).



Brick 15).



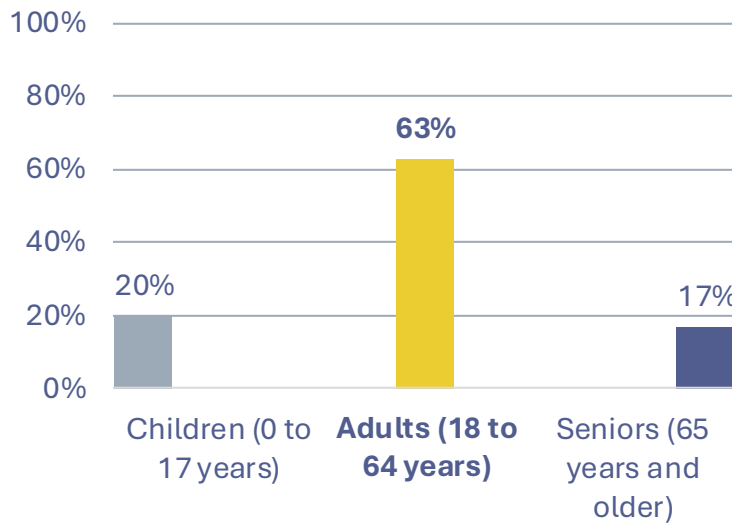
Curtain wall 16).

PEOPLE AND CULTURE

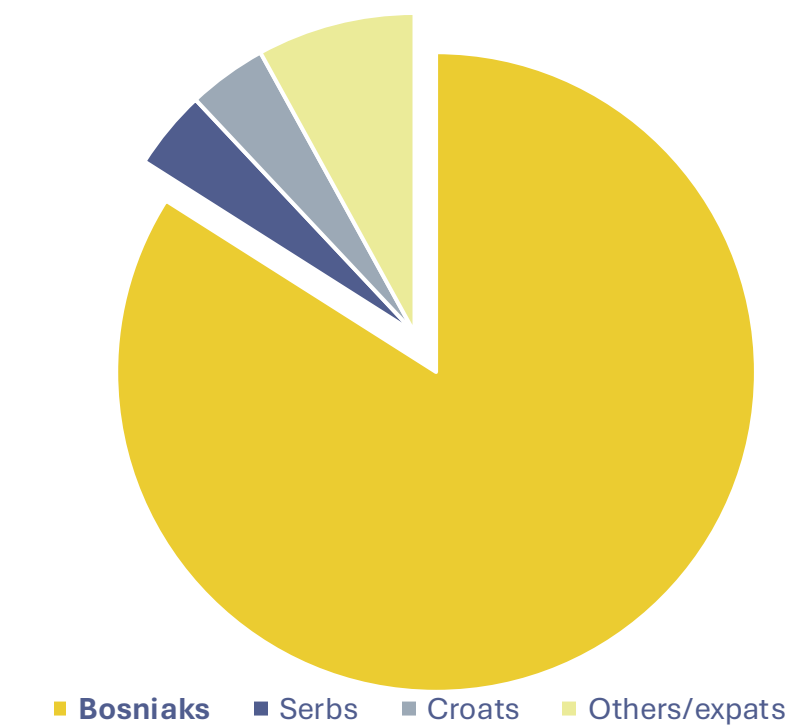
In Dobrinja, community life is strong, with high value placed on family, safety, and familiarity. Young people seek free gathering spaces, while older residents prefer quiet seating. Traditional customs like Bosnian coffee and shared iftars remain important **(with 50% of the population connected to Islam)**. There is a cultural need for shaded seating, spaces for women and the elderly, and flexible community areas. The market serves as the social heart, a traditional meeting place for all generations. 17).

- Spaces for family activities**, children's activities, and (school) gatherings such as an open-air theater, for example.
- Traditional hospitality and meeting places**, like cafés serving Bosnian coffee and sevdalinka music, small discussion groups, and walks in parks.
- Local markets** that attract entire families, where Bosnian and Herzegovinian producers sell their goods.
- Local materials and colors**: wood, natural materials, regional color traditions.
- Sevdalinka references**: seating areas, acoustic spaces, soft lighting, and decor featuring musical tiles or panels. 17).

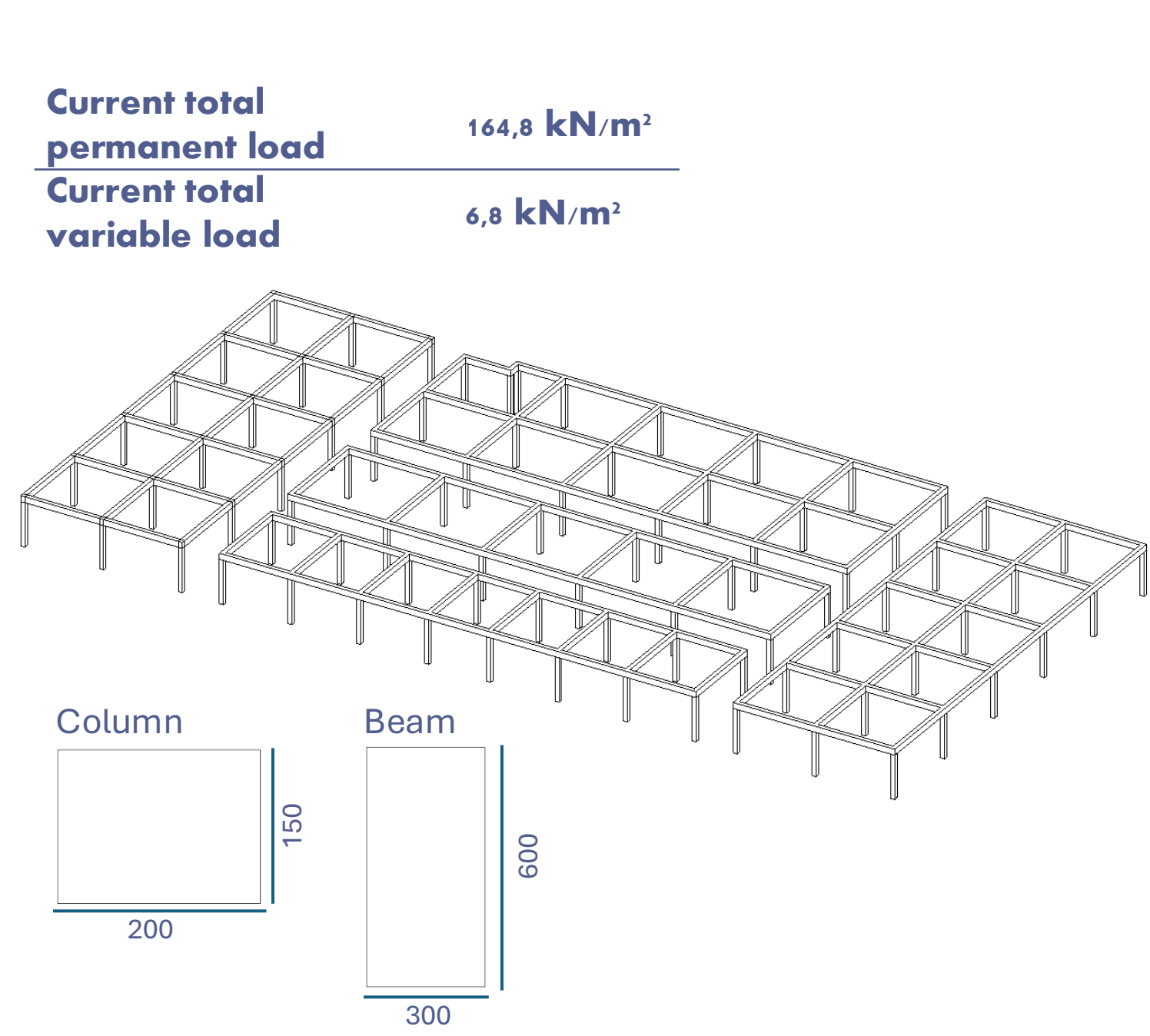
Age categories



Ethnic composition



CURRENT STRUCTURE AND BUILDING PHYSICS



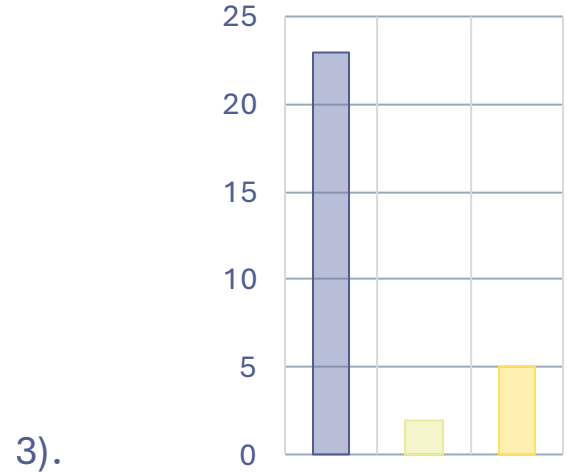
As you can see in the image on the left, the current structure of the building is a **combination of reinforced concrete columns and beams**. The rest of the wall construction consists of **masonry**, which is **partly load-bearing**. The condition of the concrete beams and columns appears to be in good order based on the images available on Brightspace. The brick walls are still in decent condition but could use some extra attention. Currently, there is **no insulation** present in the wall construction of this building. This means the building performs very poorly in terms of thermal insulation. Also, there seems to be **single glazing**. It is likely that there are gaps in the construction, causing significant heat loss or allowing cold air to enter. In addition, the building's energy performance is very poor, as it cannot retain heat and lacks any renewable energy sources to generate sustainable energy. 18).

The current dimensions of the columns and beams have been determined by calculating the current roof load and the self-weight of these structural elements. The columns are currently estimated to have dimensions of **200 x 150**, and the beams have dimensions of **600 x 300**. **Improvement proposals** for the structure and building physics could include the following:

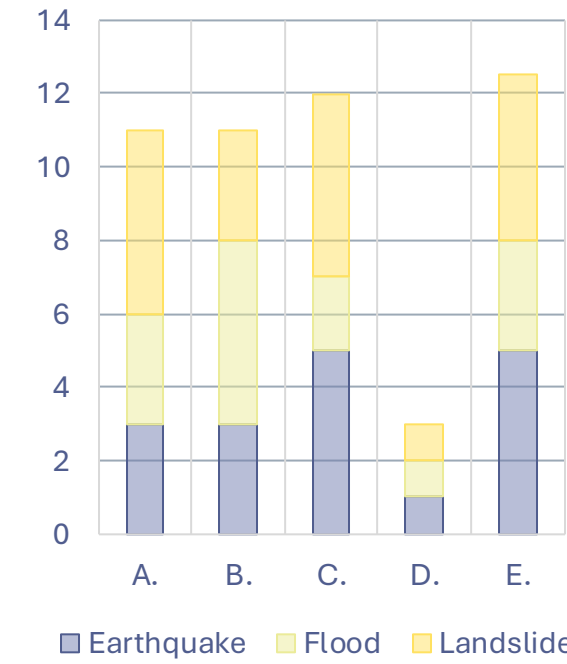
- Repair cracks with repair mortar
- Replace crumbled bricks with reused bricks
- Strengthen the structure with timber frame construction
- Apply additional insulation using hemp
- Replace the single glazing with double or triple glazing
- Add a ventilation system

DISASTERS

Change in a year



Building strength



4).



# SARAJEWO | DO BRICKJA

## RESEARCH IDEAS ELABORATION

### MATERIALIZATION

Wooden finishes  
20).

Masonry with keim coating  
21).

Urban rooftop garden  
22).

### MATERIALIZATION

Stucco, wooden finishes + green walls  
27).

Green roof + solar panels  
28).

Wooden beams  
26).

Play Island  
23).

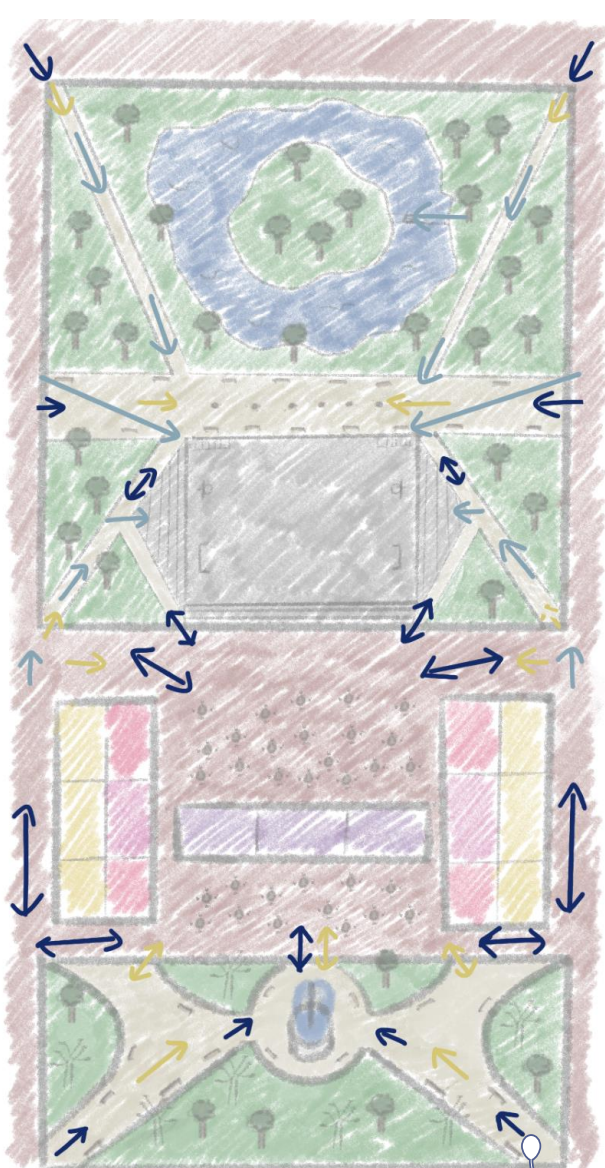
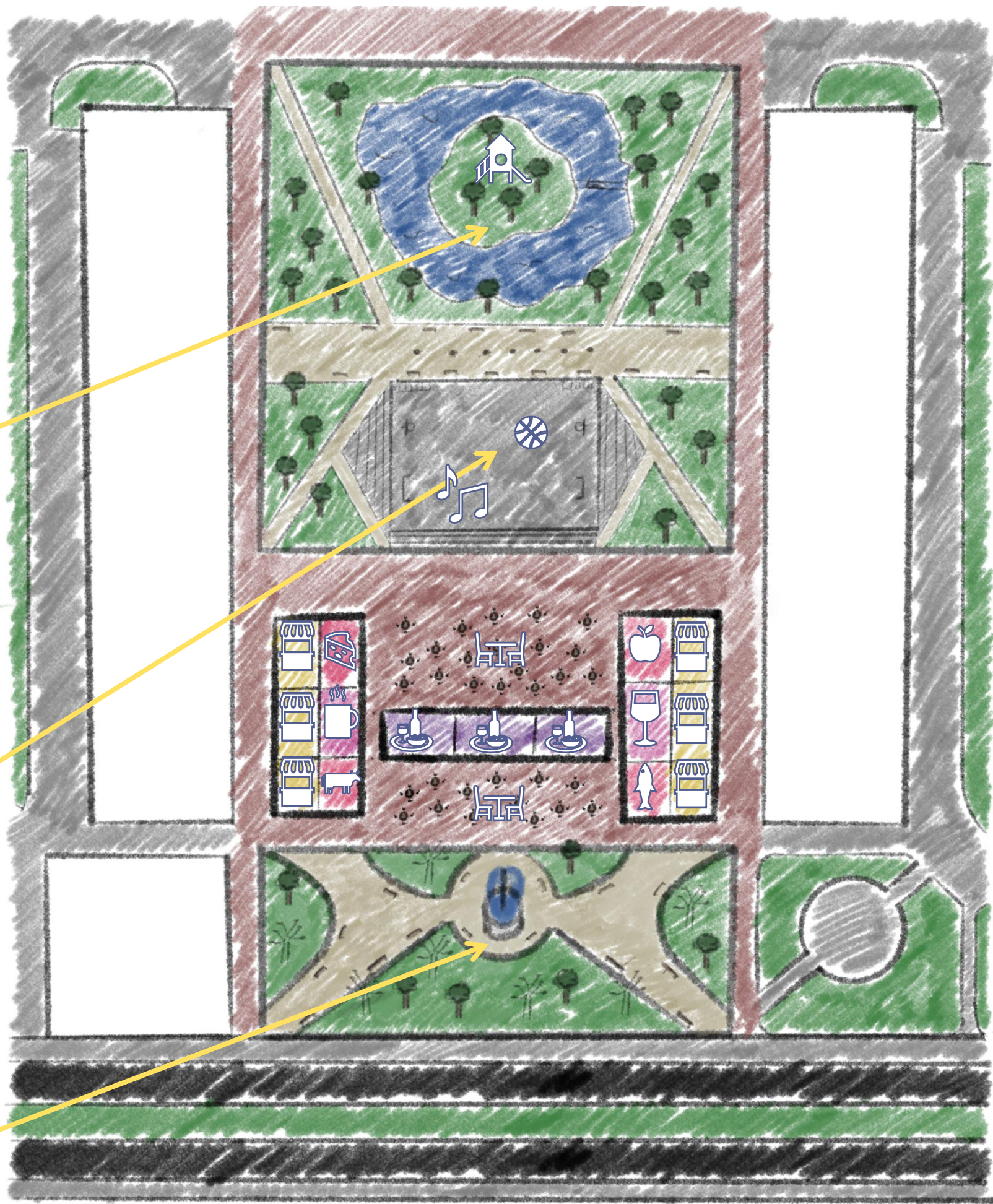
Water square + sports court  
24).

Solar trees  
25).

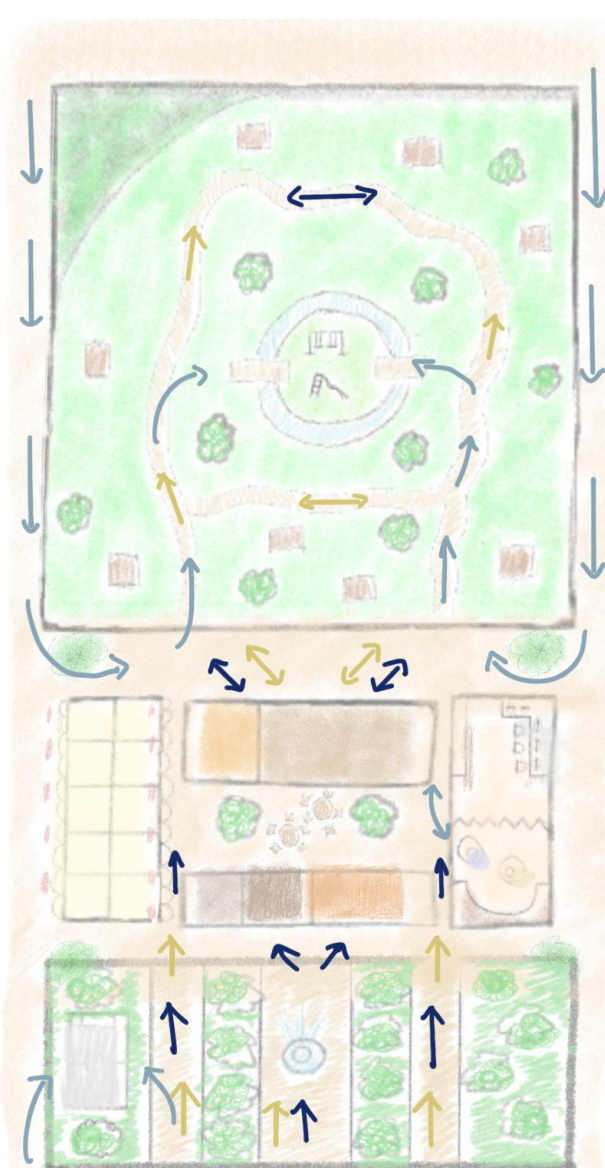
Play Island  
29).

Park seating  
30).

Seating area  
31).



Children (0-19)  
Adults (18-64)  
Seniors (65+)



### CONCLUSION

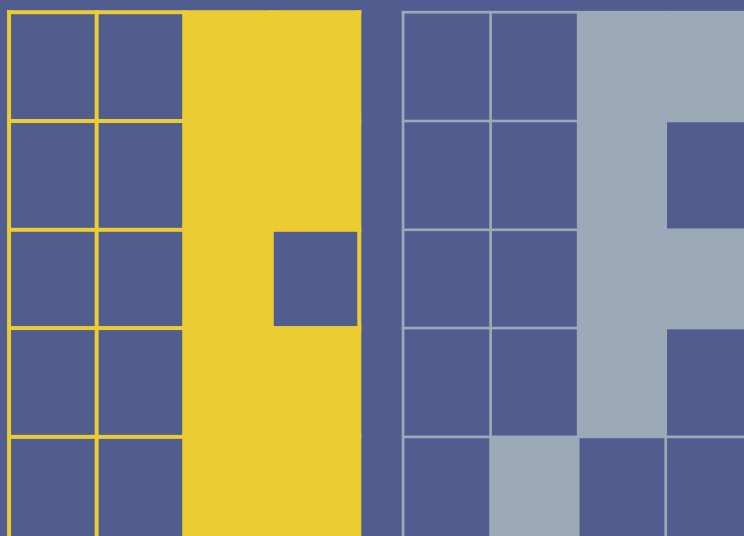
The H-building form was chosen because at the street side you could sit in the sun and at the park side you could sit in the shade. We also had the idea of an elevation on the sides and for the middle to have only one level and have a garden on the roof. Inside the building there is a combination of function. Stores, restaurants, cafés, and workshop spaces. Outside we were inspired by the paths in other parks and used them as inspiration for the paths in the park on the frontside of the building.

### CONCLUSION

The building is designed around a central courtyard with seating areas surrounded by greenery. The flat roof is a green roof, combined with solar panels. Inside, the building hosts various functions, including shops inspired by a Bosnian local market, a library with study areas that can be turned into a cinema in the evening by opening the folding walls in the center, and several cafés and a restaurant. Behind the building is a large park with a natural playground and multiple gathering spots. At the end of the field is a raised grassy area for sunbathing or open-air theater performances. The brick structure will be replaced by timber frame construction, with the original bricks reused in the park's pathways.

IDEA 1  
-- - + ++

Functions within the building 1  
Functions outside the building 1  
Green infrastructure  
Sustainability and climate adaptation 2  
Accessibility of the building 3



- 1) The functions inside and outside the building appeal to different target groups at various times and create a place where people can come together
- 2) The new materials are either reused or sustainable, and climate adaptation was taken into account during the design of the façade
- 3) The paths in and around the building have been thoughtfully designed to ensure optimal accessibility to each function



# SARAJEWOW DOBRINJA

## RESEARCH IDEAS ELABORATION

GROUP 2

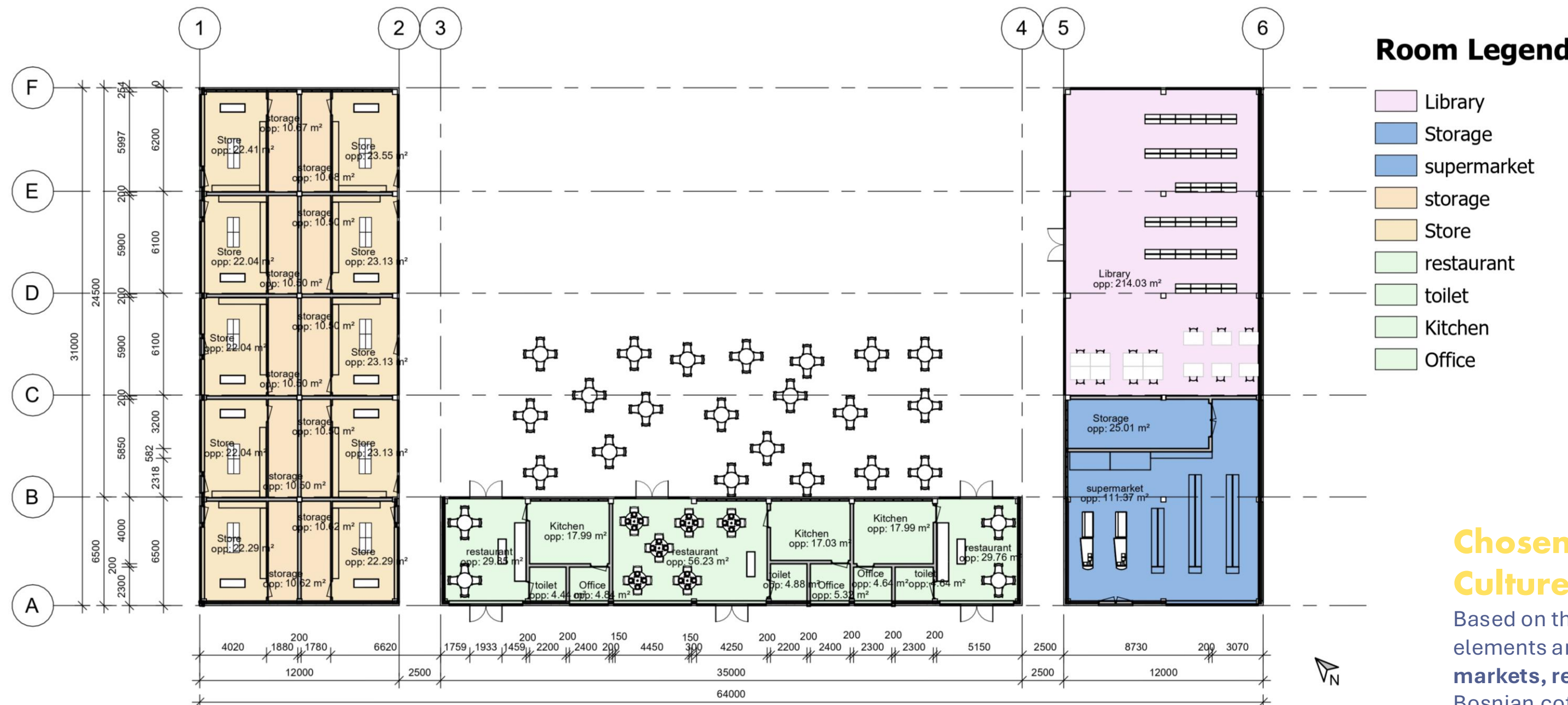
### Sustainability

Sustainability and green energy are increasingly important themes in the construction industry. In this project, **solar panel trees** are installed in the park at the front of the building. **One tree** can generate enough energy to power **fifteen streetlights**. This energy can be used for **park lighting, the building's energy consumption**, and potentially even be **fed back into the energy grid**.

### Path structure

The diagonal pathways provide **efficient routes**, enhance symmetry, and add visual depth to the design. They align with the existing structure of the area and form the foundation for the name SarajeWOW, the distinctive **W-shape** of the paths is directly reflected in it.

### FLOOR PLAN 1:250



### Layout, Functions & Opening Hours

The **left building** has a **market function** with small square stores for rent, such as fabric or fruit and vegetable shops. It is mainly active around early afternoon. The **middle building** has a **restaurant in the centre with two cafés on the sides**. The cafés are used in the morning and afternoon, while the restaurant opens in the evening. The **right building** has a **library and a supermarket**. The library is open from morning till night for studying and reading. The supermarket that is meant for nearby apartment residents is open for morning till night.

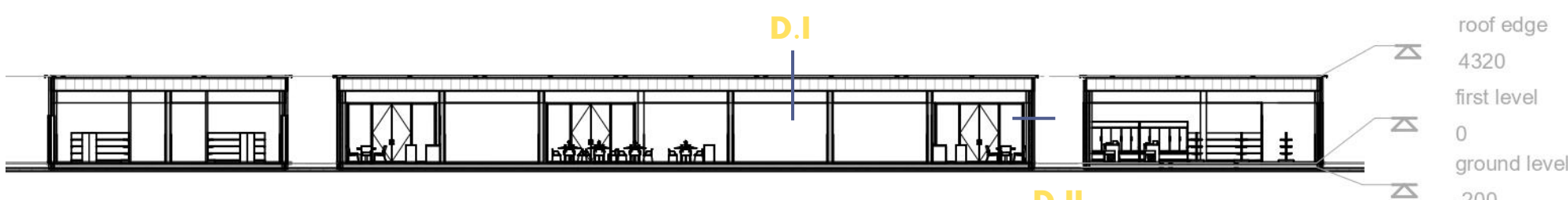
### Chosen Option, Target Group and Culture

Based on the model we chose, we can see that all cultural elements are included. There are **places to sit, local markets, restaurants, and cafés** where you can also get Bosnian coffee. There is also a **great park** where older people can walk, children can play, and middle-class families can have a picnic. It is a great choice for the whole family.

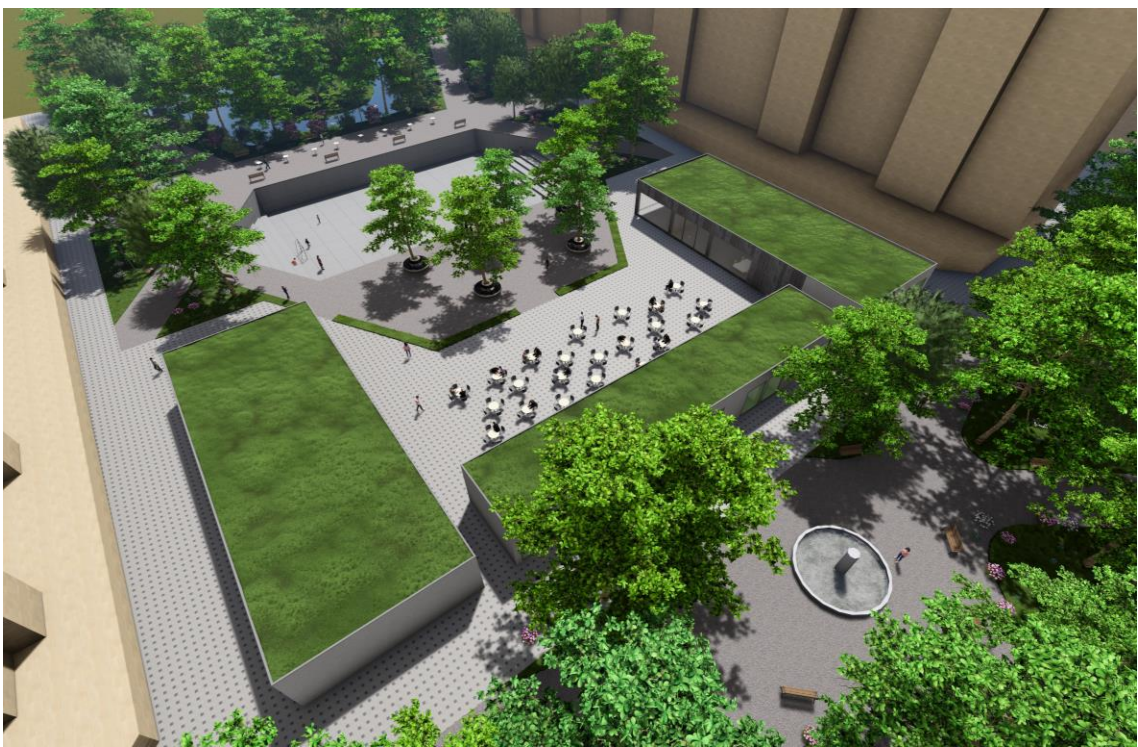
### REAR VIEW 1:300



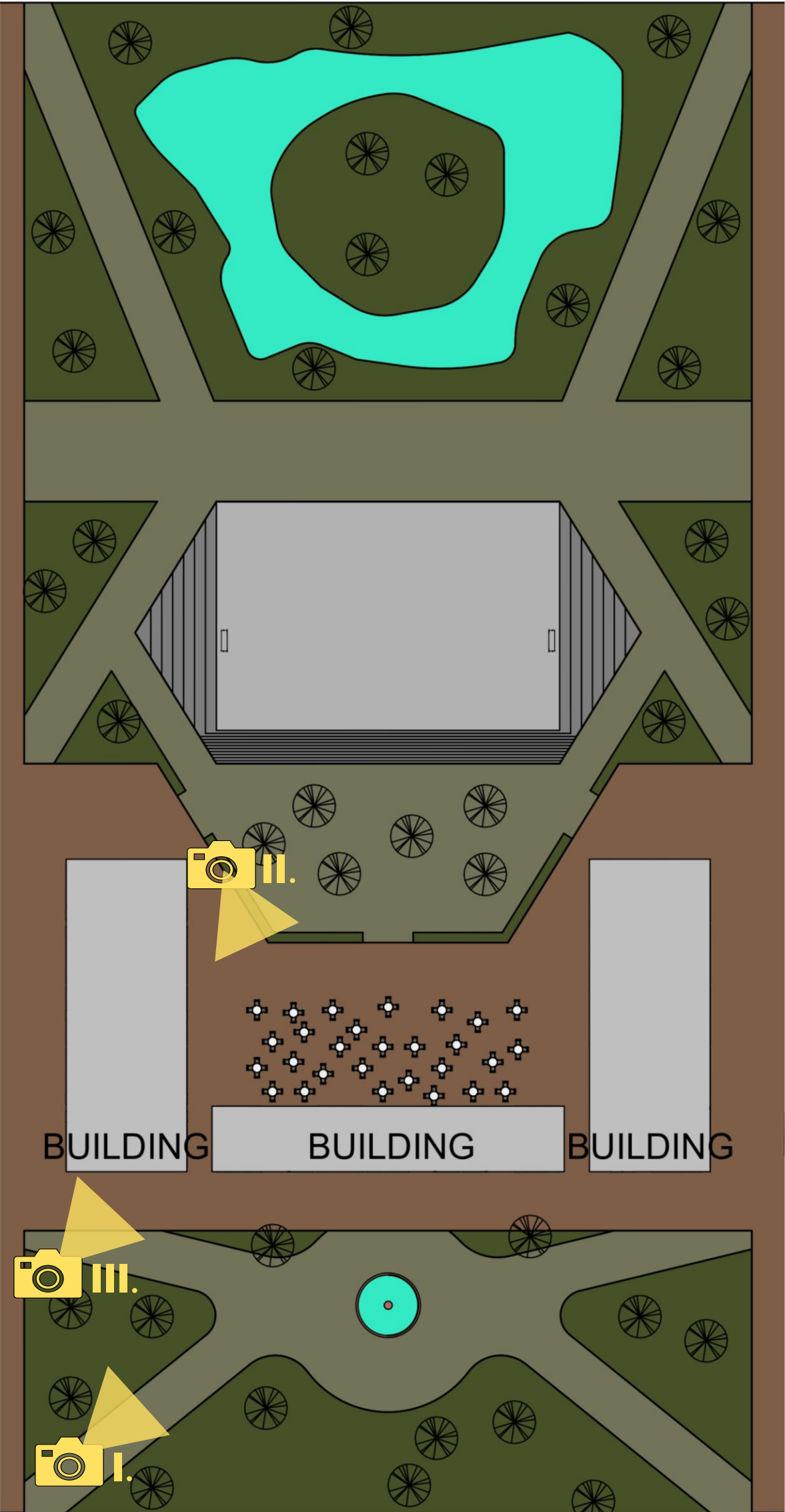
### SECTION 1:300



### ARTIST IMPRESSIONS

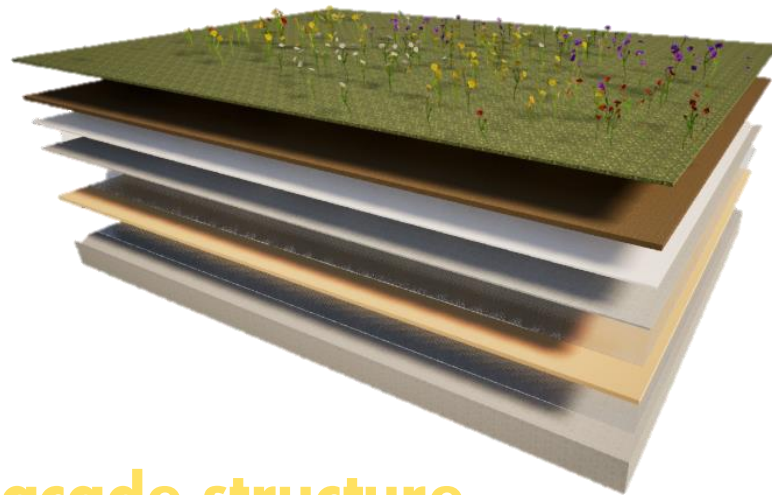


### SITE PLAN 1:500



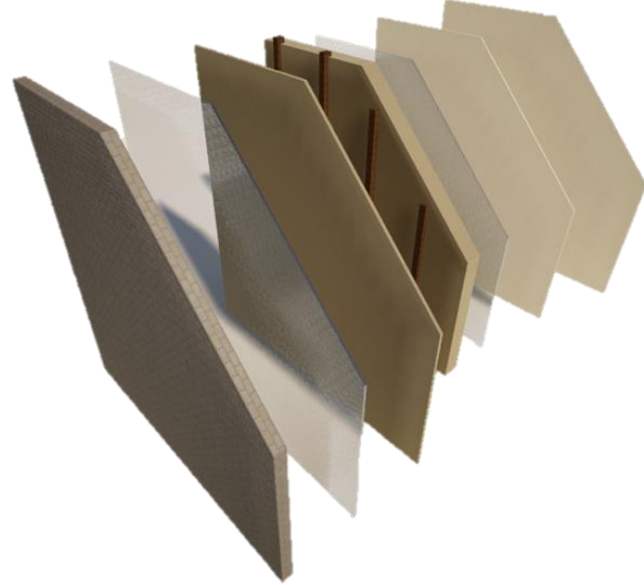
### EXPLODED VIEWS

#### Roof structure



The roof consists of a **solid reinforced concrete slab** with a vapor barrier and **50 mm PIR insulation** (R-value  $\geq 2.5 \text{ m}^2\text{K/W}$ , U-value  $\leq 0.4 \text{ W/m}^2\text{K}$ ). On top of the insulation comes a root-resistant membrane, drainage layer, substrate, and vegetation. The **green roof** insulates, enhances biodiversity, and improves air quality around the building 32).

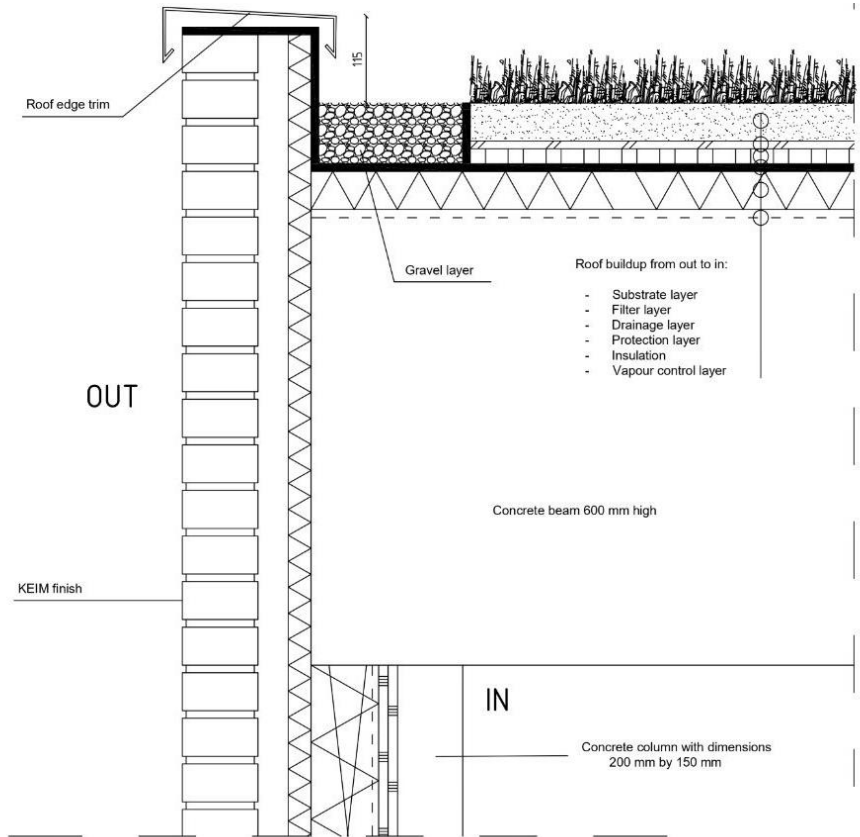
#### Facade structure



For the facade finishing, the **existing masonry** on the exterior will be used. This masonry will be **restored where necessary** and then coated with a **silicate paint layer**. This layer **extends the lifespan** of the facade and is also **sustainable**. On the interior side of the exterior walls, **near the terrace**, a **wooden finish** will be applied. This creates a more **pleasant atmosphere** and is equally **sustainable**. The wood is sourced from **surrounding forests** managed under a **sustainable forestry system**. **Remaining brickwork** will be **repurposed as paving** for the pathways in the front and rear park areas.

### DETAIL I 1:10

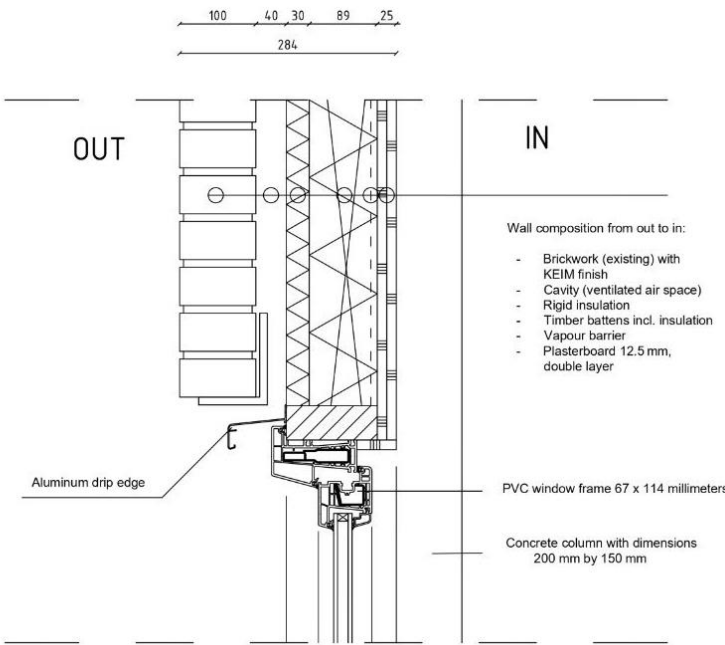
#### Roof



**Wood frame construction** is ideal for Dobrinja Market: lightweight, sustainable, low-disruption, and fast to build. Natural insulation adds comfort, and existing foundations stay intact. A smart, eco-friendly choice.

### DETAIL II 1:10

#### Façade



For the interior finish, a double layer of gypsum board was used, **each 12.5 mm thick (total 25 mm)**, with a **fire resistance rating of EI60 per layer**. This build-up ensures a minimum **fire resistance of 120 minutes** on the interior side of the building and between different rooms. In addition, **this layer protects the timber frame structure**.

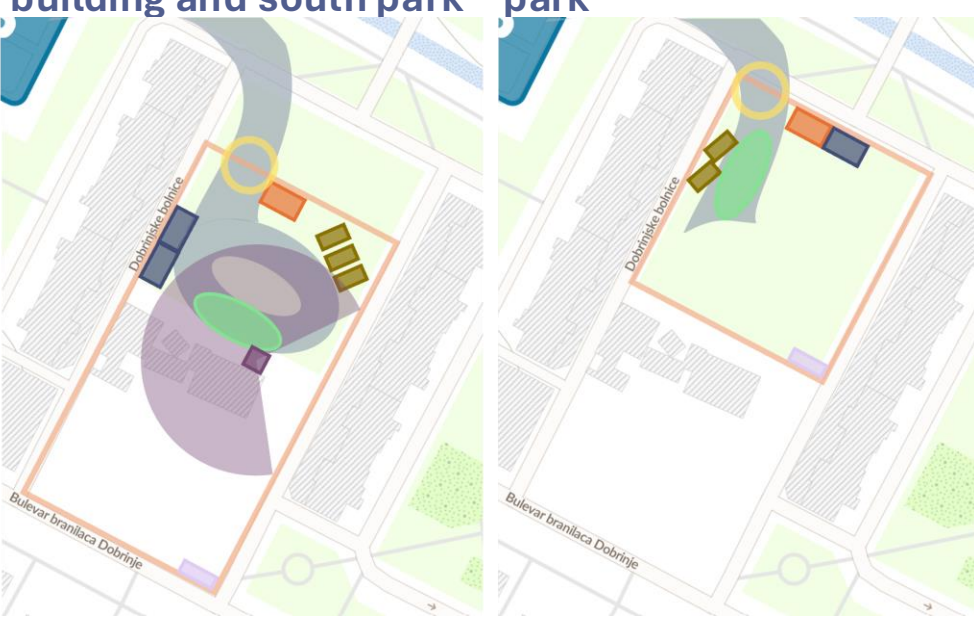
### EFFICIENT CONSTRUCTION LOGISTICS

#### Phase 1 Demolition work



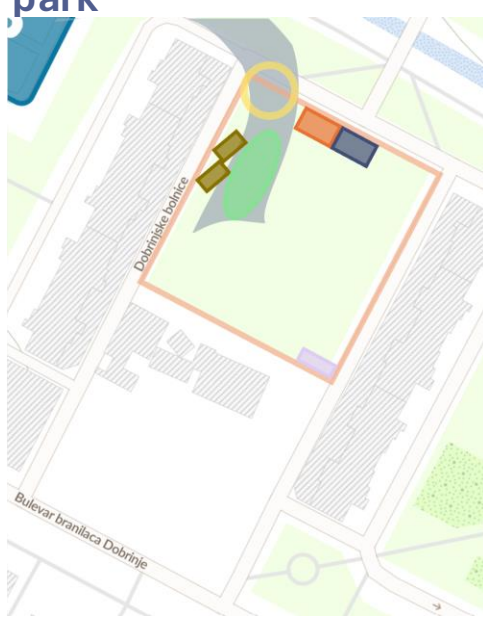
- Construction fence
- Access gate
- Construction road
- Construction sign

#### Phase 2 Renovation of the building and south park



- Cabin
- Storage area
- Crane + lifting zone
- Loading zone

#### Phase 3 Renovation of the north park



- Waste area
- Parking area

### MAINTENANCE

	COMPONENT	MATERIAL	MAINTENANCE MEASURE	TYPE OF MAINTENANCE	CYCLE (YEARS)
1	Beams, columns and floor	Concrete	Inspection for cracks and deformation	Preventive	10
2	External insulation	PIR insulation	Inspection for thermal bridge interruption	Preventive	10
3	External finish	Brickwork	Inspection of pointing, cleaning	Planned	20
4	Vegetation	Moss	Pruning, feeding, replacement	Planned	2
5	Window frames + doors	PVC	Cleaning, inspection of function of hinges	Preventive	5
6	Ventilation	System C	Cleaning of vents and ducts	Preventive	2

The existing ventilation **system C** is maintained, combining natural supply and mechanical exhaust, to **avoid unnecessary demolition** and support energy efficiency. It's included in the maintenance plan for regular checks, ensuring lasting comfort and healthy air quality.