



KOTELNA RESIDENCE

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Site analysis

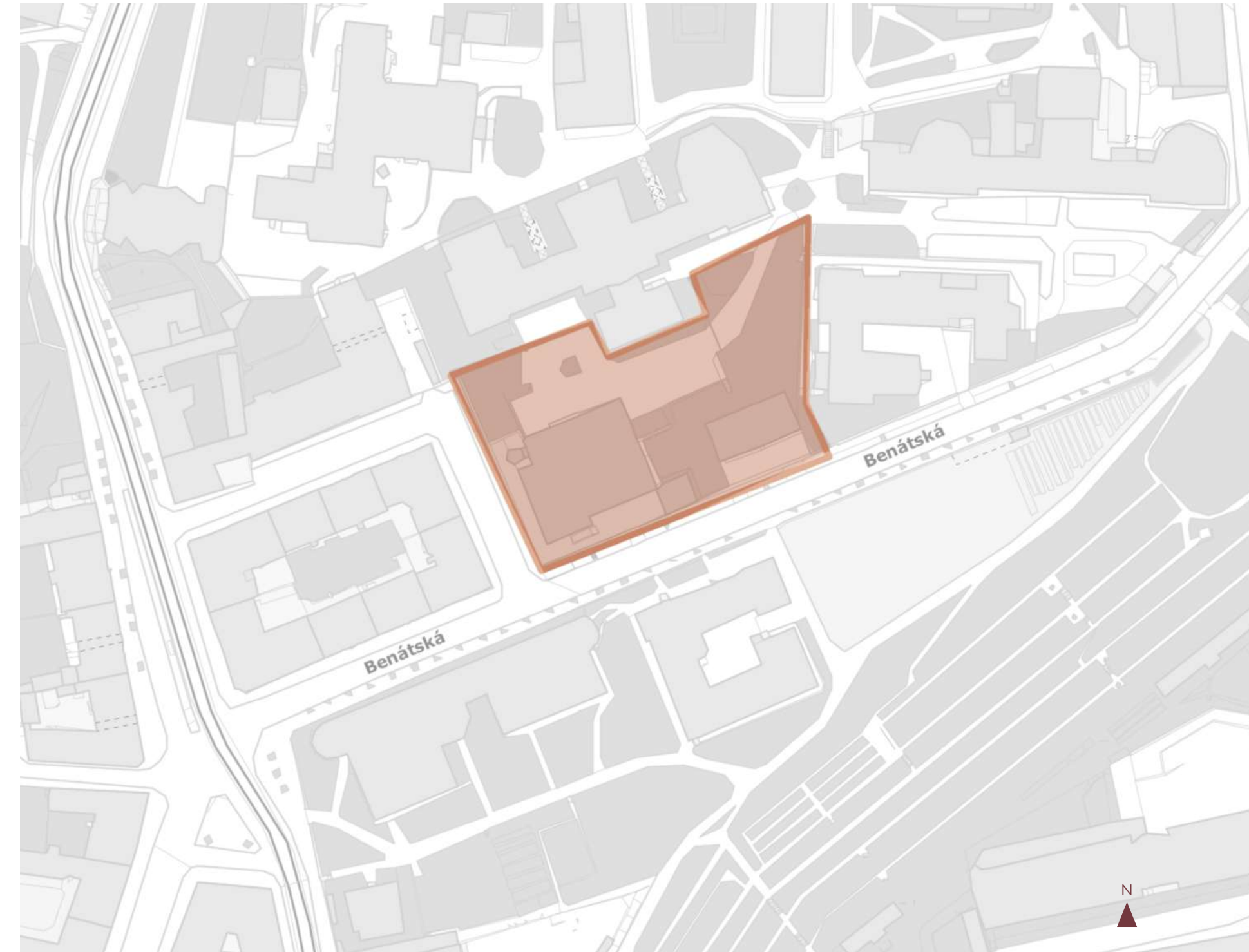


Studio brief: The task of the study was to explore the abandoned, empty, semi-ruined buildings of Prague, count their number according to various categories (Residential, Presentable, Industrial, Public, Commercial, Military, Traffic), and propose options for their restoration, imbuing them with new functions aimed at improving the architectural and urban planning solution of the city and satisfying the needs of its residents.

As a result of the research, I have selected two buildings currently serving as boiler houses. Presently, these buildings appear neglected and detract from the overall ensemble of the street. The research also revealed that there is a shortage of quality and affordable student housing in Prague, despite it being a popular city among prospective students.

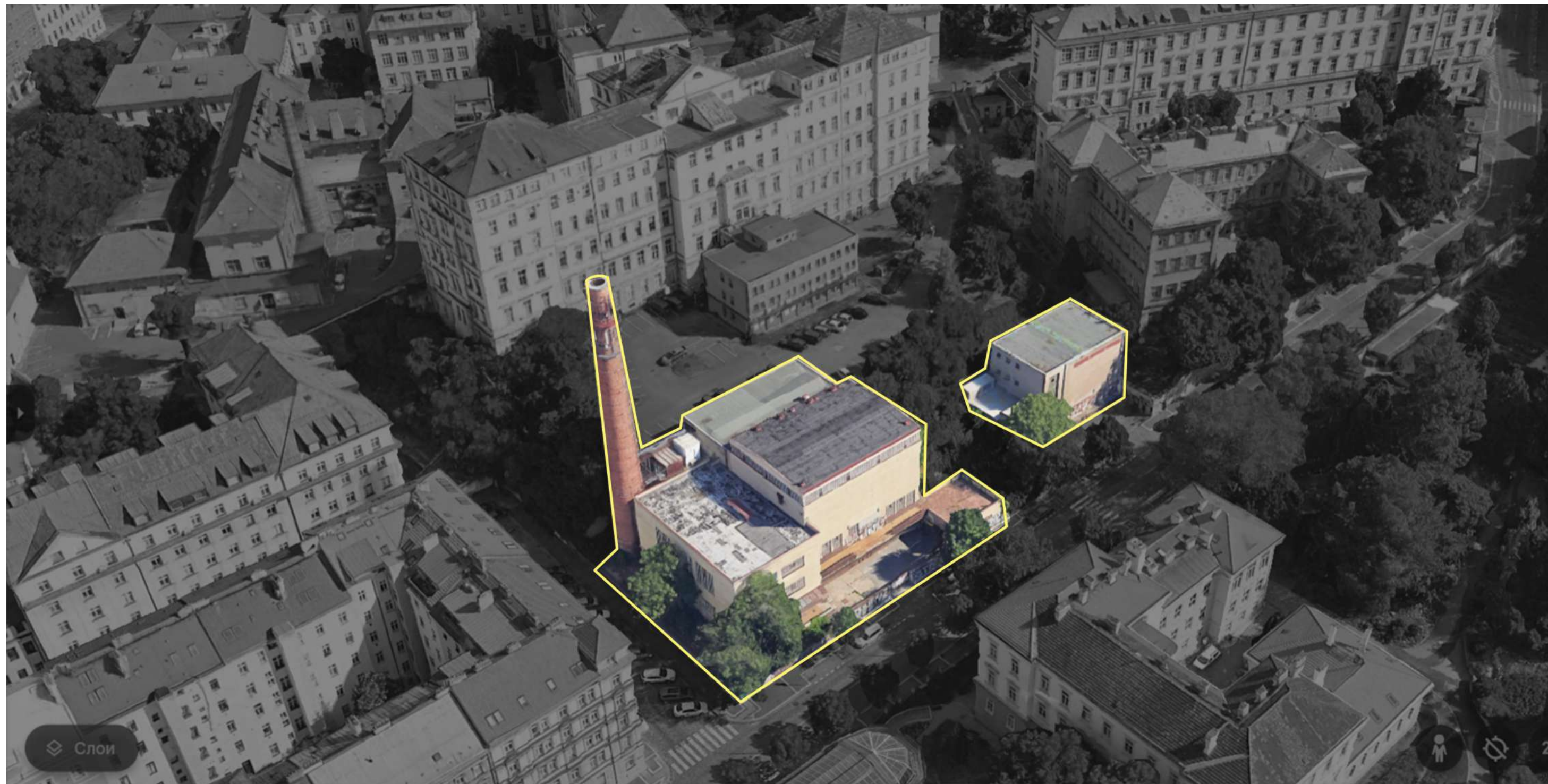
My proposal is to repurpose the buildings into a multifunctional student residence. The boiler function will not be retained, but it is planned for the building to be highly passive, energy-efficient, and self-sufficient.

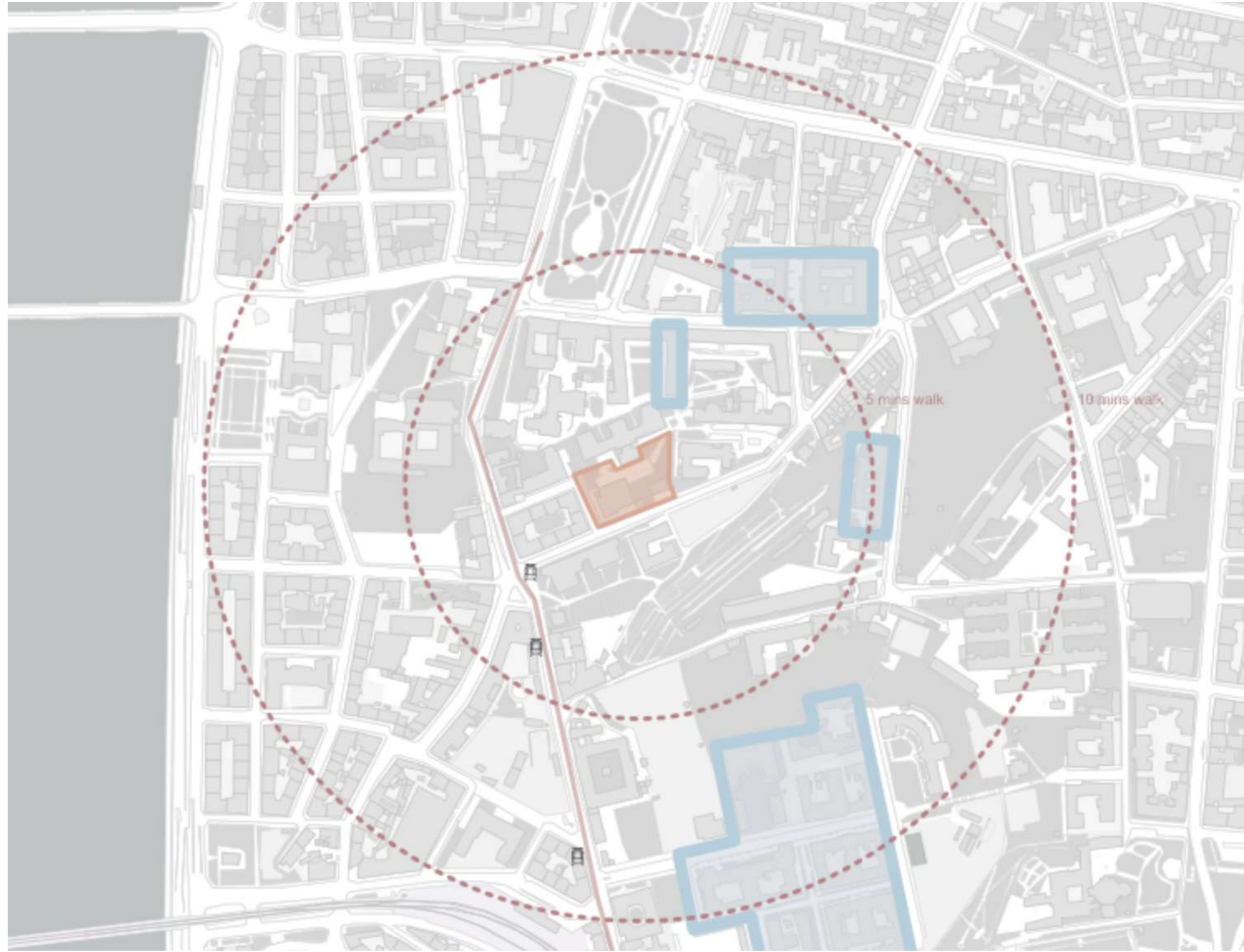
Scale 1 : 2000



Scale 1 : 15 000

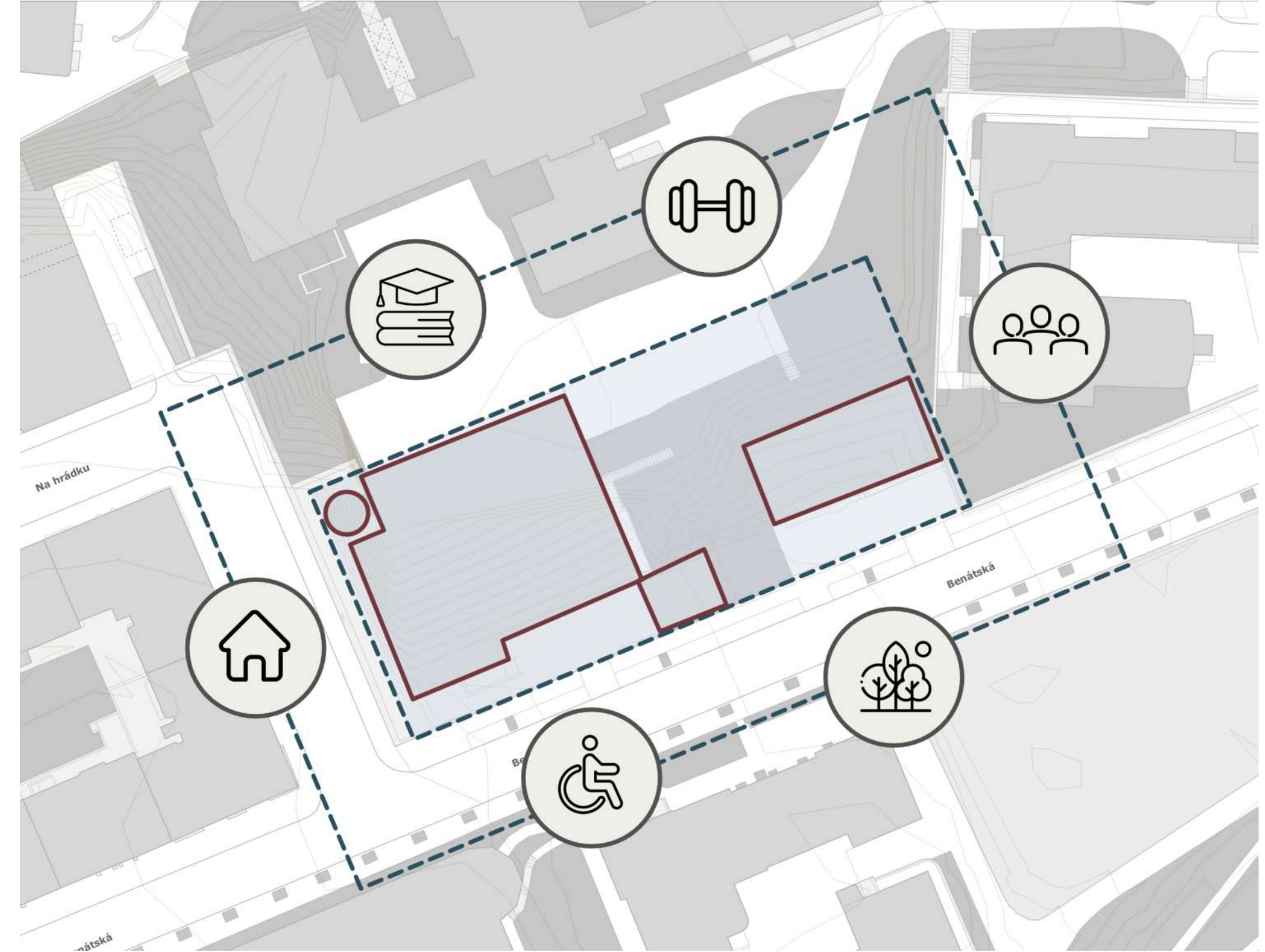




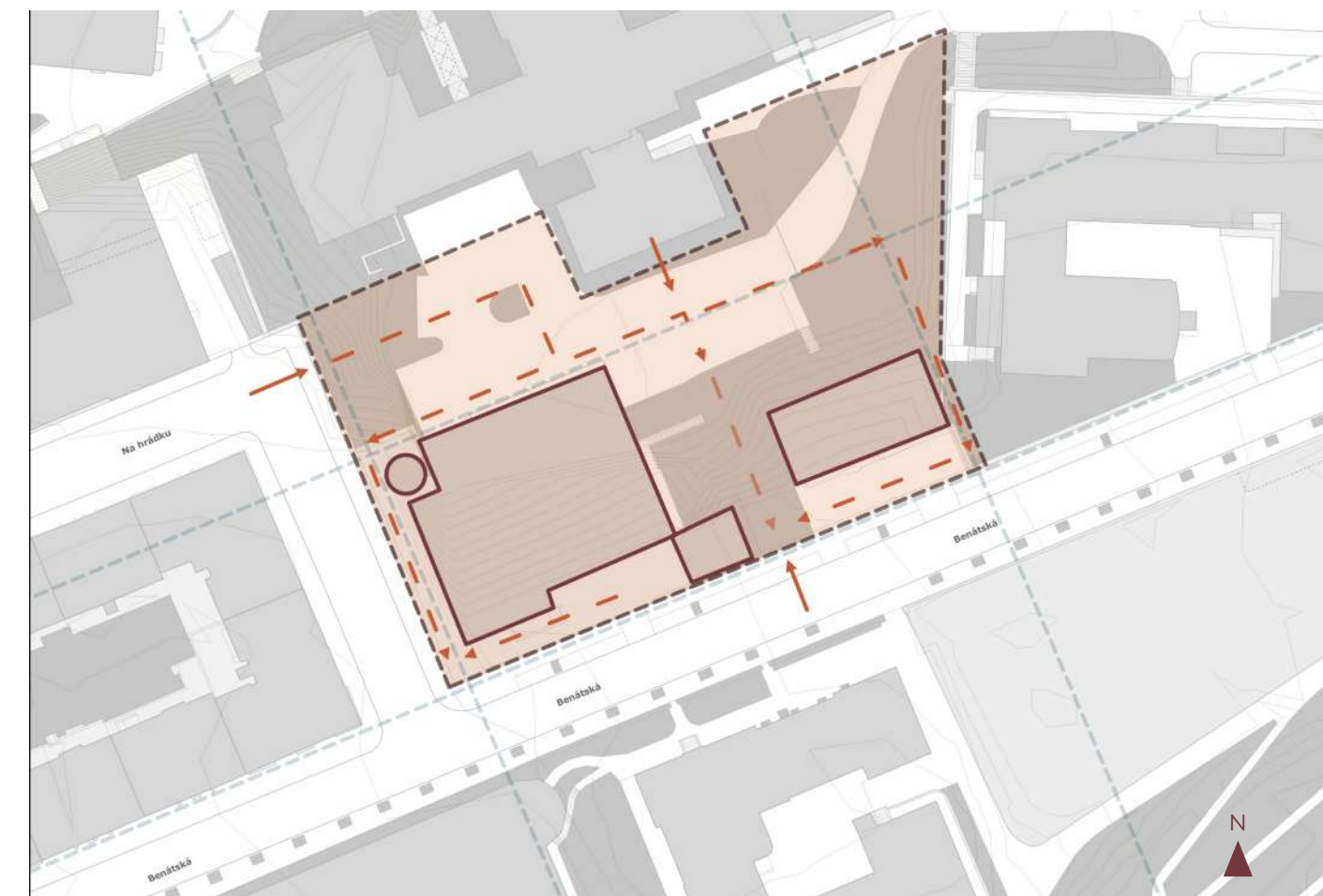
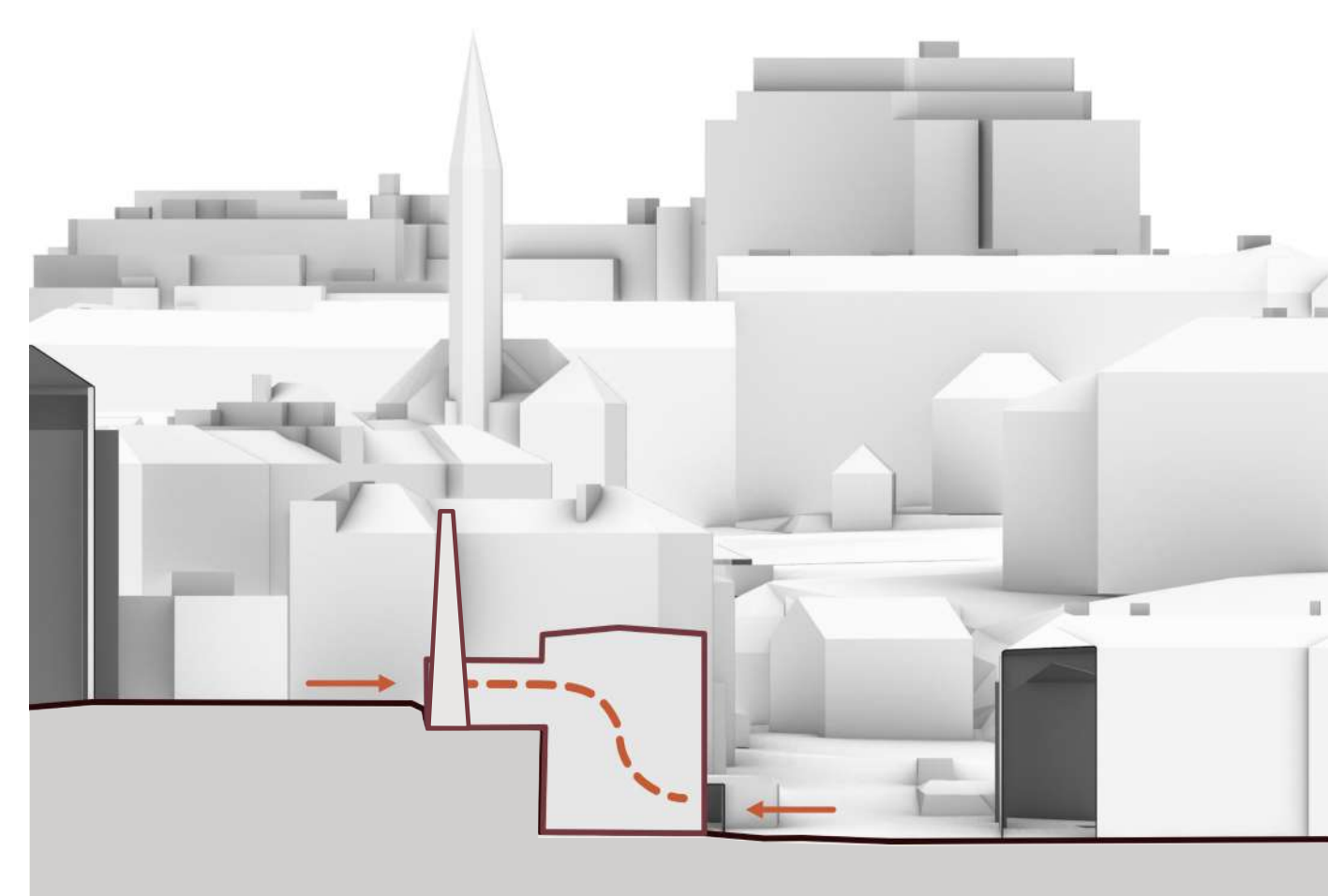
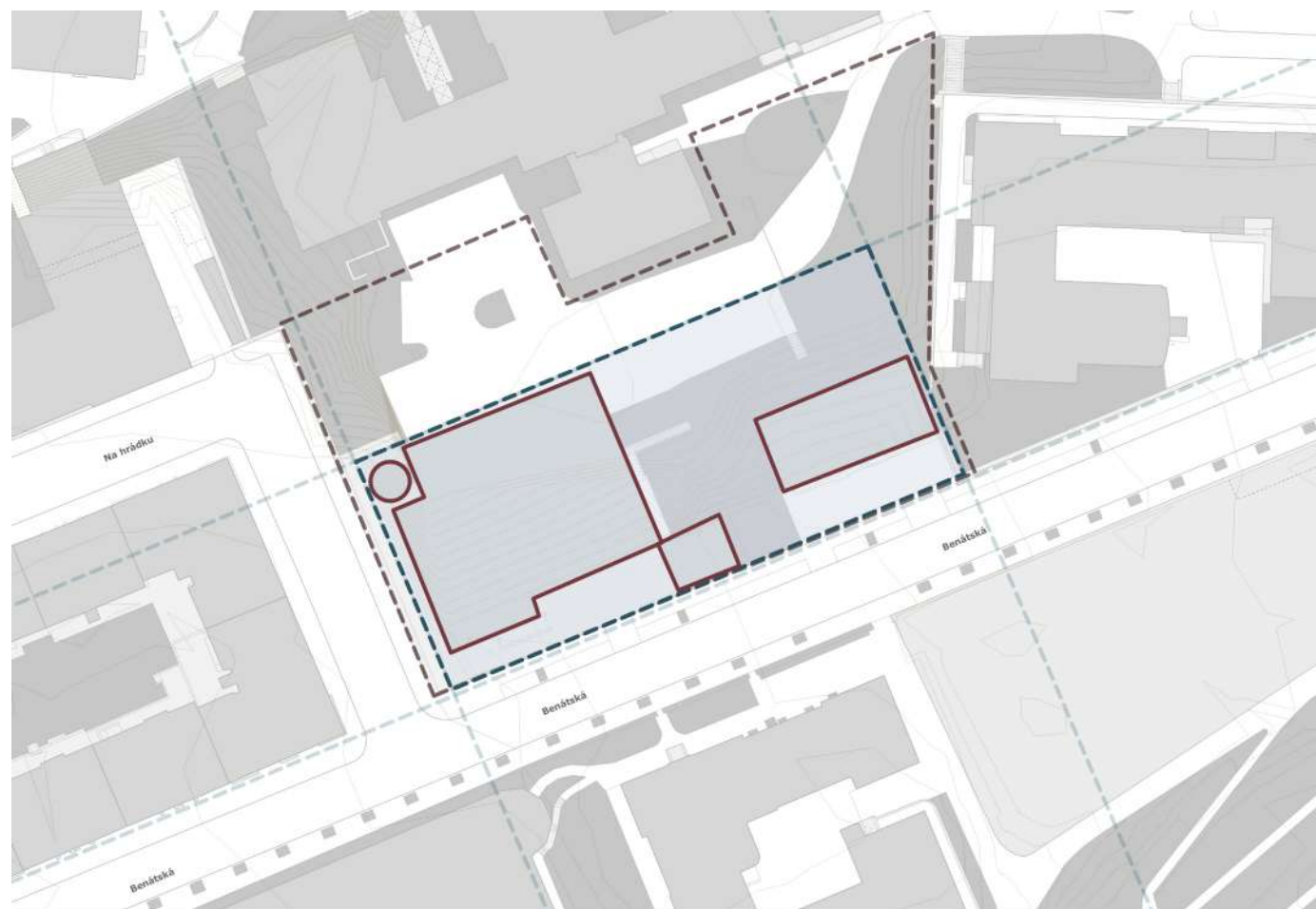


Within a radius of less than one kilometer, there are numerous faculties of various universities. 1st Faculty of Medicine, Institute of Biochemistry and Experimental Oncology, Department of Anatomy, Charles University, Academy of Social Pedagogy and Theology, Faculty of Transportation Sciences, Czech Technical University in Prague, Purkyně Institute, 1st Faculty of Medicine Faculty of Science, Charles University Institute of Physiology.

The transportation infrastructure is excellent, with tram stops located nearby.

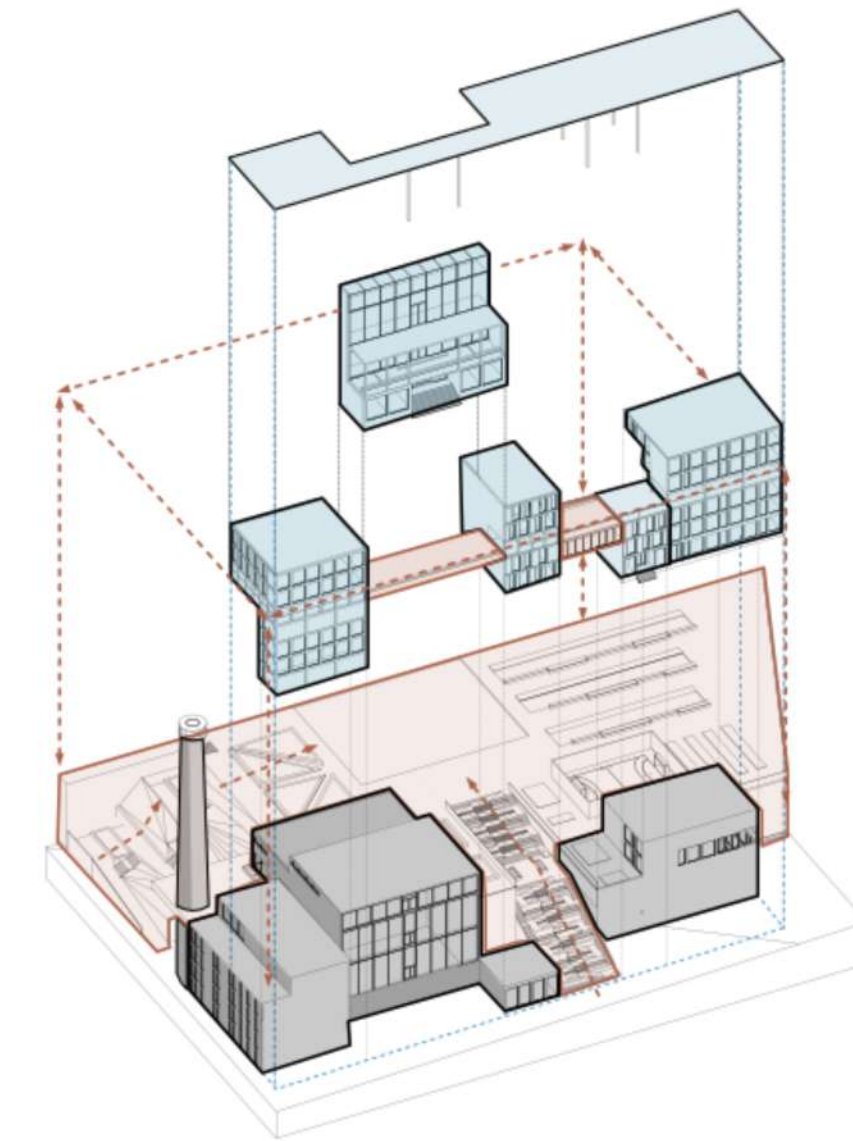
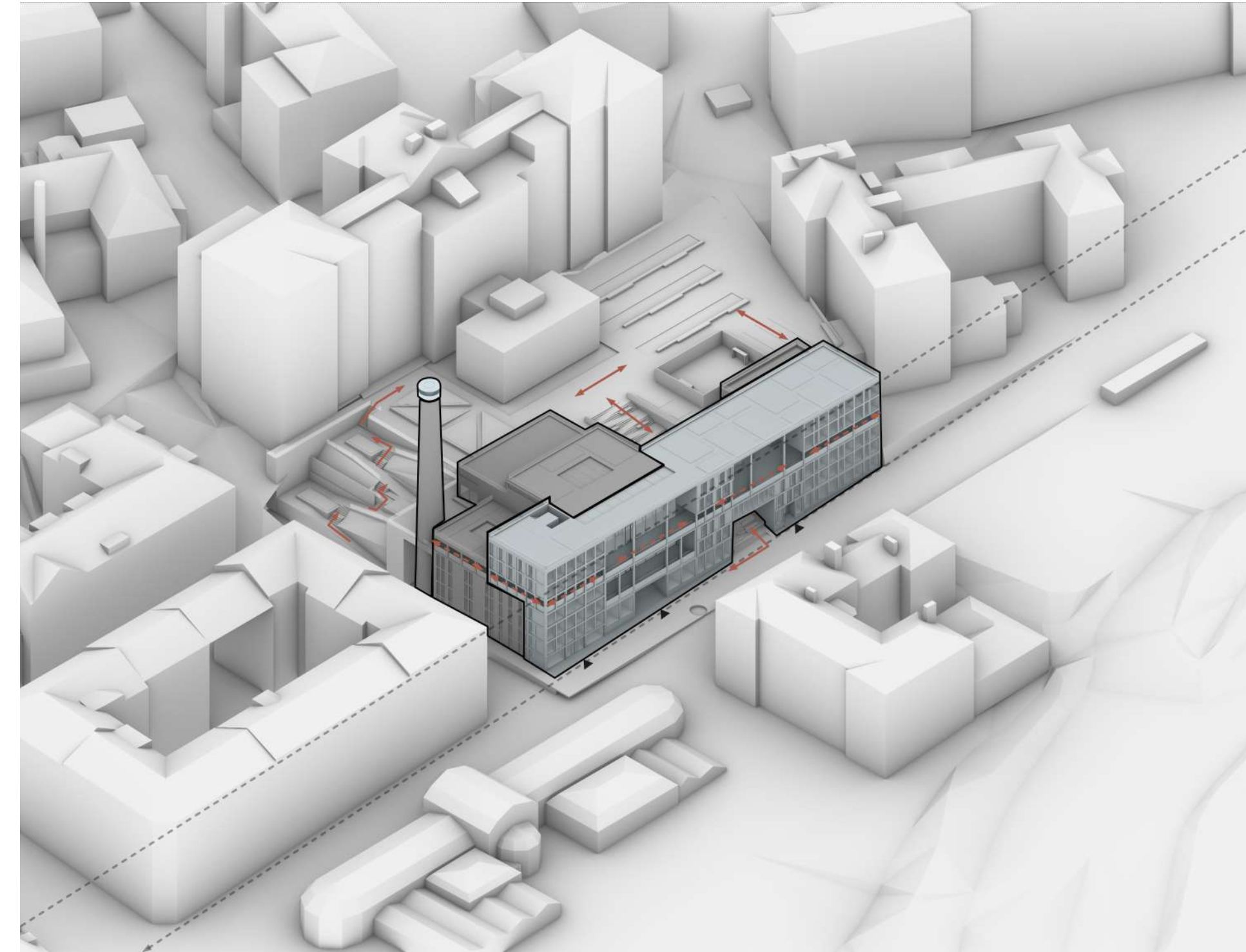


- Users:** Students
- Problems:**
- find a safe accommodation.
 - lack of study place
 - limited public spaces (launges, cafeterias)
 - sport facilities
 - inadequate accessibility for the students with disabilities
 - access to the nature



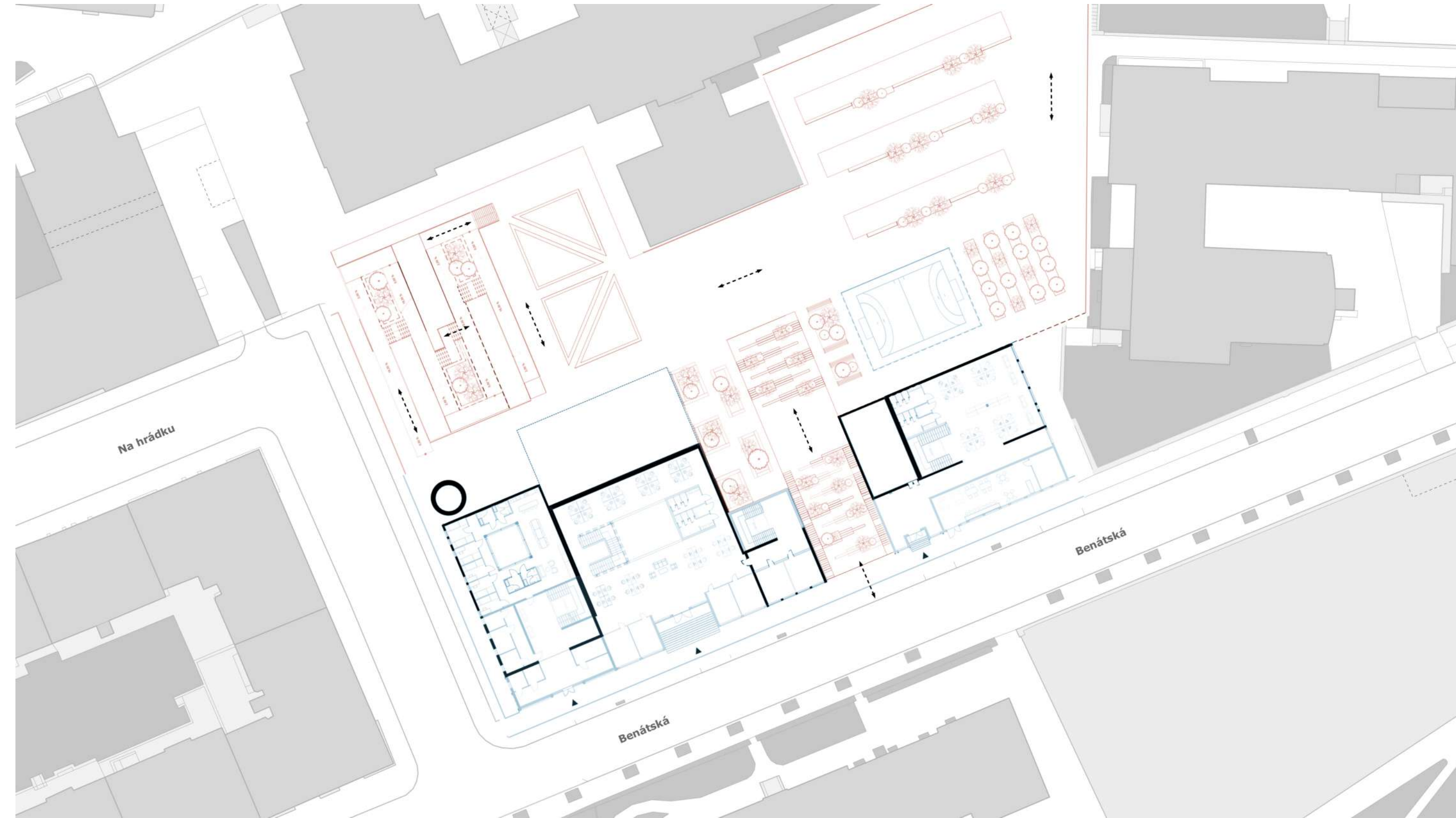
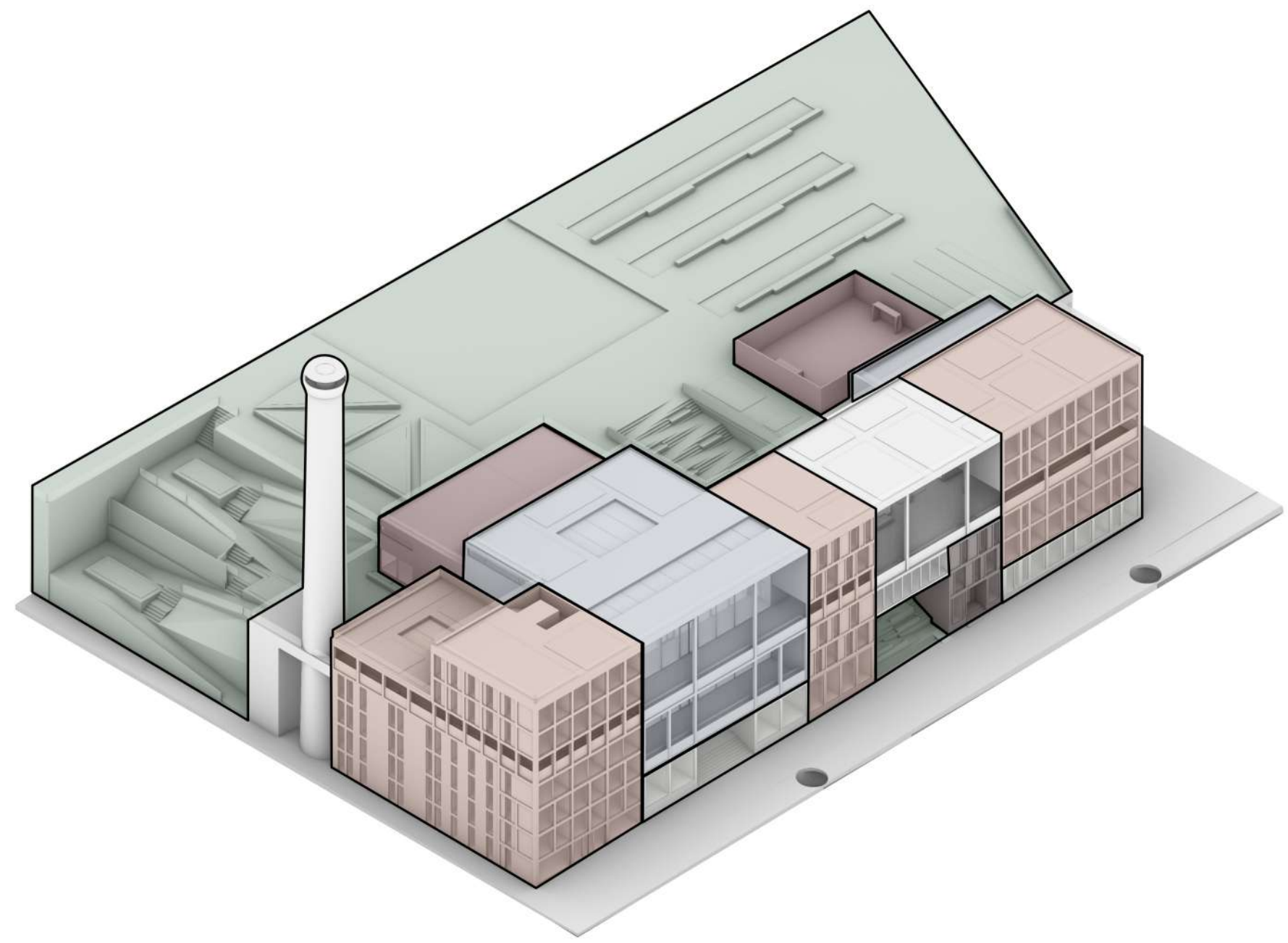
Design solution

Concept

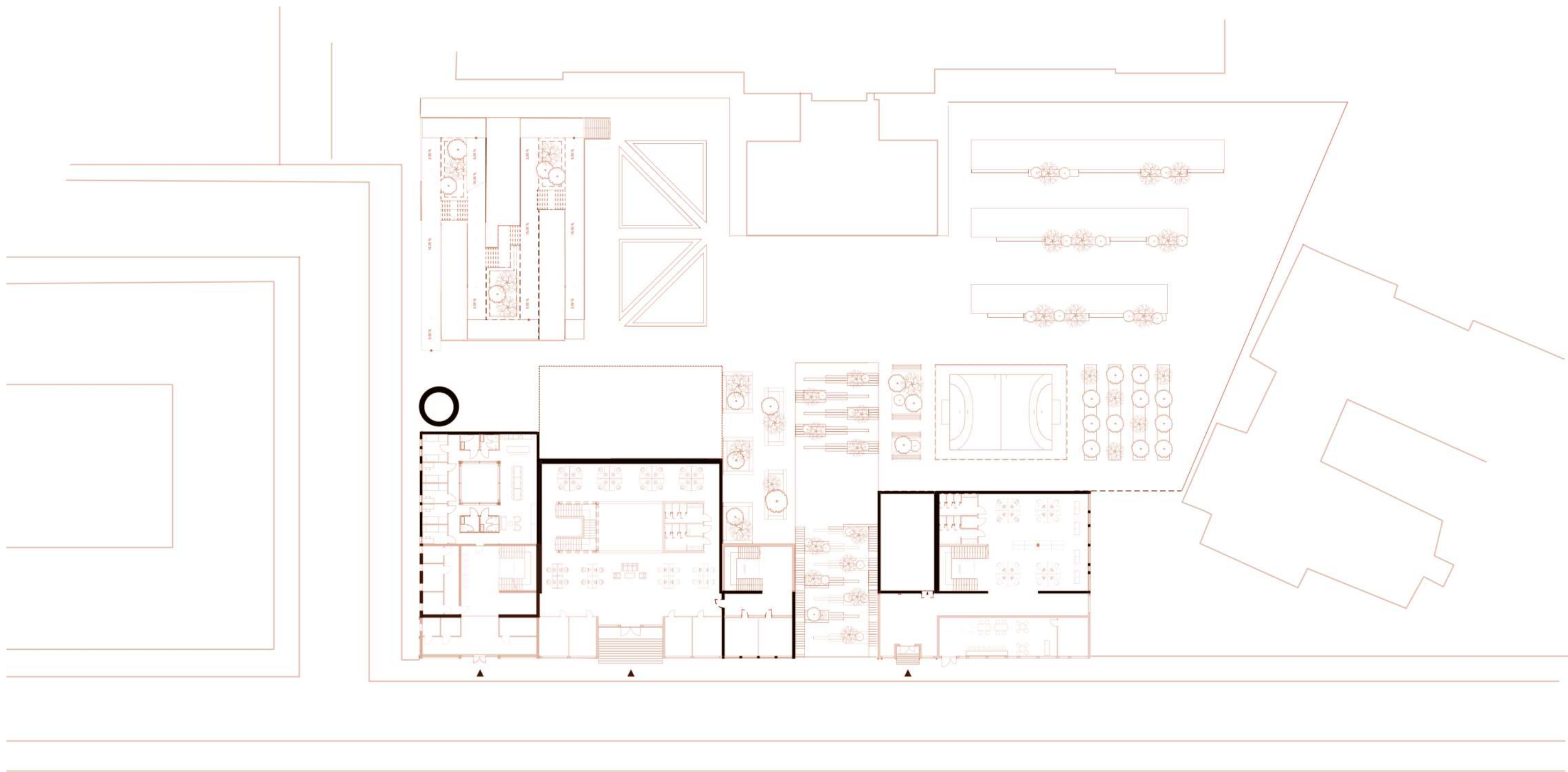


- Keep the existing walls and redesign structure for new functions
- Add new structures, taking into account the height restrictions and the street line
- Accessible connection of the street to the upper part of the plot

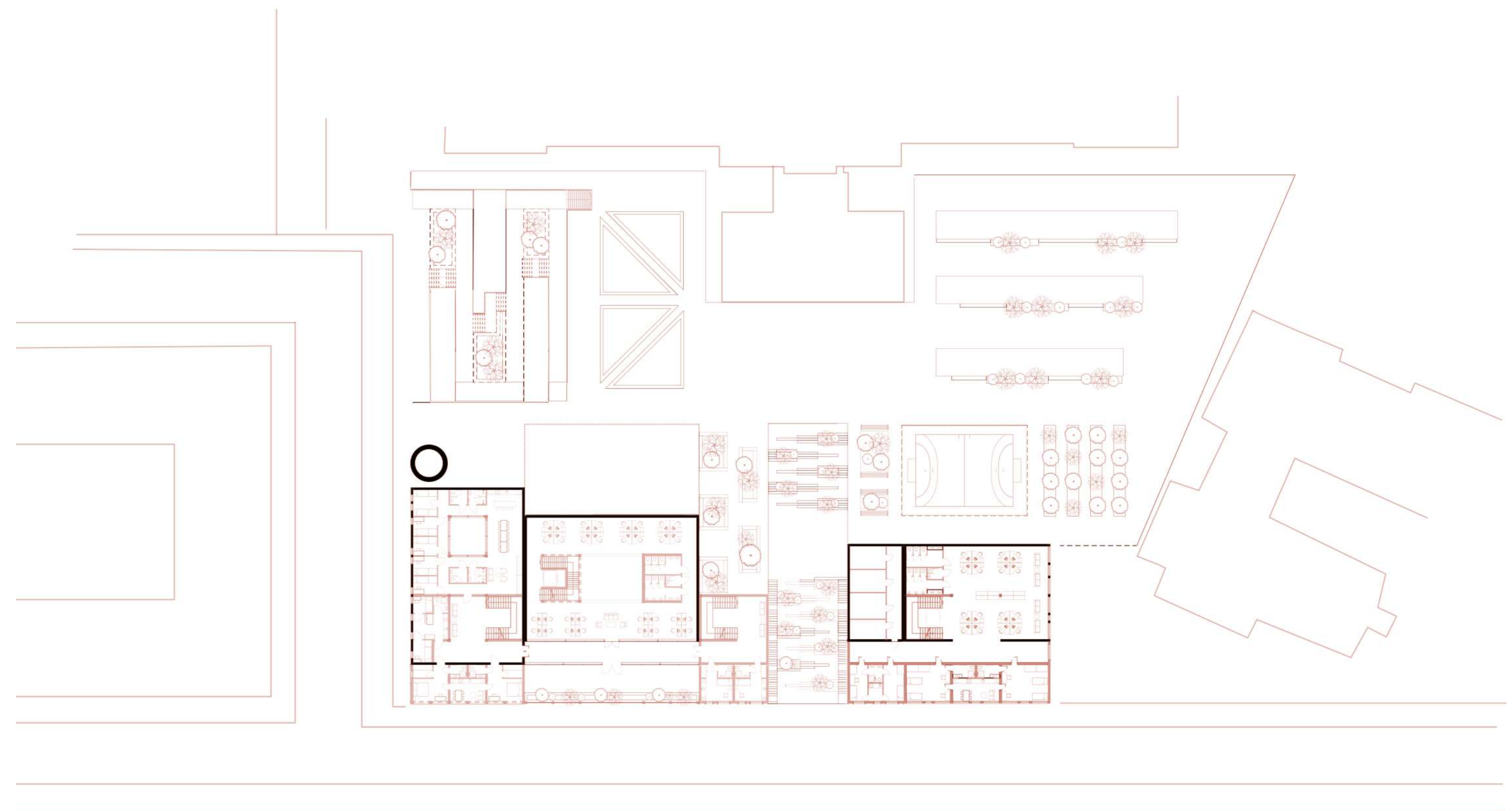
- Residential Part
- Study Area
- Public Space | Commercial Area
- Technical Area
- Sport Area
- Connection + Green Space

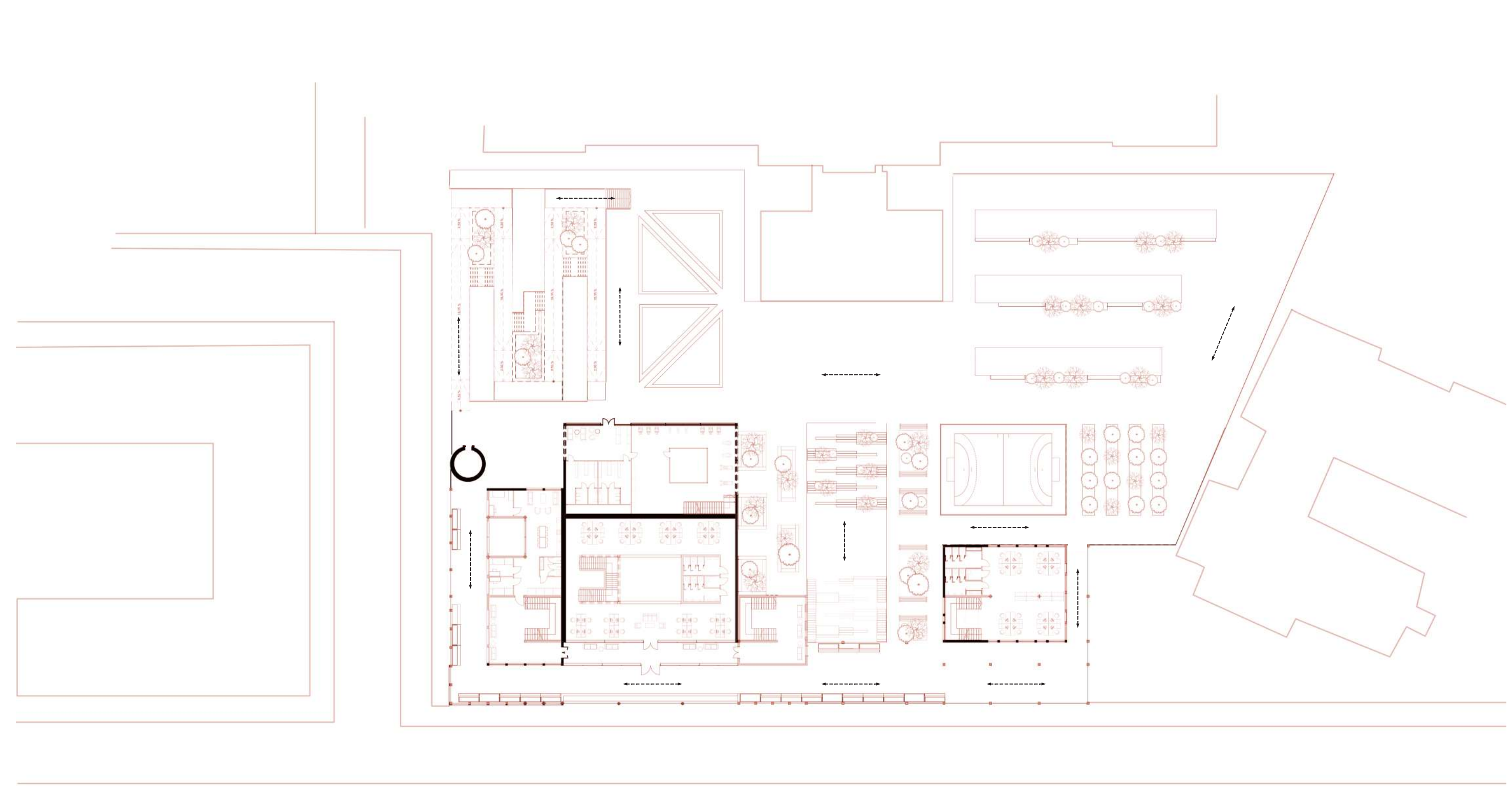
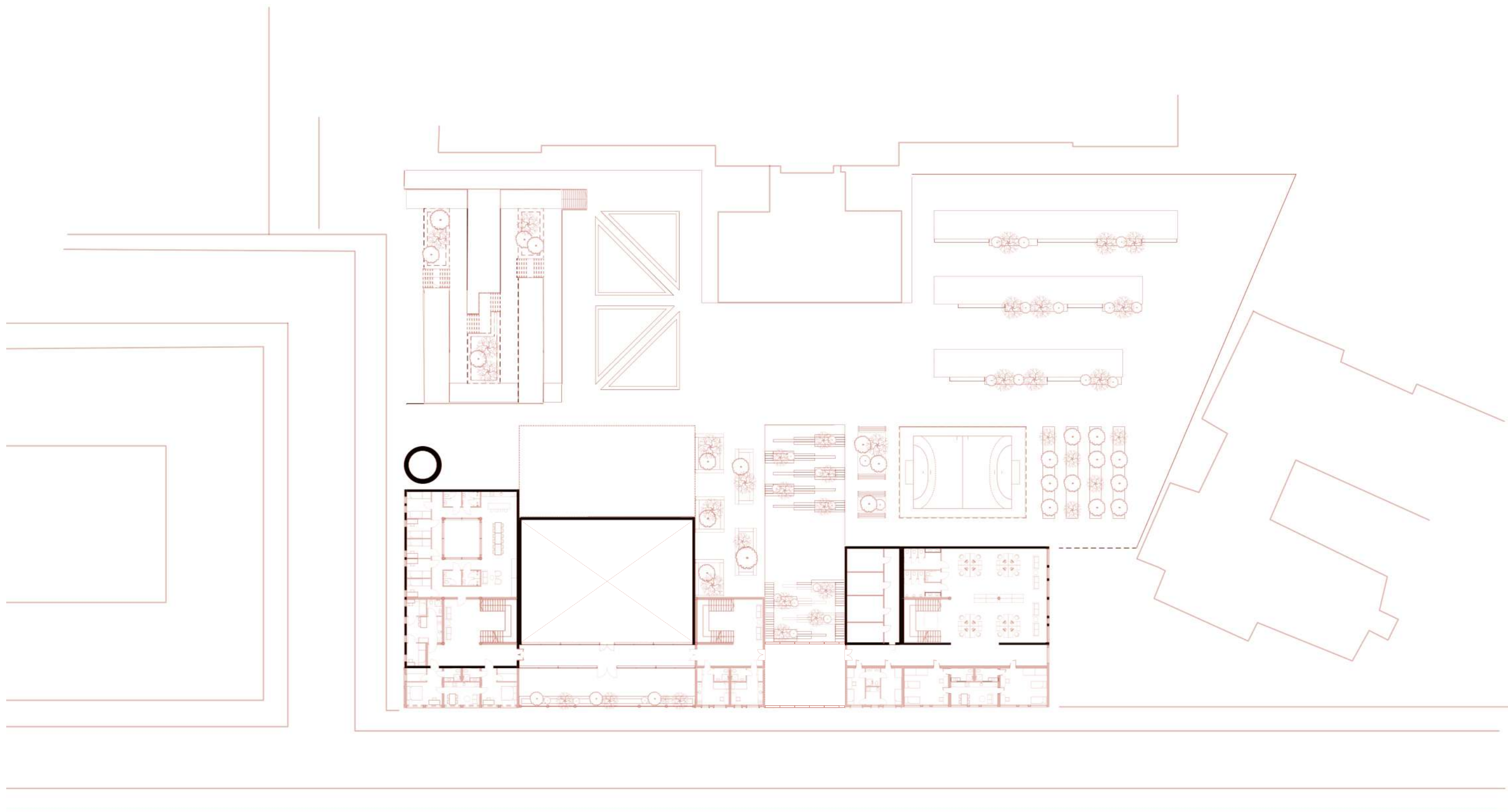


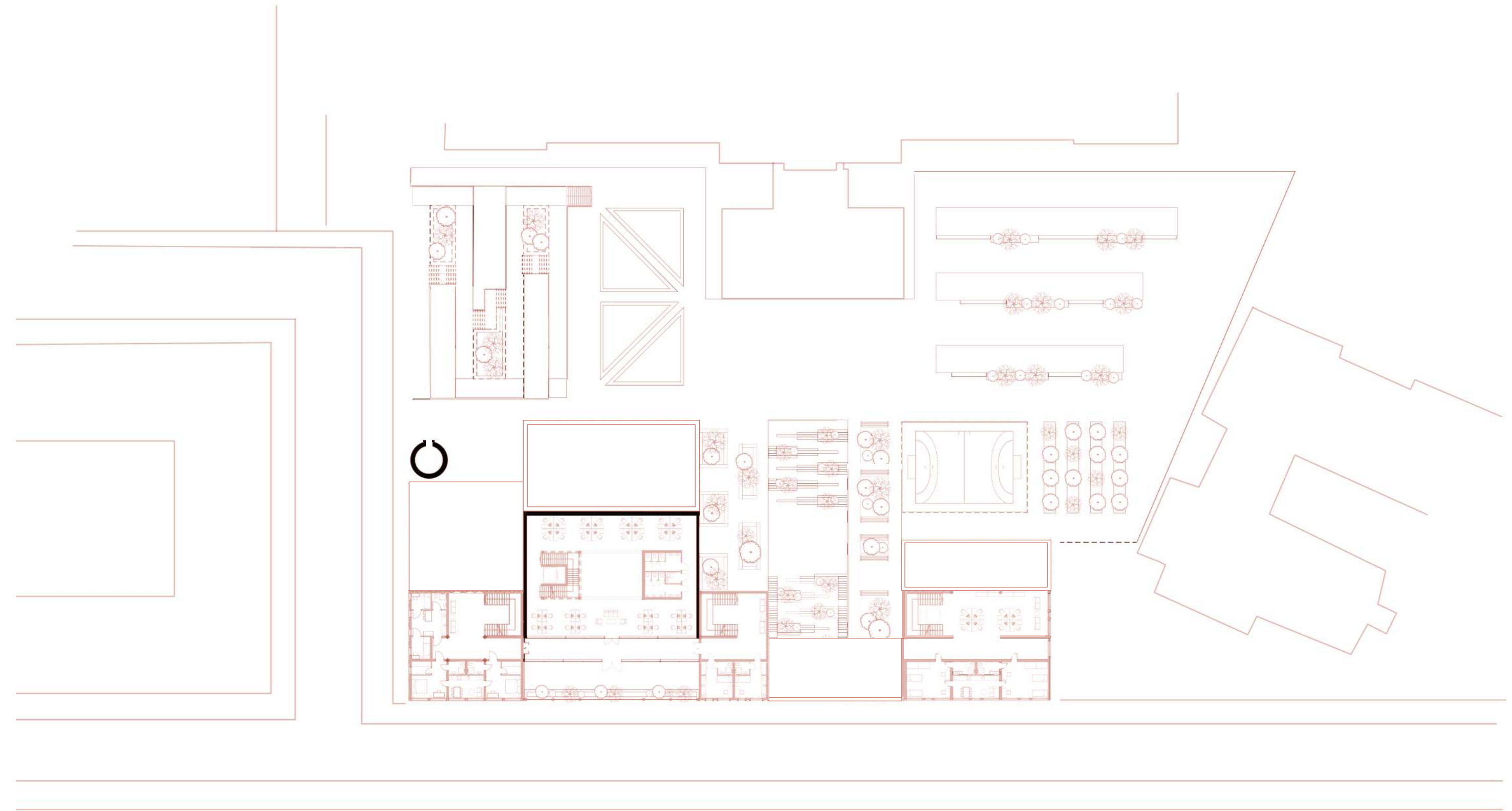
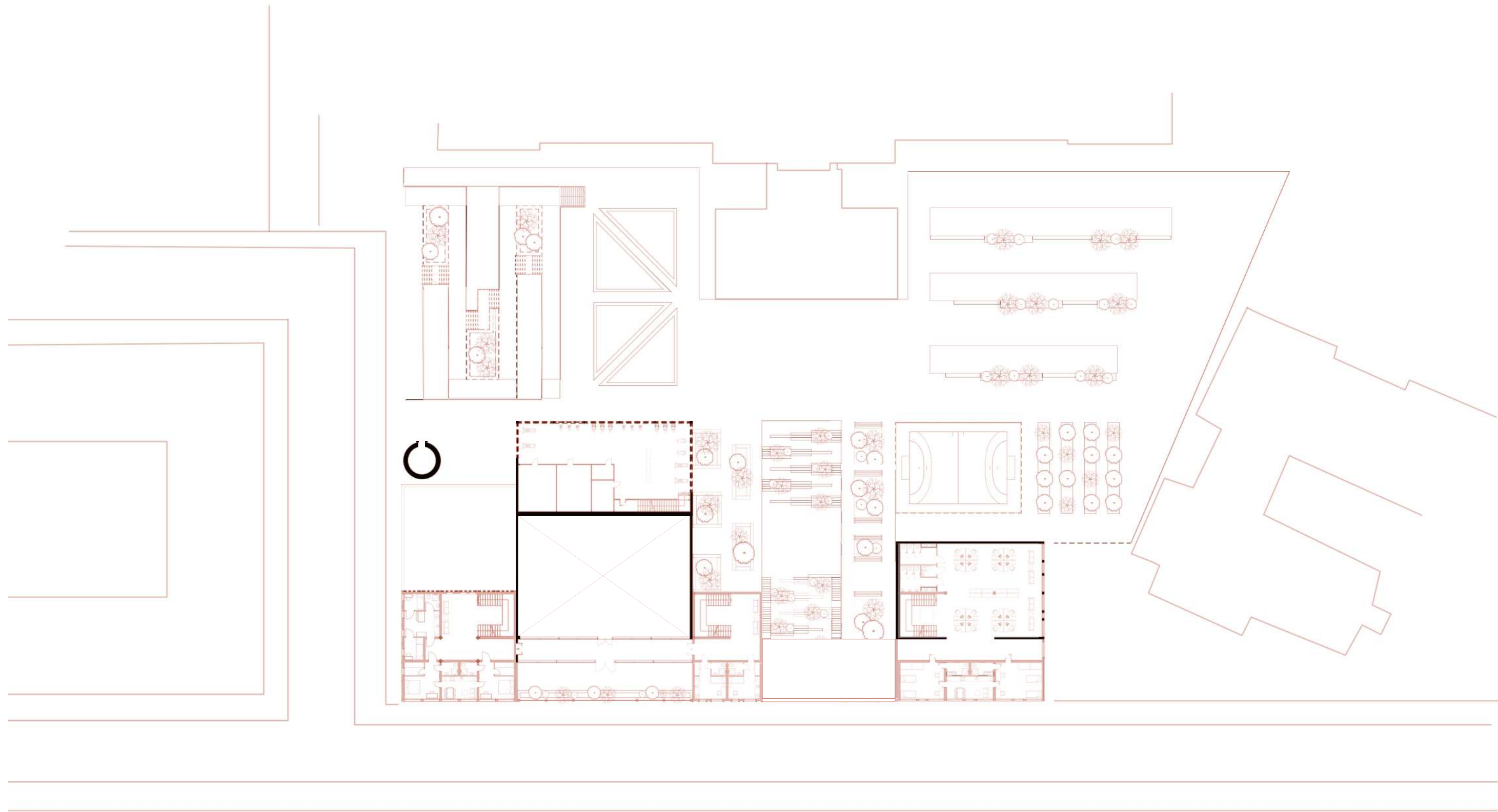
Ground floor plan Scale 1:500

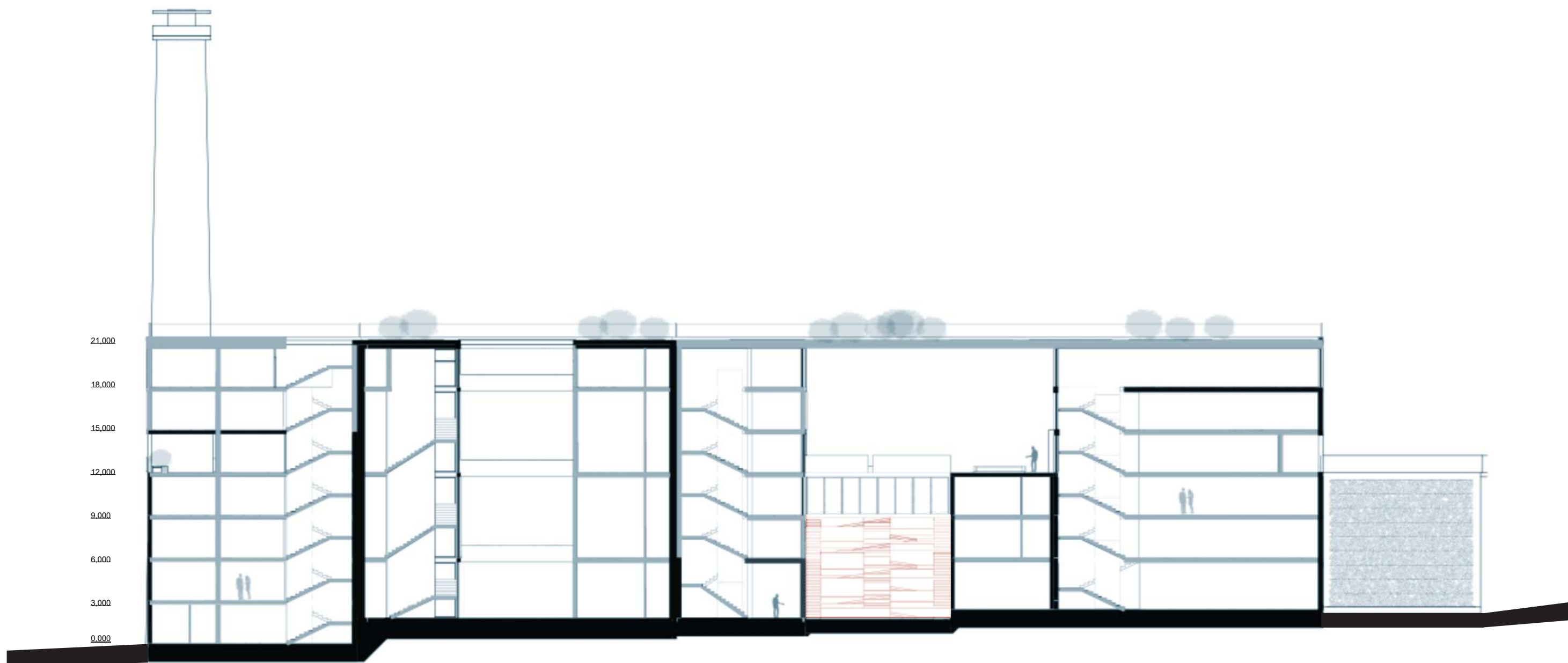


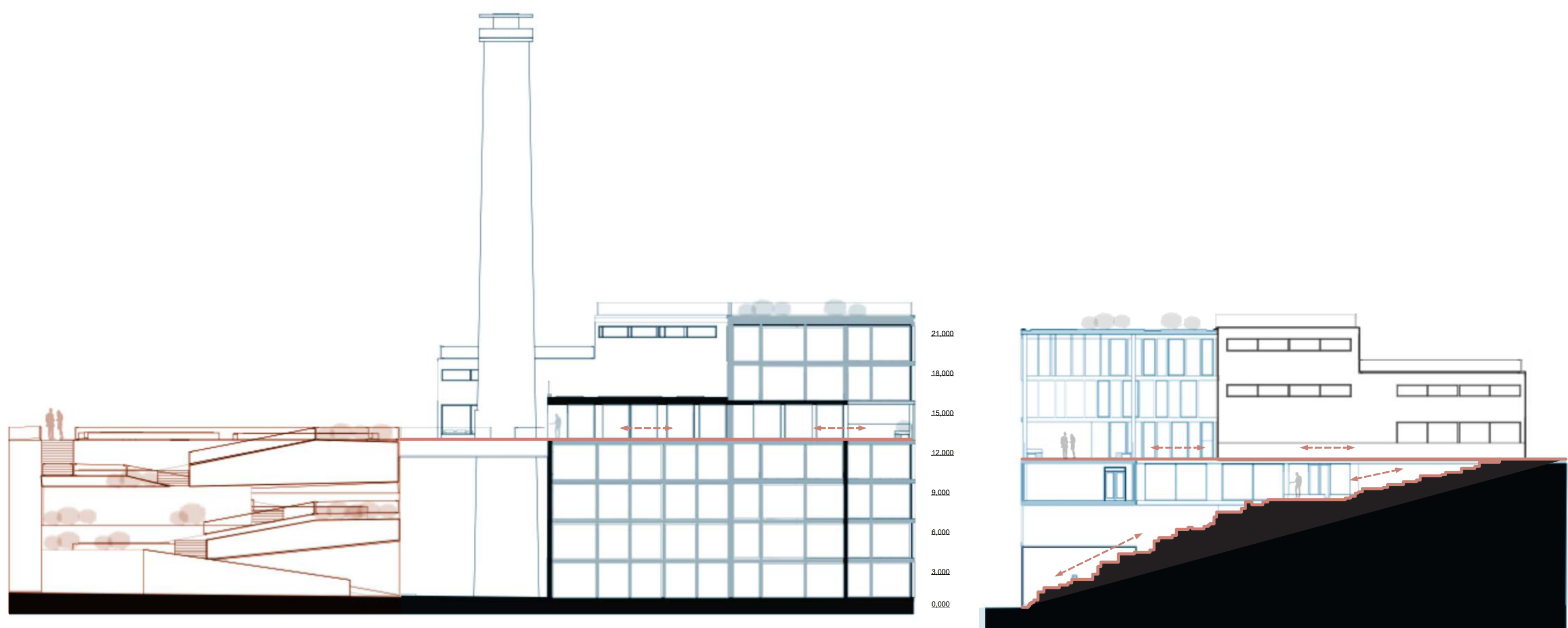
2nd floor plan Scale 1:500

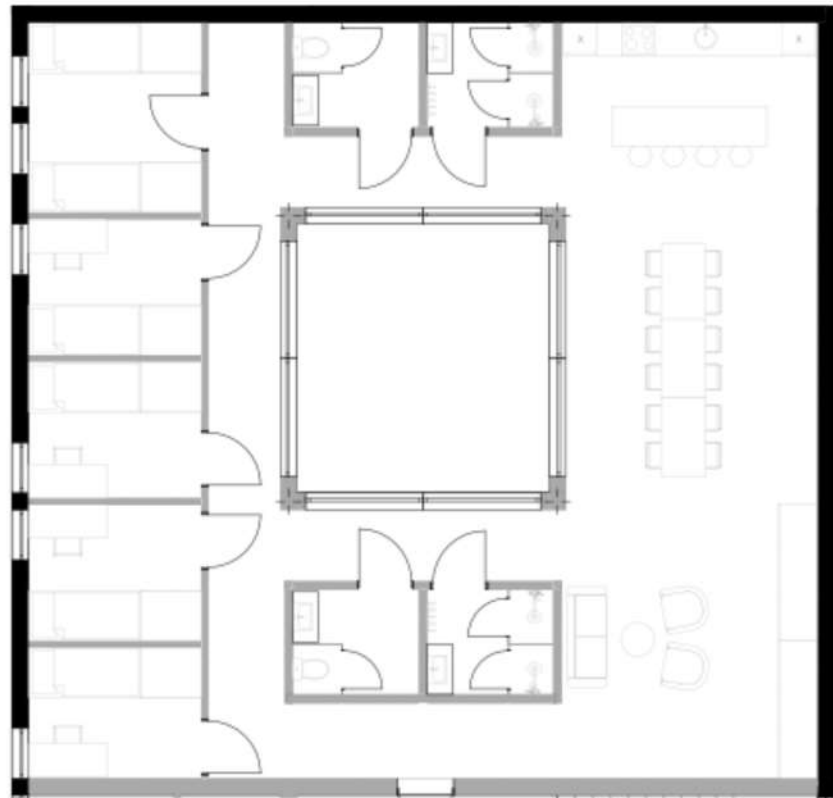




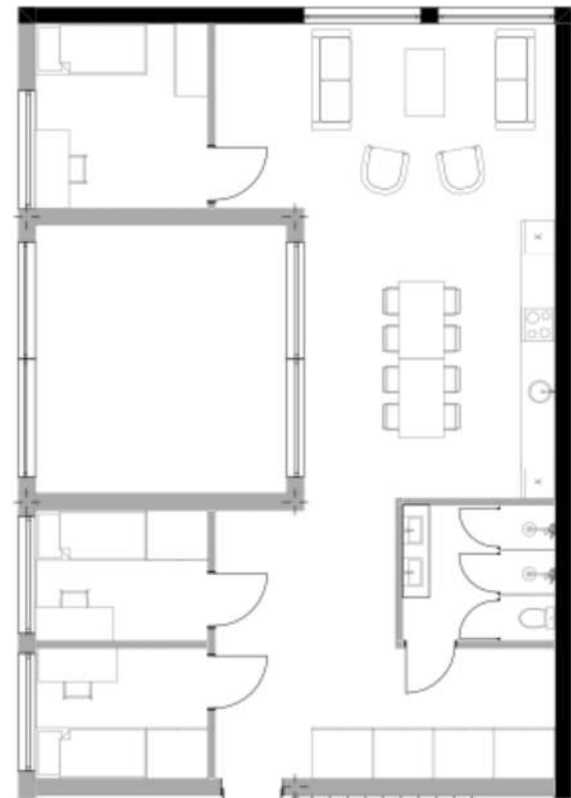




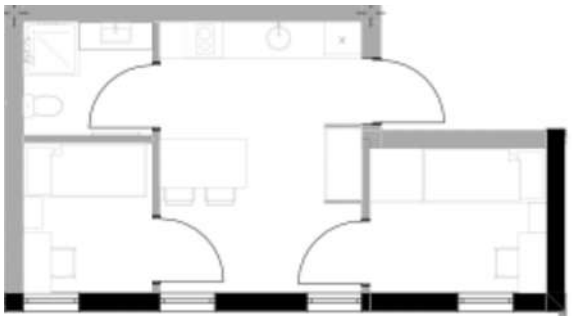




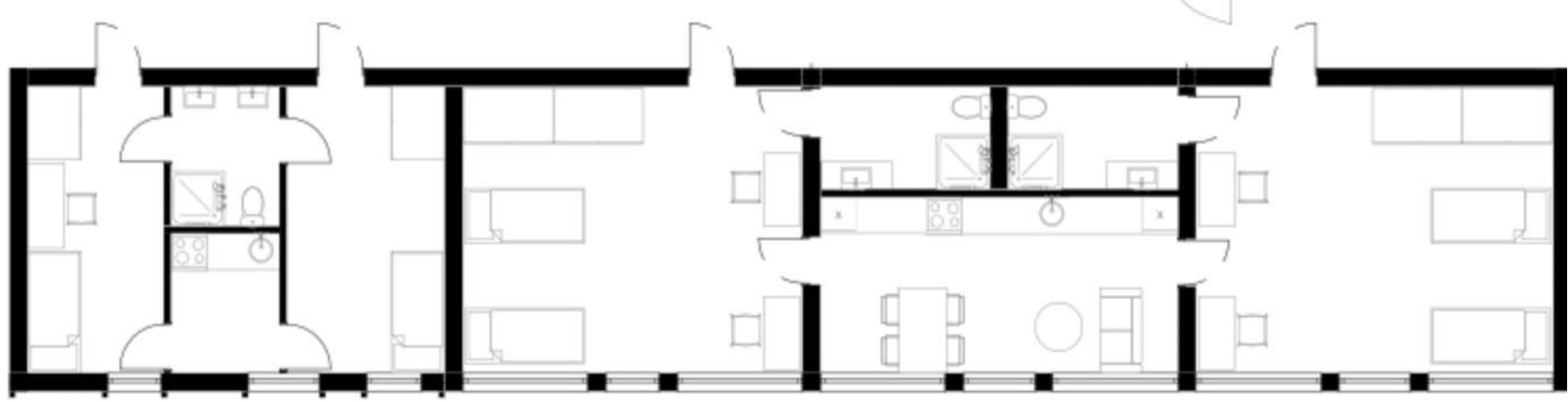
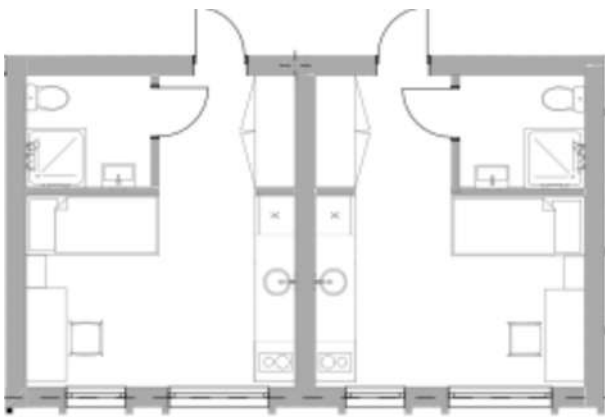
Room for 6 people.



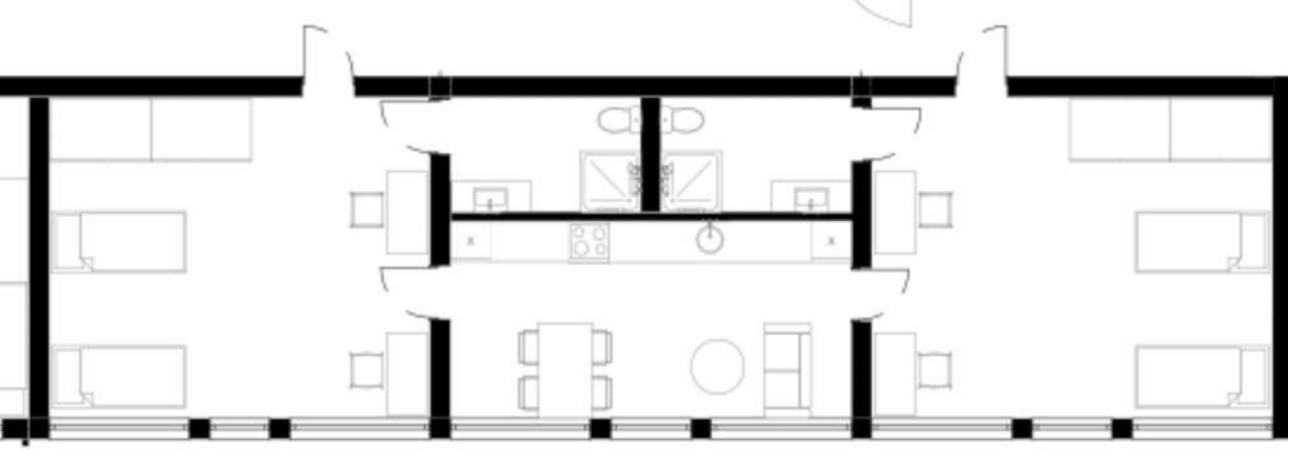
Room for 3 people.



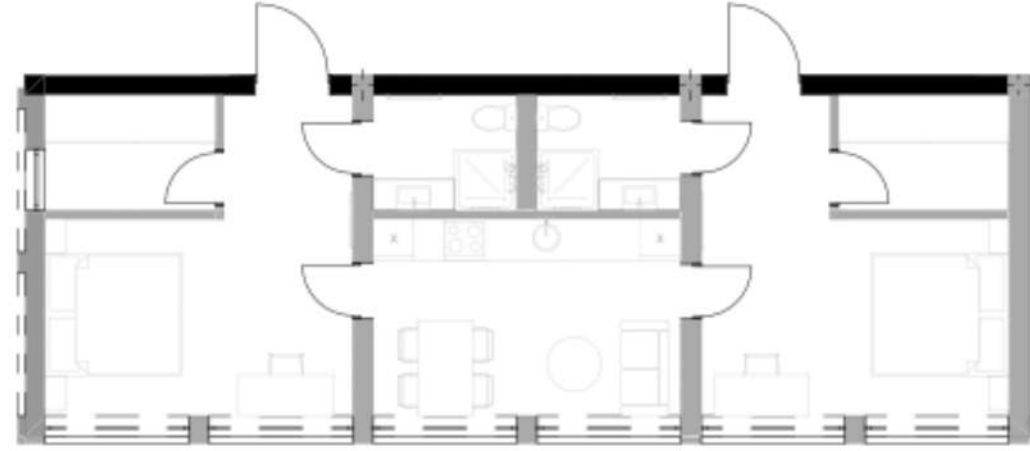
Room for 1-2 people.



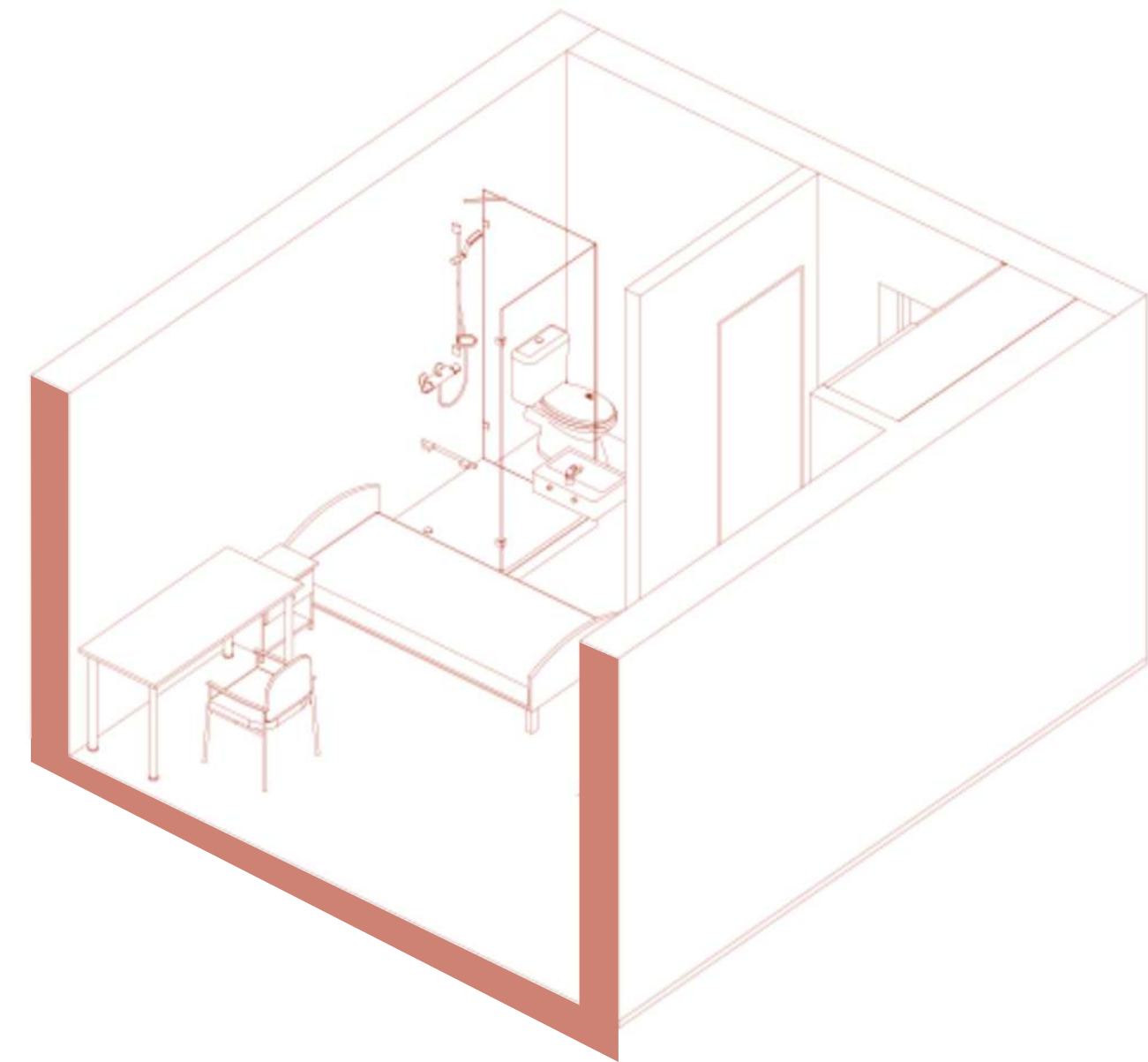
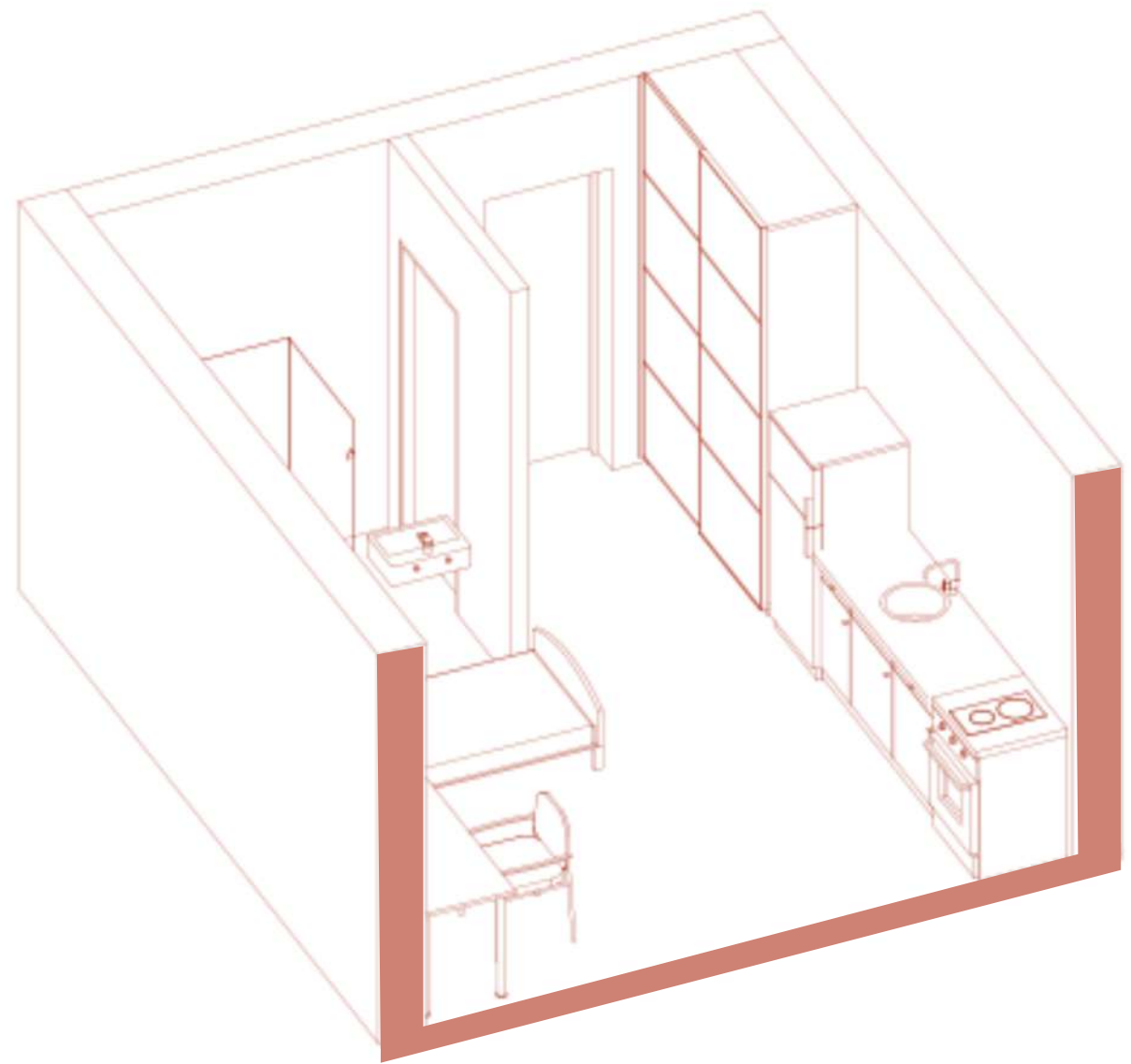
Room for 2 people.



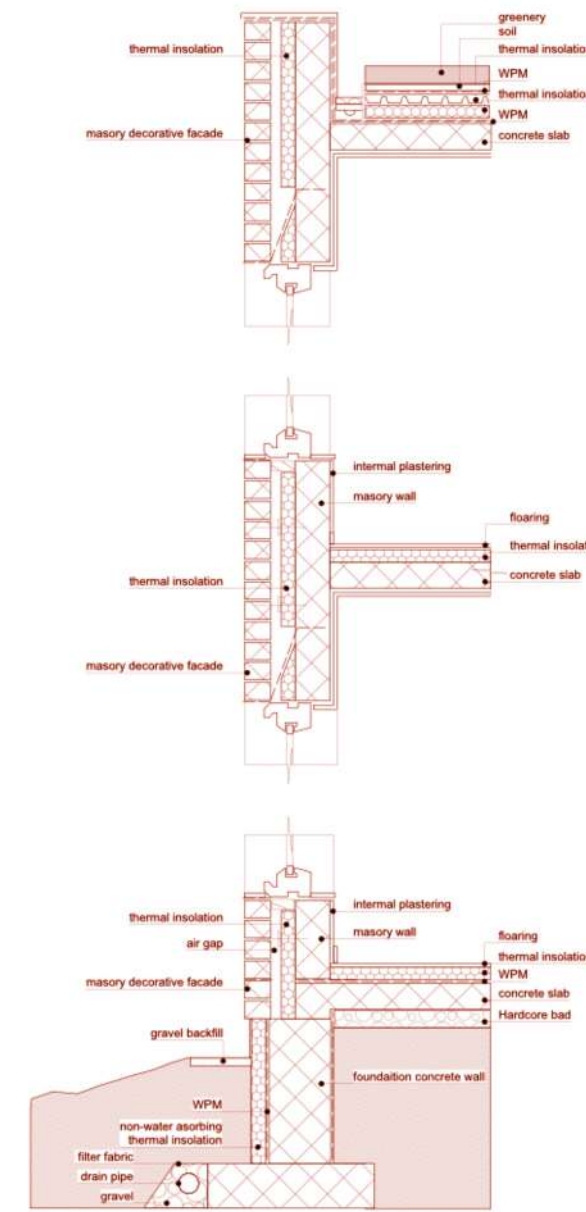
Room for 2-4 people.



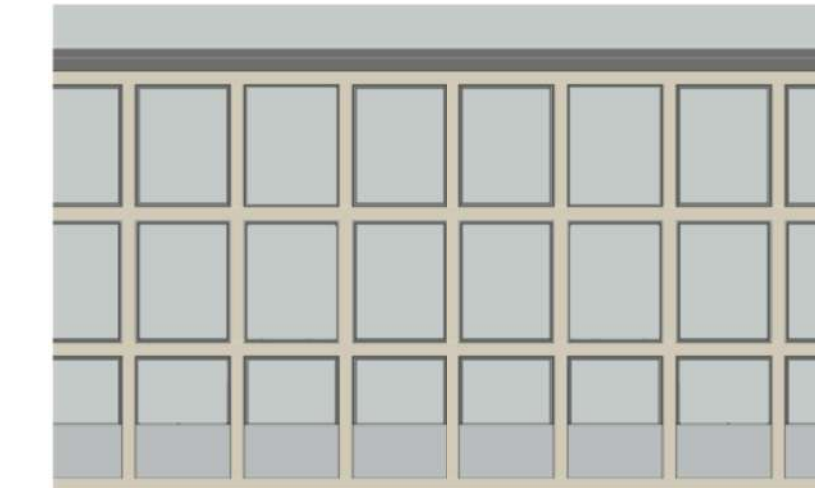
Room for 2-4 people.



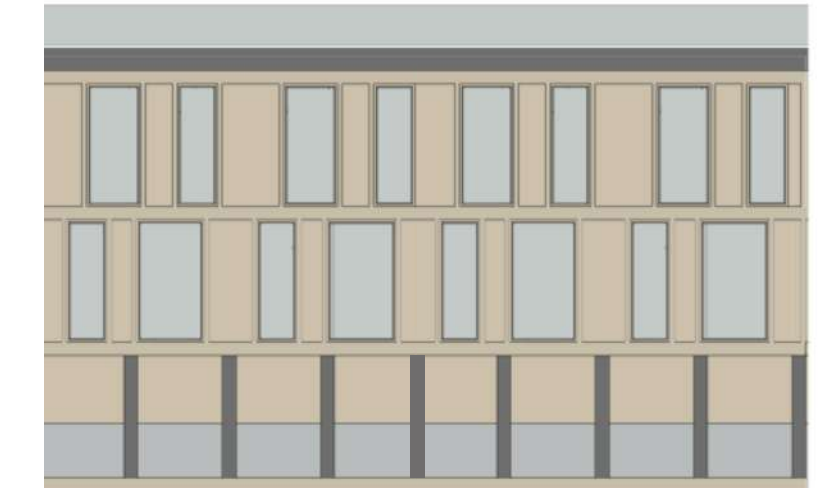
Technical issues



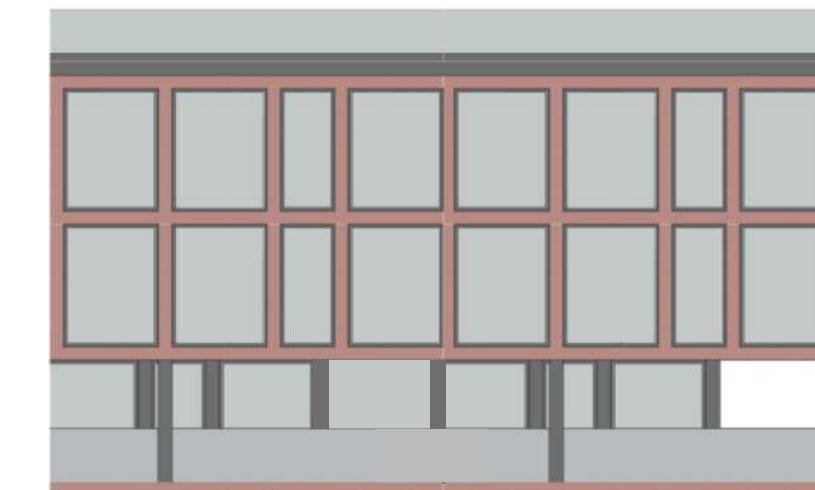
Construction details.



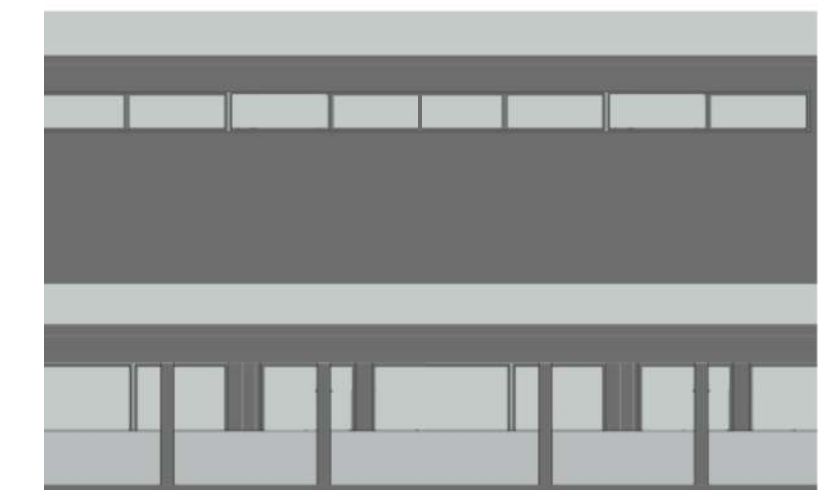
Ventilated facades with exterior decoration: ceramic tiles.



Ventilated facades with exterior decoration: timber panels.

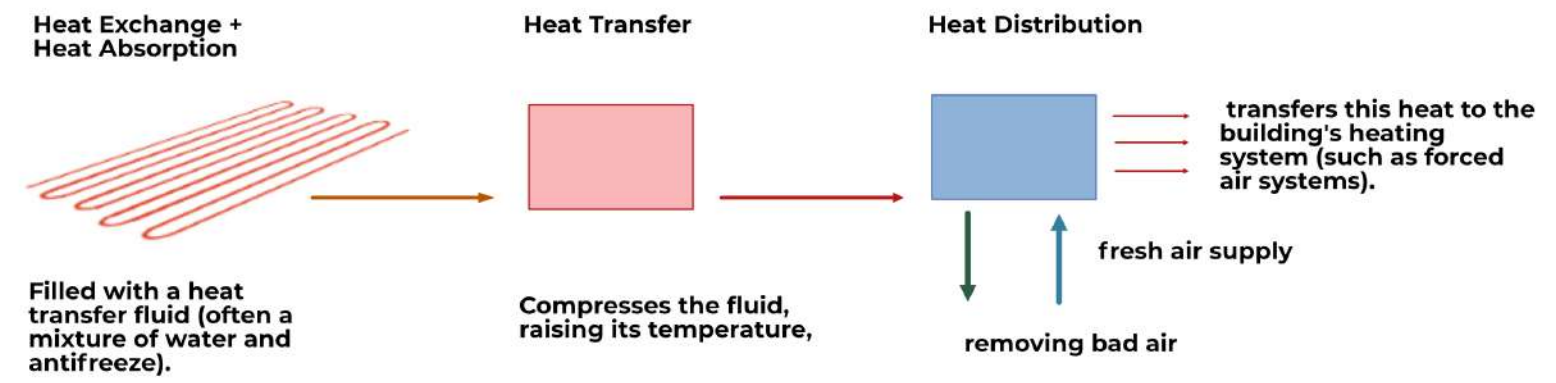


Ventilated facades with exterior decoration: reused bricks.



Environmentally friendly paint that has a high level of resistance to external influences, RAL 9011

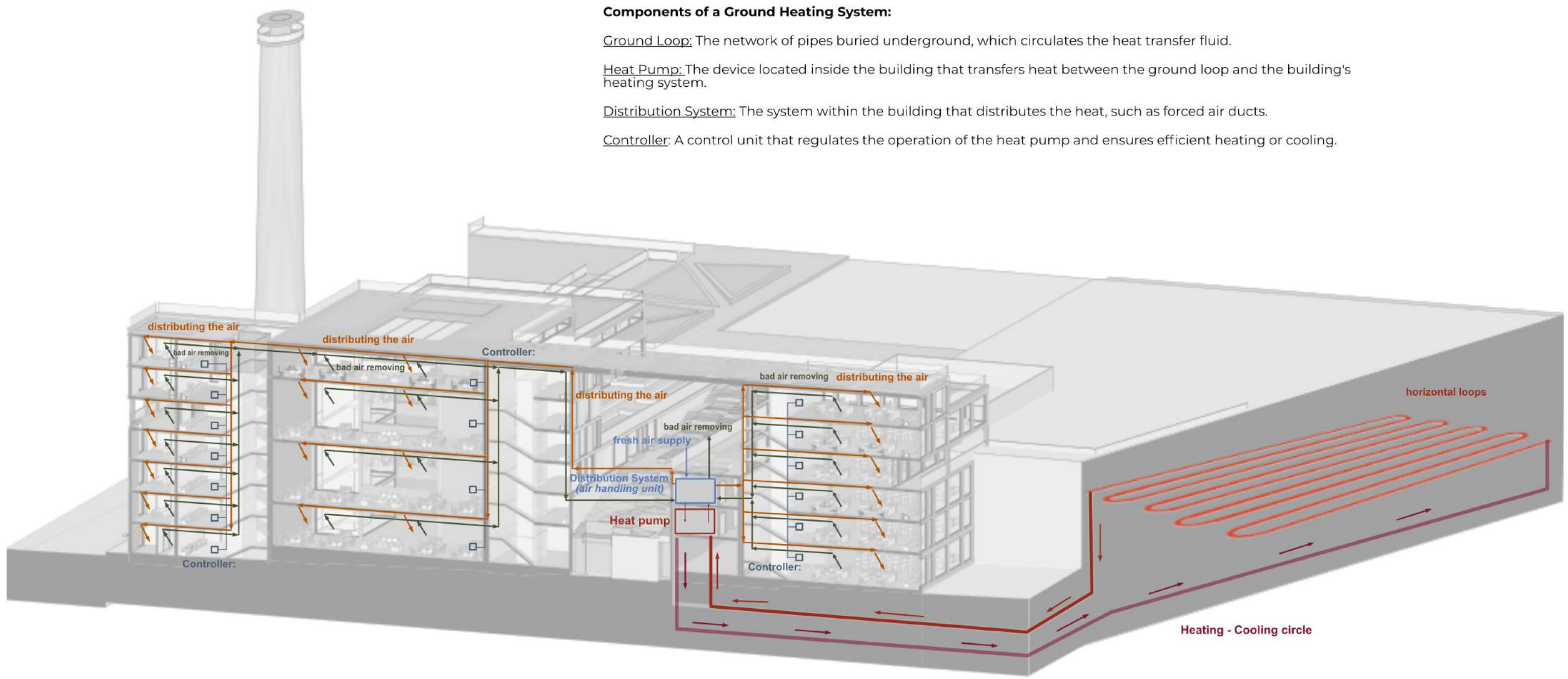
Geothermal heating-cooling system + Air ventilation system



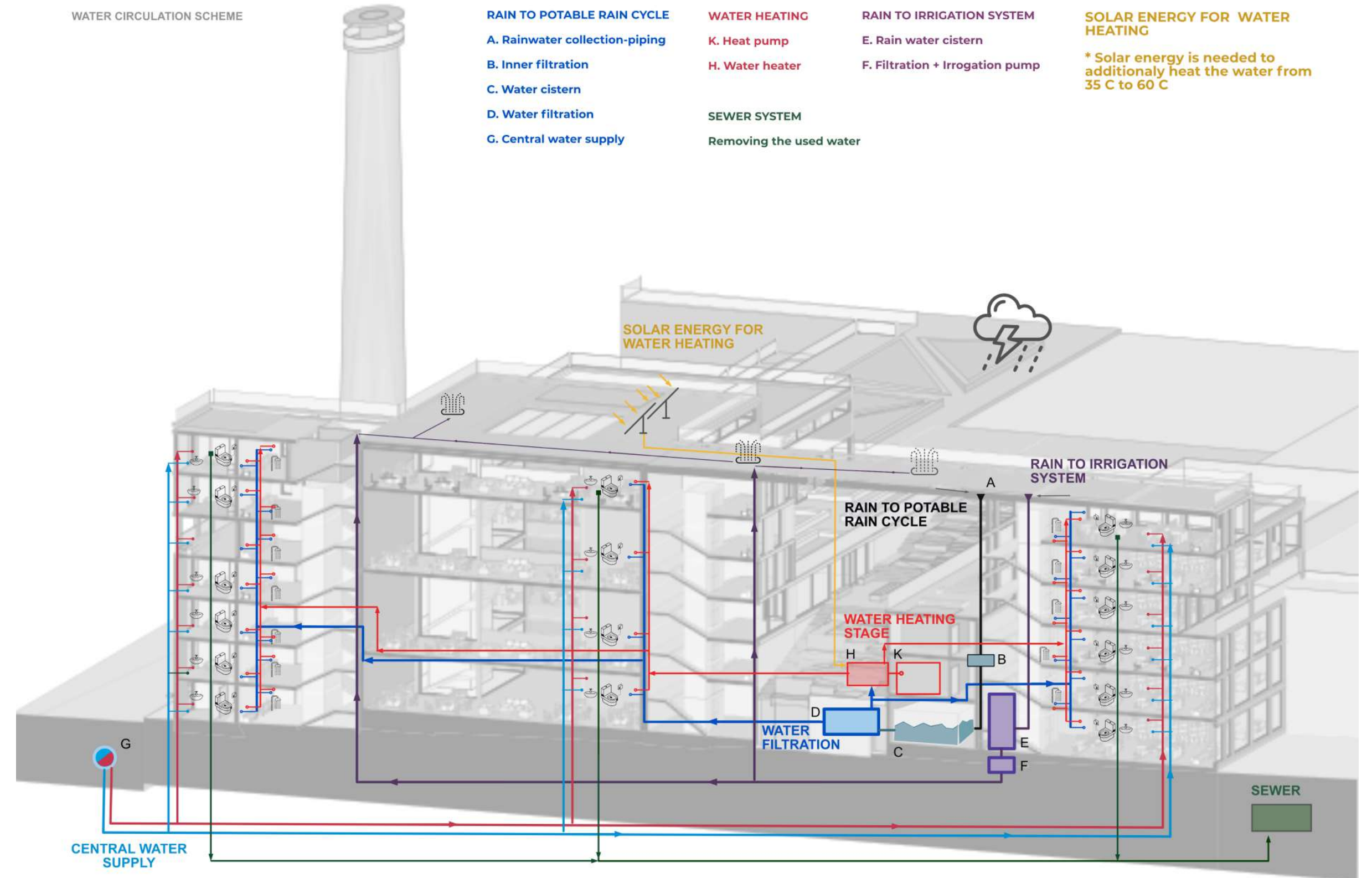
*** Cooling Option:** In warmer months, the process can be reversed to provide cooling by transferring heat from the building to the cooler ground

Components of a Ground Heating System:

- Ground Loop:** The network of pipes buried underground, which circulates the heat transfer fluid.
- Heat Pump:** The device located inside the building that transfers heat between the ground loop and the building's heating system.
- Distribution System:** The system within the building that distributes the heat, such as forced air ducts.
- Controller:** A control unit that regulates the operation of the heat pump and ensures efficient heating or cooling.

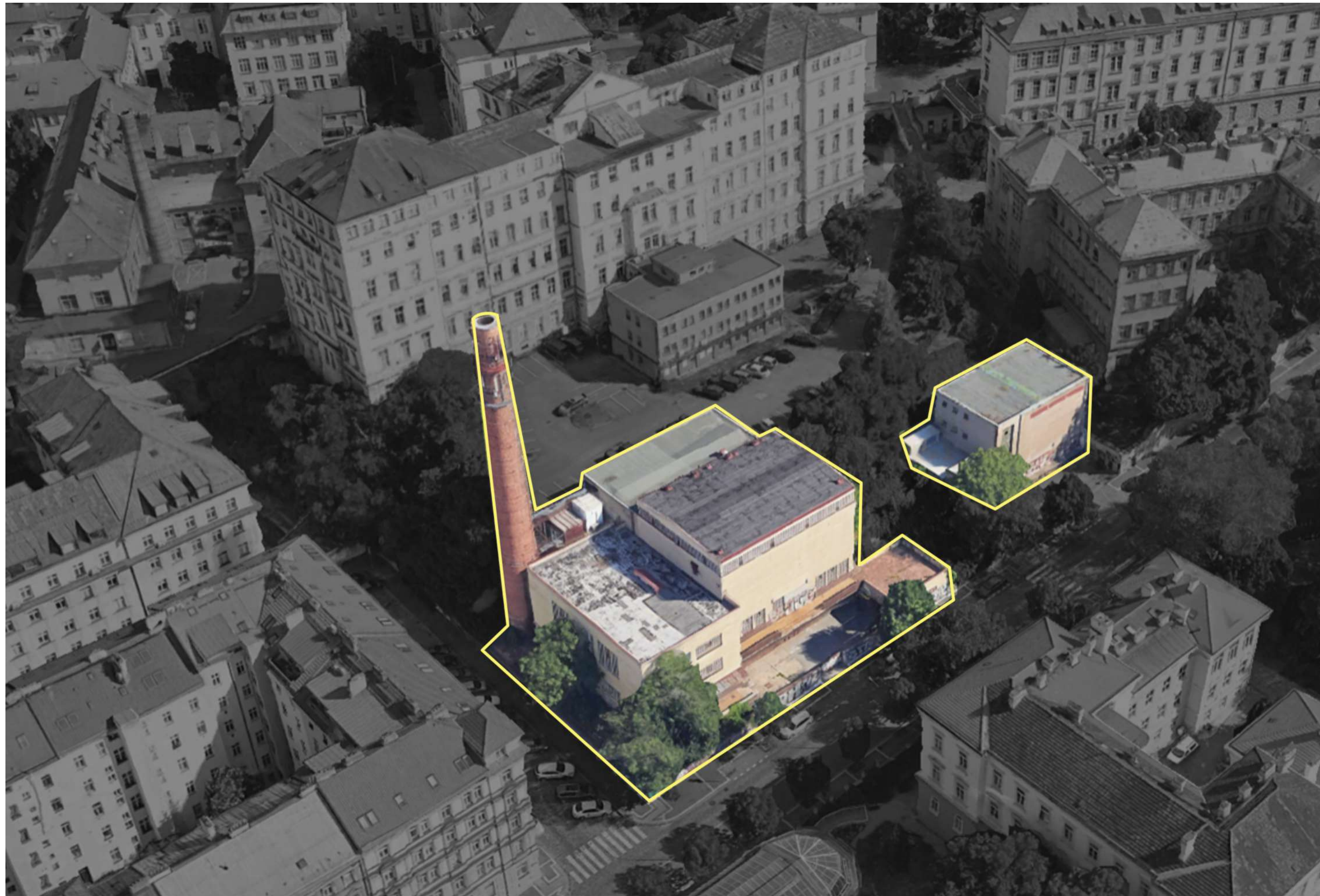


WATER CIRCULATION SCHEME



Visualizations

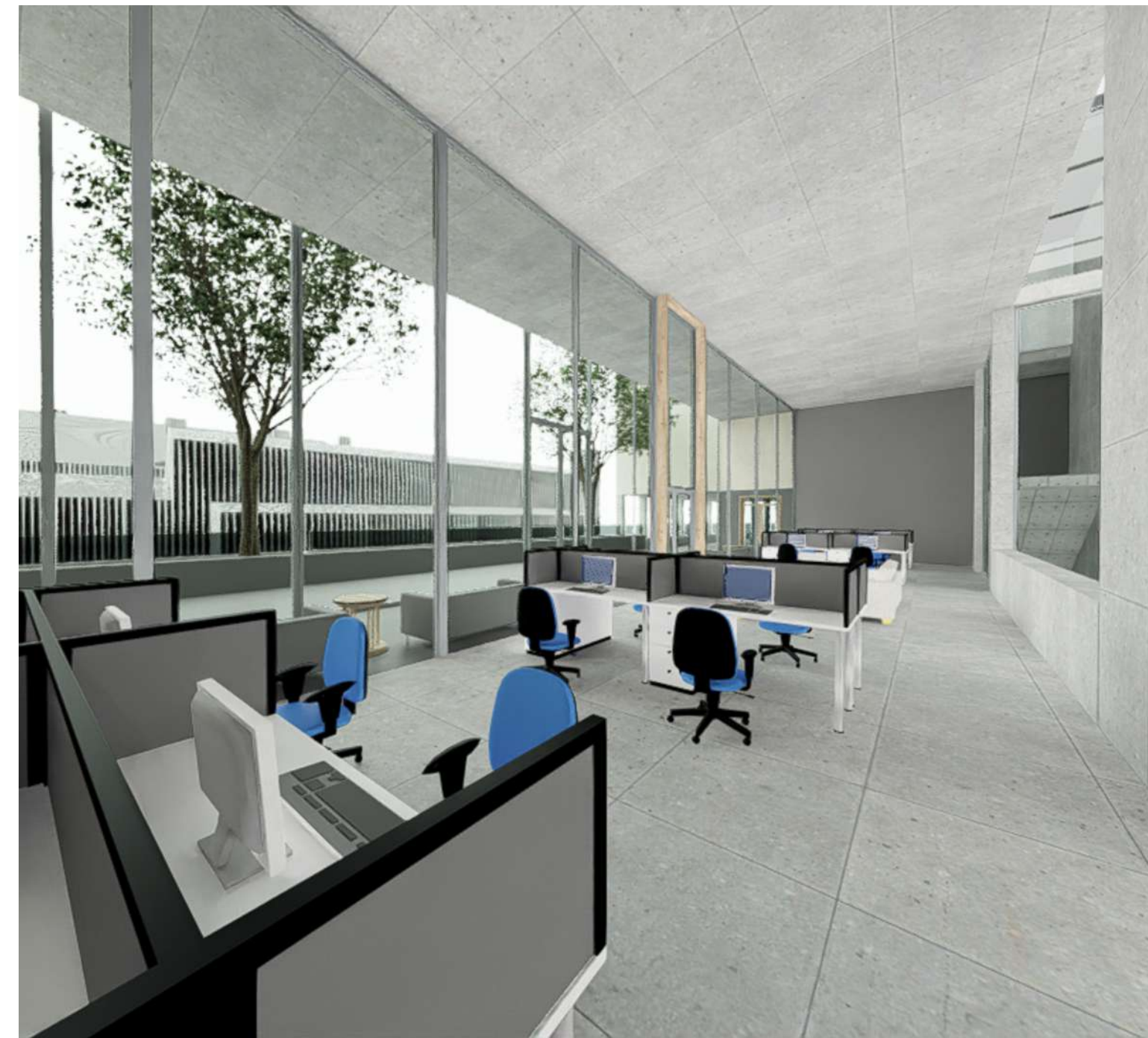












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