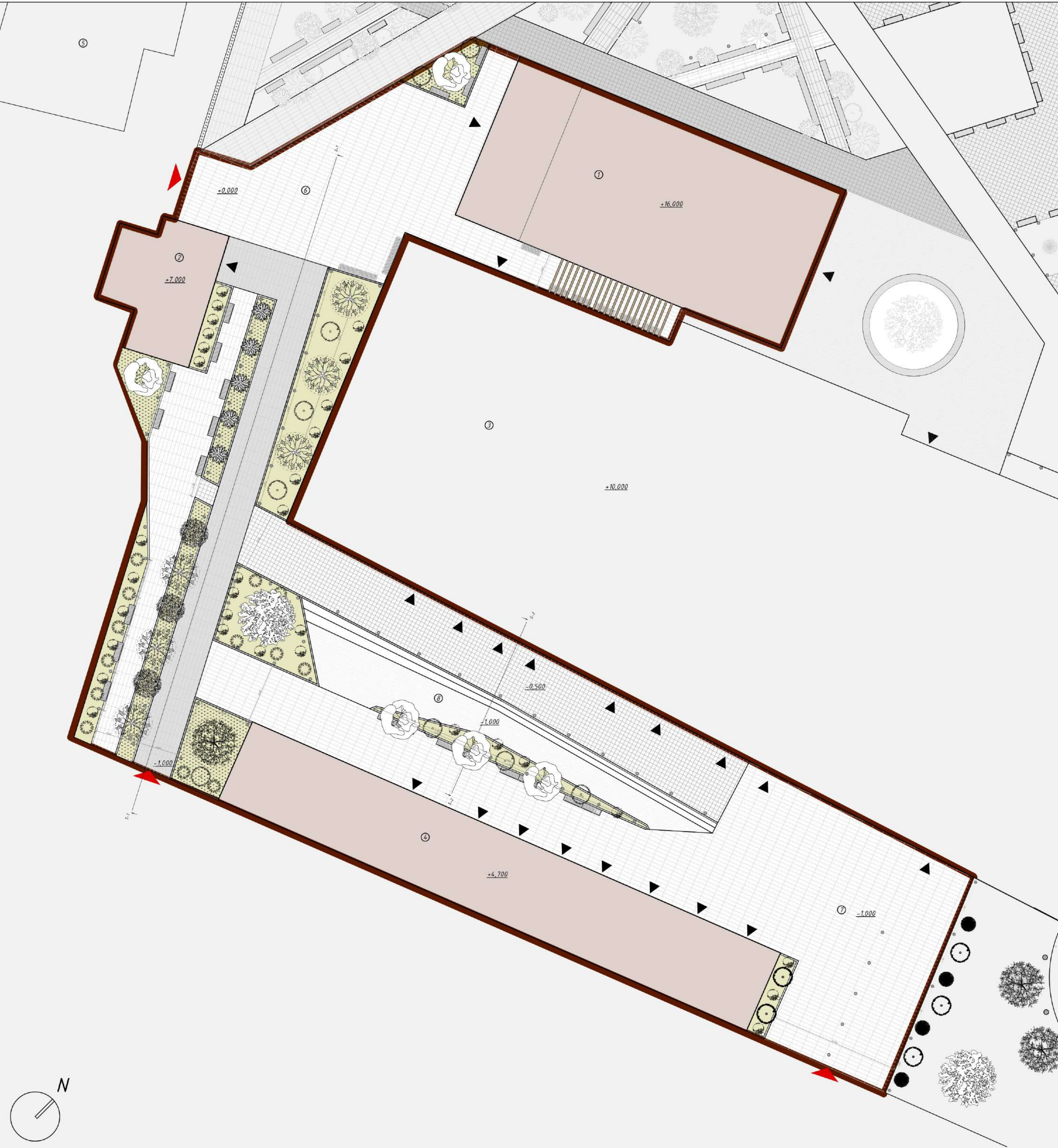# DESIGNING A MULTIFUNCTIONAL COMPLEX FOR GAME DEVELOPMENT INDUSTRY AS A PART OF KYIV STATE WINERY WAREHOUSE N.1 REVITALIZATION

MOTION CAPTURE STUDIO
ADMINISTRATIVE BUILDING
COMPLEX OF PUBLIC ENTERTAIMENT BUILDINGS

MASTERPLAN S1:200

CONCEPT

The main task of the concept was to create connections with different parts of the complex and create a space that meets functional needs.

There were created active zones, which move people on the territory of the complex and which have active movement and quiet areas - promenades, recreation areas.

The project contains three entrances to the territory, one of which is historic, which is the main one and overlooks the square. From there, visitors can get either to the training area or to the entertainment and recreation. The other two entrances are proposed by the project. One overlooks the square that connects the spaces of the cafe and has entrances to the passage. Another - alleys leading to the center of the complex.

The main purpose is to renovate three buildings:

1 - Industrial building, warehouse to Game development studio

2 - Utility buildings to the Complex of public entertaiment buildings

3 - Security guard house to Administrative building

LEGEND

Territory borders		Maple silver	⑦	Game development studio
Buildings		Cercis European	②	Administration building
Entrances to the territory		Cercidiphyllum japonicum	③	Passage
Entrances to the buildings		Sorbus Aucuperia	④	Caffees, bakeries, market
Concrete tile 1200x400		Spiraea betulifolia	⑤	Residential building
Concrete tile 400x400		Cotoneaster acuminatus	⑥	Main square
Granite cobblestone		Berberis thunberga kornik	⑦	Secondary entrance square
Concrete tile 1200x400		Miscanthus sinensis		
Wild grass		Berberis thunbergii 'Atropurpurea'		
Lawn grass				

SECTION 1-1
S1:100

SECTION 2-2
S1:100

3D VIEW

GAME DEVELOPMENT STUDIO
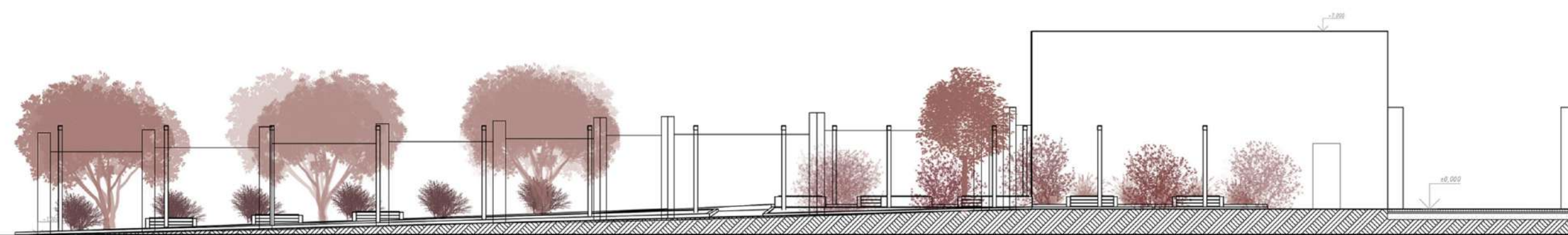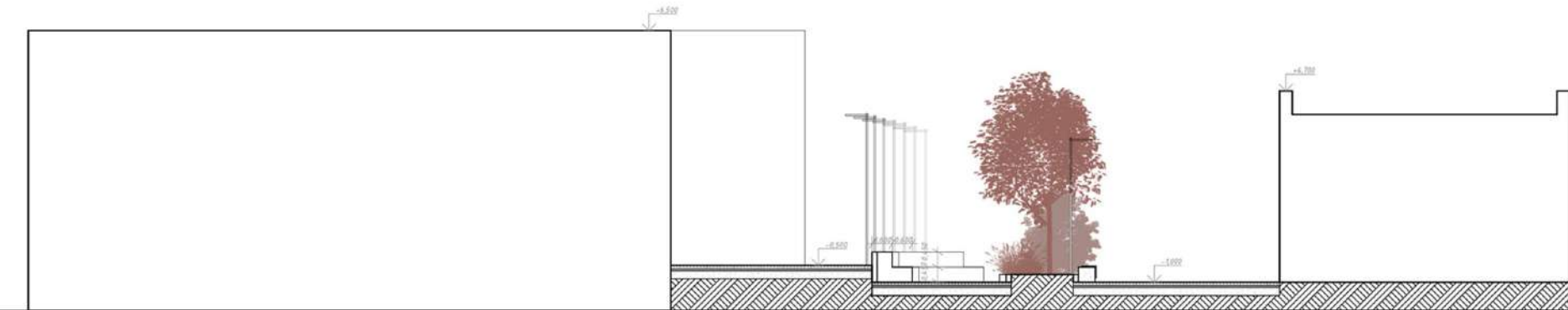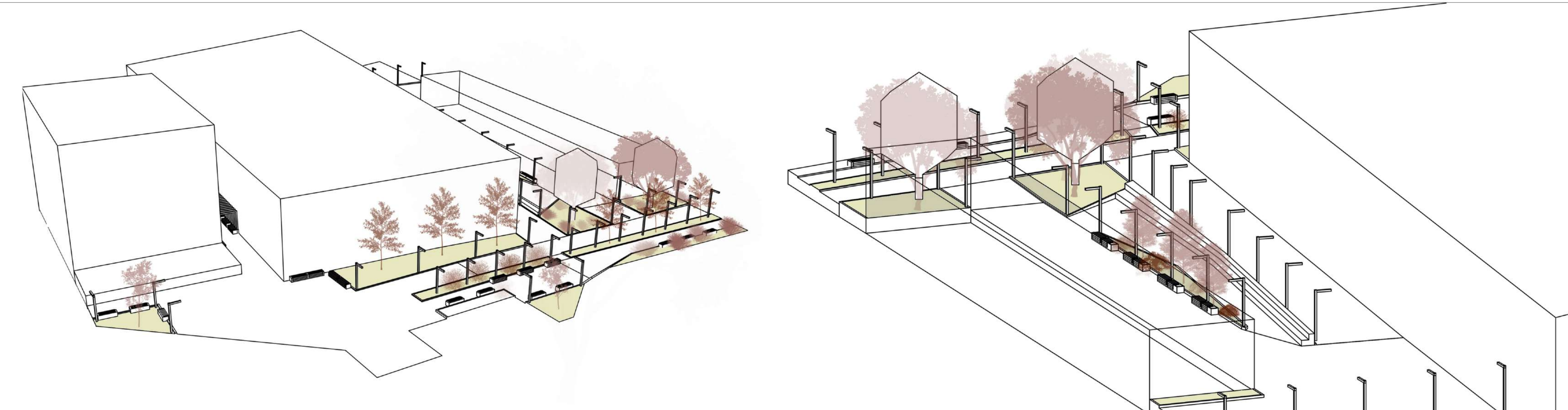
CONCEPT

According to technical inspections, the building has the best technical condition on the territory of the State Wine Warehouse. According to the project proposal, the building has two main functions - an exhibition hall on the ground floor and office space of the game development studio.

The second floor is an office space for game development. Here is a studio for capturing movements and an office that works with the received 3D information.

The building has high ceilings and open space, which allowed you to safely place in it such a large and demanding to the amount of space room for recording movements. It requires open space inside and a large number of various auxiliary equipment around the perimeter. In addition, the height of the ceiling is important, which will allow you to place auxiliary structures for tricks or to place additional cameras and lighting.

MOTION CAPTURE TECHNOLOGY

Motion capture (mocap or mo-cap) is a modern technology that usually uses for making films and videogames. It could be used for sports, army, robotics and medical purposes. Technology allows to "capture" actor movements, save information about these movements and use this information in the development of 2D or 3D.

The process is as follows: the actor is dressed in a special costume on which markers are located. Cameras indoors are recorded by movements of these markers, form information and calculate 3D positions in the virtual space, which is then used to create the required video. The motion capture can include face and fingers or captures subtle expressions – this type of motion capture known as performance capture. But in filmmaking and game development motion tracking refers more to match moving.
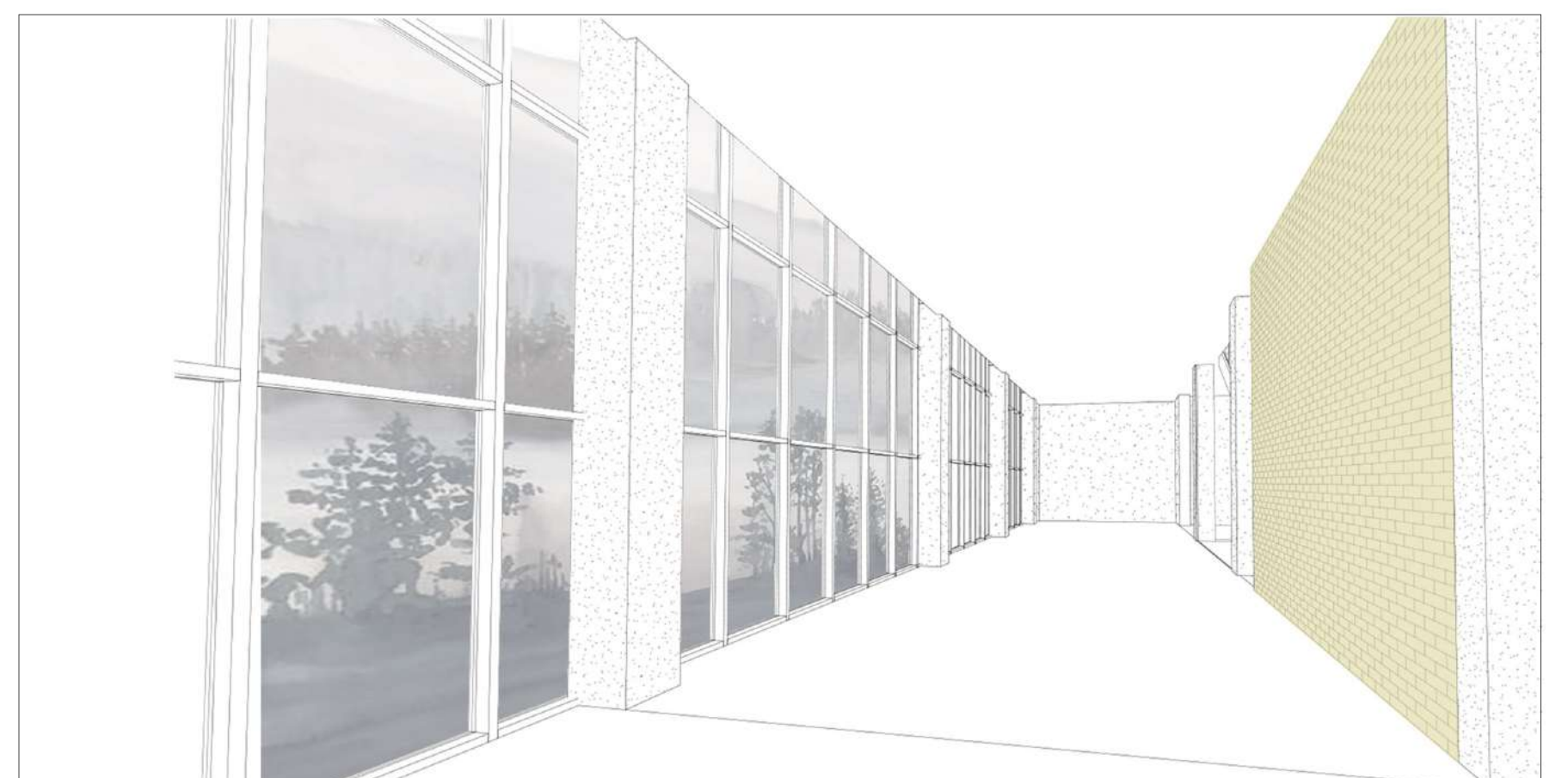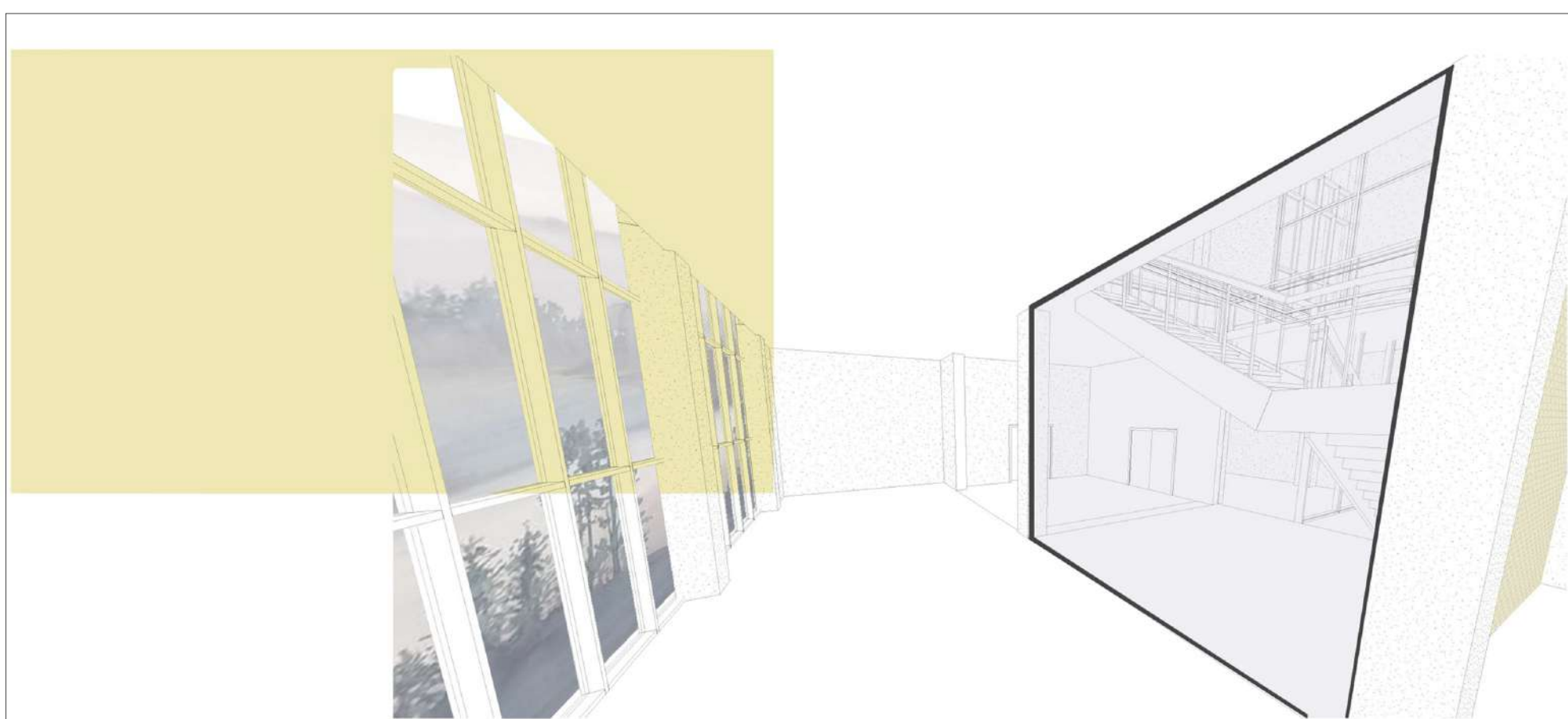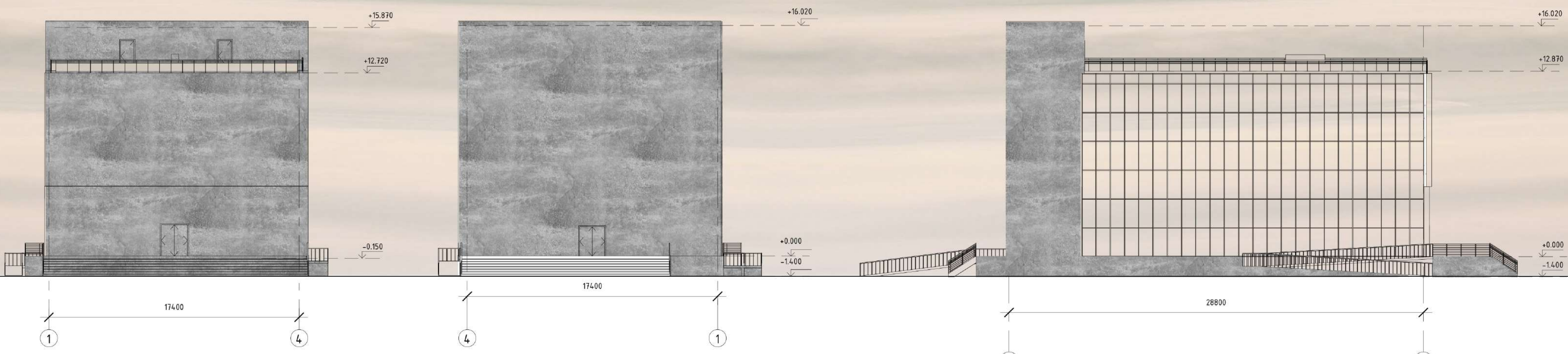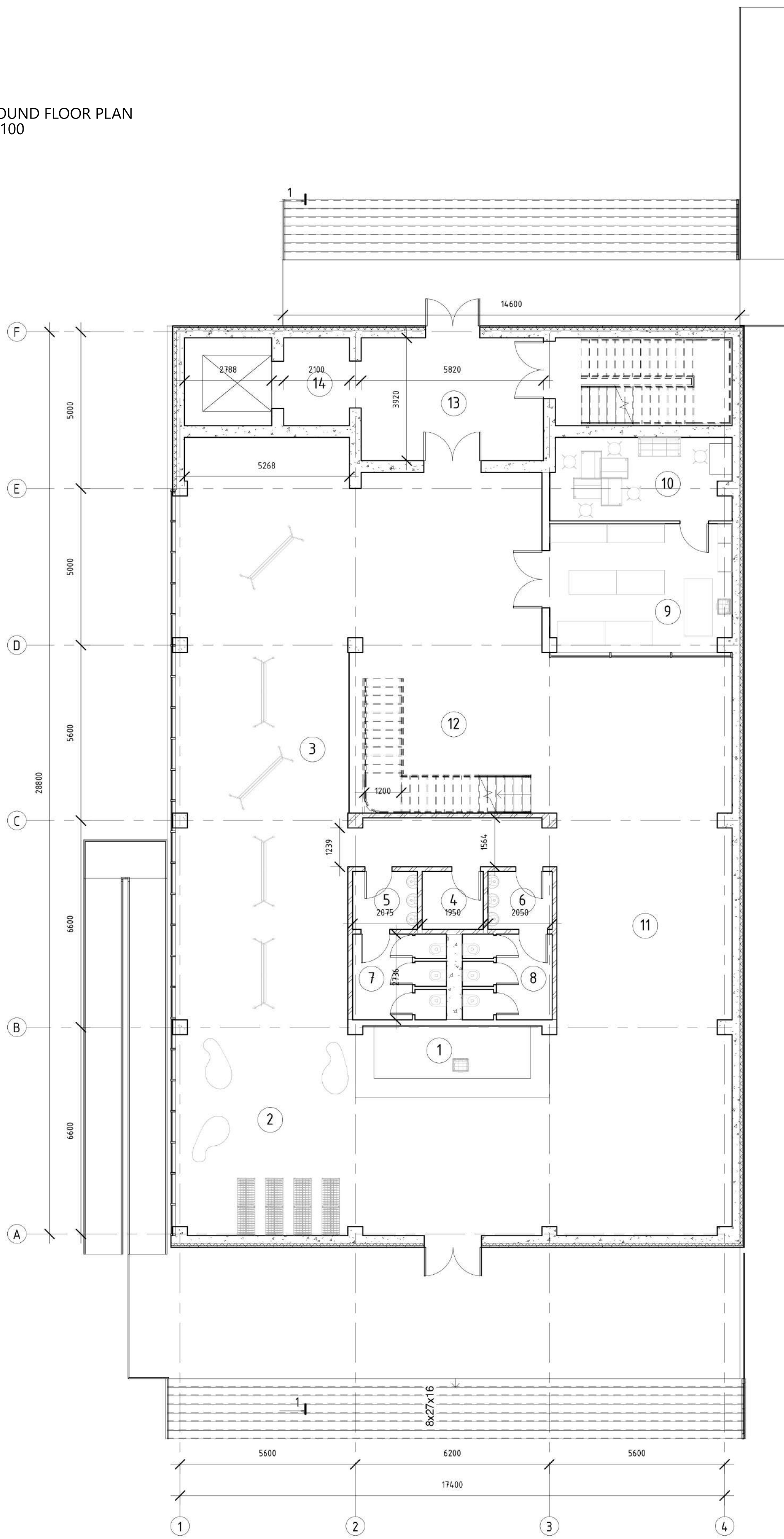

HOW MOTION CAPTURE PROCESS LOOKS LIKE

FUNCTIONAL SCHEME
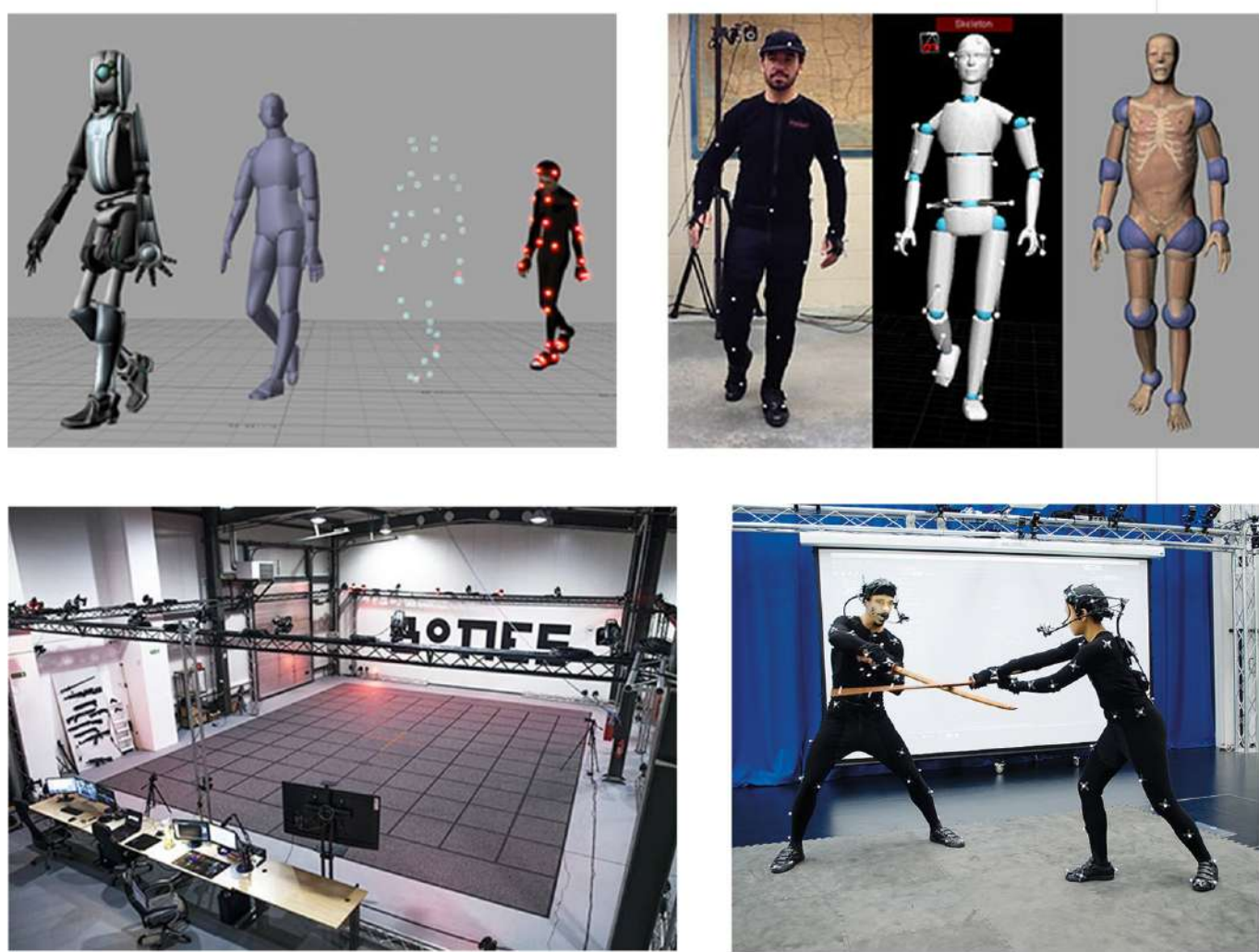
- office
- exhibition space
- mocap studio space

FACADE 1-4
S 1:200

FACADE 4-1
S 1:200

FACADE F-A
S 1:200

GROUND FLOOR PLAN
S 1:100

FIRST FLOOR PLAN
S 1:100
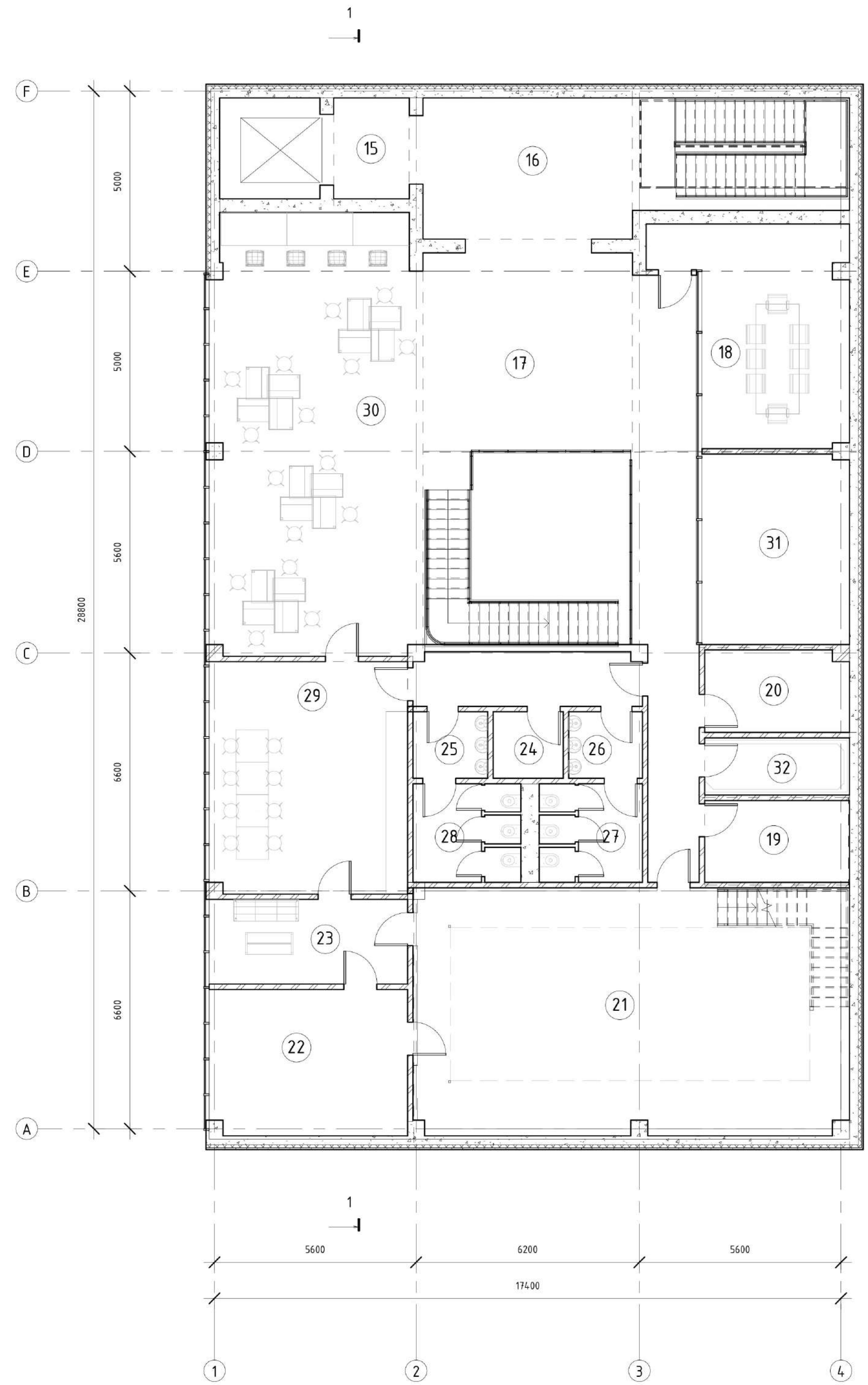
SECTION 1-1
S 1:100

Ground floor explication		
Number	Name	Area
1	Reception	14 m²
2	Entrance hall	64 m²
3	Exibition hall	106 m²
4	Toilet	4 m²
5	Toilet tambour	4 m²
6	Toilet tambour	4 m²
7	Toilet	5 m²
8	Toilet	5 m²
9	Staff store	24 m²
10	Game testing room	15 m²
11	Exibition hall	105 m²
12	Hall	33 m²
13	Vestibule	23 m²
14	Elevator hall	6 m²

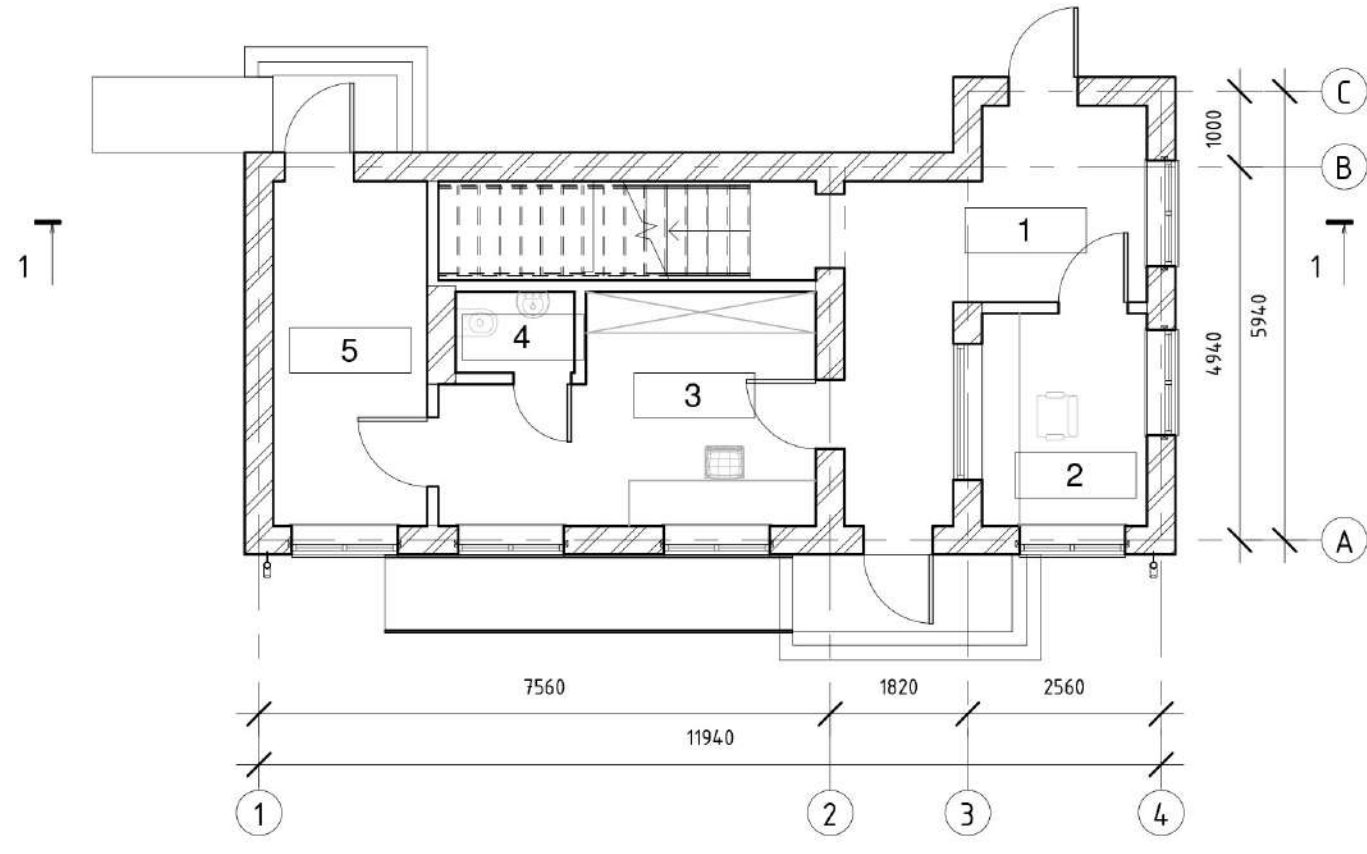| 1st floor explication		
Number	Name	Area
15	Elevator hall	6 m²
16	Vestibule	24 m²
17	Hall	34 m²
18	Conference hall	28 m²
19	Edit suit	9 m²
20	Edit suit	9 m²
21	Moving capture space	83 m²
22	3D Edit suite (checkroom)	22 m²
23	Restroom	13 m²
24	Toilet	4 m²
25	Toilet	4 m²
26	Toilet	4 m²
27	Toilet	5 m²
28	Toilet	5 m²
29	Kitchen	35 m²
30	Office	72 m²
31	Mocap cleanup Laboratory	22 m²
32	Sound Booth	6 m²

ADMINISTRATIVE BUILDING

CONCEPT

The security building does not require significant changes. First of all, the function remains the same - a room to guard the complex.

The building is divided into three main zones: work, storage and personal. Work area - an area directly where the security guard monitors the object and order and has its own workshop with bathroom. The warehouse area has an exit from the territory of the complex. There you can download the necessary equipment for tracking the area. The personal area or recreation area is located on the second floor. There is a bathroom with shower, kitchen, living room.
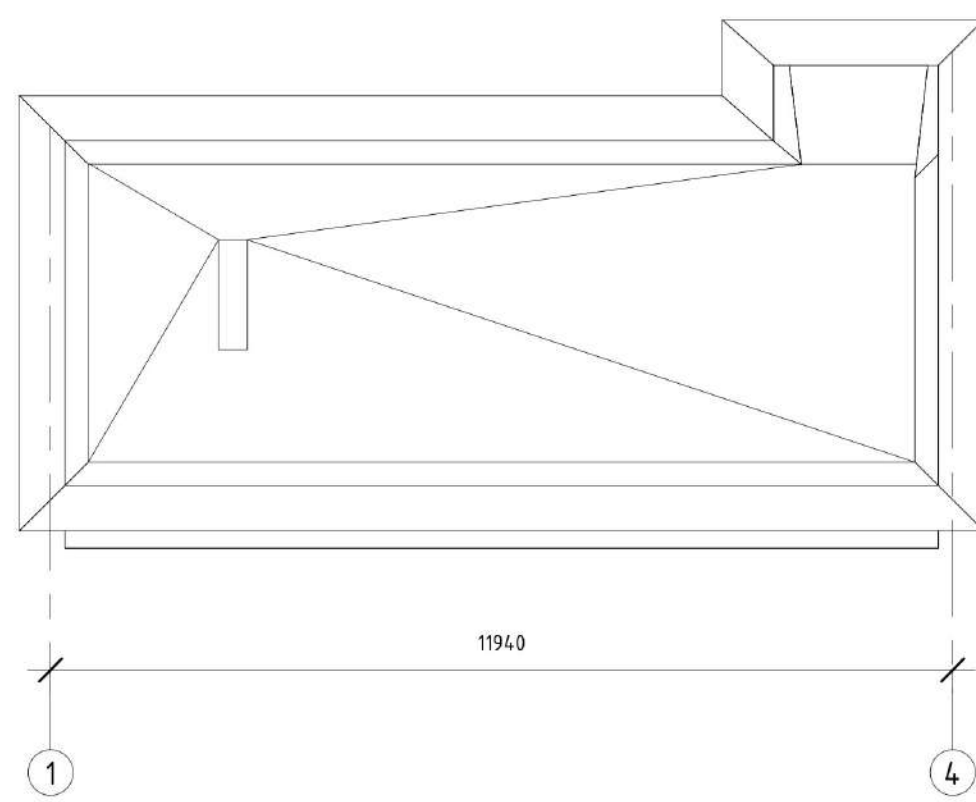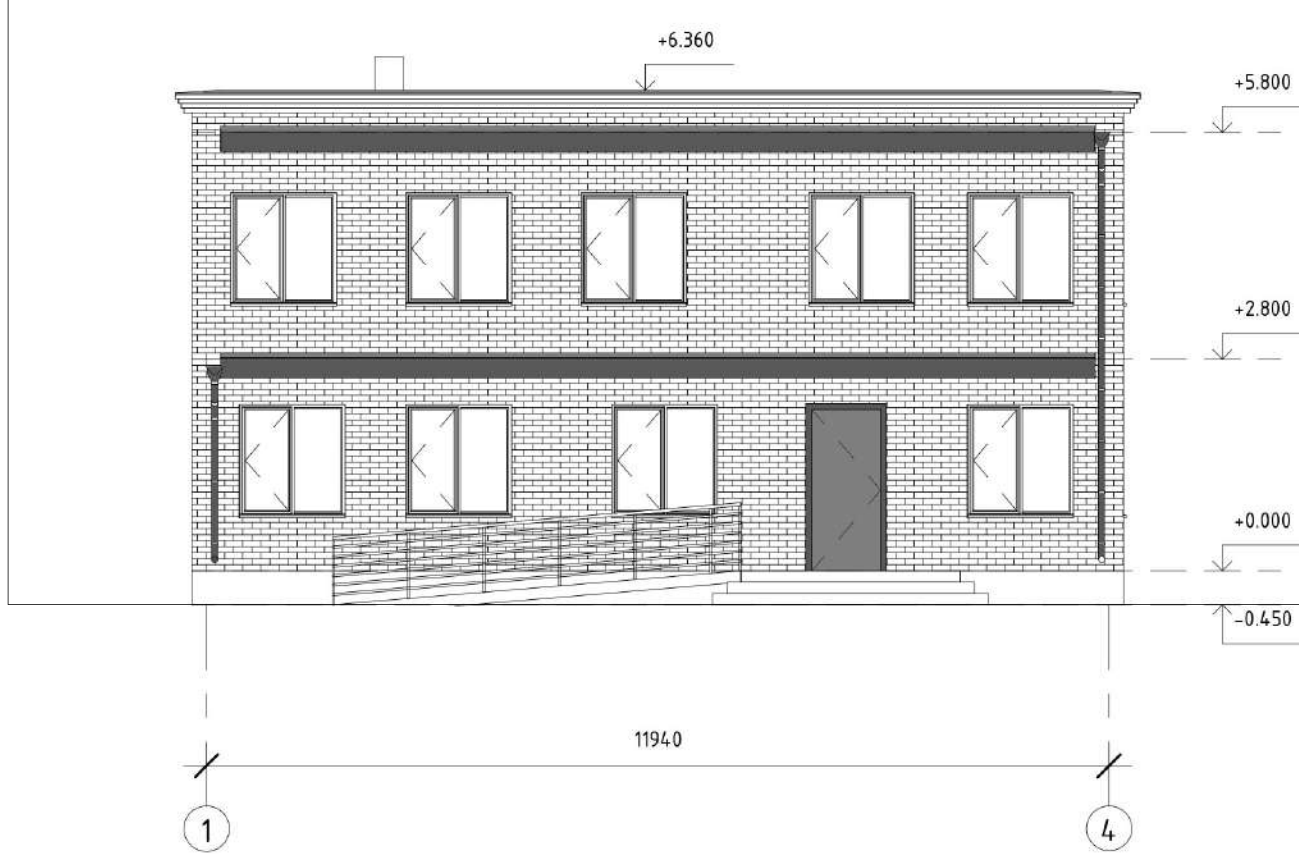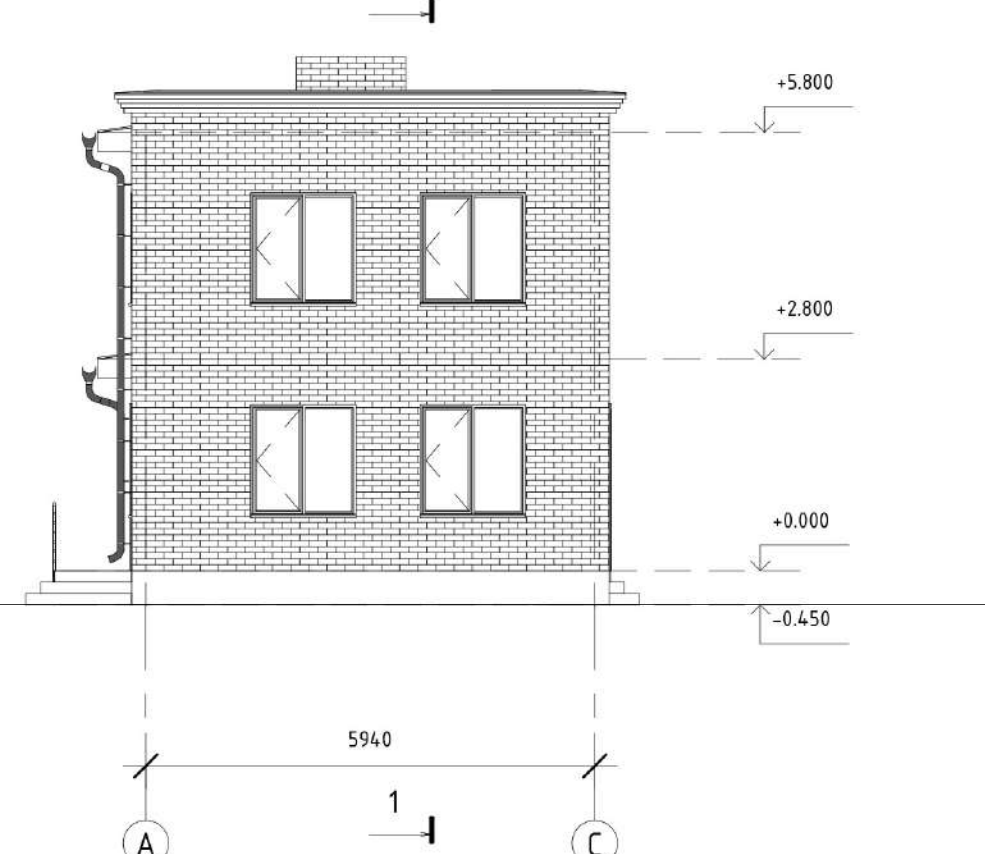

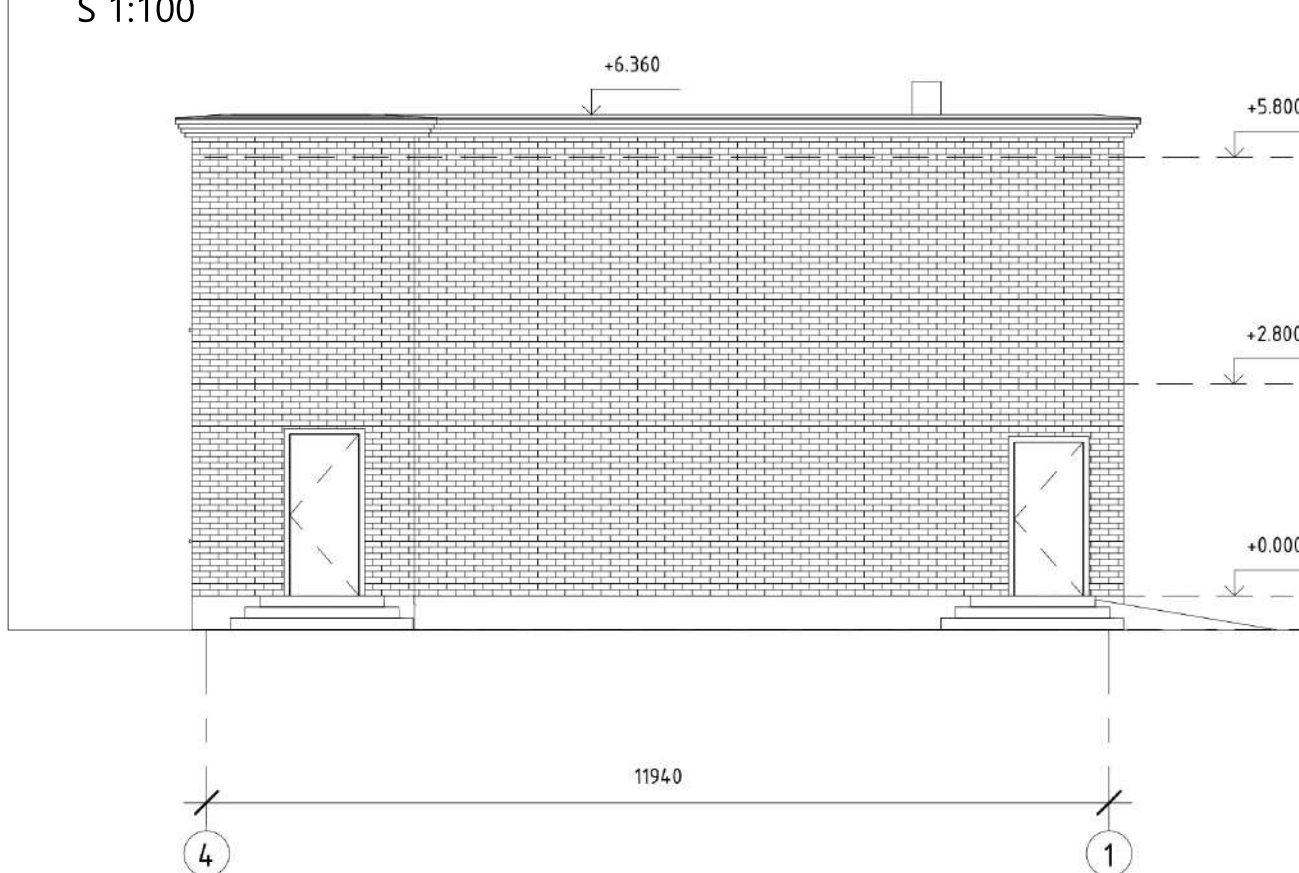**GROUND FLOOR PLAN**
S 1:100

FIRST FLOOR PLAN
S 1:100
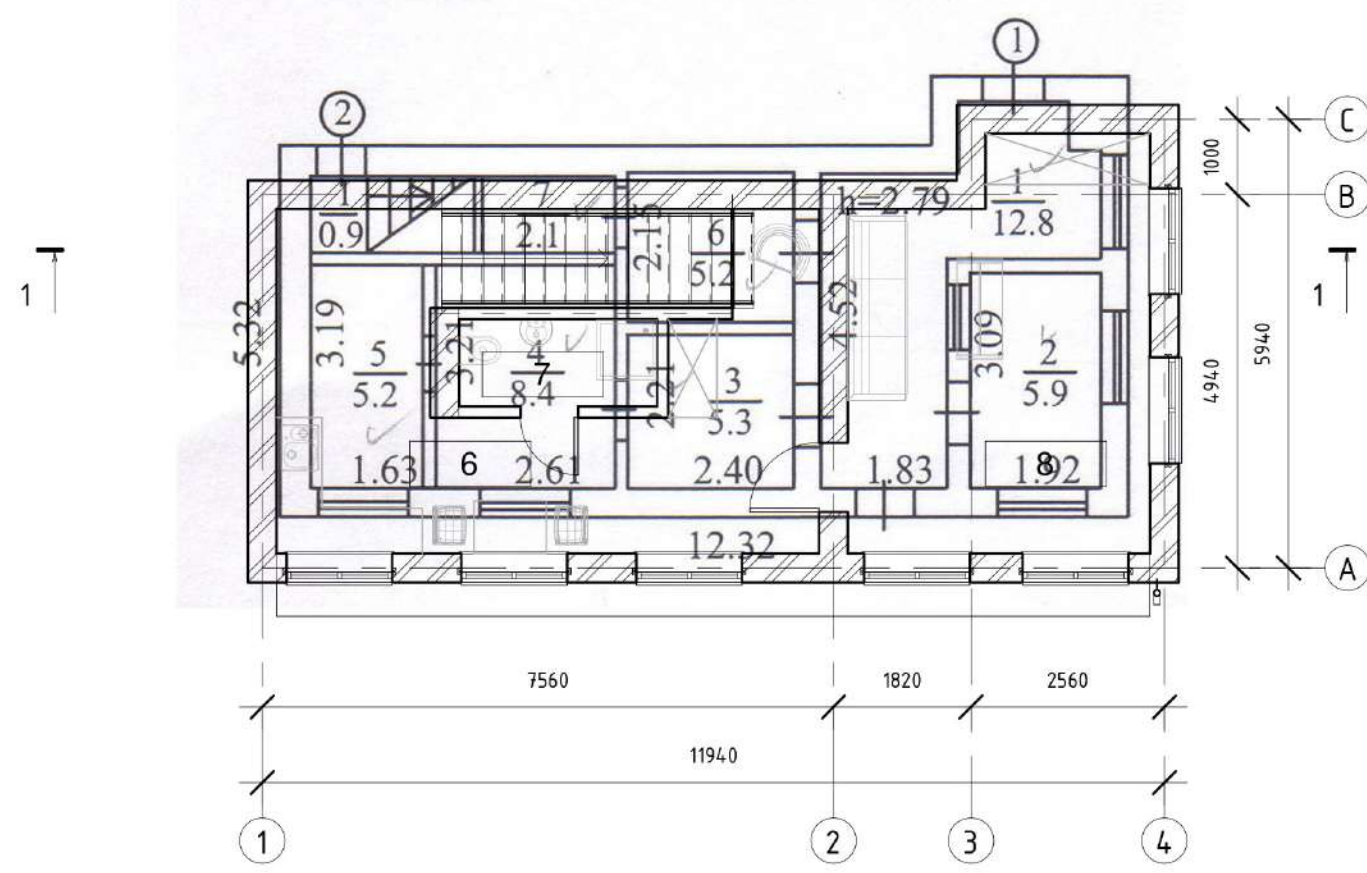
ROOF PLAN
S 1:100

FACADE 1-4
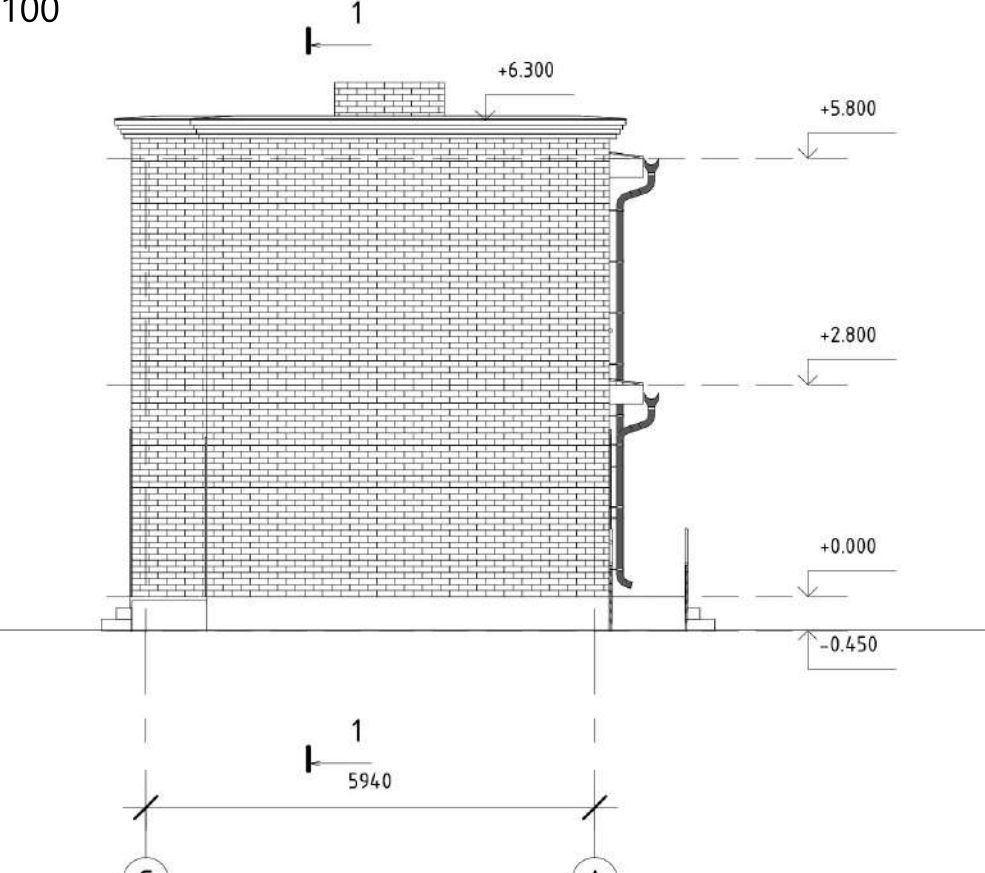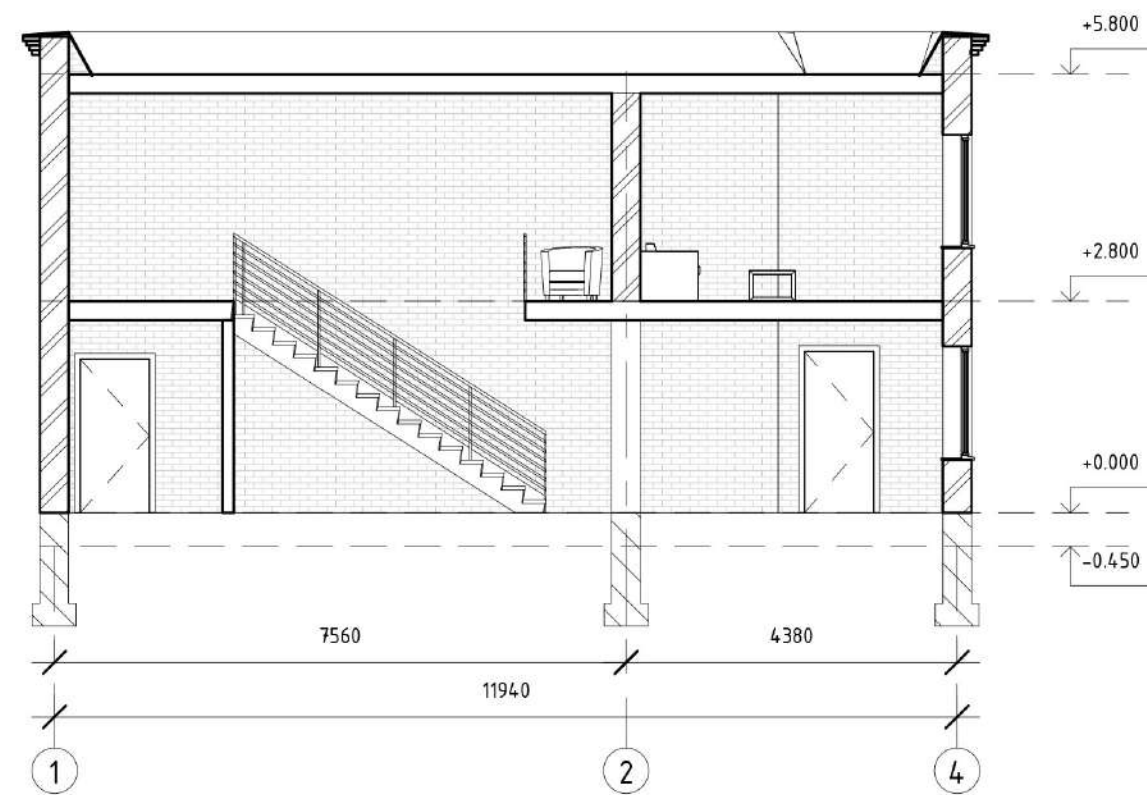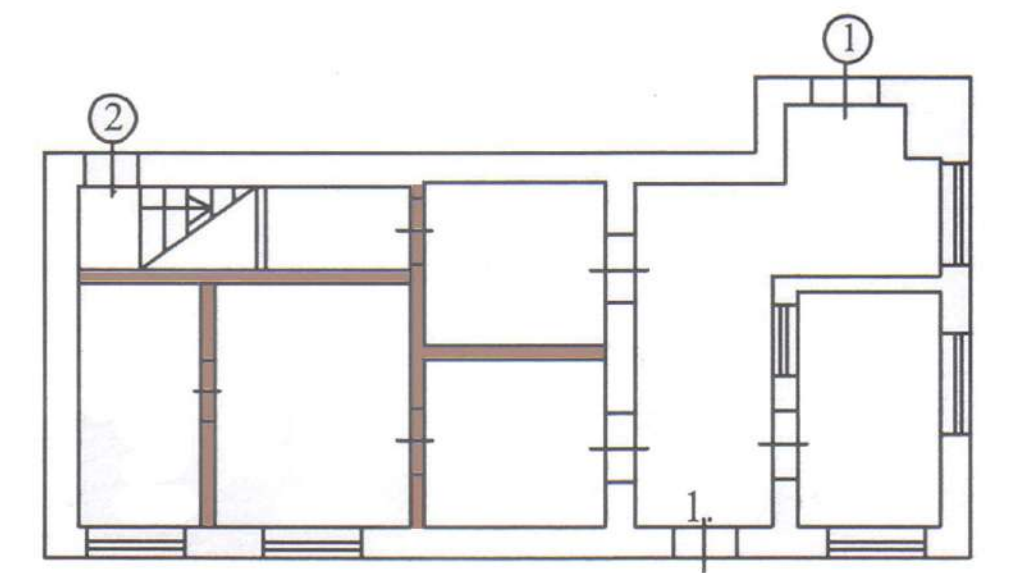S 1:100

FACADE A-C
S 1:100

FACADE 1-4
S 1:100

FACADE A-C
S 1:100

SECTION 1-1
S 1:100

DISMANTLING SCHEME OF GROUND FLOOR

Explication Ground floor		
Number	Name	Area
1	Entrance hall	13 m²
2	Workplace	6 m²
3	Workshop	13 m²
4	Toilet	2 m²
5	Warehouse	9 m²

Explication 1st floor		
Number	Name	Area
6	Kitchen	23 m²
7	Toilet	3 m²
8	Living room	20 m²

COMPLEX OF PUBLIC ENTERTAIMENT BUILDINGS

FACADE 1-9
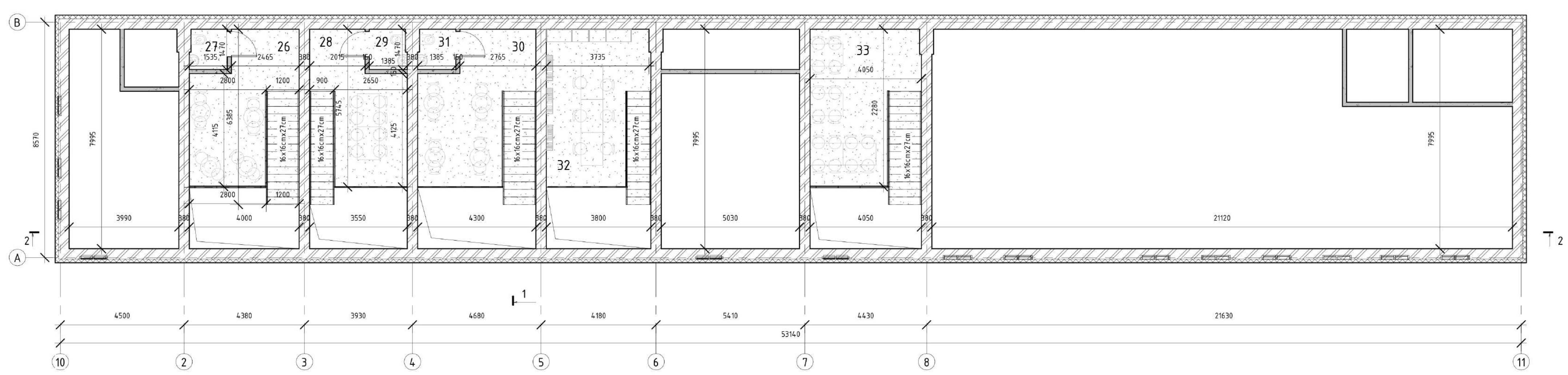S 1:100

Bakery CoffeeTalk Bookshelter
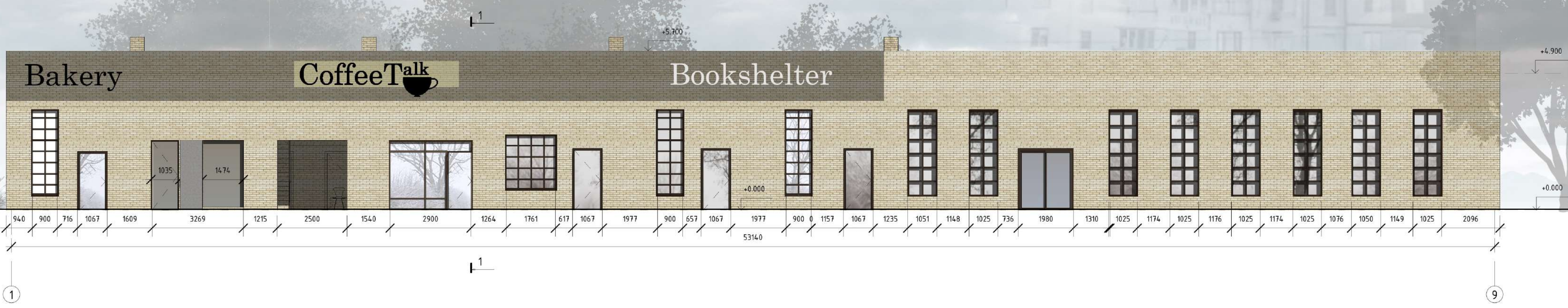
GROUND FLOOR PLAN
S 1:100
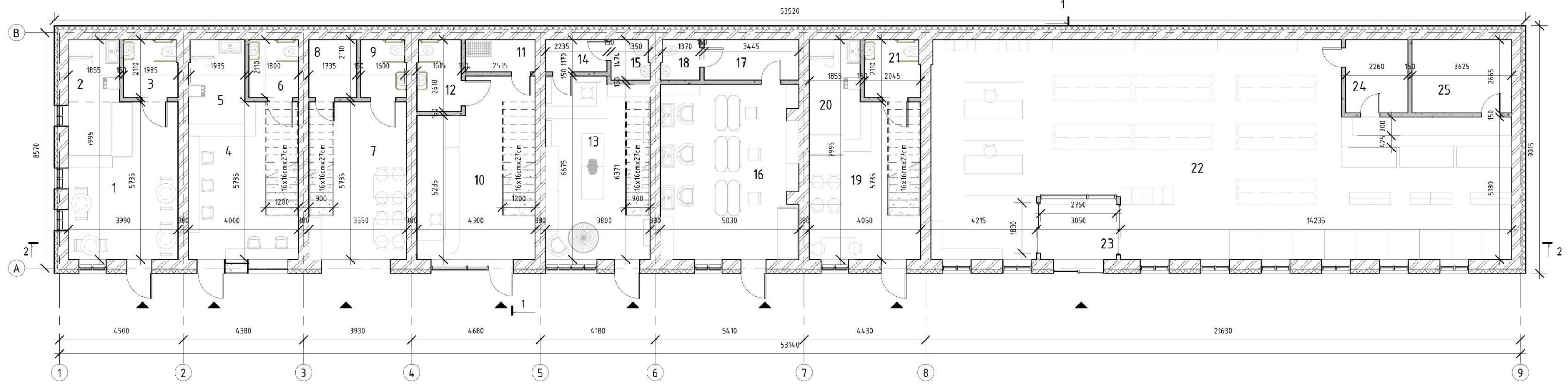
FIRST FLOOR PLAN
S 1:100

FACADE B-A
S 1:100
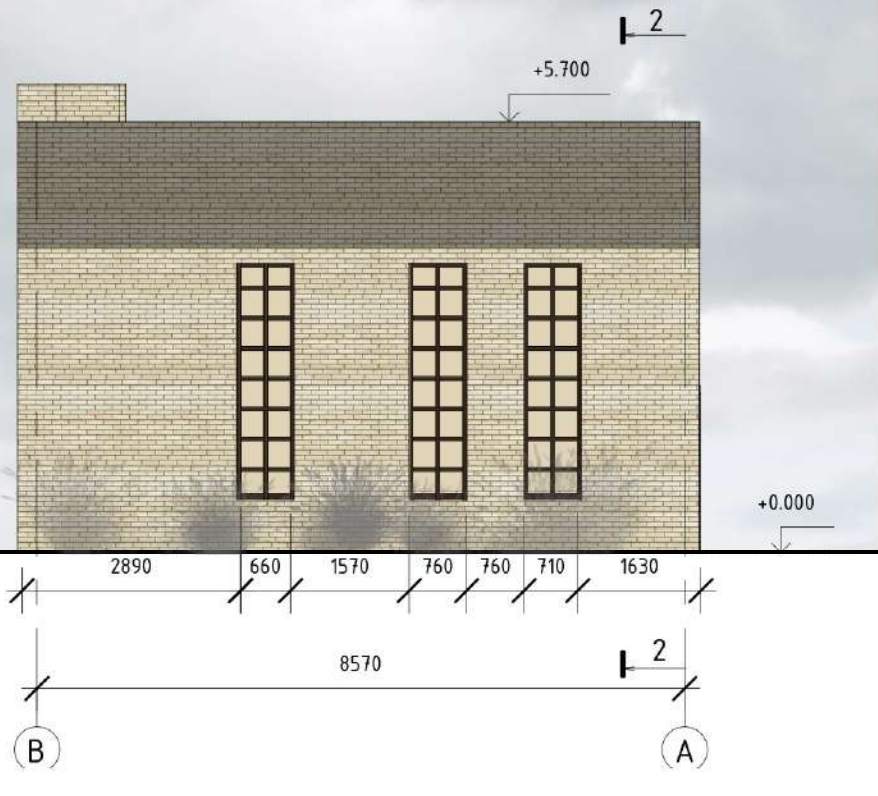
FACADE A-B
S 1:100
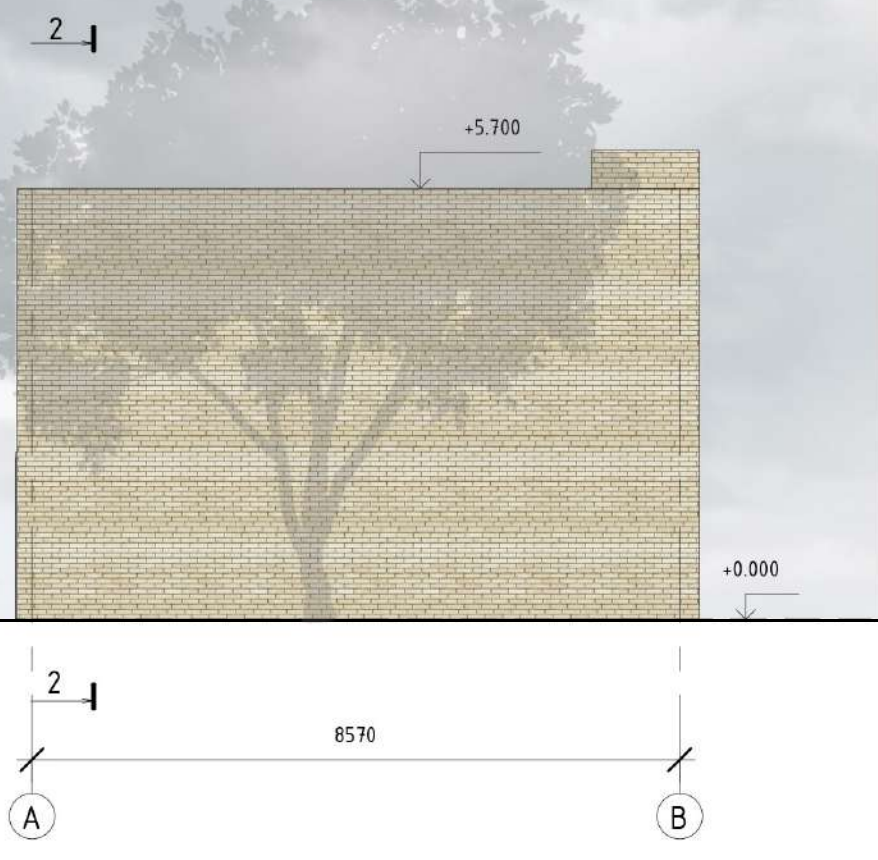
Ground floor explication

Number	Name	Area
1	Bakery hall	23 m²
2	Kitchen	4 m²
3	Toilet	4 m²
4	Caffee hall	21 m²
5	Kitchen	6 m²
6	Toilet	4 m²
7	Caffee hall	20 m²
8	Stuff room	4 m²
9	Toilet	3 m²
10	Caffee hall	27 m²
11	Stuff room	3 m²
12	Toilet	4 m²
13	Shop room	25 m²
14	Stuff room	3 m²
15	Toilet (stuff only)	2 m²
16	Haircut hall	32 m²
17	Stuff room	5 m²
18	Toilet (stuff only)	2 m²
19	Bakery hall	21 m²
20	Kitchen	7 m²
21	Toilet	4 m²
22	Market hall	144 m²
23	Tambour	6 m²
24	Stuff room	6 m²
25	Storage	10 m²

1st floor explication

Number	Name	Area
26	Caffee hall	16 m²
27	Toilet (stuff only)	2 m²
28	Caffee hall	15 m²
29	Toilet (stuff only)	2 m²
30	Caffee hall	18 m²
31	Toilet (stuff only)	2 m²
32	Shop room	19 m²
33	Caffee hall	189 m²

SECTION 2-2
S 1:100

Waterproofing membrane (coating)
Insulation
Vapor barrier
Concrete screed
Concrete ribbed slab

+5.700
+5.400
+5.075
2375
+2.700
+2.700
+2.490
+0.000
+0.000

| 4500 | 4380 | 3930 | 4680 | 4180 | 5410 | 4430 | 21630 |

53140

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

ROOF PLAN
S 1:100

Ⓑ
8570
Ⓐ
2

1,5% 1,5% 1,5% 1,5% 1,5% 1,5% 1,5% 1,5% 1,5% 1,5% 1,5% 1,5% 1,5%

| 4500 | 4380 | 3930 | 4680 | 4180 | 5410 | 4430 | 21630 |

53140

⑩ ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑪

SECTION 1-1
S 1:100

+5.400   +5.700
+4.900
+5.075
+2.700
+2.490
+0.000

8570

Ⓐ Ⓑ

SCHEME OF DEMOLITION OF PART OF THE BUILDING
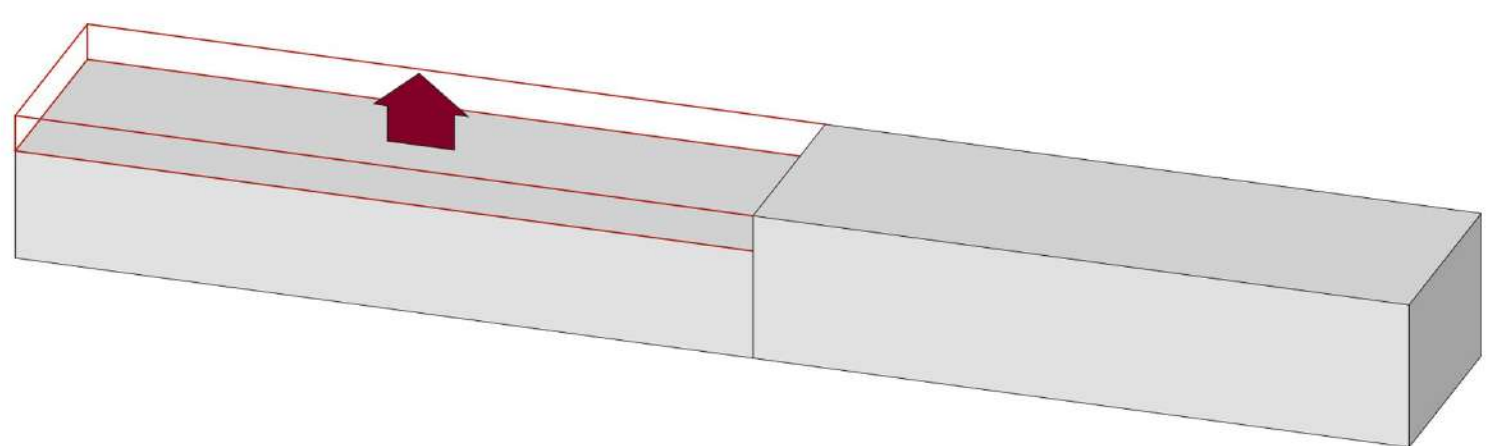
h = 5 050

SCHEME OF DEMOLITION OF PART OF THE BUILDING

EXTERIOR PHOTOFIXATION OF COMMON CONDITION OF THE BUILDINGS

GENERAL CONCEPTION OF THE BUILDING

Originally it was a complex of 15 buildings for various industrial functions: welding workshops, garages, warehouses, utility buildings etc. Due to the decision to make two additional entrances to the complex from the residential area, it was decided to demolish part of the premises on both sides. There are 4 garages, 3 workshops and a household building left for design. It was decided to divide the buildings into main functions: a grocery market and a group of multifunctional premises that can be rented out. These can be cafes, bakeries, bookstores, hairdressers and beauty salons, etc. The link structure allows to create small premises convenient for rent, and also creates a variety of functions.

Since historically these buildings were built in Soviet times and their original appearance is painted in red brick, it was decided to replace the paint with the original brick. The facade was designed for one height, and the difference between the original height and the design is highlighted by a different color.

VISUAL CONCEPTION OF THE BUILDINGS

INTERIOR PHOTOFIXATION OF COMMON CONDITION OF THE BUILDINGS

Visually, the existing complex of buildings looks fragmented and chaotic due to the difference in height, roof structure, roofing materials and more. Also due to the construction at different times, the overall composition of the facade is missing. To correct this, it was proposed to align the height of the buildings to the common, which will add order and height to the garage.
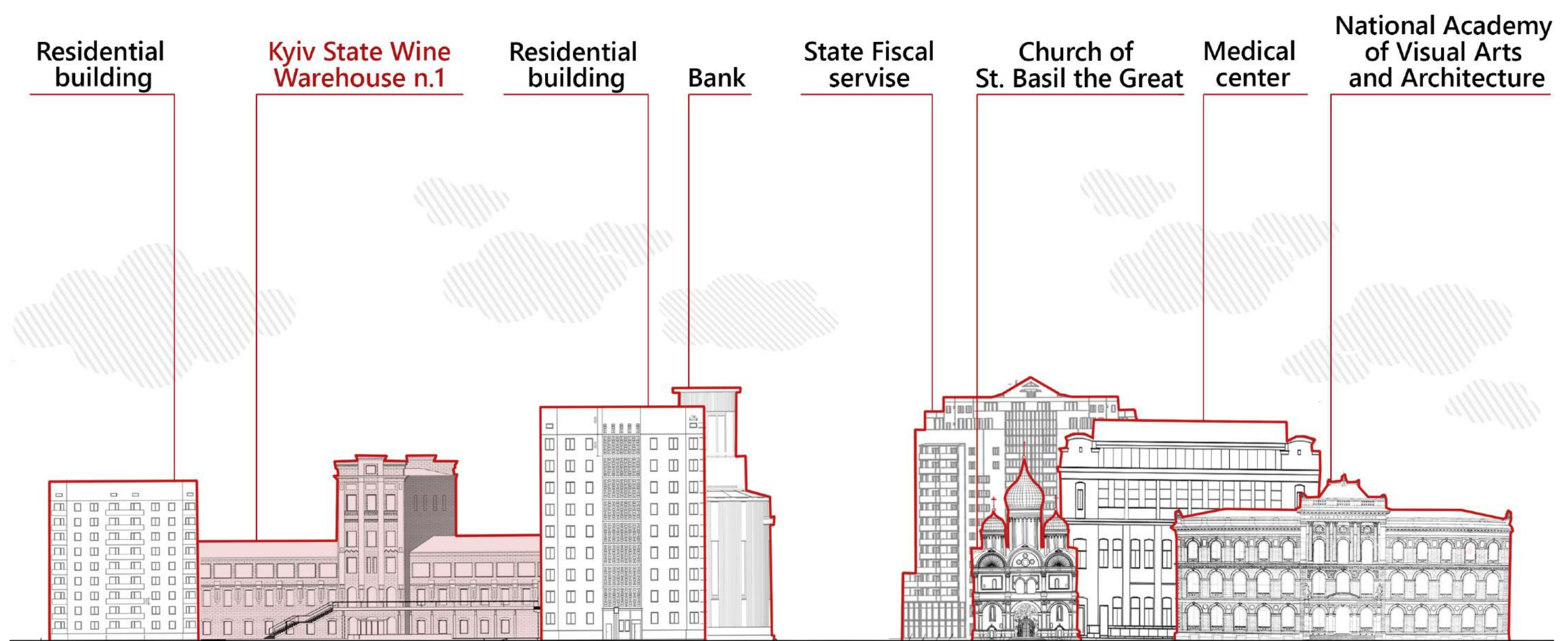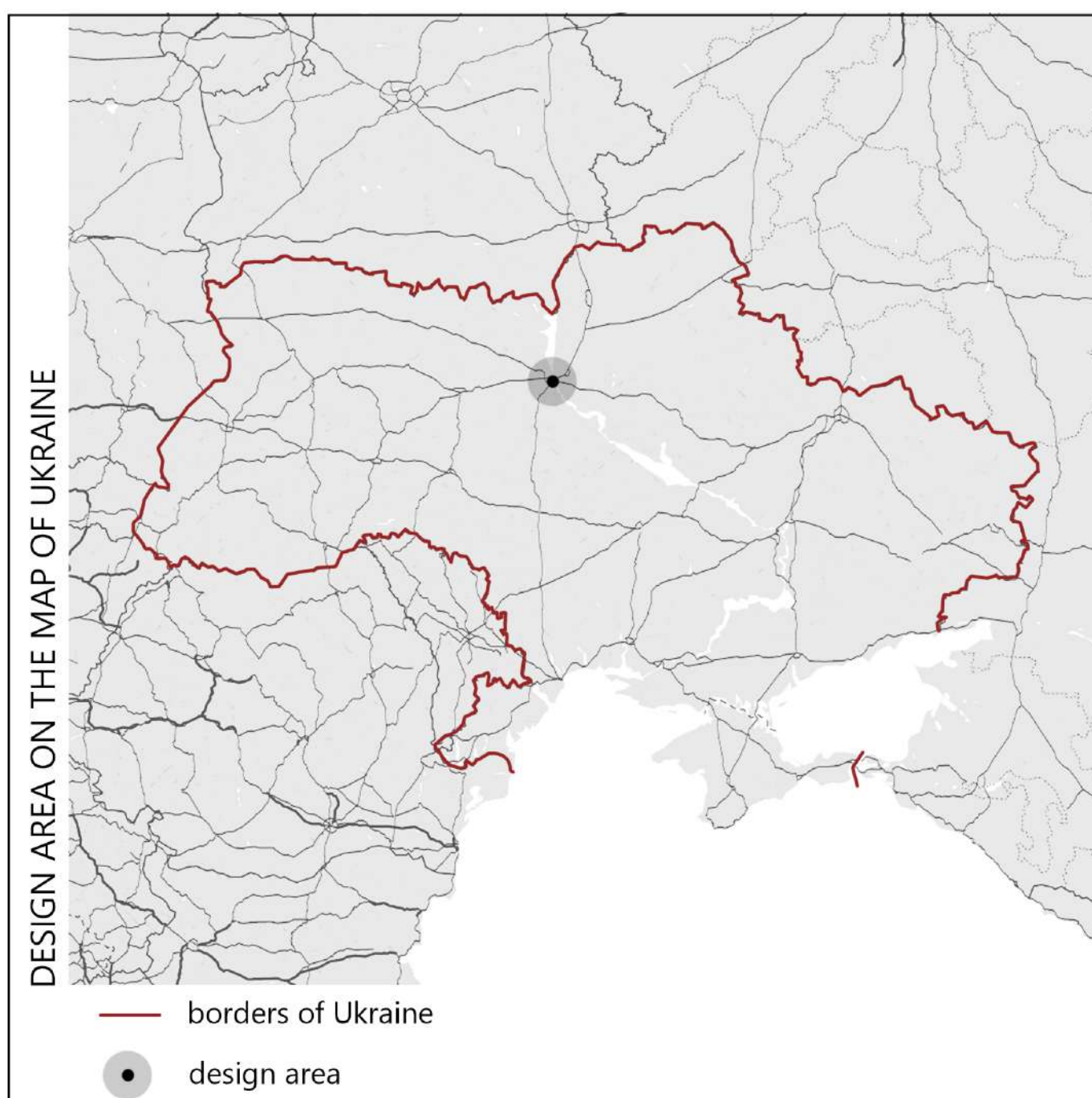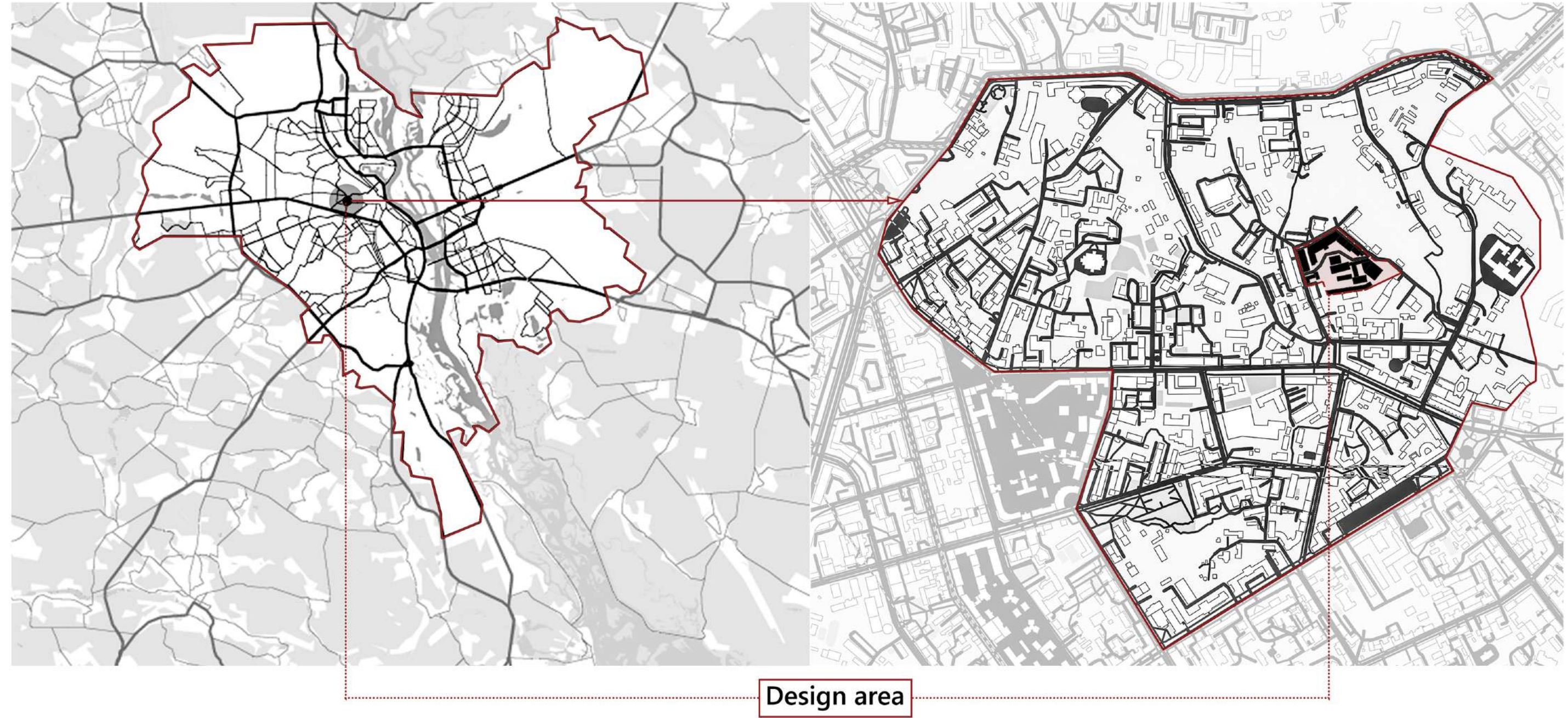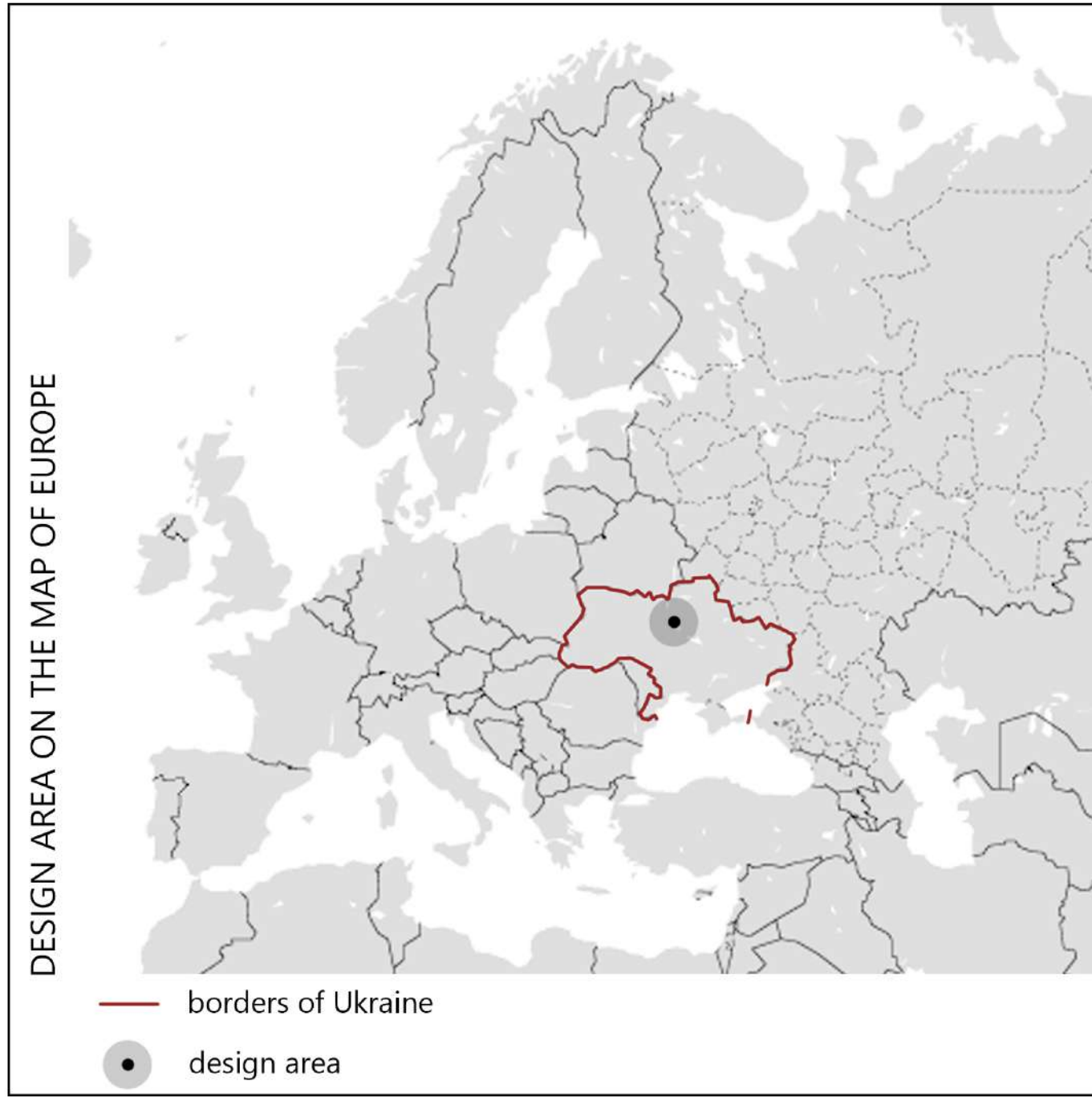
FUNCTIONAL CONCEPTION OF THE BUILDINGS

Explication

■ product market

■ studios
can be used for different workshops

■ recreation place
here can be cafes/bakeries and other staff
for public entertaiment

DESIGNING A MULTIFUNCTIONAL COMPLEX FOR GAME DEVELOPMENT INDUSTRY AS A PART OF KYIV STATE WINE WAREHOUSE N.1 REVITALIZATION

Kerekesha Zoia, Kharchenko Anastasiia, Kolisnyk Roksolana, Kozlova Diana

DESIGN AREA ON THE MAP OF EUROPE

— borders of Ukraine

● design area

Design area

DESIGN AREA ON THE MAP OF UKRAINE

— borders of Ukraine

● design area

Residential building

Kyiv State Wine Warehouse n.1

Residential building

Bank

State Fiscal servise

Church of St. Basil the Great

Medical center

National Academy of Visual Arts and Architecture

Residential building 1976, 13 st.
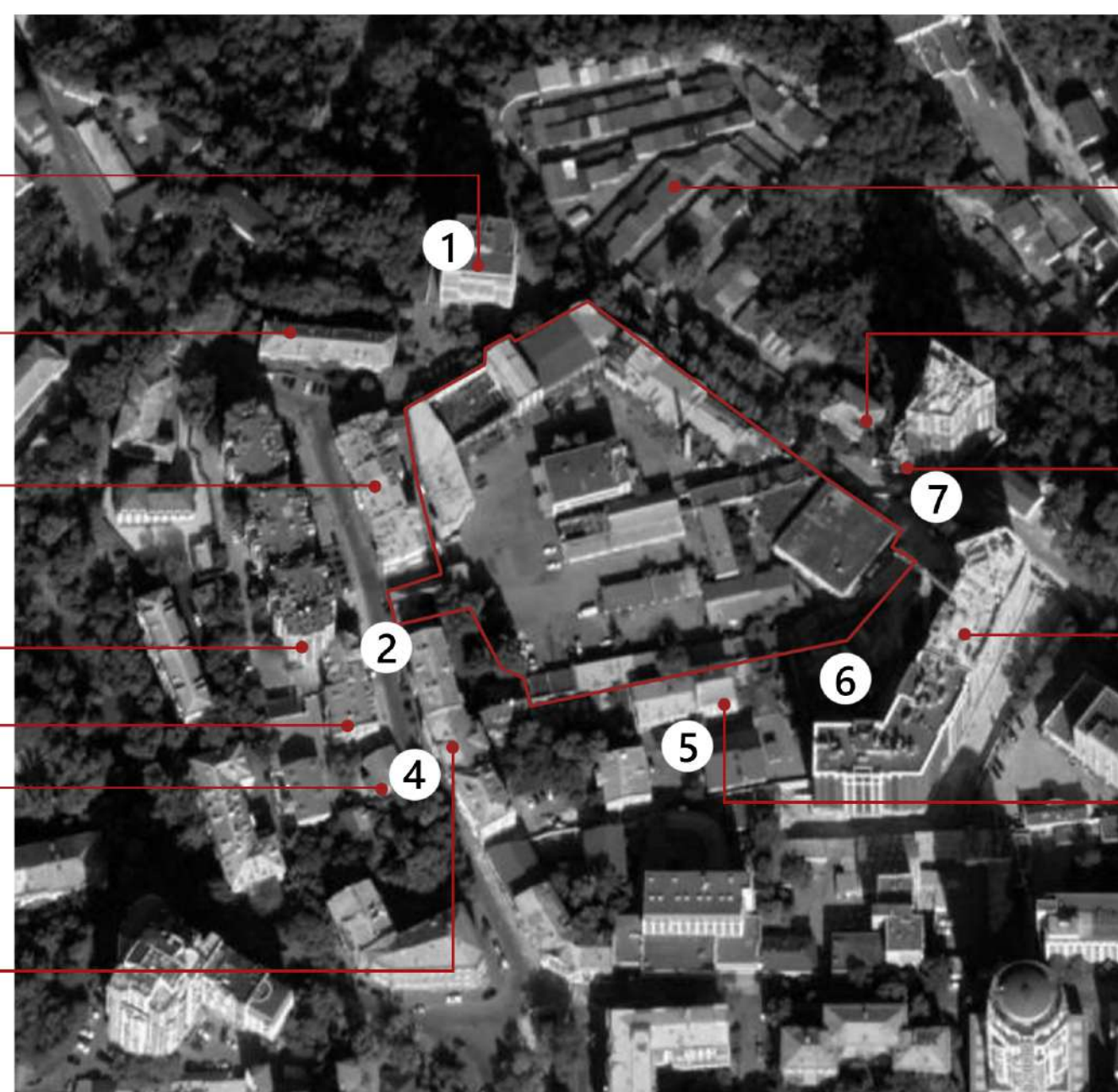
Residential building 5 st.

Residential building 1917, 4 st.

Residential building 2000, 7 st.

Office building

Affiliate of Kyiv Museum
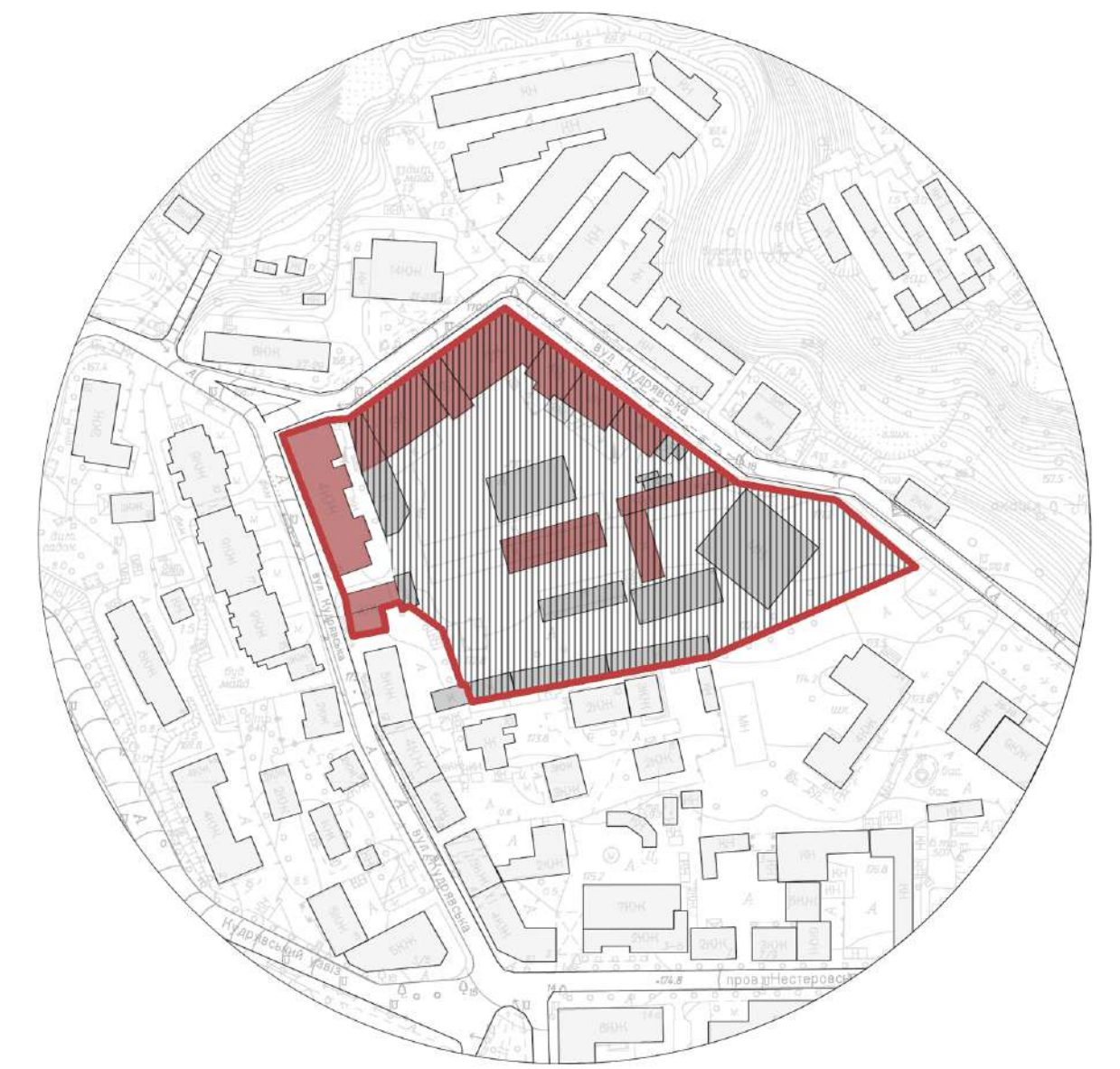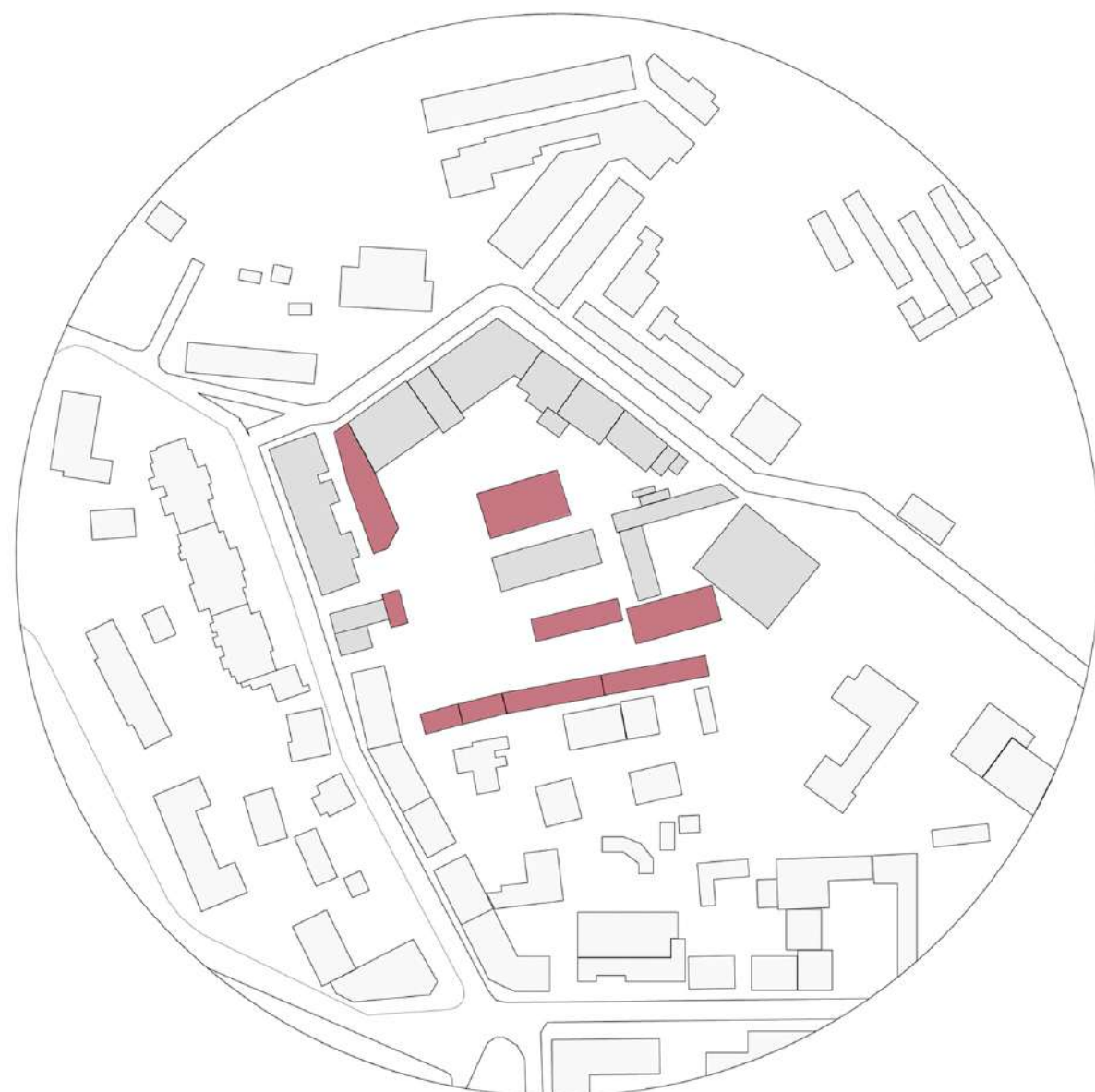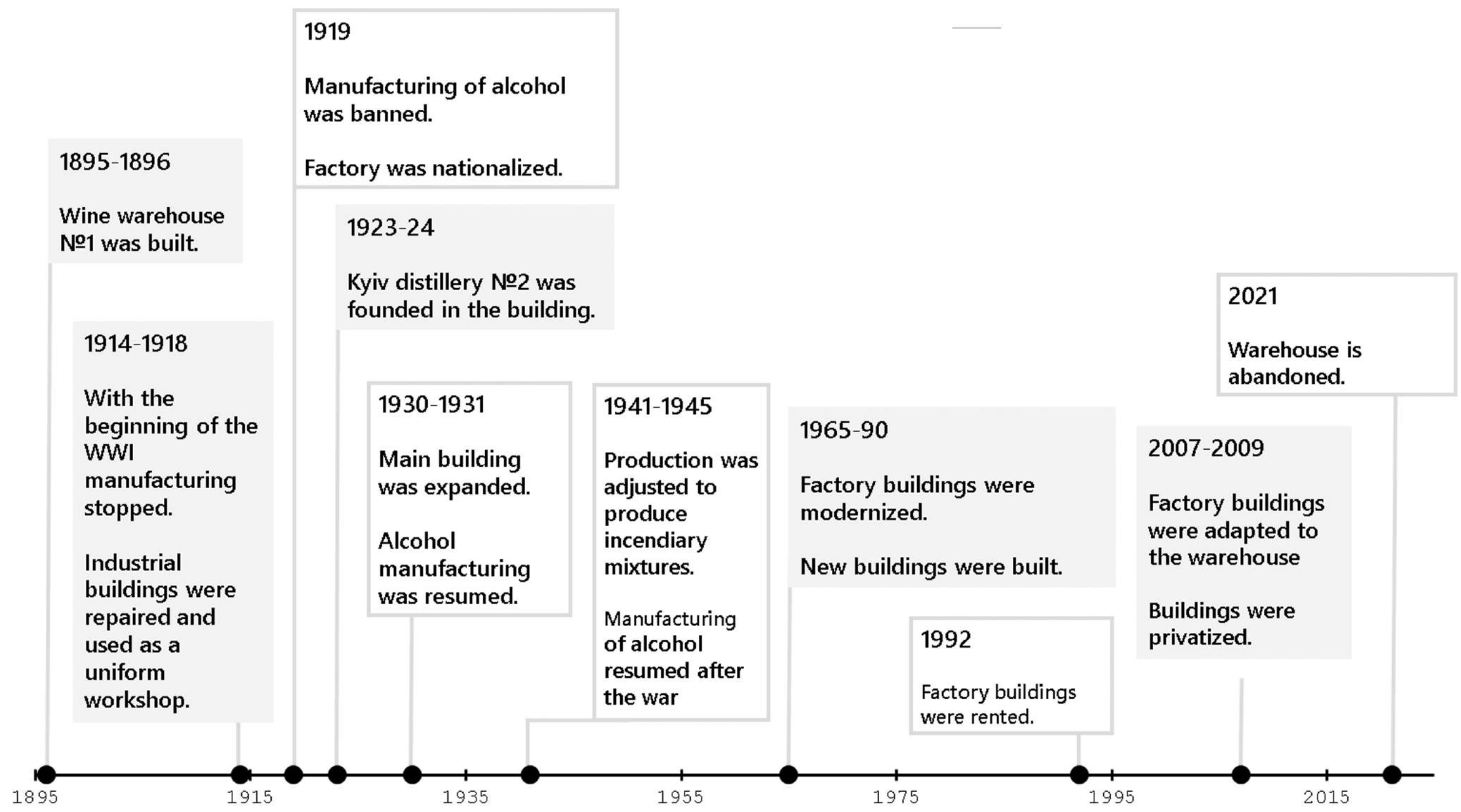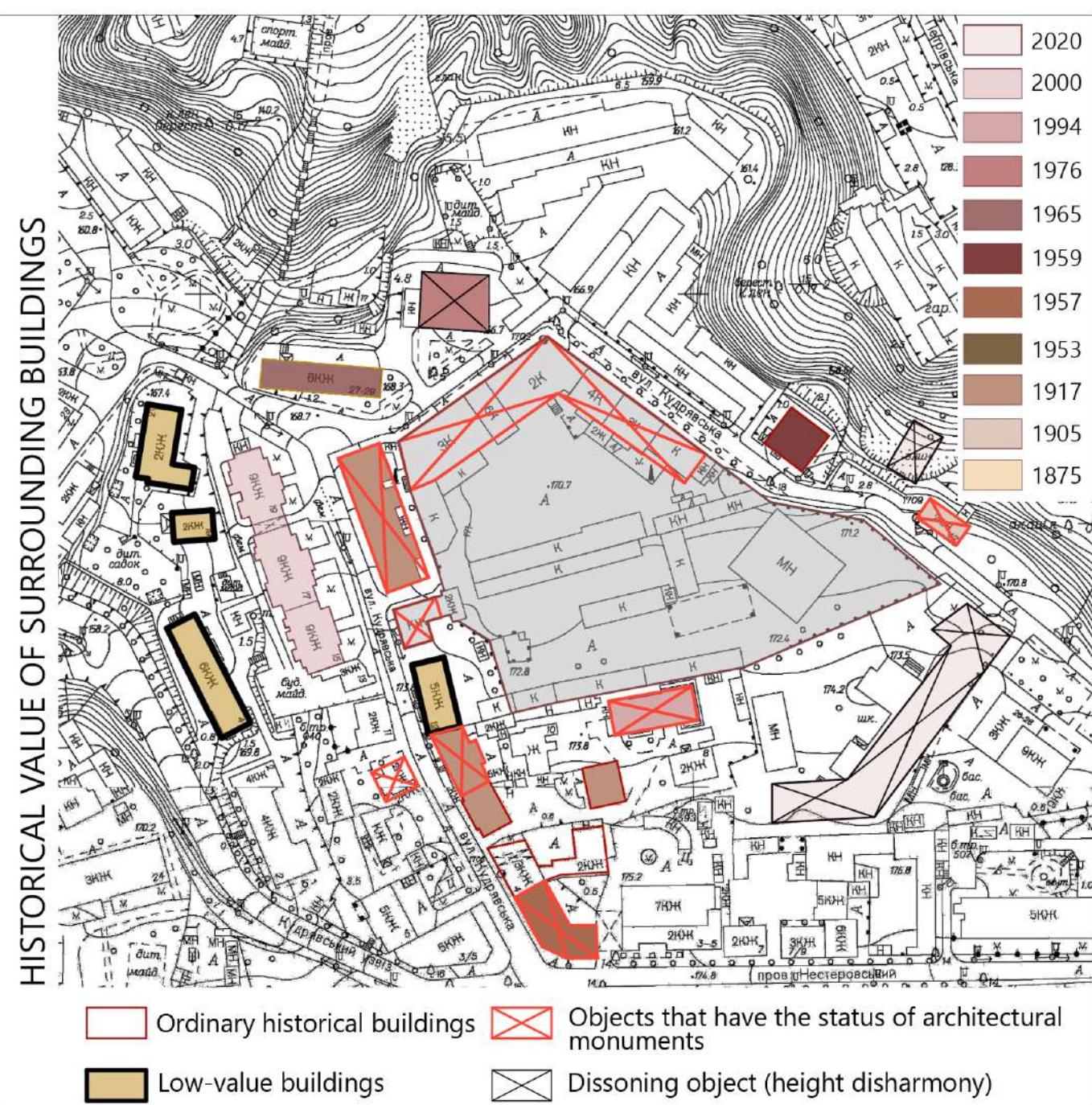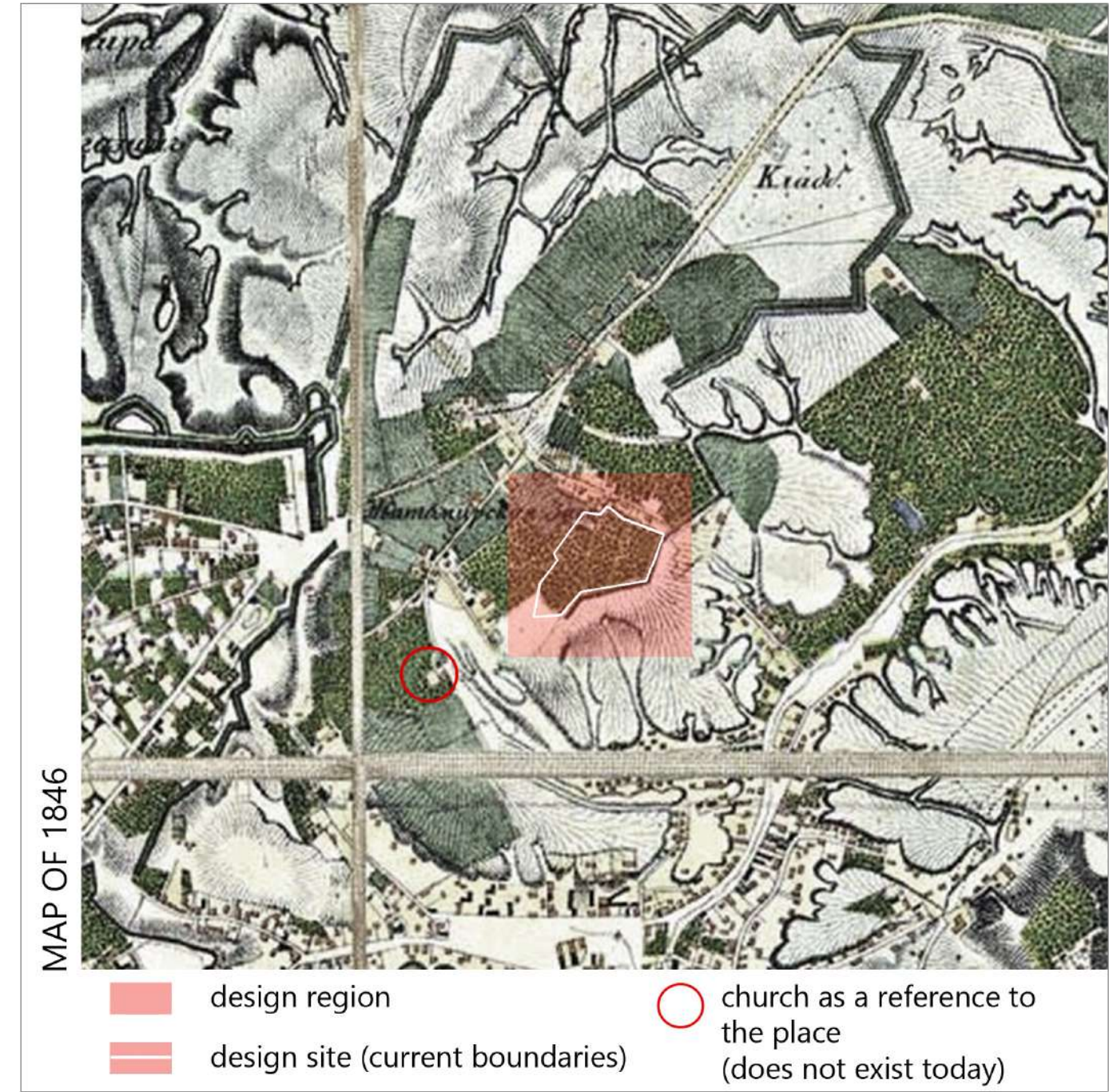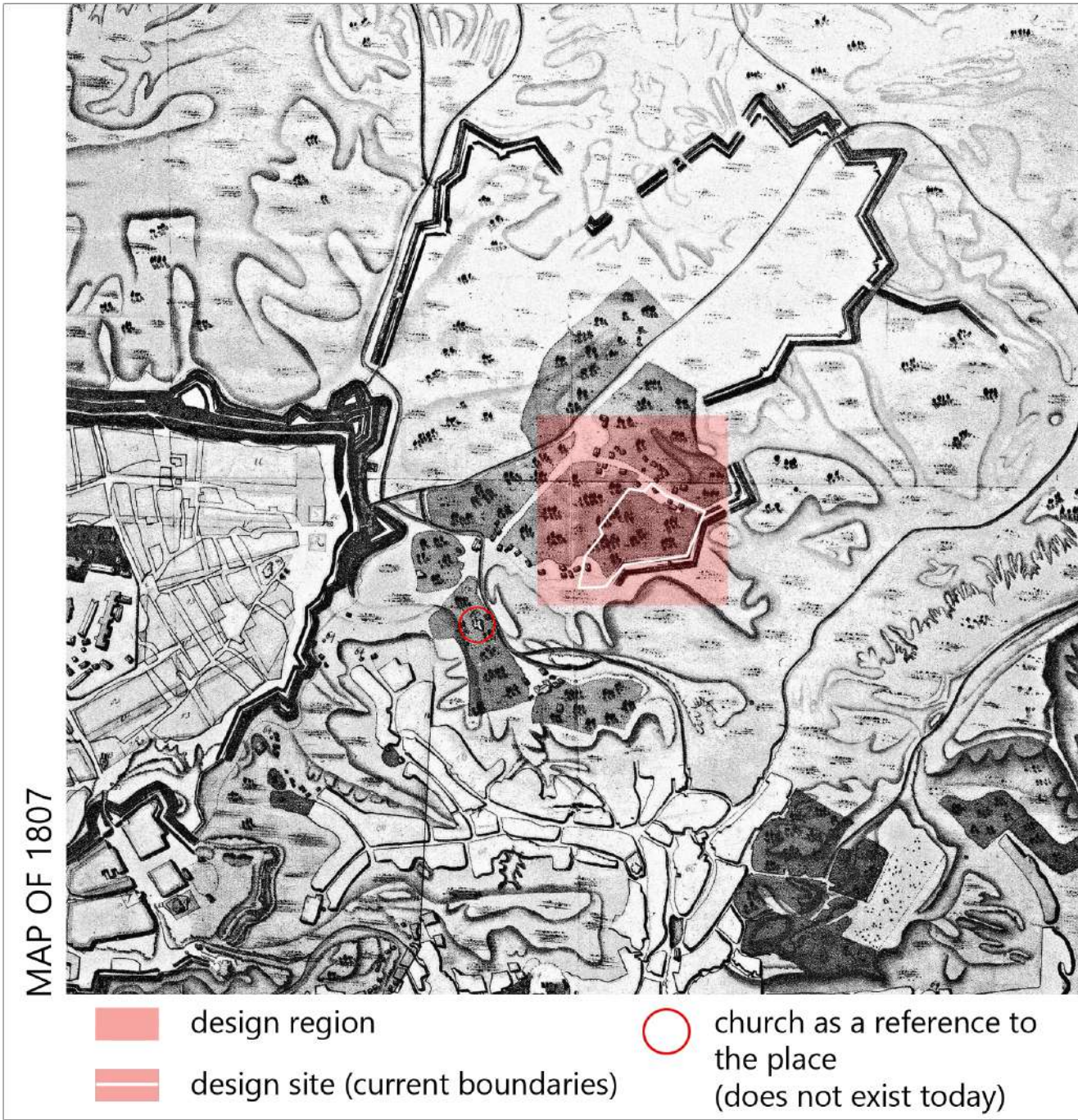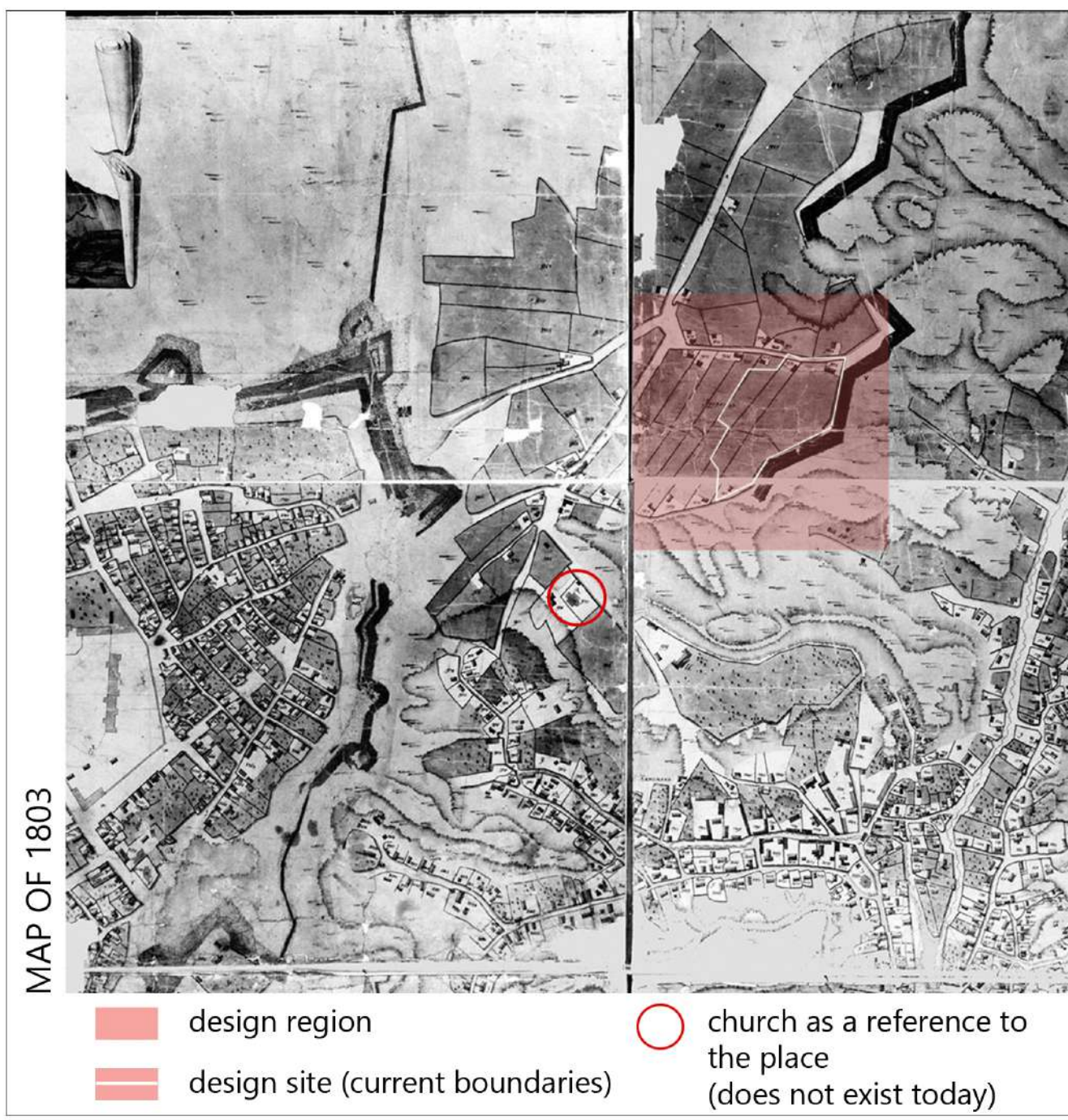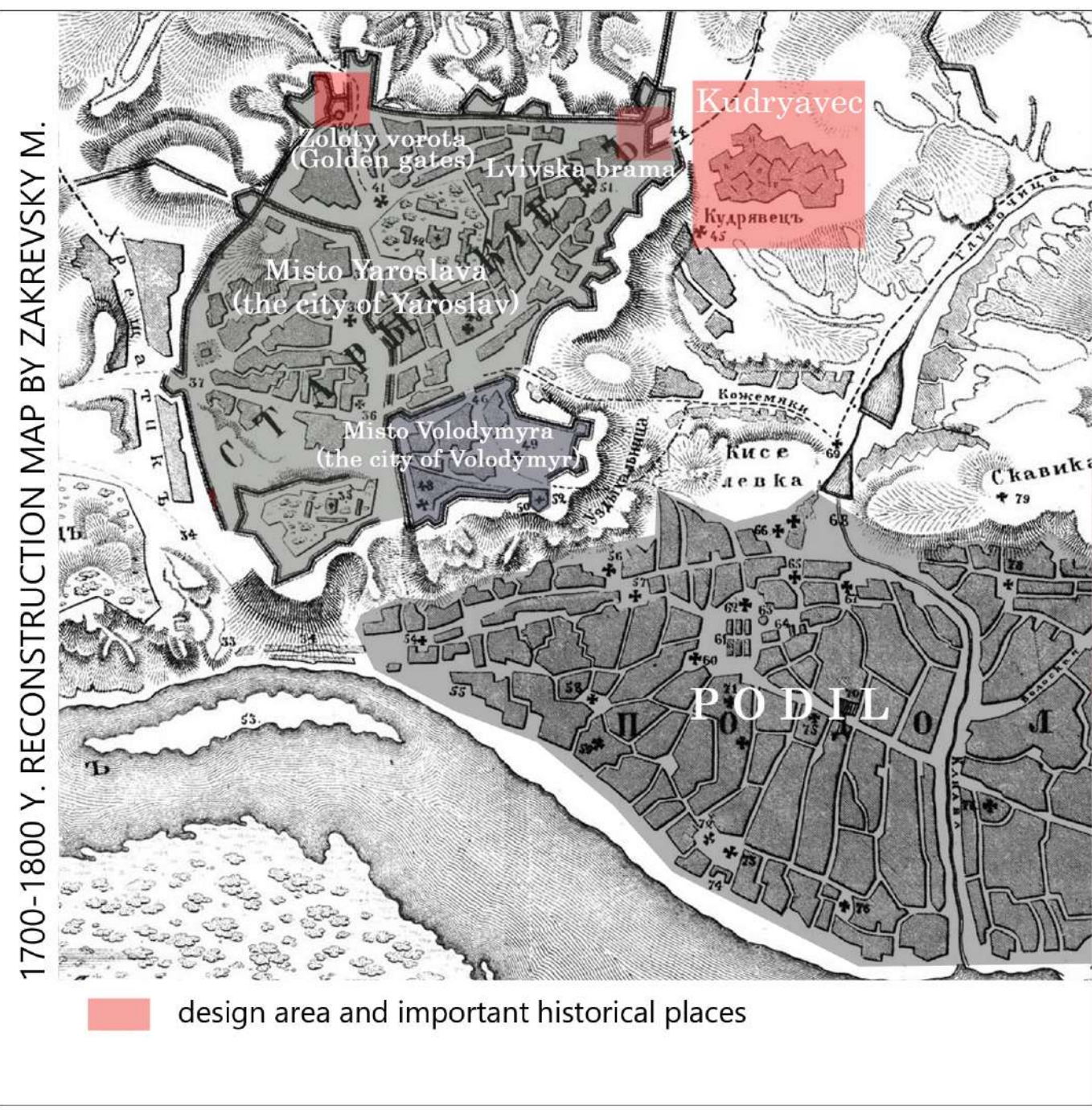
Residential building 5 st.

Garages

Residential building 4 st.

Residential building 2020, 16 st.

Residential building 2021, 15 st.

Institute of Applied Optics

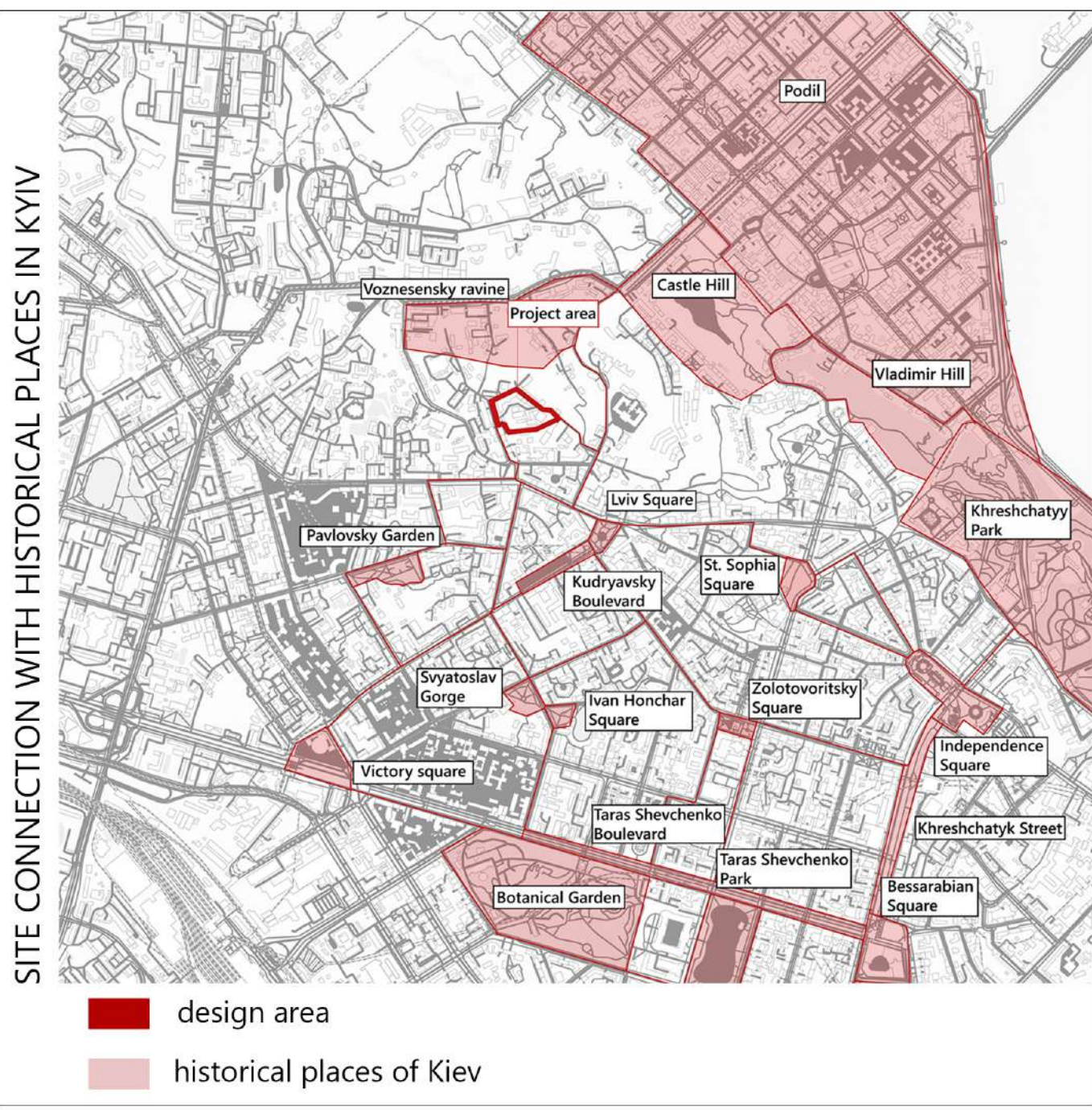DESIGN AREA SURROUNDING — design area boundaries

design area and important historical places

design region

design site (current boundaries)

church as a reference to the place (does not exist today)

design region

design site (current boundaries)

design area and important historical places

design site

boundaries of Old Kyiv City

design region

design site (current boundaries)

church as a reference to the place (does not exist today)

design region

design site (current boundaries)

church as a reference to the place (does not exist today)

2020
2000
1994
1976
1965
1959
1957
1953
1917
1905
1875

Ordinary historical buildings

Low-value buildings

Objects that have the status of architectural monuments

Dissoning object (height disharmony)

1895-1896

Wine warehouse №1 was built.

1914-1918

With the beginning of the WWI manufacturing stopped.

Industrial buildings were repaired and used as a uniform workshop.

1919

Manufacturing of alcohol was banned.

Factory was nationalized.

1923-24

Kyiv distillery №2 was founded in the building.

1930-1931

Main building was expanded.

Alcohol manufacturing was resumed.

1941-1945

Production was adjusted to produce incendiary mixtures.

Manufacturing of alcohol resumed after the war

1965-90

Factory buildings were modernized.

New buildings were built.

1992

Factory buildings were rented.

2007-2009

Factory buildings were adapted to the warehouse

Buildings were privatized.

2021

Warehouse is abandoned.

1895   1915   1935   1955   1975   1995   2015

THE BUILDINGS DESIGNED BY ARCH. BEZSMERTNYI V.

original buildings

NEW BUILDINGS BUILT IN SOVIET TIMES

new Soviet buildings

HISTORICAL VALUE OF DESIGN AREA BUILDINGS

design area

boundaries of the territory of recently discovered objects of cultural herritage

recently discovered objects of cultural herritage

SITE CONNECTION WITH HISTORICAL PLACES IN KYIV

- ■ design area
- ■ historical places of Kiev

ANALYSIS OF TRANSPORT ROADS

- — street marking
- → direction of traffic
- 🚏 gas station
- Kudryavska Street (one-way traffic) street name
- 🚌 public transport stops
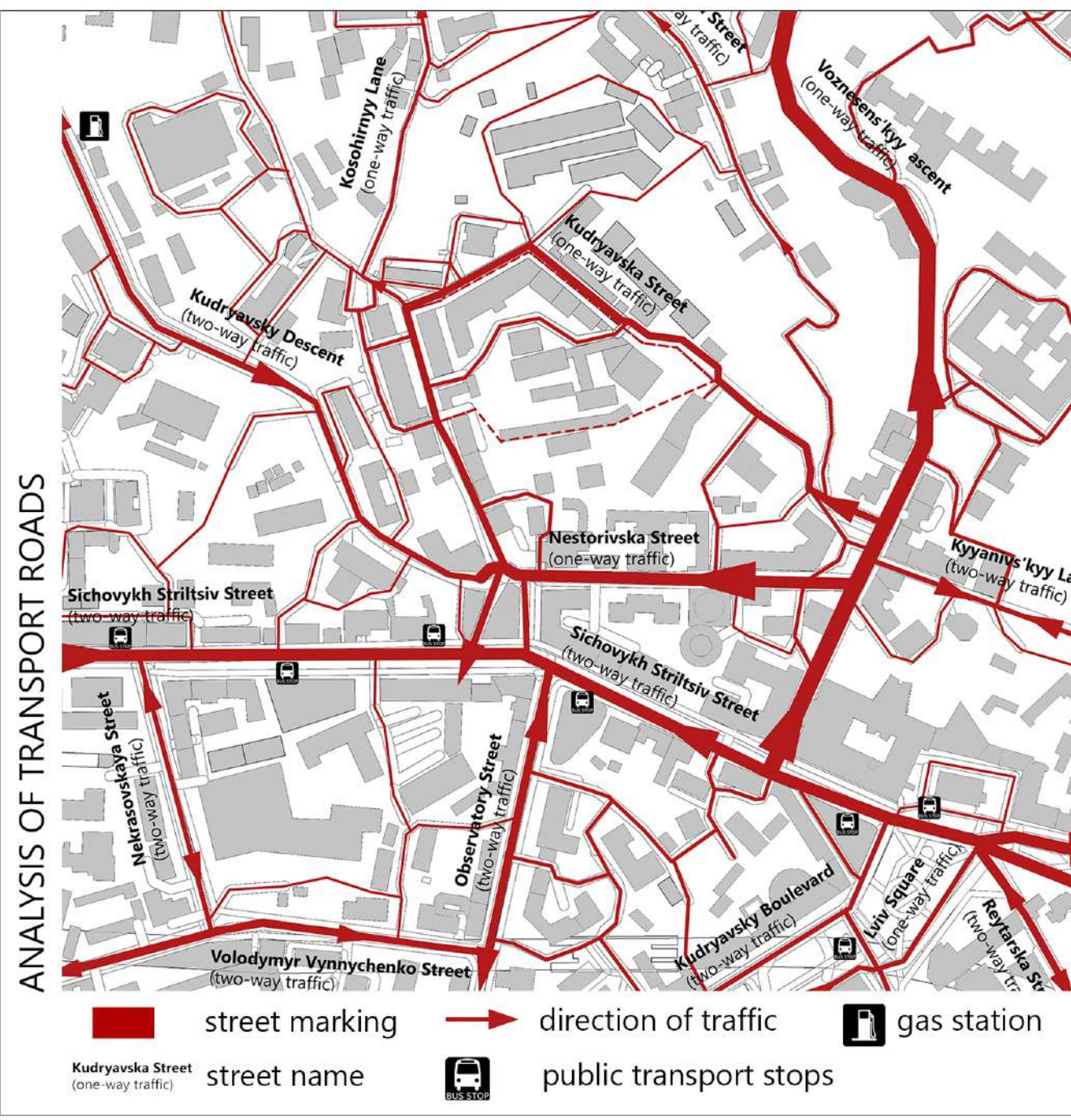
ANALYSIS OF PEDESTRIAN PATHS

- ■ pedestrian paths
- 🚸 pedestrian crossings
- 🚌 public transport stops
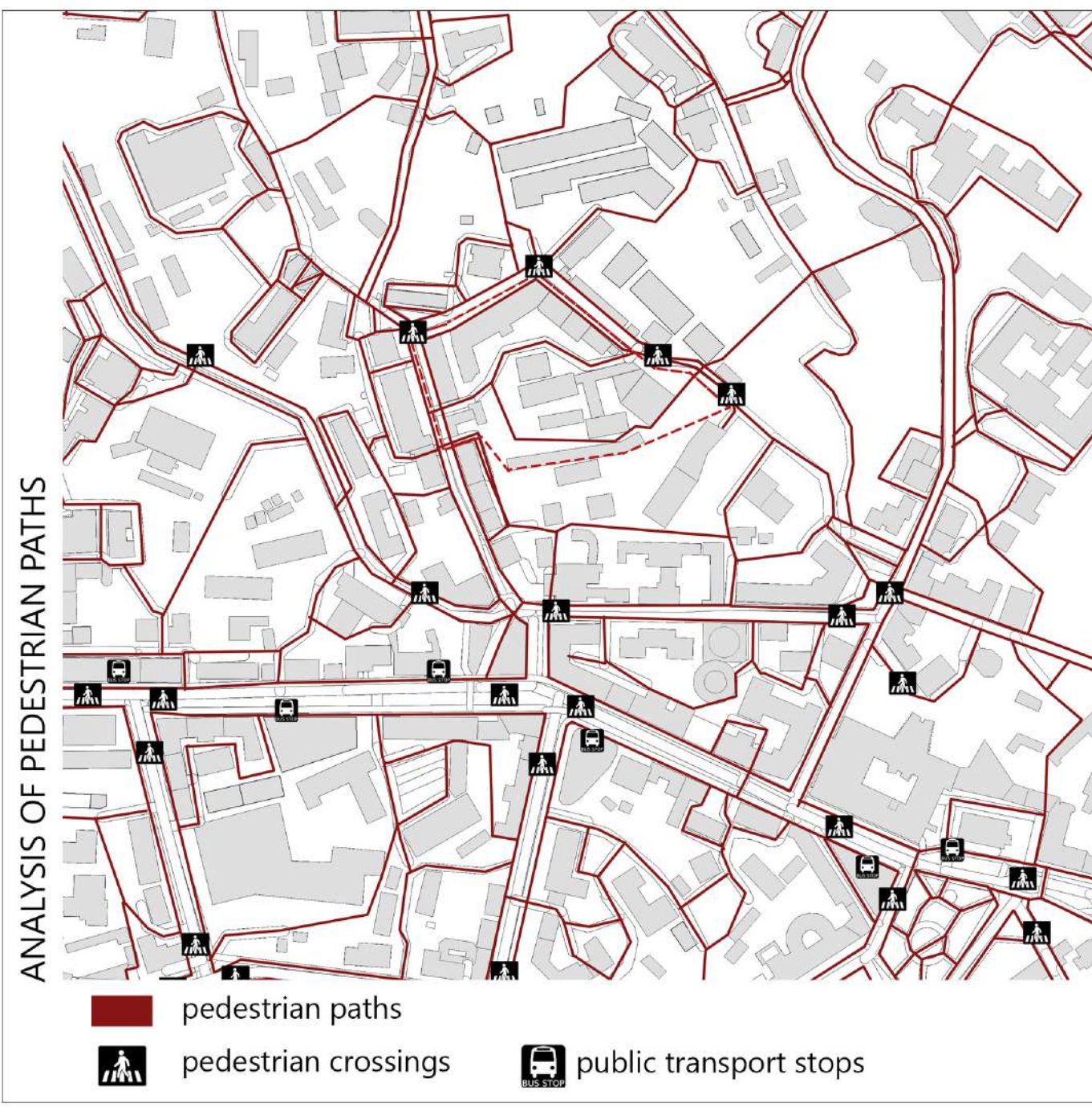
FUNCTIONAL ZONING OF THE TERRITORY

- ■ industrial areas
- ■ residential area
- ■ State wine warehouse №1
- ■ public areas
- ■ communal area
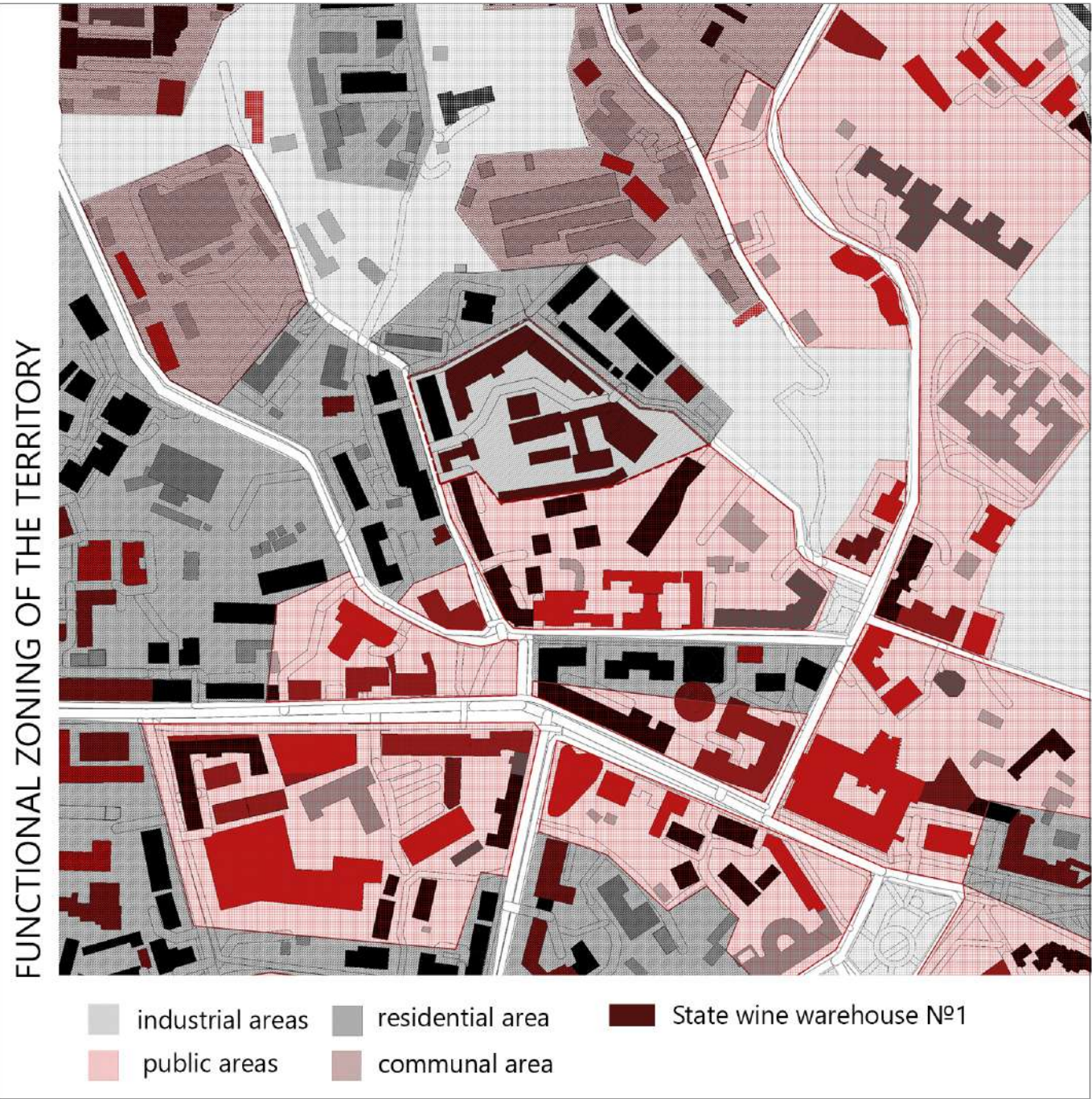
ANALYSIS OF GREENERY

- ■ design area
- ● greenery

ANALYSIS OF THE RELIEF

- ■ design area
- 180 m.a.s.l. — 115 m.a.s.l.

Emergency 80-100%
Poor 50-80%
Average 30-50%
Satisfactory 0-30%
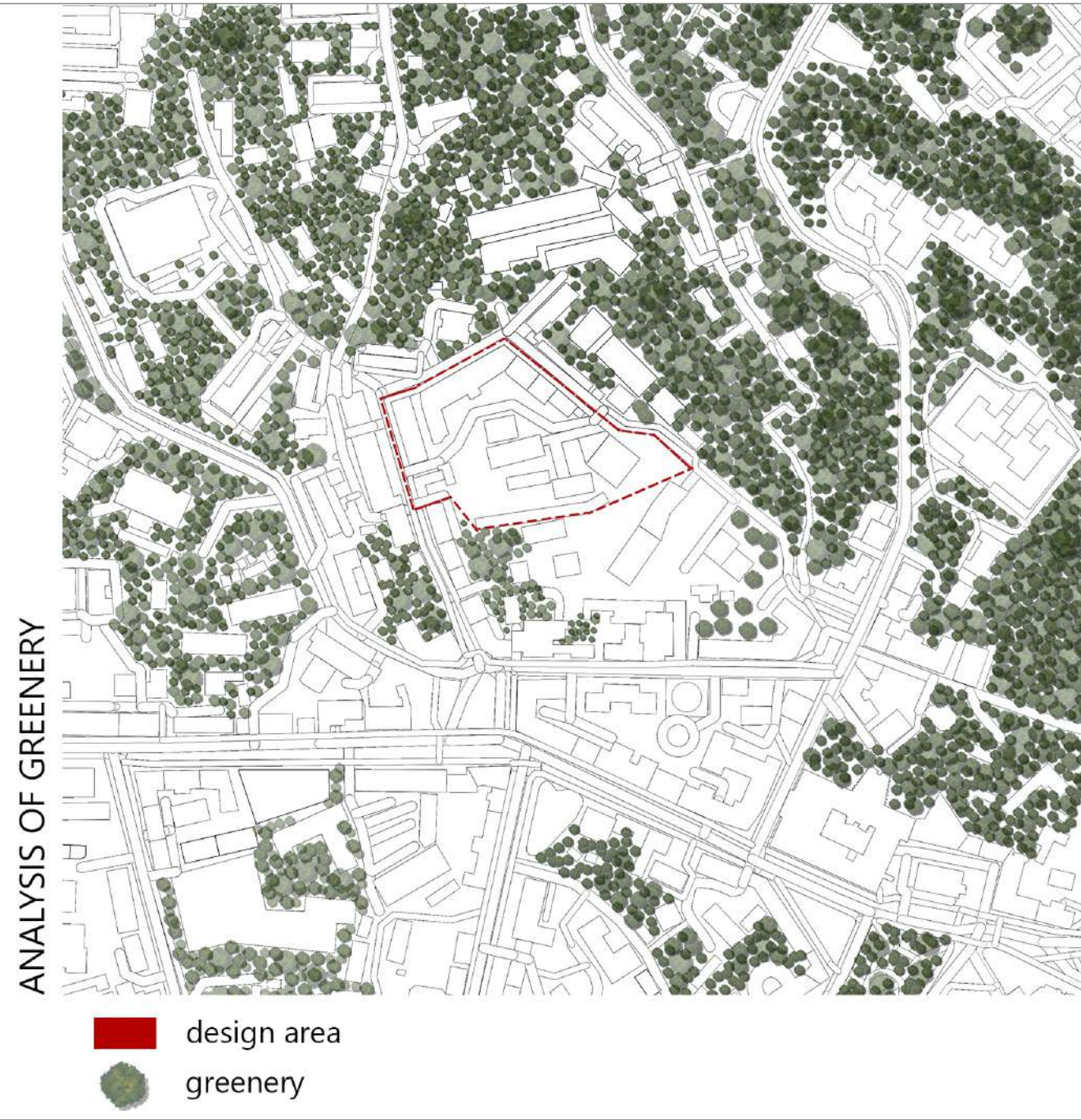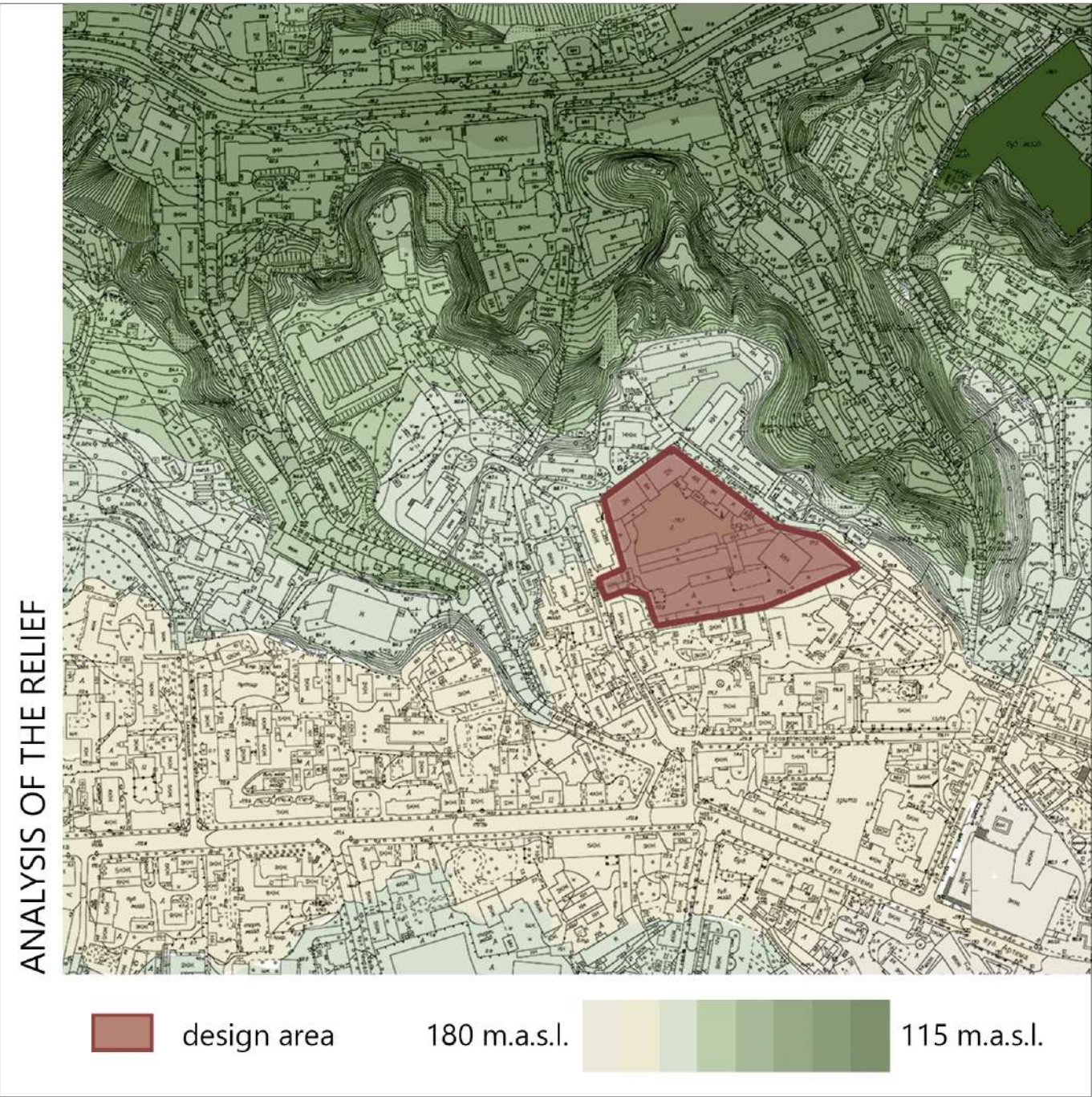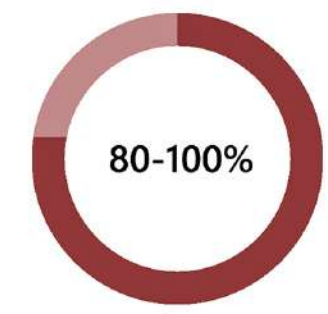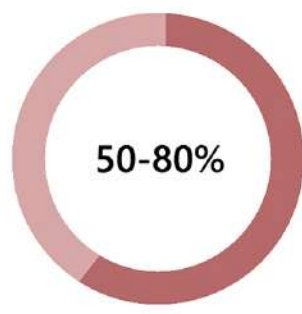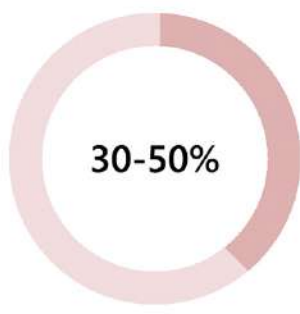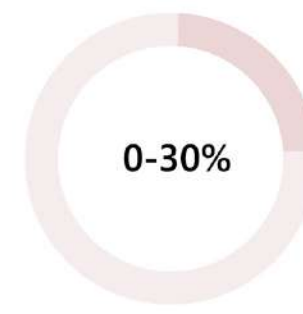
Notes:
1. Completely or partially destroyed roof
2. Broken doors and windows in most buildings
3. Decorative elements in poor condition
4. Peeled paint

Demolished structures are marked in **black**. They have no historical significance. Currently, these are canopies that serve as a warehouse.
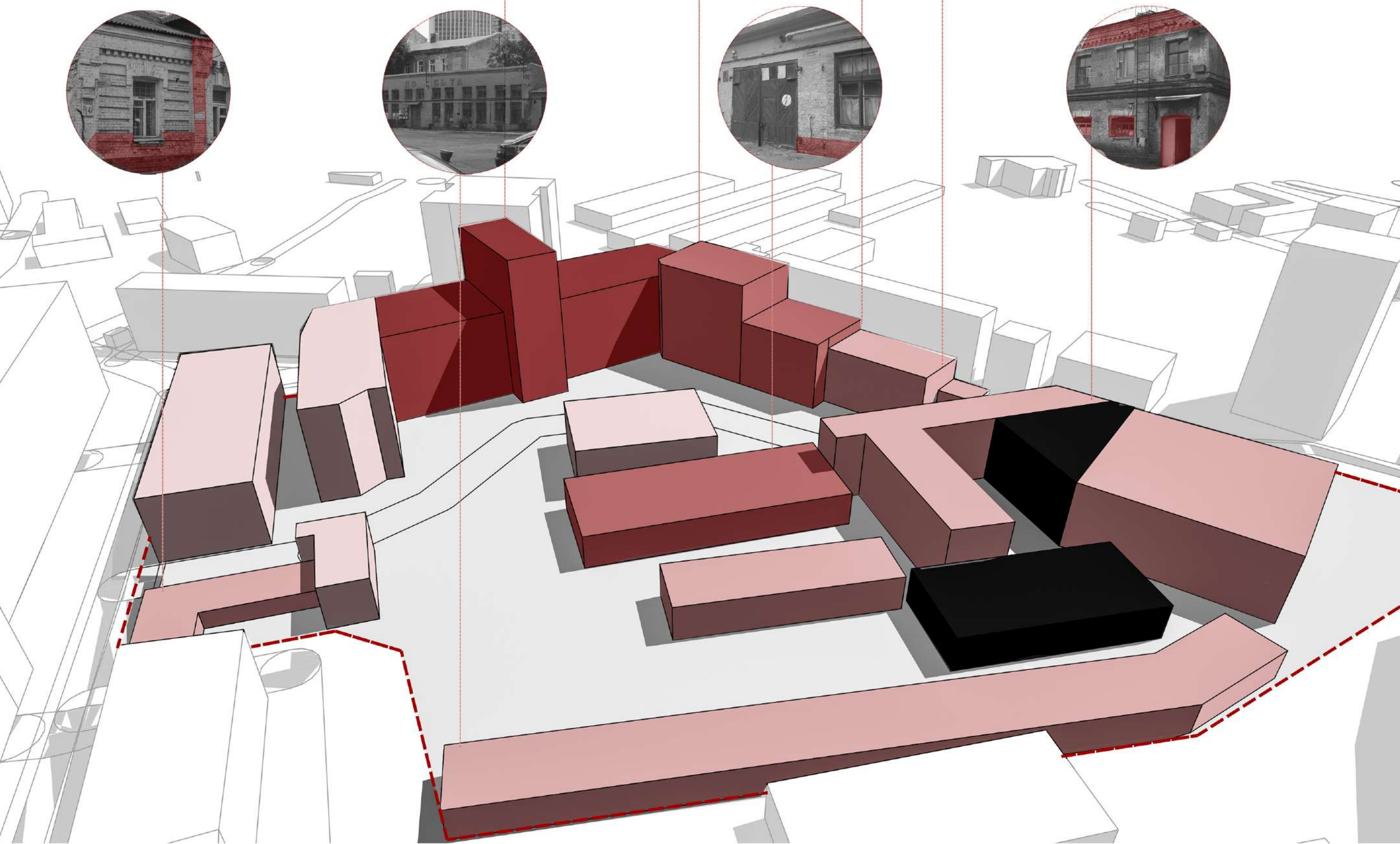
ANALYSIS OF THE TECHNICAL CONDITION OF THE BUILDINGS

BEFORE

- ■ demolition of the superstructures

AFTER

- ■ construction of new architectural objects
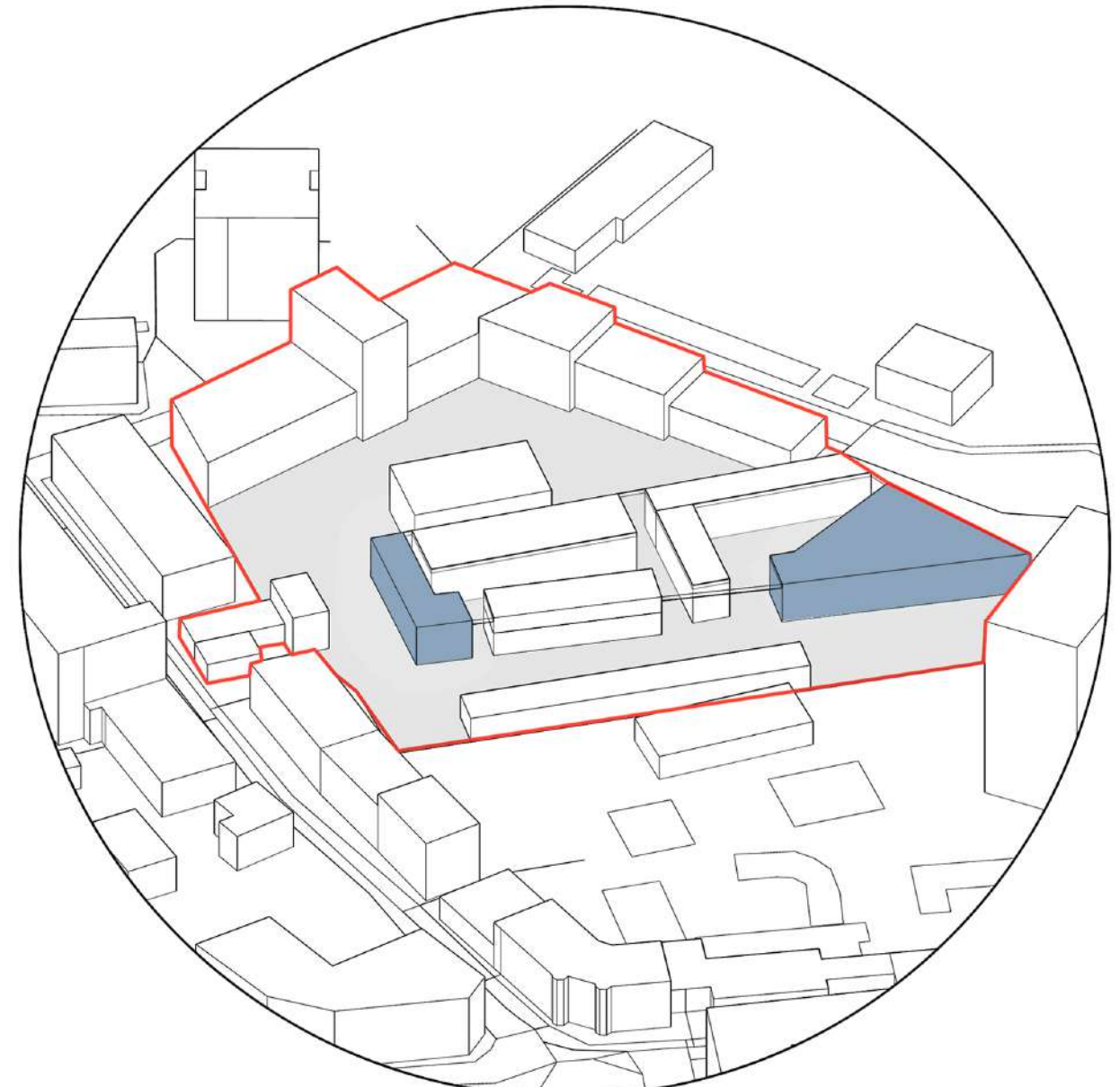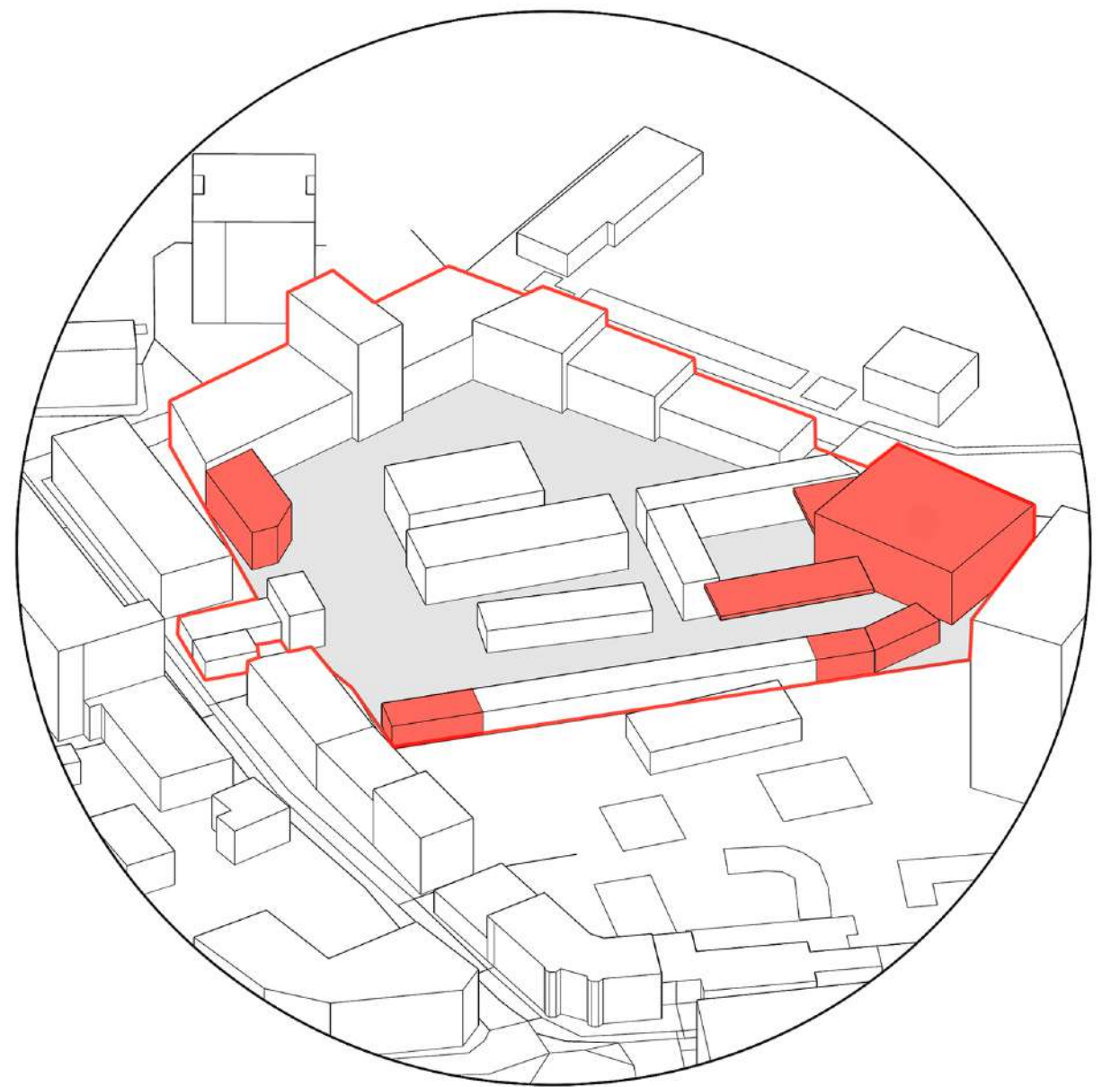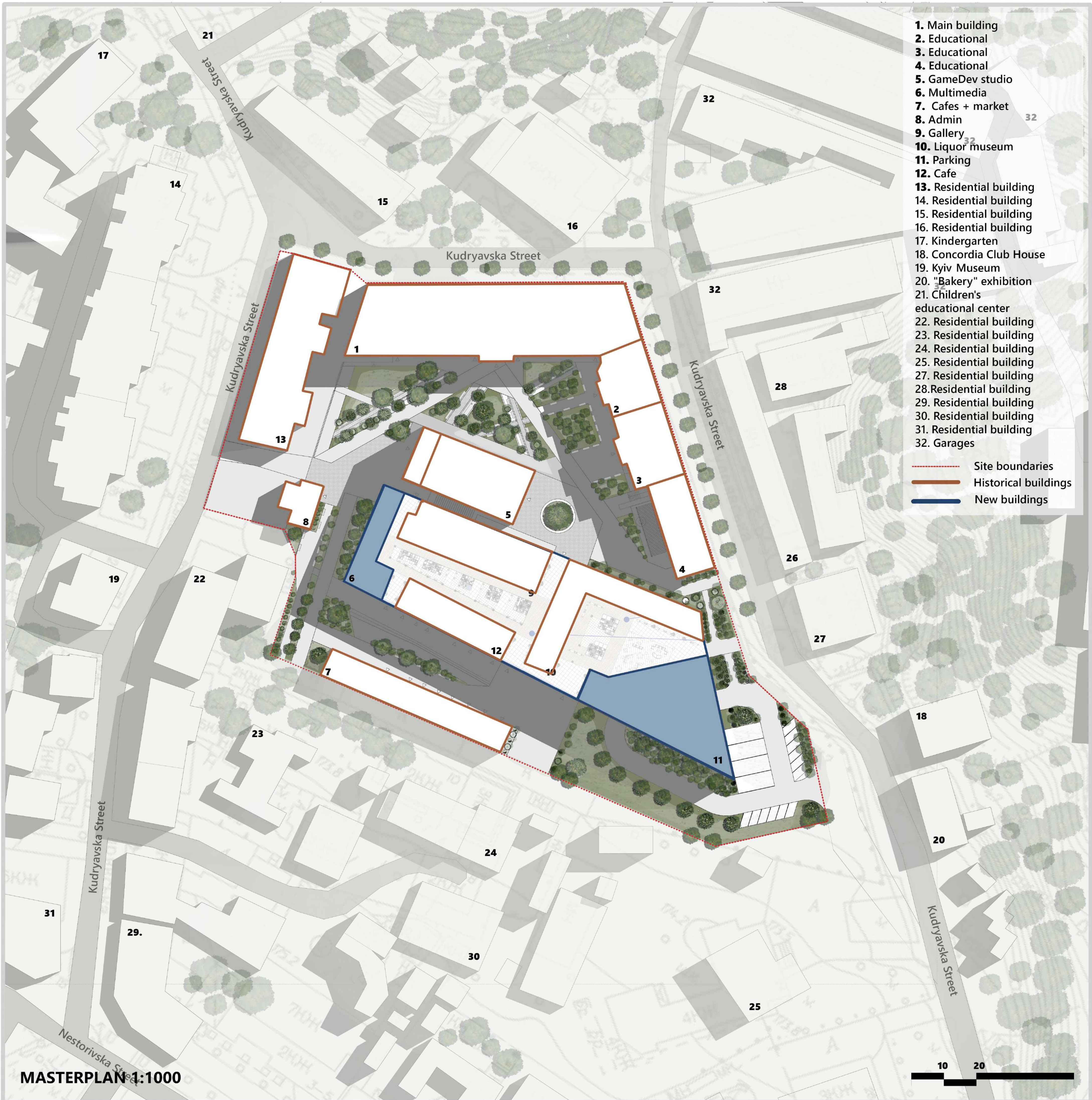
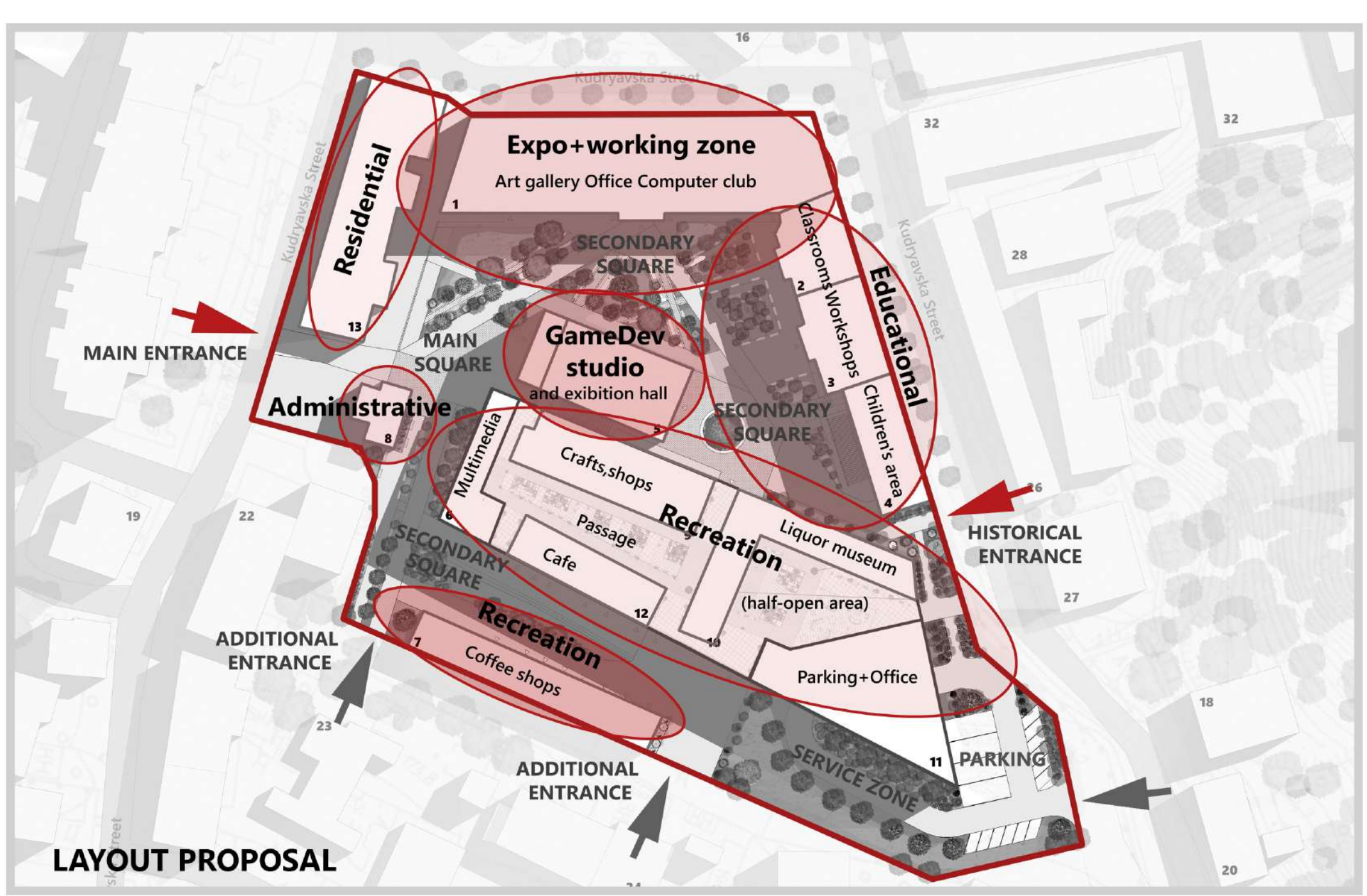**1.** Main building
2. Educational
3. Educational
4. Educational
5. GameDev studio
6. Multimedia
7. Cafes + market
8. Admin
9. Gallery
10. Liquor museum
11. Parking
12. Cafe
13. Residential building
14. Residential building
15. Residential building
16. Residential building
17. Kindergarten
18. Concordia Club House
19. Kyiv Museum
20. "Bakery" exhibition
21. Children's educational center
22. Residential building
23. Residential building
24. Residential building
25. Residential building
27. Residential building
28. Residential building
29. Residential building
30. Residential building
31. Residential building
32. Garages

- - - Site boundaries
── Historical buildings
── New buildings

MASTERPLAN 1:1000

10   20

LAYOUT PROPOSAL

Expo+working zone
Art gallery Office Computer club
Residential
SECONDARY SQUARE
Educational
GameDev studio
and exibition hall
MAIN SQUARE
SECONDARY SQUARE
Children's area
MAIN ENTRANCE
Administrative
Multimedia
Crafts,shops
Recreation
Liquor museum
HISTORICAL ENTRANCE
SECONDARY SQUARE
Passage
Cafe
(half-open area)
ADDITIONAL ENTRANCE
Recreation
Coffee shops
Parking+Office
ADDITIONAL ENTRANCE
SERVICE ZONE
PARKING

The proposed function of the revitalized Kyiv State Wine Warehouse n.1 is the multifunctional complex for game development industry. There are three main reasons why this function is needed here:

1. The field of Game development combines different disciplines. It includes such huge fields like art (visual art, acting), IT, Technologies and robotics etc.

2. Multifunctional space for people of all ages. The project aims not only to create a modern complex, but also a place that will be popular for locals of all ages.

3. There is no space for the game development industry in Kyiv. There is no special place which contain a whole process and all needed fields to create games, especially in the form of a complex.