

HEALTHCARE CENTER IN BILBAO

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- San Ignacio Neighbourhood, Bilbao, Basque Country, Spain
- Program: endowment, medical, administrative
- Design Studio V14th Course University of Navarra
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■ Buildings Plots ■ Municipality boundary Blocks — Infrastructure connections ■ Pre-existing healthcare centers / hospitals ■ Healthcare center project in San Ignacio Neighbourhood

SITE PLAN
E 1/5000



1. FLOODABILITY

The site where the health center is located does not fall within the vulnerable areas to possible risks of flooding due to a possible rise in the water level of the Duato canal. Therefore, the health center will not have its own construction criteria for buildings in flood-prone areas.



2. CONTAMINATED FLOORS

Considering the studies in which it is shown that there is a direct relationship between soil contamination and health problems, the health center has the virtue of being in a strategic point that, in a way, hides from the industrial environment characteristic of its surroundings. Fortunately, the long industrial history of Zorrozurra has not left notable consequences of contamination in the soil thanks to the regulation of the Master Plan for the protection of the soil drafted in 2005.



3. GREEN AREAS

Its location on the edge of the township of Bilbao translates into a peripheral location that allows a balance between direct contact with the city and proximity to large external natural spaces such as the great hill of Mount San Pablo Auzoa. Likewise, the spaces surrounding the health center suppose enough green areas areas so that the building itself does not need to provide much more green area than there already is.



4. ACCESSIBILITY

The entrances to the building have been strategically located according to the lines with the highest traffic that lead to the site. The widest and most unique entrance, offers a progressive way of entering the center and serves the entire southern residential area and Larrañaga street, the widest. However, due to the difference in height in the access area to the building, a second, much more direct entrance is proposed from the plaza on the lower level.



5. AREA OF OPPORTUNITIES

Existing urban plans have already proposed new mobility axes that will facilitate the use of the health center in areas such as the island of Zorrozurra and the tip of Zorroza, where new residential areas are planned in the not-so-distant future.

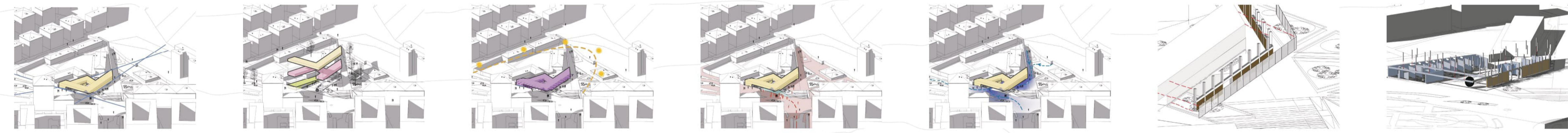


VIEW THAT SHOWS THE RELATIONSHIP BETWEEN THE BUILDING AND THE SURROUNDING BUILDINGS (San Ignacio College, surrounding buildings ...)
(San Francisco Square)



VIEW OF THE RELATIONSHIP BETWEEN THE BUILDING AND THE URBAN CONTEXT: ZORROZURRE ISLAND





1. SIMPLE GEOMETRIES AND CLEAR COLORS

On the one hand, clean and simple geometries are proposed taking as a reference the basic alignments of the plot. In this way, it is possible to avoid excessive breaks in the geometry and show itself as a clear building with paths that are recognizable at first sight for new patients. This simplification of the geometry favors a correct and easier cleaning of the center, in a building where cleaning plays such an important role in the health of the patient.

On the other hand, the choice of light-colored materials is an architectural decision that, in addition to creating more homelike environments for the patient, (warm environments, zone lighting, lighting control by the patient, and more comfortable materials), influence indirectly in aspects such as the significant reduction of the patient's recovery times, contributing in an effective way to their well-being.

2. DIFFERENTIATION OF USE SPACES IN DIFFERENT FLOORS.

Finally, the ground floor includes the more immediate uses, such as the emergency room, pediatric consultations or more public and administrative uses. Secondly, the first floor collects inquiries that offer more specific services and are sectorized throughout the floor.

In addition, it was decided to buy one of the floors intended exclusively for medical staff, thus achieving a total privatization of the workers of the center in relation to the more public area.

3. NATURAL LIGHTING / VENTILATION

Lighting in buildings such as a health center must serve two fundamental objectives: guarantee the optimal conditions to carry out the corresponding tasks, and contribute to an atmosphere in which the patient feels comfortable. All this happens guaranteeing the maximum possible energy efficiency.

Regarding ventilation, all types of rooms in the project, especially the ones of the healthcare area, have of large openings to the outside (either to the street or to the interior patio). In this way, air quality and temperature and humidity conditions are kept within acceptable levels, while ensuring that the air conditioning systems themselves are not a source of contamination and infections.

4. EMPOWERING OF PUBLIC SPACE

The pool of water raised outside the center is not only an instrument that allows the space to be fictitiously duplicated creating a double architectural image, but also further. It is lengthened in order to create a new urban point of public attraction. At the same time, the water transmits serenity to the patient and an atmosphere of comfort.

5. ACCESS TO THE BUILDING

The entrances to the building have been strategically positioned according to the lines with the highest traffic that lead to the site. The widest and most unique entrance, offers a progressive way to enter the center and serves the entire southern residential area and Larrañaga street, the widest. However, due to the difference in height in the access area to the building, a second, much more direct entrance is proposed from the plaza on the lower level.

Finally, an exclusive access of a much more direct and private nature is proposed for the medical personnel of the center, so that they can access it without going through the public traffic of people.

6. TREATMENT OF THE PRE-EXISTING WALL

The project has the preservation of the pre-existing perimeter wall. The wall is renovated according to the basic principles of the building, preserving all the materiality of the stone wall on the access floor and employing it on the first floor, preserving only its concrete structure.

In this way, the heavy character is preserved in the lower part built in reinforced concrete, contrasting with the upper floor, which is lighter, based on prefabricated slabs and glazed elements that allow natural lighting to pass through in all the consultations.

7. STRUCTURAL SYSTEM

The materiality contrast is also reflected in the structure, which follows the modulation marked by the medical consultations. Therefore, the ground floor is made up of reinforced concrete beams and load-bearing walls, giving the building's base a heavy character. However, the first floor aims to be as light as possible, resulting in lower weight materials and a metallic structure.

Finally, at the main entrance there is a large cantilever, which has the main supports on the building itself. Seeing that these supports are not enough to support so much load, two intermediate supports are proposed: a large concrete wall and the sphere already mentioned, which, apart from providing a sculptural touch, hides a structural function as it houses an enormous support inside of reinforced concrete that supposes a great structural reinforcement.

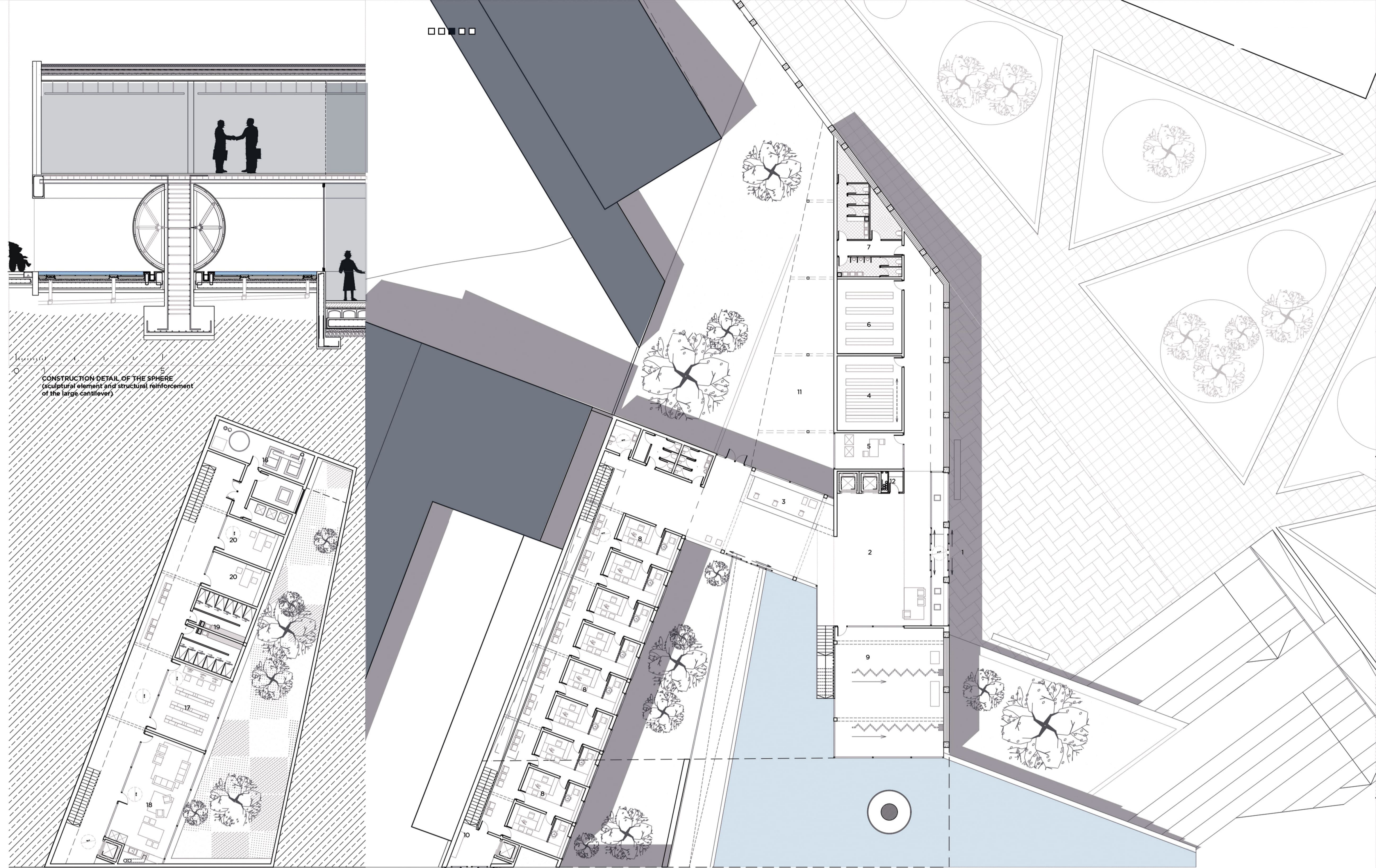
HEALTHCARE CENTER IN BILBAO

- San Ignacio, Bilbao neighbourhood, Basque Country, Spain
- Program: endowment, medical, administrative

The main idea behind designing this project was to define a new definition of the relationship between architecture and health, a new prototype of a health center. This project tries to break some conventional conditions to turn the building into a place that transmits serenity, and comfort while founding and enhancing the virtues of its context.

The project is developed in one of the sites with the greatest future goals for Bilbao citizens, close to Zorrozaurre Island; located in a strategic point with a strong urban identity and somehow manages to hide from the typical industrial environment of its surroundings.





CONSTRUCTION DETAIL OF THE SPHERE
sculptural element and structural reinforcement
of the large cantilever

0 1 5 10 15

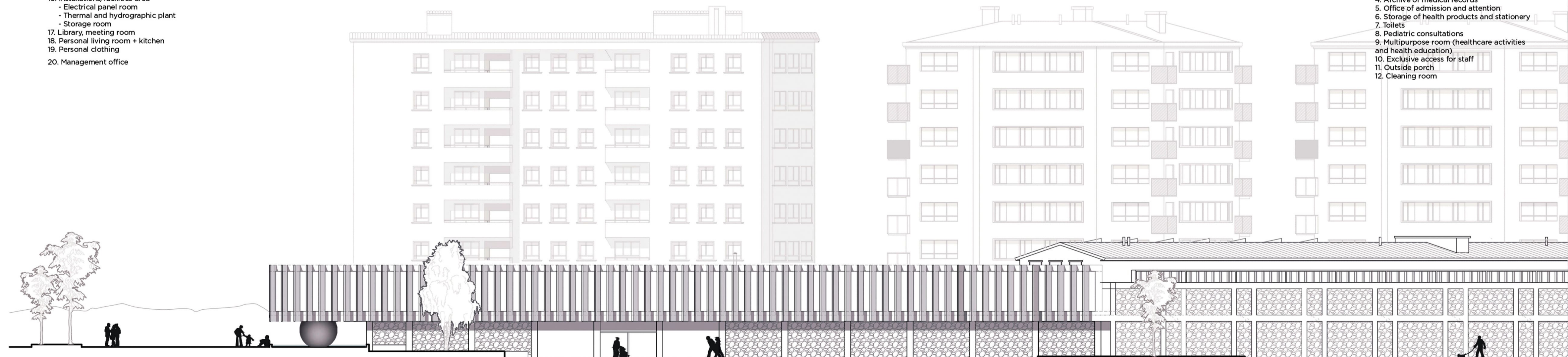
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BASEMENT PLAN (-3.20 m)
E 1/200

- 16. Installations/facilities area
 - Electrical panel room
 - Thermal and hydrographic plant
 - Storage room
- 17. Library, meeting room
- 18. Personal living room + kitchen
- 19. Personal clothing
- 20. Management office

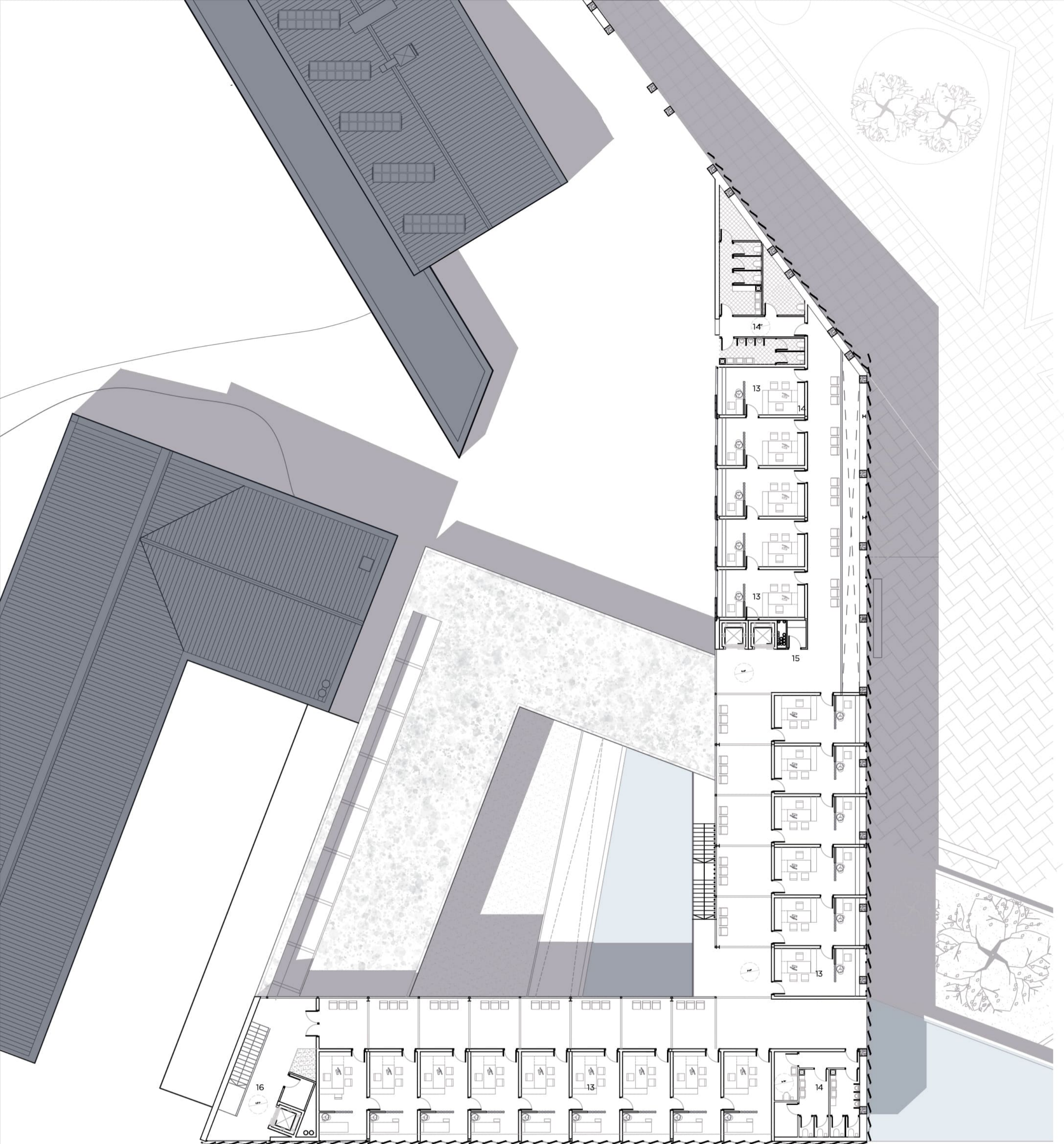
GROUND FLOOR
(+0.00 m)
E 1/200

- 1. Double main access
- 2. Entrance hall
- 3. Reception
- 4. Archive of medical records
- 5. Office of admission and attention
- 6. Storage of health products and stationery
- 7. Toilets
- 8. Pediatric consultations
- 9. Multipurpose room (healthcare activities and health education)
- 10. Exclusive access for staff
- 11. Outside porch
- 12. Cleaning room



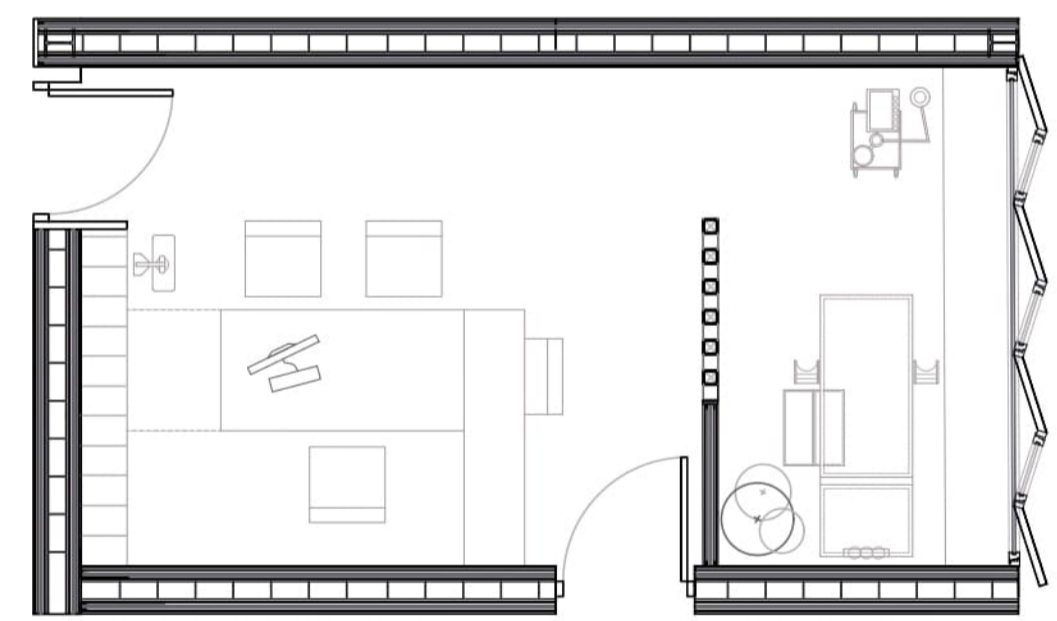
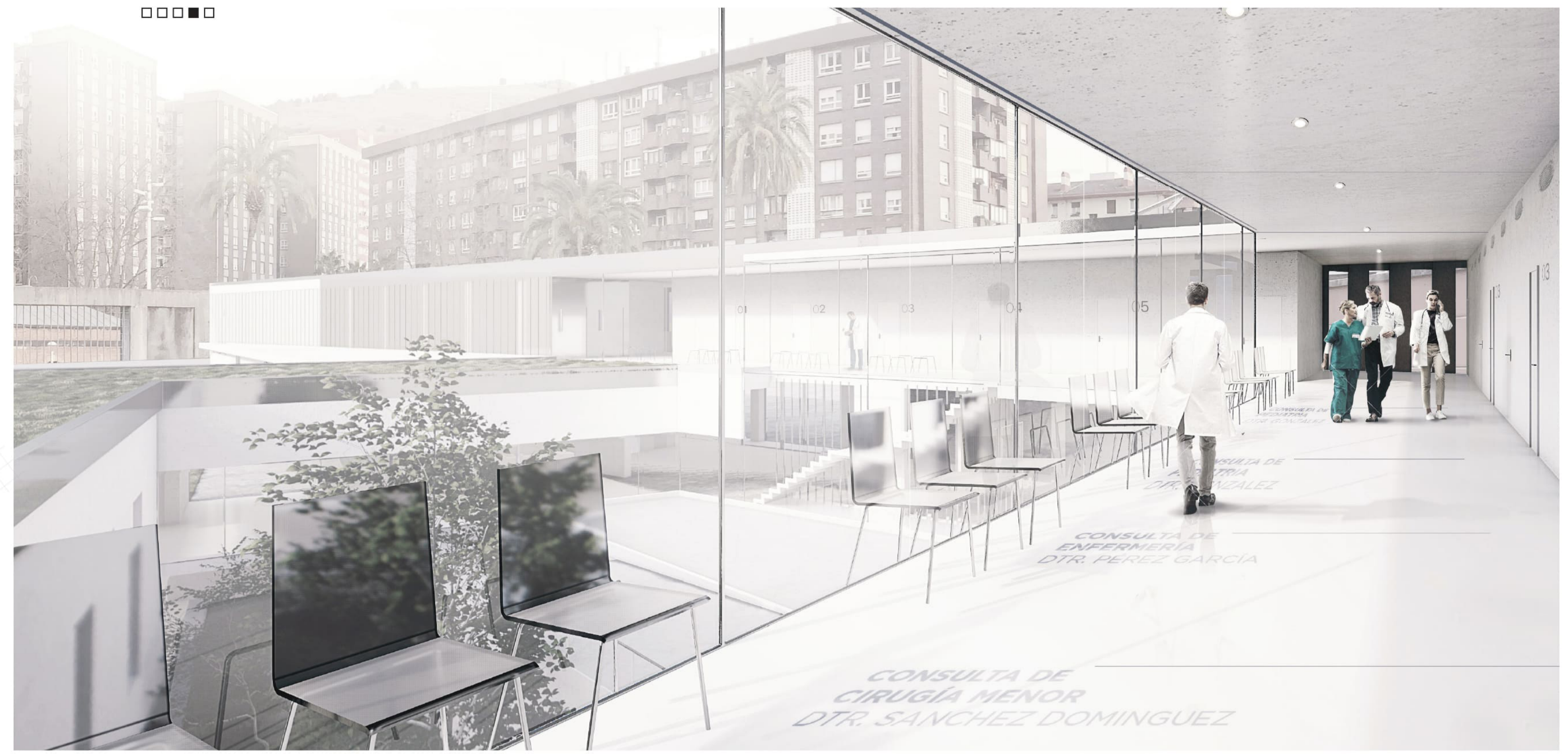
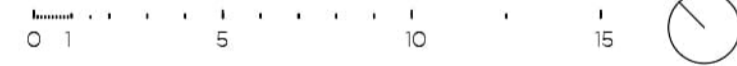
WEST ELEVATION
E 1/200

0 1 5 10 15



13. Consulting rooms
14. Toilets
15. Cleaning room
16. Private area for health center staff

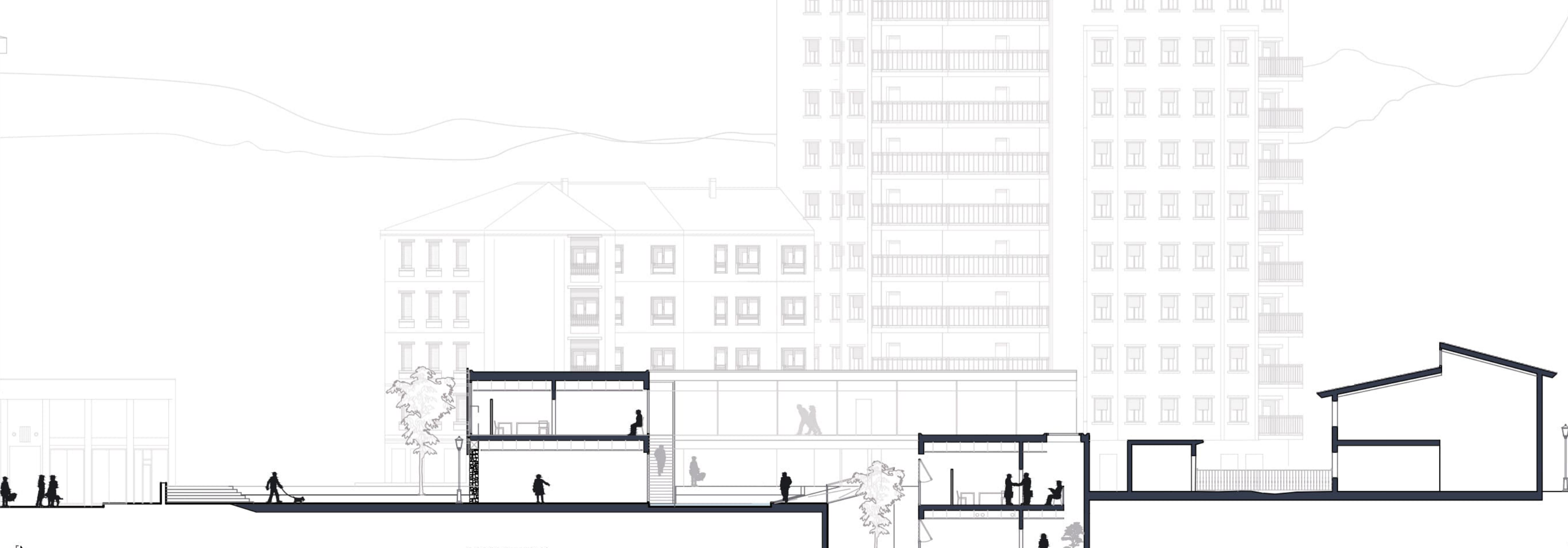
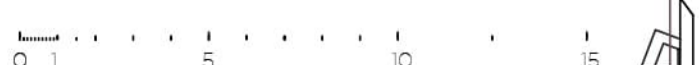
FIRST FLOOR (+4.00 m)
E 1/200



DETAIL OF TYPICAL MEDICAL CONSULTATIONS ROOMS
(first floor)
E 1/200

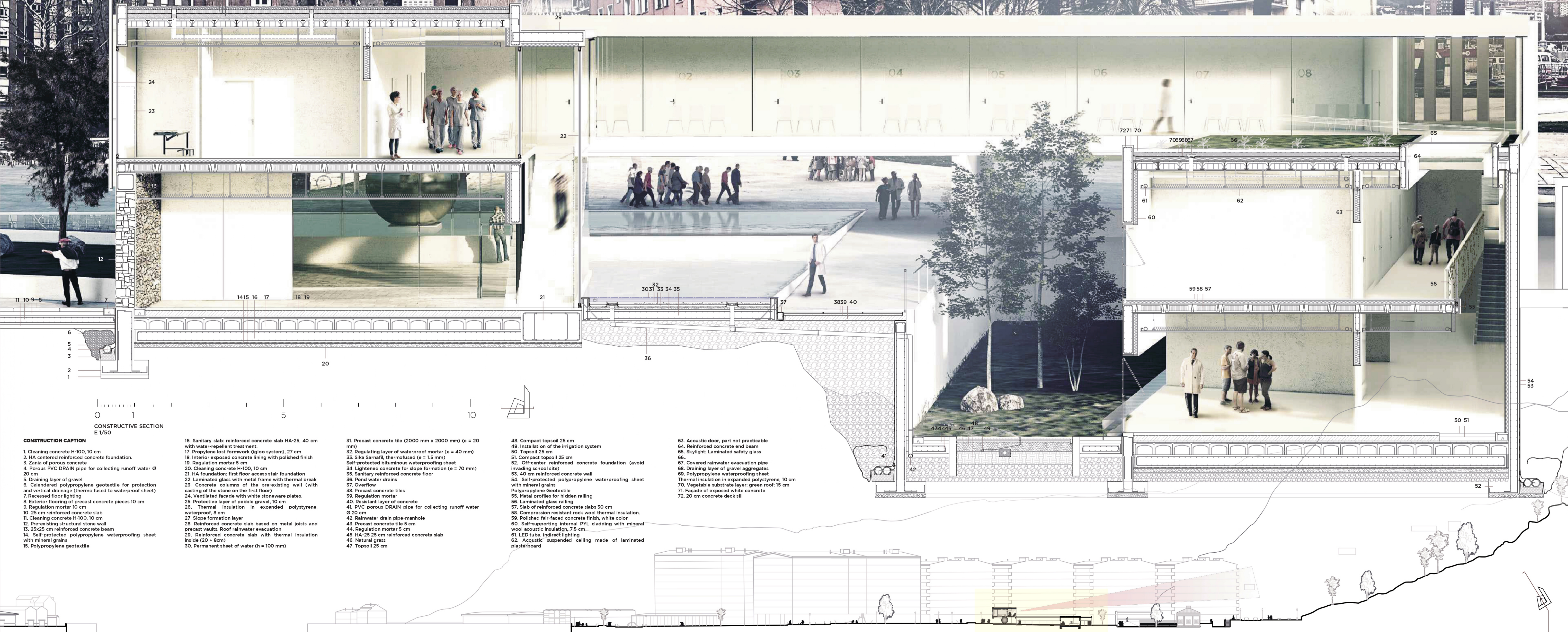


LENGTHWISE SECTION
E 1/200



CROSS SECTION
E 1/200





- CONSTRUCTION CAPTION**
1. Cleaning concrete H-100, 10 cm
 2. HA centered reinforced concrete foundation.
 3. Zania of porous concrete
 4. Porous PVC DRAIN pipe for collecting runoff water Ø 20 cm
 5. Draining layer of gravel
 6. Calendared polypropylene geotextile for protection and vertical drainage (thermo fused to waterproof sheet)
 7. Recessed floor lighting
 8. Exterior flooring of precast concrete pieces 10 cm
 9. Regulation mortar 10 cm
 10. 25 cm reinforced concrete slab
 11. Cleaning concrete H-100, 10 cm
 12. Pre-existing structural stone wall
 13. 25x25 cm reinforced concrete beam
 14. Self-protected polypropylene waterproofing sheet with mineral grains
 15. Polypropylene geotextile

16. Sanitary slab: reinforced concrete slab HA-25, 40 cm with water-repellent treatment.
17. Propylene lost formwork (ligloo system), 27 cm
18. Interior exposed concrete lining with polished finish
19. Regulation mortar 5 cm
20. Cleaning concrete H-100, 10 cm
21. HA foundation: first floor access stair foundation
22. Laminated glass with metal frame with thermal break
23. Concrete columns of the pre-existing wall (with casting of the stone on the first floor)
24. Ventilated facade with white stoneware plates.
25. Protective layer of pebble gravel, 10 cm
26. Thermal insulation in expanded polystyrene, waterproof, 8 cm
27. Slope formation layer
28. Reinforced concrete slab based on metal joists and precast vaults. Roof rainwater evacuation
29. Reinforced concrete slab with thermal insulation inside (Ø = 8cm)
30. Permanent sheet of water (h = 100 mm)

31. Precast concrete tile (2000 mm x 2000 mm) (e = 20 mm)
32. Regulating layer of waterproof mortar (e = 40 mm)
33. Sila Sarnafil, thermofused (e = 15 mm)
34. Self-protected bituminous waterproofing sheet
35. Sanitary reinforced concrete floor
36. Pond water drains
37. Overflow
38. Precast concrete tiles
39. Regulation mortar
40. Resistant layer of concrete
41. PVC porous DRAIN pipe for collecting runoff water Ø 20 cm
42. Rainwater drain pipe-manhole
43. Precast concrete tile 5 cm
44. Regulation mortar 5 cm
45. HA-25 25 cm reinforced concrete slab
46. Natural grass
47. Topsoil 25 cm

48. Compact topsoil 25 cm
49. Installation of the irrigation system
50. Topsoil 25 cm
51. Compact topsoil 25 cm
52. Off-center reinforced concrete foundation (avoid invading school site)
53. 40 cm reinforced concrete wall
54. Self-protected polypropylene waterproofing sheet with mineral grains
55. Polypropylene Geotextile
56. Metal profiles for hidden railing
57. Laminated glass railing
58. Slab of reinforced concrete slabs 30 cm
59. Compression resistant rock wool thermal insulation.
60. Polished fair-faced concrete finish, white color
61. Self-supporting internal PVL cladding with mineral wool acoustic insulation, 7.5 cm.
62. LED tube, indirect lighting
63. Acoustic suspended ceiling made of laminated plasterboard

64. Reinforced concrete end beam
65. Skylight: Laminated safety glass
66. Covered rainwater evacuation pipe
67. Draining layer of gravel aggregates
68. Polypropylene waterproofing sheet
69. Thermal insulation in expanded polystyrene, 10 cm
70. Vegetable substrate layer: green roof: 15 cm
71. Facade of exposed white concrete
72. 20 cm concrete deck sill