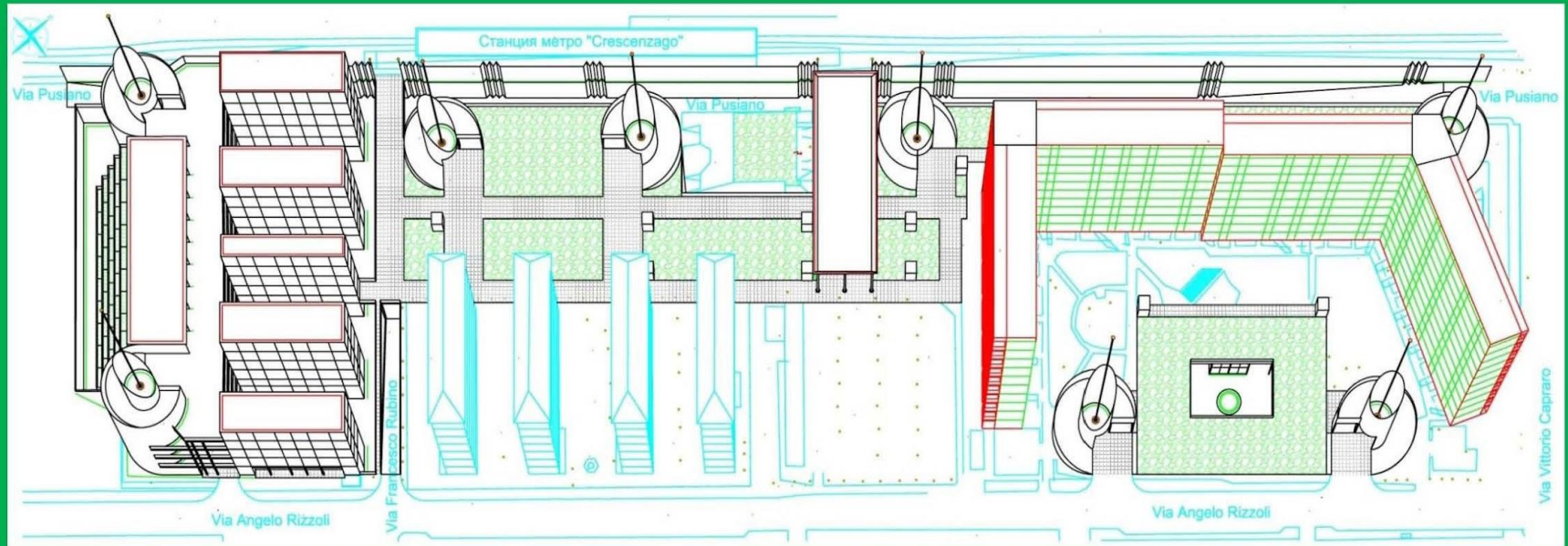


THE CRESCENZAGO MICRODISTRICT RECONSTRUCTION (Milan city, ITALY)



THE METHODOLOGY OF THE COMPETITIVE DESIGNING

~
by **Martinson K.V., Kit A.R., Samoilov K.I.**
Almaty, 2019



1. THE INTRODUCTION

The Competitive designing is a specific area of the creativity.

It differs from a strictly regulated design process for subsequent implementation.

The specificity of the tasks is combined with extensive interpretation possibilities.

Short deadlines exclude detailing all parts of the project.

The main thing is the formulation of an interesting concept and the demonstration of its main parameters by a complex of interconnected images. An important aspect is the uniformity of the image style.

An Achievement of the parameters specified in the competition task must be confirmed by appropriate calculations.

The implementation of these tasks is shown by the example of the authors' participation in the International Two-Stage Student Competition "Multicomfort from Saint-Gobain 2019. The Development and the restoration of the Crescenzago microdistrict territory, Milan, Italy".

The Project carried out by authors was awarded the "Unique Project" diploma at the First stage of the Competition.

This allows you to show stages of its implementation as an example of the implementation of methods of competitive design at the level of a student work.

AUTHORS THANK COMPETITION ORGANIZERS FOR THE OPPORTUNITY TO TAKE PART IN THIS VERY INTERESTING EVENT.

The presented Album is formed for Educational purposes.

2. COMPETITION TASKS

COMPETITION TASK OF THE INTERNATIONAL TWO-STAGE STUDENT COMPETITION MULTICOMFORT from Saint-Gobain - 2019

"The Development and the restoration of the Crescezagò microdistrict territory, Milan, Italy"

Participants are required to create a concept and basic solutions for the future sustainable development of the Crescezagò metro area, integrated into the urban environment, taking into account the regional characteristics of this place. The project will require the reconstruction of three existing buildings, harmoniously integrating them with new residential buildings, public spaces and service enterprises. The project should be innovative, sustainable, energy efficient, and also meet the criteria of the "Multicomfort" concept.

For the section A – “The New construction”: to develop a new multifunctional residential development (it is necessary to give the first 1-2 floors to non-residential functions, and residential premises above commercial buildings (number of floors - up to 5 floors above ground level)).

For the section B – “The Reconstruction”: reconstruction of three existing multi-apartment buildings aimed at increasing the comfort and well-being of the residents, while the total energy consumption of buildings and the long-term environmental impact should be reduced. The task strategy assumes to take into account the research of innovative tools and / or methods that allow for a quick and “non-destructive” reconstruction.

For the section C – “The Integration”: the connection of section A and section B, the integration of urban services and public facilities, taking into account the surroundings of the region.

3. The Competitive task: BASIC DATA (the Topo-Geodesic base, general views of sites)

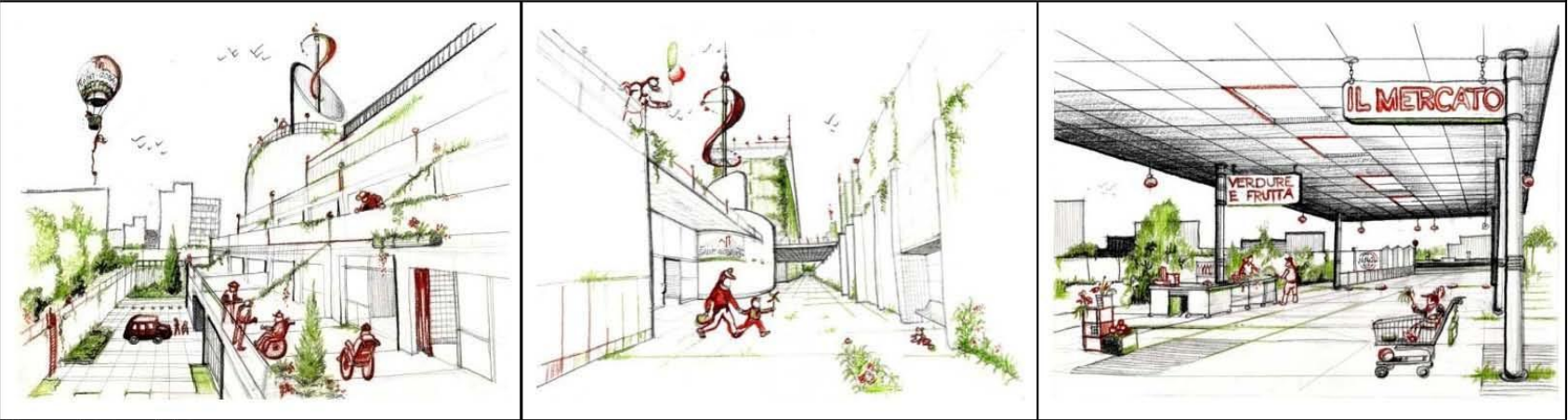


4. THE CONCEPT OF OUR TEAM (1411)

THE CONCEPT OF OUR TEAM PROVIDES FOR THE FORMATION OF A HIGHLY COMFORTABLE AND MOST CONVENIENT LIVING ENVIRONMENT WITH A DEVELOPED SYSTEM OF TRADE AND CONSUMER SERVICES, LEISURE ACTIVITIES, PEDESTRIAN AND TRANSPORT INFRASTRUCTURE, MULTI-SPECIES AMENITIES AND ABUNDANT LANDSCAPING.

All this is carried out on the basis of various methods of improving energy efficiency, the use of renewable energy sources and the achievement of high rates of temperature-acoustic comfort both indoors and in the surrounding areas.

The basis of these solutions is the widespread use of advanced materials produced and supplied by the international group of companies "SAINT-GOBAIN".



Source: Autor's materials

5. PROJECT PROPOSALS for the Section A

New multifunctional residential complex on 305 apartments:

- 45 apartments for people with limited mobility with individual floor-by-floor parking directly at the entrances to apartments and wide balconies;
- 260 apartments for small families and single citizens.

The complex has 5 residential floors, a floor height of 3.3 m, entrances to the floor-by-floor corridors, stairways and elevator halls from each tier. An additional entrance is provided from the Via Angelo Rizzoli and Via Francesco Rubino levels. Basement for commercial and public spaces. The main entrances to the residential part are provided from the level of the main courtyard. The ramp provides a descent to the underground section of Via Pusiano, which runs along sections A, C and B. The main courtyard of the residential complex is recessed relative to the adjacent streets.

Two-level underground parking for 384 half-open spaces with individual instrumental cells in the partition cabinets. The connection between all floors is carried out by flight of stairs, elevators, circular two-lane road ramps. Top ramps used for summer recreation sites. On top of the central parts of the ramp are vertical type wind turbines.

The half-pass roofing of an attic type serves as a support for solar panels. The temperature-humidity and acoustic comfort of living is provided by the use of slab blocks and panels of vertical gardening, as well as thermo sound-absorbing glazing. Soundproof glass screen along the entire section parallel to the ground line of the metro and highway.

All decisions are based on the reasonable use and application of Saint-Gobain materials and solutions in the project - ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber.

6. PROJECT PROPOSALS for the Section B

Three existing multi-storey buildings of the 1980s are undergoing partial reconstruction to increase the temperature, humidity and acoustic comfort of living. For this, the following measures are provided: extension of the loggias from the side of staircases, which will increase the number of spaces used in the summer in each apartment. All exterior walls made of reinforced concrete panels are insulated from the outside and soundproofed with slab blocks and closed with vertical garden panels. Solar panels are installed on the surface of the reconstructed attic roof.

The existing two sections between the existing end walls are engaged in new multi-storey residential inserts for 18 apartments each.

The section along the railway tracks, occupied by ground parking, is being reconstructed with the construction of a club complex and two-level underground parking. Green spaces with arbors, fountains, sports grounds, promenade alleys are formed on its exploited roof. The ground part of the entrance-departure ramp is designed as a summer cafe.

The courtyard space is reconstructed with the construction of a public complex and a two-level underground parking, on the exploited roof of which trees and shrubs, temporarily excavated on this site, are planted again, flower beds, a rose garden, gazebos, terraces and playgrounds are being built. Soundproof glass screen along the entire section parallel to the ground line of the metro and highway.

All decisions are based on the reasonable use and application of Saint-Gobain materials and solutions in the project - ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber.

7. PROJECT PROPOSALS for the Section C

Partially occupied parking area is being reconstructed with a device in the first underground level of a supermarket and entertainment center. Below them on two levels is parking.

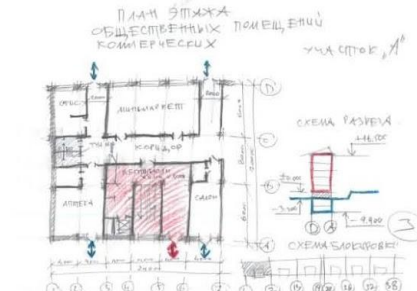
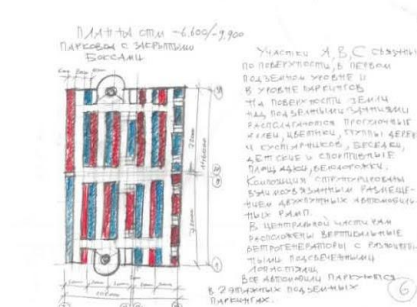
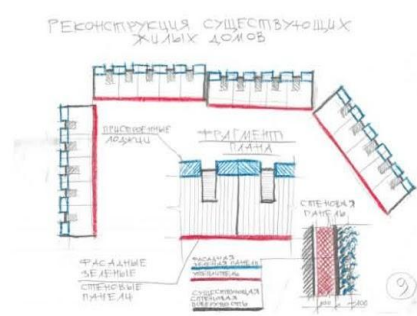
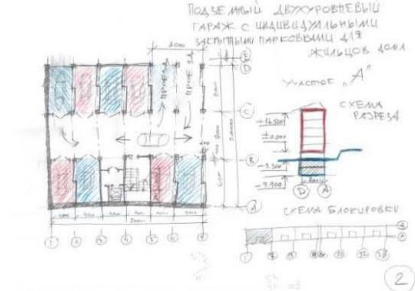
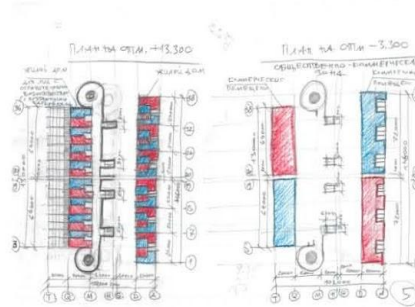
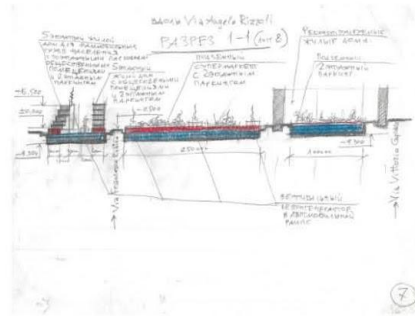
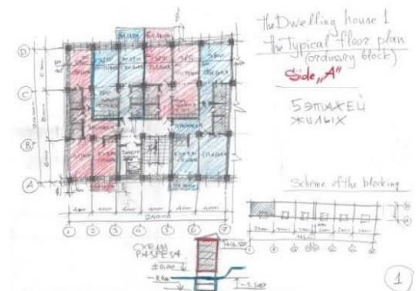
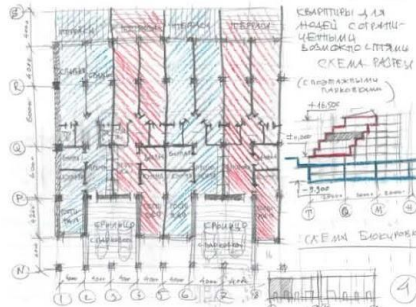
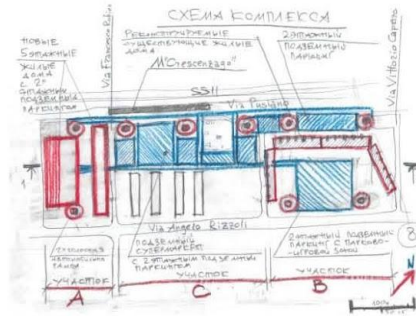
Pavilions of the periodically operating market are located on the operated roof in the zone of the entertainment center.

The greened roof of the existing semi-underground structure, located between the shopping and entertainment center, is complemented by flower beds and cascades. On the operated roof of the shopping center are located green areas for recreation and entertainment with gazebos, walking paths and fountains. Part of the alleys is in the form of covered galleries.

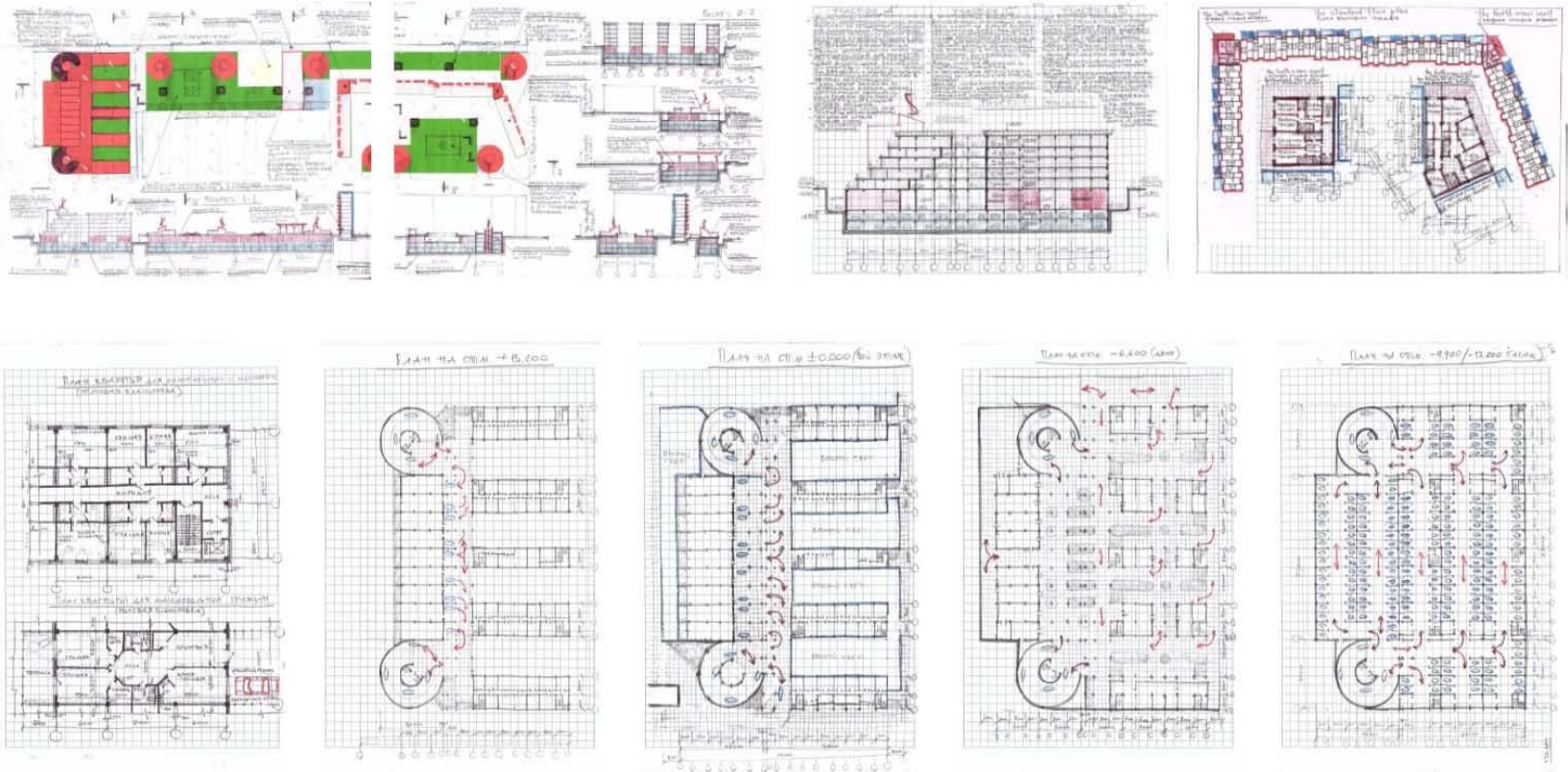
Entrance to the shopping center is from three sides, including the exit from the metro station "Crescenzago". Ground parts of the exit from the parking lots on ramps are performed in the form of summer cafes. Soundproof glass screen along the entire section parallel to the ground line of the metro and highway.

All decisions are based on the reasonable use and application of Saint-Gobain materials and solutions in the project - ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber.

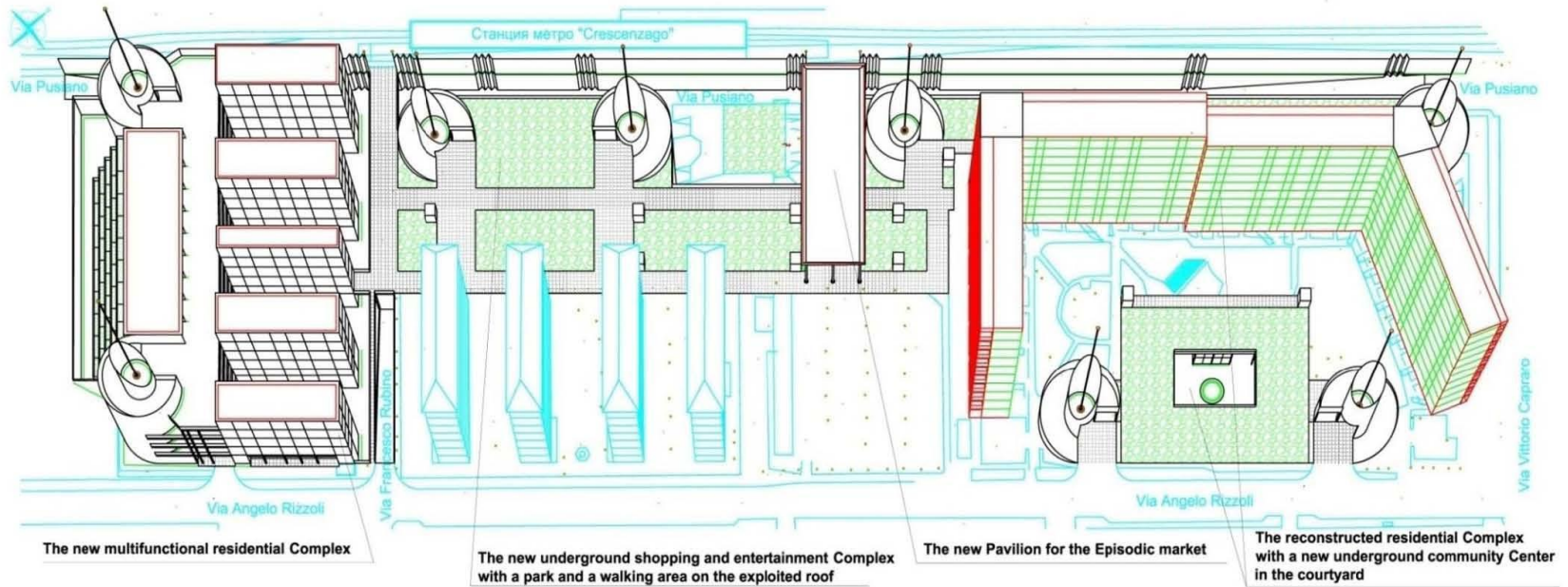
8. PROJECT PROPOSALS IN SKETCHES (30% details of readiness – December 2018)



9. PROJECT PROPOSALS IN SKETCHES (50% details of readiness – February 2019)



10. THE GENERAL VIEW

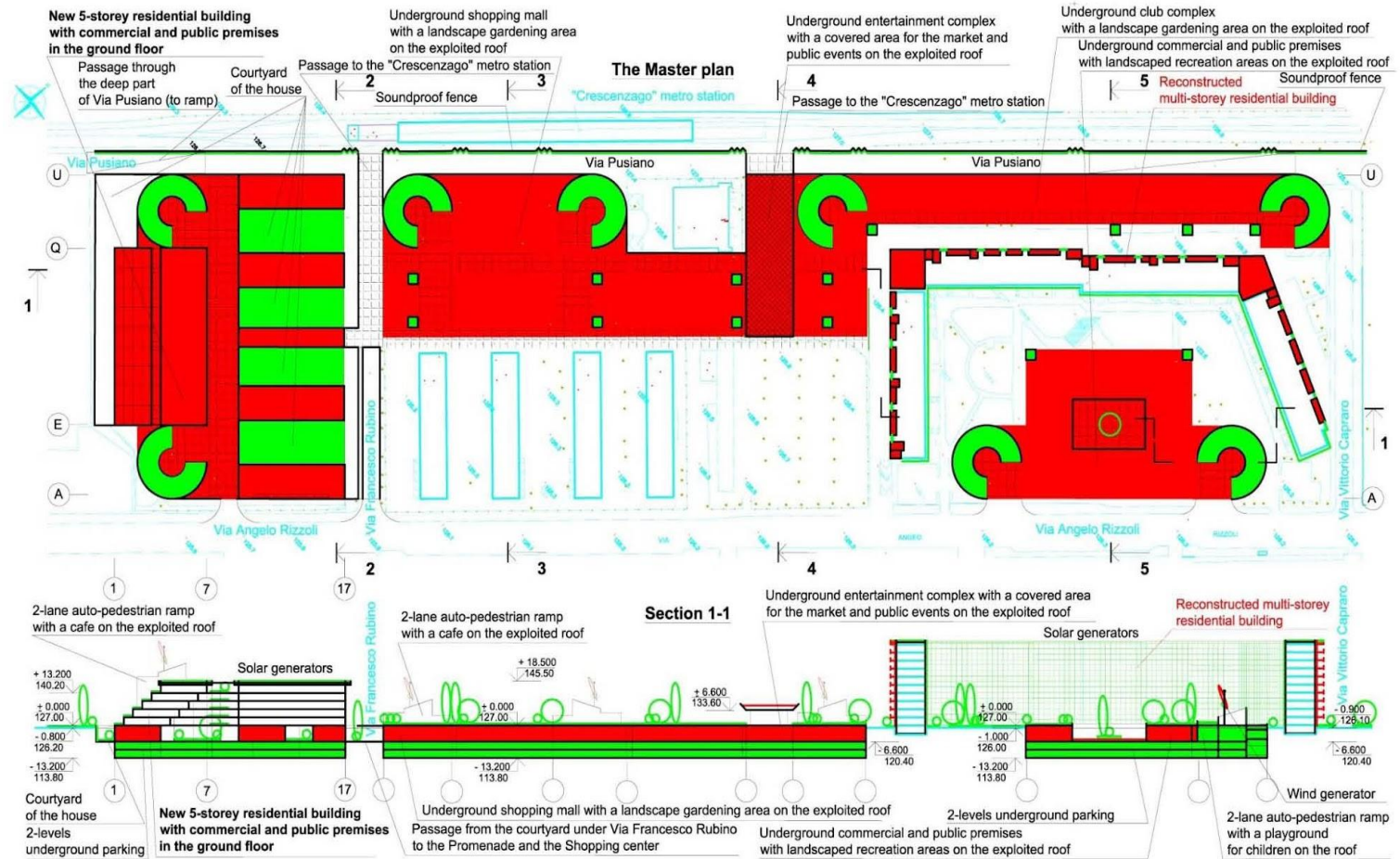


11. SOME VIEWS OF THE COMPLEX (the 3D version)



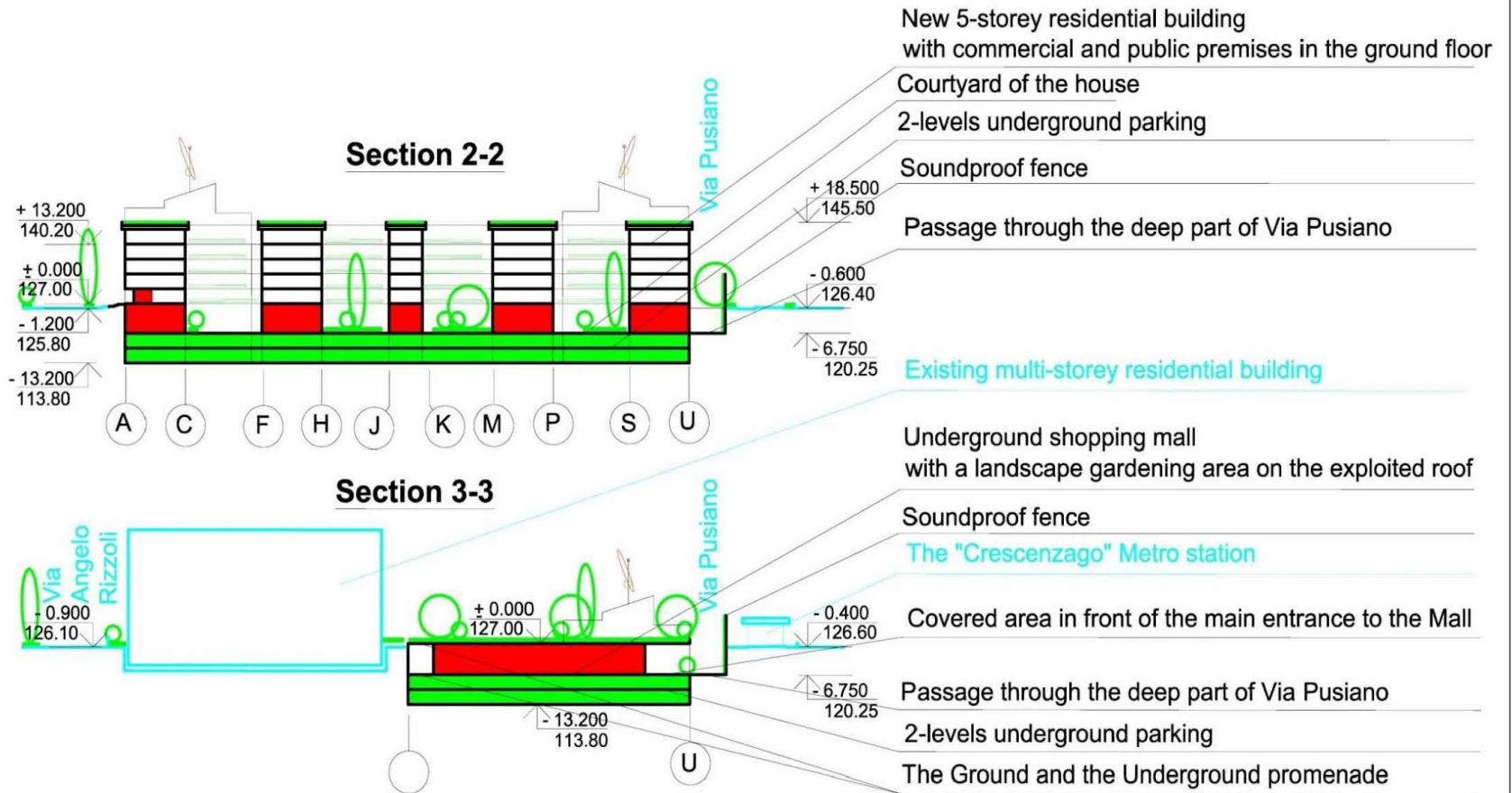
Source: Autor's drawings

12. THE MASTER PLAN, THE SECTION 1-1

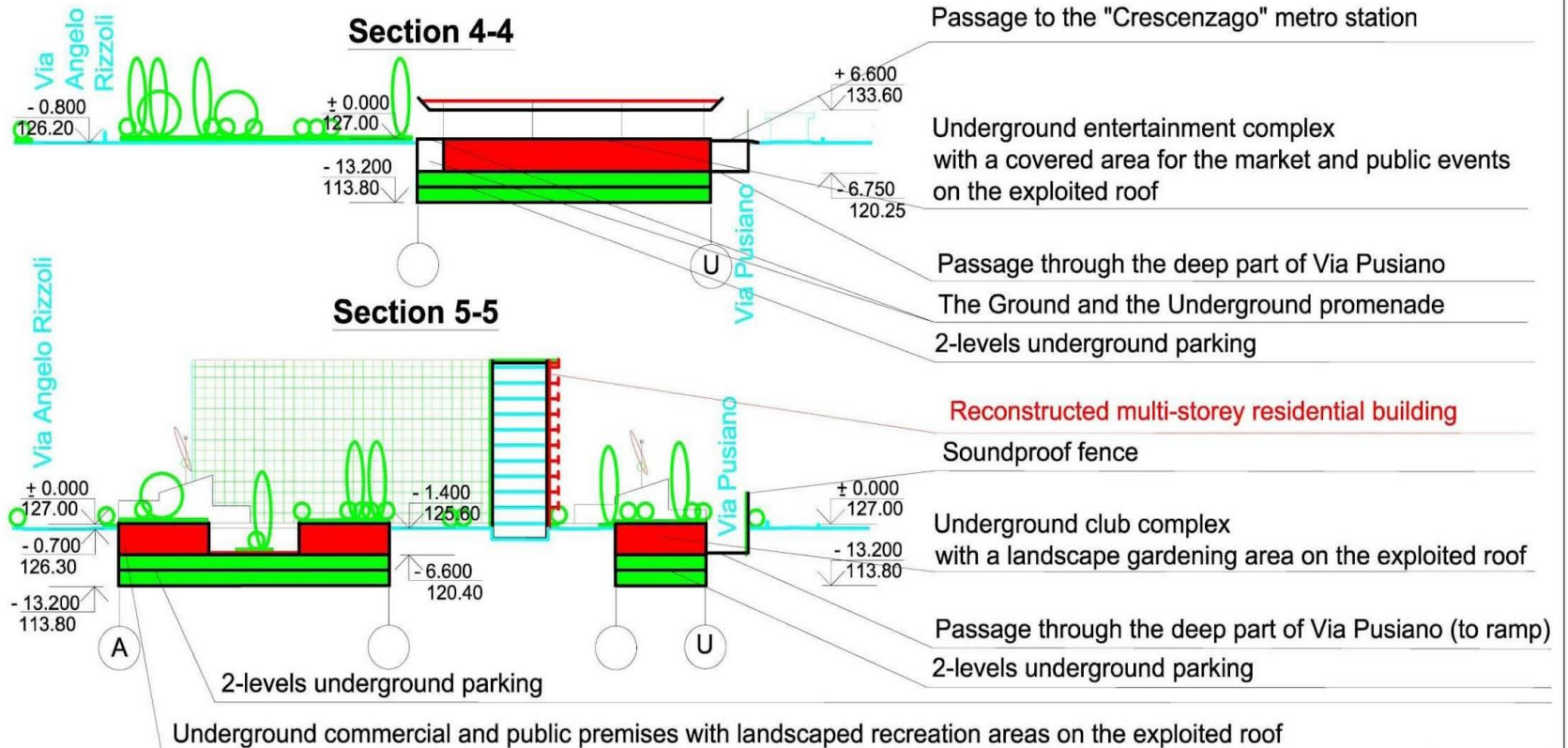


Source: Autor's drawings

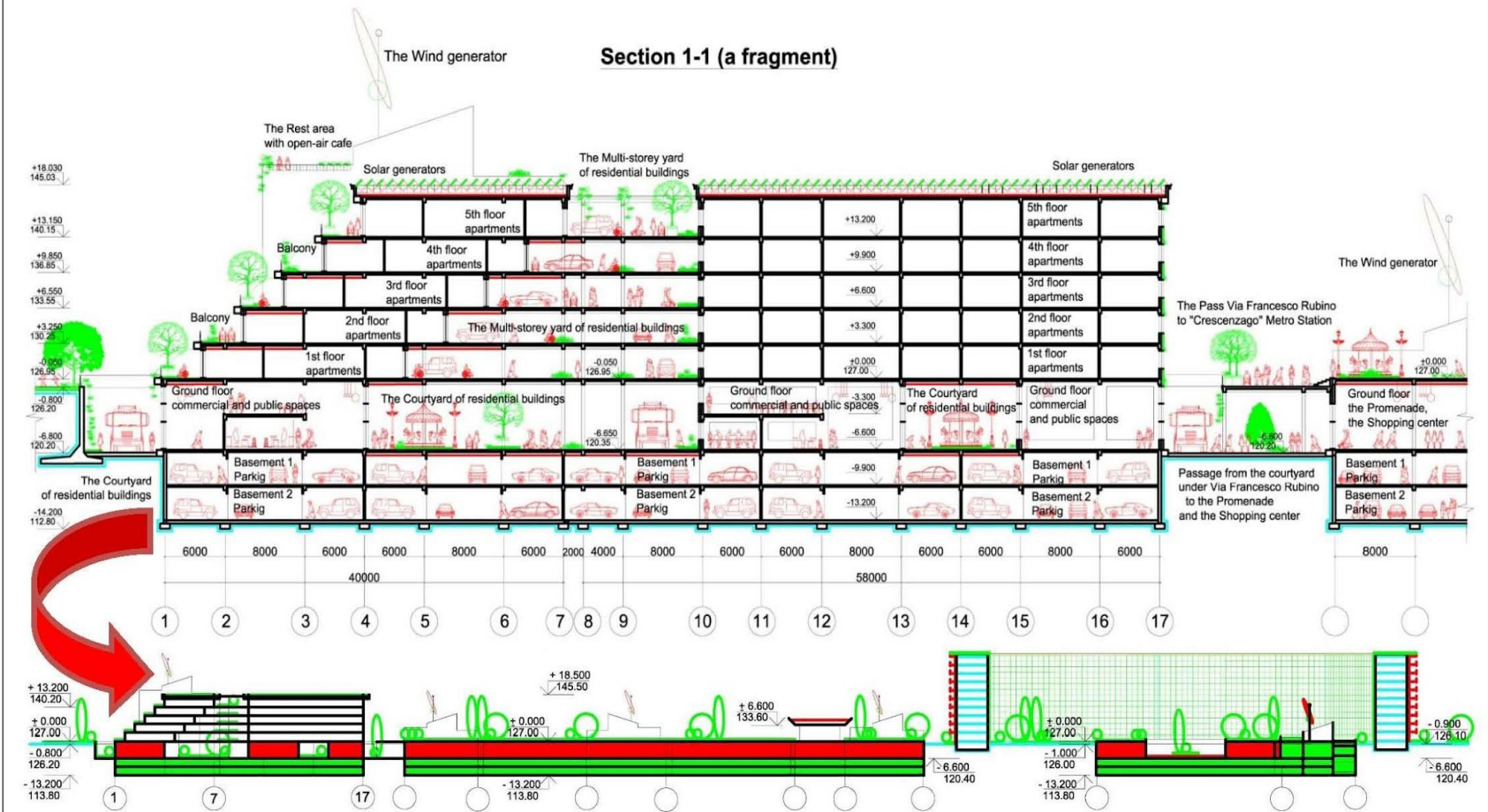
13. SECTIONS 2-2, 3-3



14. SECTIONS 4-4, 5-5

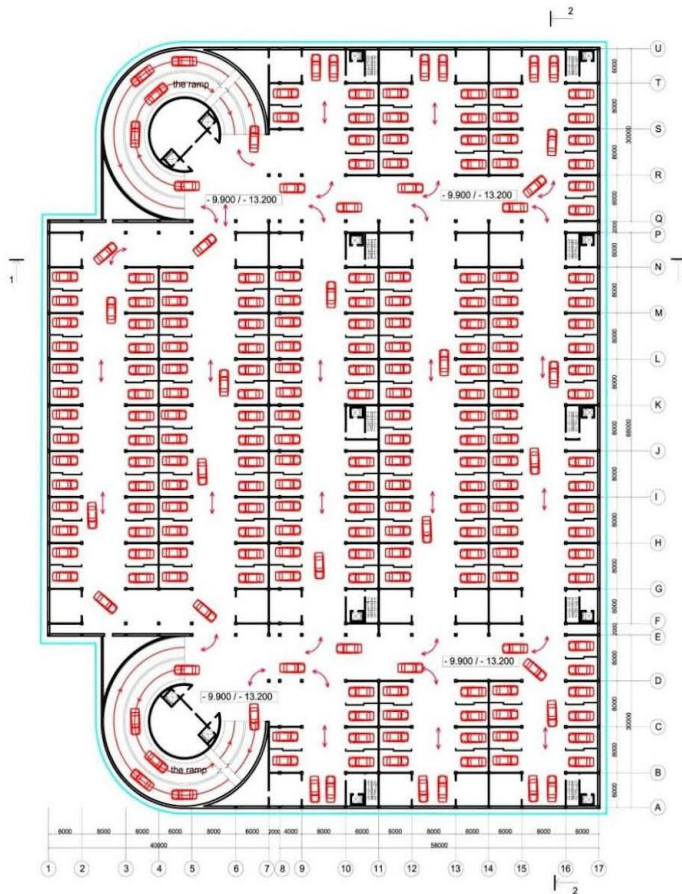


15. THE SECTION 1-1 (the fragment)



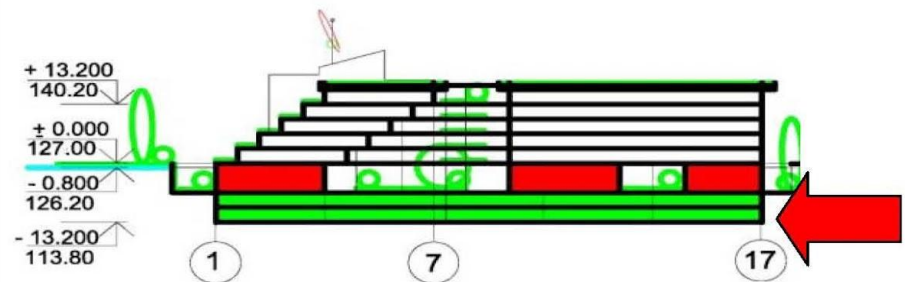
Source: Autor's drawings

16. THE NEW RESIDENTIAL COMPLEX (plans at mark -9.900 / -13.200)



The 2-level basement

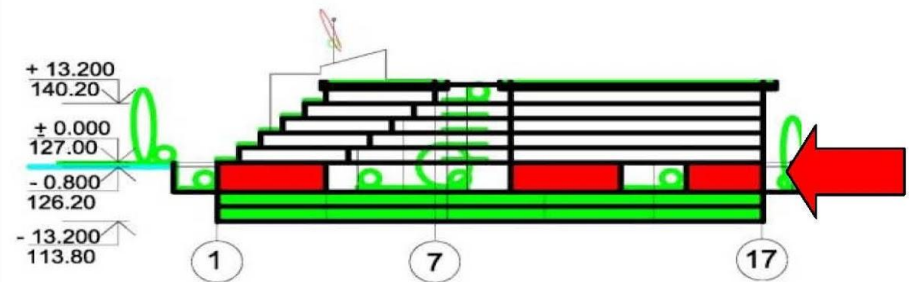
- GARAGE WITH HALF-OPEN PARKING SPACES



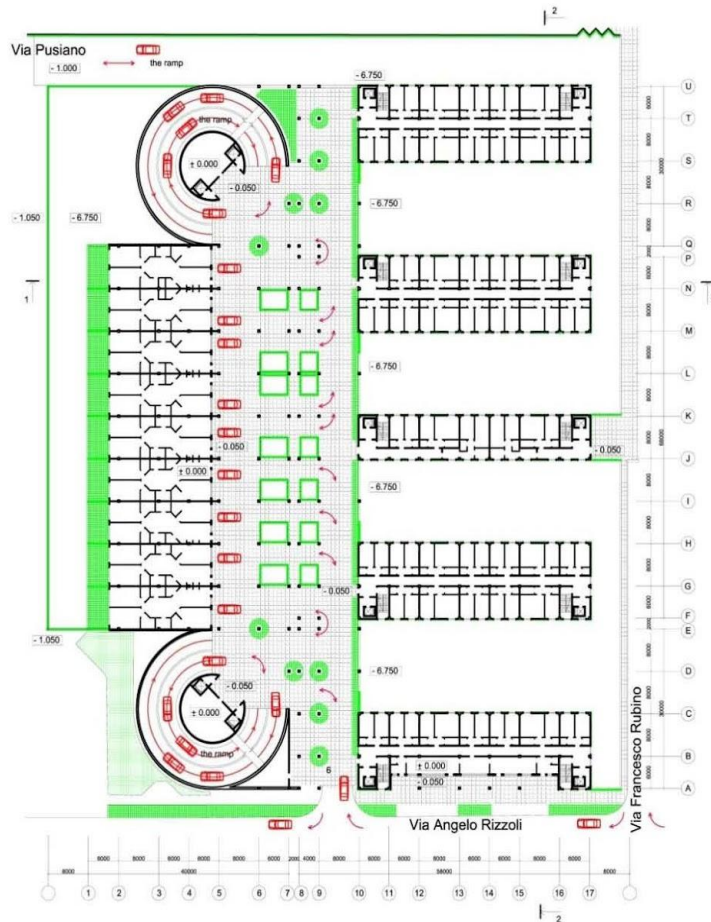
17. THE NEW RESIDENTIAL COMPLEX (the plan at mark -6.600)



The Ground floor
– COMMERCIAL, PUBLIC PREMISES AND
COURTYARD WITH OPEN AND COVERED AREAS

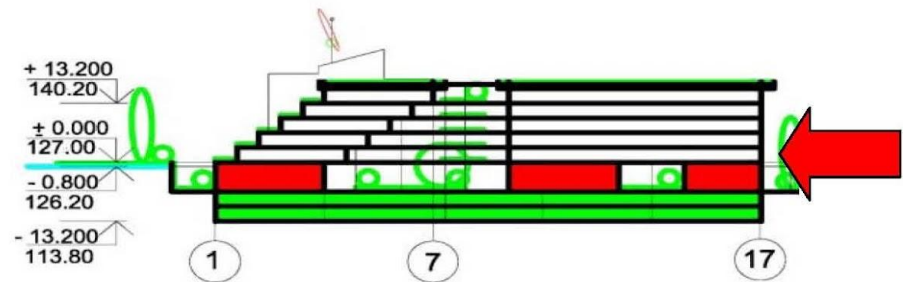


18. THE NEW RESIDENTIAL COMPLEX (the plan at mark 0.000)

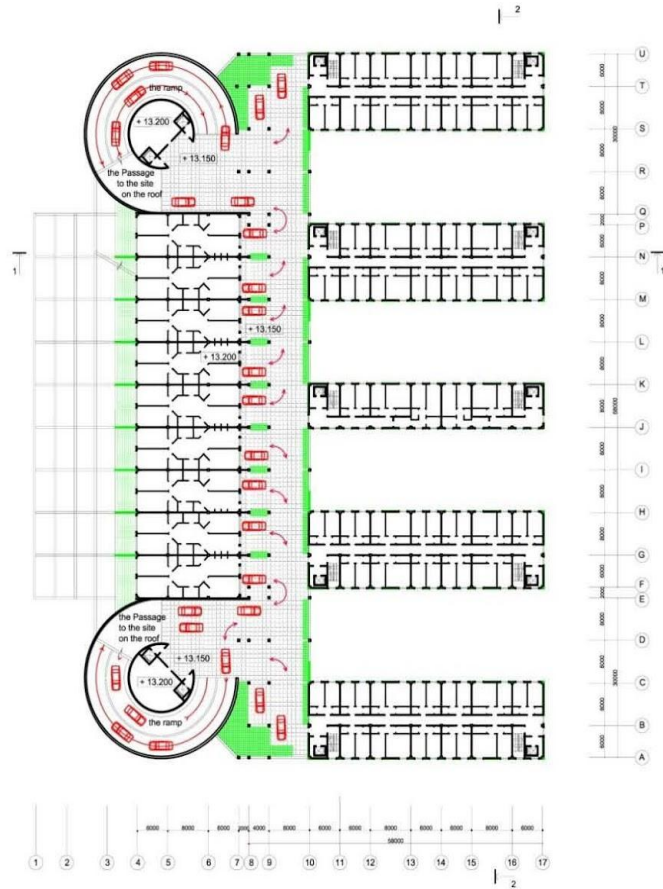


The 1st floor

– APARTMENTS FOR SINGLE, SMALL FAMILIES AND PEOPLE WITH LIMITED MOBILITY WITH FLOOR-BY-FLOOR APARTMENT PARKING, COURTYARD-GALLERY

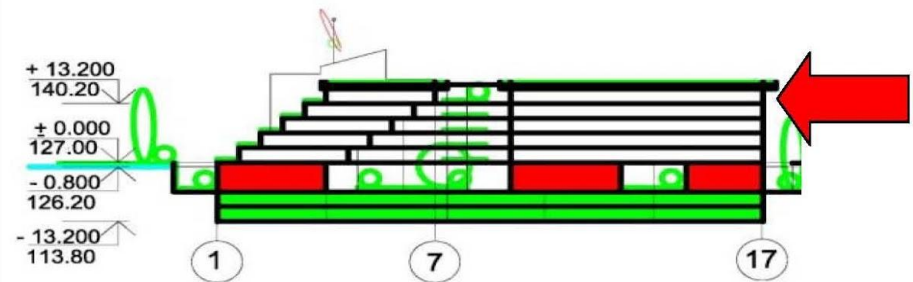


19. THE NEW RESIDENTIAL COMPLEX (the plan at mark +13.200)

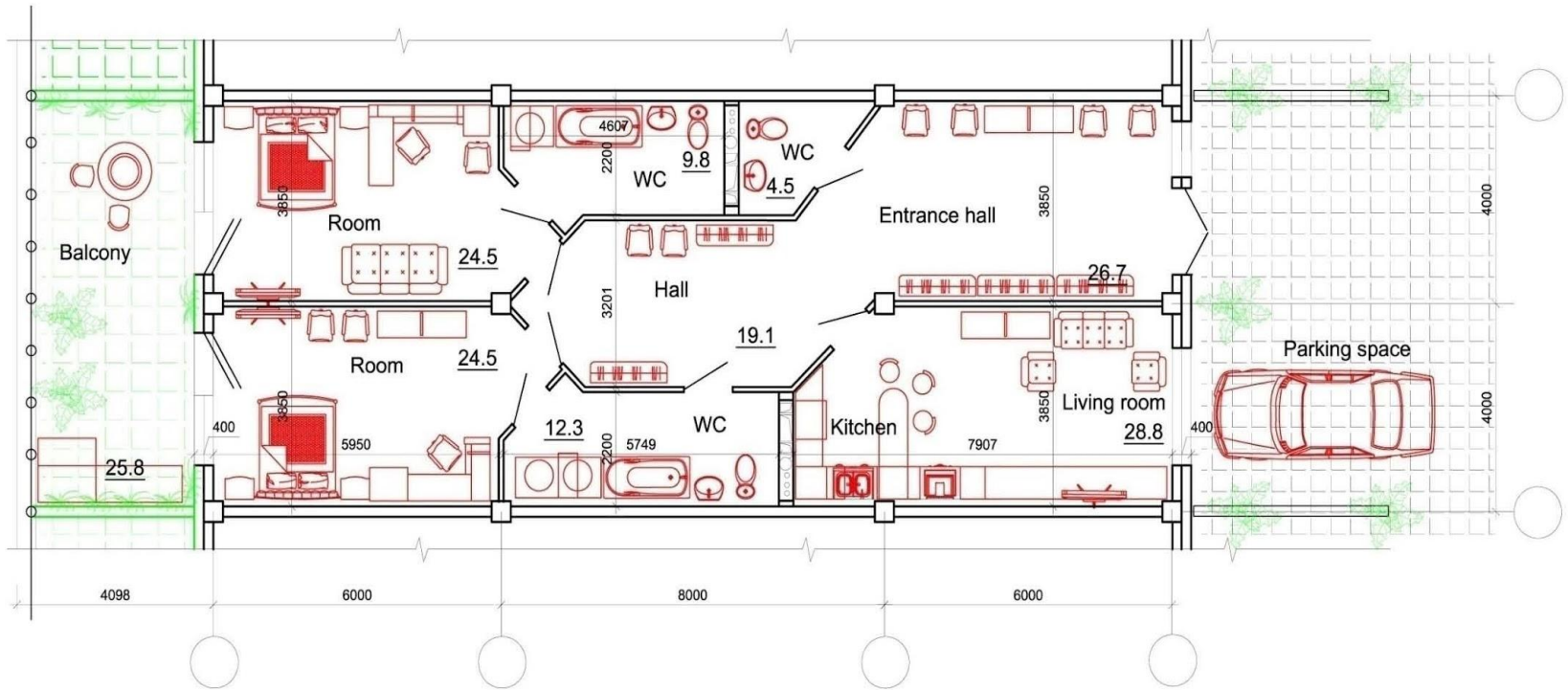


The 5th floor

– APARTMENTS FOR SINGLE, SMALL FAMILIES
AND PEOPLE WITH LIMITED MOBILITY WITH
FLOOR-BY-FLOOR APARTMENT PARKING,
COURTYARD-GALLERY



20. THE NEW RESIDENTIAL COMPLEX (a apartment for people with limited mobility)



Source: Autor's drawings

21. APARTMENTS OF THE NEW RESIDENTIAL COMPLEX

The Apartment for people with limited mobility -150.2 square meters (45 apartments)

It consists of a hallway, a hall, a living room, a toilet with an entrance from the hallway, two bedrooms with bathrooms, a balcony having an entrance from both bedrooms. Before entering the apartment there is the possibility of parking a car (the personal car, a social services car).

THE LAYOUT PROVIDES THE MOST CONVENIENT MOVEMENT AROUND THE APARTMENT.

APARTMENTS FOR SMALL FAMILIES AND SINGLE CITIZENS (260 APARTMENTS)

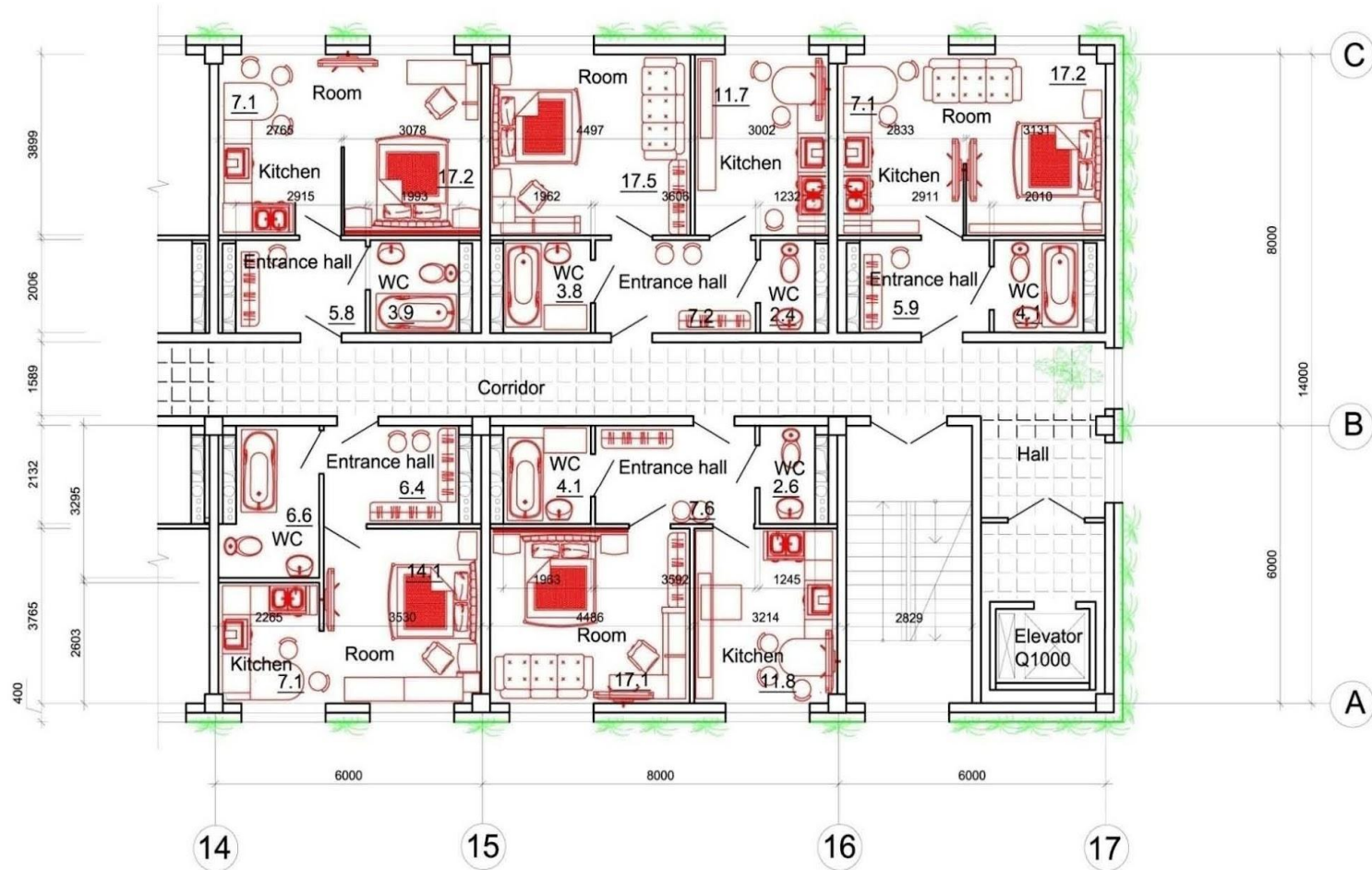
The Apartment for small families - 42.6 square meters

It consists of an entrance hall, toilet and bathroom, with entrance from the hallway, kitchen and room with a living room and bedroom function.

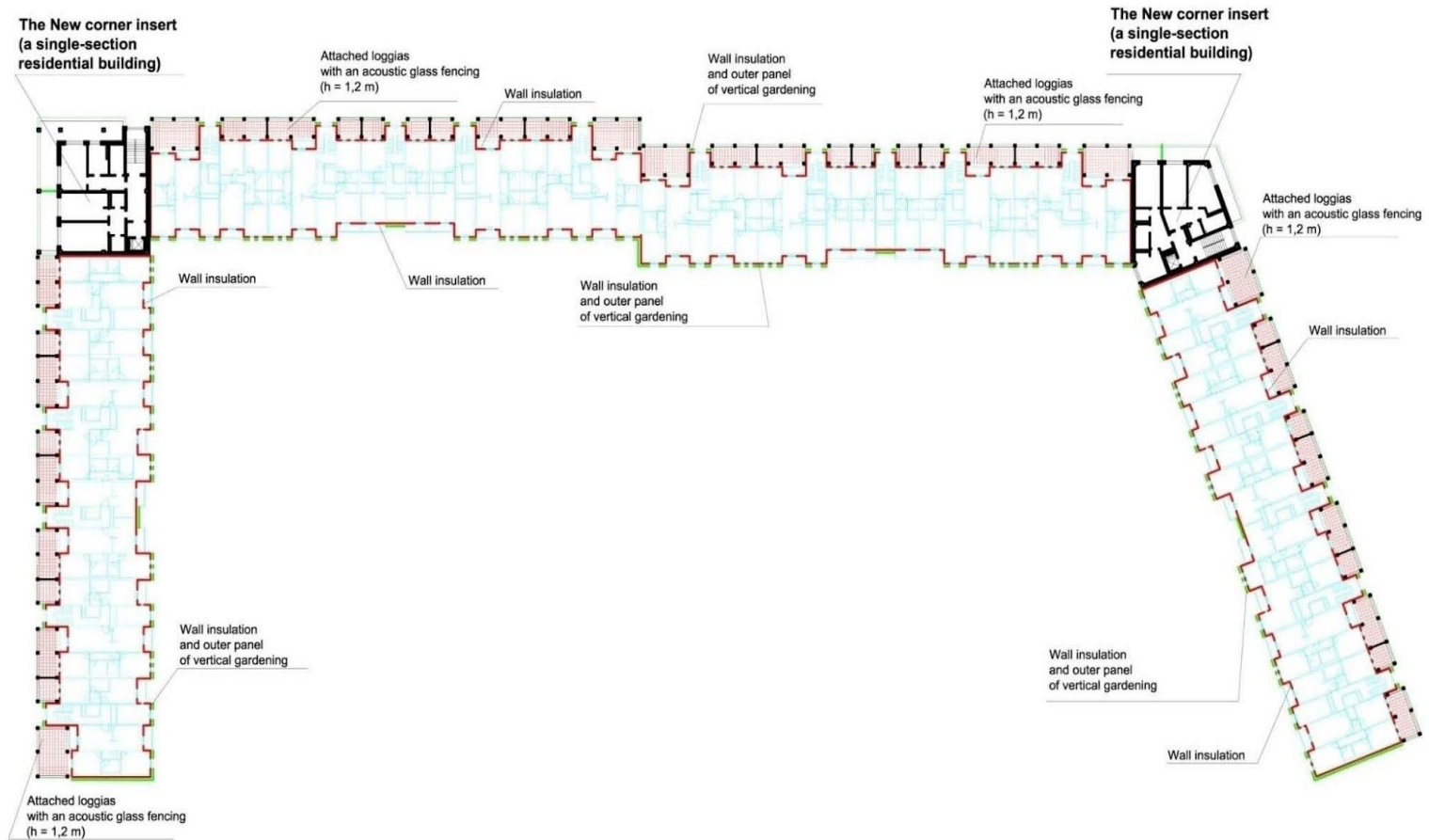
The Apartment for single citizens - 34.0 square meters

The planning type “studio” consists of a hallway, a combined bathroom with entrance from the hallway, a room with the function of a bedroom, a living room and a kitchen.

22. THE NEW RESIDENTIAL COMPLEX (apartments for single citizens and small families)

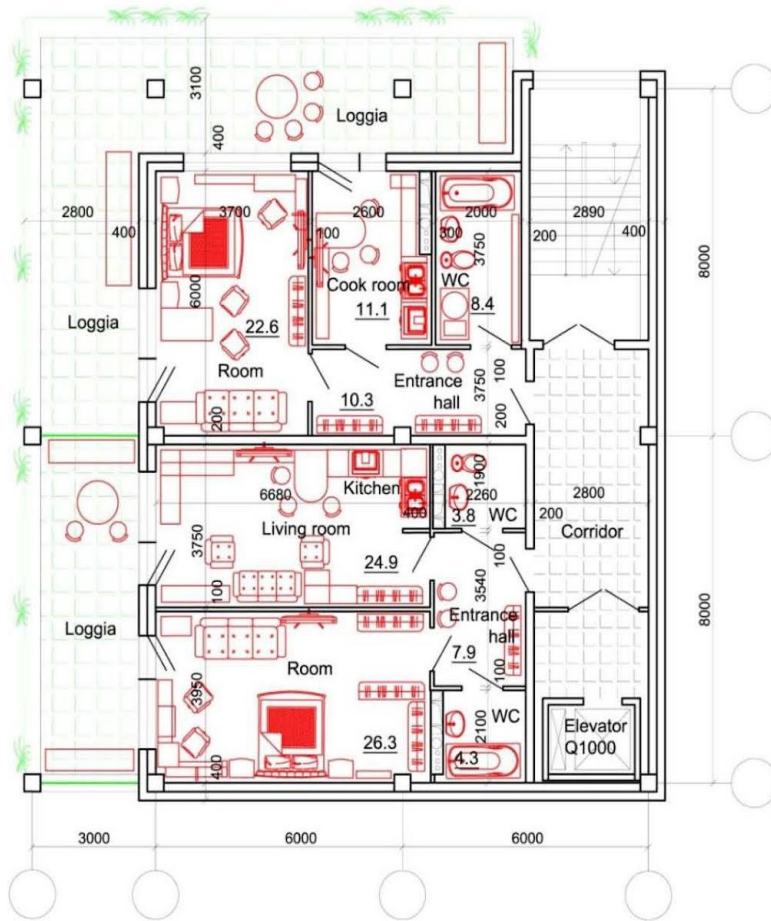


23. RECONSTRUCTED RESIDENTIAL HOUSES WITH NEW ANGULAR INSERTS (the typical floor plan): the Reconstruction without relocation of residents



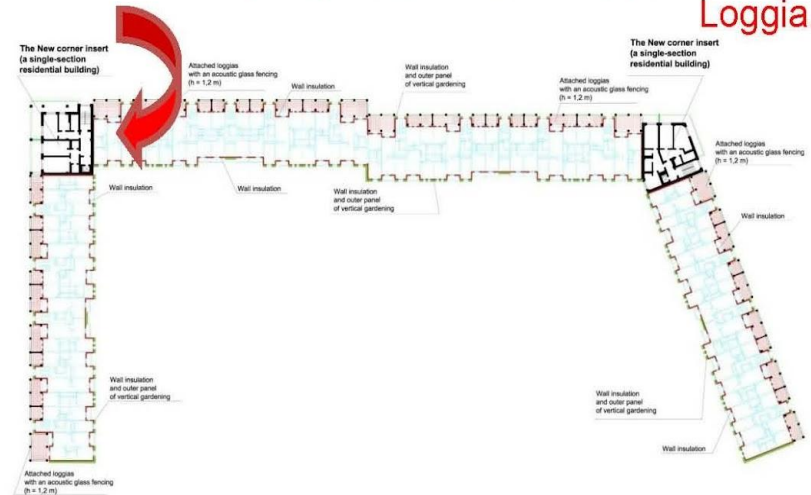
Source: Autor's drawings

24. THE NEW ANGULAR INSERT (the South angular inset typical floor plan)



ONE ROOM APARTMENT:
 the Entrance hall – 10,3 sq.m, the WC – 8,4 sq.m,
 the Cook room – 11,1 sq.m, the Room – 22,6
 sq.m, the Loggia.

ONE ROOM APARTMENT:
 the Entrance hall – 7,9 sq.m, the WC – 3,8 sq.m,
 the WC – 4,3 sq.m, the Living room with the
 Kitchen – 24,9 sq.m, the Room – 26,3 sq.m, the
 Loggia.



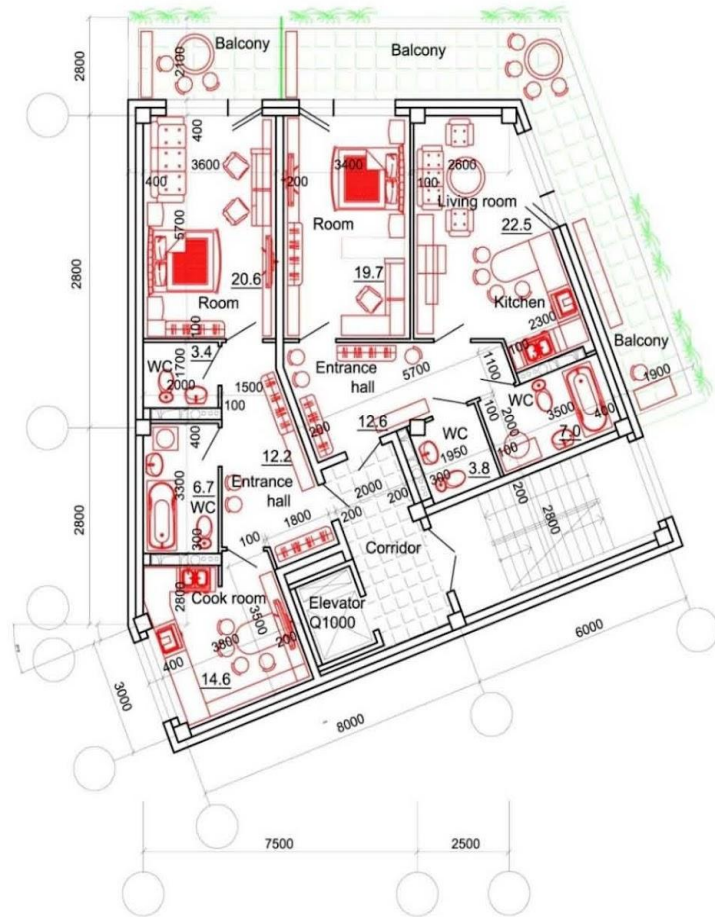
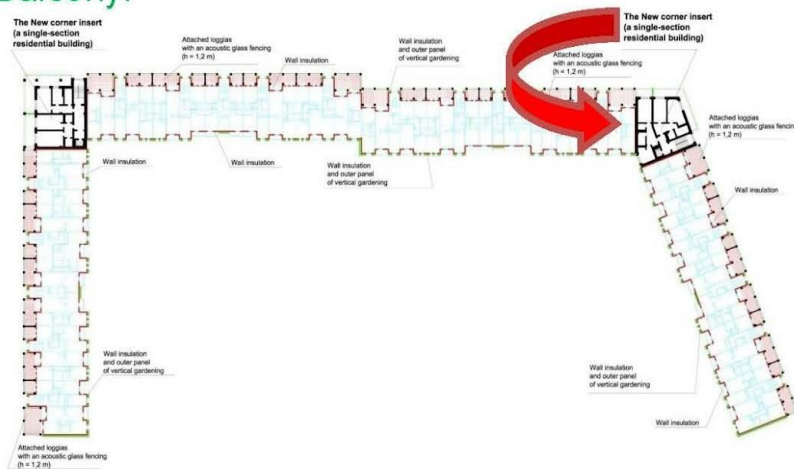
25. THE NEW ANGULAR INSERT (the North angular inset typical floor plan)

ONE ROOM APARTMENT:

the Entrance hall – 12,2 sq.m, the WC – 3,4 sq.m, the WC – 6,7 sq.m, the Cook room – 14,6 sq.m, the Room – 20,6 sq.m, the Balcony.

ONE ROOM APARTMENT:

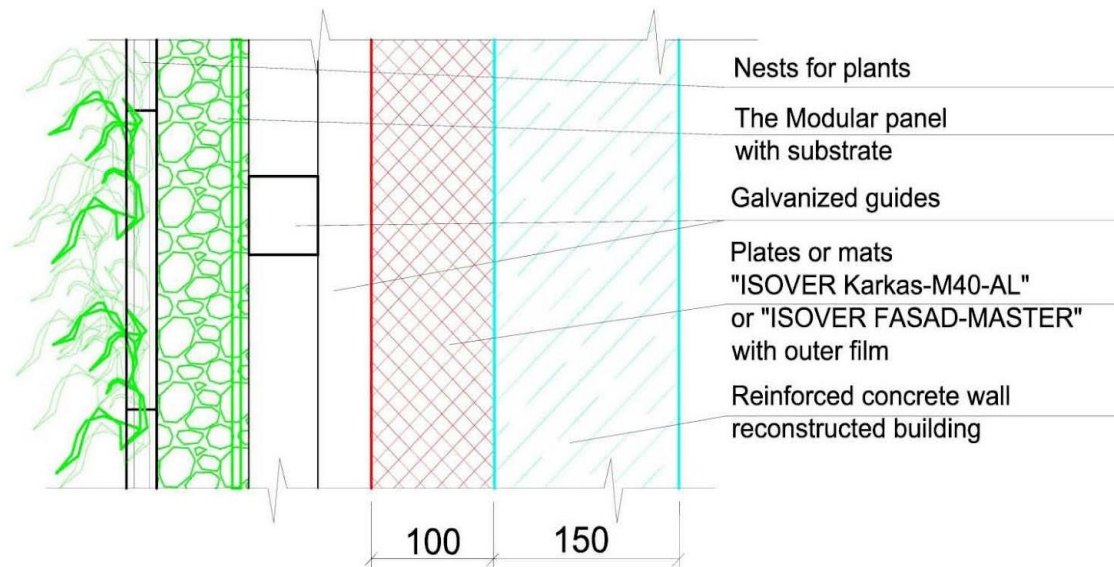
the Entrance hall – 12,6 sq.m, the WC – 3,8 sq.m, the WC – 7,0 sq.m, the Living room with the Kitchen – 22,5 sq.m, the Room – 19,7 sq.m, the Balcony.



26. APPLICATION OF PRODUCTS OF THE INTERNATIONAL GROUP OF COMPANIES "SAINT-GOBAIN" (ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber)

A GREEN FACADE OF RECONSTRUCTED BUILDING MODULAR SYSTEM OF VERTICAL GREENING

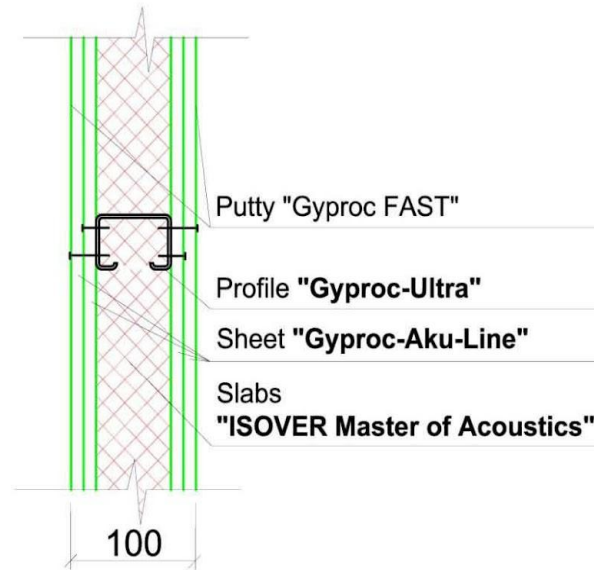
- The existing reinforced concrete wall is sheathed with insulating mats based on fiberglass, covered with aluminum foil "ISOVER Karkas-M40-AL" or hard mineral wool slabs on the basis of stone fiber "ISOVER FASAD-MASTER" with an external waterproofing film.
 - Modular panels of vertical gardening mounted on steel rails.
- (attachment of guides and elements of drip irrigation conventionally not shown)



27. APPLICATION OF PRODUCTS OF THE INTERNATIONAL GROUP OF COMPANIES "SAINT-GOBAIN" (ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber)

THE PARTITION ON THE APARTMENT "C-1M-2 AKULINE"

- A partition on a single metal frame.
- The frame consists of rack and guides partitions **"Gyproc-Ultra"**
- Filling plates **"ISOVER Master of Acoustics"**
- The framework from two parties is sheathed by two layers gypsum sheets **"Gyproc-Aku-Line"**
- Putty **"Gyproc FAST"**



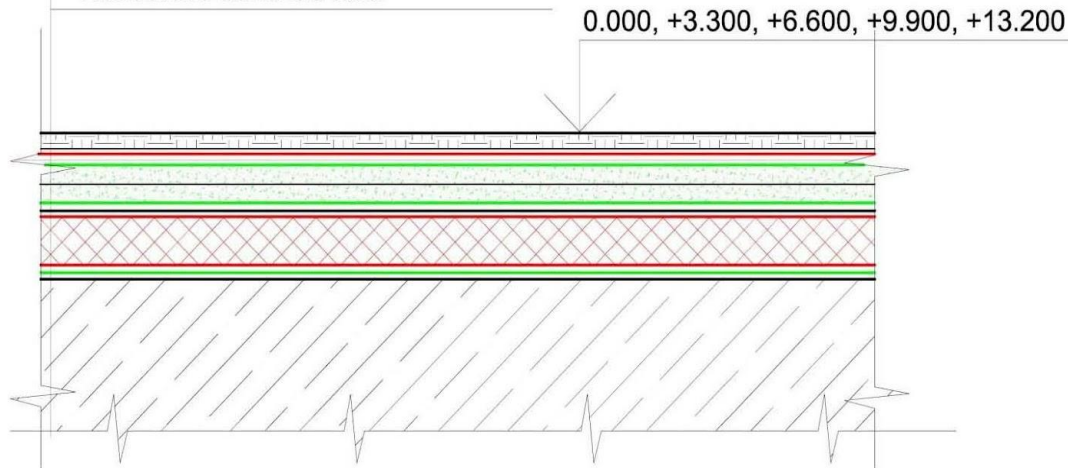
28. APPLICATION OF PRODUCTS OF THE INTERNATIONAL GROUP OF COMPANIES "SAINT-GOBAIN" (ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber)

A FLOOR INNER PARQUET PARQUET

analogous to node 1 -

("ISOVER. The Album of Technical Solutions 2014". - P.483)

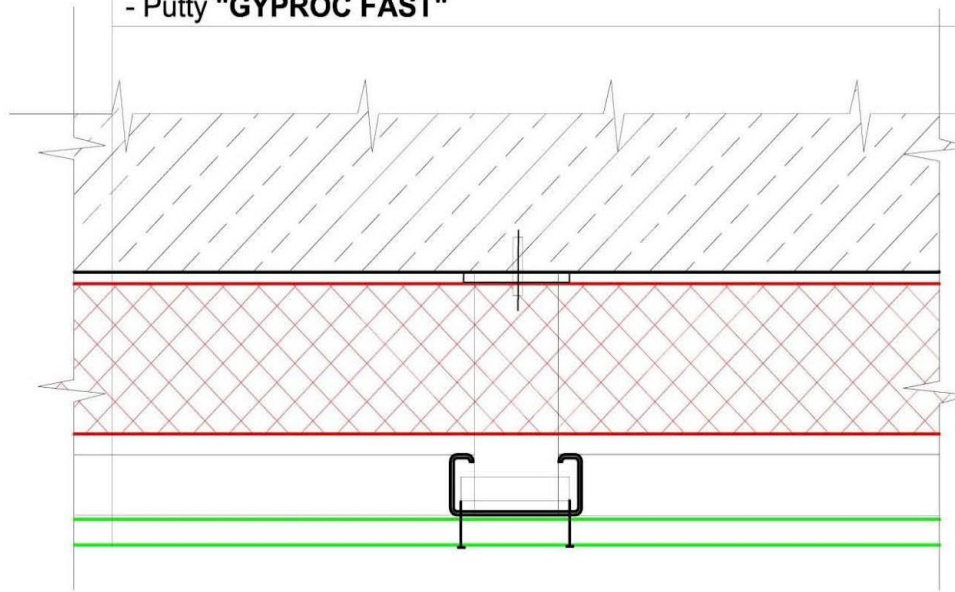
- Type-setting parquet on glue - 15 mm
- Basic leveling device for the floor "**Weber.Vetonit 5700**" - 5 mm
- Cement-sand screed based on dry concrete "**Weber.Vetonit s 100**" with steel mesh 5 mm (mesh 40x40 mm) - 20 mm
- Reinforced plastic film
- Mineral wool tiles "**ISOVER Floating Floor**" - 30 mm
- Leveling layer with Weber.Flor 145 fiberglass mesh - 10 mm
- Reinforced concrete slab



29. APPLICATION OF PRODUCTS OF THE INTERNATIONAL GROUP OF COMPANIES "SAINT-GOBAIN" (ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber)

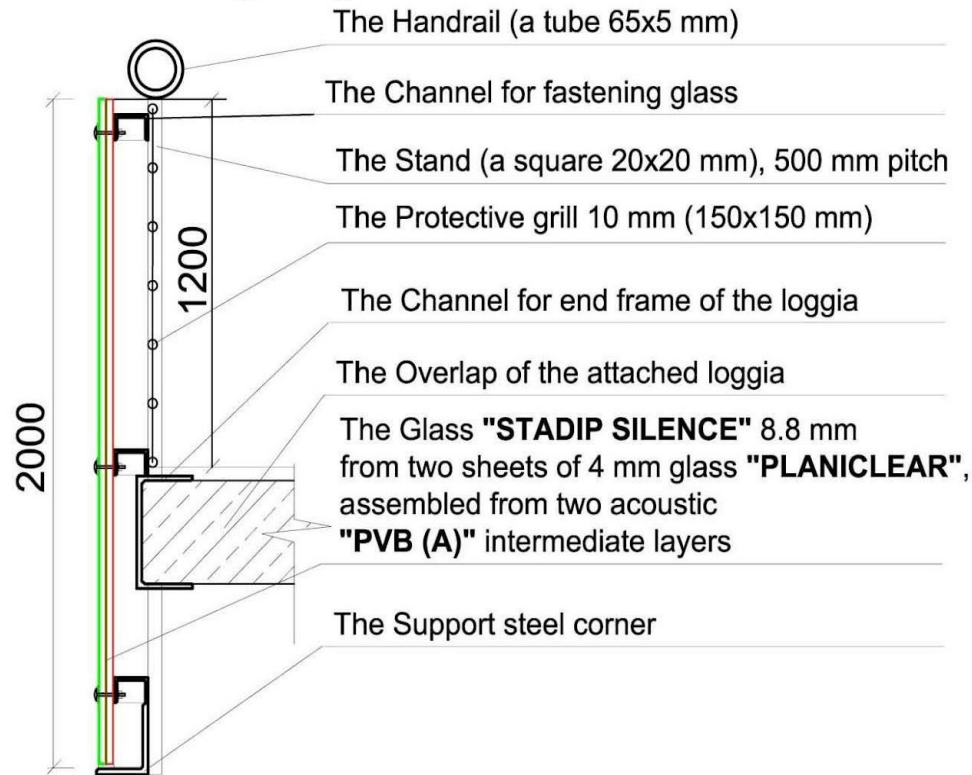
WARMING OVERLAPPING BOTTOM AND SUSPENDED CEILING (attachment of elements shown conventionally)

- Reinforced concrete slab
- Insulating mats based on fiberglass,
covered with aluminum foil **"ISOVER Karkas-M40-AL"** - 150 mm
- Ceiling profile **"GYPROC - ULTRA 60/37"**
- Sound-proof gypsum sheet **"GYPROC AKU-LINE (GSP-D)"** - 12.5 mm
- Putty **"GYPROC FAST"**



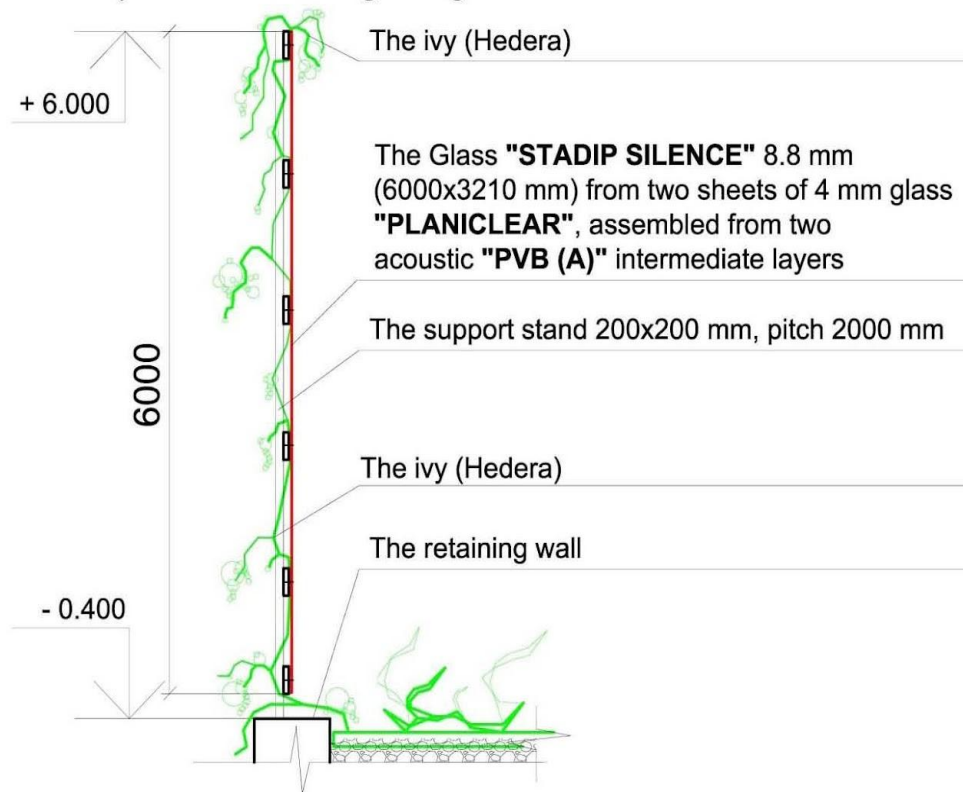
30. APPLICATION OF PRODUCTS OF THE INTERNATIONAL GROUP OF COMPANIES
"SAINT-GOBAIN" (ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber)

THE ACOUSTIC PROTECTION OF ATTACHED LOGGIATHE
(bolted fastenings of glass elements are shown conditionally)



31. APPLICATION OF PRODUCTS OF THE INTERNATIONAL GROUP OF COMPANIES "SAINT-GOBAIN" (ISOVER, Gyproc, Saint-Gobain Glass, Ecophon, Isotec, Weber)

THE SOUND PROTECTION SCREEN ALONG THE METRO LINE (bolted fastenings of glass elements are shown conditionally)



32. THE NEW MULTI-FUNCTIONAL RESIDENTIAL COMPLEX (Results of the heat-technical calculation – the Southeast building)

Multi Comfort Designer



Performance Simulation Residential complex



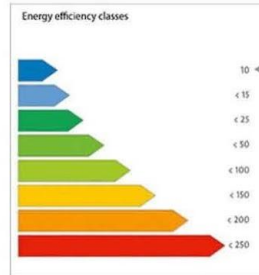
Owner: 1411
 Architect:

Multi Comfort Designer



CALCULATIONS

Specific Heat Demand	
Transmission Heat Losses:	58190.31 kWh/a
Ventilation Heat Losses:	19726.90 kWh/a
Total Heat Losses:	77917.21 kWh/a
Internal Heat Gains:	41419.66 kWh/a
Solar Heat Gains:	37873.11 kWh/a
Total Heat Gains:	65488.86 kWh/a
Annual Heat Demand:	12428.35 kWh/a
Specific Heat Demand:	3.10 kWh/(m ² a)

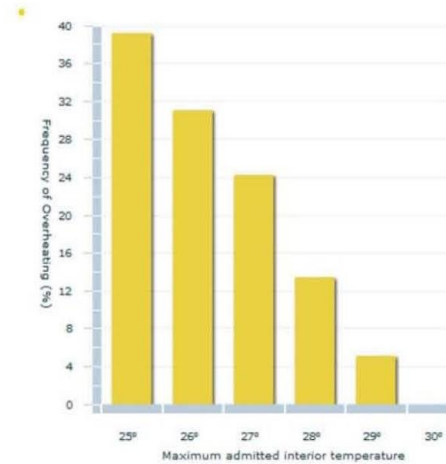


Multi Comfort Designer



CALCULATIONS

Overheating	
Exterior Thermal Transmittance:	736.67 WK
Ground Thermal Transmittance:	32.20 WK
Ventilation Transmission Ambient:	154.31 WK
Ventilation Transmission Ground:	0.00 WK
Solar Aperture:	182.68 m ²
Frequency of Overheating:	39.20 %



33. FOLLOWING PROFESSIONAL PROGRAMS WERE USED IN THE DESIGN PROCESS



CorelDRAW X8



Multi
Comfort Designer



3ds MAX



Lumion 8.0

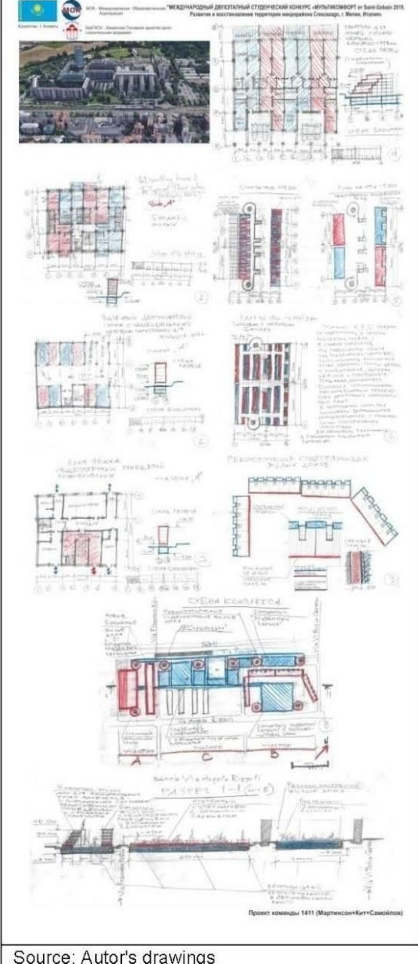
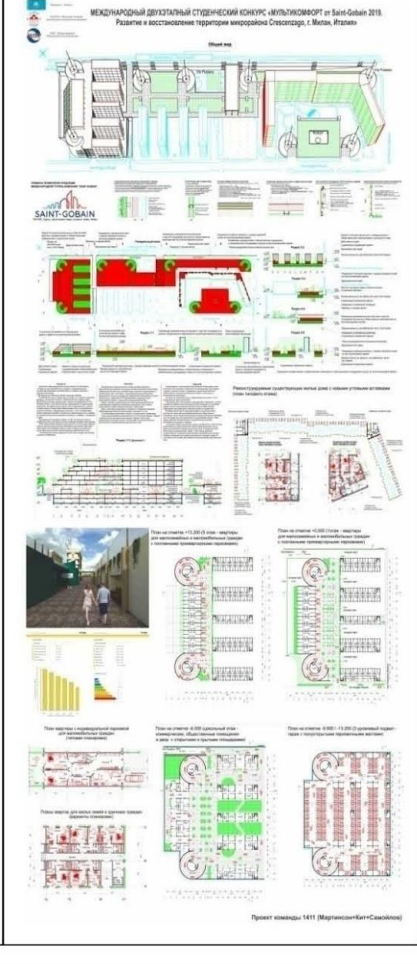
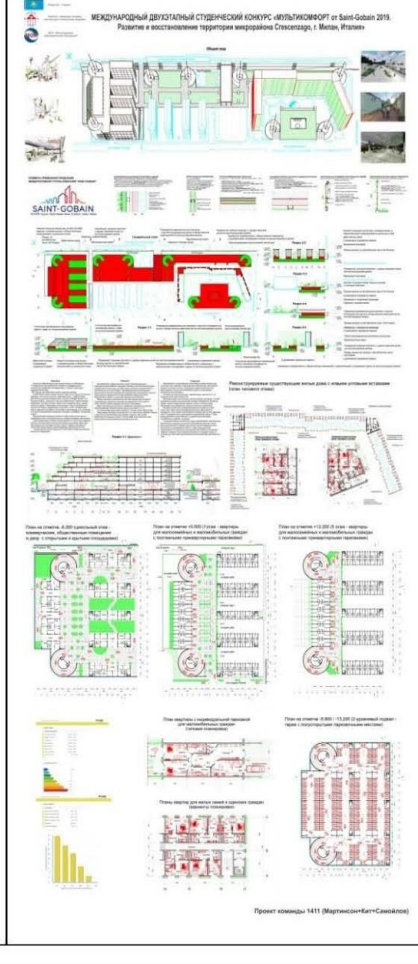
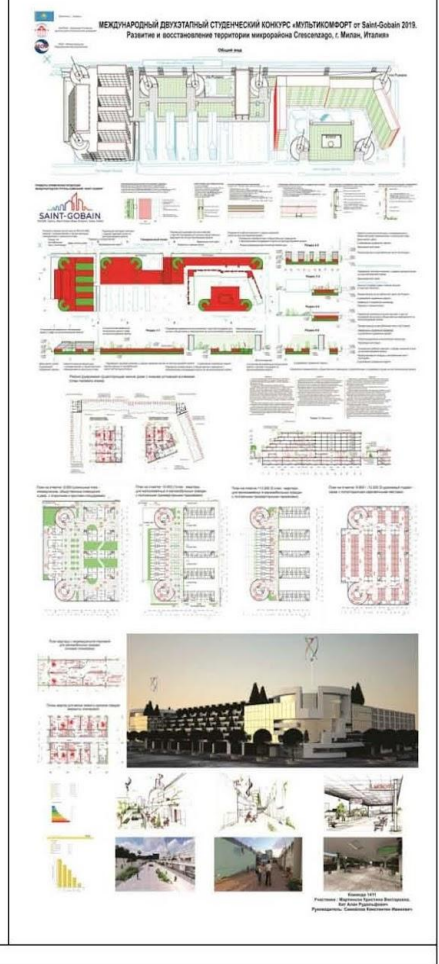


AutoCAD



Adobe
Photoshop

34. DEMONSTRATION MATERIALS ON THE STAGES OF READINESS

30%	50%	80%	100%
<p>МЕЖДУНАРОДНЫЙ ДЕДУКАЛЬНЫЙ СТУДЕНЧЕСКИЙ КОНКУРС ИМПУЛЬСИВОРТ от Saint-Gobain 2019. Развитие и восстановление территории микрорайона Сресченцаго, г. Милан, Италия</p>  <p>Проект команды 1411 (Martinson K.V., Kit A.R., Samoilov K.I.)</p>	<p>МЕЖДУНАРОДНЫЙ ДЕДУКАЛЬНЫЙ СТУДЕНЧЕСКИЙ КОНКУРС ИМПУЛЬСИВОРТ от Saint-Gobain 2019. Развитие и восстановление территории микрорайона Сресченцаго, г. Милан, Италия</p>  <p>Проект команды 1411 (Martinson K.V., Kit A.R., Samoilov K.I.)</p>	<p>МЕЖДУНАРОДНЫЙ ДЕДУКАЛЬНЫЙ СТУДЕНЧЕСКИЙ КОНКУРС ИМПУЛЬСИВОРТ от Saint-Gobain 2019. Развитие и восстановление территории микрорайона Сресченцаго, г. Милан, Италия</p>  <p>Проект команды 1411 (Martinson K.V., Kit A.R., Samoilov K.I.)</p>	<p>МЕЖДУНАРОДНЫЙ ДЕДУКАЛЬНЫЙ СТУДЕНЧЕСКИЙ КОНКУРС ИМПУЛЬСИВОРТ от Saint-Gobain 2019. Развитие и восстановление территории микрорайона Сресченцаго, г. Милан, Италия</p>  <p>Проект команды 1411 (Martinson K.V., Kit A.R., Samoilov K.I.)</p>

Source: Autor's drawings

35. THE PHOTO SESSION OF THE NATIONAL FINAL (the "KAZGOR" Project Academy)



36. SOURCES

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37. BRIEFLY ABOUT AUTHORS (the Team 1411)



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**The Crescenzago microdistrict reconstruction (Milan city, Italy):
the Methodology of the competitive designing ~
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