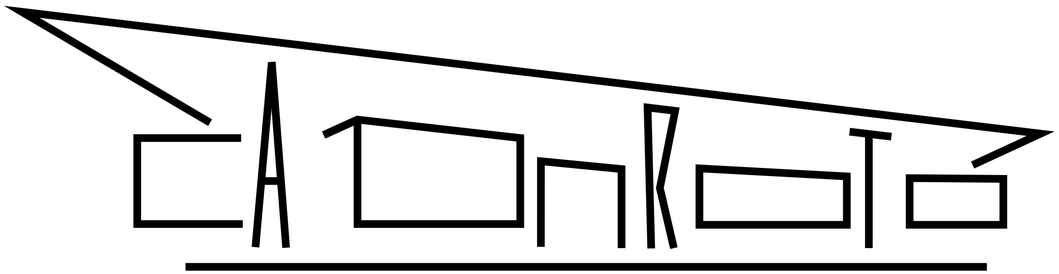
Art+

National center of Arts and Handicrafts on New Waterfront district in Kazan city



author: student, B.Arch Shaimardanov Amir|supervisor: associate professor, PhD Ivantsov Alexey

Art+. Relevance of the topic

historic settlement context

Kazan waterfront
urban development program

New Waterfront district – Phase 1
completion: Yanalif residential complex

waterfront revitalization & cultural cluster
development – a contemporary trend

industrial heritage
of Kazan river port

public demand for art space clusters

Adonis art cluster development launch

green roofs & sustainable architecture:
global trends and Kazan urban regulations

demand for new exhibition venues in Kazan

Kazan Today – A City on the Rise

Kazan is a metropolitan area of over 1.5 million people and one of Russia's most dynamically developing cities. In 2025, the city welcomed 5.1 million tourists – a figure originally targeted for 2030. The new goal: 7 million tourists and 2 billion US dollars in tourism turnover by 2030. This rapid growth creates an acute demand for new cultural infrastructure and points of attraction.

The Creative Cluster Deficit

Contemporary urban practice requires art clusters, cultural centers, and creative studios in every active city district. In million-plus cities, this is a standard of urban quality. Moscow holds over 59% of Russia's creative clusters, St. Petersburg – 17%. Kazan is virtually absent from this list. Demand for creative spaces in the city far exceeds supply.

The City's Response

Kazan is moving toward a systemic solution: new residential developments are now required to include art installations and recreational spaces. Cultural venues are opening in reconstructed buildings across the city. The creative cluster agenda has become a declared vector of urban development.

The Gap This Project Fills

The only creative cluster currently operating in Kazan is located in the historic city center. The rest of the city – including its emerging waterfront – remains without modern creative infrastructure. Art+ at New Waterfront district is conceived as the first next-generation art cluster on the banks of the Volga – at the intersection of the tourist route, a new residential district, and an emerging embankment – closing the critical gap in Kazan's cultural infrastructure.

Art+. Social profile of complex

Before developing the architectural solution, a social portrait of the future complex was established – who will use this space and how.

The Visitors

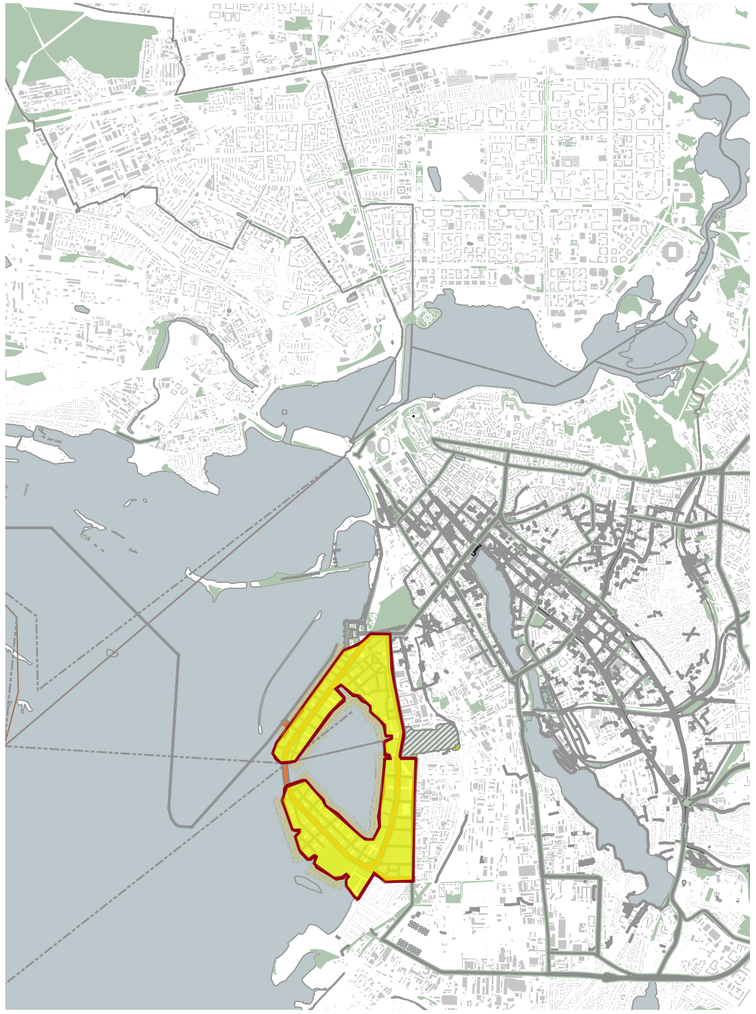
City residents seeking social connections and a place for creative expression
Artists and craftspeople hosting workshops and performances
Exhibition visitors engaging with art and culture
Leisure guests looking to relax, stroll along the embankment, or find quiet solitude by the water
Marina yacht owners and waterfront enthusiasts

The Result

This diversity of scenarios defined the building's multifunctional structure – a combination of exhibition, educational, recreational, and commercial spaces within a single complex.

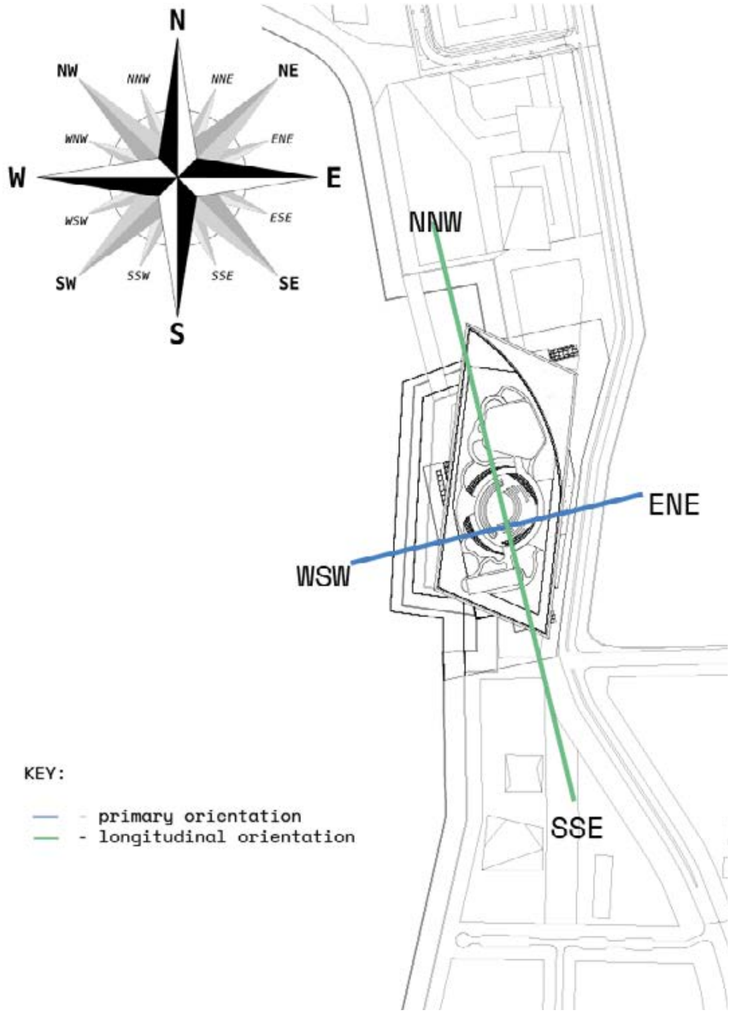
Art+. Location

New Waterfront district in the city of Kazan



Art+ on the New Waterfront district

solar orientation



Art+. Site analysis in urban development context

NWD|functional zones:

- recidential buildings with office space
- education facilities
- shopping centers.cafes/restaurants
- mixed-use business centers.office/retail
- existing buildings
- Kazan New Waterfront boundary
- project boundary

NWD|green landscape:

- green landscape
  (waterfront/boulevard/park/square)
- beach
- bike line
- existing buildings
- Kazan New Waterfront boundary
- project boundary
- marina water area

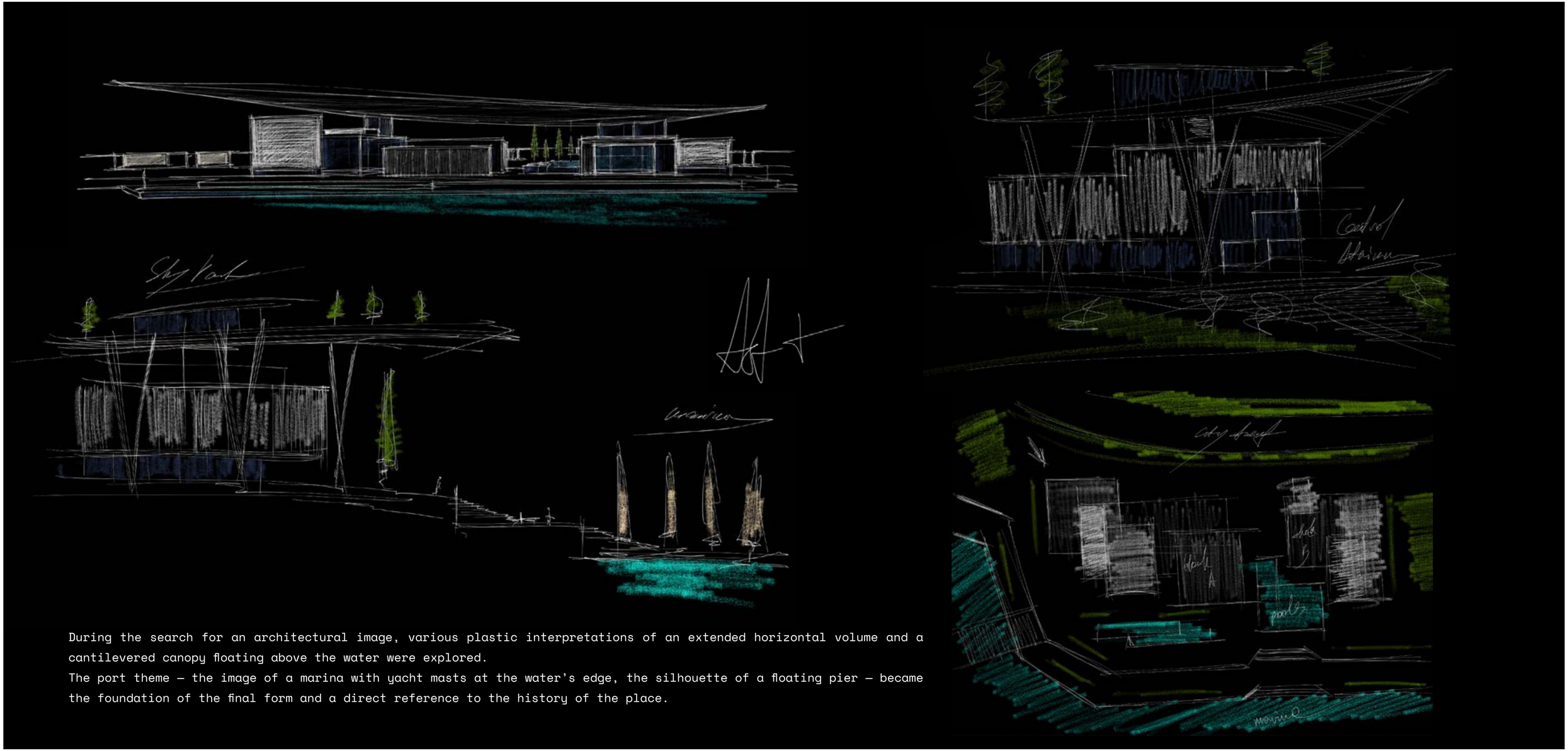
NWD|transport ways:

- green landscape
- primary circulation
- public transport stops
- tram line
- existing buildings
- Kazan New Waterfront boundary
- project boundary

NWD|primary objects:

- key high-rise landmarks
- existing buildings
- Kazan New Waterfront boundary
- project boundary
- main viewpoints

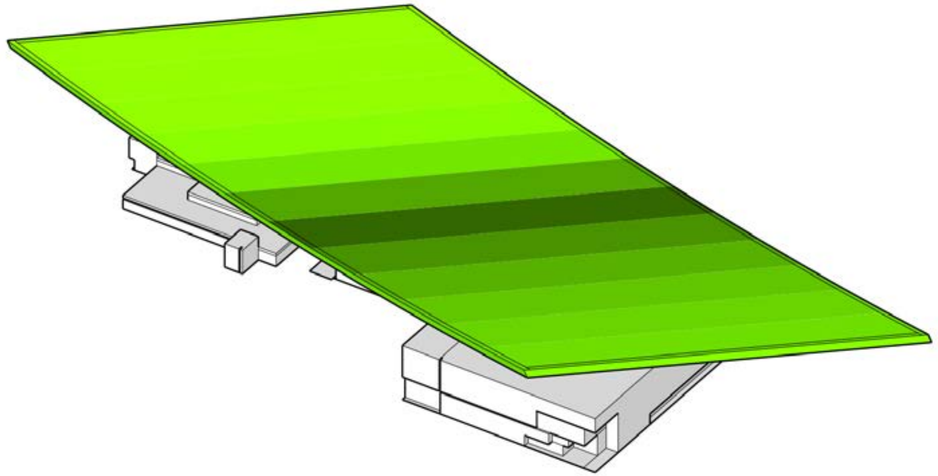
Art+. Sketches



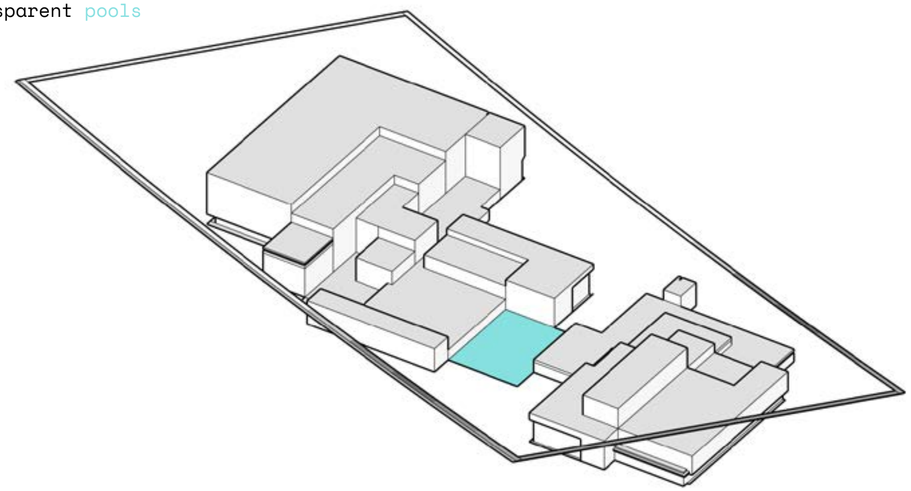
During the search for an architectural image, various plastic interpretations of an extended horizontal volume and a cantilevered canopy floating above the water were explored.
The port theme – the image of a marina with yacht masts at the water's edge, the silhouette of a floating pier – became the foundation of the final form and a direct reference to the history of the place.

Art+. Massing & form

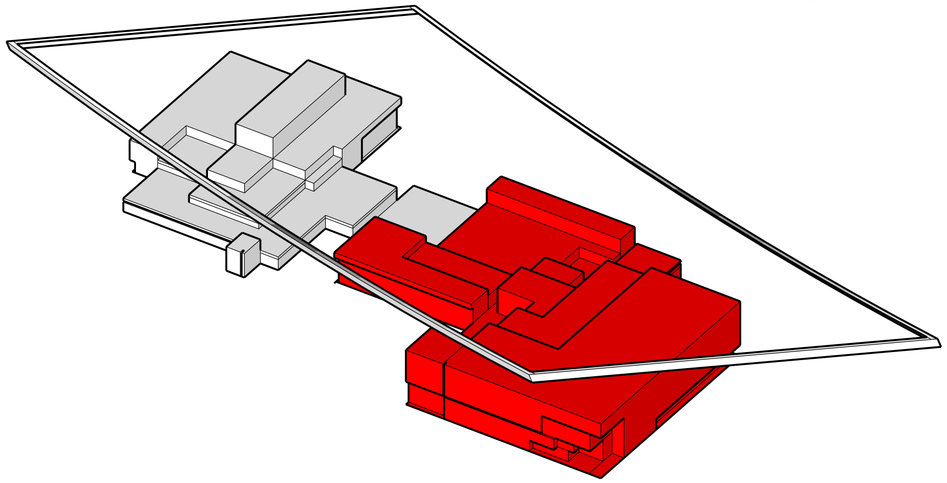
cantilevered roof
terrace Sky Park



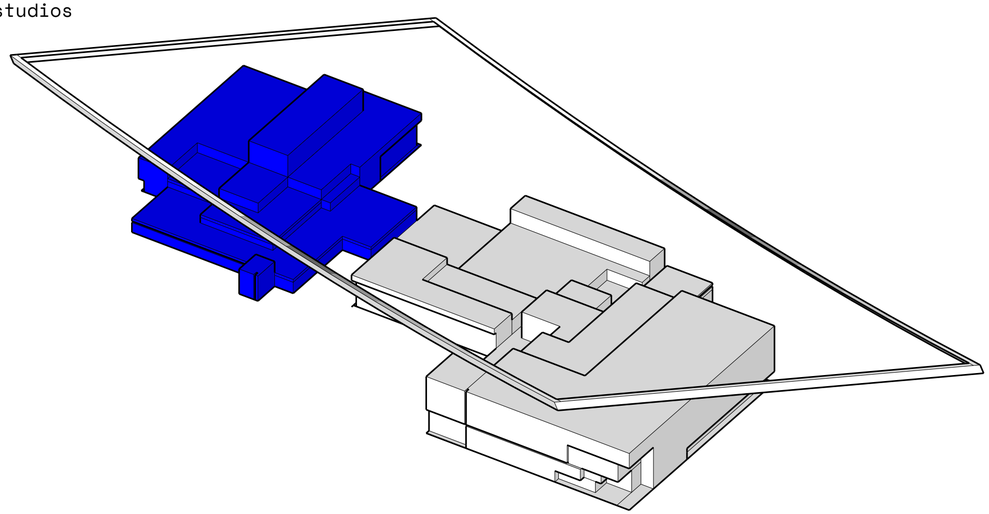
lower terrace with
light-transparent pools



block A
art gallery



block B
creative studios



Art+. Axonometric

Art+. Urban Waterfront elevation from New Waterfront district

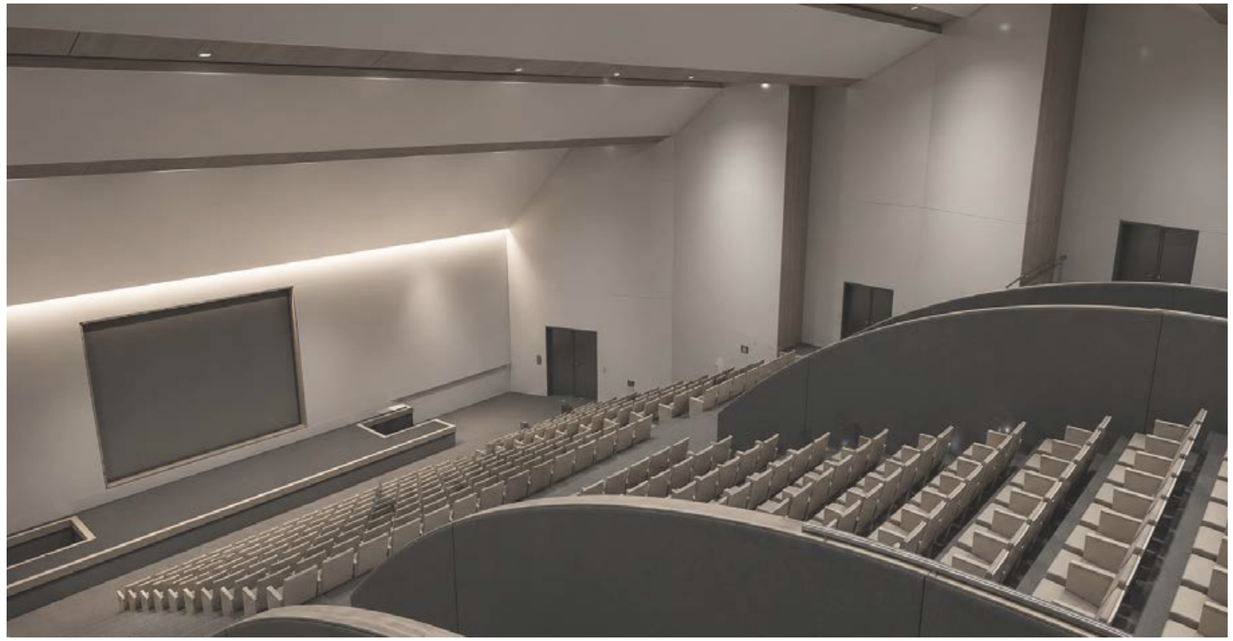
Art+. Master plan

Art+. Architectural form & volume

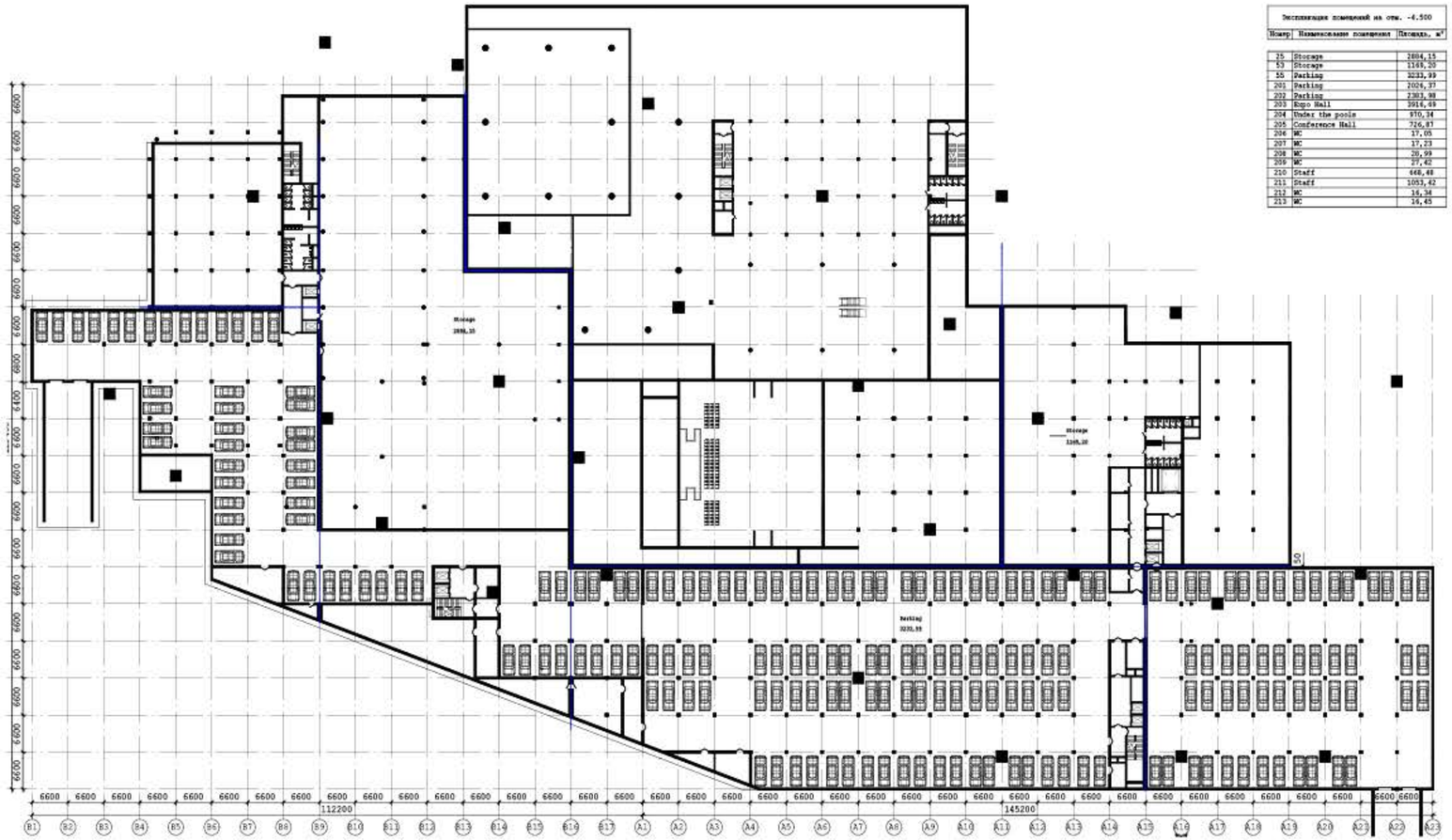
Art+. Light-transparent terrace pools

Art+. Sky Park | cantilevered terrace

Art+. Creative cluster interiors



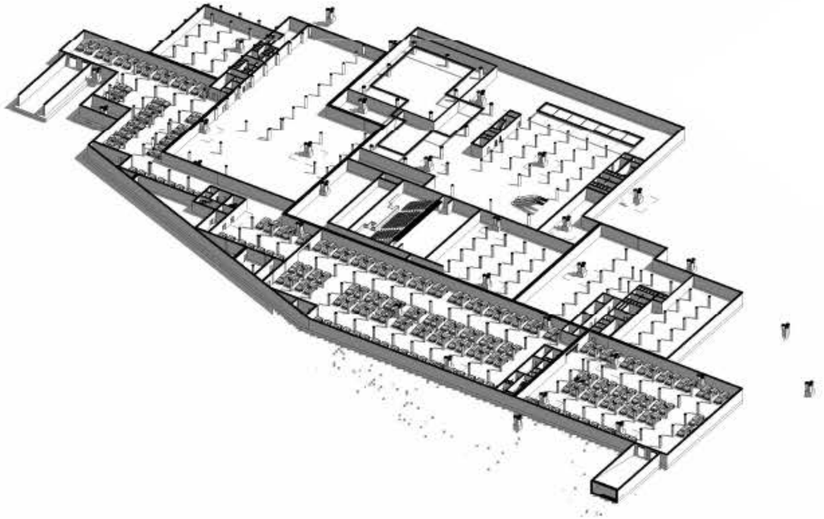
Art+. Basement floor plan | el. -4.500



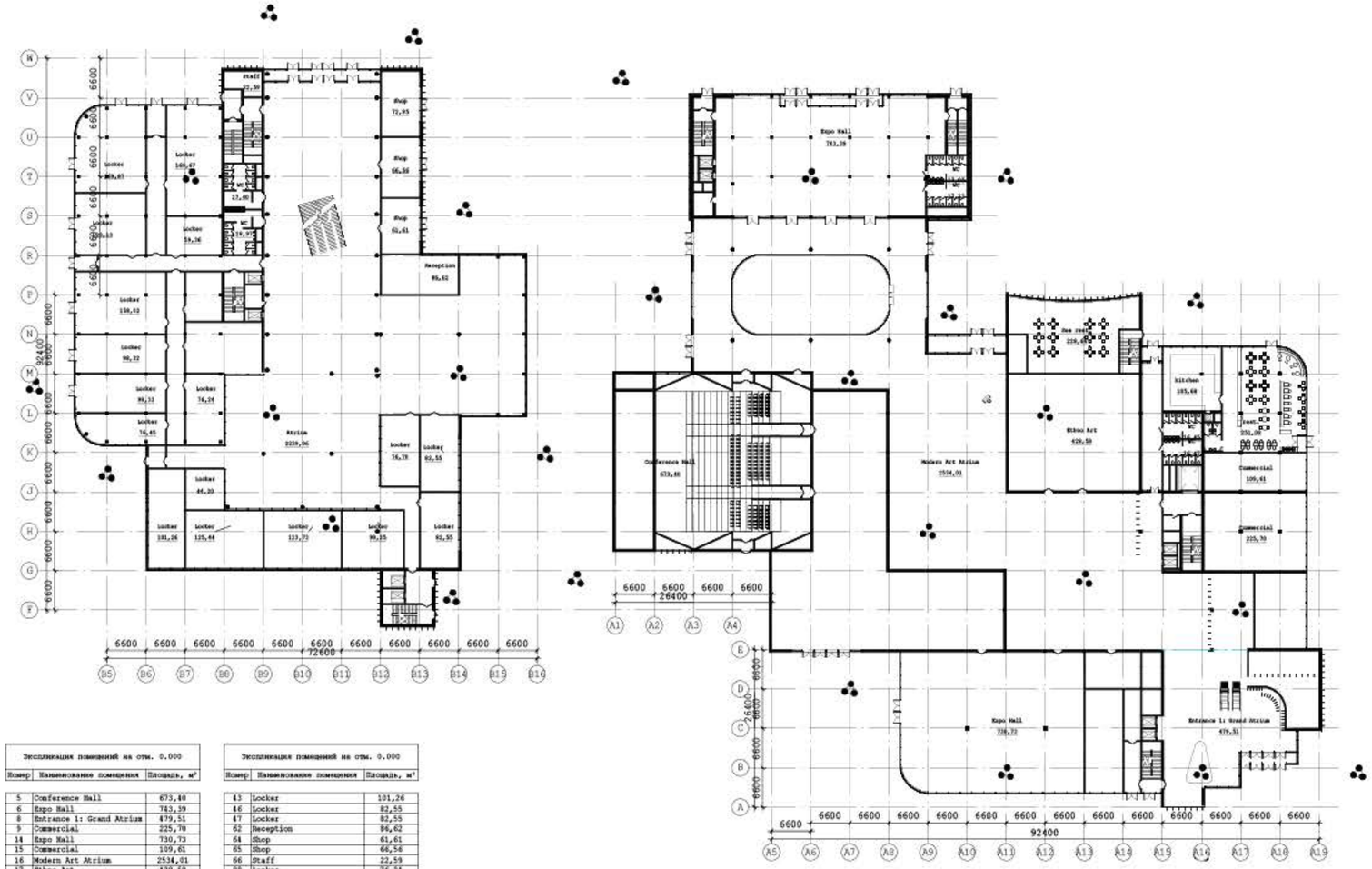
Экспликация помещений на отм. -4.500

Номер	Наименование помещения	Площадь, м²
25	Storage	2884,15
53	Storage	1169,39
55	Parking	3233,99
201	Parking	2026,37
202	Parking	2383,98
203	Expo Hall	3919,69
204	Under the pools	970,34
205	Conference Hall	724,87
206	WC	17,05
207	WC	17,23
208	WC	20,99
209	WC	27,42
210	Staff	648,48
211	Staff	1053,42
212	WC	16,34
213	WC	16,45

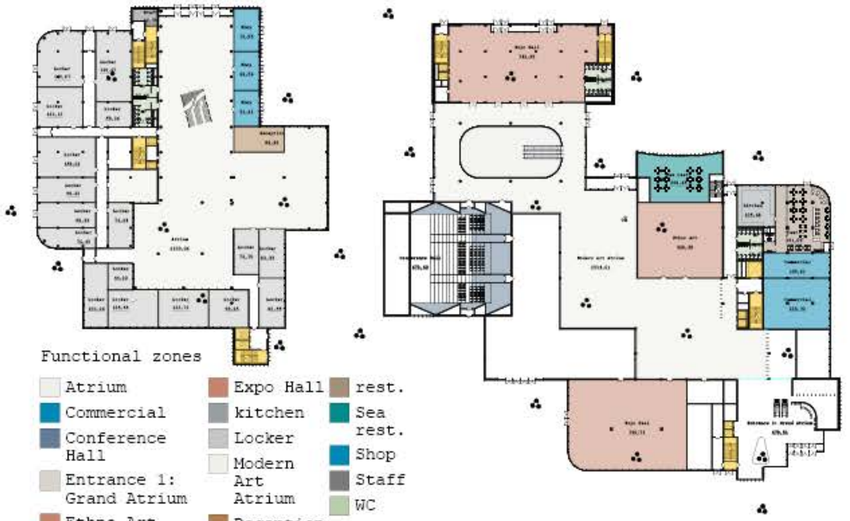
functional zoning

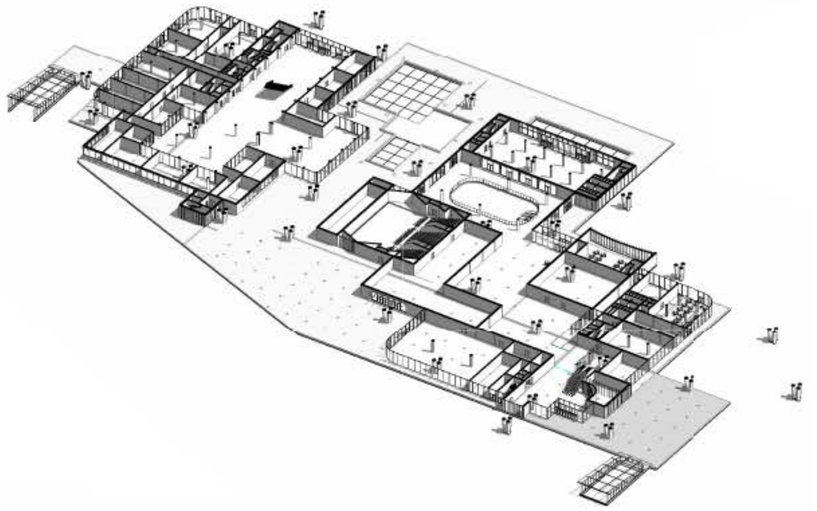


Art+. Ground floor plan | el. 0.000



functional zoning

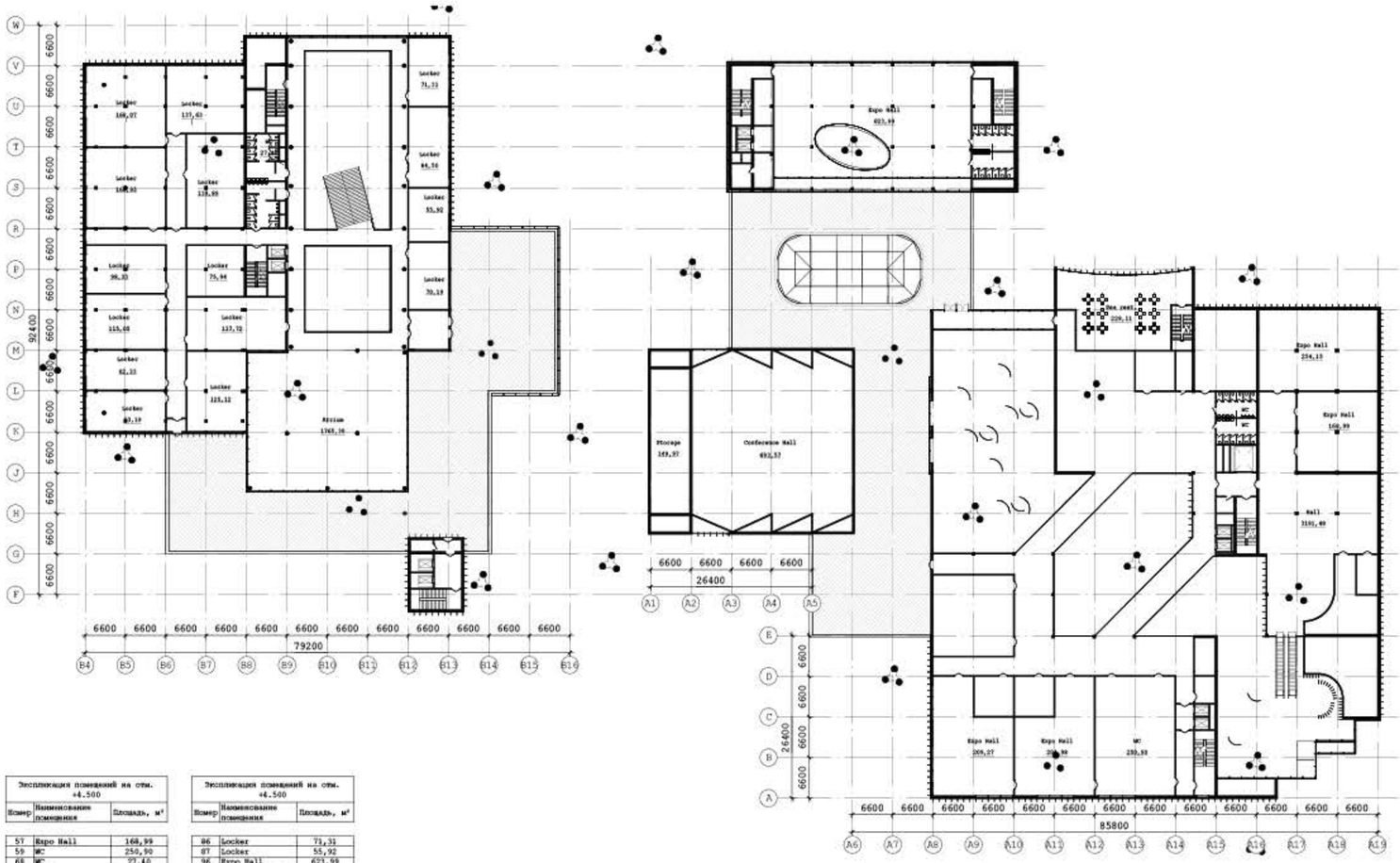




Экспликация помещений на отм. 0.000		
Номер	Наименование помещения	Площадь, м²
5	Conference Hall	673,40
6	Expo Hall	743,39
8	Entrance 1: Grand Atrium	479,51
9	Commercial	225,70
14	Expo Hall	730,73
15	Commercial	109,61
16	Modern Art Atrium	2534,01
17	Ethno Art	428,58
19	Sea rest.	228,64
23	Atrium	2239,06
27	Locker	99,25
28	Locker	123,73
29	Locker	125,44
30	Locker	44,20
34	Locker	76,70
35	Locker	169,67
36	Locker	59,36
37	Locker	123,13
38	Locker	169,87
41	Locker	158,02

Экспликация помещений на отм. 0.000		
Номер	Наименование помещения	Площадь, м²
43	Locker	101,26
46	Locker	82,55
47	Locker	82,55
62	Reception	86,62
64	Shop	61,61
65	Shop	66,56
66	Staff	22,59
88	Locker	76,24
89	Locker	98,33
90	Locker	76,45
91	Locker	98,32
98	kitchen	105,68
99	rest.	251,09
100	Shop	72,95
118	WC	28,97
119	WC	27,40
120	WC	16,47
121	WC	16,45
122	WC	17,05
123	WC	17,23

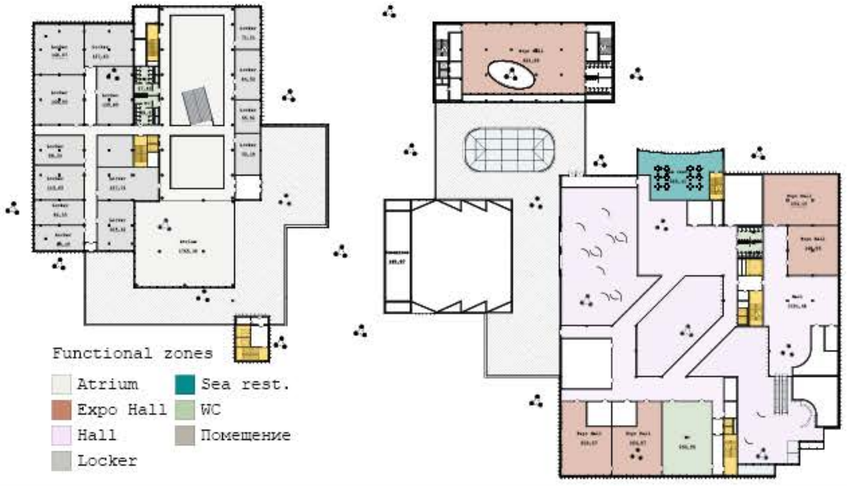
Art+. 1st floor plan | el. +4.500

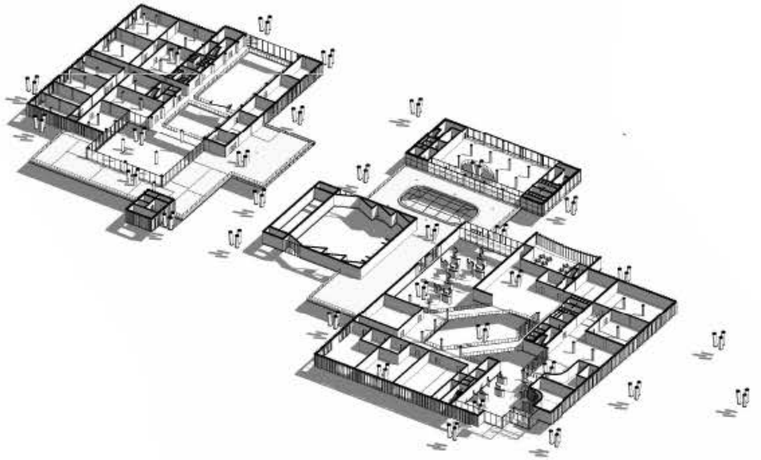


Экспликация помещений на отм. +4.500		
Номер	Наименование помещения	Площадь, м²
57	Expo Hall	168,99
59	WC	250,90
68	WC	27,40
69	Locker	166,95
70	Locker	168,07
71	Locker	137,63
72	Locker	139,89
73	Locker	98,33
75	Locker	137,72
76	Locker	82,33
78	Locker	88,50
79	Locker	70,19
80	Atrium	1765,30
83	Locker	115,05
84	Locker	83,19

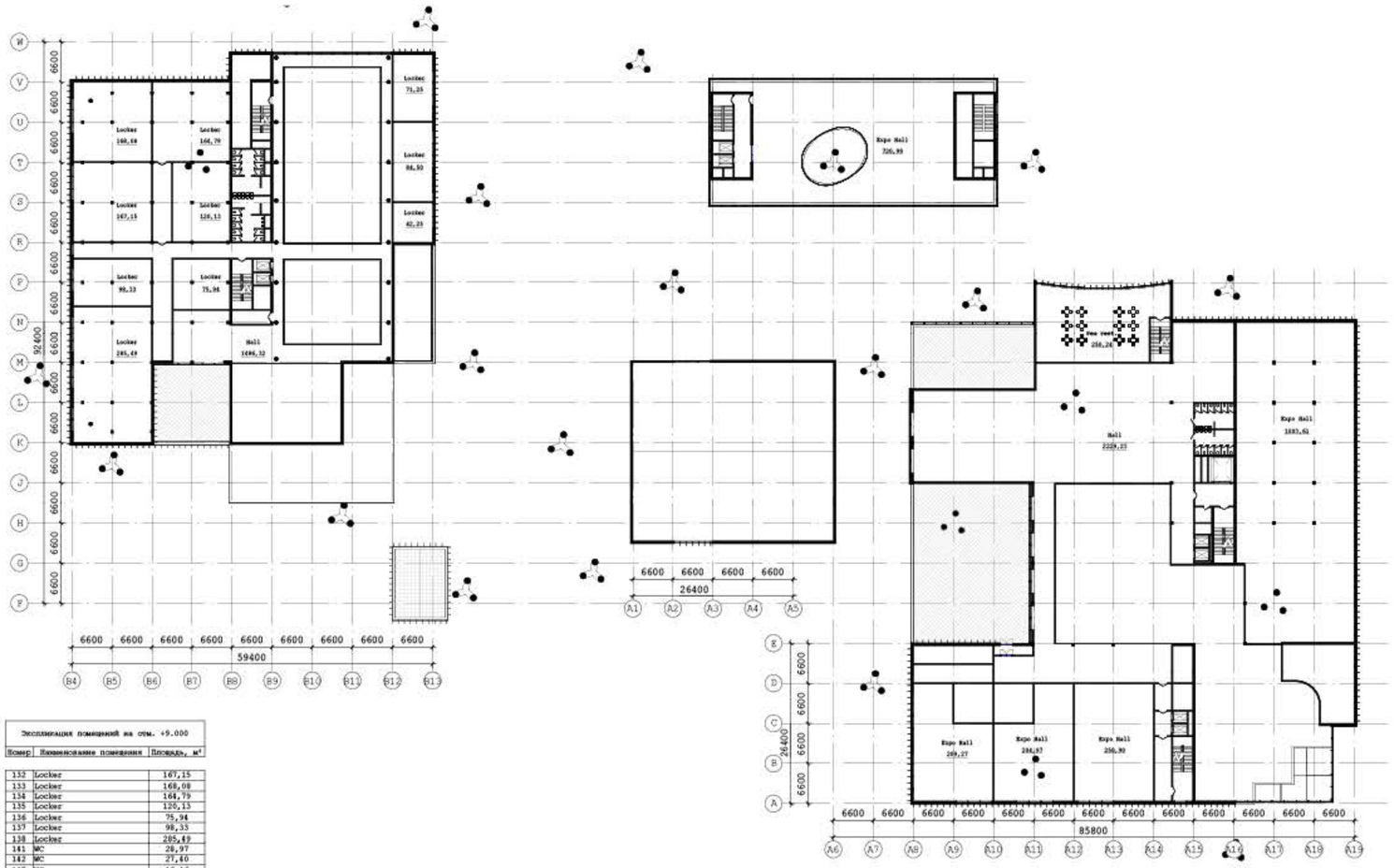
Экспликация помещений на отм. +4.500		
Номер	Наименование помещения	Площадь, м²
86	Locker	71,31
87	Locker	55,92
96	Expo Hall	623,99
130	Conference Hall	693,57
131	Storage	149,97
139	WC	28,97
143	Locker	125,12
144	Locker	75,94
145	WC	16,44
146	WC	16,46
154	Sea rest.	229,11
155	Hall	3191,48
156	Expo Hall	254,15
157	Expo Hall	206,98
158	Expo Hall	209,27

functional zoning



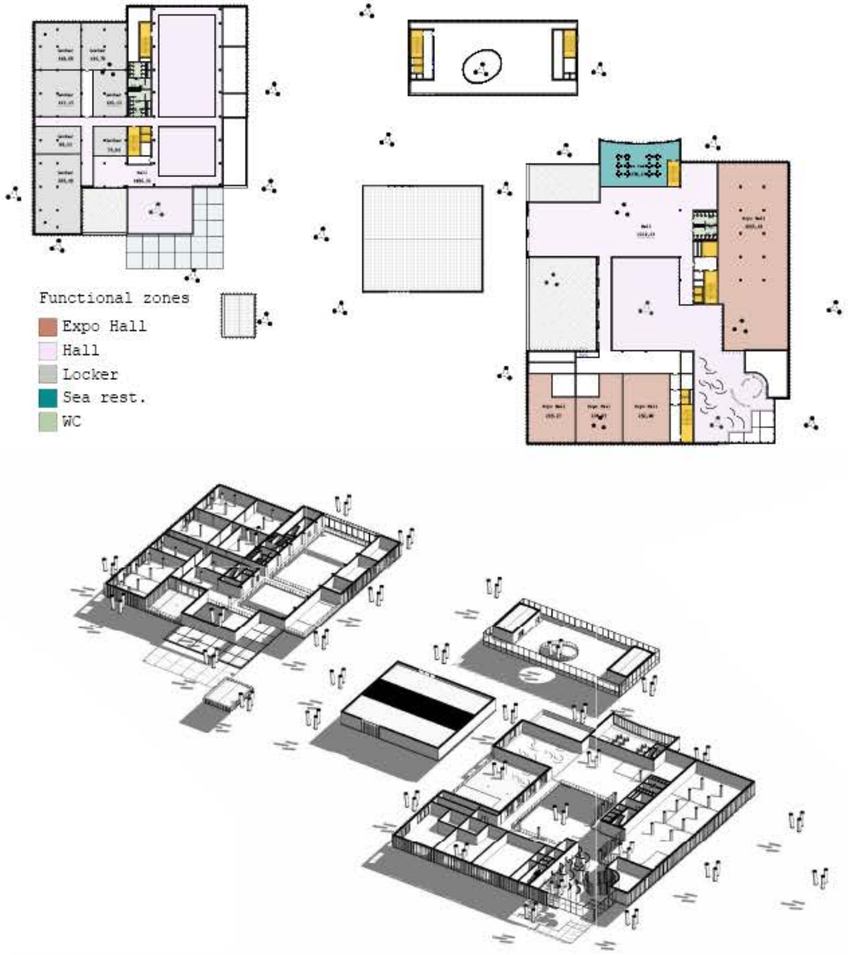


Art+. 2nd floor plan | el. +9.000

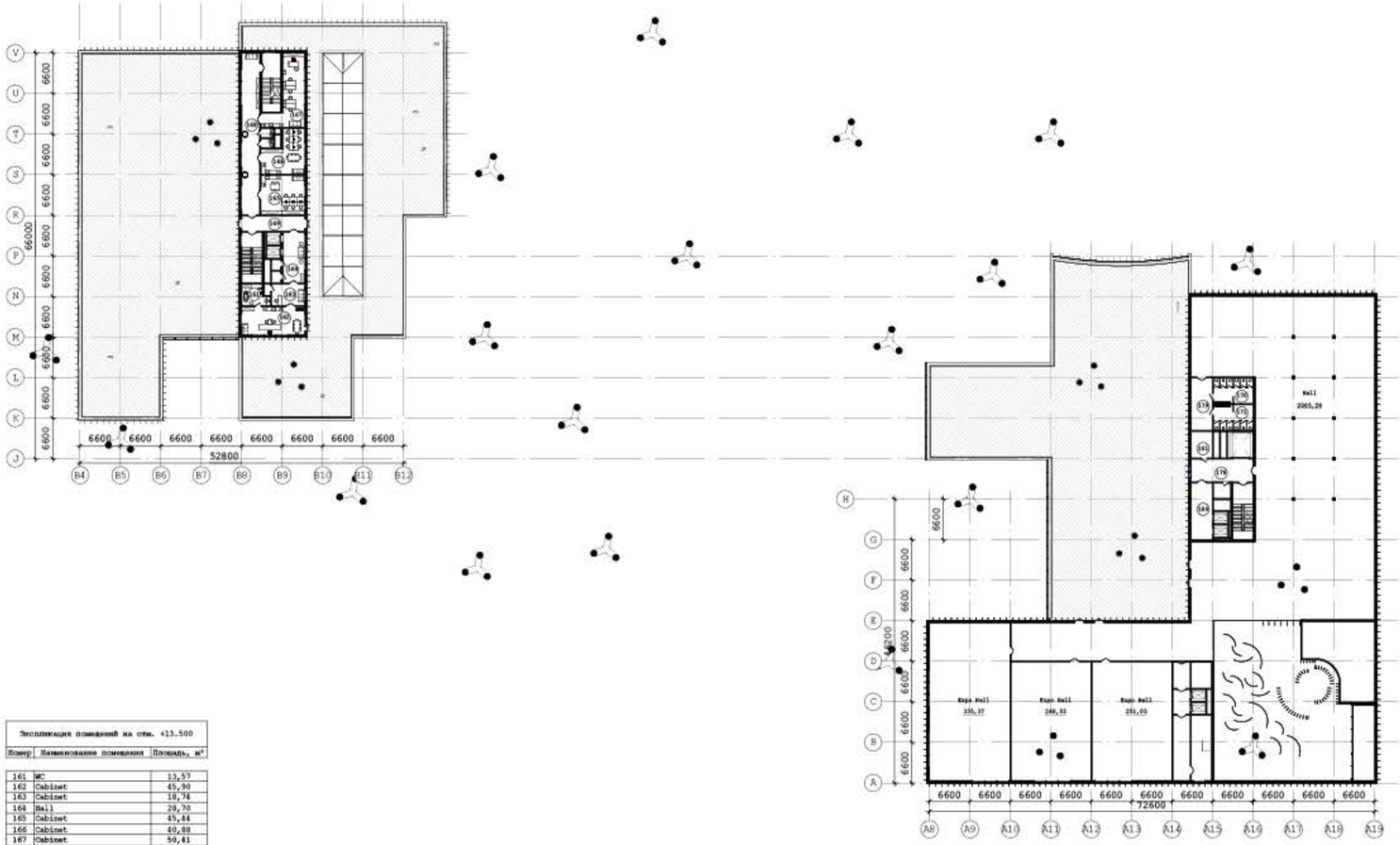


Экспликация помещений на отм. +9.000		
Номер	Наименование помещения	Площадь, м²
132	Locker	167,15
133	Locker	168,08
134	Locker	164,79
135	Locker	126,13
136	Locker	75,94
137	Locker	98,33
138	Locker	285,49
141	WC	28,97
142	WC	27,40
147	WC	16,46
148	WC	16,44
149	Expo Hall	269,27
150	Expo Hall	204,97
151	Expo Hall	250,90
152	Expo Hall	1003,61
153	Sea rest.	250,24
159	Hall	2229,23
160	Hall	1486,32
214	Locker	42,25
215	Locker	88,50
216	Locker	71,25
217	Expo Hall	726,99

functional zoning



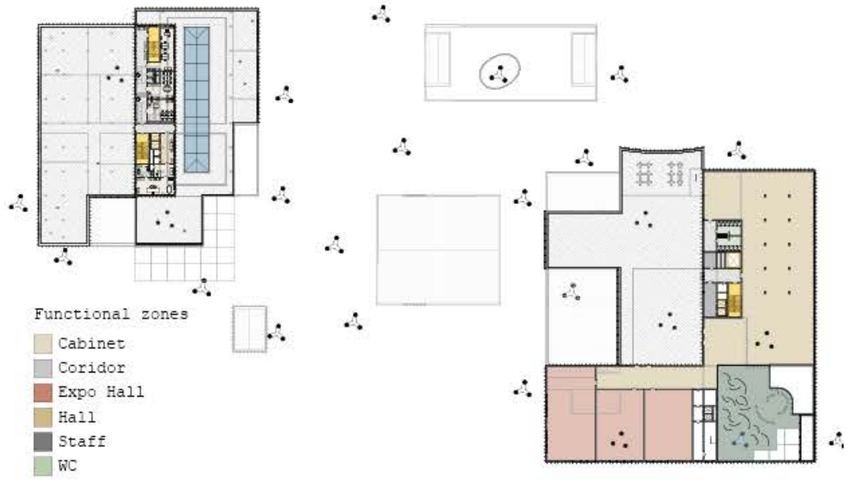
Art+. 3rd floor plan | el. +13.500

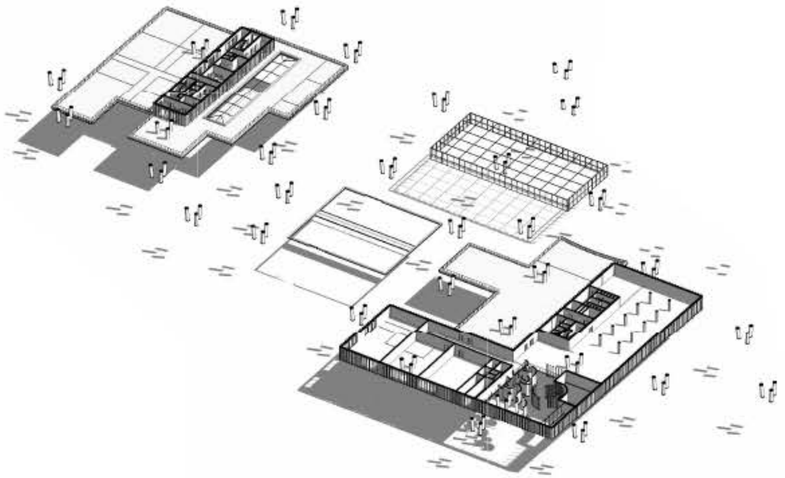


Экспликация помещений на отм. +13.500

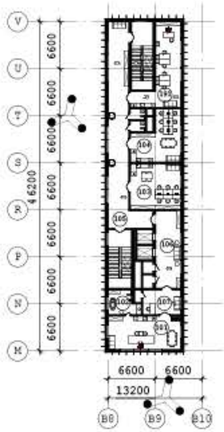
Номер	Наименование помещения	Площадь, м²
161	WC	13,57
162	Cabinet	45,90
163	Cabinet	18,74
164	Hall	28,70
165	Cabinet	45,44
166	Cabinet	40,88
167	Cabinet	50,41
168	Coridor	74,27
169	Coridor	25,50
170	WC	16,44
171	WC	16,46
172	Hall	2005,28
173	Expo Hall	335,37
174	Expo Hall	248,53
175	Expo Hall	251,05
176	WC	3,16
177	WC	3,04
178	Coridor	37,32
179	Coridor	28,91
180	Staff	31,28
181	Staff	14,67

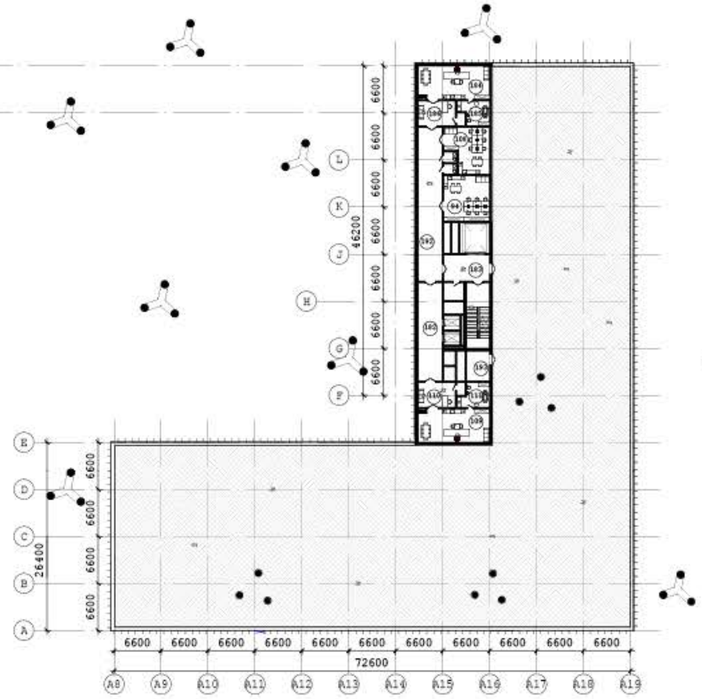
functional zoning





Art+. 4th floor plan | el. +18.000

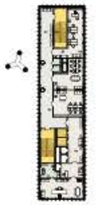




Экспликация помещений на отм. +18.000

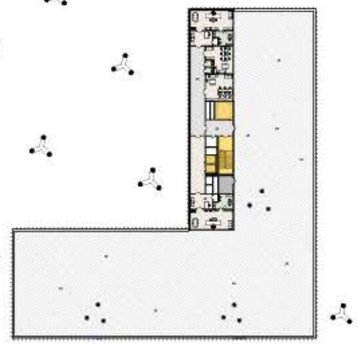
Номер	Наименование помещения	Площадь, м²
94	Cabinet	41,60
101	Cabinet	47,94
102	WC	13,57
103	Cabinet	45,44
104	Cabinet	40,88
105	corridor	92,61
106	lobby	38,15
107	Cabinet	18,74
108	Cabinet	35,86
109	Cabinet	47,49
110	Cabinet	18,40
111	WC	13,57
182	lobby	46,99
183	Coridor	24,05
184	Cabinet	47,48
185	WC	13,57
186	Cabinet	18,39
187	WC	2,86
188	WC	2,75
189	WC	3,16
190	WC	3,04
191	Cabinet	50,41
192	Coridor	73,63
193	Staff	13,88

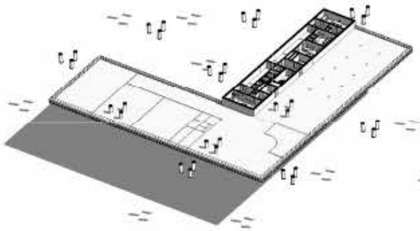
functional zoning



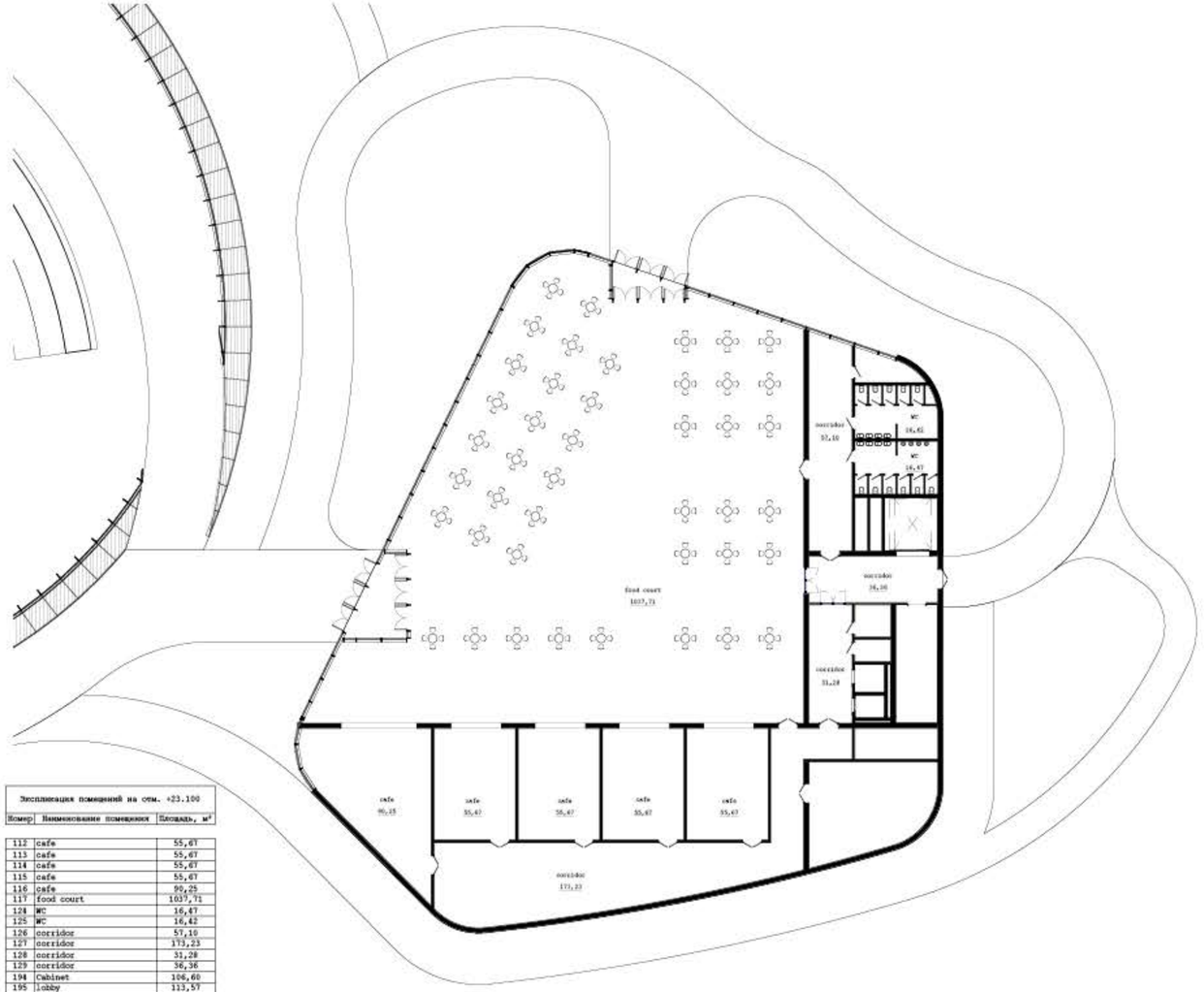
Functional zones

- Cabinet
- Coridor
- corridor
- lobby
- Staff
- WC





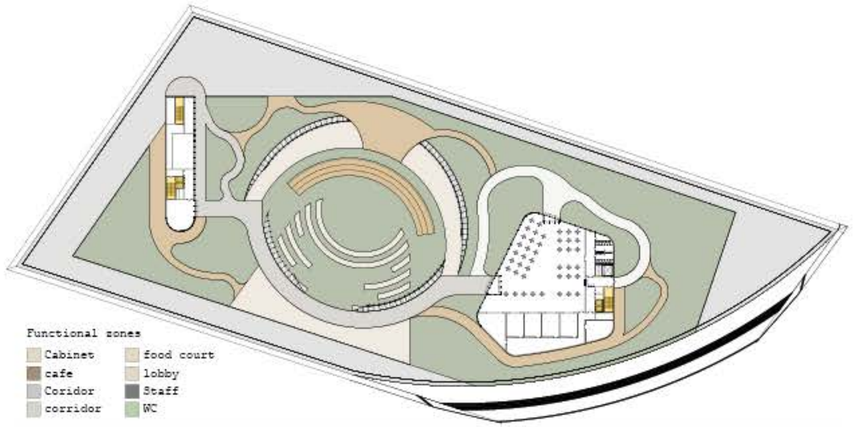
Art+. Food court & Sky Park plan | el. +23.100

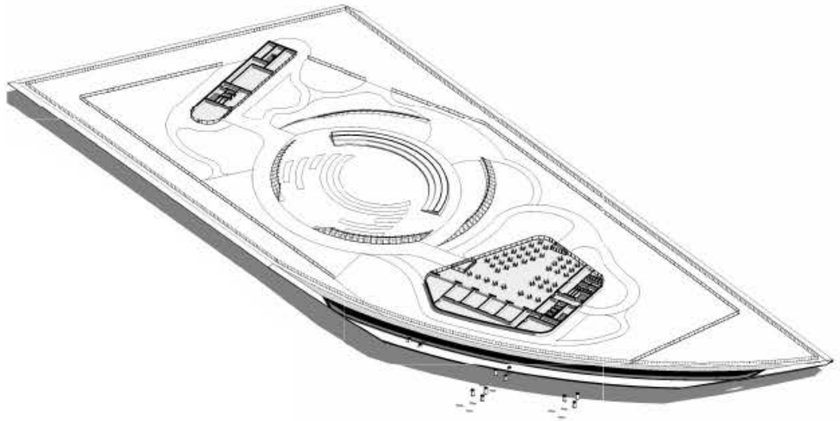


Экспликация помещений на отм. +23.100

Номер	Наименование помещения	Площадь, м²
112	cafe	55,67
113	cafe	55,67
114	cafe	55,67
115	cafe	55,67
116	cafe	90,25
117	food court	1037,71
124	WC	16,47
125	WC	16,42
126	corridor	57,10
127	corridor	173,23
128	corridor	31,28
129	corridor	36,36
194	Cabinet	106,60
195	lobby	113,57
196	Coridor	42,51
197	Staff	27,70
198	Coridor	47,49
199	Coridor	15,75
200	Staff	48,67

functional zoning





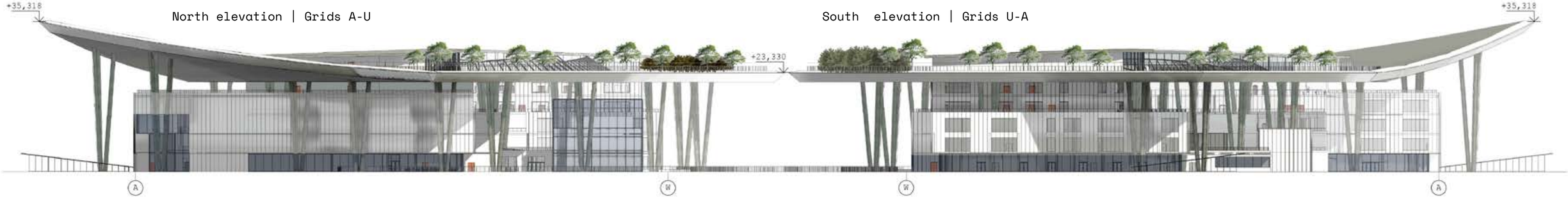
Art+. Elevations

Eastern elevation | Grids B1-A23

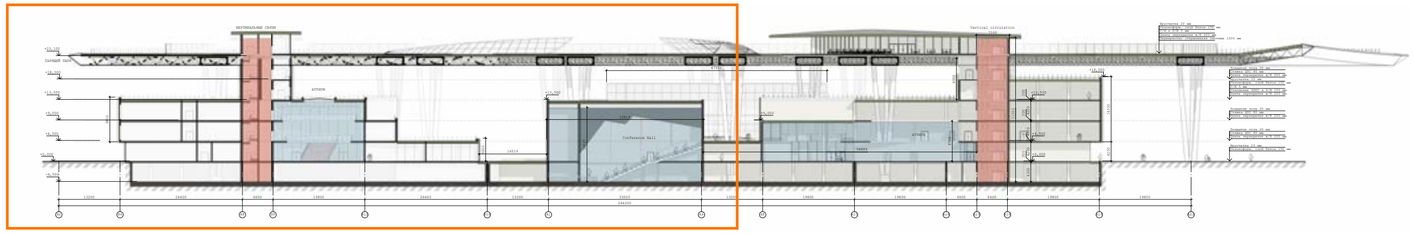
West elevation | Grids A23-B1)

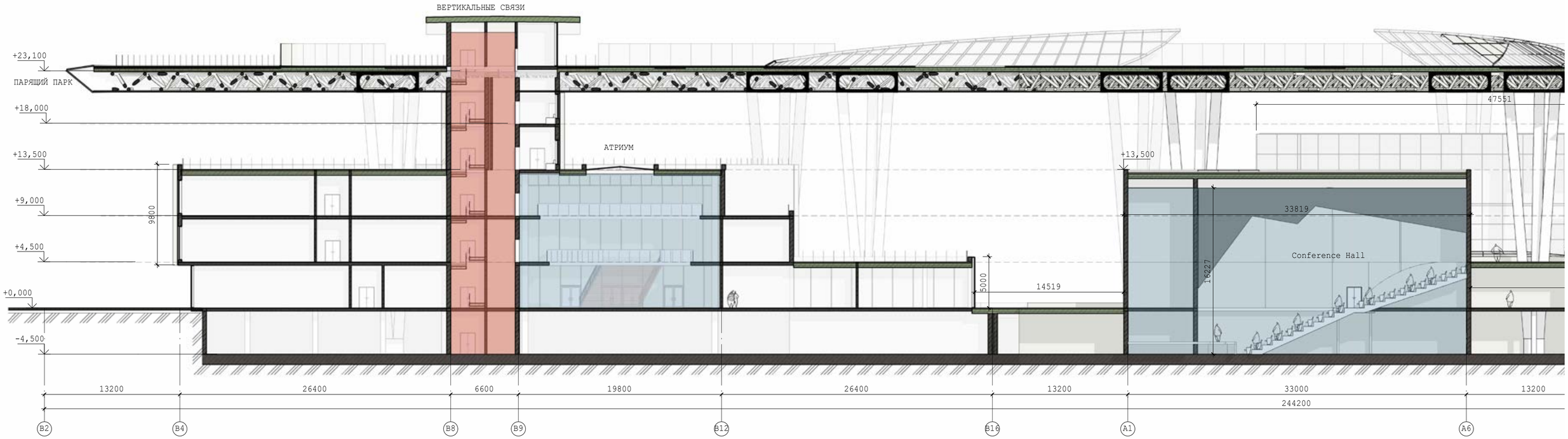
North elevation | Grids A-U

South elevation | Grids U-A

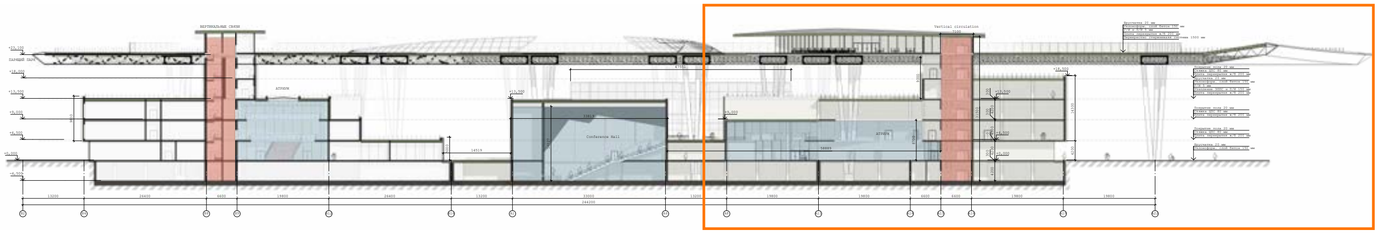


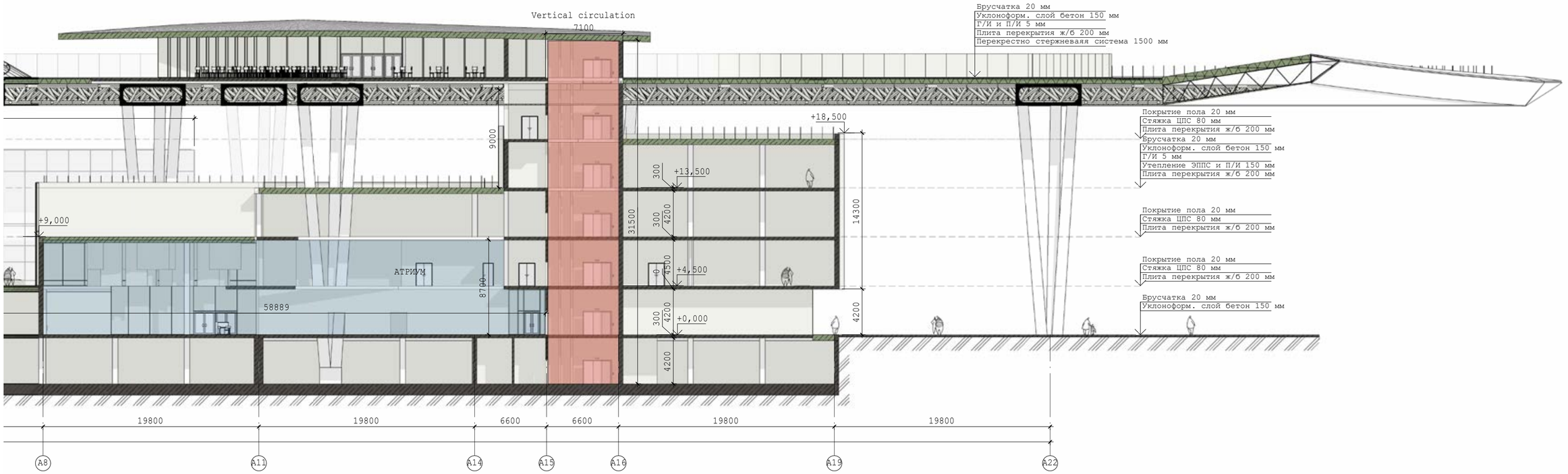
Art+. Longitudinal section | Grids B2-A22



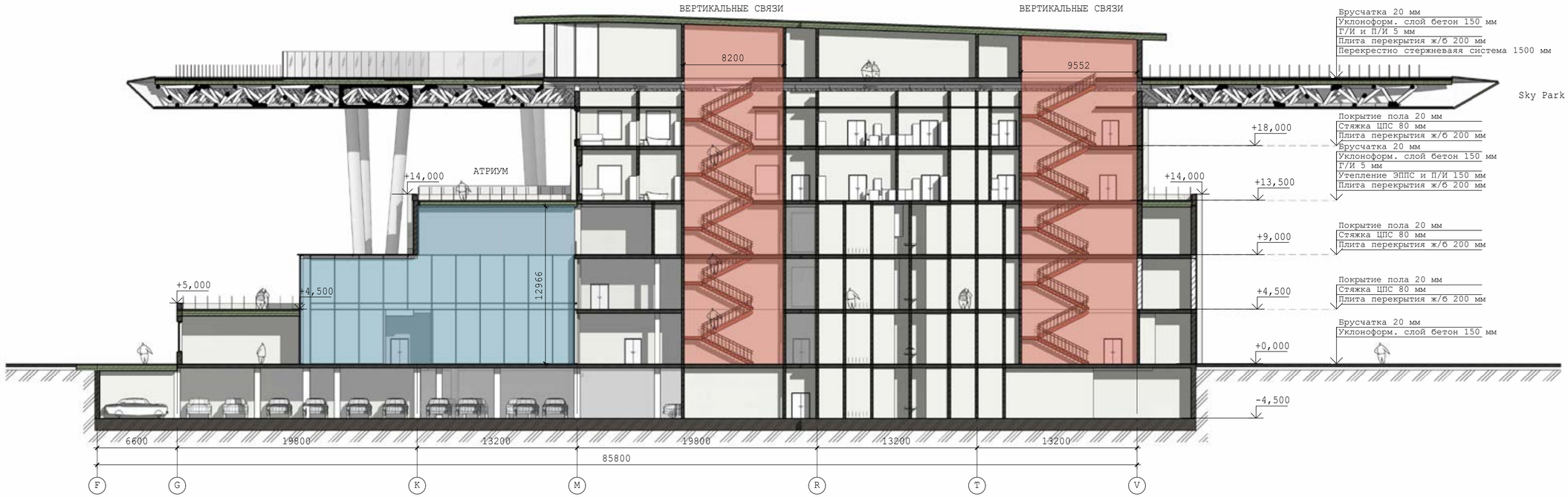


Art+. Longitudinal section | Grids B2-A22



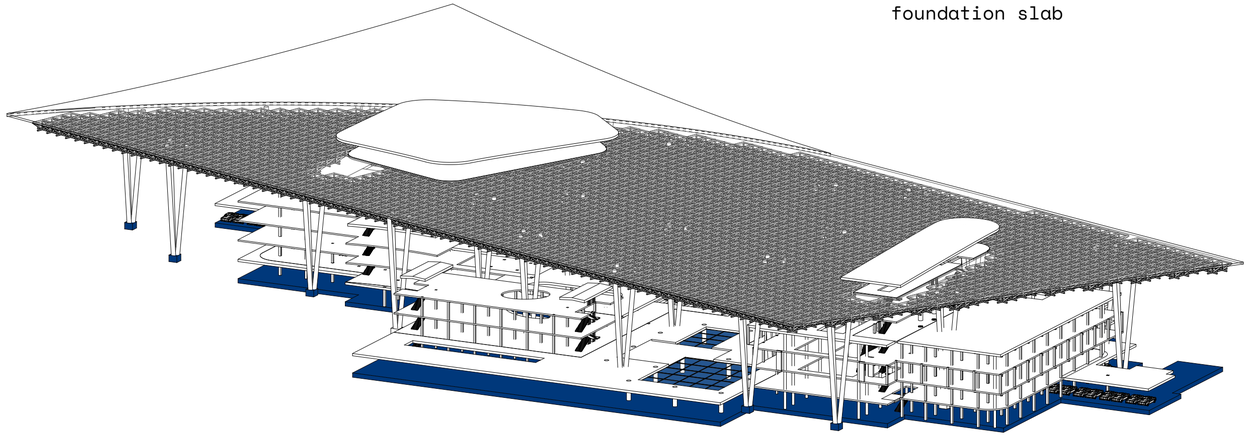


Art+. Cross section | Grids B2-A22 F-V

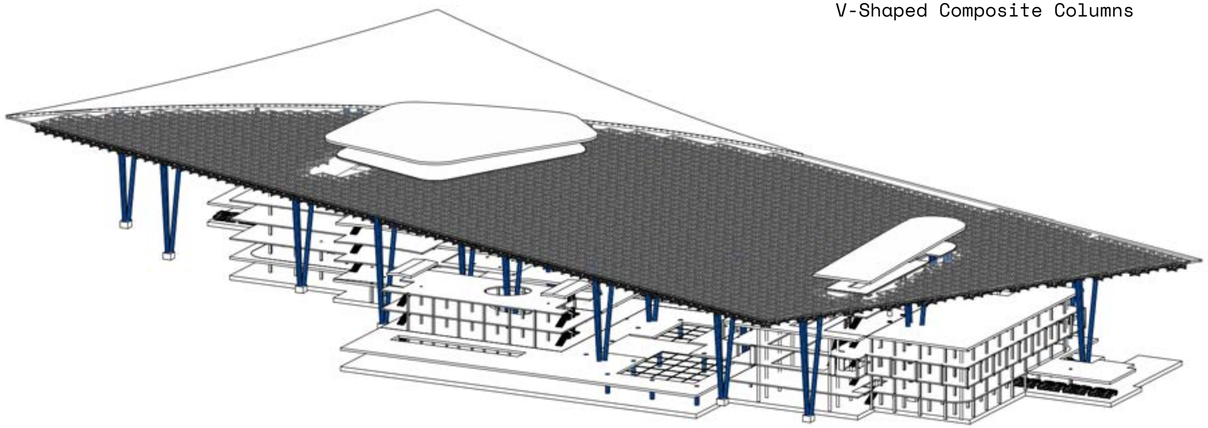


Art+. Sky Park cantilever roof | Structural diagram

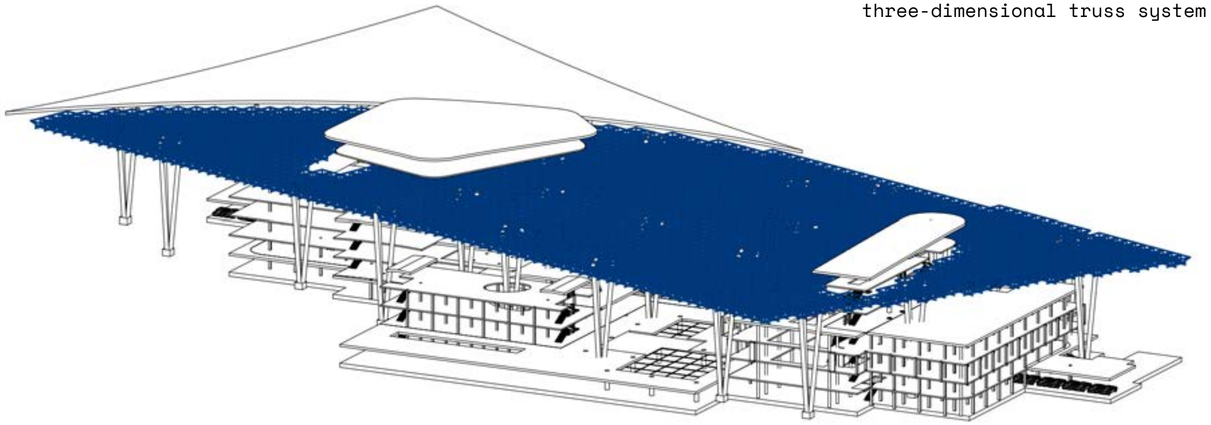
foundation slab



V-Shaped Composite Columns

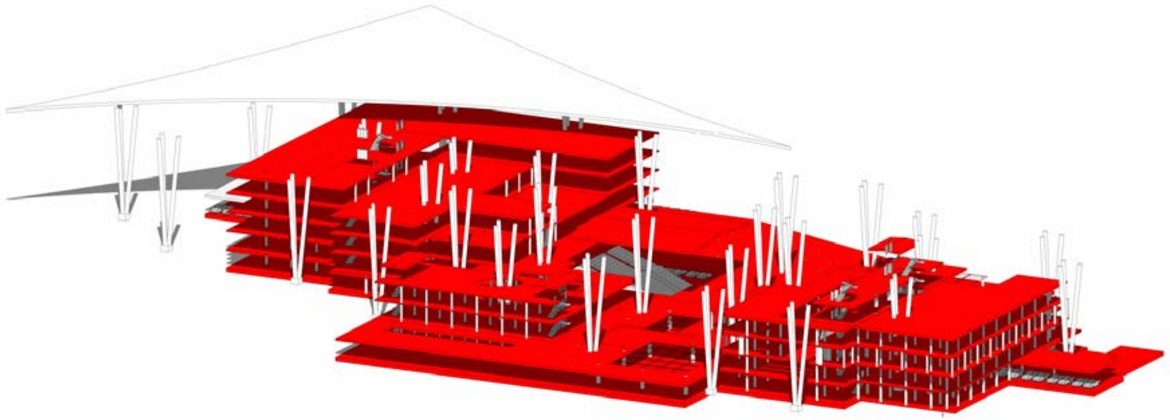


three-dimensional truss system

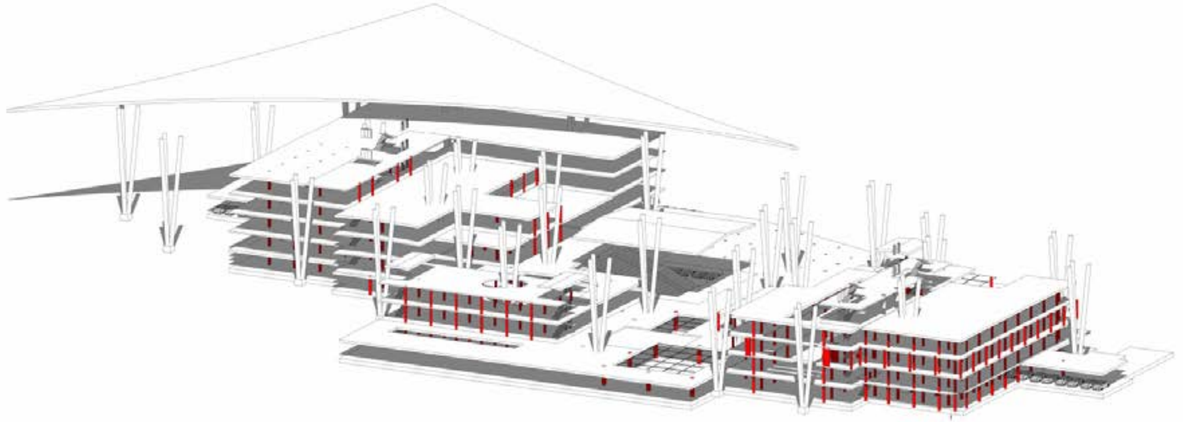


Art+. Main volume | Structural diagram

floor slabs
horizontal bracing



columns
vertical bracing



NATIONAL CENTER OF ARTS AND HANDICRAFTS «ART+» ON NEW WATERFRONT DISTRICT IN KAZAN CITY

Introduction

Relevance of the topic. In the context of modern urban development in Kazan, the priority direction is the revitalization of waterfront territories and former industrial zones. The New Waterfront district district holds enormous potential, transforming from a depressed industrial periphery into a new civic, business, and cultural center of the city. The design of the National Center for Arts and Crafts Art+. Cluster is driven by the need to create a multifunctional space that integrates the preservation of Tatarstan's traditional cultural heritage with a platform for the development of contemporary art industries.

Object of design: the architectural and spatial organization of a multifunctional public building within the structure of the waterfront territory.

Objective of the work: the development of a design for a modern cultural and educational cluster that meets the requirements of functionality, structural reliability, and aesthetic expressiveness in the context of the contemporary urban fabric of Kazan.

To achieve this objective, the following tasks were completed:

1. A pre-design analysis of the design territory in the New Waterfront district district was conducted, including a study of transport and pedestrian logistics.
2. A volumetric and spatial design solution was developed for the building, including exhibition halls, conference zones, office spaces, and an underground parking facility.
3. The choice of structural system was substantiated (monolithic reinforced concrete frame with the use of V-shaped supports and space frame structures).
4. Necessary engineering calculations were performed, confirming the structural stability and thermal performance of the building envelope.

5. Fire safety measures for the facility were developed.

The scientific and practical significance of the work lies in the creation of a unique architectural concept of a “floating park,” which increases the area of urban greenery by utilizing the building’s roof, thereby creating a new type of public space for city residents.

The design solution for the National Center Art+. Cluster is inextricably linked to the strategic concept for the development of waterfront territories “Kazan – City on the Water.” Within this program, the transformation of the Volga riverbank from an industrial zone into an interconnected system of public spaces accessible to urban residents is envisaged.

The proposed building serves as a key connecting hub between the urban core and the water. The implementation of the “Sky Park” concept (an accessible roof) directly aligns with the program’s environmental standards, enabling a balance between building density and the volume of urban greenery. In this way, the building not only fulfills its primary function as an arts center but also forms a new waterfront on the New Waterfront district embankment, contributing to Kazan’s transformation into a modern metropolis with a developed recreational infrastructure by the water.

Architectural and Structural Solutions

In accordance with the terms of reference for the thesis, Section 1 “Architectural and Structural” includes the following:

6. Urban planning solutions.
7. Architectural solutions.
8. Structural solutions.

1.1 Urban Planning Solutions

1.1.1 Brief Characterization of the Construction District

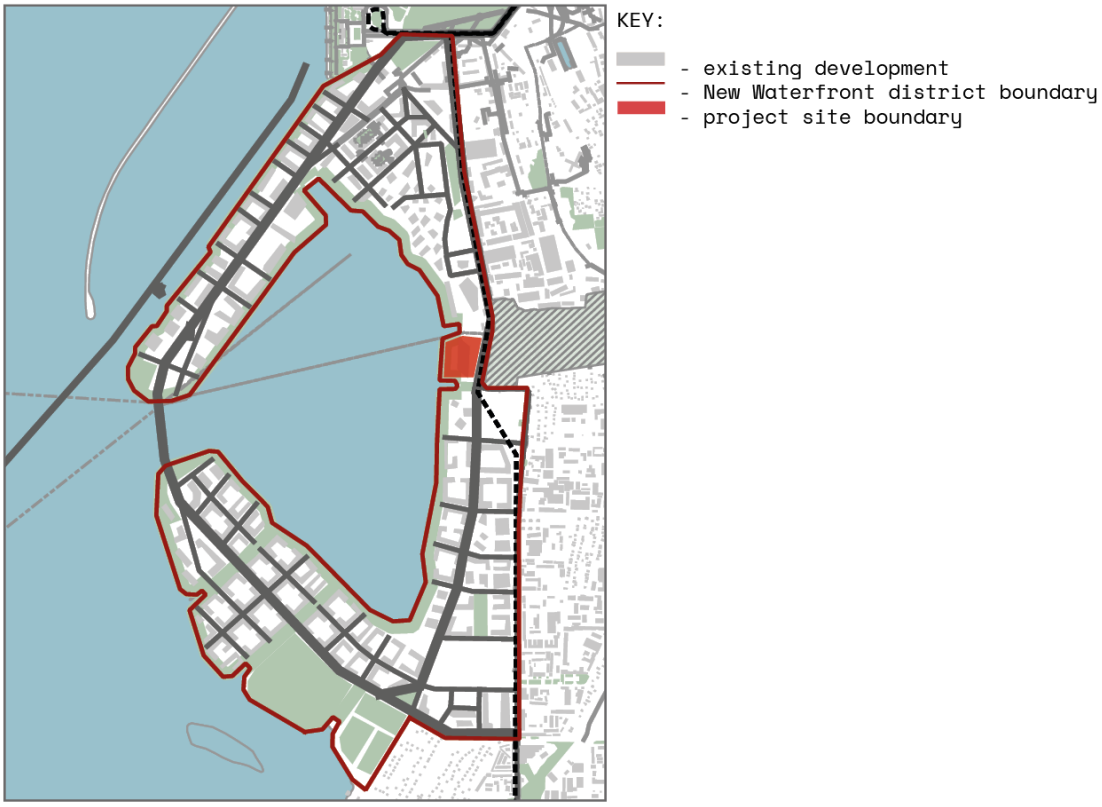


Fig. 1.1. Location of the design site within the structure of the New Waterfront district

The design object – the National Center for Arts and Crafts Art+. Cluster – is located in the Privolzhsky district of Kazan, on the territory of the "New Waterfront district" waterfront zone, in close proximity to the bank of the Volga River (Fig. 1.1). The area of the design site is approximately 3.5 hectares.

The New Waterfront district territory covers the former lands of the Kazan River Port with a total area of approximately 287 hectares. The design site is located in the central part of this zone, between the projected urban Volga embankment to the west and Mekhovshchikov Street to the east.

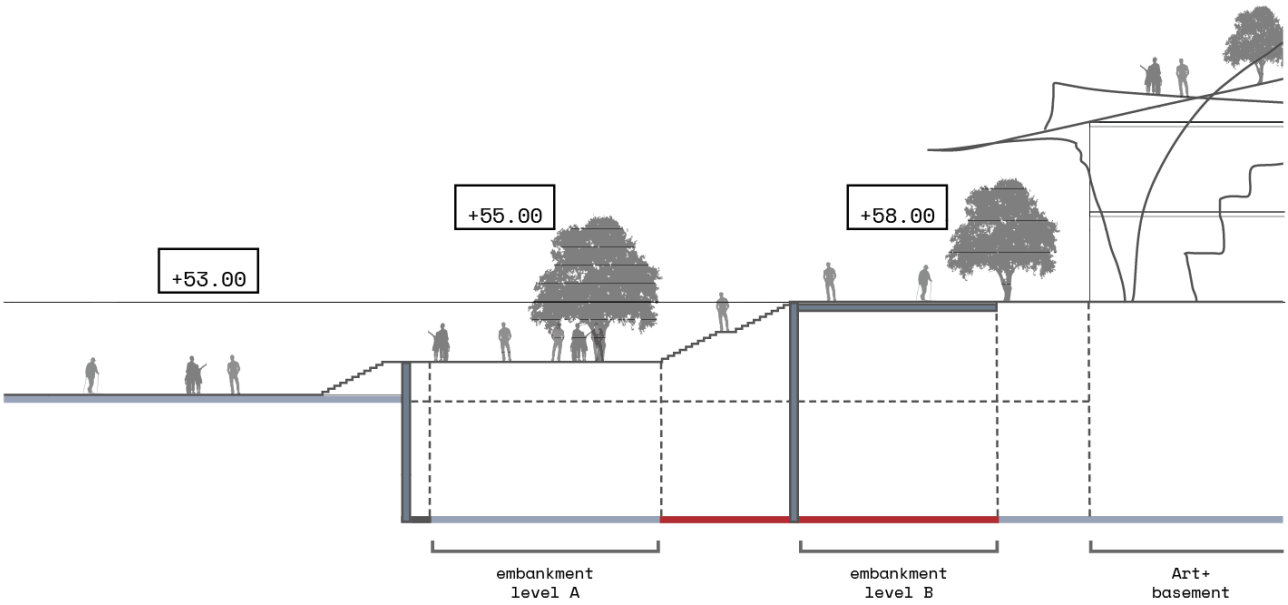


Fig. 1.2. Cross-section along the embankment. Elevation differences: Embankment Level A (+55.00), Level B (+58.00), water level (+53.00)

The terrain within the site is relatively flat with a slight slope toward the water. The zero elevation mark (0.000) corresponds to the finished floor level of the first floor, which equals absolute elevation +58.00 m in the Baltic Height System. The lower embankment level (Promenade A) is +55.00 m, and the water level averages approximately +53.00 m (Fig. 1.2).

Adjacent development. In immediate proximity to the site, construction is underway on the Yanalif residential complex (developer SMU-88) – the first realized project of the “New Waterfront district” program. The district master plan also provides for business centers, retail facilities, and a yacht marina. To the southeast, the site borders the territory of the Staro-Tatarskoe Cemetery, which is taken into account when forming pedestrian connections.

1.1.2 Analysis of the Historical Development of the Design Site

Kazan has historically been one of the major waterway hubs in the European part of Russia. Due to its location on the Volga, the city has been connected since the 15th century by waterways to five seas: the Azov, Baltic, White, Caspian, and Black Seas.

In 1948, by a decree of the Minister of the River Fleet of the USSR, the “Kazan” pier was granted the status of the Kazan River Port. In 1952, in connection with the creation of the Kuibyshev Reservoir and the flooding of the old piers, a decision was made to construct a new, fully mechanized port with a deep port basin on the Volga bank (Fig. 1.3). Construction was completed in 1964: the main river terminal building, designed by architect I.G. Gainutdinov in the style of Soviet modernism, was commissioned.

In the 1970s, the Kazan River Port was considered the best on the Volga; the level of mechanization of loading and unloading operations reached 99%. The cargo terminal, berthing structures, gantry cranes, warehouses, and workshops occupied the entire waterfront zone along Portovaya Street, completely isolating the Volga embankment from the city.

Since the early 2000s, cargo river transport has lost its former significance. The port territory has gradually deteriorated: industrial buildings and warehouses are either abandoned or used for purposes other than their original ones. The main river terminal building has been in a state of incomplete reconstruction since 2005. Portovaya Street, which received its name on December 24, 1962 (renamed from Privokzalnaya), has turned into a transit corridor with no points of attraction.

In 2019, the Kazan City Administration began active development of the waterfront territory renovation program. In 2022, the “New Waterfront district” concept was presented and approved at the level of the Republic of Tatarstan leadership. Thus, the chosen design site – the central part of the former industrial and port zone – is a territory with no objects of historical value and fully prepared for new construction within the approved master plan.

Fig. 1.3. Historical photograph. View of the Kazan River Port. The territory during the period of active operation

1.1.3 Photo Documentation of the Territory

During the preparation of the project, photo documentation of the design territory and surrounding streets was conducted (Figs. 1.4–1.5). Photography was carried out on Portovaya Street, from the embankment level and from the Volga waterway.

The photo documentation revealed the following characteristics of the territory: a predominance of deteriorated port and warehouse structures subject to demolition; an open riverbank with an unformed embankment; the absence of landscaping and pedestrian

points of attraction; active construction processes on adjacent plots (the Yanalif residential complex). The territory is perceived as a transit zone that is difficult for city residents to access.

Fig. 1.4. Photo documentation. View from Mekhovshchikov Street.

Fig. 1.5. Photo documentation. View from Mekhovshchikov Street.

1.1.4 Functional Analysis of the Territory

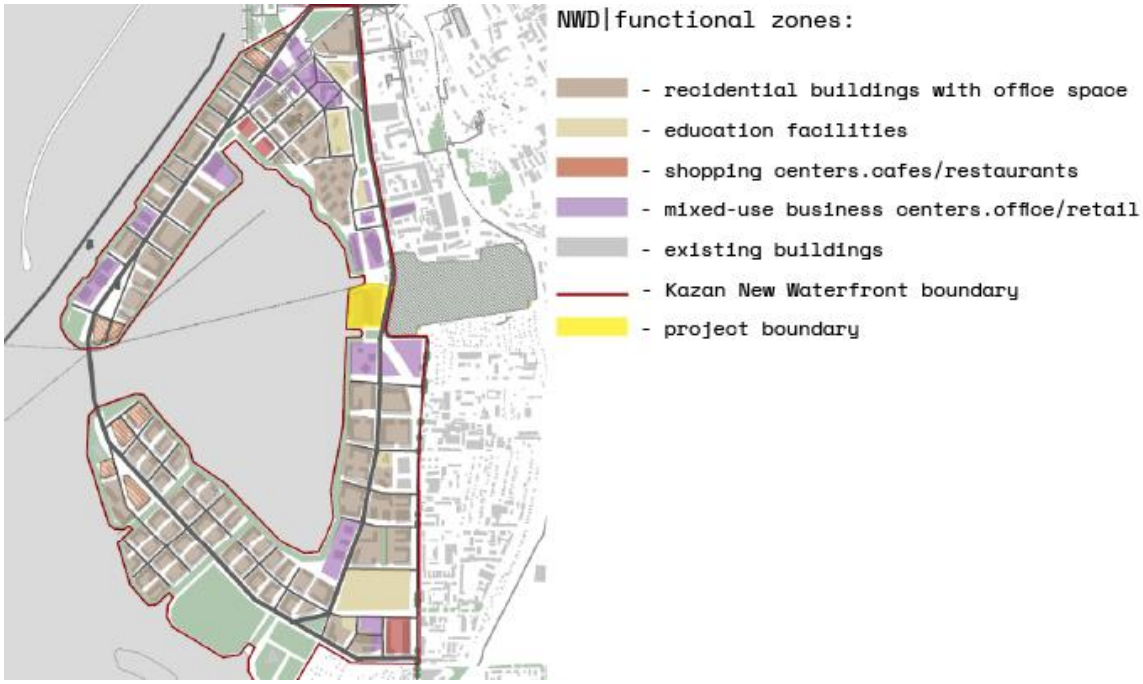


Fig. 1.6. Functional analysis of the "New Waterfront district" territory

A functional analysis of the existing zoning of the New Waterfront district district and adjacent blocks (Fig. 1.6) revealed the following structure. The territory within its current boundaries represents a former industrial and warehouse zone with river port facilities subject to demolition. Along the perimeter of the district, blocks of mixed use are taking shape: residential buildings with administrative premises on the ground floors, retail facilities, and civic and business centers. Educational institutions are concentrated in the inner part of the district.

Recreational and cultural-public functions are currently almost entirely absent: the Volga embankment is closed to city residents, and there are no park areas. This deficit is the primary justification for placing a cultural-public facility – the National Center for Arts and Crafts – on the site.

In accordance with the functional zoning of the master plan, the design object is classified as a cultural and educational zone and serves as the form-defining element of the public space in the central part of the embankment.

1.1.5 Transport Analysis of the Territory

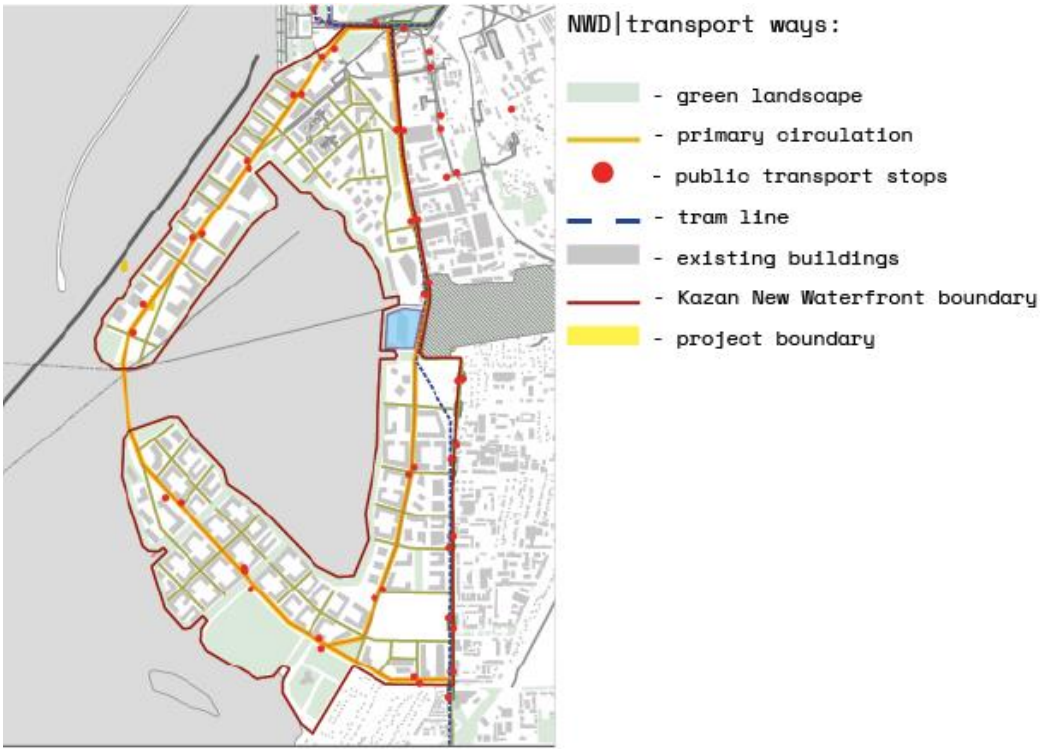


Fig. 1.7. Transport analysis of the "New Waterfront district" territory.

The transport infrastructure of the design territory is being formed within the framework of the New Waterfront district master plan (Fig. 1.7). The main road network of the district is formed by Mekhovshchikov Street, which is awaiting reconstruction and partial widening. The street then transitions into Magistralnaya and Devyatayeva Streets, through which the design territory is connected to the main parts of the Vakhitovsky and Privolzhsky districts and the historical and business center.

Public transport. The primary mode of public transport at the initial stage of the program implementation will be bus service. According to the district development concept, public transport stops are located directly at the boundary of the design site along the city thoroughfare, providing a direct pedestrian route to the main building entrance without additional crossings. In the future, the organization of 1-2 metro stations for the entire New Waterfront district district is under consideration.

Vehicular access. The entrance to the underground parking facility is organized from Mekhovshchikov Street, excluding transit traffic along the embankment. Separate service entrances for deliveries

to the gallery, workshops, and commercial spaces are provided, including via the underground level. Along the embankment, only fire and special equipment access is provided.

Cycling infrastructure. A dedicated bicycle lane is provided along the entire perimeter of the embankment and Mekhovshchikov Street, connecting the facility with adjacent recreational areas of the district.

1.1.6 Analysis of Landscaping and Green Areas

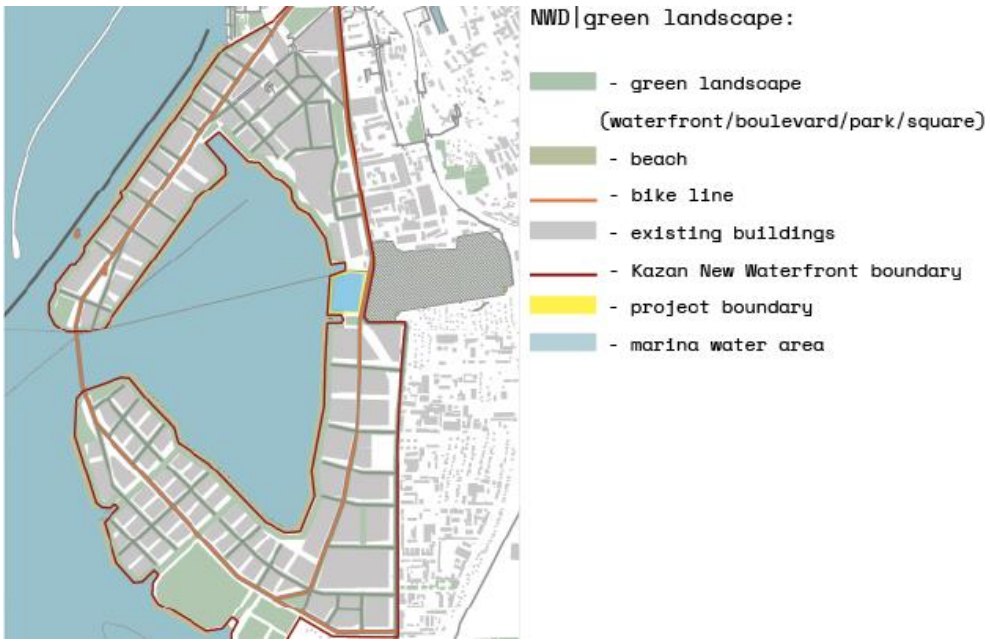


Fig. 1.8. Green space analysis scheme for the "New Waterfront district" territory

Analysis of the existing green cover (Fig. 1.8) revealed an extremely low level of landscaping in the waterfront territory in its current state: there is virtually no greenery within the industrial zone boundaries; open spaces are represented by unlandscaped dirt areas.

The New Waterfront district concept envisions the creation of 72 hectares of green areas and a 9-kilometer continuous pedestrian embankment. Within the design site, the following elements are being formed: a waterfront boulevard with row-planted trees; open lawn spaces of the central plaza; and the "Craftsmen's Park" – a

compact green zone on the south side of Block B, separating the arts center from the adjacent business development.

A special landscaping element is the accessible Sky Park roof, with an area of approximately 8,500 m². It serves as a "compensatory green space": the building occupies land at ground level, but returns an equivalent area to the city in the form of a publicly accessible garden with greenery, viewing terraces, and rooftop pavilions. A bicycle lane is provided along the embankment perimeter. A beach zone at the water's edge is also included.

1.1.7 Analysis of Height Dominants in the Vicinity of the Territory

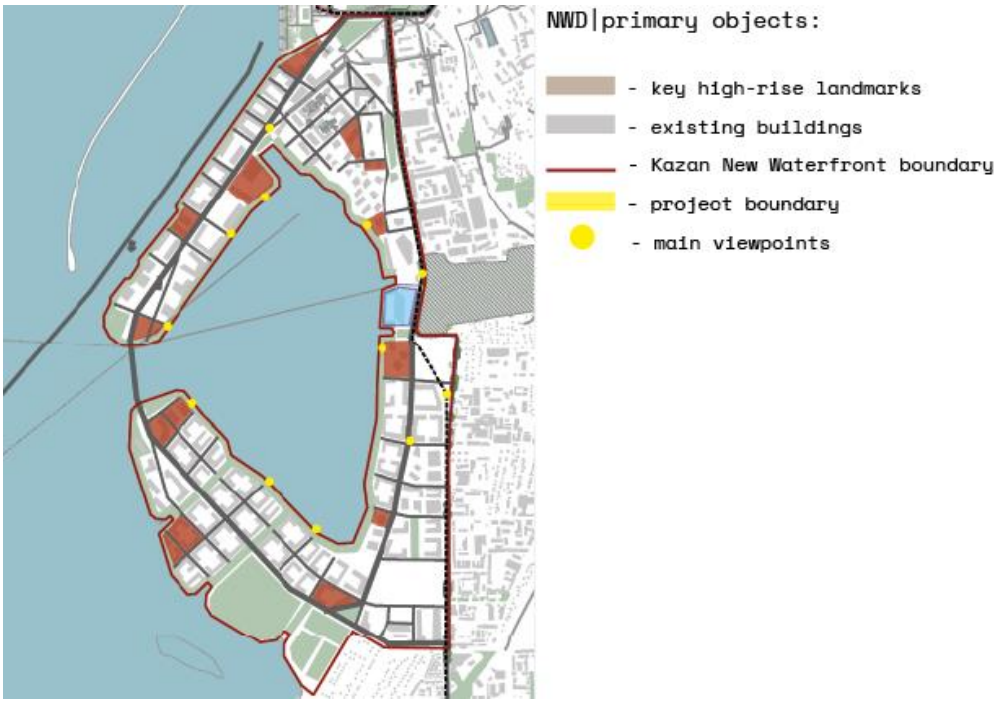


Fig. 1.9. Height dominant analysis scheme for the "New Waterfront district" territory

The emerging development of the New Waterfront district district creates a new panoramic skyline along the Volga embankment at an elevation of +58.00 m. Within the district, the Yanalif residential towers (under construction) and business centers of 15–30 stories are planned, forming a dynamic vertical silhouette (Fig. 1.9). The design object is intentionally conceived as a

horizontal accent dominant against the backdrop of vertical towers, creating rhythmic diversity in the embankment panorama.

Fig. 1.10. Unfolded city panorama of the New Waterfront district embankment. The place of Art+. Cluster in the overall silhouette

In the context of the New Waterfront district panorama (Fig. 1.10), the Art+ Cluster complex is positioned in the middle of the central section of the future building line, between the Yanalif residential complex, a business center, and a retail cluster, giving it the significance of a semantic focal point of this territory when perceived from the water.

1.1.8 Site Master Plan

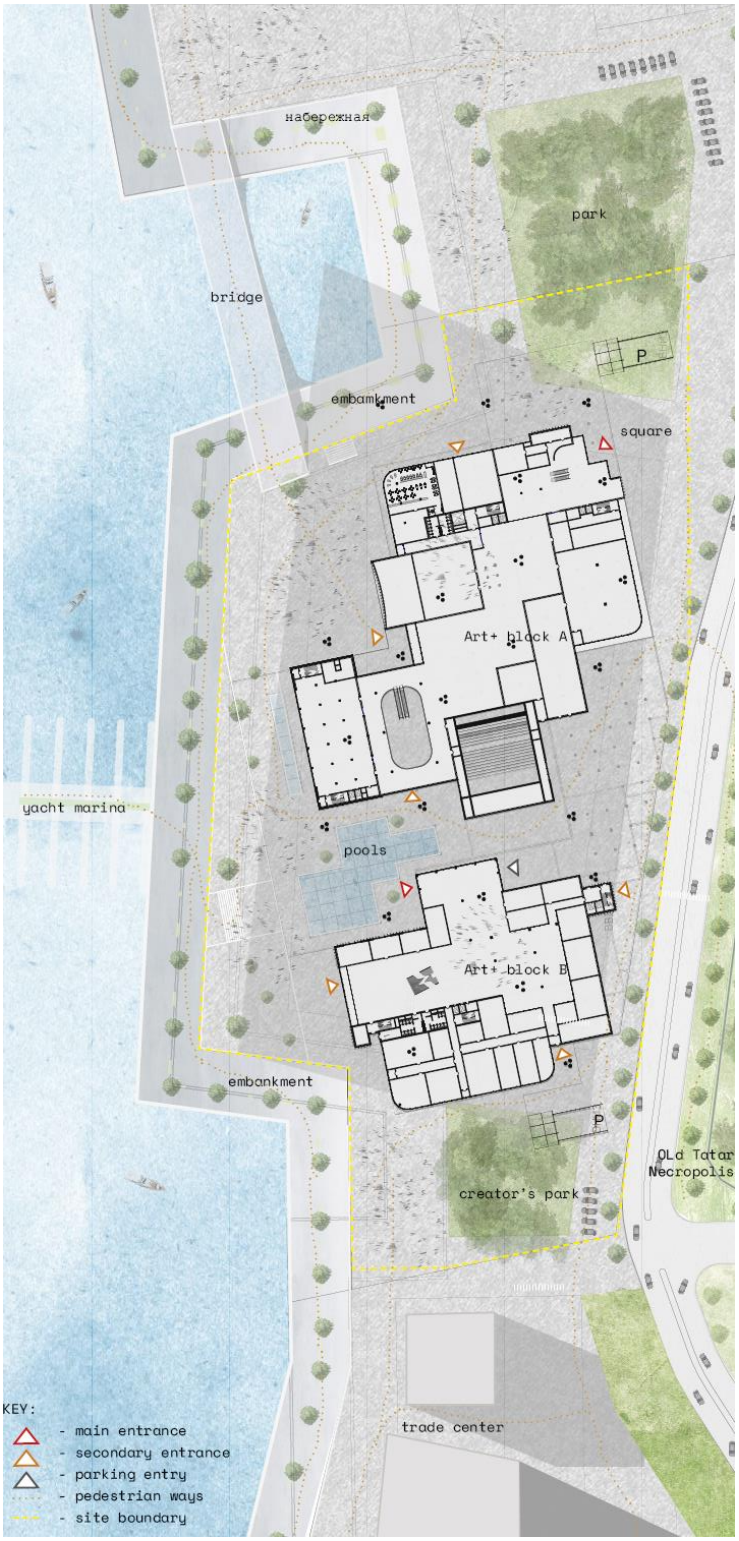


Fig. 1.11. Site master plan for Art+. Cluster

The project developed a master plan solution for the territory (Fig. 1.11). The site is oriented with its long side along the Volga riverbank (west-east direction).

Functional zoning within the site: the main entrance zone and central plaza – on the south side facing the thoroughfare; Block A zone (gallery) – eastern part; Block B zone (workshops) – western part; open recreational zone with a pool – between the blocks, facing the water; “Craftsmen’s Park” – to the west of Block B; yacht marina – along the northern bank; underground parking – entrance from the south.

The main entrance to Block A is provided from the central plaza. Secondary entrances are located on the embankment side and on the west facade of Block B. The entrance to the underground parking is organized from the city thoroughfare, excluding transit through the embankment.

1.1.9 Pedestrian and Traffic Flow Analysis

The design territory envisions the formation of two main flows of people and vehicles (Fig. 1.12). The first is formed as the main pedestrian artery along the New Waterfront district embankment (absolute elevation +55.00 m). The second is the sole vehicular route via Mekhovshchikov Street, with associated pedestrian and cycling infrastructure. This route also serves as the access point for public transport to the complex, as well as for visitor vehicles and service deliveries to the underground level.

The main pedestrian flows are formed on the upper terrace of the waterfront territory (absolute elevation +58.00 m), from the direction of the Yanalif residential complex and the future Financial Center. From the north, a pedestrian bridge also adjoins the territory, providing the shortest connection between the upper promenades of the embankment.

The division of the complex into Blocks A and B also creates a pedestrian artery connecting, via the plaza with pools, the Marina with the embankment and Mekhovshchikov Street, including drop-off zones for river and road transport.

Fig. 1.12. Analysis of pedestrian and vehicular flows

1.1.10 Technical and Economic Indicators for the Master Plan

The technical and economic indicators for the project master plan are presented in Table 1.1.

Table 1.1
Technical and Economic Indicators for the Master Plan

No.	Indicator	Unit	Value	Note
1	Design site area	m²	42,000	Within design boundary
2	Total building footprint	m²	24,500	Including underground level
3	Total building area	m²	95,000	Total across all levels
4	Usable area	m²	55,000	Excluding technical rooms and shafts
5	Number of floors	pcs.	7	1 underground and 6 above-grade (including accessible roof)
6	Height	m	+23.100 / +35.400	To Sky Park level / Highest structure (cantilever)
7	Parking capacity	spaces	202	At elevation -4.500
8	Green area	m²	18,000	Including rooftop park

1.1.11 Orientation of the Complex by Cardinal Directions

In terms of cardinal orientation, the complex is developed in two directions. The primary axis is ESE (East-Southeast) – WNW (West-Northwest). The longitudinal axis runs NNW (North-Northwest) – SSE (South-Southeast).

The complex is oriented with its main facade facing east, toward Mekhovshchikov Street and the primary pedestrian flow. The western facade opens onto the Volga waterway and the yacht marina.

An optimal natural lighting regime is provided through roof lanterns and a translucent facade with glass louvres, which deliver stable natural daylight necessary for fine manual work with color and materials in the workshops, diffused natural light in the galleries of Block A and common atriums, through a combination of controlled shading and supplementary artificial lighting.

The accessible Sky Park roof is open to sunlight from all directions, providing conditions necessary for landscaping and visitor use during the warm season. Wind protection screens on the roof are provided on the western side against the prevailing river winds from the Marina, and on the eastern side due to the low-rise development in that direction.

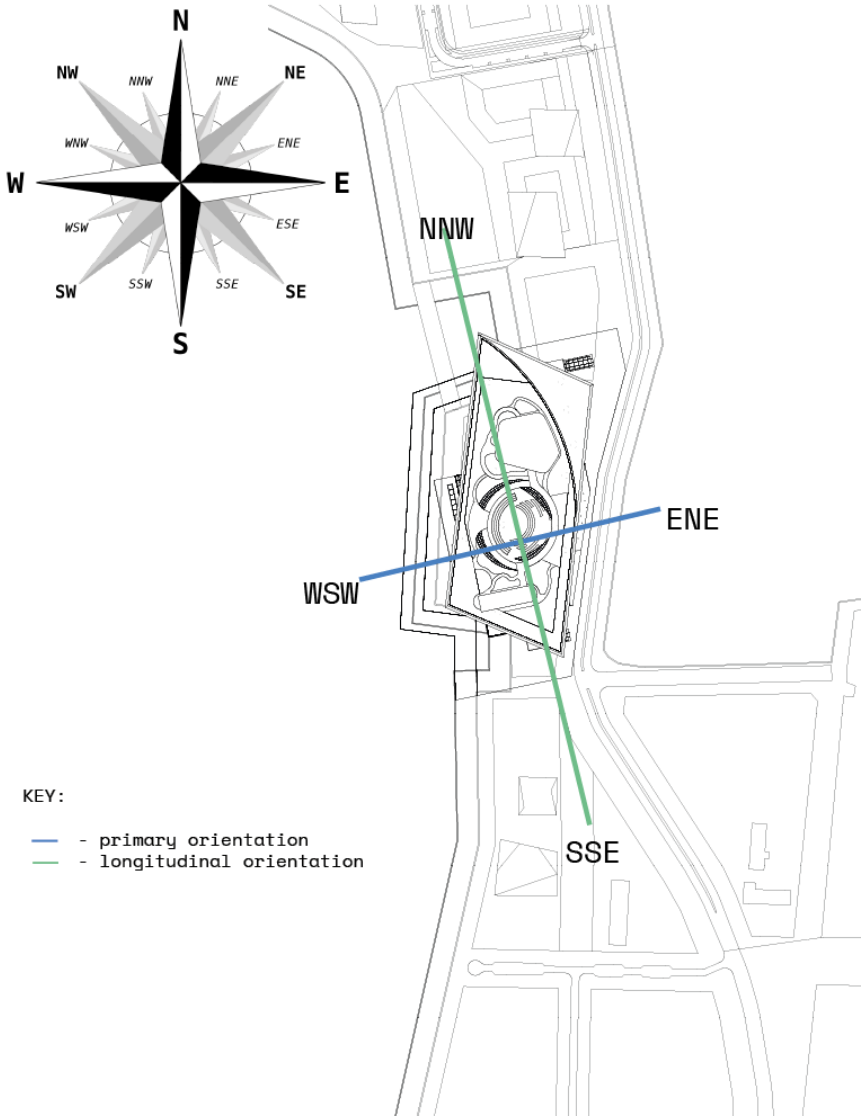


Fig. 1.12. Orientation of the complex

1.2 Architectural Solutions

The architectural concept of the complex is based on the idea of a horizontal accent: the building is intentionally contrasted with the vertical towers of the emerging New Waterfront district development and is conceived as a low, elongated volume that creates a rhythmic pause in the embankment silhouette and forms its visual center.

The primary formal approach is the fragmentation of the volume into independent rectangular blocks, shifted relative to one

another horizontally and decreasing in floor area from the lower level upward. Each successive floor is smaller than the one below, creating an effect of gradually “disintegrating pixels” or stacking blocks: the building volume becomes more open and lighter as it rises, forming stepped cantilevered projections and open terraces at each level. This articulation produces a rich play of light and shadow on the facades, visually reduces the scale of the building, and gives it sculptural expressiveness when viewed from the embankment and from the water. The facades are executed in a restrained white palette with the use of curtain wall glazing and suspended composite panels — the form reads as a clean geometric volume against the background of the sky and the Volga waterway.

The building consists of two independent blocks — A and B — each of which independently realizes the principle of “pixelated” form-making. The space between the blocks opens toward the embankment and the water and is organized as a publicly accessible central plaza with a reflecting pool at ground level — the horizontal water plane echoes the Volga waterway and visually extends it into the depth of the site. The building thus operates not as a barrier on the riverbank, but as an open “gateway” — a through portal between the urban street and the embankment.

The key architectural element and principal compositional idea of the project is the accessible Sky Park roof — a monumental horizontal slab on V-shaped inclined columns, freely cantilevering over both blocks and uniting them into a single architectural volume. The roof does not bear on the walls of the blocks — it floats above them, evoking the image of a pontoon or river dock as an architectural reference to the port history of the place. The Sky Park simultaneously performs several compositional functions: it unites the disparate block volumes into a unified silhouette, forms an expressive horizontal canopy over the public space at ground level, and creates an accessible green level with landscaping, viewing terraces overlooking the Volga, and two rooftop pavilions — a restaurant and a covered gallery. In this way, the Sky Park is not merely the building’s roof, but an independent public space suspended above the city, returning to

its residents the built footprint in the form of a green garden above the water.

Fig. 1.13. Visualization. Main facade. View from the central plaza

Fig. 1.14. Visualization. View from the Volga waterway. Embankment panorama

Fig. 1.15. Visualization. View of the Sky Park at elevation +23.100

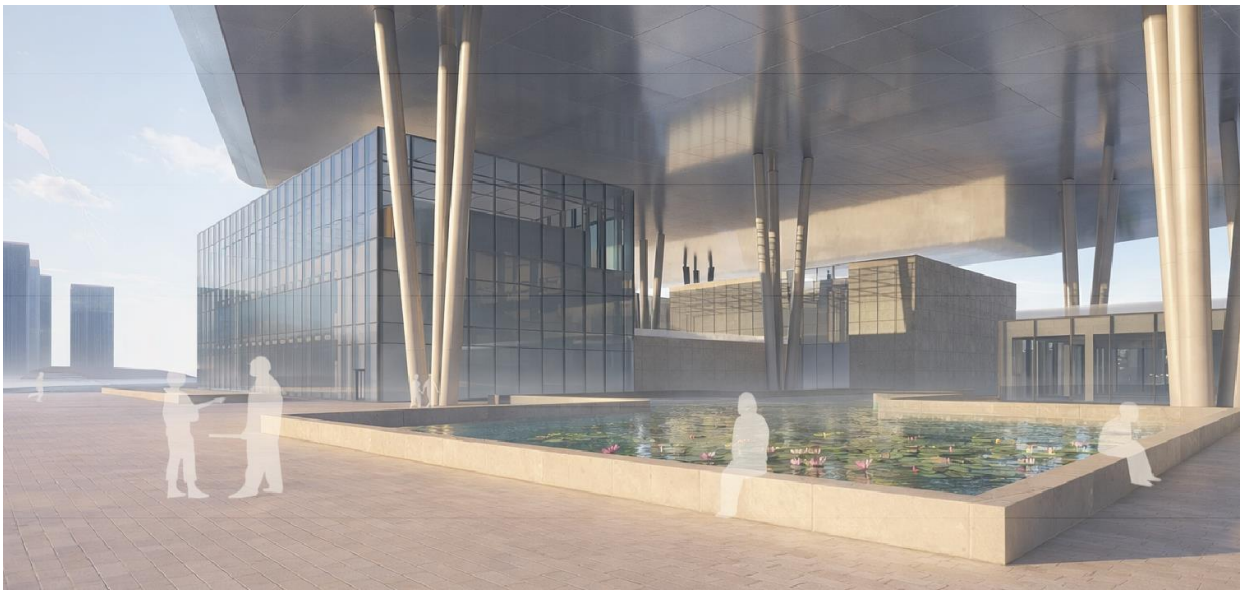


Fig. 1.16. Visualization. Central promenade with pools

Fig. 1.17. Visualization. Interior of the basement-level exhibition space

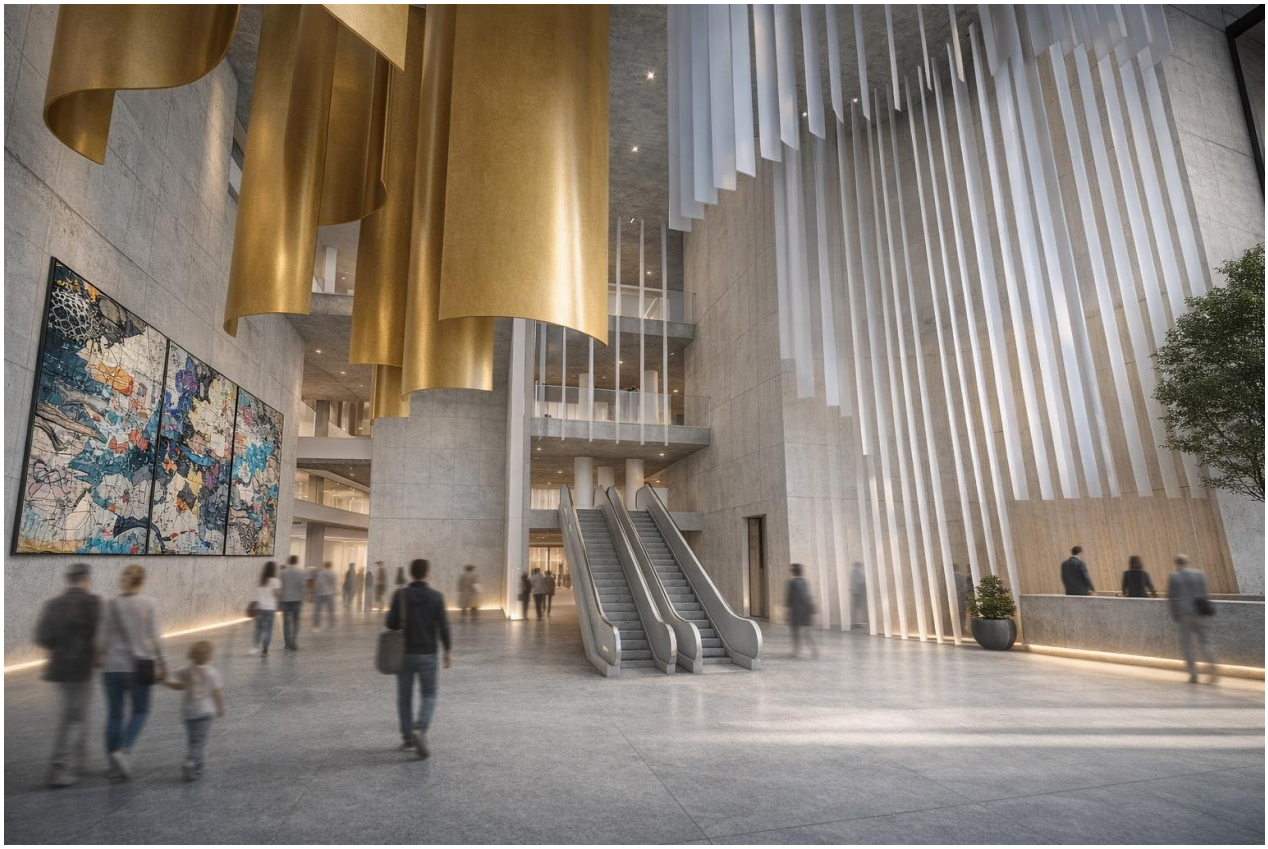


Fig. 1.18. Visualization. Atrium interior

Fig. 1.19. Visualization. Interior of the multipurpose conference hall

1.2.2 Volumetric and Spatial Design Solution

The building is a multifunctional complex with a total area of approximately 32,400 m² and 6 levels (Figs. 1.20–1.26): one underground and five above-grade. The maximum roof elevation is +23.100 m.

Block A – Museum Complex. On the first level (elevation 0.000, absolute +58.00 m): Main atrium / entrance hall (Entrance 1: Grand Atrium, 643 m²); temporary exhibition hall Expo Hall (777 m²); Grand Exhibition Hall (715 m²); Modern Art Atrium Exhibition Gallery (2,615 m²); Ethno Art hall (429 m²); conference hall (613 m²); restaurant (276 m²); shops and ticket offices. On levels 2–5 (elevations +4.500 – +18.500): second-level temporary exhibition hall (800 m²), atrium balcony (1,306 m²), panoramic restaurant, offices.

Block B – Creative Cluster. Primary function: rental of creative studio spaces (lockers) to artists and craftspeople. Lockers ranging from 44 to 168 m² are located on all above-grade floors and can function in “closed studio,” “co-working,” or “showroom” modes. On the first level: a publicly accessible gallery, co-working space, and the cluster administration office.

Underground level (elevation -4.500, absolute +53.50 m): parking 3,234 m² (~120 spaces); exhibit storage 1,953 m²; warehouse areas 3,629 m²; restaurant kitchen; technical zones.

Accessible roof "Sky Park" (elevation +23.100): a publicly accessible recreational zone with landscaping, viewing terraces, two rooftop pavilions (a restaurant-food court and a covered retail gallery), and covered terraces. The roof unites Blocks A and B.

Vertical circulation: 6 smoke-free staircase-elevator cores of Type H1 (pressurized), evenly distributed along the length of the building; panoramic elevators in the atriums for the main visitor flow.

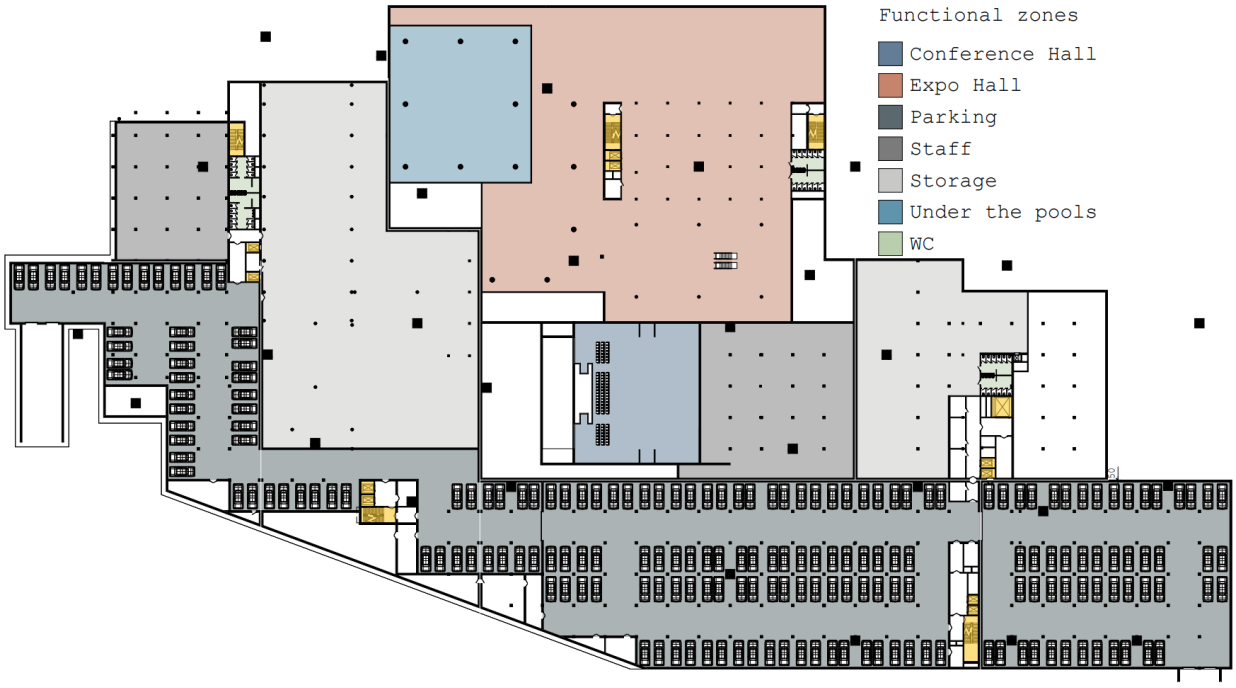


Fig. 1.20. Functional floor plan at elevation -4.500.

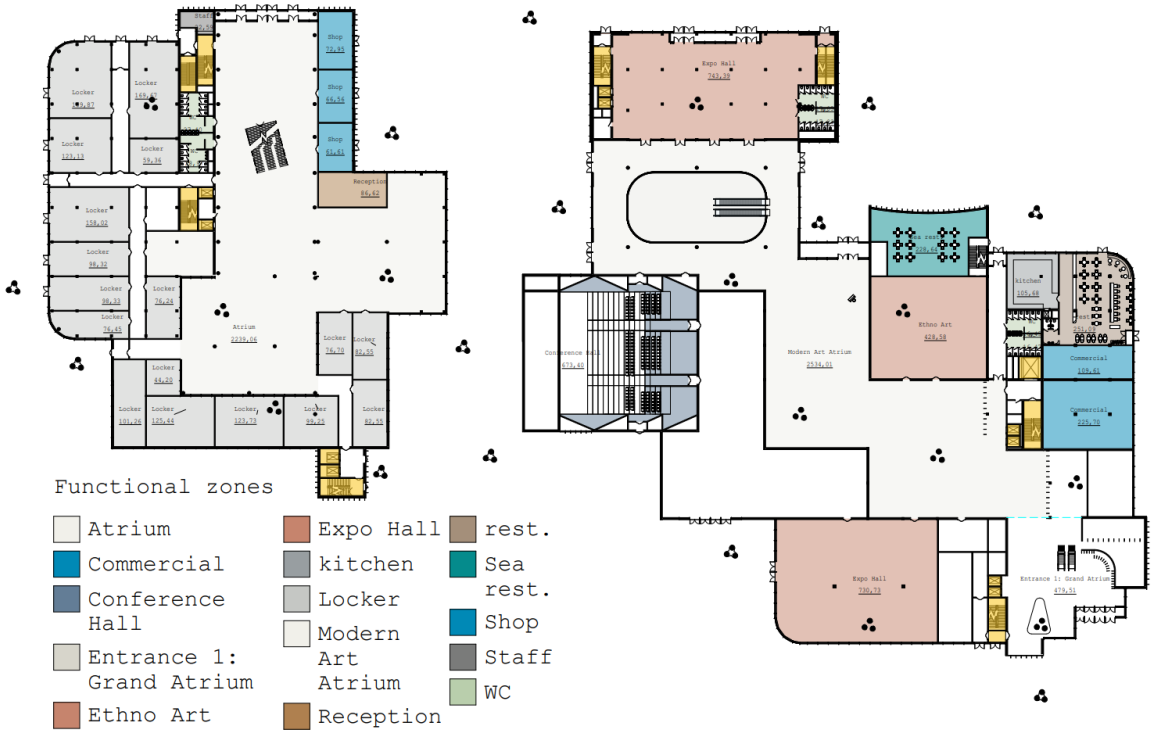


Fig. 1.21. Functional floor plan at elevation +0.000.

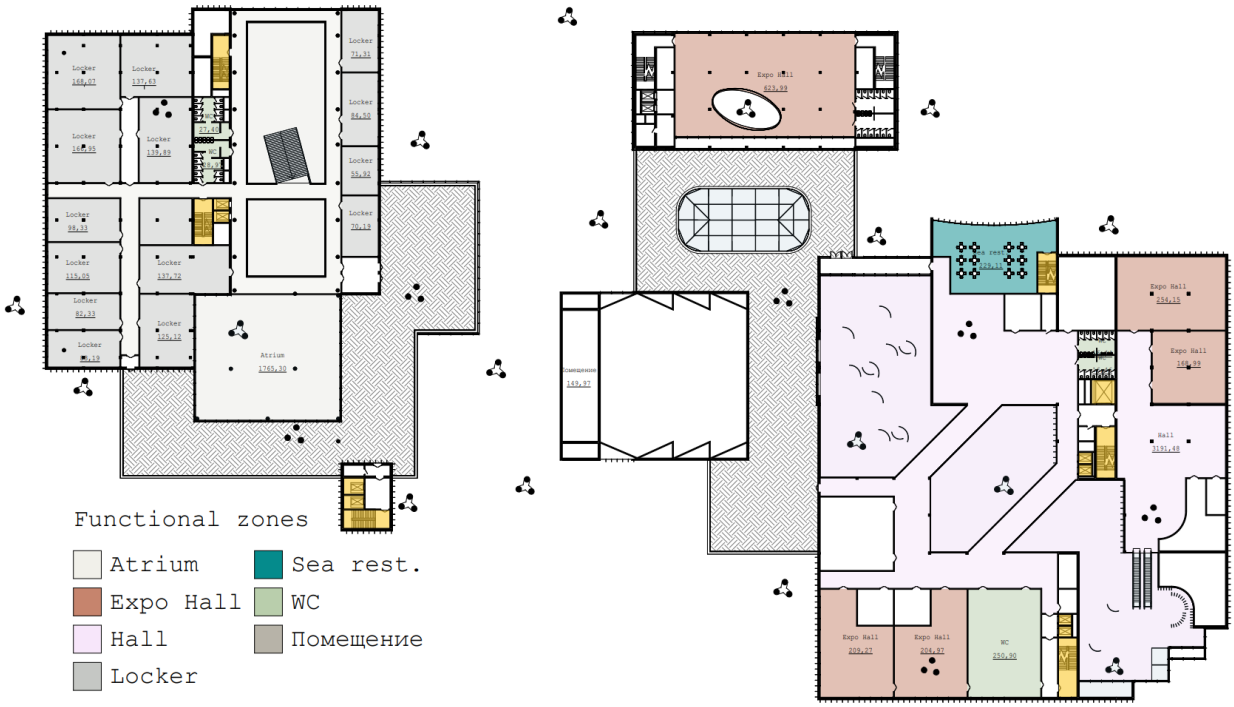


Fig. 1.22. Functional floor plan at elevation +4.500.

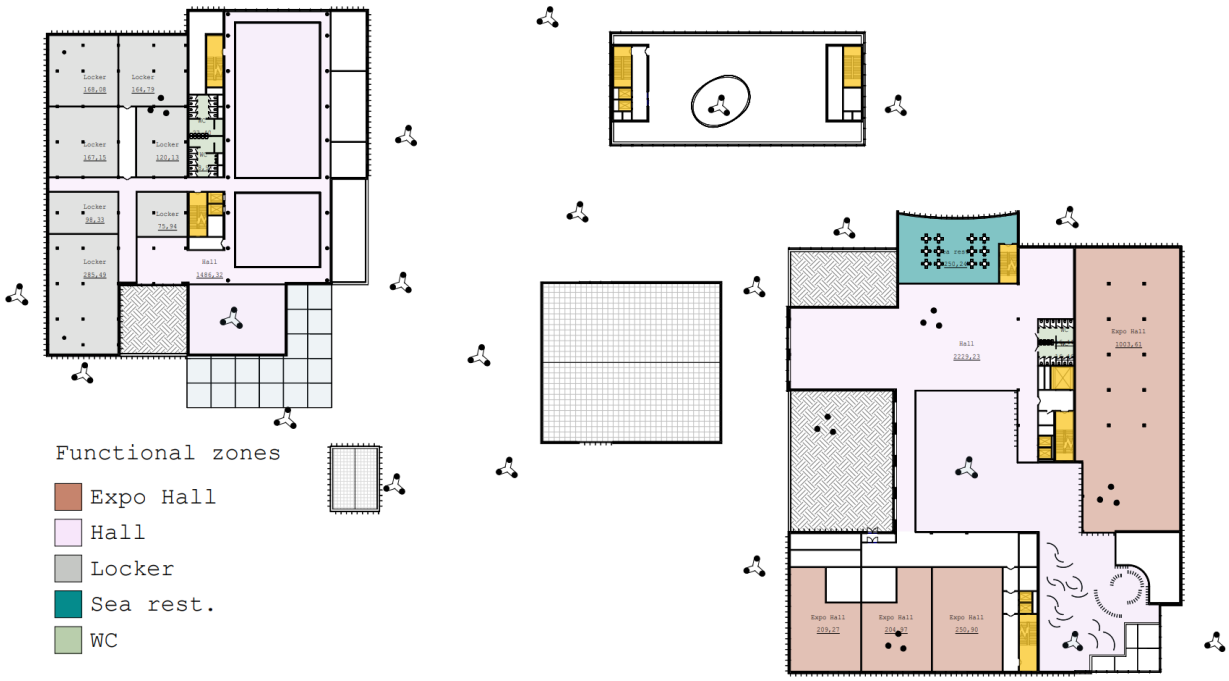


Fig. 1.23. Functional floor plan at elevation +9.000.

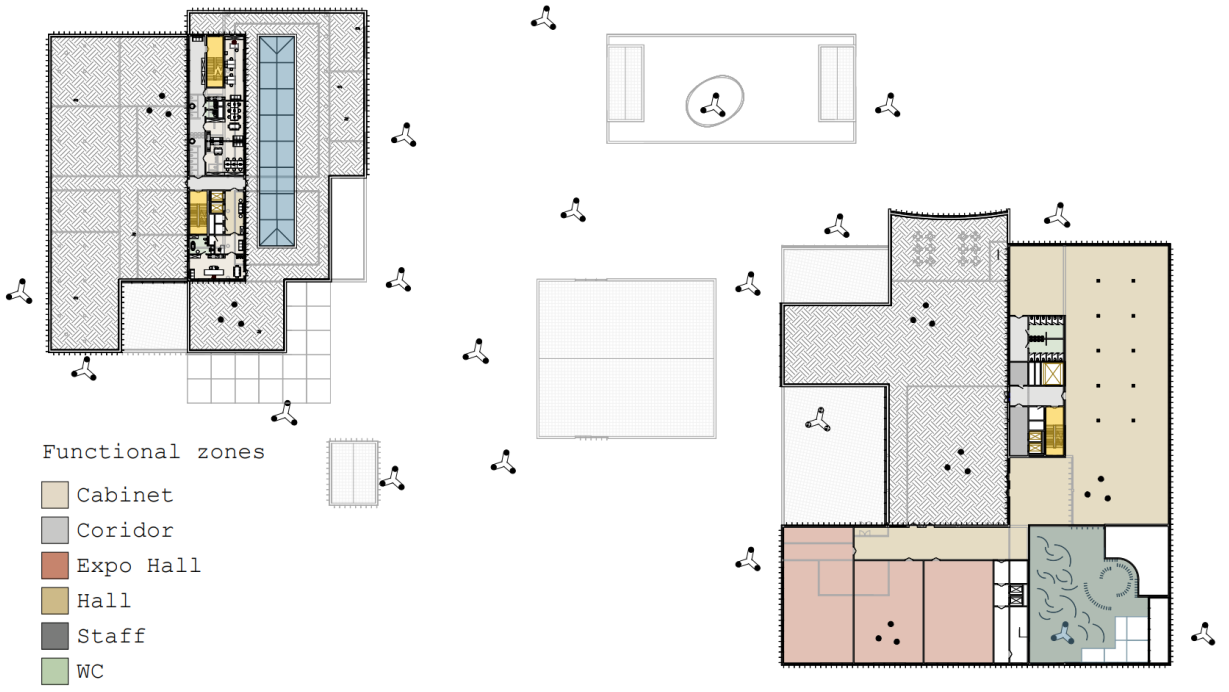


Fig. 1.24. Functional floor plan at elevation +13.500.

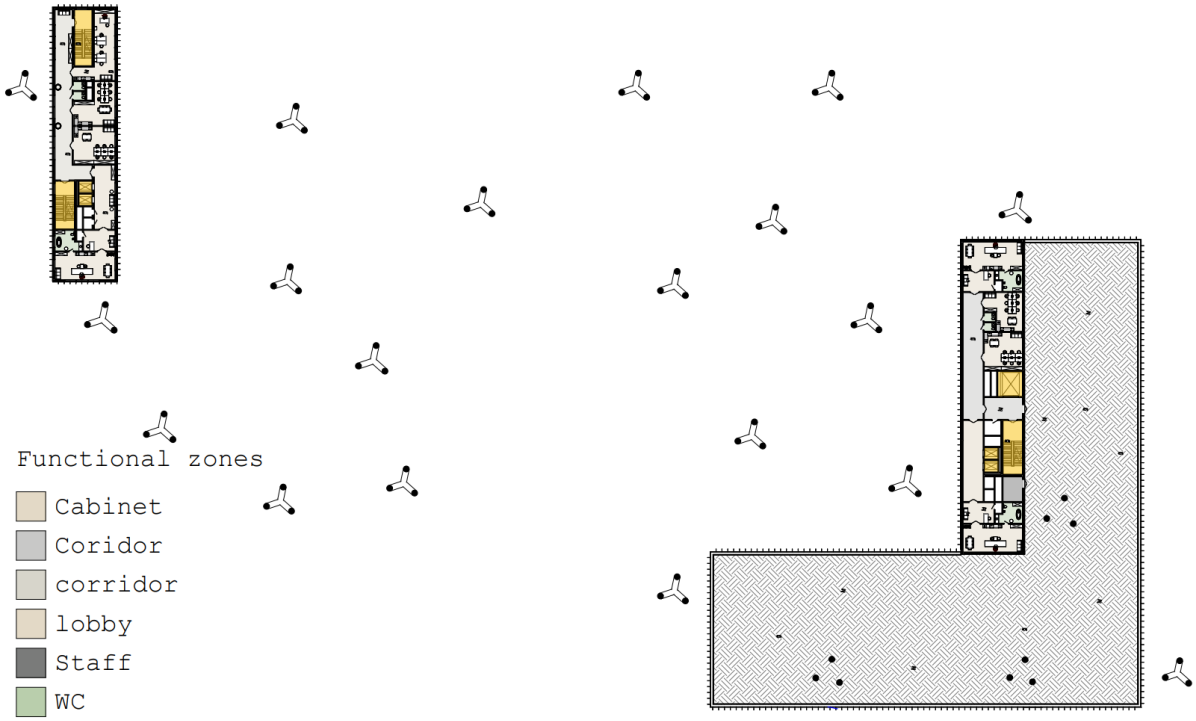


Fig. 1.25. Functional floor plan at elevation +18.000.

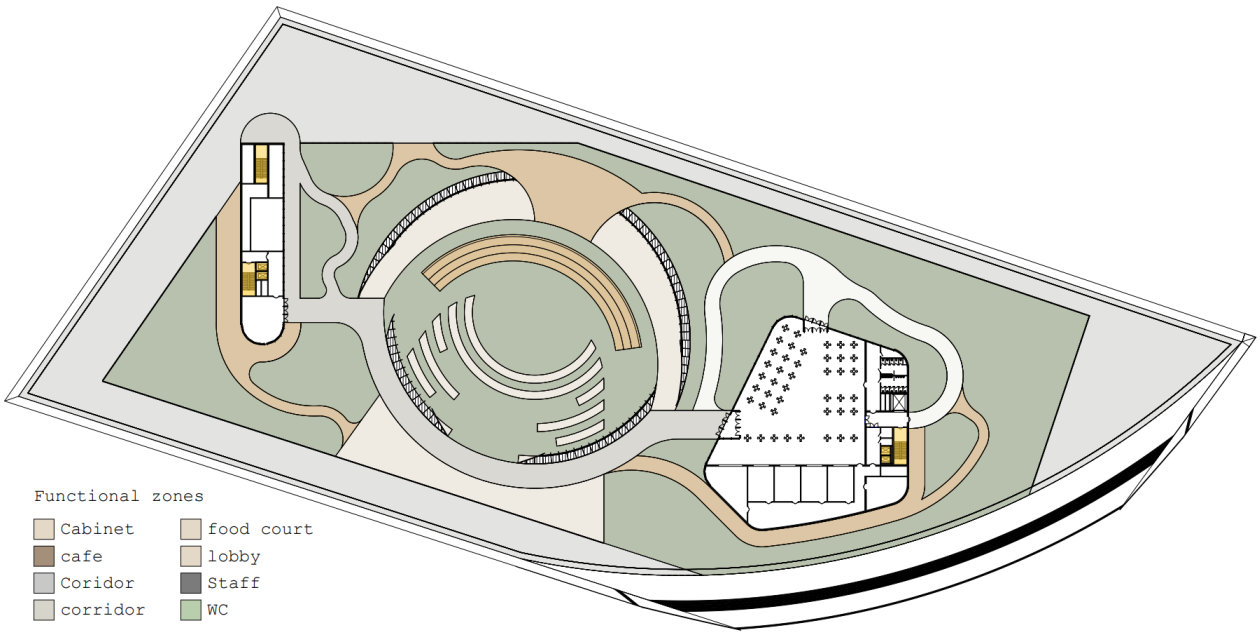


Fig. 1.26. Functional floor plan at elevation +23.100.

1.2.3 Interior Finishes and Flooring

The interior finish concept is based on the contrast between a laconic “White Box” in the gallery halls and an industrial loft aesthetic in the workshop zones.

Gallery halls (Block A): walls and ceilings — white textured plaster or plasterboard; floors — polished concrete or large-format ceramic tiles in natural tones; exposed engineering systems (track lighting) are integrated into the interior.

Workshop lockers (Block B): walls — exposed brick masonry, partially metal-framed plasterboard with acoustic treatment; ceilings — exposed floor slabs or suspended acoustic systems; floors — industrial epoxy self-leveling floor or technical ceramic tiles.

Atriums and public zones: finishes in natural stone, concrete, and wood; curtain wall glazing with views of the waterway.

Bathroom floors — ceramic tiles with anti-slip surface. In the underground parking — reinforced screed with surface hardener (topping).

1.2.4 Accessibility Measures for People with Limited Mobility

Design solutions for providing an accessible environment for people with limited mobility (PLM) were developed in accordance with the requirements of SP 59.13330.2020 “Accessibility of Buildings and Structures for People with Limited Mobility” and SP 118.13330.2022 “Public Buildings and Structures.”

Entrance groups. The main entrance to the building from the central plaza is level with the adjacent landscaping, with no changes in elevation. Where level differences between the embankment and the entrance group are unavoidable, ramps with a slope of no more than 1:20 (5%) and a width of at least 1,500 mm are provided, with handrails on both sides at heights of 0.7 m and 0.9 m. Horizontal landing areas of at least 1,500×1,500 mm are provided in front of entrance doors. Entrance doors are automatic sliding, in aluminum frames, with a clear width of at least 1,800 mm, requiring no physical effort to open.

Vertical circulation. All above-grade levels, the underground parking, and the accessible Sky Park roof are connected by elevators with a load capacity of at least 1,000 kg and a cabin size of at least 1,100×2,100 mm. Elevators are equipped with voice informers, Braille on control buttons, horizontal grab bars, and a mirror on the rear wall of the cabin. All staircases are additionally fitted with bilateral handrails with horizontal extensions projecting at least 300 mm beyond the first and last steps.

Circulation routes. On all levels of the building, a continuous tactile floor navigation system is provided from entrance groups to the main functional zones — exhibition halls, workshops, elevator lobbies, and sanitary facilities. The width of main corridors and passageways is at least 1,800 mm; the clear width of doorways in rooms is at least 900 mm. Visual contrast indicators and information signs are also provided in Braille.

Sanitary facilities. A dedicated accessible sanitary cabin for PLM of at least 1,650×1,800 mm is provided on each floor, equipped with a fold-down seat, bilateral grab bars, horizontal and angular grab bars near the washbasin, and an emergency staff call button.

Parking. The underground parking facility includes at least 6 parking spaces for PLM vehicles, each 3,500 mm wide, located in direct proximity to elevator lobbies. The route from the PLM parking space to the elevator is free of level changes and steps.

1.2.5 Fire Safety Measures

Design solutions for ensuring fire safety of the complex were developed in accordance with Federal Law No. 123-FZ of July 22, 2008 “Technical Regulations on Fire Safety Requirements,” SP 1.13130.2020, SP 2.13130.2020, SP 4.13130.2013.

Object classification. The building belongs to a mixed functional fire hazard class: F2.1 — exhibition and gallery halls, atriums, conference hall; F3.1 — commercial spaces and showrooms in Block

B; F3.2 — restaurants and food court on the first level and on the roof; F4.3 — administration offices and co-working zone; F5.1 — workshop lockers in Block B; F5.2 — exhibit storage and warehouse areas on the underground level; F5.3 — underground parking at elevation -4.500. The defining class imposing the most stringent requirements for evacuation and fire protection systems is F2.1. The structural fire resistance rating of the building is Grade I; the structural fire hazard class is C0.

Evacuation. To ensure safe evacuation, the building incorporates six staircase-elevator cores of Type H1 (smoke-free stairwells with air pressurization), evenly distributed along the length of the building. The distance from the most remote point of each level to the nearest emergency exit does not exceed the normative value per SP 1.13130.2020. Separate evacuation routes from the underground parking are provided, structurally isolated from the above-grade portion of the building. Emergency exit doors are single-leaf, outward-opening (in the direction of evacuation), equipped with self-closing devices, door seal strips, and panic hardware. Fire resistance class of emergency exit doors is at least EI 30.

Fire barriers. The building is divided into fire compartments by fire walls of Type 1 and floor slabs of Type 1. The fire resistance rating of load-bearing structures is at least R 150. Atrium spaces spanning multiple floors are designated as independent fire compartments and equipped with a mechanically driven smoke exhaust system and automatic fire curtains.

Fire protection systems. The building incorporates: an automatic fire suppression system (AFSS) of the sprinkler type in all rooms, including the underground parking and technical zones; an automatic fire alarm system (AFAS) of the addressable-analog type; a notification and evacuation management system (NEMS) of Type 4 with voice announcements and illuminated “Exit” signs; smoke exhaust and air pressurization systems in smoke-free stairwells, atriums, and elevator shafts.

Fire access routes. Fire vehicle access roads at least 6 m wide are provided around the perimeter of the building, with a distance from the road edge to the building wall of no more than 10 m. Dead-end road sections are equipped with turnaround areas of at least 15×15 m. Building access is not obstructed by landscaping elements and is ensured from the city thoroughfare on a 24-hour basis.

1.3 Structural Solutions

1.3.1 General Information

The Art+. Cluster complex is designed with a frame structural system. It consists of two architectural blocks united by an underground level (at elevation -4.500) and a cantilevered roof (at elevation +23.100). The choice of system is determined by the need to provide large open spaces — atriums and exhibition halls — flexibility of locker layouts, and the realization of significant cantilevered floor projections.

The floating park roof (Sky Park at elevation +23.100) represents a unique structural solution: it carries only its own loads and is self-supporting. It is fully isolated and independent from the main building volume.

The design building belongs to a mixed functional fire hazard class: F2.1 — spaces intended for temporary occupancy for recreation, education, or cultural development (exhibition and gallery halls, atriums, conference hall); F3.1 — retail establishments (showrooms, shops, and retail galleries in Block B); F3.2 — food service establishments (restaurants and food court on the first level and on the accessible roof); F4.3 — management, design, and research institutions (administration offices, co-working zone); F5.1 — industrial buildings, structures, and premises (workshop lockers in Block B); F5.2 — storage buildings, structures, and premises (exhibit storage, warehouse areas on the underground level); F5.3 — automobile parking (underground parking at elevation -4.500). The defining class imposing the most

stringent requirements for evacuation and fire protection systems is F2.1.

The object belongs to Fire Resistance Grade I, structural fire hazard class C0. The responsibility level is elevated (Level II per GOST 27751).

1.3.2 Structural Scheme of the Building

The structural scheme of the main building volume (Block A, Block B, and the underground level) is a monolithic reinforced concrete frame. Spatial rigidity is ensured by the combined action of monolithic frames (columns + floor slabs) and vertical rigidity diaphragms — monolithic walls of staircase and elevator shafts, evenly distributed along the length of the building.

The basic column grid spacing is 6,600×6,600 mm, adopted based on the conditions of construction element standardization and the requirements for vehicle placement in the underground parking. In atrium zones and the conference hall, the grid is consolidated using reinforced space frame systems and beams.

The suspended Sky Park roof is a space frame system supported on V-shaped composite steel-concrete column legs.

1.3.3 Foundation

The foundation is a continuous slab (at elevation -4.500) constructed from monolithic reinforced concrete. A pile field of driven piles with a diameter of 600 mm is installed beneath the slab. This choice is determined by the soil conditions of the New Waterfront district waterfront zone (sandy loam, medium-density sands).

The V-shaped columns of the floating Sky Park roof have their own massive foundation, which absorbs their concentrated loads.

1.3.4 Load-Bearing Frame

The vertical load-bearing elements are monolithic reinforced concrete columns. They carry loads from the facades, roof slabs, and floor slabs; their primary cross-section is 400×400 mm in above-grade levels, 500×500 mm in underground levels, and 600×600 mm in zones of elevated loads.

The V-shaped inclined supports carrying the space frame system of the cantilevered Sky Park roof are made of steel-concrete composite: a steel tube filled with reinforced monolithic concrete, working in combined compression and bending. They are the key architectural and structural element that creates the “floating” image of the building.

The rigidity diaphragms consist of monolithic walls of stairwells and elevator shafts, 200 mm thick, carrying horizontal loads.

In the underground level, the load-bearing frame of the building also includes the entrance ramps from elevation 0.000 to -4.500, constructed from 200 mm monolithic reinforced concrete, and retaining walls enclosing the underground level from the surrounding soil and absorbing lateral earth pressure.

1.3.5 Exterior Wall Construction

The exterior building envelope is constructed as a three-layer ventilated curtain facade system. A 300 mm brick masonry layer serves as the structural layer. Mineral wool insulation is mounted on top of it, followed by an exterior cladding with a ventilation cavity.

The facade cladding is provided in three variants depending on the facade zone: large-format HPL facade panels, architectural stone, and perforated metal cassettes. Over the metal finishing layer, glass louvres are also mounted – horizontal translucent screens that create an effect of lightness and a “ripple” on the facade, reflecting the water.

Panoramic large-format curtain wall glazing is used in atrium zones and along the building perimeter at the first floor level. Double-pane insulated glass units are used, set in aluminum profiles with an energy-saving coating.

1.3.6 Interior Wall and Partition Construction

Interior walls are non-load-bearing: primary walls are built from 250 mm aerated concrete blocks; secondary walls are metal-framed partitions with double-layer plasterboard sheathing, 100–150 mm thick. Locker partitions allow for dismantling and relocation — a modular system for flexible reconfiguration of workshop spaces. In workshop zones, partitions include acoustic mineral wool infill.

1.3.7 Floor Slabs

Inter-floor slabs are monolithic reinforced concrete flat plates, 200 mm thick. Load transfer occurs through column-head zones with additional reinforcement beneath each load-bearing column. In spans exceeding 2,000 mm, monolithic reinforced concrete beams or space frame systems up to 1,000 mm in depth are used, ensuring rigidity of the spatial cantilever and span structures.

The typical floor construction consists of: a 200 mm monolithic reinforced concrete slab; a sound insulation layer; an 80 mm cement-sand screed; and a 20 mm finish layer.

1.3.8 Roof Construction

The Sky Park roof is accessible and inverted, bearing on a monolithic reinforced concrete slab. The slab itself rests on a space frame system supported by V-shaped composite steel-concrete columns.

The roof finish consists of 20 mm paving stones or fill soil planted with lawn, shrubs, and small trees up to 2 m in height. Beneath these are: a 150 mm slope-forming layer (Fig. 1.27); 5 mm waterproofing and vapor barrier; 150 mm extruded polystyrene (XPS) and polyisocyanurate (PIR) insulation; a 200 mm monolithic reinforced concrete slab; and a 1,500 mm space frame system.

In zones of intensive landscaping, tree and shrub planting, the following additional layers are included: a drainage-moisture-retaining layer of profiled membrane; filtering geotextile; and lightweight soil substrate 200–1,000 mm thick. The roof slope toward internal drainage points is at least 1.5%.

1.3.9 Snow Removal

To ensure safe operation of the Sky Park roof during winter, a comprehensive snow management system is provided. A cable electric heating system of the “Anti-Ice” type is installed on pedestrian routes (roof pathways, ramps, steps), preventing the formation of ice and glazed frost. Parapets and guardrails are fitted with heating elements to prevent icicle formation. Internal drainage funnels are equipped with heated receiving cups to prevent ice blockages.

Manual snow removal from the roof park is carried out by the maintenance service of the operating organization. The design snow load for Kazan (Snow Load Zone IV) is 2.0 kPa; accounting for possible “snow pockets” in parapet zones, the load is taken with an amplification factor.