parametrica

Full cycle Architectural bureau.
Smart products for developers based on
IT-technologies

www.parametrica.team

Full cycle architectural bureau

1st phase →

Masterplan

2 months min.

2nd phase →

Schematic design (architectural urban planning solution and appearance)

2 months min.

3rd phase →

Design development

2 months min.

4th phase

Construction documents development

4 months min.

Our expertise

- Marketing research
- Interior design
- Landscape design
- Project audit
- Standardization
- Automation
- Field supervision

Our experience

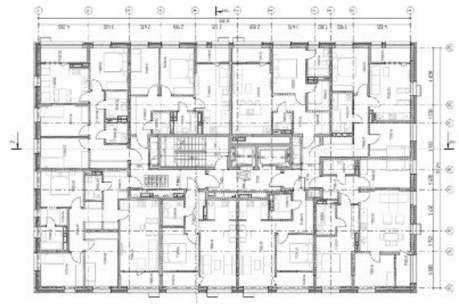
25 000 000 m2
Of masterplans

100 projects
4 300 ha

1 500 000 m2
of schematic deisgn

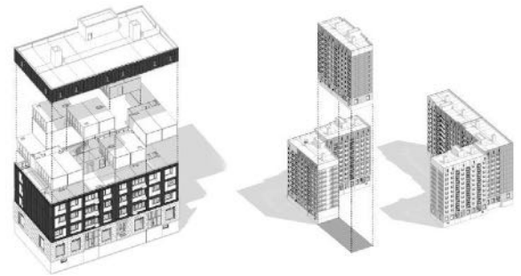
260 buildings
25 000 apartments

1 000 000 m2
of design development and construction documentation



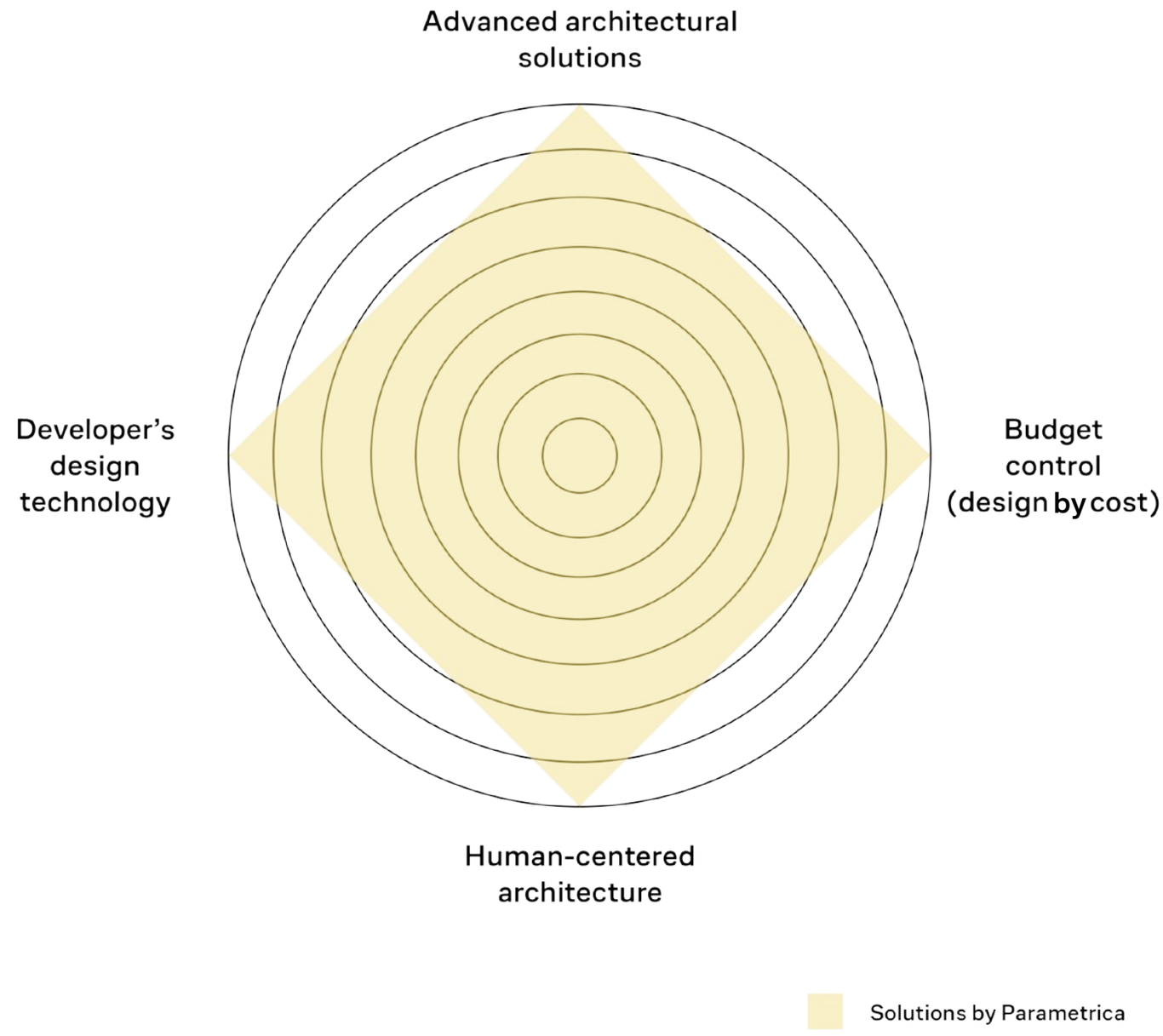
180 buildings
16 000 apartments

17 standards
of development product

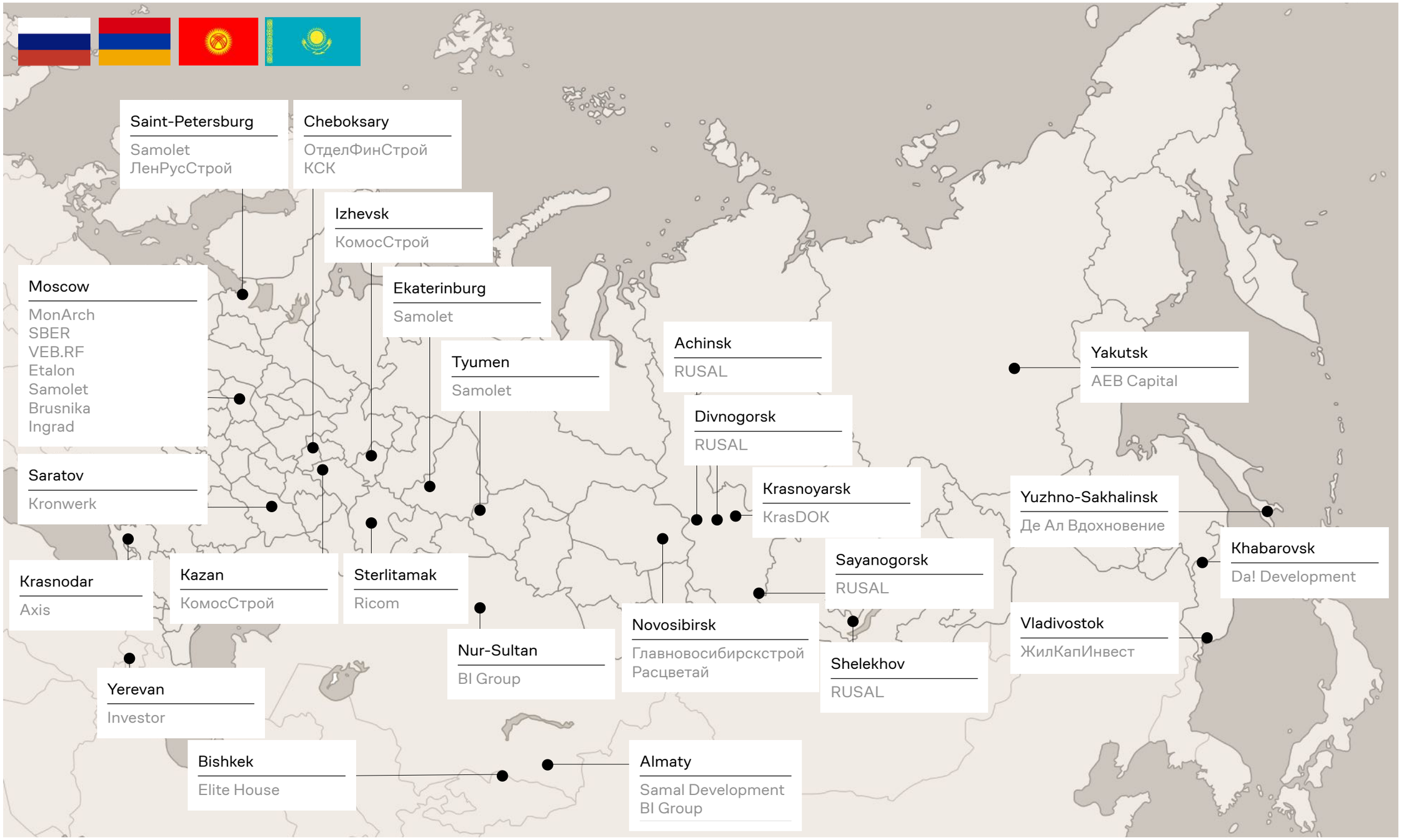


45 developers

Our values


Advanced architectural solutions
Budget control (design by cost)
Human-centered architecture
Developer's design technology
Solutions by Parametrica

Our projects



Our team

We are a team of more than 200 employees: masterplanners, architects, designers, engineers and IT specialists.

Our offices

3 countries

5 cities

6 offices

7 years

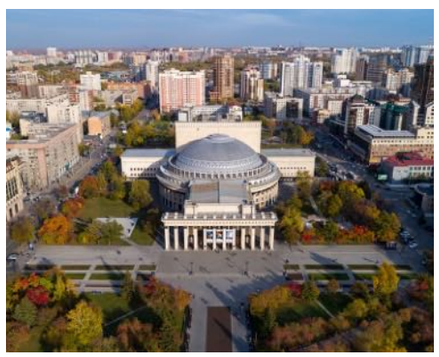
We have offices in 5 cities across 3 countries:

Moscow, Russia

Yerevan, Armenia

Riyadh, Saudi Arabia

Novosibirsk, Russia



Sevastopol, Russia

Our clients and partners

МонАрх
ГРУППА КОМПАНИЙ

SBER

ВЭБ РФ

БРУСНИКА

RUSAL

ЭТАЛОН

INGRAD

самолет

АОК Красноярский деревообрабатывающий комбинат

ОТДЕЛФИНСТРОЙ
СПЕЦИАЛИЗИРОВАННЫЙ ЗАСТРОЙЩИК

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РАЗВИВАЕМ ГОРОДА

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ЛенРусСтрой

КИРОВСПЕЦМОНТАЖ
строительная компания

Parametrica and Sber

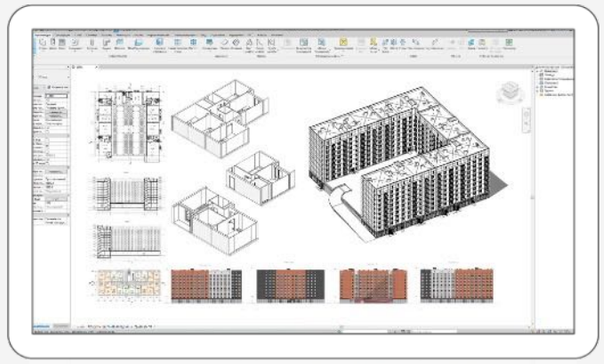
Sber and Parametrica collaborate to help develop Sber's ecosystem of product solutions for developers.

Together we create effective masterplans, architecture designs and IT solutions.

Masterplan

Schematic design

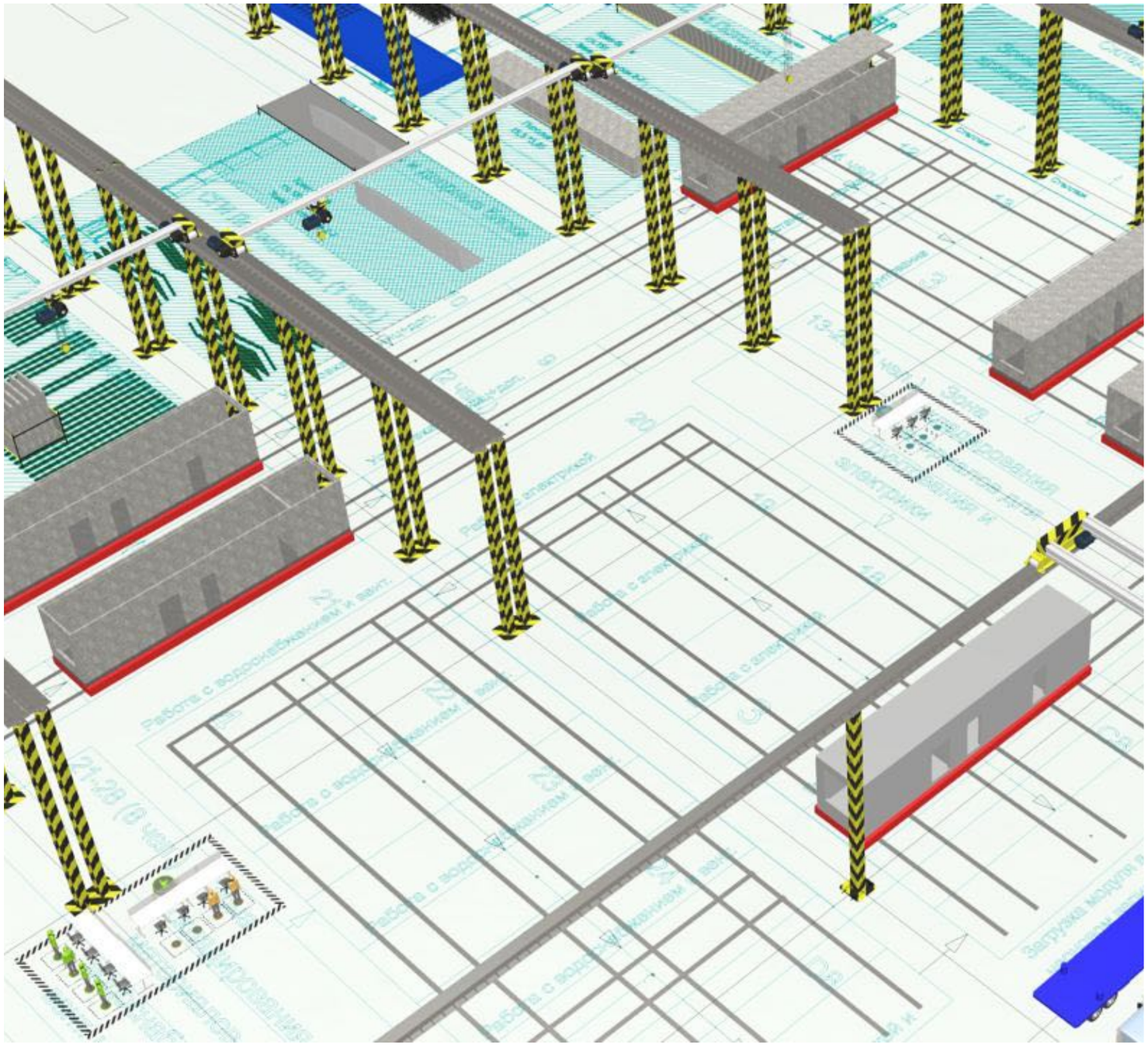
IT



Digital twin

Parametrica is developing a digital twin.

Digital twin allows construction teams to interact with 3D models of civil and industrial buildings or any other constructions during the design and planning stages in real time.



Masterplan

Masterplan

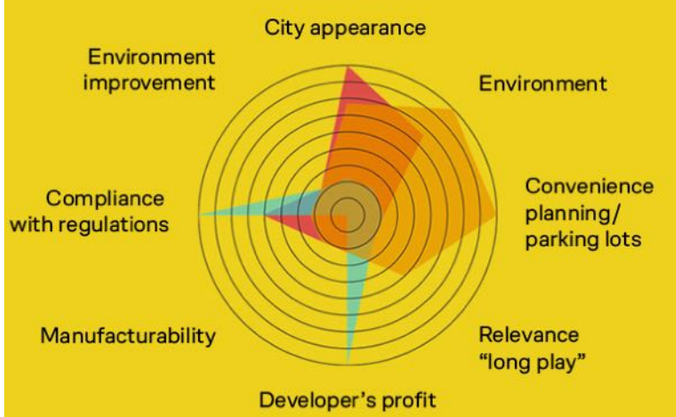
Masterplan is a strategy for the spatial development of a territory. The goal of masterplan development is to form a clear model of project implementation, taking into account the main KPIs.

Bureau Parametrica develops masterplans for all types of territories, quarters, neighbourhoods, cities and touristic clusters.

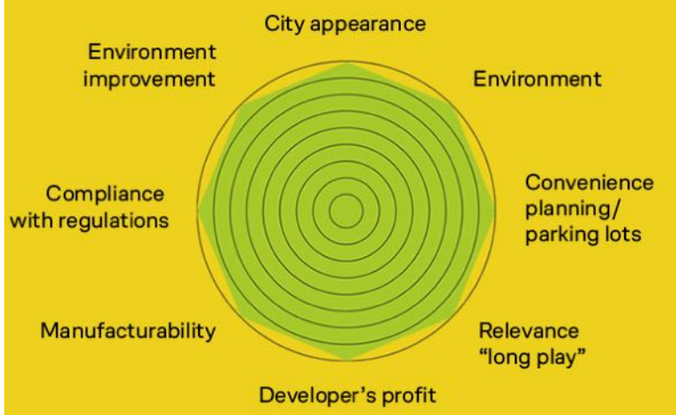
A finished masterplan is a product that combines the different parties interests, which may contradict each other:

- City administration interests towards to the development of this territory
- A developer looking for profit
- An architect who wants to be proud of his project
- Builders fighting for strict adherence
- A client who would like to live in comfort
- City residents who rightly believe that new buildings should not destroy the already formed way of life in their area

Map of participants interests in development projects (unbalanced project)



Map of interests in Parametrica’s projects



Masterplan development phases

1st phase →

Preparation

Collection, analysis and systematization of the initial data of the projected area and surrounding context.

2 weeks min.

2nd phase →

Development

Massing. Graphic rationale for decisions.

4 weeks min.

3rd phase →

Detailing

Detailing of the selected masterplan variant of development. Development of accompanying and illustrative materials.

2 weeks min.

Masterplan principles and values

1. Apartments map

2. Organized parking and a courtyard without cars

3. Entrance at ground level

4. Operating systems optimization

5. Retail on the ground floors

6. Correct phasing

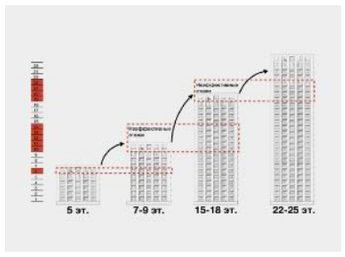
7. Functions merchandising

8. Good window vies maximizing

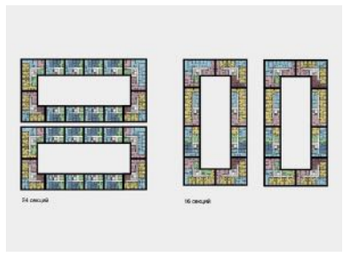
9. Kindergartens and schools with a fence facade

10. Pedestrian-oriented masterplan

11. Public spaces hierarchy

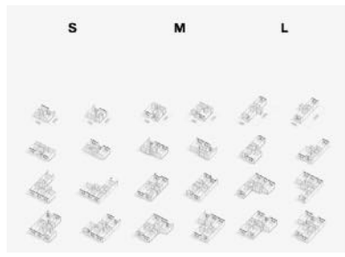


12. Correct number of storeys



13. Effective sections and houses

14. Multi-storey

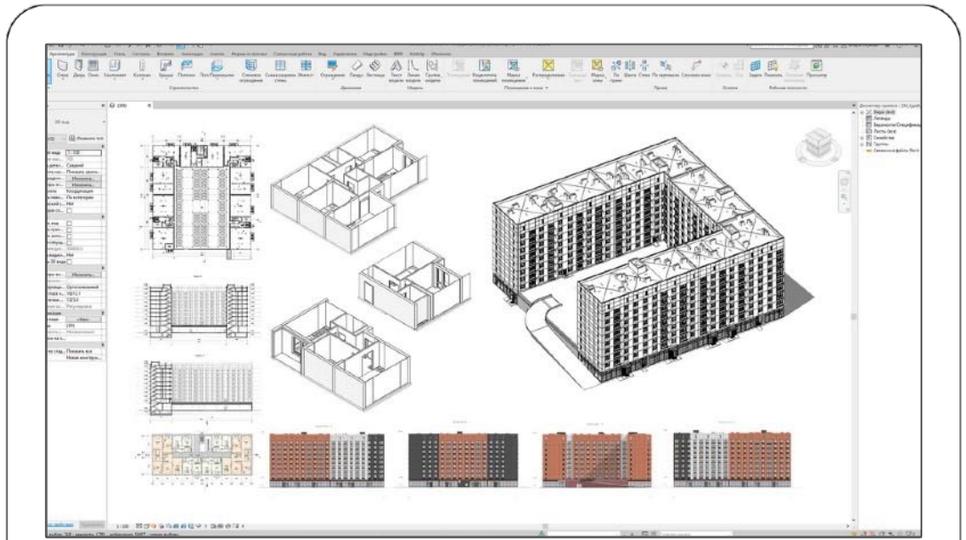


15. SML floor planning

Urbanbot

Urbanbot is our own software solution, created for architects, masterplanners and developers to improve efficiency of architectural and engineering design.

Urbanbot analyzes the site and develops an efficient and economically reasonable architectural design. The final masterplan is assembled from the elements available in the Urbanbot store and follows all required guidelines



Input

- Site
- Massing and context
- Insolation
- Floor planning

Output

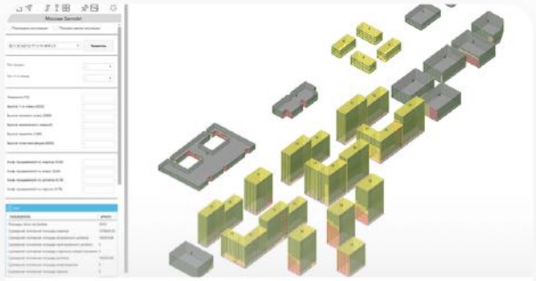
- BIM-model
- Plans
- Cross section
- Cost estimates

Urbanbot masterplan development roadmap

1. Analysis

- Source data
- Spatial, historical and environmental context
- Values and advantages
- Issues and limitations
- Assets and infrastructure
- Market analysis
- Regional features

1 week



2. Urbanbot

- GIS-data export
- Development options configuration
- Insolation check
- Technical and economic indices
- Floor plans generation

1 hour

3. Comparison

- Comparison of different solutions
- Optimal solution selection

1 day

4. Final

- Masterplan album
- DWG sketch
- Excel spreadsheets
- SKP model
- Optional facade generation

1 day

Effective masterplan

Reducing the price per square meter

We reduce the cost per square meter by applying the right design solutions.

Product characteristics. Quality environment

We create a quality environment by organizing the correct structure of saturation of public spaces.

Correct masterplan is a balance between projects solutions.

Effective masterplan

1. Design solutions

- Correct number of storeys:
  - 5 floors
  - 7–9 floors
  - 15–18 floors
  - 22–25 floors
- Effective sections and houses
  - Meridional location
  - 400–500 sq m of selling space per 1 stairs elevator hub
- Effective capacity kindergartens and schools:
  - Kindergartens— 250, 300, 350 people
  - Schools — 1100, 1375, 1500 people
- Checking the apartment on the masterplan
- Correct orientation to the cardinal points
- Sections repeatability
- Thoughtful parking strategy
- High building density
- Maximizing window views
- Optimal placement of engineering networks and head structures

2. Product solutions

- Quarterly organisation of the masterplan
- Private courtyard
- Entrance at ground floor
- Optimization of the operating system
- Retail on the ground floors focused on public spaces
- Merchandising functions
- Correct phasing
- Pedestrian-oriented masterplan

3. Landscape design

- Optimal ration of the landscape design
- Courtyard without cars
- Hierarchy of public spaces:
  - Residential courtyard
  - Kindergartens territory
  - Educational organisations territory
  - Boulevard
  - Park
  - Central square
  - Transport hub
  - Game hub
  - Sport hub
  - Dog walking area
  - Square

Masterplan development coefficients

Masterplan development calculates following coefficients:

$K_{parking}$

The ratio of all parking lots on the masterplan (flat, multi-level, underground)
to the number of apartments on the masterplan.
The optimal range of values is:
0,60–0,80. The higher the indicator, the more comfortable the environment.

K_{stairs}

Reflects how many square meters of area sold per staircase. The higher the indicator, the lower the cost of the project.

$K_{elivator}$

Reflects how many square meters of the area sold per elevator. The higher the indicator, the lower the cost of the project.

$K_{measures}$

The ratio of all sections and towers sum to the total quantity of sections.The minimum value of the coefficient — 0,60. The maximum value of the coefficient— 1. The higher the indicator, the more economically profitable the project. The range of coefficient indicators in our projects: 0,8–1.

S_{facade}

Facade square. The smaller the square, the lower the project cost.

K_{facade}

Reflects how many square meters of sold area falls on 1 square meter of the facade.

Landscape design set of elements

Plaza

Boulevard

Transport hub

River shore

Retail

Streetball

Play hub

Sport Hub

Central square

Pedestrianized street

Traffic calming

Dog walking area

Bike path

Workout

Courtyard

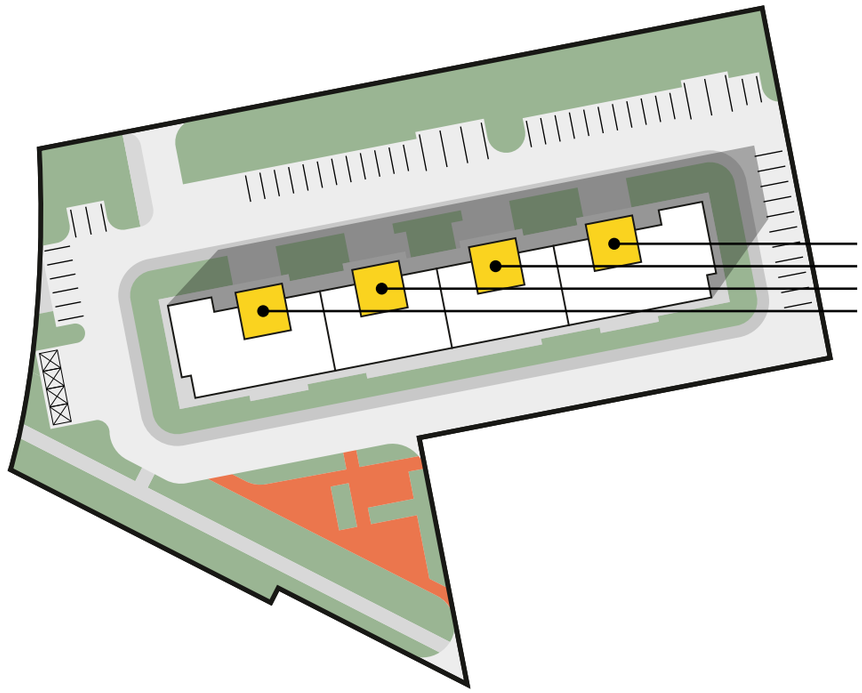
Skate-park

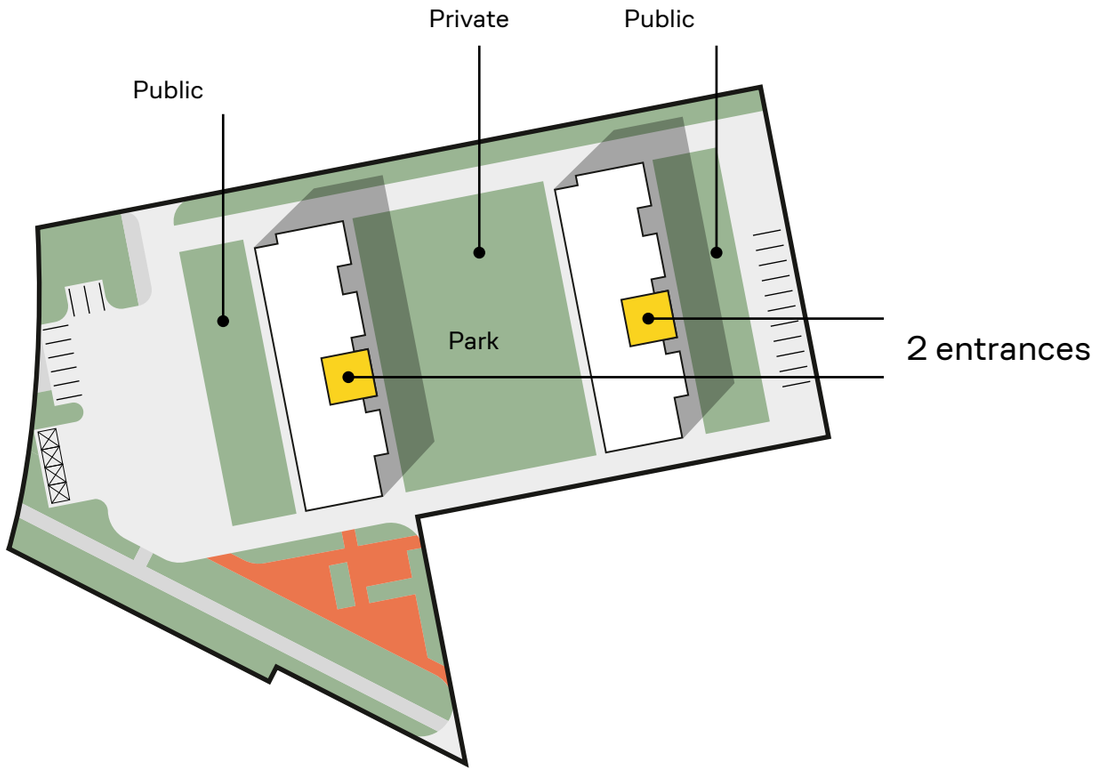
Adult games

Green parkings

Landscape design elements that we use in the masterplan.
The more landscape design elements are involved in masterplan, the more comfortable the environment. The area of the landscape must be at least 40 % and not more than 60 % of all sold areas on the masterplan.

Cost optimization cases on masterplan





Before

8 elevators per 18 apartments
4 staircases

40% of apartments are three-rooms
No private area, only public
A child cannot walk unattended

After

4 elevators
2 staircases

A closed pedestrian courtyard appeared
Buildings meridian orientation
Elevators and stairs reduction by 2 times
Optimization of public places

Cost optimization cases on masterplan

Lost profit
3 396 852 $

1 772 105 $
Not received amount due to extra builded and finished 37 sq m of public places on each floor

+

1 488 158 $
Due to increase of sold area on 116 sq m on each floor

+

131 579 $
Economy on elevators

---

3 396 852 $

↓ ↓ ↓ ↓

26,5% from
12 818 309 $

Masterplan | Yabloni Park

Penza, 2022
Client «Yabloni Park»

Site size 1044 hectares
Sellable area 3 390 000 sq m
Multiple classes

Masterplan | Technopark and a residential complex

Moscow, 2021
Client «Samolet»

Site size 165 hectares
Residential area 499 227 sq m
Technopark area 1 160 000 sq m
Economy class

Masterplan | Kalinovka

Moscow region, 2021
Client «Samolet»

Site size 157 hectares
Sellable area 934 989 sq m
Economy class

Masterplan | Novosaratovka

Leningrad region, 2021
Client «Samolet»

Site size 102,76 hectares
Sellable area 821 903 sq m
Economy class

Masterplan | Comfort class residential complex

Belgorod, 2021

Site size 20,28 hectares
Sellable area 159 681 sq m
Comfort class

Masterplan | Business class residential complex

Moscow, 2022

Sellable area 60 000 sq m
Business class

Masterplan | Izmaylovo - Depo

Penza, 2019
Client «Risan»

Site size 6,81 hectares
Sellable area 55 117 sq m
Density 8 093,5 sq m/ hectares
«Standard+» class

Projects

Hotels and public buildings

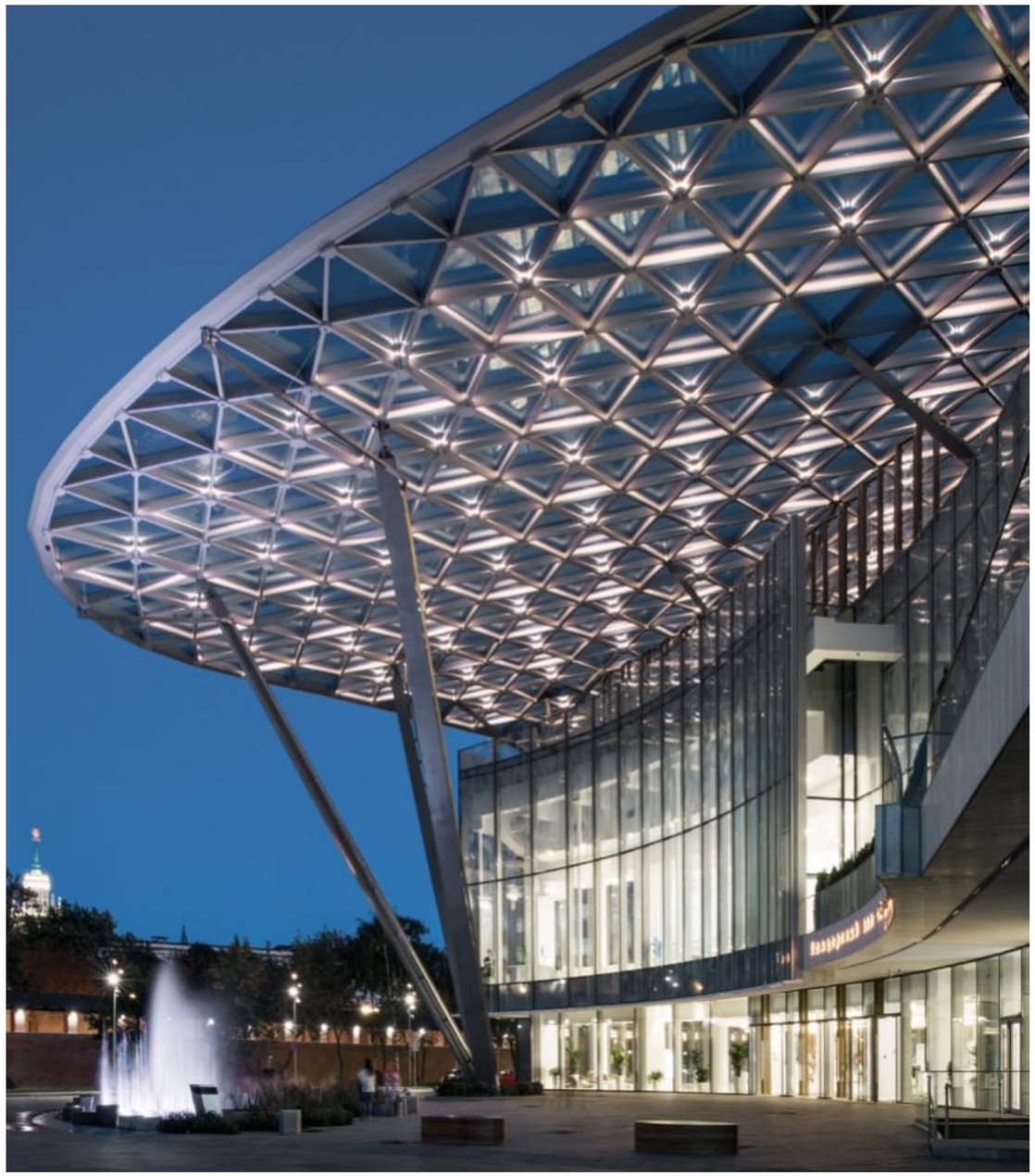
Zaryadye Concert Hall | Moscow

Zaryadye Concert Hall | Moscow

Zaryadye Concert Hall | Moscow

Zaryadye Concert Hall | Moscow

Zaryadye Concert Hall | Moscow



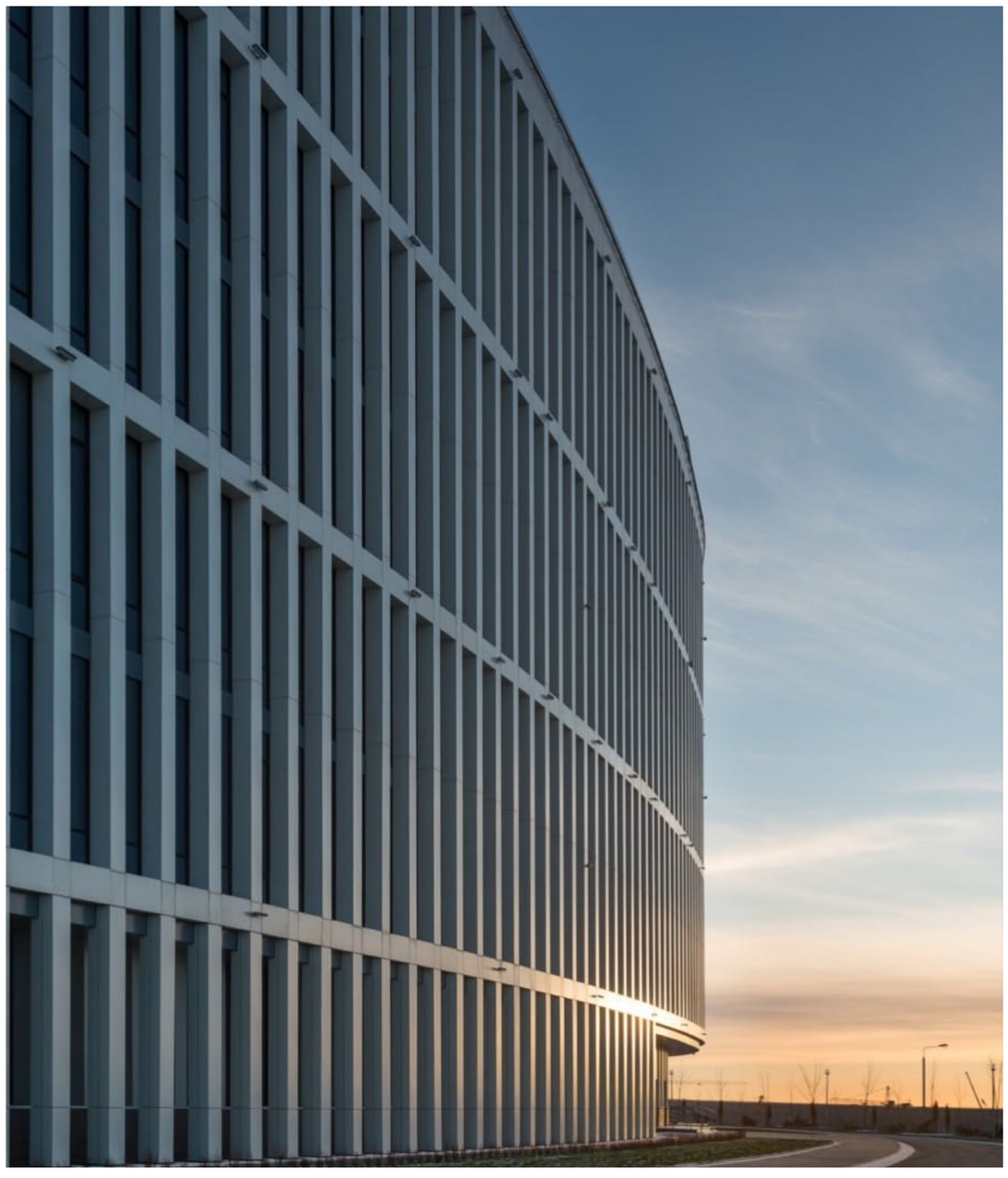
Kommunarka Hospital | Moscow

Kommunarka Hospital | Moscow

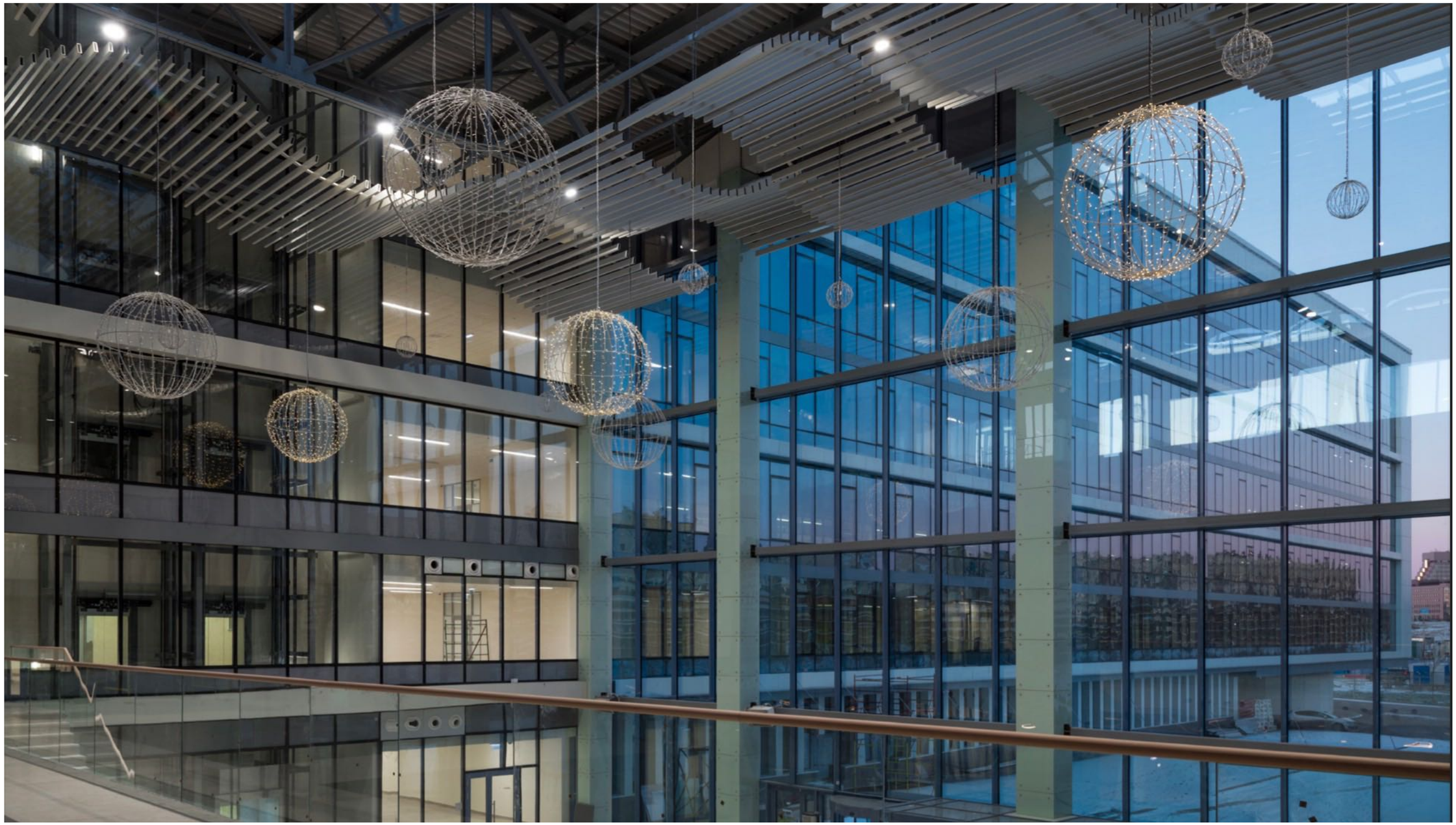
Kommunarka Hospital | Moscow

Prefecture building | Moscow

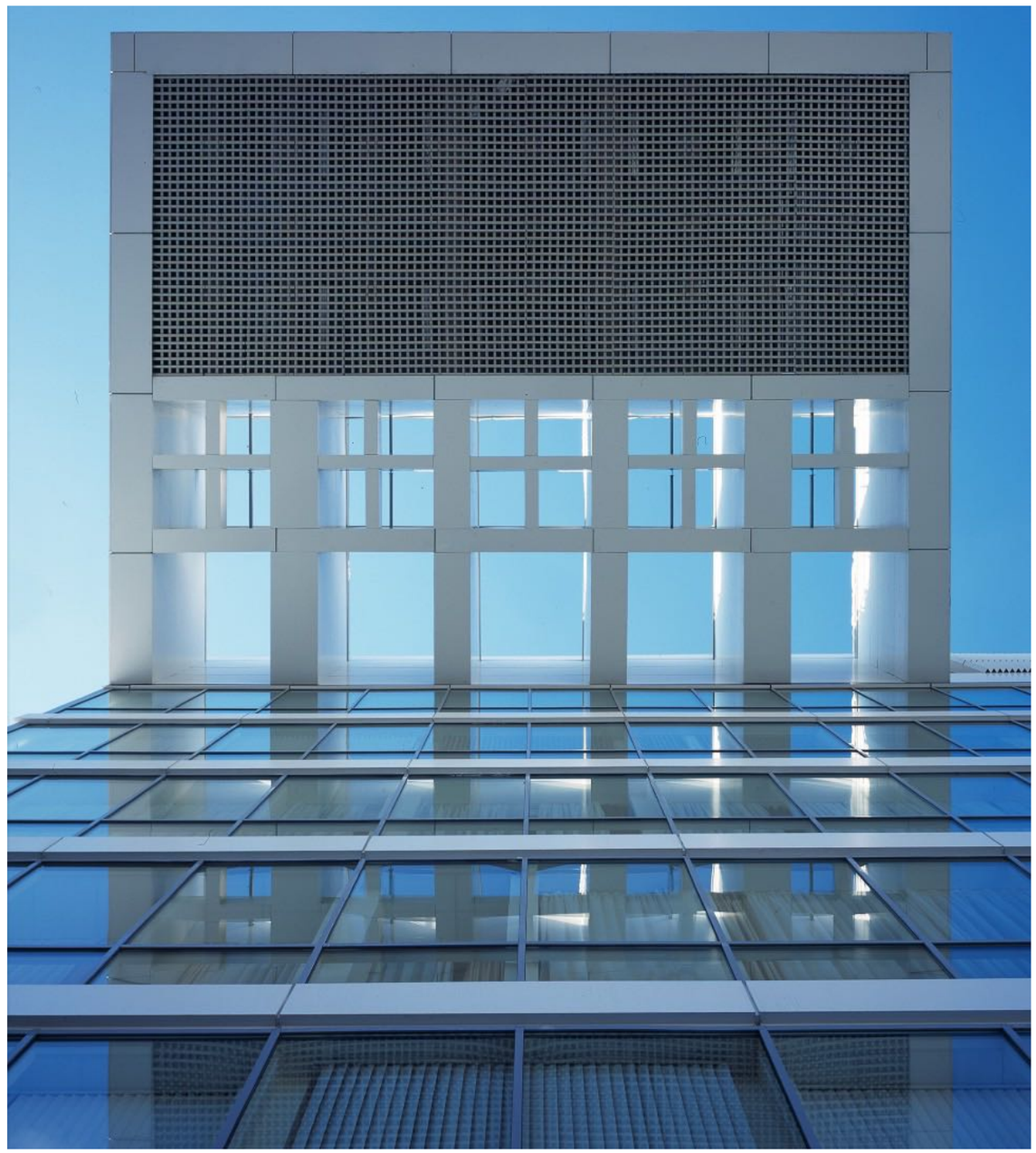
Prefecture building | Moscow



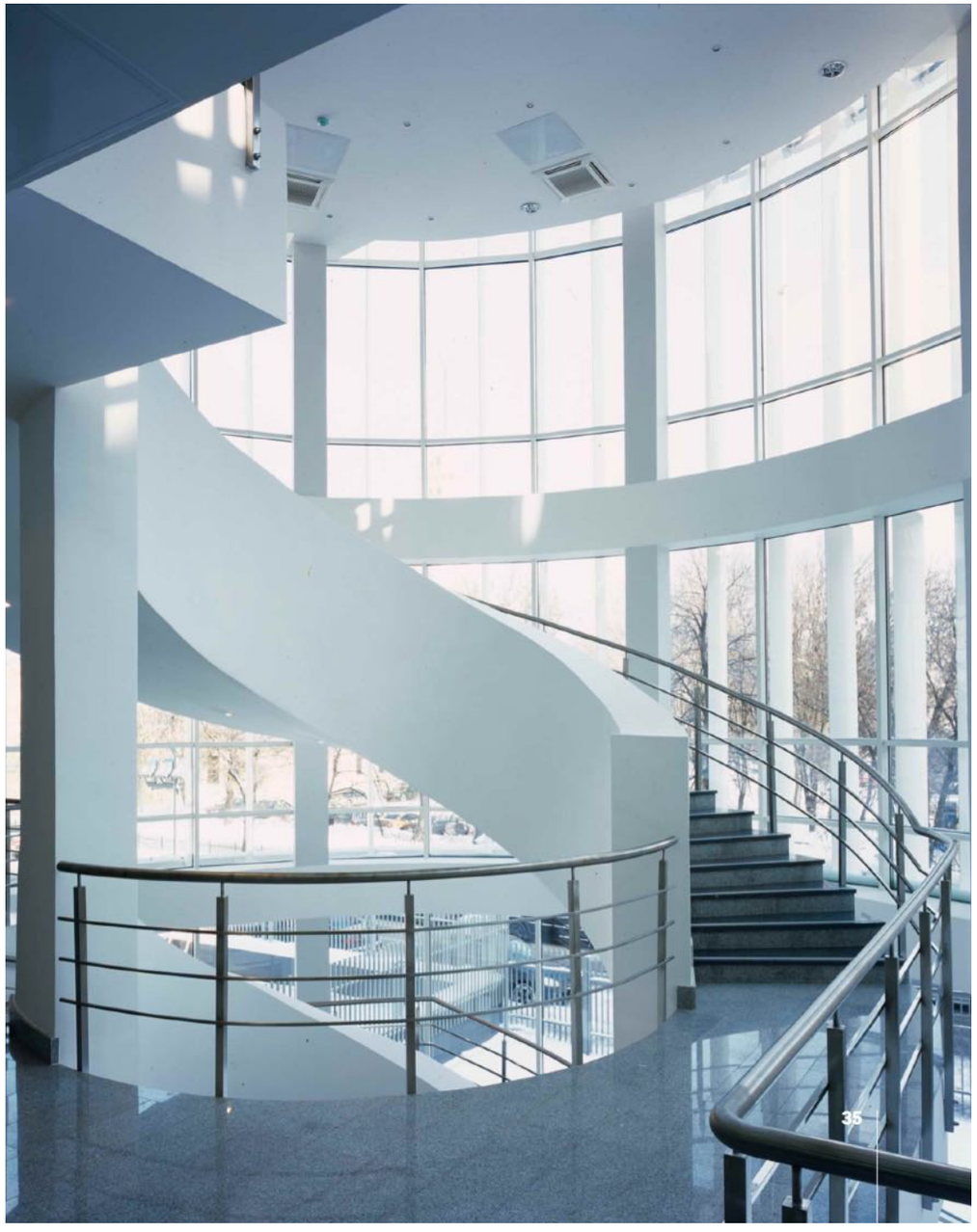
Prefecture building | Moscow

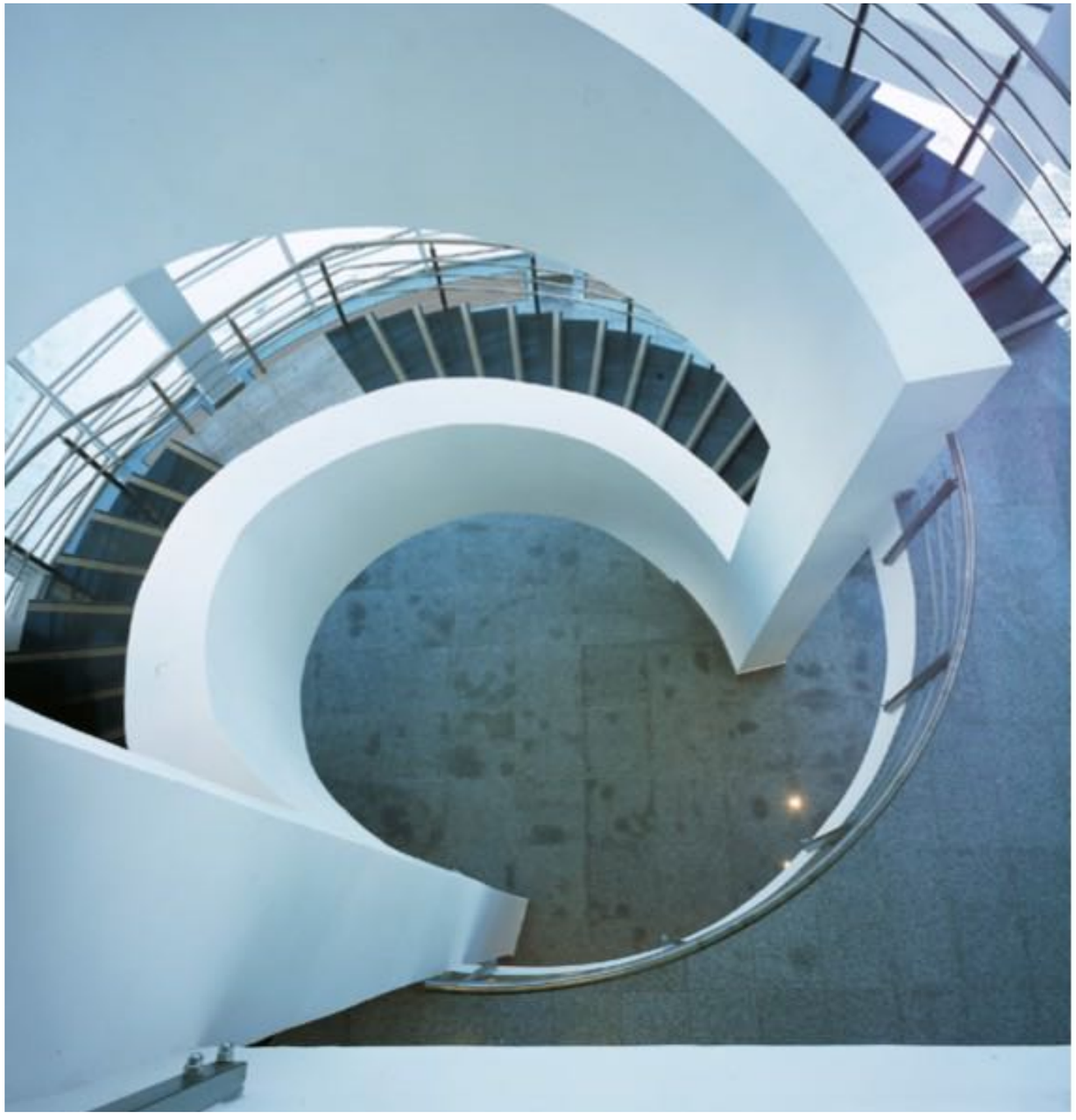


Court building | Moscow



Court building | Moscow





Park Huamin business center | Moscow

Park Huamin business center | Moscow

Park Huamin business center | Moscow

Hotel | Sudak

Sudak, 2023

Apartment complex | Sudak

Sudak, 2023

Hotel | Vladikavkaz

Vladikavkaz, 2022
Total area 4 577 sq m

Museum complex | Moscow

Moscow region, 2022
Total area 87 362 sq m

Hotel | Vladivostok

Vladivostok, 2021
Total area 10 248 sq m

Hotel | Ust-Labinsk

Ust-Labinsk, 2020
Total area 5 130 sq m

Radisson Blu Moscow Riverside Hotel & SPA | Moscow

Moscow, 2017

Modular construction

Module

In joint cooperation with the «MonArch» Group Parametrica produces modules for civil and public building construction.

Module is a prefabricated reinforced concrete box-shaped construction of wall panels united by a floor slab. Based on the transport dimensions, modules are divided into two main types:

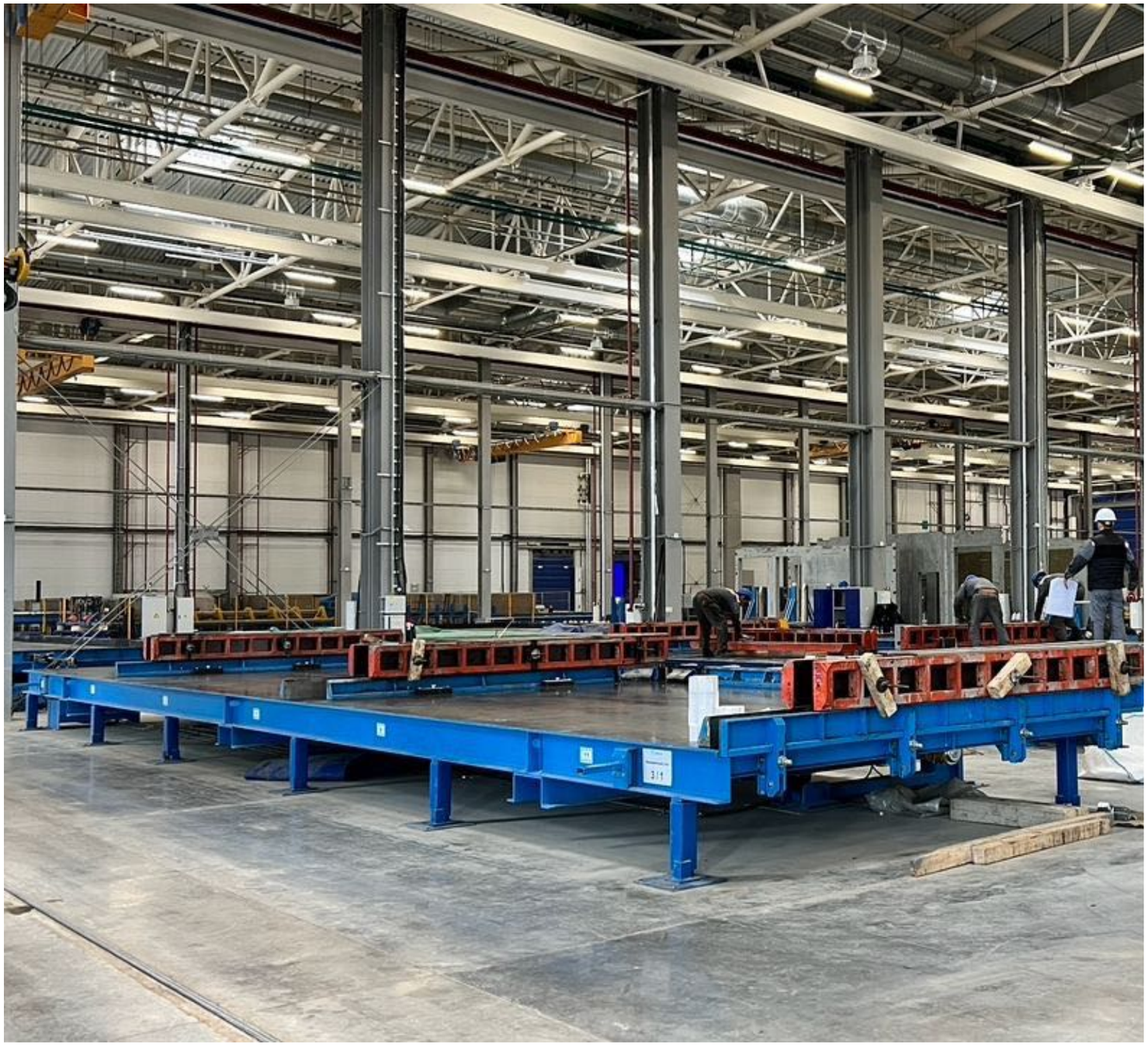
Wide:
до 7500 x 15500 x 4000 мм
(w x l x h);

Narrow:
до 3500 x 15500 x 4000 мм
(w x l x h)

Module production

The entire cycle of module production takes place at a single plant:

- Reinforced concrete frame structures;
- Assembly of structures;
- Engineering systems;
- General construction;
- Interior finish;
- Facade installation.



Modular building height

The maximum height of a modular building is limited by two factors: the module design and crane constraints.

At the moment, cranes allow construction of modular buildings up to 75m high.

With certain modifications it is possible to build modular constructions up to 100m high, taking into account changes in the cross-section of structures.

Module installation

The initial installation technology involved bonding the modules floor by floor via brickwork. This approach requires “even” and “odd” floors in accordance with the layout of structural elements.

Upon further construction process development we implemented a new approach – bonding the modules 4 floors at a time.

The new approach allows us to construct buildings up to 15 stories high without rearranging the modules.

Modular construction projects | «Yakovlevo», Moscow

Moscow, 2023
Status: Construction in progress

The «Yakovlevo» project is an experimental residential microdistrict in the Moscow region with houses of variable height built from modules.

Modular construction projects | «Yakovlevo», Moscow

Moscow, 2023
Status: Construction in progress

The project also involves construction of two modular high-rise residential buildings.

Modular construction projects | The French House, Moscow

Moscow, 2023
Status: Finished

The French House is a pilot modular home project presented at the VDNKh Expo centre.

Modular construction projects | The French House, Moscow

Moscow, 2023
Status: Finished

The house was completed in 33 days including module production, installation and transportation:

- Project design - 14 days
- Module production - 1 day
- Module assembly - 1 day
- Interior - 14 days
- Transportation - 5 hours
- House installation - 5 hours
- Final adjustments - 2 days
- Project duration - 33 days

Modular construction projects | The French House, Moscow

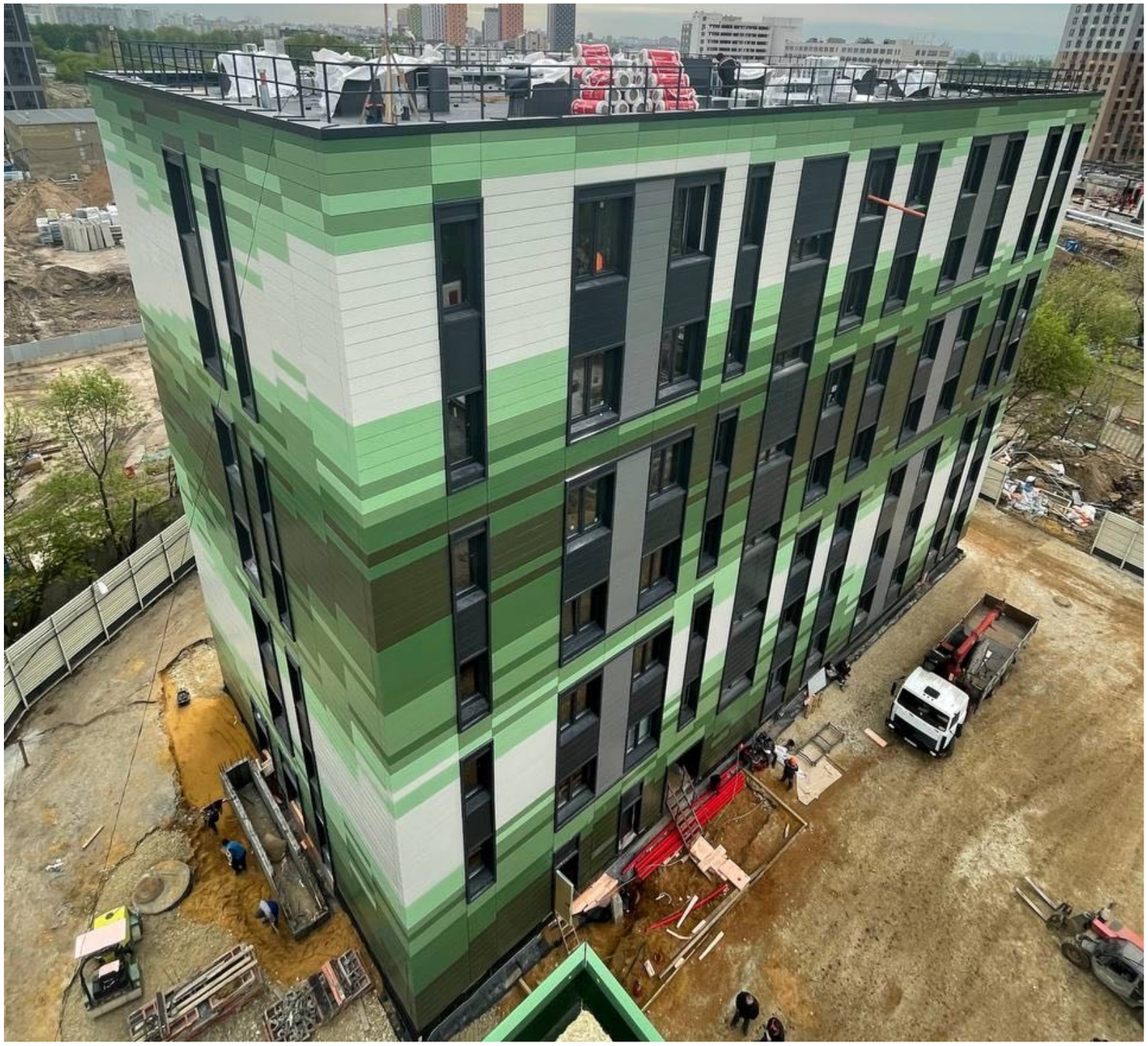
Moscow, 2023
Status: Finished

Total area 225 m2
Total area + terrace 270m2

Modular construction projects | Metro municipal building, Moscow

Moscow, 2023
Status: Finished

The 7 story municipal building was constructed using 6 modules per floor with total habitable area of 1513 m2.



Modular construction projects | Metro municipal building, Moscow

Moscow, 2023
Status: Finished

Module production at the factory.

Modular construction projects | Metro municipal building, Moscow

Moscow, 2023
Status: Finished

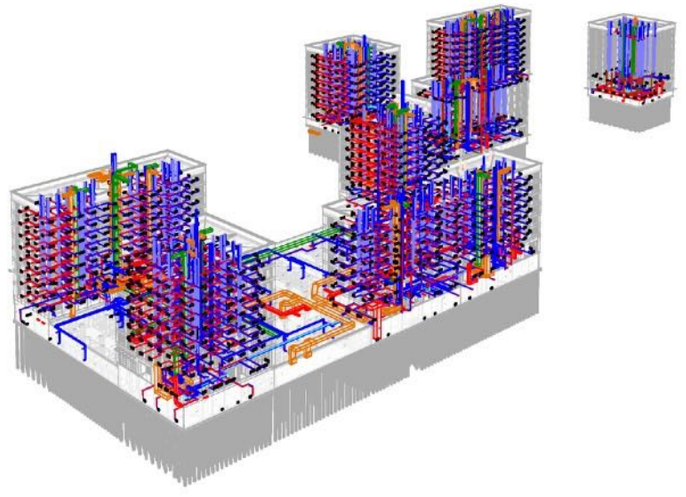
Total area: 3706 m2
Height: 7 stories
Modules: 42

Residential buildings

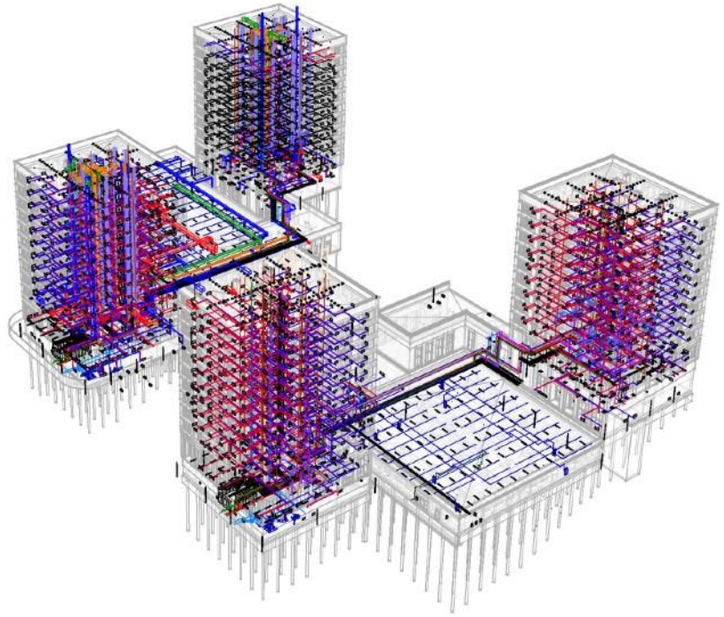
Business class. Nametkina 10 | Moscow

Business class. Residential complex | Moscow

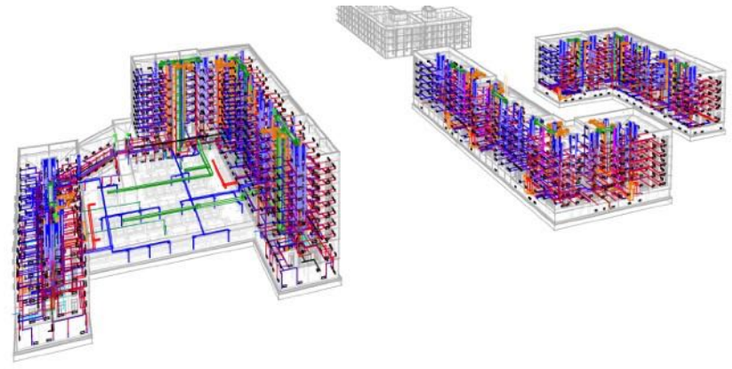
Comfort class. Minipolis | Achinsk



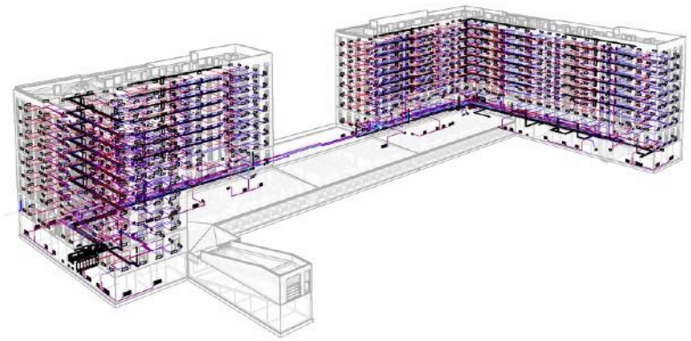
Comfort class. Minipolis | Divnogorsk



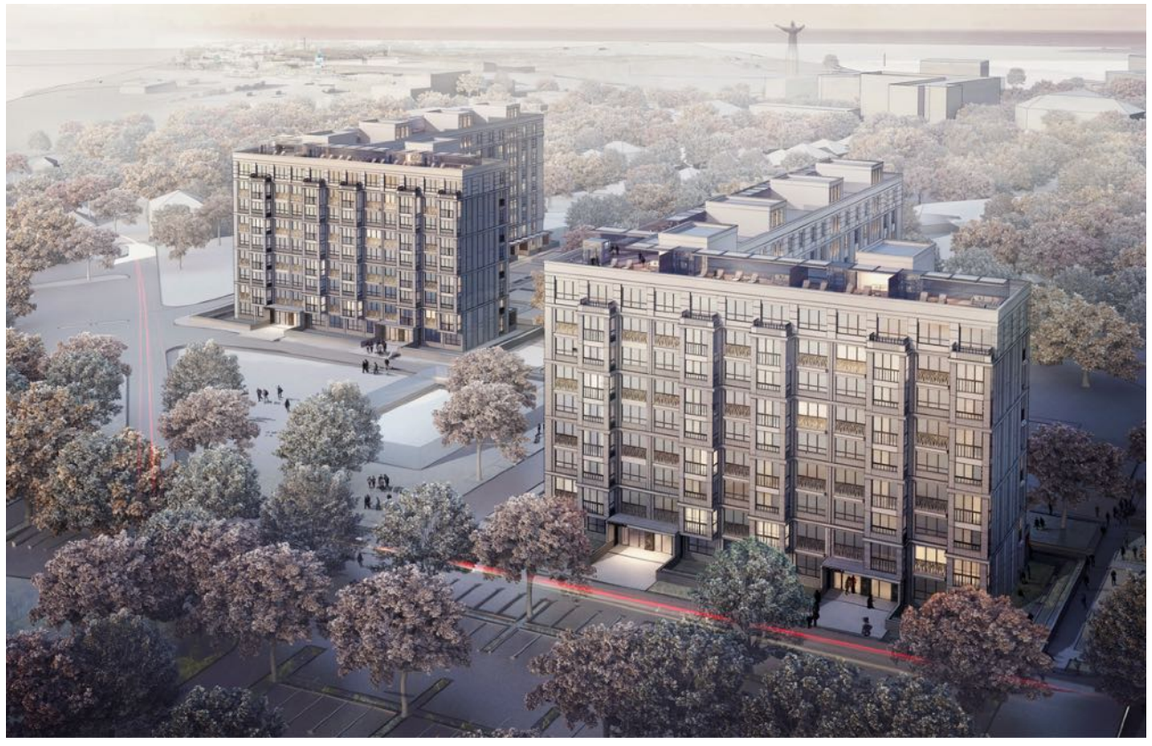
Comfort class. Residential complex | Sayanogorsk

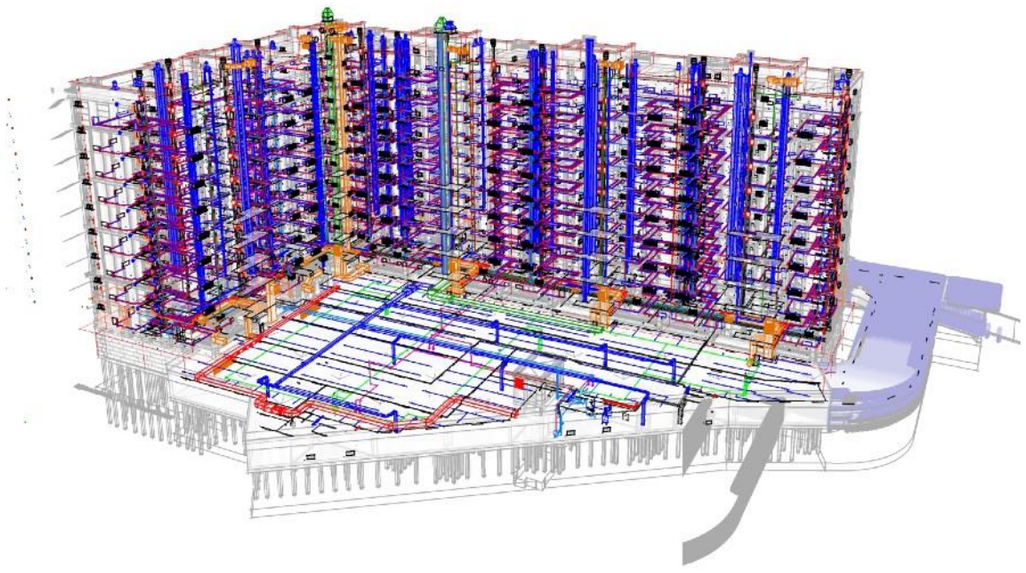


Comfort class. Residential complex | Shelekhov

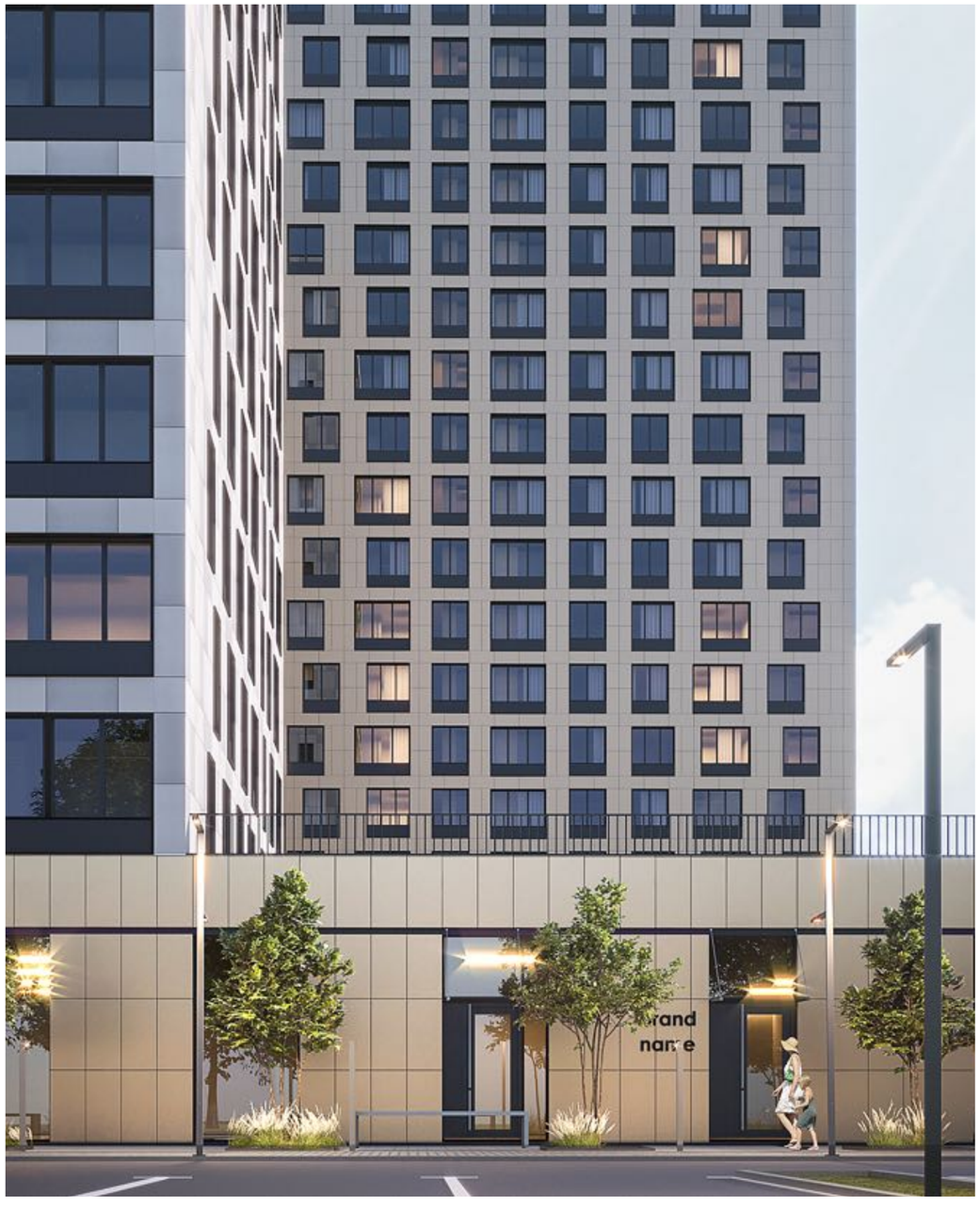


Business class. "Symphony" residential complex | Cheboksary



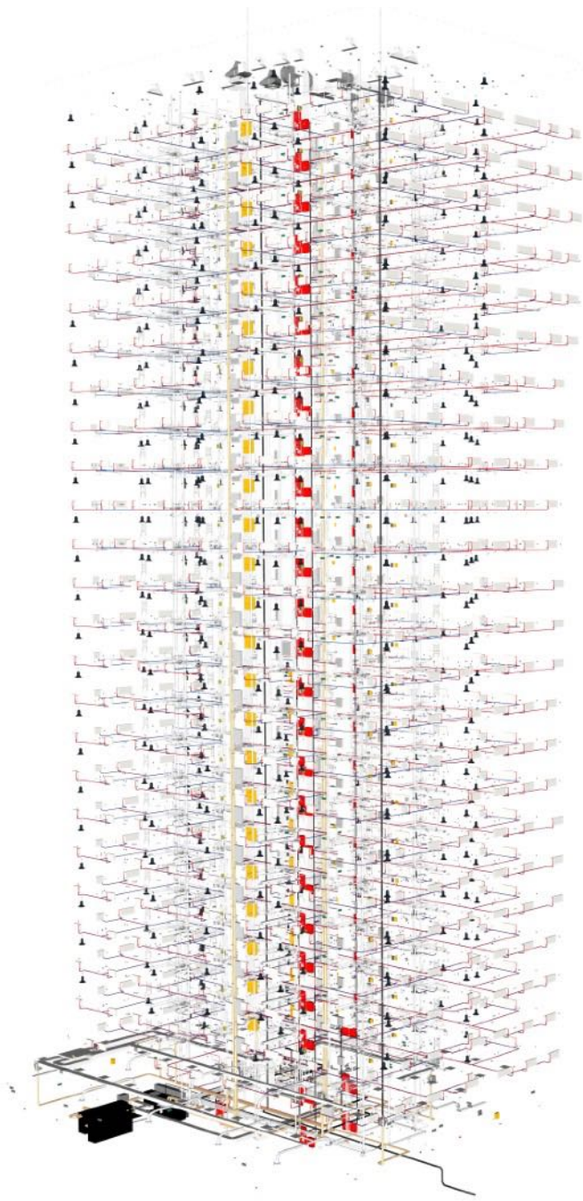


Comfort class. "Bravo" residential complex | Sterlitamak

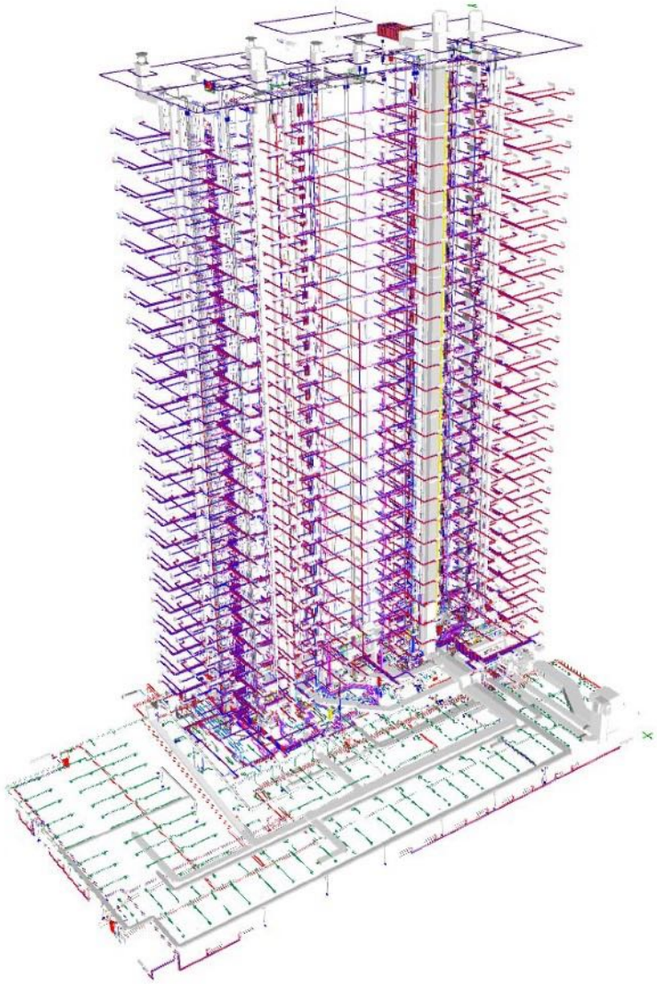


Comfort class. "El-Park" residential complex | Krasnoyarsk

Comfort class. "Olimp" residential complex | Cheboksary



Renovation program | Moscow



Design development and construction documents

1st phase

Masterplan

2 months min.

2nd phase

Schematic design
(architectural urban planning solution and appearance)

2 months min.

3rd phase

Design development

2 months min.

4th phase

Construction documents development

4 months min.

Our experience in DD and CD

Over the years we have developed more than 1,000,000 m2 of construction documentation in 47 cities.

Moscow

Residential complex Nametkina 10
Depository
School building
Sanatorium
100 modules
Building of the Ministry of Internal Affairs
Milashenkova 6
«French house»
Northern line, 9
Kindergarten
Modular School
Renovation project
Modular hospital
Modular dormitory
Modular sales office
MAI control center
Moscow Metro office building
Modular residential complex
Residential complex Rublyovo-Arkhangelsk
Yakovlevo

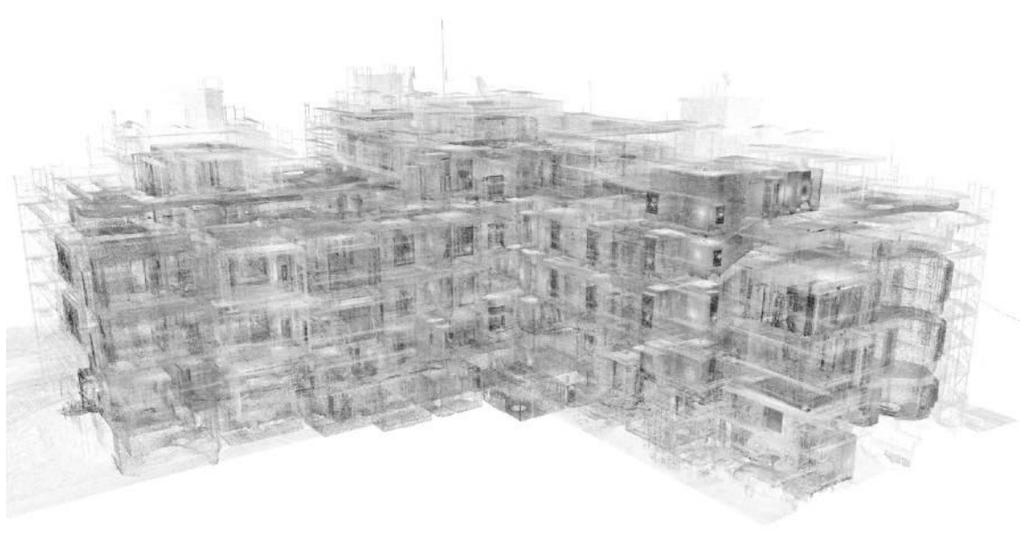
Other cities

Minipolis Achinsk
Residential complex Belgorod
Olimp 2G residential complex Cheboksary
Olimp 4 residential complex Cheboksary
Symphony residential complex Cheboksary
Minipolis Divnogorsk
Residential building Kirov
El-Park residential complex Krasnoyarsk
Children's Center Marushkino
Minipolis Sayanogorsk
Minipolis Shelekhov
Bravo residential complex Sterlitamak
Tallinn St. Petersburg
Hotel Vladikavkaz
Pervomaiskaya Vladikavkaz
Apartment building Vladivostok
Hotel Vladivostok
Vilyuisky Trakt Yakutsk
Bolshaya Polyanka Yuzhno-Sakhalinsk

Point Cloud

Point Cloud is a discrete set of data points that represents a 3D object. With point cloud technology we can create a 3D representation of any object or space using laser-placed "points" on visible surfaces instead of traditional manual data collection.

We laser scan the objects to obtain point cloud data about it’s size, position and configuration. Point clouds are then used to visualize the construction progress and detect any deviations from the project on early stages.



Team and Field supervision

Our team consists of more than 200 employees in various regions of Russia, CIS States and Middle East.

Team

Many of our specialists have vast experience in construction and development, which helps us better understand our clients' needs.

ПИК ЛСР

БРУСНИКА ЭТАЛОН

Field supervision

Parametrica conveys Field supervision to ensure complete compliance with the project documentation:

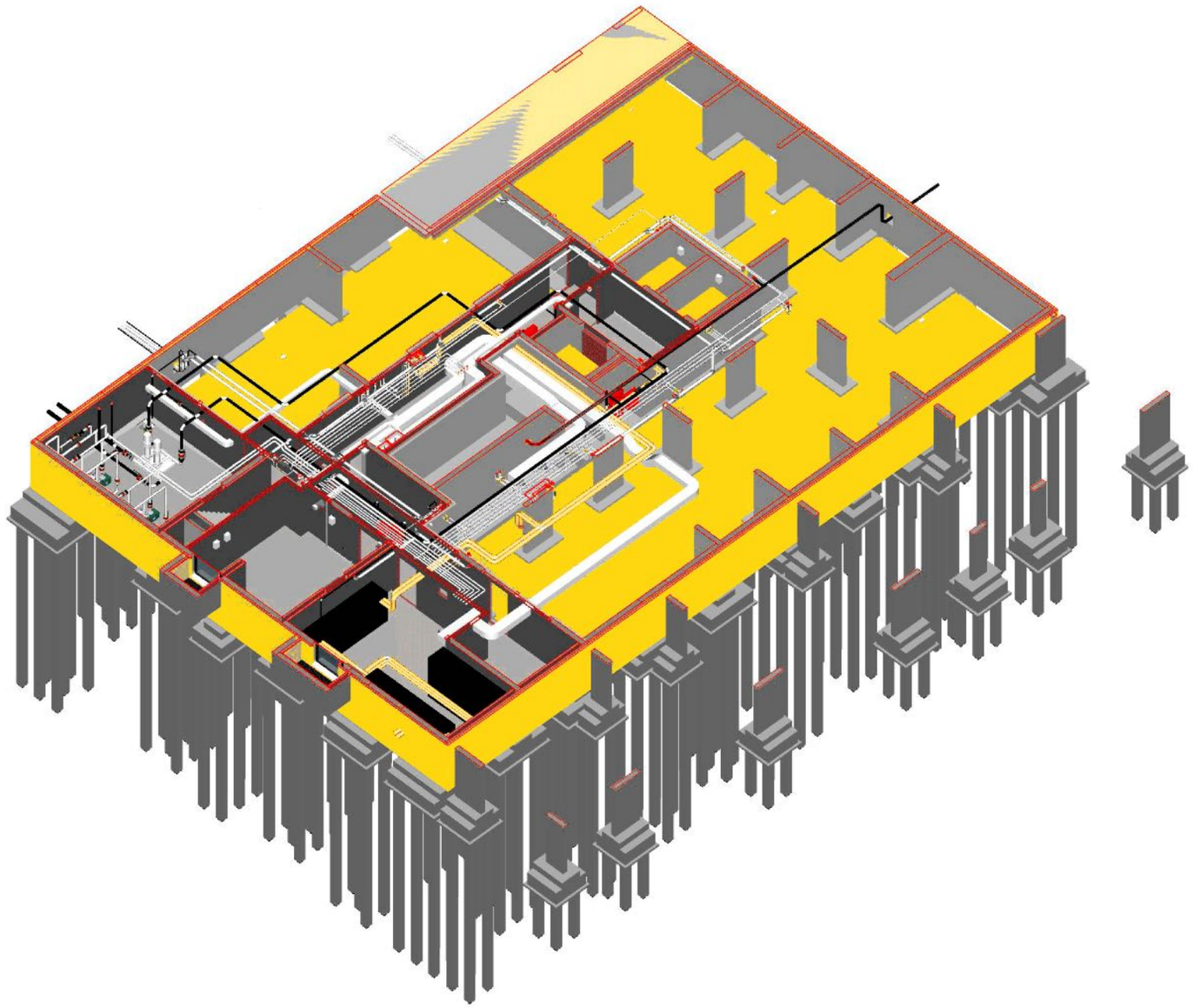
- construction documentation audit;

- meeting the Construction Documents, architectural concept and other technical requirements.

Project groups

We assign the team to a project based on the Client and the construction site location.

BIM



Advantages of BIM-standard

30% ↓ **Cost reduction** in construction and maintenance

×5 **5** times **faster** model revision

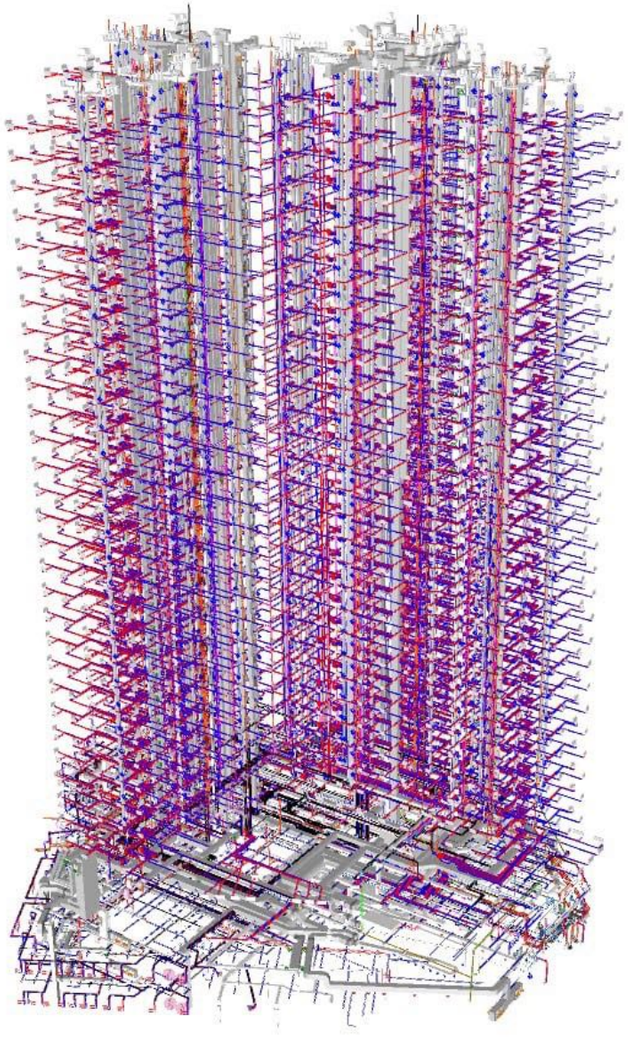
40% ↓ **Error reduction** in construction documents and planning

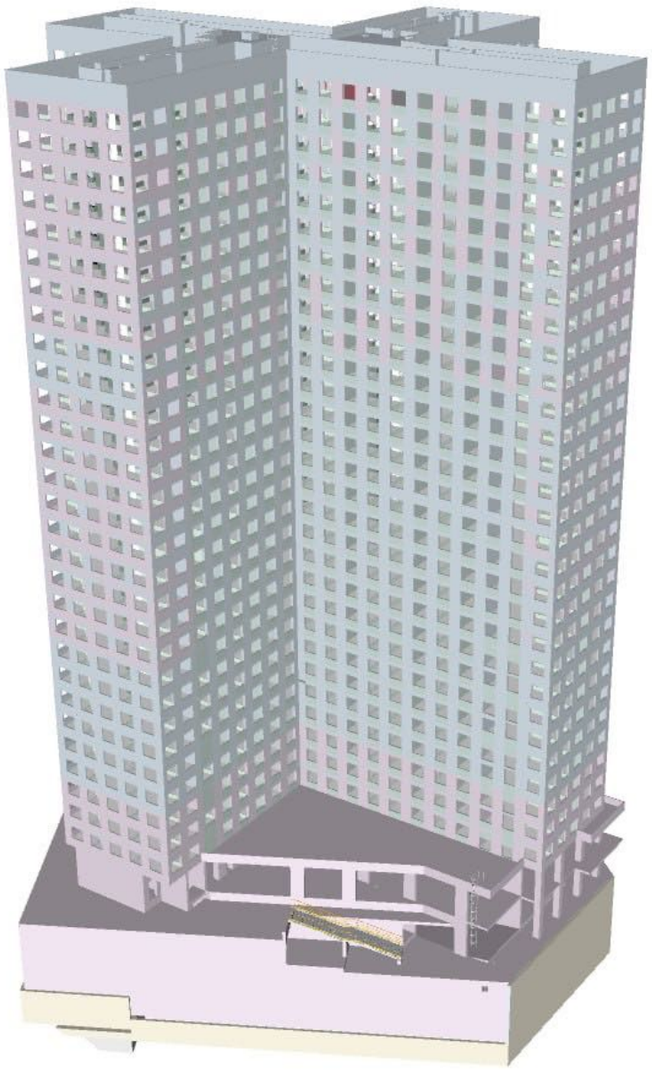
×4 Up to **4** times **less** errors in budget allocation and planning

50% ↓ **Reduction** in project execution times

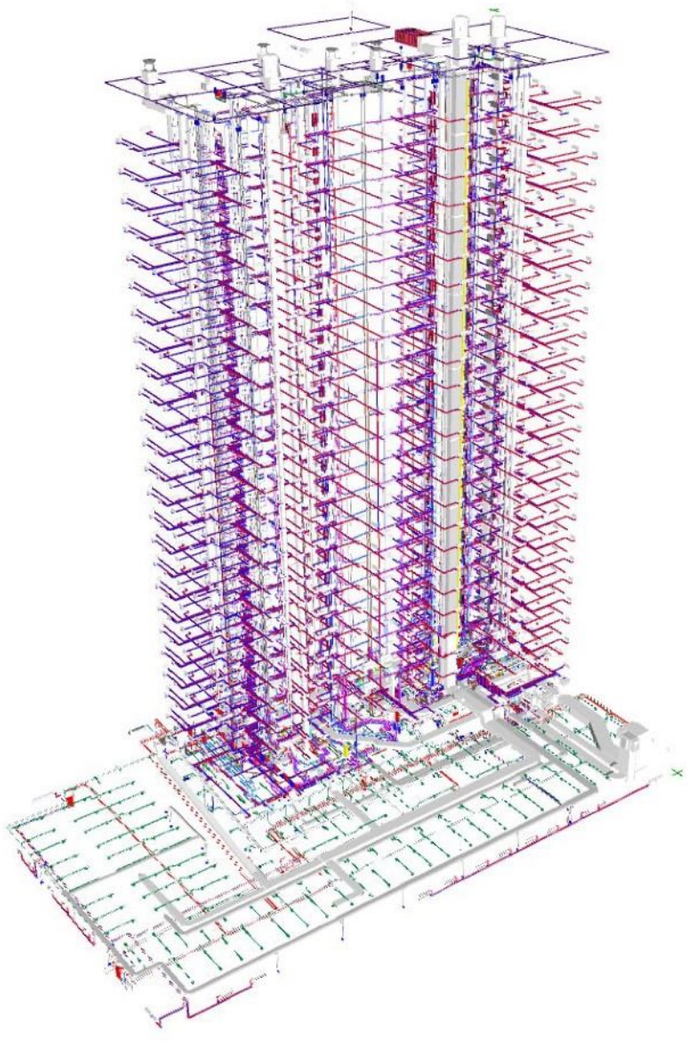
80% ↓ **Faster** project coordination

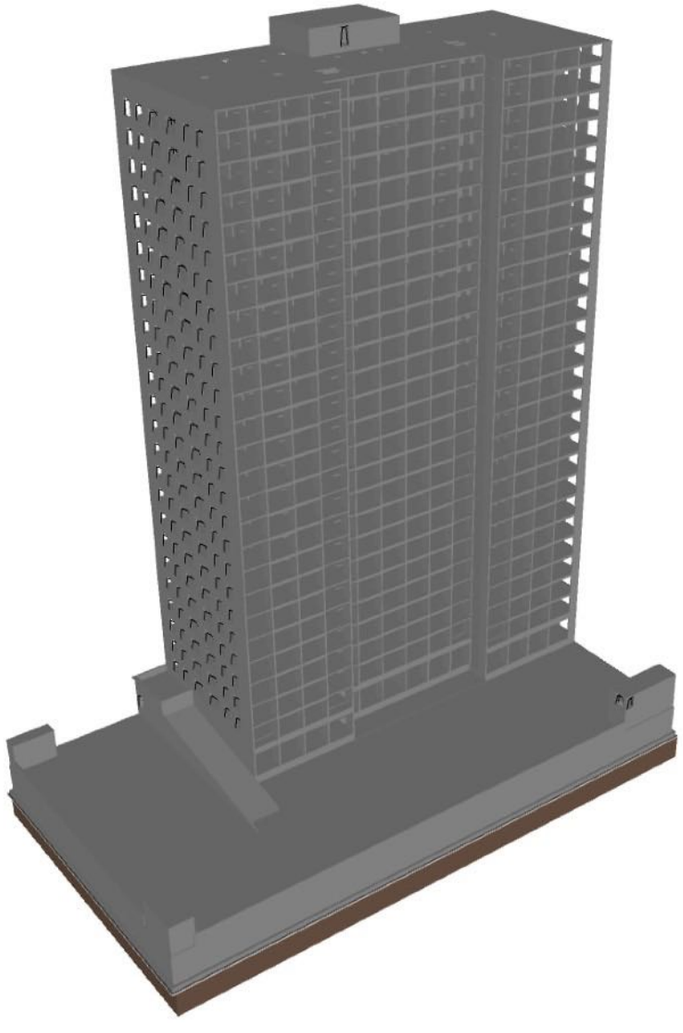
BIM Nametkina 10 | Moscow



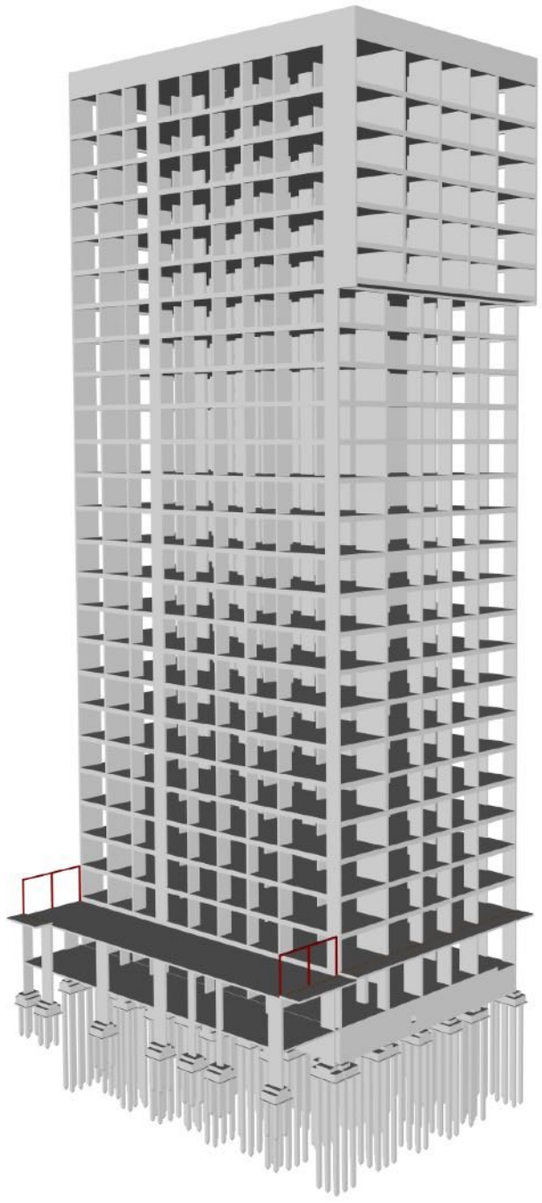


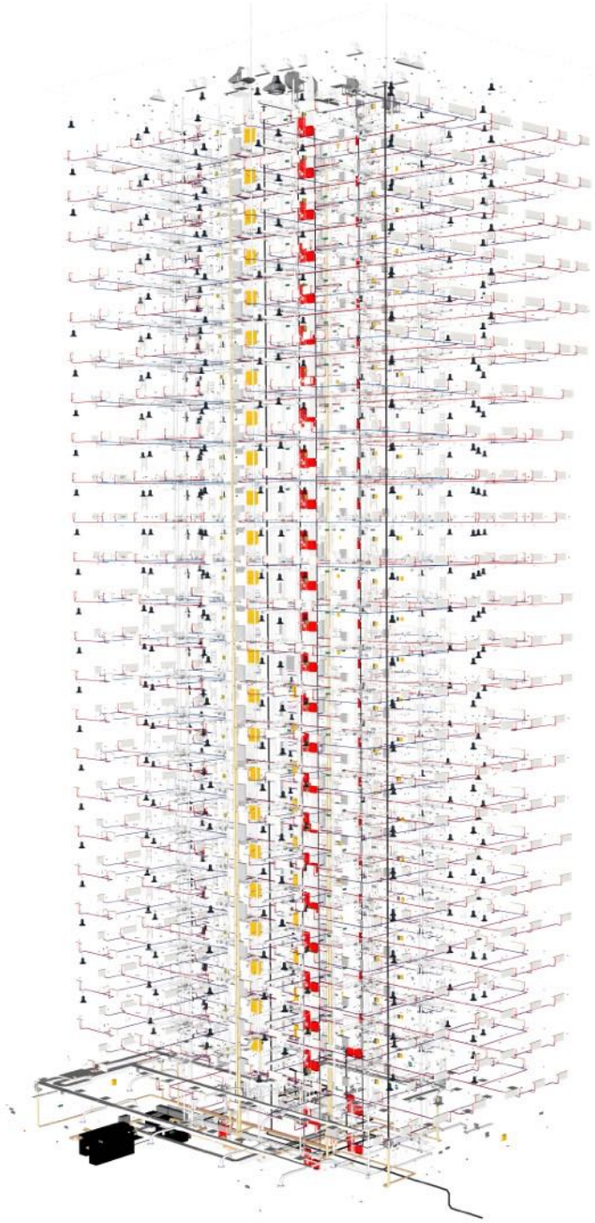
BIM Cheremushki | Moscow

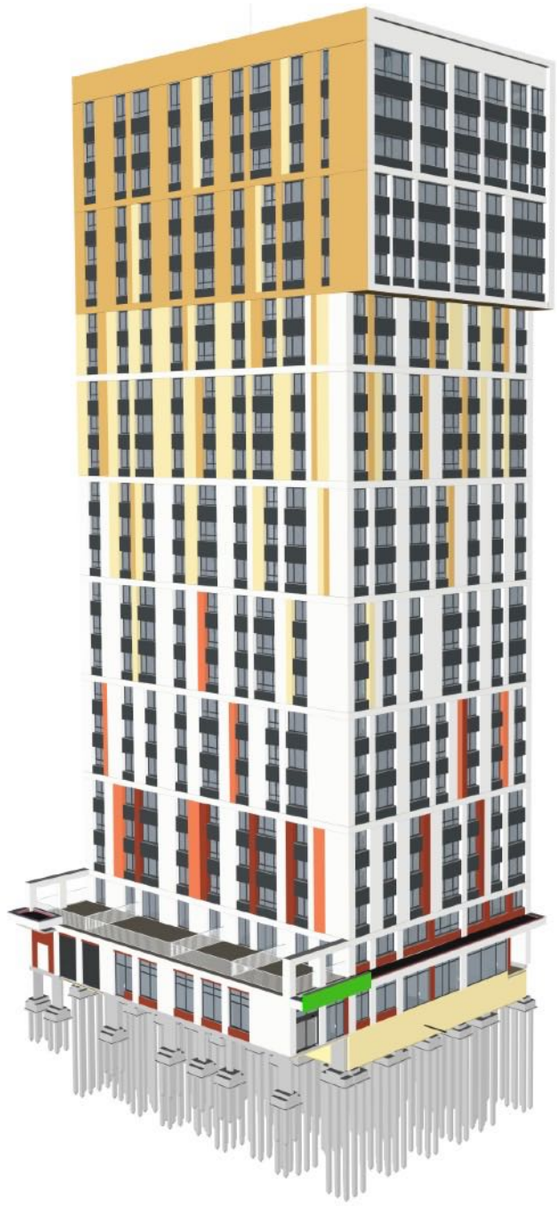




BIM Olimp 2G | Cheboksary







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