Competition for Development
of the Architectural and Artistic Concept of Moscow Metro Stations:
Sheremetyevskaya, Rzhevskaya, Stromynka

OBJECT OF THE COMPETITION

The concepts must meet the following criteria:

- artistic concepts of the Metro stations shall harmoniously match with environment and historic context of the districts;
- use of state-of-the art technologies, durable and eco-friendly materials;
- safe and comfortable movement for all population categories and groups;
- functional utilization of space in view of all technical characteristics of the Metro;
- convenient navigation.

COMPETITION OBJECTIVE

The main objective of this tender is to find an optimum design and architectural-artistic solution for interiors of passenger areas and entrance halls of Sheremetyevskaya, Rzhevskaya and Stromynka stations.

Principal design solution must include a proposal on materials, lighting and non-bearing structures of the stations.

COMPETITION FORMAT

Open, International, Two-Stage

COMPETITION STAGES

First stage — qualifying, where tenderers shall present their applications, portfolios and essays describing the key ideas of their future competition concepts for each station.
Second stage – according to essays for each station 15 finalists will develop competition concepts.

Participants: Russian and foreign (consortium members) architectural companies capable of engaging designers, engineers, planners, specialists in the spheres of economy and financial modeling.

COMPETITION SCHEDULE

Date	Event
November 10, 2016	Competition start, press conference
November 22, 2016	Design seminar for participants
till December 15, 2016	Call for bids
January 24, 2017	Jury session. Selection of finalists
January 25, 2017	Presentation of a detailed technical assignment for finalists
February 2, 2017	Orientation seminar for the Competition finalists with the participation of the Initiator and the Organizing Committee
till March 13, 2017	Competition proposals development by the finalists
till March 13, 2017	Consulting support of the finalists
March 13, 2017	Submission of entries by finalists
March 28, 2017	Technical evaluation of entries
April 4, 2017	Jury session, choice of the best competition proposals

Jury

1. **Marat Khusnullin, Deputy Mayor of Moscow for Urban Development and Construction in the Government of Moscow**
2. **Sergey Kuznetsov, Chief Architect of Moscow**
3. **Mars Gazizullin, Director General of Mosinzhproekt JSC**
4. **Maxim Liksutov, Deputy Mayor of Moscow in the Government of Moscow, Head of the Department of Transport and Road Transport Infrastructure Development of Moscow**
5. **Andrei Bochkaryov, the head of the Moscow Department of Construction**
6. **Anna Merkulova, Director General of Mosproekt-3 OJSC, managing company of Mospromproekt OJSC**
7. **Dmitry Pegov, Head of Moscow Metro**
8. Yury Avvakumov, architect, artist, curator
9. Olga Aleksakova, Founder of buromoscow Architectural company
10. Ruben Arakelyan, Co-founder and partner of WALL Architectural Bureau
11. Evgeny Ass, Dean of MARCH Architectural School
12. Timur Bashkayev, Head of Timur Bashkayev Architectural Bureau
13. Boris Bernaskoni, Founder of Bernaskoni Bureau
14. Alexander Brodsky, Founder of Alexander Brodsky Bureau
15. Eduardo Gutiérrez, Founder of ON-A Arquitectura Studio, architect of Drassanes metro station in Barcelona
16. Egor Korobeinikov, Founder of UrbanUrban.ru online magazine
17. Evgeny Leonov, Co-founder of U-R-A Architectural Bureau
18. Karim Rashid, designer, author of University of Naples metro station in Naples
19. Oleg Shapiro, partner of Wowhaus Architectural Bureau
20. Marina Khrustaleva, art critic, member of Coordination Board of Arkhnadzor Civil Society Movement

* The list of the competition Jury is subject to change

Organizer

Agency for Strategic Development CENTER, a team of professionals in the sphere of comprehensive development of territories. The mission of the Agency is to shape a new model of territorial development in Russia. Its main point is to reveal the potential of every place through creating new cultural, social and economic centers there.

The company portfolio includes concepts of development of city embankments, country clusters, urban parks, regeneration of industrial territories and commercial real estate properties, as well as organizational management of large-scale architectural and urban-planning tenders and territory branding competitions.

CENTER Agency is one of the Russia's three largest competition operators. In summer 2015, its team held a public competition for the concept design of development of embankments and coastal bands of Kaban Lakes in Kazan. From 2013 till 2015, it organized several landmark competition for park development: Nikola-Lenivets, Sokolniki, Mitino Landscape Park, competition for design concepts of the Crystal Plant public spaces, competition for a new visual identity of Sokolniki Park, etc.

CONTEXT
-VISION-

Moscow Metro is the mainstay of the Russian capital's transport network and the most popular kind of public transport in Moscow. More than 2.5 billion trips are made in the Moscow Metro annually, the Metro is one of the most intensely used undergrounds in the world.

In order to meet the Moscow's growing need for public transport, to reduce passenger load, as well as to ensure connectivity of Moscow remote areas, the Moscow Metro network develops at an unprecedented rate over the last years. It is planned to open 55 new station from 2016 till 2020, the length of the Metro lines will increase by 162 kilometers and 9 out of every 10 Muscovites will live within walking distance from Metro stations.

In September 2016, the Moscow Ring Railway (Moscow Central Circle) was opened for passengers. This joint project of the Russian Railways and Moscow Metro is an intracity commuter train line partially integrated with the Moscow Metro (there is an integrated fare system and Moscow Ring Railway stations are connected to the Metro ones). As of the end of the first month of the Moscow Central Circle operation, it was used by 6 million passengers. It is planned to increase the Moscow Central Circle passenger throughput up to 300 million passengers annually by 2025.

It is planned to complete the construction of the second ring line of the Moscow Metro, the Third Interchange Circuit, by 2020. 28 stations will be built within the framework of the project and the new Metro line will be more than 60 km long. It is presumed that after completion of its construction, the second ring line will unload the Metro system by 25% and reduce the duration of Metro trips by half.

#img metro map 2020.pdf {our stations must be highlighted}
* Station completion deadlines are subject to change

THE ESTABLISHED PRINCIPLES OF MOSCOW METRO STATIONS CONCEPTUAL DESIGN

Metro is traditionally viewed as a projection of above-ground urban environment; together they form an integrated image of the city. Interiors of the Moscow Metro stations bear the impress of common historical and cultural aspects of Russian capital's development in different periods.

Several factors traditionally influence the architectural look of the Moscow Metro stations:

- **Global historical and cultural context** traditionally bears the principal ideology of the epoch and comprises historical, cultural, economical and political aspects on a countrywide scale.
- **Local historical and cultural context** shapes a station identity to its location and includes historical and socio-cultural aspects on a regional level.

- **Urban context** includes specifics of city district type, city and district development plans, urban environment parameters, established onsite restrictions, demographic situation, traffic conditions and so on.

GLOBAL HISTORICAL AND CULTURAL CONTEXT AND ITS INFLUENCE ON THE APPEARANCE OF MOSCOW METRO STATIONS

Overloaded, deteriorated and failed into disrepair post-revolutionary Moscow public transportation system became a historical prerequisite for the start of the Moscow Metro construction. At that time trams, the main type of Moscow public transport, were constantly overcrowded, rapidly got broken, which led the city to frequent traffic standstills.

That is how satirical writers I. Ilf and E. Petrov depicted that situation: *"Tram cars are targets of frantic attacks. A warlike mood overcomes the people queuing for a tram. It is well-nigh a miracle that tram cars are not staved to splinters. The Moscow tram network cannot satisfy everybody who wishes to use it, but nevertheless it carries them. So overloaded that their windows burst, heavily roaring tram cars drop office workers near the huge buildings... of the institutions that govern the country's life."*

In 1931, it became clear that neither tram nor bus can solve the problem of the Moscow transport service. The June Plenum of the Central Committee of the All-Union Communist Party (Bolsheviks) adopted a final decision to build a metro in order to correct the situation.

CONSTRUCTION PERIODS (INFOGRAPHICS)

1935-1941, I. Stalin, Pre-WWII period — 22 stations built

Metro as a the temple of Communism.

1941-1945, I. Stalin, WWII period — 7 stations built

Stations as monuments to approaching victory.

1945-1953, I. Stalin, Post-WWII period — 10 stations built

Maximum solemnity and decorativeness. The main theme: victory in the Great Patriotic War.

1953-1964, N. Khrushchev (the Khrushchev Thaw) — 29 stations built

Elimination of architectural extravagances, simplification of designs of the VDNKh, Sportivnaya and other stations which were already under construction. In 1961 the first generic design stations appear, so called "Centipede like station" - shallow column three-span station, which tunnel walls are faced with ceramic tiles, columns are faced with marble, the ceiling remains ribbed because of structural units configuration.

1964-1982, L . Brezhnev (Stagnation) — 48 stations built
1982-1985, Yu . Andropov — K . Chernenko — 11 stations built
1985-1991, M. Gorbachev (collapse of the USSR) — 23 stations built

"The third way" is declared, combining the expressiveness of Stalin-era Metro and standardized solutions of the Khrushchev period.

1991-1999, B. Yeltsin — 12 stations built

Post-Soviet period characterized by a great architectural freedom and limited financing.
1999-2008, V . Putin — 16 stations built
2008-2012, D. Medvedev, the 2000s — 9 stations built
2012- ..., V . Putin — 16 stations built

2000-2010: Search for new forms of station design, experiments with materials and typology.
2010 — present time: The ideology of a comfortable city with well-developed public spaces is being developed

LOCAL CONTEXT
-SHEREMETYEVSKAYA STATION-

The station opening is scheduled for 2019.
The station has a single entrance hall at the crossing of Sushchevsky Val and the 2nd Maryina Roshcha Street connected by the escalator tunnel with a forehall from which stairs descend to both platforms. From the western end of the station, transfer to the Maryina Roshcha station of Lyublino-Dmitrovskaya Line will take place.

Type: deep pylon triple-vault station
Depth: 40 m
Number of platforms: 2
Type of platforms: side

Interchange station — MARYINA ROSHCHA
Architects: A. Kurenbayev, A. Shutov
Opening: June 19, 2010

Station design: deep pylon.

The platform part of the station is a triple-nave structure with a middle nave and two side naves with platforms. The side naves are provided with benches for passengers to rest; they run along platform walls.

The tunnel walls are faced by curved marble and granite stones. The pylons are faced with light and dark marble. Thus, pylons look shorter and less massive. Dark stripes blend into the pylon base, and the light ones — into its cornice.

Fiberglass waterproofing decorative canopies following the shape of the vaults are installed on the vaults of the station middle and side naves and the vaults of inclined escalator tunnels.

Dark brown granite rectangles and polished beige slab form a geometric pattern on the floor; it matches the rhythm of pylons and passages. The steps of exit stairs are faced with heat-treated granite.

The middle nave is lit by fluorescent lamps placed behind cornices.

The station entrance hall is connected with its platform part by a four-escalator tunnel with access corridors.

URBAN CONTEXT

The Maryina Roshcha District belongs to the North-Eastern Administrative Okrug of Moscow. This is the southernmost area of all those belonging to that Okrug. The area of Maryina Roshcha is 468 hectares, its population is 67 thousand people.

The district is mainly built with typical apartment buildings interspersed with industrial zones founded during the 1930s industrialization and running along railways and the Sushchevsky Val Street.

The cultural core of the district, comprising the Satiricon Theater, the Planeta KVN Moscow Youth Center, Konstantin Raikin Theatrical School, Raikin Plaza Shopping and Entertainment Mall, is located near the exit from the Maryina Roshcha metro station.

HISTORICAL RETROSPECTIVE OF THE DISTRICT

There are several versions Maryina Roshcha District name origin. One of them tells that this territory was named after boyarynya Maria, wife of Fedor Goltyai, the owner of these lands. According to another version, until the 18th century, Maryina Roshcha was a part of a forestland that was home to a gang of robbers led by female chief Maria.

Forests in the outskirts of Maryino changed their owners many times. During Empress Anna Ioannovna's reign, Chancellor Prince Cherkassky owned them. This village was also owned by Count Sheremetyev for some time. In 1799, he built the Ostankino Palace in early Classicism style.

When Kamer-Kollezhsky Val served as a Moscow customs border was built in 1742 near Maryino, almost all forests adjacent thereto were cut down but groves were left intact, and they became a popular place for folk festivals for a long time. It was written in the 1829 Moscow Almanach: "The density of the grove completely covered with greenery offers a pleasant promenade, there are several versts around with all charms of untarnished nature." There were fair show-booths, carousels and tea kiosks in the grove.

In 1861, the Sheremetyevs, the owners of Maryina Roshcha, let their land on lease for a long term to Pozemelnoye Obshestvo. It cut the grove down and leased the land plots to petty proprietors. At that time, Maryino was built by single- and two-story houses. After the Moscow — St. Petersburg railway was built, Maryina Roshcha was separated from Ostankino. Then the Windau railway was built, which split the territory of Maryina Roshcha in half. After a bridge was built across the railway tracks, separated parts of Maryina Roshcha were reconnected. This gave an impetus to the development of local industry. The area was improved for account of local industrialists. The village streets were paved, water supply and sewage networks were built.

During the World War I, most men from the Maryino village were called up to the army, and the 1917 Revolution and the Civil War brought about further decline of the village. Most of its population fought in the White Army at that time.

During the NEP period, the inhabitants of Maryino were engaged in flower production that brought a good profit to them. In subsequent decades, Maryina Roshcha developed as an industrial district of Moscow, large industrial enterprises were concentrated there. During the World War II, they were adapted for the production of military goods, armaments and ammunition.

For rather a long time during the postwar period, Maryina Roscha did not develop at all. Dilapidated wooden houses stood here up to the 1960s when standardised blocks of flats construction started in Maryina Roshcha. In 1980s, during the preparation for the 1980 Moscow Olympics, the district changed for the better, the streets were asphalted, remained dilapidated houses were pulled down and Olympiysky Prospect was laid. Since then, the area began to look ever more urban.

LOCAL CONTEXT
-RZHEVSKAYA STATION-

About the station

The station opening is scheduled for 2019.

This is the Third Interchange Circuit station that is located closest to the Kremlin; besides, it is the only one located in the Central Administrative Okrug of Moscow. The station has two entrance halls with exits to the Rzhevskaya railway platform and to the Rizhskaya Square, to the Riga Railway Terminal and to the existing pedestrian underpass under the square.

Type: shallow column three-span station
Number of platforms: 1
Type of platforms: middle

Interchange station — RIZHSKAYA

Architects: A. Reinfelds, V. Apsitis
Entrance hall architects: S. Kravets, G. Golubev, Yu. Kolesnikova
Opening: May 1, 1958

The design of the station is deep pylon triple-nave one.

It was built as per a standard design and received its name from the Riga Railway Terminal near which it is located.

The station was extensively decorated with ceramics made by Riga factories. During construction of the station, decoration work was carried out by Latvian workers. The pylons are faced with yellow and brown Latvian ceramics. There are sculpted bas-reliefs with Riga cityscapes in the niches of the pylons. Bas-reliefs on the walls of the hall were made after the designs of Latvian artist G. Vilks by scratching on green ceramics and slip-glazed. These pieces of architectural ceramics are unique to the Moscow Metro. The tunnel walls are faced with cream-colored and dark gray ceramic tiles. The floor is faced with gray granite. The cornices of pylons and ventilation grilles are decorated with Latvian national ornament.

There is a monument dedicated to the launch of the First Satellite near the station (sculptor S.. Kovner, architect V. Kartsev).

Rizhskaya metro station is included into the list of Moscow newly detected cultural heritage sites. The heritage site comprises the underground hall, the above-ground entrance hall and the escalator tunnels.

URBAN CONTEXT

The territory around the metro exits is cut in two by Prospect Mira and limited by the Leningrad and Riga railroad tracks. On the south, the area is cut from Moscow by Sushchevsky Val and Novorizhskaya Overpass of the Third Transport Ring.

There is Krestovsky Department Store, Rizhsky Farm Market and the former audio and video equipment market (Rizhsky Radio Market) near the metro exit. The Radio Market was closed down because it was planned to build the Rzhevskaya metro station in its place.

In the years to come, it is planned to reconstruct the Riga Railway Terminal area and to build a transport interchange node that will connect the railway spurs with the metro stations. The transport interchange node will include platforms, passenger terminals and other facilities. At the same time, it is planned to build the second extension of the Krestovsky Shopping and Administrative Complex with a parking area for 900 cars. The area of the complex will be approximately 40 thousand square meters.

HISTORICAL RETROSPECTIVE OF THE DISTRICT

Traditionally, this area of Moscow is associated with the Riga Railway Terminal and the square of the same name.

The Riga Railway Terminal (*Windau* before 1930, Baltic *until mid-1930s, Rzhev* until 1946)

In late 19th century, tsarist Russia developed rapidly. The needs of its foreign trade made it necessary to develop railway communication with the Baltic countries having access to ice-free Baltic ports, Riga and Windau. In March 1897, Emperor Nicolas II issued an edict on the start of construction of a railway that was named Moscow-Windau-Rybinsk. The Windau Railway Station (at present, Riga Railway Terminal) was built simultaneously with the railway as per design of St. Petersburg architect S. Brzozowski. The building facade is designed according to the traditions of Neo Russian style. Three palace-like buildings were connected by covered walkways built on the ground floor level. The railway station was opened on September 11, 1901. The first train departed from the station to Windau on the same day. Subsequently, passenger traffic from the Windau Railway Station was the heaviest, and the station itself was considered as the most passenger friendly and the best equipped for its time: a proprietary electric power plant was used to light its premises and platforms. At present, the Riga Railway Terminal is the least used one in Moscow. Only three long-distance trains and some commuter trains depart from and arrive to its platforms.

Rizhskaya Square

Rizhskaya Square came into existence in the mid-18th century near Krestovskaya city gate of Kamer-Kollezhsky Val. Until 1947, it was named Krestovskaya Zastava Square. In 1892, two round water towers were built therein during the reconstruction of Mytishchi waterworks. Water tanks were placed on their top floors, five floors below were occupied by residential and office premises, water metering stations. In 1920, the fourth floor of the right tower was used to house the Museum of Moscow Municipal Services. The water towers were its working exhibits. From their viewing platforms visitors could see the panorama of the northern districts of Moscow.

After Krestovsky Market was built in the 20th century, Rizhskaya Square became a place of vigorous trade. The present Rizhsky Farm Market was opened in the Riga Railway Terminal square in 1982. The market became widely known in late 1980s, in connection with the development of cooperative production and the emergence of elements of market economy in the USSR.

LOCAL CONTEXT
-STROMYNKA STATION-

About the station
The station opening is scheduled for 2019.

Type: shallow column three-span station
Number of platforms: 1
Type of platforms: middle

Northern entrance hall will have exits to the underground crossing under Sokolnichesky Val to main entrance of Sokolniki park and tram terminal station Sokolnicheskaya Zastava. Southern entrance hall will have an exit to Stromynka Street and will also be used for transfer to Sokolniki station.

Transfer station – SOKOLNIKI

It was opened as a part of first startup stage of the Moscow Metro and has exits to Rusakovskaya and Stromynka streets and to Sokolniki recreation park.

Type: shallow column three-span station.

The station has two rows of 23 columns.

Square columns on the station hall are lined with grey-blue Ural marble Ufaley and marbled glass. Walls along the tracks are lined with ceramic tile, light yellow on top and black in the bottom. The floor is finished with black and gray granite. Corridors and ticket hall are finished with Georgian Sadakhlo marble and Ural Prokhoro-Balandinsky marble.

Above-ground entrance hall made as an arch with double sided exit is located at an alley leading to Sokolniki recreation park. The interior of the entrance hall is finished with Koelga marble and white marble glass.

The design of this station was awarded Grand Prix of 1937 International Fair in Paris.

URBAN CONTEXT

The area of Sokolniki District is 1028 hectares, its population is about 61 thousand people, the district has mix of building types from historical and functional points of view and developed social infrastructure. Significant part of the district is occupied by Sokolniki park

and the rest of its territory is predominantly occupied by residential houses, hospitals and production enterprises located mostly in its South-Eastern part and along railway tracks confining the district from the West.

Currently, the district has only one railway station of the same name located in its central part that will be connected to the new Stromynka station of the Third Interchange Circuit of the Moscow Metro.

Exit from the above-ground hall of Sokolniki station is visually linked with the park by the Alley of Sokolniki Square that, jointly with Sokolniki Pavilionny Drive, is a part of Sokolniki park center line. Historical above-ground hall of the station is surrounded by typical multistoried residential buildings built in 1980s and modern dominating structures of the district – residential complex House in Sokolniki (2010) and Holiday Inn Sokolniki Hotel (2006).

Apart from Sokolniki park being renovated in the recent years, cultural life of the district is presented by famous Roman Viktyuk Theater and Zhar Ptitsa Puppet Theater.

HISTORICAL RETROSPECTIVE OF THE DISTRICT

Sokolniki is one of the oldest recreational areas in Russia. It would be wrong, however, to refer to Sokolniki as a place for recreation only. This area is closely related to the history of Moscow and Russia. During each historical period, the park had its individual image impregnated with symbols and senses of relevant epoch.

The name of the district originates from falconry. In 15-17th centuries, the area of Sokolniki was occupied by reserve forest, which was the favorite falconry place for the Tsars. There was a falconry yard with falcon coops, falcon wood and a village of falconers. Current territory of the park was the place where Russian Tsars Ivan the Terrible and Aleksey Mikhailovich Romanov hunted.

Eventually, falconry lost its significance. Under Peter the Great, the Sokolniki field was used for mock battles. At those times, Sokolniki became a place for traditional festivities of the noble and ordinary people of Moscow. The celebrations that attracted the largest number of people were held on May 1.

In the second half of 19th century, the woods already had the basic features of its typical layout: seven radial cleared strips were directed from the Circle and ended up with transversal cleared strip. A several systems of ponds were arranged based on water bodies.

Starting from 1860s, Sokolniki turned into one of the most populated places for country houses (dachas): at first, those were personal dachas that later, by the end of 19th century, turned into commercial rental residential complexes. Some of the dachas that survived until now are acknowledged as cultural heritage objects.

In 1880s, the territories of Sokolniki woods and adjacent Olenya woods were administratively included in the city of Moscow.

In 1931, the Presidium of Moscow City Council made a Resolution "On arrangement of recreational base at the territory of Sokolniki Woods."

Early in 20th century, along with development of industry and railway transport, suburban Sokolniki gradually turned into an independent urban district.

In 1920s, during evolvement of the Soviet Republic and along with cultivation of a new generation of citizens, the issue of arrangement of clubs where simple Soviet citizens could have rest after work, take part in amateur performances or listen to lectures became very acute. Such clubs were given a great significance, since they were the tools of propaganda of socialistic ideas.

In 1927-1929, the Club of Rusakov was built at Stromynka Street based on design of constructivist architect K. Melnikov. In an attempt to make the building multifunctional, the designer provided for possible transformation of inner rooms. There are three lecture halls that play a role of theater galleries after opening towards the main hall by lifting walls. Lifting walls provided for possibility of using each of five spatial elements of the club separately. Vertical stairways service all rooms. The composition of facade is defined by its inner structure: three upper lecture halls extend outside in the shape of 3D consoles. Currently, the Community Center named after Rusakov houses the Roman Viktyuk Theater.

CONCEPT DEVELOPMENT PRINCIPLES

Competition' bids must address the following parameters:

- Masterplan
- Operational requirements for the stations
- Spatial requirements
- Requirements for image of the stations
- Requirements for elements and materials
- Requirements for station structures
- Functional requirements
- Requirements for lighting
- Requirements for navigation
- Requirements for furniture
- Safety requirements
- Requirements for access of low-mobile groups

Masterplan

Surrounding urban context, directions of human traffic, development plans for adjacent areas, and visual environment must be considered during preparation of proposals and visualization of station halls. Station halls must be clearly distinguishable as metro entrances and organically tied-in to environment.

Operational requirements for the stations
It should be considered during design development that all station elements must be easily serviceable over the short night periods of traffic shutdown

Spatial requirements
Considering the typology of the stations and their functional zoning, competition participants must provide an integral and clear comfortable space for passengers in their design proposals. Movement directions depending on purpose must be made intuitively clear to passengers through use of certain materials, light and textures. The design shall also provide for clearly distinguishable and convenient meeting points for passengers that would not prevent passenger traffic.

Requirements for image of the stations
Station image must be designed according to modern experience in decoration of metro stations, both internationally and in Moscow. Decoration of the stations must be visually comfortable for passengers, correlate with the name and location, and correspond to modern tendencies for creation of comfortable urban environment and development of public spaces.

Requirements for elements and materials
Materials used for the stations must be preferably of Russian origin and correspond to Russian standards and regulations. All elements and materials must be durable, easily replaceable, safe in operation, vandal- and impact-proof and have hygienic certificates issued by State Sanitary Epidemiological Service. Use of noxious and flammable materials is not allowed.

Floor finishing with slippery materials is not allowed; polished granite should be used in the areas with large accumulations of people, heat-treated granite – in underground crossings. All finishing and elements of the stations must be stable to vibrations. Use of mirroring and intensively glossy surfaces in platform areas is not allowed.

Requirements for station structures
Competition participants are not allowed to change (move, remove or modify cross-sections) load bearing structures for a station. Special attention must be paid during development of finishing fixing structures and station elements to their reliable fixations and possibility of quick replacement and simple access for maintenance. To this point, use of prefabricated structures and lightweight materials is recommended.

Functional requirements
Apart from transit functions, each metro station also has a lot of functional areas: entrance halls, transit halls, ticket halls, meeting points, sales points, passenger screening points, checkpoints, platforms, recreation and waiting areas must be structured using design

elements considering all operational requirements. The participants may offer functional areas not typical for metro stations, provided that they would not impede main station functions and fit into surrounding context.

Requirements for lighting

Lighting at metro stations is classified as decorative and functional and is given special attention in the underground, since it does not only influence a station appearance, but is also one of the most important passenger safety elements. Sufficient floor lighting must be ensured in passenger and transit areas. Station lighting must be uniform, dissipated and must not blind passengers and train operators. All lighting fixtures at stations must be easily accessible for maintenance and replacement. Competitors shall also keep in mind that lighting intensity and color spectrum may have an emotional influence on passengers.

Requirements for navigation

An important component of metro stations functioning is simplicity and quickness of orientation for passengers. Competition participants shall provide places for installation of navigation signs and other visual landmarks for designation of train movement directions, crossings and exits. All navigation at the stations must be as clear and intuitive as possible and shall be established with both informational signs and materials, textures and lighting that may be used to control human traffic flows in order to avoid their collisions. Competitors should keep in mind that there are requirements for navigation at metro stations for physically challenged people, therefore, tactile floor tile and navigation plates with Braille letters must be provided in public areas according to existing law and regulations.

Competitors must use existing typical graphical design for navigation signs, indicators and other graphic navigation elements customized for the Moscow Metro. Non-typical design may be used for station names at platforms and outside stations.

Requirements for furniture

The design must provide for passenger recreation areas at stations not preventing traffic of people and cleaning equipment. Special supports must be provided for people with musculoskeletal disorders. Competition participants shall develop an individual furniture design – for recreation areas, supports, banisters and cabins for station duty officers.

Safety requirements

The station design must ensure that all interior elements do not deteriorate metro functioning, obstruct passages, reduce illumination of surfaces, represent injury hazard, or accumulate dust. A luminescent strip must be provided at a distance of 1200 mm from the platform edge along its whole length. Furniture and other elements may not be placed closer than 1.6 m from the platform edge.

Requirements for accessibility for people with disabilities

Special devices for transportation of people in wheelchairs and suitable handrails for people with musculoskeletal disorders must be provided at all stair flights in public areas of the

stations. Textured signs and contrast color strips must be provided in front of stairs, ramps and doors for blind and visually impaired passengers, according to existing law and regulations. Navigation at the stations must be complemented with sign plates printed in Braille.