CENTRE FOR PROMOTION OF SCIENCE, REPUBLIC OF SERBIA

Competition brief

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CENTRE FOR PROMOTION OF SCIENCE

COMPETITION BRIEF

VOLUME 1 | THE PROGRAMME OF THE COMPETITION

**The open international, anonymous, single stage competition
for the PRELIMINARY ARCHITECTURAL DESIGN of the new building of the
CENTRE FOR PROMOTION OF SCIENCE
in New Belgrade urban BLOCK 39, Republic of SERBIA
and
Urban design ideas for a Science and Art Campus
in BLOCK 39, New Belgrade**

1 PURPOSE OF THE COMPETITION

The purpose of the architectural competition is to choose, on the basis of a comparison of submitted designs, the best entry by a participant capable of creating the most suitable design in fulfilment of the promoter's requirements as laid down in these Terms, Programme and Relevant Documents.

The ambition of the competition is to select an architectural design of the Centre for Promotion of Science, and propose urban development solutions of the Block 39.

New Belgrade's block 39 should be seen as a Belgrade prime "innovation" part of the city, a scientific park (research institutes, universities, research based business), with special focus on designing the Centre for Promotion of Science. The Centre for Promotion of Science will be an institution of service and a national bank of knowledge in the field of science for general public. It will organise innovative and educative exhibitions, and bring science closer to general public.

The Block 39 consists of 11,66 ha out of which 20.915 m2 have been allocated for the construction of the Centre for Promotion of Science building.

The promoter expects to build approximately 10.000 m2 for exhibitions areas, science club, planetarium dome theatre, conference halls, restaurant/café, as well as administration and technical units.

2 BACKGROUND OF THE COMPETITION

Serbia's Strategy for scientific and technological development 2010 to 2015 is in line with the Europe 2020 strategy with the common aim of developing an economy based on knowledge and innovation.

Communication of science and technology, that is rich and engaging, stimulates the interest of young people and their creativity and potential, and makes them aware of the current issues in science by bringing them nearer to scientists and researchers.

[1]See: http://www.nauka.gov.rs/eng/index.php?option=com_content&task=view&id=361

The recently adopted Strategy of Science and technological development[1] as well as the Law on Scientific and Research Activities envisage the formation of the Centre for Promotion of Science in partnership with the society and scientific community as a mean of investing in future development and growth. The Centre is expected to give out of school science education and will be the first of its kind in the region of the Western Balkans.

Science Centres inspire curiosity and support learning about science from early ages. In the area of knowledge-based societies a modern science centre can play a central role in the dissemination of scientific culture and the strengthening of research, not only for young generations, but also for adults.

Science Centres offer rich resources for lifelong learning, providing meeting places for citizens and the research community, supporting schools, and contribute to the cultural and economic vitality of their communities.

The main goal of this Centre of Promotion of Science will be to facilitate scientific education, a continuous training as well as social and economic growth, both with direct action, and in partnership with other actors – primarily the Ministry of Science and Technological Development and the Ministry of Education.

The project promoter is the Ministry of Science and Technological Development of the Government of the Republic of Serbia.

2.1 Comments by the Minister for Science and Technological Development

According to the Minister of Science and Technological Development, Mr. Božidar Đelić, the Science Centre is an ambitious and high priority in Serbia in the next few years. It is to be an landmark of Belgrade - to be put on postcards, a place that lives day and night, that pulses and attracts.

"…It will be a part of lifelong education of the population of Serbia, and will help boost the recruitment of talent and prepare society to meet the challenges of opportunities of new technologies. Belgrade will be getting an attractive and interesting feature that has the goal to bring closer science and the general population of all ages. The Centre for Promotion of Science will at the same time be a regional attraction, since there is no similar institution in the countries of the region, and the Centre will fill the touristic and living offer of Belgrade and promote it as a modern and exiting European city".

Minister of Science and Technology - Božidar Djelić

3 THE COMPETITION AREA

The Republic of Serbia is a landlocked country located at the crossroads of Central and South-Eastern Europe, covering the southern lowlands of the Carpathian basin and central part of Balkans, with population of 7,334,935 citizens, without Kosovo and Metohija.

Belgrade (in Serbian: Београд, Beograd) is the capital and largest city of Serbia. The city lies at the confluence of the Sava and Danube rivers, where the Pannonia Plain meets the Balkans. With a population of 1,630,000 (official estimate 2007), Belgrade is the third largest city in South-eastern Europe, after Istanbul and Athens. Its name in Serbian means White city.

The competition area is the urban Block 39 in New Belgrade, right next to the country's main highway E 75, one of the ten European corridors linking Vienna to Istanbul, Budapest to Athens, Boulevard of Arsenije Čarnojević.

New Belgrade, which has approx. 300.000 inhabitants, is planned and partly built on reclaimed land between the historical independent cities of Zemun and Belgrade, right between the banks of Danube and Sava River.

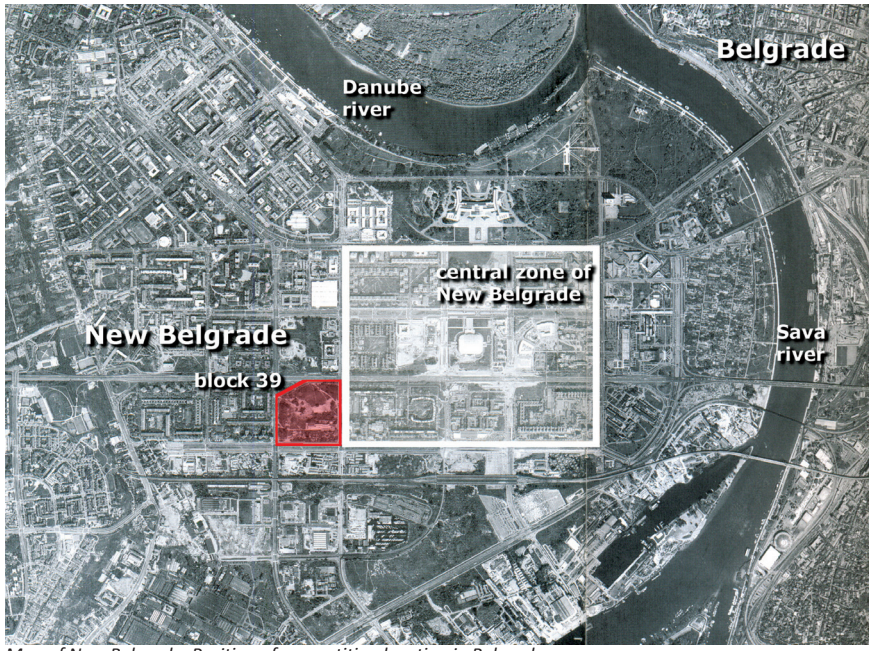
More information about city of Belgrade and the map with the satellite view one can find on site: www.beograd.rs and www.blokovi.com/index.php/mapa.html

3.1 Development of New Belgrade

Due to the general expansion of Belgrade start during the beggining of the 20th century, the first idea of how New Belgrade should be built was elaborated after World War I, in 1923.

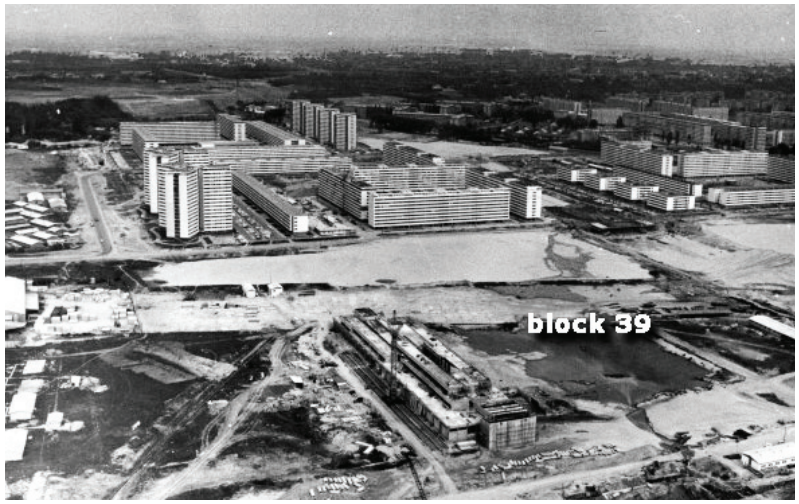
The real construction of New Belgrade began after World War II on April 11th 1948, when the first foundation rock was put in its muddy and sandy soil.

Almost all housing models of the new area were built following the Master plan 1950 and later the Regular plan from 1960. The corners of the blocks were marked by high buildings. The architects for the main buildings and blocks in New Belgrade were selected by competitions.



Map of New Belgrade, Position of competition location in Belgrade

Filling the terrain with sand (draining of the swamp), New Belgrade, 1950`s



Block 39 at the beginning of the construction of New Belgrade, 1970's

Site plan with a block numbers in New Belgrade

New Belgrade was built using the rules of modern urbanism, which was the product of the CIAM group (International Congresses of Modern Architecture - an organisation with the objective of spreading the principles of the Modern Movement focusing in all the main domains of architecture) and Athens charter.

At that time, futuristic urban planning was carried out, with a clear orthogonal street system, wide boulevards, fast traffic, open and half open blocks with macro and micro ambiences and appropriate following content, green zones and good environmental qualities.

It became later a "functional city" having four main functions: habitat, work, recreation and traffic. Some of the main characteristics of the area are: high ground floors, big green surfaces within the blocks, high buildings for residence, separation of pedestrian and motor traffic, good traffic connections.

Typical architecture features in New Belgrade are breakthroughs through the buildings, open ground floors, free angles of the parcels and open roof surfaces.

Inner yard in block 23, quality of New Belgrade`s blocks

Passage in the ground floor, characteristics of buildings in New Belgrade

3.2 NEIGHBOURHOOD

The Block 39 is bordered by the following streets: Milutina Milankovića, Bulevar Umetnosti, Omladinskih brigada and Boulevard Arsenije Čarnojević (which is the European highway E75, so called Pan-European Corridor X, connecting Budapest and Istanbul, as well as Athens).

The immediate surroundings of the Block 39 have a high degree of spatial and functional wholeness, and it was built in a typology of open blocks for business and business-residential function.

Blocks 38 and 28 on each side of the Block 39 are residential. Blocks 65, 41 and 41a across the Milutina Milankovića Street are dedicated to business and commercial activities, and across the highway the Blocks 29, 32, 33 are mostly residential.

Map of important architectural structures in the surrounding of the Block 39

Block 38 towers

Block 28, "Televizorka" building, author Ilija Arnautovic

3.3 The Block 39 - Competition area

The only building currently existing in Block 39 is the Faculty of Drama designed by Aleksandar Stjepanović and Božidar Janković, which was built in 1974. It is the only built part of the envisaged university of Art Campus.

3.3.1 Size

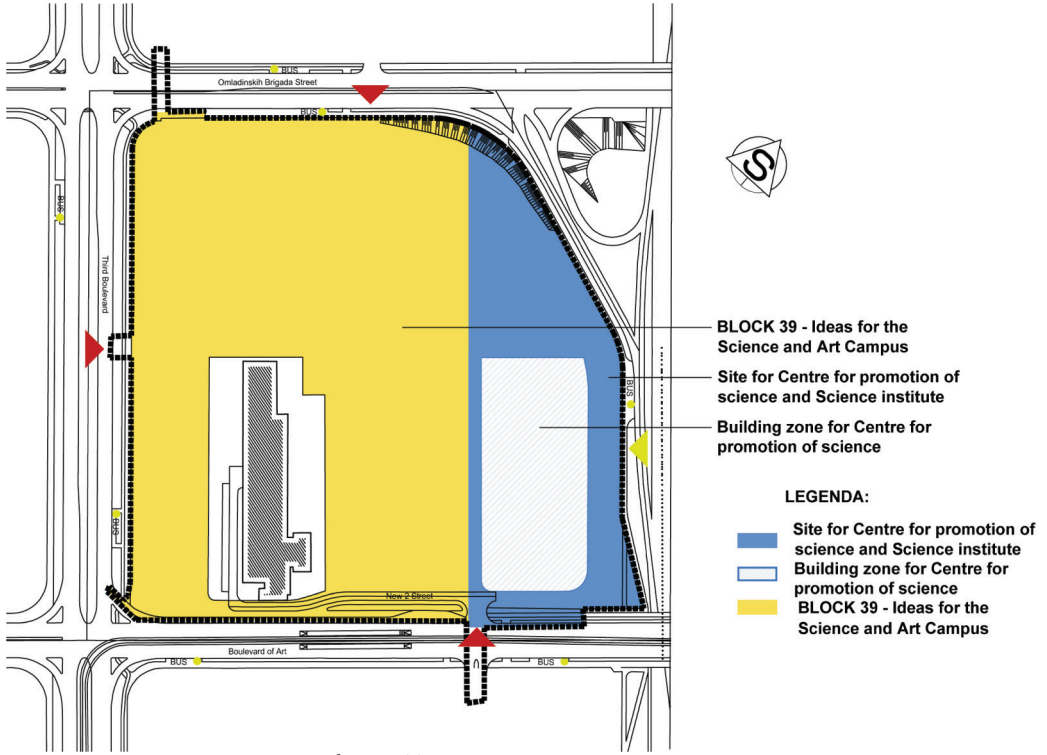
Block 39 has an area of 11,66 hectares. Maps and cross sections are provided in the downloadable documents.

The site selected for the "Centre for Promotion of Science" and science institute has an area of 20.914 m2. The dedicated area is presented in the figure below, but urban solutions which may envisage construction of the Centre on some other part of Block 39 is allowed.
The rest of the vacant areas of the block are dedicated to the future Science Park.

3.3.2 Traffic

The current accesses for cars to the Site are possible from the Boulevard of Arts, the Boulevard Milutina Milankovića and Omladinskih Brigada Street.
Apart for employee's cars and for bicycles, based on the wish of the promoter all parking areas have to be hidden in underground garages.

Pedestrian approach to the targeted location is possible from the direction of the highway.
Positions of the Vehicles-pedestrian approaches are given on the graphic attachment.



Map of competition area

Faculty of Drama Arts, Block 39

3.3.3 Zoning conditions

The plan basis for this project is the General Master Plan of Belgrade 2021. The plan provides dedication of Block 39 to specialized centres, schools for higher education, and educational centres. Specialised centres are defined by the Master Plan as areas that concentrate buildings of one single activity, but can also include several complementary types of buildings of macro-regional importance and importance to the country.

The only parameter which the General Master Plan defines for Specialised Centres is that green areas should comprise minimum 40% of the total area.

The volume, number of floors, percentage of parcels usage and occupancy level are not specified, but are subject to the development of ideas to be proposed for the whole Block 39.

3.3.4 Geotechnical conditions

The Project's location in Block 39 is spread on a part of the alluvial plane of the Sava River with a terrain level of 77.30 to 77.90 meters high.

The terrain is artificially levelled with embankment of foundry sand, thickness of 1.5 to 4.6 meters, which is ravaged in many places, with excavations partially filled with construction waste. Continuity and homogeneity are therefore not ensured.

The part near the surface of the terrain is made of compressible alluvial dusty and sandy clay and sludge, thickness from 3.7 to 7.2m.

Clays are soft, saturated with water and are thicker until the middle compressible clay. To the depth of 13.6 – 43.5m the terrain is built of alluvial-lake gravel-sand.

As the area is an old riverbed which was filled in, the groundwater level is very high between 1.6 and 4.5 m. The groundwater is at the surface level of the former terrain and is hydraulically connected to the river of Sava.

Aerial view of the competition area

3.3.5 Climate

Belgrade has a moderate continental climate, with four seasons and uniformly spread precipitation. The year-round average temperature is 11.7 °C (53.1 °F), while the hottest month is July, with an average temperature of 22.1 °C (71.8 °F).

There are, on average, 31 days a year when the temperature is above 30 °C, and 95 days when the temperature is above 25 °C. Belgrade receives about 700 millimeters (27.56 in) of precipitation a year.

The average annual number of sunny hours is 2,096. The sunniest months are July and August, with an average of about 10 sunny hours a day, while December and January are the gloomiest, with an average of 2–2.3 sunny hours a day. The highest officially recorded temperature in Belgrade was +43.1 °C, while on the other hand, the lowest temperature was −26.2 °C on January 10, 1893.

Block 39, View on the location

4 COMPETITION REQUIREMENTS

4.1 Ideas for the urban concept of the Block 39

The intention is that the Block 39 becomes a Scientific and Arts campus. It will be scientific space as well as an educational and business centre, a place where science, education and technology meet arts and culture.

4.1.1 Vision

It is envisaged that in the future, Block 39 should accommodate a number of scientific institutes, faculties and office buildings which will host companies related to scientific research.

The designer should envisage that in the near future, the location will accommodate specialised research institutes like the Centre for Materials, the Nano Science and Supercomputing Centres, approximately 2000 m2 each. It is important to notice that those institutes do not necessarily require separate buildings.

Generally, in the future, an additional 30 - 40.000 m2 will be required for research institutes, but the organisation of the parcels and the buildings should be made in order to leave flexibility for erecting additional buildings, not foreseen at this moment.

The University parts are foreseen to be for the Faculty for Electrical Engineering, the Faculty for Organisational science, the Faculty of Mathematics and the Faculty of Physics, with an expected capacity of 10 000 students.

Those universities (which do not necessitate separate buildings) will require around 60.000 m2 net space (listed below). It will possibly grow up to 100.000 m2 in the future.

Additionally, the urban planning should envisage a possibility of creating a Secondary school centre for about 1000 pupils, to accommodate the Gymnasium of Mathematics. This specialised secondary school is a unique institution in the Serbian education system, which provides world-class quality education in area of natural sciences (predominantly mathematics and physics). Around 30% of teachers in this school are University professors from faculties of Natural sciences and the Gymnasium of Mathematics curricula are tightly connected with curricula at those faculties. The competitor should envisage additional area dedicated for the University of Arts on the southern part of the Block, in the vicinity of the existing Faculty of Drama.

In the area of Sciences, the buildings that are currently predicted to be accommodated in the area are:

- Faculty for Electrical Engineering
- Faculty of Organisational Science
- Faculty of Mathematics
- Faculty of Physics
- Supercomputing Centre
- Materials and Nano Technology centres
- Science Institute

Science Institute should foresee a high-rise building with a minimum height of 50 m, allocated next to the site for the Centre for the Promotion of Science.

The aim is to develop a synergy between the facilities of the Centre for promotion of Science and the University campus; it will also be a land mark of the Block 39. A physical connection between the buildings should be taken into consideration.

4.2 The Architectural design of "Centre for Promotion of Science"

The architects should consider the design of the building, in light of the tight time schedule available. A time schedule is attached to the Volume 2 – Competition regulations.

4.2.1 Vision

The Centre for Promotion of Science will be the center for furthering the understanding of science and technology by means of interactive activities, experiments, lectures and workshops.

Science centre exhibits have to be interactive and promote self-determined learning about science and technology. These activities invite to play, to experiment and to think ahead, irrespective of any previous knowledge.

The aim is to support a future-oriented approach towards science and technology and to overcome prejudices against difficult topics, spark curiosity in scientific contexts and the delight in innovation. It will inspire dialogue on these matters and encourage young people in their choice of career.

It can be summarised as follows:
- Make science accessible to the general public.
- Encourage the excitement of discovery, primarily amongst the young population and their parents.
- Become an integral and dynamic part of the learning environment.
- Broaden public understanding of science through experiential learning.

It is expected that the Centre for Promotion of Science will become:
- a learning oriented institution where general public can enjoy and individuals can experience hundreds of scientific demonstrations and experiments.
- a centre for research, development and advancement of activities for engaging children, parents, and teachers and promoting educational excellence and innovation.
- a place well-known among professional educators for the informal science education programmes for all age groups.
- unavoidable destination for school excursions in Serbia.
- a place known as one of the region's "must-see" destinations.
- a place interesting for those who have visited similar institu tions abroad because of its architecture and content.
- a meeting place for various sectors of society such as media politicians and civil society to meet with the research community, learn more about scientific issues and discuss their impact on society.

4.2.2 Architecture

Science itself is very live, intriguing, enigmatic, and above all interesting and fun. The architecture of the Centre for Promotion of Science should support and assert the above mentioned vision, and first of all it should be a reflection of its content and a landmark, with unique architectural qualities and smart technological installations and sustainable principles.

The building of the Science Promotion Centre the of will be surrounded with the Science Garden, an outdoor area equipped with exhibits which shall stimulate people to go inside to play and explore the fields of science.

Inside the Science Club with all the laboratories, exhibits and lecture rooms will take visitors further in the scientific world, and make it the "home" of all the local scientists and fans of science.

Everybody who comes to the Centre for Promotion of Science leave inspired and enriched.

The Science Garden is seen as an outdoor activity and exhibition area next to the Centre for Promotion of Science in order to attract people who pass by and give them a perspective on what science exhibits really are. A close relation to the surrounding park and green areas is expected from the whole building. In other words, easy accesses from relevant areas to the outside and buildings transparency are to be considered. The building has to be planned in a way that makes it possible to build the project in different phases, and also consider possible extensions in future.

The structural construction system of the building shall allow as much flexibility as possible for future changes of the building. The sizes and shapes of the rooms shall support the functions of the rooms. The exhibition areas should also allow flexibility to accommodate the ever changing content and programming of the Centre. - as few columns as possible.

It is important that all staff functions, like maintenance and administration, can meet without passing through public areas.

The position and relation between vertical and horizontal communications (hallways, aisles, staircases, and elevators) should offer easy movement and orientation within the building, allow for exhibition and equipment transport, and good connectivity between the spaces based on their programming functions.

Integration of constraints related to accessibility to all should be considered and in particular for disabled people access (ramps, toilets). It would be preferable to have all public areas in a single level.

4.2.3 Sustainability

The competition promoter expects entrants to integrate sustainability as a natural element in the project and that sustainability will be an important part of the integrated design. Sustainability should be an integral aspect both of the building complex and the surrounding areas.
The competitors should take into consideration the following requirements:

- Energy conscious design; increased R-value at building envelope (walls and roof). Minimise adverse environmental impact on areas surrounding the building. Use of appropriate technology and materials.
- Consider criteria for sustainability including building for low energy use, with natural daylight, passive solar gain, solar shading, natural ventilation, saving water, awareness of use of materials with low embodied energy, or from sustainable resources, with potential for recycling, and reducing site waste.
- Consider a good level of ventilation, ideally by natural means, adequate heating for thermal comfort, good sound insulation and acoustics.
- Ease of maintenance, safety and security. Safe storage of hazardous substances needs to be provided.
- Use attractive durable good quality materials with practical robust construction details that result in ease of maintenance and lower costs. Specifications of wall and floor finishes for performance and maintenance must be included, especially where there are Health and Safety issues. Needed sound proofing is to be provided.

4.2.4 A day at the Centre for Promotion of Science

This is a typical working day in May at the science centre. We have nine school groups scheduled for today. All of them are coming from out of Belgrade. During the previous months, we had, in average, only two groups per day and most of them were from Belgrade.

They worked a lot in the laboratories and the science club. Although organized visits are planned and managed, in some periods of the year, the demand can be much larger then in some other periods. Except for the school groups, we can expect 200-300 adults with children today. Most of them will come in the early afternoon.

Our explainers will be mostly exhibition guides today. Some of them will perform demonstrations in the main hall at four occasions.

In the restaurant, they will serve simple meals and refreshments mostly (Medieval hotdog is an absolute hit these days!), but tomorrow we will have an international conference with 230 participants, and they are also going to use the Planetarium for a special performance. Then the restaurant will work at full capacity. In the evening, we will have a scientific seminar (one of five regular monthly seminars) for 40-45 people. Most of them are members of our science centre's club, but there will also be a few guests from abroad.

Members, of course, don't need admission tickets because they have annual cards.

5 SPACES AND FUNCTIONS

5.1 Vision

The Centre for Promotion of Science is to be seen as a complex with four main functions: The Exhibition areas, Science Club, the planetarium and the conference centre.

These areas are separate unique functions, accessed but also combined through the main reception area, where the restaurant and the other service/supportive functions are integrated or directly connected.

The building has a clear separate and logic flow for the public and for the staff. The service- and maintenance staff can access all functions without passing through or using the public areas.

5.2 LOBBY

The Lobby shall be the centre "nerve" of the Centre, it is where the building is accessed from the outside, and it is from where admission to all the functions of the Centre happens. A secondary level of services is placed in direct connection with the Lobby, as the shop and the café/restaurant, in order to serve all the areas of the complex.

The flow capacity of the building is a key issue and should be addressed in order to handle large groups of people and direct them to the different parts of the Centre.

The lobby should have an airy and lucid design in the public mingling area dimensioned for the various visitor groups. Café, exhibition space, information and ticket counter, the booking office for events and guided tours are located in the Lobby area.

After purchasing tickets at the centrally placed Info Desk, there should be easy and logic accesses to all the areas of the building, like exhibitions, Conference hall and Planetarium.

Seats and other rest areas shall be provided in the lobby; along with display panels and screens where information on the Centre, the programmes and other specific information for visitors, can be found. This information can conceivably be interactive and computer-based.

Lobby, Cite des Sciences, Paris

Certain Parts of the lobby shall have a ceiling height of min. 10 meters for large exhibits. Some areas of the lobby shall have daylight, but there is also a need for exhibition spaces to have daylight control.

5.2.1 Info Desk

The Info Desk shall be a staffed desk for information/ lost and found / ticket sales. This is the first line of services where visitors and others can refer. The desk must be easily visible and identifiable (languages, colours, lights) from the main entrance.

The desk should be designed and dimensioned to accommodate telephone, computers, registers and information boards/flat screens set up for security control from the information desk.

5.2.2 Locker rooms

Locker rooms should be easy accessible to and from the lobby, in the flow-lines to and from the core areas of the building.

The rooms shall include coat racks and units that can hold a small backpack/large bag/small suitcase.

Locker rooms, Experimentarium, Denmark

5.2.3 Staff office with first aid

Adjacent to the Info Desk.

5.2.4 Connections: elevators and staircases

Possible elevators and staircases for visitors should be easily visible from the lobby.

5.2.5 Shopping: souvenir and book store.

The Centre will have a shop with articles such as books and souvenirs related to science and technology.
The store shall be visible and accessible without going into the exhibition area, i.e. without having to purchase an entry ticket. The shop must be designed to be flexible and allow easy reorganisation of displayed items. In connection to the shop a small storage room is needed.

5.2.6 Café

The Café is integrated in the Lobby, behind the ticket check-point, with a capacity for approximately 50 persons.

The café will serve snacks, drinks and coffee/tea. The café facility should include a service bar equipped for simple food preparation, serving, washing up, and pantry, including water and drainage installation.

Example of Café

5.2.7 Booking Office

Standard office space for two employees, the booking office is where the visitors can get information on guided tours of the centre and where actual booking can be done.

5.3 EXHIBITION AREA

Centre for Promotion of Science will basically have two different exhibition areas (permanent and temporary exhibitions) with exhibits, displays, video and hands-on demonstrations that promote self-directed learning.

All the exhibition areas shall be very flexible with few load bearing columns, no permanent walls, but with a system of modular mobile walls for separation. All installations shall be accessible from the ceiling or floor.

5.3.1 Permanent exhibition area

The total programmed exhibition area shall be able to be divided into four to five thematic areas by a mobile modular wall-system. The themes can be: Universe, Planet Earth, Life on Earth, Human Organism and other topics from the active research areas of Physics, Biology, Chemistry, etc.

All areas shall be easily accessible to the public, safeguard natural visitor flow, and allow for both quick review and in-depth study of exhibitions by individual visitors or larger groups.

The flexible system must allow for exhibits to be presented on the walls, hanging from the ceiling, by video projections, as free standing exhibits or exhibits on shelves and stands.

The 4 - 5 areas should be able to be closed off for e.g. installing new exhibitions, without hindering the flow of visitors with respect to the other exhibition areas.
The exhibitions will be changed approximately every two years and will frequently require rearrangements due to the continuous development of the exhibition.

Exhibition area, Experimentarium, Denmark

Exhibition area, Experimentarium, Denmark

5.3.2 Temporary exhibition area

The temporary exhibitions are thematic by nature, depending on the “hot” topics in scientific world such as Nano-world, Climate change etc. These exhibitions can be travelling or loaned from other centres and will be changed approximately every six months.

The temporary area should be possibly separated from the rest of the exhibition area, but can be visually connected and has a separate entrance, for possible separate ticket purchase.

The temporary exhibition area shall be able to be divided by a mobile modular wall-system, for exhibits to be presented on the walls, hanging from the ceiling, by video projections, as free standing exhibits or exhibits on shelves and stands.

5.3.3 Break Areas

Visitor break areas must be spread throughout the exhibition space, depending on the architectural solutions and visitor flow. These areas will allow for breaks/rest in the exhibition areas. These areas could have daylight and outdoor view.

There should be adequate seating, and could be placed in close proximity to the visitor’s restrooms.
The break areas can have a computer with interactive presentations.

5.3.4 Additional requirements

- Total daylight control, if any windows
- Light grid for various light/exhibition lighting/projectors
- Electrical outlets in the flooring
- Transport paths must be adapted for devices such as forklifts, pallet trucks or manual carts. It is important to have "clean" transport lines, without sharp corners/turns. It shall be possible to bring objects of large formats into the centre, such as an object that is 3 meters wide and 4.5 meters high.

5.4 SCIENCE CLUB

The Science club will provide spaces for lectures, demonstrations, discussions and hands-on work with students and other visitors, mainly for Extracurricular and Co-curricular activities. In addition, this will be the area where demonstrators and explainers will be trained. The area is separate from the exhibition area and in close proximity to the maintenance and mechanical workshops.

5.4.1 Laboratories

Four laboratories (20 students per laboratory) that include wet and dry laboratories: Biology, Chemistry, Physics and Electronics, with the necessary equipment. It is expected to have one teacher per 20 students.

Wet laboratories include laboratories for chemistry and biology and require exhaust hoods and emergency shower head.

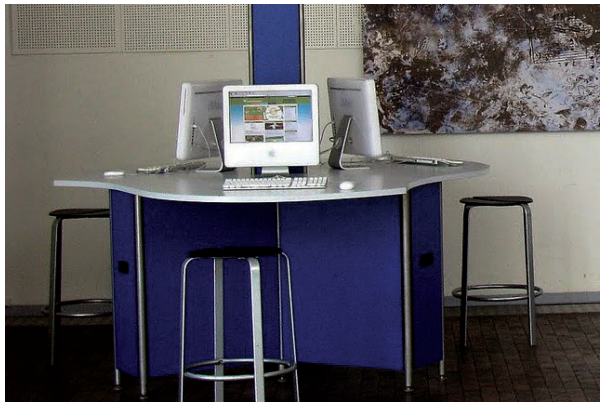
Dry laboratories are for experiments regarding physics and electronics. There should be daylight control because of optics experiments.

Additional requirements are
- inlets for standard laboratory gases used in both wet and dry laboratories,
- water and drainage.

5.4.2 Teacher's preparation rooms for lab technicians:

Two rooms for teachers to prepare lectures and meetings in a central position of the Science Club.

Example of laboratory



Example of break area with internet access

Laboratory equipment

Example of science club

5.4.3 Storage of equipment:

In connection to the laboratories storerooms are needed for storage of lab-equipment and other teaching material. From the store rooms exhaust is required.

5.4.4 Flexible classroom space

The classroom consists of a large flexible space with furniture that can be easily rearranged and shall be located close to the laboratories.

It will be used for lectures, demonstrations, round tables, competitions and workshops and could accommodate up to 60 persons.

5.4.5 Science playground area

It shall be a flexible area for exhibits, experiments and workshops with hand's on activities for preschool children. In connection with the classroom, events like birthday parties can be held. The Playground area and the classroom shall be connected with a big sliding door. It shall be accessible from the Lobby.

5.4.6 Visitors restrooms

It will depend on the layout and proximity to the classrooms and labs.

5.5 CONFERENCE AREA

5.5.1 Conference hall

Multifunctional hall with a capacity of 250 seats, Programming activities will aim to improve science and technology literacy of political and economic elites and public at large.

It shall be possible to open up to the lobby during special arrangements and to use it as a separate meeting and conference hall, stage for performance, gatherings, regular and 3D projections, etc. Hall can be rented for commercial use not related to the Centre.

The hall should have high ceilings and steps with good acoustic conditions and no daylight. The hall will include a control/ projection room in the back of the hall and five rooms for simultaneous translation.

Special technical requirements:
- Light grid for various light/exhibition lighting /projectors
- Adjustable auditorium lighting and stage lighting
- Retractable projection screen
- Electrical outlets in the stage floor
- Traction cable for control of light, sound and other equipment from the place of control
- Customized, necessary electrical equipment, amplifier systems, large amounts of power
- Antenna cabling
- Necessary fixtures for cinema
- Equipment for simultaneous translation

5.5.2 Room for speakers and storage

In connection with the conference and congress halls there should be a backstage room for speakers and performers as well as a storage room for technical equipment. This space should have an entrance for deliveries and a separate entrance for a hidden entry into the hall stage.

Auditorium, Thessaloniki Science Center and Technology Museum, photo by NOESIS

5.5.3 Restrooms

Restrooms for visitors are in close proximity to the conference hall entrance or it can be shared with the main visitor's restroom connected to the lobby, depending on the architectural solutions.

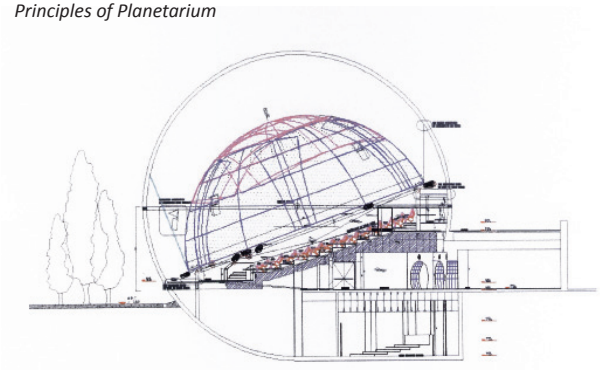
5.5.4 Additional requirements

Space for technical units and equipment

5.6 PLANETARIUM

Dome theatre with a capacity of 100 seats and a diameter of at least 12 meters.

Principles of Planetarium



Planetarium, Thessaloniki Science Center and Technology Museum, photo by NOESIS

The Planetarium Dome Theatre will serve multipurpose functions in the centre, through its variety of shows (skies & stars, educational/scientific films adapted for this format), through its shape and capacity for other types of potential activities (conferences, lectures, promotions, sponsored events …).

It will be functional all year round with multiple shows every day.

The seating arrangement, due to its multifunctional use, is to be arranged as an amphitheatre with seats distributed on rows as straight as possible, not curved.

Entrance shall be possible from the main lobby and will require separate ticket purchase.

The Planetarium will be equipped according to modern digital planetarium standards, combining both 2D and 3D projection capabilities.

The lighting of the dome should also be taken into consideration (controls, LED, fading …). The Planetarium shall have good acoustic conditions and no daylight.

5.7 RESTAURANT AND CANTEEN

This should be a main area for the Centre offering food and drink.

The restaurant should be accessible directly from the Lobby after the ticket checkpoint and in close connection with the conference hall and if possible also with the exhibition areas.

It should have separated space for group visits bringing lunch boxes.

Necessary storage, refrigeration, and waste room must be easily accessible from the kitchen and in the close proximity to the delivery areas.

5.7.1 Sitting area (100 seats)

Open space with daylight and views to the outdoor areas and Science Park. During seasons outside serving should be possible.

5.7.2 Delivery kitchen with counters and register

Including:
- Dishwasher
- Pantry accessible from kitchen
- Fridge/freezer/dry storage/waste
- Staff restroom, showers and changing rooms

5.7.3 Canteen Managers office

Standard office with one working place.

5.7.4 Additional requirements

- All deliveries in an area separated from the visitors flows.
- Specific guests' restrooms accessible only through the restaurant.
- The distribution of goods and waste shall be handled outside public and exhibition areas.
- Storage room for safe storage of cleaning chemicals and cleaning equipment.
- Storage room for extra chairs and tables for the canteen sitting area.

5.8 MANAGEMENT AND ADMINISTRATION

The management and administration office facilities are separated from the visitor areas. They will have separate entrance and will be well connected to other staff parts of the Centre.

The office area shall have daylight.

5.8.1 Director's office

Standard Office for the Director and a Secretary

5.8.2 Manager, Event Project Manager, Business Administration office space

Open office space with modules.

5.8.3 Volunteer's area

Open office space where the volunteers can meet and prepare activities

5.8.4 Coffee station/kitchenette

Located close to the meeting room.

5.8.5 Copy room with storage

Space for machines and some supplies (paper). Copy room for entire centre is included here.

5.8.6 Meeting room

Standard meeting room with standard furniture for 20 persons and equipped with suitable audio-visual solutions including electronic screen projector.

Example of office space

5.8.7 Reception area

Located centrally in relation to the administration offices, the reception area should include a reception desk and waiting area for visitors.

5.9 MAINTENANCE AREA

5.9.1 Repair and maintenance workshops

Repair and maintenance of the exhibits is of great importance of the Centre. The maintenance workshops have to be in immediate connection to the exhibition area, with direct access for deliveries.

The workshops will be the areas where exhibits are repaired and maintained and new ones created. In addition the centre will create, construct and patent new exhibits that will be for the centre or sold to other science centres. There shall be workshops for carpentry, electrical, welding, and painting repairs and maintenance of the exhibits.

Rooms to be provided for:
- Storage for equipment and supplies
- Shelves
- Desks
- Rest areas for the employees
- Paint store

5.9.2 Office space

Standard office for the Staff manager plus 3 desks for small multimedia studio, which will work on original exhibits of the Centre

5.9.3 Cleaning Room

Centrally located cleaning room with cleaning supplies storage.

It must have water and drainage access and space adapted to accommodate necessary cleaning equipment and chemical storage.

5.9.4 Security control room

There shall be a central control room with monitoring station for all technical/electrical security fittings. The room can be accessed only by the personnel with personal PIN codes. There shall be safe for weapons, and changing room with lockers.

Examples of worckshop space

5.10 SHARED STAFF AREAS

5.10.1 Locker rooms

The restrooms for cleaning-, technical-, security- and repair / maintenance staff shall have changing rooms with lockers, showers and toilets divided for male and female.

5.10.2 Break room

The break room shall be centrally located in relation to the offices and restrooms and be used by all employees. The room should be in close proximity to the Centre's canteen and have daylight.

5.10.3 Lavatories and other ancillary rooms

Serbian law requires one toilet per fifteen employees (distributed in women's and men's rooms) and generally one accessible toilet on each floor of the building, which in practice means one accessible toilet in connection with each larger group of toilet module.

In addition, there should be toilet facilities for the visitors. Competitors may apply a reduction factor and base their design on a requirement of one toilet per 30 visitors.

At the auditorium and the large halls, the number of toilets should be larger, as several people are likely to want to use the facilities in breaks and intermissions. It may also be useful to locate toilet facilities in the main entrance and reception area. All toilet modules should have a washbasin, and there should also be a washbasin in a lockable front room.

Each function section should have a room for cleaning staff with enough space for a cleaning trolley, a vacuum cleaner, a large sink and a floor drain.

5.11 TECHNICAL UNITS

- Elevators for visitors, staff and equipment
- Air conditioning units
- Power station with emergency diesel generator
- Heating unit
- Fire extinguisher sprinkler system and required water storage
- Manholes and infrastructure

5.11.1 Transport paths

Transportation paths within the building will consist of hallways with "clean" transport lines, without sharp corners/turns. It shall be possible to bring objects of large formats into the exhibition area, such as an object that is 3 meters wide and 4.5 meters high.

5.12 UNDERGROUND ARRIVING AREA, PARKING AND LOADING/UNLOADING AREAS

In the interior transport system, all transport paths and driving zones for loading transport must be dimensioned according to the usual standards.

The underground garage will have parking space for 120 cars, (require ceiling height of 2.4 m) and for 10 bus parking spaces (ceiling height requirement of 4.5 m).

It is important that this arrival area is well designed, integrated and an active part in the complex, as it will be "the front door" of most visitors.

From the underground arriving area there shall be ramps, visitor elevators, equipment elevators, and emergency exits.

5.12.1 Loading /Unloading areas

Technical entrance with loading deck and service area for loading and unloading of the equipment, food, and other supplies.

Required ceiling height is 4.5 m.

5.12.2 Waste

Waste shall be handled outside public and exhibition areas. Central waste room with the possibility of any desired recycling and placements containers. The waste room may be regarded as an extension of the loading and unloading site.

It should be possible to close off waste room independently of the rest of the building.

5.12.3 Security room/entrance control

It includes technical and physical control of the garage premises.

5.12.4 Storage space for exhibitions equipment

Storage space for exhibition equipment shall be adjacent to the loading dock; this is the area where exhibit pieces wait to be distributed in or out of the centre, or wait to be repaired.

The storage vault space must be utilized as effectively as possible through the use of compact furnishing solutions.

The storage room should be easily accessible, possible to pass through, and have enough space for secure, handling and transport of the objects.

5.13 Expected Staff and Visitors

Foreseen employees/staff:
Administration and Management: 8
Exhibitions' and activities' developers: permanents staff: 15-20
Explainers (part-time): 15-20
Educators: in labs and classrooms: 10
Information desk, coat check, ticket sales staff: 5
Technicians:
(technicians for audio/video/light/and computer systems): 5
Canteen and café: 13
Security: 12
Janitors/cleaning staff / 2 shifts: 15 per shift

Expected Visitors:

The Estimations for the annual number of visitors given by several professionals in the area are ranging from 100 to 300 thousands. Most of them agree that 200,000 is a realistic number of visitors to be predicted in the second year after the opening. Estimated growing to around 500.000 in 5 year's time.

Daily number of visitors will vary a lot during a year. It can be expected 200 visitors during a workday in September, but nearly up to 2000 during a weekend in May when most of school excursions are being realized.

Mainly students from Belgrade, will come during the whole school year, and will occupy the laboratories.

5.14 ROOM BOOK

No.	Room category	Total net floor area (m^2)	Daylight	Employees	Additional information/description
1.0	**LOBBY**	**500**		**6**	
1.1	Entrance hall and main entrance	155	Yes		Airy, open space. Parts of the lobby shall have a ceiling height of min. 10 meters for large exhibits. Resting and waiting spaces, capacity for 100 people.
1.2	Info desk	25	No	3	Information, ticket sales, lost and found.
1.3	Wardrobes and lockers	50	No		Easy accessible in the flow-lines of the visitors
1.4	Staff office with first aid	15	yes		Adjacent to the info desk.
1.5	Restrooms	60	no		Main restroom area for visitors.
1.6	Souvenir and book store with office and storage space	100	No		The shop will have articles related to the Centre's collection, science/technology related articles, books and souvenirs.
1.7	Café and staff restroom	75	Yes	3	Café for 50 people with the service area. The café is in open connection to the Lobby
1.8	Booking office	20	No		Should be closely adjacent to info-desk and administration.
2.0	**EXHIBITION AREAS**	**3000**		**30-40**	
2.1	Permanent exhibition area	2500	No	*	The area shall be able to be divided into 4 - 5 areas by a mobile modular wall-system. Approximately 200 exhibits including video projections. High requirements of accessibility. Transport in and out, and flexibility for changing exhibitions. The deck should withstand heavy loads. Ceiling high minimum 5 m.
2.2	Temporary exhibition area	500	No	*	The area shall be able to be divided by a mobile modular wall-system. High requirements of accessibility. Transport in and out, and flexibility for changing exhibitions. The deck should withstand heavy loads. Ceiling height 5-10m.
3.0	**SCIENCE CLUB**	**415**		**6 full time**	
3.1	Four laboratories- 45m2 each (20 students per laboratory)	180	Yes	3	Wet and dry laboratories including necessary equipment; 1 teacher per 20 students. There will be a laboratory for Biology, Chemistry, Physics and Electronics.
3.2	Flexible classroom space	75	Yes		Possibility to move walls and change spaces so they can be multifunctional and used for lectures, demonstrations, round table, competitions and workshops. Requires proximity to the labs and canteen.
3.3	2 Preparation rooms for teachers	2 x 20	yes		For preparing courses and meetings
3.4	Storage of equipment	20	no		For storage of Lab-equipment in connection to Laboratories
3.5	Science play ground area	100	Yes	3	The area should be integral part of the Science club and accessible from the lobby

No.	Room category	Total net floor area (m^2)	Daylight	Employees	Additional information/description
4.0	**SEMINARS/CONFERENCES**	**600**		**5 full time**	
4.1	Conference hall (250 seats)	500	No		Multipurpose, with white screen, stage for "science on stage", and as meeting room for larger groups. The hall can be rented out for commercial use. Technically advanced equipment, high acoustic and sound design requirements. The conference hall should have its own lobby, which can be used for receptions and poster sessions, without being affected by the general public flows.
4.2	Conference hall lobby	75			
4.3	Room for speakers and storage, restroom	15	No		
5.0	**PLANETARIUM**	**250**		**3 full time**	
	Dome theatre , with 100 seats	250	No		Multipurpose space (lectures, promotions...). Entrance from the main lobby. The seating arrangement, due to its multifunctional use, is to be arranged as an amphitheatre with seats distributed on rows as straight as possible, not curved. The lower part of the Planetarium can be used for exhibition space or maintenance. Equipped according to the modern digital planetarium standards. Must include control room, technical units, security.
6.0	**RESTAURANT/CANTEEN**	**240**		**9**	
6.1	Sitting area (80 seats)	120	Yes	4	Good location in relation to the views of the outdoors and science park. Open, adjacent to the lobby, with flexible shared use. Close proximity to visitors restrooms.
6.2	Delivery kitchen with counters and register	100	Optional	5	Including Managers office, staff rooms and other requirements.
6.3	Storage for chairs/supplies	20	No		

No.	Room category	Total net floor area (m^2)	Daylight	Employees	Additional information/description
7.0	**EMPLOYEES/STAFF**	**510**		**35**	Consist of 7.1, 7.2, 7.3, 7.4
7.1	**Management and administration**	**180**		**8 full time**	
7.1.1	Director 's office and secretary	25	Yes	2	Standard office with area for small group meetings.
7.1.2	Manager, event project manager, business administration	80	Yes	6	Open space with cubicles for the employees, 10 square meters per employee.
7.1.3	Office space for volunteers	20	Yes		
7.1.4	Copy room with storage	15	No		Space for machines and some supplies. Copy room for entire centre is included here.
7.1.5	Meeting room (10 - 20 people)	30	Optional		
7.1.6	Reception area	10	No		Reception area with a reception desk and waiting area located in the main hallway for the office area.
7.2	**MAINTENANCE**	**230**		**4 full time**	**Additional cleaning staff will be working under contract (15 people per shift)**
7.2.1	Office space	20	Yes	1	Staff manager plus 3 desks
7.2.2	Storage space	50	No	*	Cleaning equipment
7.2.3	Repair and maintenance workshops	160	Optional	3	Provide room for : storage space, shelves, and desks, and equipment for carpentry, electrical repairs, welding, painting where exhibits are made and repaired.
7.3	**SECURITY**	**20**		**7**	Including staff for exhibition areas
7.3.1	Security control room	20	No	2	
7.4	**SHARED STAFF AREAS**	**80**			**Cleaning staff, technical staff, repair and maintenance staff, explainers, administration/management and information desk staff**
7.4.1	Changing room, restrooms with showers	40	Optional		Divided by gender. Including lockers.
7.4.2	Break room	40	Yes		Used by all staff.
8.00	**GARAGE + PARKING**	**2900**		**1 to 2**	
8.1	Cars (120 spaces)	2400	No		Underground garage with height=2.40 m with 5 handicapped spaces.
8.2	Buses (10 spaces)	500	No		Underground parking and loading/unloading zone with height=3.60m

No.	Room category	Total net floor area (m^2)	Daylight	Employees	Additional information/description
9.0	**LOADING/UNLOADING AREA**	**630**		**2**	**Loading and unloading of the equipment, food, and other supplies.**
9.1	Technical entrance with loading deck and service area	120	No		Loading and unloading of the equipment, food, and other supplies. Height 3.60m
9.2	Waste containers	100	no		Waste containers with separation of waste.
9.3	Security room/entrance control	10	Yes	1 to 2	Technical and physical control.
9.4	Storage space for exhibitions equipment	400	No		Connected to the repair workshops and in close proximity or connected to the technical entrance and loading deck, and elevator for equipment. Must have high requirements for accessibility, transport in and out, and flexibility.
10.0	**OUTDOOR AREA**	**3,000**		**3**	
10.1	Roads	approximately 1,000			Road that services the site and building. Width 6.0 m, that allows access into the garage, loading/unloading area and serves for fire truck, emergency vehicle access.
10.2	Parking	400			Open air ground level parking with 20 parking spaces.VIP parking.
10.3	Bicycle				On ground level, near the main pedestrian entrance.
10.4	Plato at the entrance	600		**1(security)**	Plato or area for mingling in front of the main entrance. The space to have attractive feature such as a fountain or a sculpture that demonstrates and describes the activities inside the centre.
10.5	Science Garden	1,000		**2 (security)**	5-10 exhibits on open air with corresponding 100-50 sqm per exhibits; most exhibits are permanent, large and take advantage of outdoor exhibits; durable materials; to be safe; access to electricity and water lines. Entrance from the Centre inside enclosed area with security.

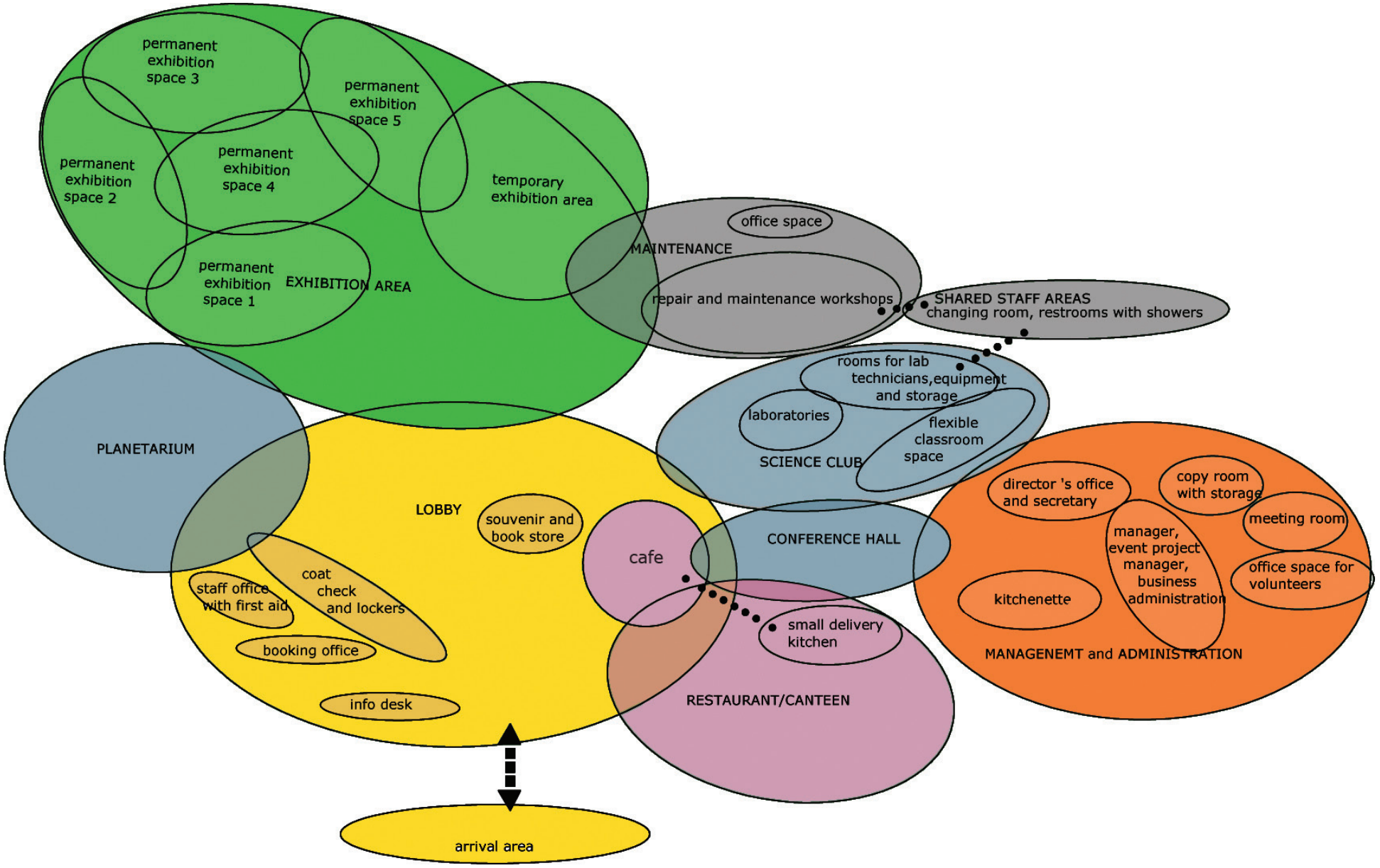
All areas are net, excluding: Toilets, stairs/lifts, aisles, internal / external walls, utility rooms and shafts.

FLOORAGE SUMMARY

No.	Room category	Required surface (m2)
1	Lobby	500
2	Exhibition areas	3,000
3	Science Club	415
4	Seminars Conferences	600
5	Planetarium	250
6	Restaurant/Canteen	240
7	Employees	510
8	Garage/Parking	2,900
9	Loading/Unloading Area	535
	Total Net Building area excluding ancillary rooms (*)	8,940
10	Outdoor area connected to the building (part of the total site area)	3,000
	Total site area	20,914

*** All areas are net, excluding: Toilets, stairs/lifts, aisle, internal / external walls, utility rooms and shafts**

5.15 DIAGRAM OF FUNCTIONS AND DISTANCES



6 OUTDOOR AREA

6.1 Roads and sidewalks

Roads that serve the site and building. Width 6.0 m that allows access into the garage, loading/unloading area and can be used for fire trucks and emergency vehicle access.

The pedestrian pathways, sidewalks and bicycle paths should connect the building with the content of Science Park and the site with the surrounding urban context and Block 39.

6.2 Parking

There shall be an open air ground level parking with 20 parking spaces. There shall be a bicycle parking near the main and staff entrances.

6.3 Open space at the entrance

Open Space, in front of the main entrance, with sitting areas and water installations.

It will be an outdoor mingling area also used for exhibition display, outdoor happenings, and performances.

6.4 Science Garden and green open space

Science Garden is envisioned as an outdoor extension of the centre. It is meant to be an open-air display area for the exhibits that require outdoor conditions such as a laminar fountain, rain gardens, educational garden areas, etc.

The exhibits are meant to attract the visitors and present the activities of the centre. Exhibits will be distributed throughout the site arranged along an axis that is visually and physically, via pedestrian paths, connected to the centre's main entrance.

The park shall also provide both passive and active recreational activities typical for an urban park: pedestrian paths, bicycle paths, sitting areas and open lawn spaces. This will provide a connection between the park and the surrounding context of the Block 39 and adjacent communities.

In the North-East section of the site there should also be structural sound barriers that shield the park and the centre from the noise pollution coming from the Highway.

6.4.1 Exhibits

The exhibits in the Science Garden are large exhibits that take advantage of outdoor conditions. The science park area is to be approx.1000 m2, which allows for 5-10 exhibits. The exhibits will be sundial, clepsydra, fountains, etc. There should be an easy access to the exhibits so that they can be maintained. The park design should allow for the expansion of the exhibit area as the centre grows and develops.

6.4.2 Pathways and Plants

The pedestrian pathways should connect the building with the Science Garden content and the park with the surrounding urban context and Block 39. The use of native, easily available plants adapted to the urban environmental conditions is preferred.

Clore Garden of Science, Israel

6.4.3 Sitting areas

Outdoor sitting areas where visitors can rest will be distributed throughout the park and in the close proximity of the exhibitions.

6.4.4 Outdoor lighting

Use of outdoor solar lights can be used for the trainers to explain solar panels technology. Outdoor lighting at and around the building should be designed with a view to reducing power consumption.

6.4.5 General Technical requirements

Material
Materials must be durable and safe first and foremost. The paving materials must be porous. The use of materials that are easy and not too expensive to maintain is preferred.

Infrastructure
The entire site must have adequate electrical, water, gas, and sewage infrastructure.

Storm water and green infrastructure
The storm water should be managed by the use of green infrastructure to minimize development impact on the existing capacity of the sewage system and enhance groundwater recharge. It is preferred that the green infrastructure methods applied to the site be made visible and serve as an exhibit piece e.g. rain gardens.

In addition to the green infrastructure on the site, rain water and grey water from the building can be collected and used for irrigation system.

Clore Garden of Science, Israel

Clore Garden of Science, Israel

Security

The building and the outdoor areas shall be secured through a combination of security personnel and technical security measures. The building will be monitored on a continuous 24-hour basis from its own monitoring station, operated by security personnel.

Security against fire and theft shall be optimal and shall meet the necessary security and regulatory requirements.

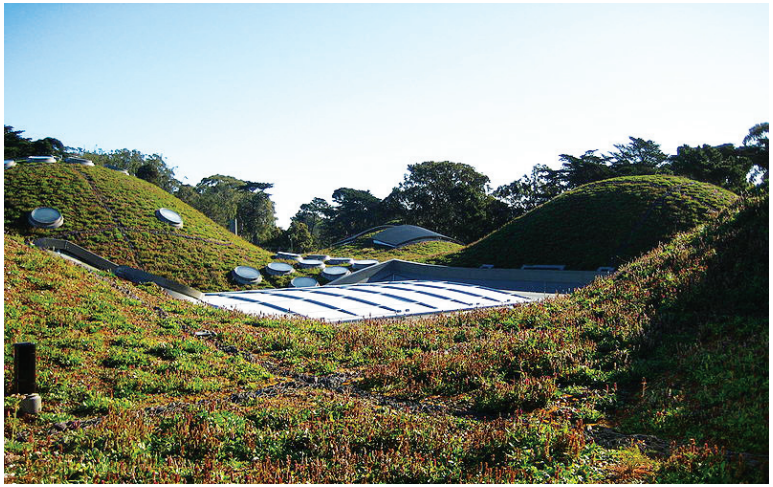
Security includes security personnel and technical/electrical security solutions. The technical/ electrical security solutions include entry controls, automatic break-in alarms and electronic theft-monitoring systems, wireless security systems for exhibit pieces, a centre-wide intercom system, electronic indoor climate monitoring system, emergency power supply and video surveillance system over the whole centre and the external sites accessible to the public, independent of centre's control and opening hours.

7 BUDGET

The overall budget envisaged for the construction of the Centre for Promotion of Science, including landscaping, external works like roads, parks and other greenery, is 15 million Euros.

The Canadian War Museum, Otawwa, Canada, photo by Shanta Rohse

Roof garden, California Academy of Sciences, San Francisco, photo by: wikipedianmarlith.blogspot.com



CENTRE FOR PROMOTION OF SCIENCE

COMPETITION BRIEF

VOLUME 2 | COMPETITION REGULATIONS

MINISTRY OF SCIENCE AND TECHNOLOGICAL DEVELOPMENT
OF THE REPUBLIC OF SERBIA
In cooperation with
THE ASSOCIATION OF ARCHITECTS OF SERBIA,
THE ASSOCIATION OF ARCHITECTS OF BELGRADE and
UIA - INTERNATIONAL UNION OF ARCHITECTS

and in compliance with:
UNESCO Standard Recommendations for International Architectural, and Urban Planning Competitions, the UIA Instructions for International Competitions and The Public Procurement Law of Serbia: article 2 paragraph 9 and article 25

ANNOUNCES
The open international, anonymous, single stage competition
for the PRELIMINARY ARCHITECTURAL DESIGN of the new building of the
CENTRE FOR PROMOTION OF SCIENCE
in New Belgrade urban BLOCK 39, Republic of SERBIA
and
Urban Design IDEAs for a Science and Art Campus in BLOCK 39, New Belgrade

INTRODUCTION

One of the objectives of the Serbian Research and Development Infrastructure Initiative is to enhance the production of knowledge and scientific excellence by enabling Serbian research institutions and researchers to increase their ability to generate, adapt and use new knowledge and become key actors contributing to the achievement of sustainable development, prosperity and economic growth.

In line with it, the Ministry of Science and Technological Development initiated the creation of the new Centre for Promotion of Science with the intention of bridging the gap between scientists and society as a whole, educating the younger generation and transmitting the scientific methods that affect the construction of a dynamic society open to the challenges of the future and playing a key role in the better quality of life solutions and the affirmation of a knowledge based economy in Society as a whole.

1. PROMOTER OF THE COMPETITION

The Promoter is the Ministry of Science and Technological Development of the Republic of Serbia, represented by Project Implementation Unit (PIU).

The PIU supported by the Association of Serbian Architects and the Association of Belgrade architects will be responsible for the organisation of the competition.

2. SCOPE OF THE COMPETITION

2.1. Subject of the competition

The subject of the architectural competition is the preparation of the Preliminary Architectural Design for the new building: Centre for promotion of science.

it is required to provide as well urban and architectural ideas for the remaining part of the Block 39, hosting the University Campus (e.g. Universities of Belgrade: Electrical Engineering, Mathematics, Physics, Faculty of Organizational Science).

The Faculty of Dramatic Arts is already part of the Block 39.

2.2 Purpose of the Competition

The purpose of the architectural competition is to choose, on the basis of a comparison of designs submitted, the best entry by a participant capable of creating the most suitable design in fulfilment of the promoter's requirements as laid down in these Terms, Program and Relevant Documents.

The ambition of competition is to identify proposals that successfully address the Centre for Promotion of Science needs, while at the same time shedding light on the development opportunities in the area finding urban planning challenges of the Block 39.

2.3 Terms and conditions of the public procurement for services

The winner of the best entry shall conclude a contract and collaborate with an authorised architects/architectural team from Republic of Serbia on all development phases of a project. The Promoter will select the authorised architects and engineers from the Republic of Serbia (according to Public procurement law article 2 paragraph 9) in collaboration with the winner.

The actual contractual conditions for the development of the main design will not be determined before the selection of the winner of the project competition.

The Promoter and the Promoter's adviser will be in charge of the dialogue and negotiation.

In the event of failing within two weeks from the announcement of the competition results, for reasons on the part of the winner of the best entry, to conclude negotiations of terms of the contract as single source procurement, new proceeding and negotiations without a public notice for a public procurement shall be conducted, taking into account the Authors awarded the 2nd and 3rd prizes of the competition.

3. TYPE OF COMPETITION

The Competition is announced as an open international anonymous one stage competition, consisting of the two following parts:
-the Preliminary Architectural Design of the new building "Centre for promotion of science".
- preparation of the design idea defining an urban concept for the rest of the BLOCK 39.

4. COMPETITION LANGUAGE AND SYSTEM OF MEASUREMENT

The language of the competition will be English. Use of the metric scale is mandatory.

5. COMPETITION SCHEDULE

15/09/10
Publication of the invitation and beginning of the registration
21/09/10
Beginning of downloading of the competition documentation
21/10/10
Deadline for the registration and downloading of the competition documentation
30/10/10
Deadline for the questions for the Promoter
10/11/10
Publication of the questions and answers of the Promoter on the web site of the competition
01/12/10
Deadline for the receipt of the proposals / 15.00h-GMT +1
13/12/10
Assessment of proposals and selection by the Jury
17/12/10
Announcement of winners by the Jury
17/04/11
Exhibition

6. ADMISSION TO THE COMPETITION

6.1 Meeting professional requirements

6.1.1 Architects (architectural teams) may participate in the competition, if they meet the following requirements:

• Architects participating in the competition shall be licensed / certified / registered / authorised in a professional body in their country,
• Architectural teams participating in the competition shall have at least one licensed/certified/registered/ authorized architect who will be the team leader.

6.1.2 At the time of registration, competitors shall prove their professional competence by submitting copy of a formal document on their license /registration / certification/ authorisation.

6.1.3 Should a winner of the competition not meet the set forth professional prerequisites (or should he/she give false data in his/her portfolio), the commission shall discuss with the next ranked competitor. At that stage the competitors will provide duly certified copies of required documents.

6.2 Persons excluded from the competition

The following persons will not be admitted to take part in the competition:
- Jurors and reserve jurors;
- Members of the Technical Committee;
- The Technical Advisor;
- Persons related to the Promoter of the competition or participated directly in the preparation of the competition assignment and in competition announcement;
- The families of the above persons, as well as persons belonging to any organisation with which the above mentioned are associated as heads, officials or advisors. This stipulation also applies to members of local government and administrative authorities including the promoter.

Competitors may not receive direct or indirect assistance related to the competition from persons mentioned above.

7. ORGANISATION AND CO-ORGANISATION OF THE COMPETITION

7.1 Professional and Technical Advisor

The Professional and Technical Advisor will ensure that the competition timetable is respected, he/she will supervise the registration of competitors, the reception of questions, and the dispatching of the promoter's replies to all competitors on web site, supervise the reception of competition entries and respect, at all times, the competitor's anonymity. She/he will control the work of the Technical Committee, assist the Jury and be present during adjudication.

7.2 Technical Committee

A Technical Committee will be appointed by the Promoter or promoter's representative and will work under the control of the Professional and Technical Advisor. It will check that entries fulfil the requirements.

The Technical Committee will take no part in the adjudication process, nor may it eliminate any entry. It will point out to the Jury any deviation from the programme or regulations, also with regard to the deadlines established for the Competition.

7.3 Competition Secretariat

The Competition Secretariat will work and can be reached at the following address:
Address:
Association of Belgrade architects, st.Kneza Miloša 7a/III
Phone :
+381112624858
E mail:
office@blok39.com
Web site:
www.blok39.com

8. ANONYMITY

Designs will be presented anonymously with an identification code chosen by the competitor and made up of a six-digit number followed by two 2 letters, 10mm high. Therefore, no part of a competition design shall contain a signature, password or any other graphical mark which could lead to breach of anonymity. The only exception is the content of the sealed and opaque envelope with inscription "Identification".

On receipt of the submissions, the Technical Committee will mask the competitor's identification codes by a serial number to be used throughout the jury meeting. A register containing the identification codes and the corresponding serial numbers will be logged with the lawyer/notary until the jury has made its decision.

When anonymity has been lifted after the jury has declared the winning entries, all the envelopes will be opened.

Non-prize winning participants, who wish to maintain anonymity during the public exhibition of projects, should indicate this wish in separate declaration in the "identification" envelope.

9. REGISTRATION PROCEDURE

Requests to enter the Competition shall be submitted by: e mail, fax or in writing and reach the Competition Secretariat (see article 7.2) not later than 21/10/2010.

Applications shall indicate:
- the individual competitor or team representative's full name and nationality
- full contact details including telephone and fax numbers, e-mail address
- copy of license/certificate of membership in professional association proving the individual competitor's or team representative's right to practice the profession in his/her country of residence
- copy of the bank transfer showing that the registration fee has been paid.

9.1 Registration fee

The competitors must pay 200 Euro to the promoter of the competition for the purchase of the tender documentation on the following bank account:

For international competitors information regarding the payment is next:

- Account name:
  JUP ISTRAŽIVANJE I RAZVOJ DOO BEOGRAD
- IBAN:
  RS35205007010039485382
- Intermediary Bank SWIFT:
  COBADEFF, COMMERZBANK AG, Germany
- Beneficiary Bank SWIFT:
  KOBBRSBG, Komercijalna banka ad Beograd
- Bank Address:
  Svetog Save 14, 11000 Belgrade, Republic of Serbia

Bank transfer charges to be paid by competitors.
Payment for the purchase of the tender documentation is non-reimbursable.

It is essential that the name of the individual competitor or team representative registered for the competition is the same as the one on the bank transfer. Bank charges shall be paid by the competitor.

For the competitors from Serbia information regarding the payment is next:

Payer:
Name, Surname, Address

Purpose of payment:
Otkup tenderske dokumentacije

Payee:
JUP ISTRAŽIVANJE I RAZVOJ DOO BEOGRAD

Bank:
Komercijalna banka ad Beograd

Account number: **205-160097-44**

Credit model and reference not to be filled out!

The payment of 200.00 euros to be made in dinar counter value at the official exchange rate of the NBS valid on the day of payment.
Bank transfer charges to be paid by competitors.
Payment for the purchase of the tender documentation is non-reimbursable.

It is essential that the name of the individual competitor or team representative registered for the competition is the same as the one on the bank transfer. Bank charges shall be paid by the competitor.

10. QUESTIONS AND ANSWERS

Any competitor wishing to obtain further information may send questions exclusively by e mail to the Competition Secretariat (see article 7.3). All such queries received within the deadlines indicated in Art. 5 will be answered and available on the competition website. It will then be considered to be an integral part of the competition brief.

The questions and answers document will also be sent to the jury members and to the UIA General Secretariat.

11. THE JURY MEMBERS; DEPUTY MEMBERS

The Jury will be composed of seven members out of which three will be representatives of the promoter, one representative of the UIA and three independent international members. Deputy members will attend all jury sessions without having the right to vote, unless called upon replace a voting member. Tasks and responsibilities of the jury:

The jury shall consider the criteria set by the promoter and establish its criteria for assessing the projects, and examine all entries. Decisions of the jury shall be taken by a majority vote, with a separate vote on each entry. In the event of a tied vote, the President shall have the casting vote. Decisions taken by the jury are final.

The jury including the deputies will act and work in the following composition:
1. Mr. **Božidar Đelić**, *Minister of Science and Technology, Serbia or his representative* **Darko Đukic**, *Adviser to the Minister/ PIU Director*
2. Mr. **Dejan Vasović**, *Belgrade town architect, Serbia*
3. Mr. **Jovan Mitrović**, *president of the association of Serbian architects*
4. Mr. **Roberto Simon**, *Brazil*
5. Mrs. **Dorte Mandrup**, *Denmark*
6. Mr. **Gunter Katherl**, *Austria*
7. Ms. **Ourania Kloutsinioti**, *Greece*

Deputies' jury:
1. Mr **Miomir Korac**, *Serbia*
2. Mr **Nicholas de Monchaux**, *USA*

12. ADJUDICATION CRITERIA

12.1 Deliberations of the jury

At its first session, the jury will elect its President, note the evaluation criteria set by the promoter.
The decisions of the jury shall be taken by a majority vote, with a separate vote on each design submitted. In the event of a tied vote, the Chairman shall have the casting vote.
The jury will decide about the invitation of other experts if and when necessary.

12.2 Evaluation criteria

The winners of the design competition will be selected on the basis of the following criteria, which are not listed in any order of priority:

• Overall architectural, aesthetic, functional and technical assessment of the response to the requirements set out in the competition brief.

• The use of integrated design, including integration, synergy, sustainable measures and cohesion between the architectural concept of the Centre and the remaining area of the Block 39.
• Cost estimate, including the proposed design's robustness in terms of compliance with the budgetary framework. A specific assessment will be made of the way in which integrated design has been used from a point of view of construction costs and building technology.
• Quality of functional, layout and operational designs.
• Assessment of the proposed solution against the required construction deadlines and phase construction.

The winning proposal has to be innovative and original, to possess the quality of a new landmark and represent a state of-the-art architectural edifice.
The floor areas will be measured in connection with the assessment.

The winner should be prepared to enter into an intense dialogue with the competition promoter about the build-ability of the project, the principles proposed and the costs of the solutions.

12.3 Reasons for elimination from the competition

The jury shall eliminate from the competition all those designs that:
• do not comply with content requirements of the announced Competition Regulation and Competition Program,
• do not comply with the anonymity requirements of the Competition Regulation and Competition Program,
• were not delivered within the required deadlines.

The Jury is obliged to eliminate from regular evaluation all those competition designs that do not comply with the prescribed conditions included in the presented regulations.

12.4 Report of the competition jury: discussions and decisions

The report covering sessions and meetings of the jury and their results shall contain in particular:

a. The minutes of jury's meeting, including the results of all votes,
b. Decisions as to the elimination of a design from the competition,
c. A list of all the accepted competition designs,
d. A brief evaluation of all the awarded designs,
e. The decision as to the granting of prizes and awards, including justification thereof,
f. Attendance lists for jury members and experts.

13. LIST OF DOCUMENTS TO BE PROVIDED BY THE PROMOTER

In addition to the Competition brief the competition material comprises the following Annexes:

List of documents provided by the Promoter:

1. Position of the block 39 in the wide city area (*dwg)
2. Correspondence of the block 39 with tight city area – Traffic(*dwg)
3. Correspondence of the block 39 with tight city area – Purpose (*dwg)
4. Existing traffic surfaces with positions of vehicle and pedestrian approaches (*dwg)
5. Centre for the Promotion of Science - Site border (*dwg)
6. General layout plan of infrastructure networks (*dwg)
7. General layout plan of the Block 39 (*dwg)
8. General layout plan – viewpoints of the 3 mandatory perspectives (*dwg)
9. Pictures F1, F2, F3 selected for rendering the mandatory perspectives (*jpg)
10. Aerial Photographs of block 39 (*jpg)
11. Photographic documentation of the building site (*jpg)
12. Axonometric view of the site (*dwg)
13. Geodetic survey for Block 39 (*dwg)
14. Sections of the site (*jpg)
15. Tables to be filled with summaries of surfaces of the submitted design (*xlsx)

In addition a time schedule presenting the design and construction phases are included in Appendix 1

Competition brief will be available to all participants at the time of the registration period (22nd October, 2010).

The relevant documents will be made available on the competition web site (.dwg, .pdf, .jpg .xlsx, see above) to which competitors will have access, using a password which will be sent by e-mail to each registered competitor.

14. DOCUMENTS TO BE SUBMITTED BY THE COMPETITORS

14.1 Plans

Ideas for the Urban concept of block 39:
1. General layout plan of the area in scale 1: 1000 (traffic service ability, accesses, plan mass),
2. Axonometric view/3D views of the location,
3. Two cross sections of the location.

The Architectural design of the new building Centre for promotion of science:
1. Site plan 1:500,
2. Floor plans of all floors in scale 1: 200 with schematic presentation of interior and description of summaries of functional areas,
3. Cross sections illustrating basic principles of a structural design of the building in scale 1:200,
4. All elevations in scale 1:200,
5. Perspective views of a general architectural design of the New Building only introduced into 2 photographs marked F1, F2 in A3 formats.

Competitors are free to choose any technique they want to, provided that the building proposed and the surrounding buildings and urban furniture are illustrated in correct proportions in relation to each other. It is up to each entrant to choose a graphic style.

Plans shall be submitted on a maximum of 8 separate sheets, format A1 (594x841mm) portrait position. Plans shall be also submitted on 2 CD carriers in .pdf format (A3 format).

The sheets shall be submitted in an opaque and solid sealed package/tube.

An identification code, to be chosen by the competitor, comprising a six-digit number followed by 2 letters, 10 mm high, will be located on the bottom left-hand corner on each sheet. On the bottom right-hand corner, there will be a separated frame 30 x 30 mm designated for the number of the drawing. The Title: Centre for Promotion of Science of the Republic of Serbia should appear on each sheet.

14.2 Descriptive report including tables

A general report shall include downsized posters summarizing the graphical part and a brief and clear explanation of the basic principles of the design with particular emphasis on:

- General urban concept for the Block 39,
- General concept of the architectural design of the Centre for Promotion of Science,
- Simple description of operational and spatial relations in side the building,
- Brief technical description of the structural design and materials used,
- Calculation of areas using the sample table,
- Estimated costs of the Project execution based on evaluation of the proposed m2.

The required text will be in Times New Roman, font size 12 and shall not exceed three A3 pages, bearing the ID code. The report including the required text and the tables and reduced plans shall be submitted in seven printed copies. The report will be also stored on 2 CD carriers together with the plans. All that shall be included, together with the plans, in a solid and opaque sealed package.

14.3 "Identification" Envelope

An envelope with the inscription "Identification" shall contain names, addresses and signatures of authors, co-authors and the above mentioned 2 CD carriers with plans in .pdf format (A3 format) as well as the report in .doc or .xls (in case of tables) formats.

The chosen code will be on the front side of the envelope.

It shall be sealed, completely opaque and placed together with the plans in a solid package.

15. SUBMISSION OF ENTRIES

Competitors must ensure that their entries arrive at the Competition Secretariat on or before: 01/12/10.

Entries shall be sent to the following address:
Društvo arhitekata Beograda, ul.Kneza Miloša 7a/III, 11000 Beograd, Republika Srbija.

Those packages sent from foreign countries must be packed so as to facilitate customs inspection, where required.

In order to preserve anonymity, the Competition Secretariat will discard packages and wrapping materials on reception. Competitors, who hand-in their entries, will be provided with a receipt by the competition secretariat.

16. AWARDS PRIZES AND HONORABLE MENTIONS

A total amount of 100.000 EUROS will be available for prizes and honorable mentions. It will be distributed as follows:

I prize 60.000,00
II prize 20.000,00
III prize 10.000,00

2 Honorable Mentions, 5.000,00 each.

The Promoter undertakes to pay the prize money within 50 days of the announcement of the competition results.

If for a reason due to the Promoter decision, no contract for carrying out the project has been signed within twentyfour months of the announcement of the jury's award, the first prize winner shall receive as compensation a further sum equal to the amount of the first prize.
In so compensating the first prize winner the promoter does not acquire the right to carry out the project except with the collaboration of its author.

17. INSURANCE OF ENTRIES

Entries will not be insured, as the Promoter assumes that entrants keep the originals of the submitted materials.

18. ANNOUNCEMENT OF RESULTS

The results of the competition will be announced on 17/12/10. The Promoter reserves the right to publish all winning entries.

Winning entries will also be published by the UIA in its Newsletter and on its web site.

19. COPYRIGHT, OWNERSHIP AND PUBLICATION OF DESIGNS

19.1 Copyrights of competitors

Copyright to an entry will always remain with the entrant.

The promoter is entitled to publish the submitted entries. The name of the entrant will be stated in connection with such publication.

19.2 Permission to use authorial works for the purposes of this competition

Designs that have been awarded a prize or an honorable mention become the ownership of the promoter. Their authors grant their consent to the promoter for the use of their submissions for the purposes of this competition.

However, any use of their authorial works for other purposes than the ones set forth herein requires authorization by the authors.

All drawings and plans, with the exception of those which have been awarded prizes or honorable mentions, will be destroyed after closing of the public exhibition.

19.3 Exhibition of competition designs

The promoter commits himself to organize a public exhibition of all competition designs within two months after announcement of the competition results. Competitors who do wish that their own competition designs are exhibited without the author's name shall express this wish in a separate declaration in the "identification" envelope.

By submission of a competition design, a competitor agrees with free reproduction and exhibition of his/her competition design for the promotion of the competition and its results. Images of the winning designs will also be published by the UIA on its web site and in its Newsletter.

19.4 Notification and announcement of competition results

The promoter shall inform competitors about the competition results. After the final decision of the Jury, the promoter shall announce the competition results in the same manner as the competition itself was announced.

20. ACCEPTANCE OF THE COMPETITION REGULATIONS

By submission of a competition design, a competitor agrees with the Competition Terms and Conditions and commits him/herself to follow and observe these regulations.

21. APPROVAL OF COMPETITION REGULATIONS

The competition was approved by the UIA in compliance with UNESCO Revised Recommendations for International Architectural and Urban-Planning Competitions. Should certain issues not be directly covered in the Competition Regulations, the promoter and jury shall refer to the UIA Guide.

moment of science

APPENDIX 1 TIME SCHEDULE

ID	Task Name	Start	Finish
0	**Centre for promotion of science - Belgrade**	**15.9.2010**	**1.7.2012**
1	**Competition**	**15.9.2010**	**3.1.2011**
2	Announcement of competition	15.9.2010	15.9.2010
3	Registration	15.9.2010	21.10.2010
4	Distribution of Competition documents	21.9.2010	22.10.2010
5	Competition period	21.9.2010	1.12.2010
6	Deadline for submission of Designs	1.12.2010	1.12.2010
7	Assessment - Jury	13.12.2010	17.12.2010
8	Award winner	17.12.2010	17.12.2010
9	Negotiations/ Contract for Consultant	17.12.2010	3.1.2011
10	**Main design**	**17.12.2010**	**17.3.2011**
11	Negotiations/ Contract for Main design	17.12.2010	17.12.2010
12	Main design	17.12.2010	17.3.2011
13	**Building**	**17.3.2011**	**30.6.2012**
14	Tender for construction works	17.3.2011	17.5.2011
15	Signing contracts for construction	17.5.2011	17.5.2011
16	Construction works	17.5.2011	30.6.2012
17	Exhibition preparations	17.5.2011	30.6.2012
18	Cleaning and preparations	23.6.2012	30.6.2012
19	**Grand opening**	**1.7.2012**	**1.7.2012**