A BIT OF HISTORY

The city of Dubna is located in the north of Moscow region. From all sides it is surrounded by water: its natural boundaries are outlined by rivers Volga, Dubna, Sister, Moscow canal and the Moscow sea (officially Ivankovsky water reservoir). Urban territory is above 7 thousand hectares.

The place in the mouth of the river of Dubna was first mentioned in Novgorod chronicles (year of 1134). The trading quarters were destroyed and burnt by Novgorod men-at -arms in 1216 during war with Vladimir-Suzdal principality. The first records of Gorodische selo (village) and Ratmino village in the mouth of the river of Dubna date back to the middle of the XVIII century. After 1751 their owners were Tatischevs. In 1815 the estate (the selo and the village) becomes the property of Elizaveta Rostislavovna Vjazemskaya (Tatischeva), married to prince Sergey Sergeevich Vjazemsky. From that time in the territory of present-day Dubna, in Ratmino, has been preserved the stone church of the Praise of the Holy Virgin Theotokos built in 1827. At present time the temple is restored to functions.

In the XX century ancient settlements were destined to have a new fate. Radical changes in the life of neighboring villages were connected to construction of Moscow Canal: Volga has been dammed in the area of Ivankovo village, the first Volga Hydroelectric Power Station «Ivanjkovskaya» has been built here. Lock No.1 of Moscow Canal has been erected here too. With completion of hydraulic work (in 2007 the 70th anniversary of the canal was celebrated), this construction remains to be one of the most tragic and greatest pages in the Soviet history).

Bolshaya Volga settlement began to grow. Now it is one of the districts in Dubna.

At the same time with construction of Moscow Canal construction of an aircraft factory was included in the Plan of industrialization of the USSR. The place for the plant (the left-bank side of present day Dubna) was chosen by aviation designer A.N.Tupolev .

And on the right-bank side, at the choice of I.V. Kurchatov, in post-war years nuclear physics laboratories began to grow, which subsequently became the foundation for the Joint Institute for Nuclear Research (est. on March 26, 1956).

Historically the city was formed around 6 city landmark enterprises: the Joint Institute for Nuclear Research (fundamental science), Dubna Machine – Building Plant and State Engineering Design Bureau «Raduga» (rocket production), Instrument Factory «Tensor» (instrument -making for nuclear-power engineering, systems of safety and security, industrial electronics), State Research Institute «Atoll» (hydroacoustics), the Space Communications Center (the largest teleport of the Eastern Europe).

JOINT INSTITUTE FOR NUCLEAR RESEARCH

The Joint Institute for Nuclear Research (JINR) – an international intergovernmental research organization established for study of fundamental properties of the substance. It is formed by 11 countries-founders on March 26, 1956 and registered by the United Nations Organization on February 1, 1957

Nowadays the Joint Institute for Nuclear Research is a large complex international centre of science which integrated fundamental nuclear physics research, development and application of state – of – the – art technologies, and also high education in relevant fields of knowledge. Its permanent members are 18 member – states as follows: Azerbaijan, Armenia, Belarus, Bulgaria, Socialist Republic Vietnam, Georgia, Kazakhstan, KPDR, Cuba, Moldova, Mongolia, Poland, Russia, Romania, Slovakia, Uzbekistan, Ukraine, Czechia. At the governmental level have been concluded cooperation agreements between JINR and Hungary, Germany, Egypt, Italy, Serbia and the Republic of South Africa.

JINR has 7 laboratories, each of which by scope of research is comparable to a major institute. The staff numbers about 5500 person, more than 1000 of them are research engineers, about 2000 are engineering personnel.

The institute has a set of the state-of-the-art physics facilities: the only one in Europe and Asia superconducting accelerator of nuclei and heavy ions – the nuclotron, cyclotrons of heavy ions U-400 and U-400M with record parameters of beams for experiments on synthesis of heavy and exotic nuclei, the unique neutron pulsed reactor IBR-2 used for neutron nuclear physics investigations and condensed matter physics investigations, and the accelerator of protons – the phasotron, which is used for radiation therapy. JINR possesses powerful high-performance computing facilities, which by means of high-speed communication channels are integrated into the global computer networks. In 2009 communication channel « Dubna-Moscow « with initial bandwith 20 Gbit/sec was put into operation.

At the end of 2008 was successfully launched a new basic unit of the Europeen class (IREN-I). Successfull work on Nuclotron-M project is going on. The project is supposed to become a foundation for new superconducting collider NICA and creation of DRIBs – II complex as well. Construction of the complex of heavy ions DRIBs-II is successfully going on too. Thus, the vital task to improve attractiveness of research at own facilities is getting solved, first of all, for young researches from the member-states.

Wide international scientific and technical cooperation is an important aspect of JINR activity. The Institute maintains ties with almost 70 science centers and universities in 60 countries of the world. Only in Russia, the largest partner of JINR, there is a cooperation with 150 research centers, universities, industrial enterprises and companies from 50 Russian cities.

The Joint Institute for Nuclear Research actively collaborates with the European Organization for Nuclear Research (CERN). A major contribution of JINR into implementation of the project of the century – The Large Hadron Collider (LHC) – was highly appreciated by the world scientific community.

The share of JINR is half of discoveries (about 40) made in the field of nuclear physics and registered in the former USSR.

In recent years scientists of Dubna synthesized new, long-lived super heavy elements with serial numbers 113, 114, 115, 116 and 118. These important discoveries have crowned the 35-years efforts of scientist from different countries in search of «the island of stability» of superheavy nuclei.

JINR actively participates in implementation of the program for creation of special economic zone «Dubna», innovative «portfolio» of the Institute consists of about 50 projects, unique physics facilities can be used as base elements of the Share Center for use of research and testing equipment which is getting created in SEZ «Dubna». On the initiative of the Joint Institute for Nuclear Research together with Russian Research Center «Kurchatov Institute», the International Association of Academies of Sciences (IAAS) and using the potentialities of Special Economic Zone «Dubna» the International Innovative Center of Nanotechnologies is getting set up in Dubna.

RESEARCH AND PRODUCTION COMPLEX

There are 21 organizations in the Research and Production Complex of Dubna. It is represented both by large enterprises, research and development organizations, and medium and small innovative companies, possessing the state-of-the-art research and laboratory/testing facilities, production capacities and highly qualified personnel.

RPC Dubna ensures competitive positions of Russia in the field of design and manufacture of aircrafts (Open Joint Stock company «Raduga State Engineering Design Bureau», «Dubna Machine-Building Plant named after N.P.Fedorov»), industry electronics and systems of safety and security (Open Joint Stock company "Instrument Factory «Tensor», Federal State Unitary Enterprise «Dedal»), acoustic electronics (State Research Institute «Atoll», research institute of applied acoustics), communication (Center of Space Communication «Dubna»).

Many developments of Dubna designers and engineers have no world analogs or exceed them by the parameters until the present day.

More than 40 prototypes of rocketry have been developed at Open Joint Stock company «Raduga State Engineering Design Bureau named after A.J.Bereznjak» for over half a century. Almost all products were made serially and have been used as armament by Air Forces and Navy of the country. 6 developments of «Raduga» were awarded by Lenin Prize, 12 developments – by the State Prize. In the work on practically each article produced by «Raduga» more than a dozen inventions and discoveries were used. For example, in the work on «Mosquito», the only missile in the world which speed of flight at small altitudes exceeds 2800 km/hs (in the West it is named «Sunburn») were used more than 30 inventions and discoveries.

Having gone through financial and industrial difficulties of recent years, Open Joint Stock Company «Instrument Factory «Tensor» is in the foreground again. Its products are used in all nuclear power stations in Russia, as well as in a number of foreign nuclear power stations (in China, India, Iran, Bulgaria, Slovakia). Customers ad users of fire-fighting and security products of «Tensor» are also the Ministry of Defense of the Russian Federation, large Russian and foreign companies – Open Joint Stock Company «Gazprom», Russian Joint Stock Company «Unified Energy Systems of Russia» («UES of Russia»), Open Joint Stock Company «Russian Railways», the giant of the construction market in the USA «Bechtel» and the world's largest builder of power stations «Black & Veatch» (USA).

The largest teleport of Russia – Center of Space Communication «Dubna» (branch of Federal State Unitary Enterprize «Space communication») was open for TV broadcast of 1980 Summer Olympics from Moscow to the countries of Europe and the Atlantic region. Today the center ensures operation of the government communication lines, including those between the Kremlin and the White House, the Élysée Palace, Residence on 10 Downing Street. In 1996 CSC «Dubna» won the international tender for accommodation of telemetry & telecontrol station for satellites of the European telecommunications satellite organization «Eutelsat», 8 satellite dishes for control of 10 satellites of this organization were installed. The experience accumulated in cooperation with «Eutelsat» has been realized in similar projects for monitoring satellites of the International telecommunications satellite organization «Eutelsat» and American corporation «LMI».

Sustained positions in the Russian and international markets have been won and successfully have been developing by Closed Joint Stock company «Research and Production Center «Aspect» (nuclear spectroscopy), «Production association «ApAteK-Dubna» Ltd. (state-of-the-art composite materials), Closed Joint Stock company «Holding Company « Trackpore Technology» – (state-of-the-art medical equipment based on track membranes), Open Joint Stock company «Research-and-Production Association «Crypten» (holography), etc.

As a whole the enterprises of the research and production complex provide up to 70 percent of the city budget receipts. Products of the majority of them are certificated according to the international quality standards.

DUBNA TODAY

The present day Dubna is the city where unique developments and projects are being developed and implemented in the most different areas, from science and technology to education, medicine, culture and sports. The urban environment is the most favorable and encouraging to development of creative abilities of a person. Well-planned and green, built among pines on two banks of Volga, the city has a special, quiet, unhurried, relaxed and non-fussy atmosphere facilitating constructive endeavor.

Dubna is linked to the Capital by Federal Highway A-104 (the distance is 120km), the railway (besides suburban electric trains there is a high-speed express train «Moscow-Dubna»), the waterway by Moscow Canal. The distance to international airport Sheremetyevo is 100 km.

The population of the city is 67 thousand. The third part of the working population is engaged in science and high technologies. In Dubna live and work 3 academicians and 2 corresponding members of the Russian Academy of Sciences, more than 300 full doctors and more than 1000 doctors of sciences.

This is the only city in Russia which is immortalized in the Periodic table of D.I.Mendeleev : one of the synthesized elements with serial number 105 was named Dubnium.

Dubna became one of the scientific and technical territorial formations (later named the science cities), established in the country in the post-war years and ensuring its scientific and technical priority in a number of directions.

The city structure is formed by 3 major residential districts: the Institutsky, Bolshaya Volga and Levoberezhny (left-bank side). In .perspective a Programmers' township will be added to them – a new little residential town for 30 thousand inhabitants in the area of the Russian IT center on the left bank of Volga.

As a result of implementation of a number of target urban programs Dubna has a modern digital communication (practically 100% of telephones have been installed in the districts), the uniform urban information and education network combining over 12 thousand computers, a high-speed fiber-optical communication channels with Moscow (20 Gb/sec. with possible development up to 720 Gb/sec.) and two more independent channels u to 10 Gb/sec. each.

The convenient territorial arrangement, favorable ecological environment, the highly skilled specialists, the developed infrastructure of communications and services, the excellent natural environment make Dubna the city attractive for development of science intensive business.

By Decree of the President of Russia No. 1472 of 20.12.2001 Dubna was awarded the Status of Science City of the Russian Federation for a period of 25 years.

SOCIAL INFRASTRUCTURE OF THE CITY

The city has a well developed education system, culture, public health services, ensuring high standarts of living for the population.

In the area of education there are 69 institutions of preschool, additional, secondary and higher education.

International university of nature, society and man «Dubna», the state educational institution of Moscow region, was established in 1994. It has modern conditions for study and life of students. More than 600 highly skilled professors and teachers from Moscow and Dubna (over 300 of them have academic degrees) do education and research at the university. Training of specialists is done in 30 specialties, including those for the special economic zone: in collaboration with 10 other Russian regional high schools and the IT-companies. The Open University of Information Technologies has been created here. For coordination of work with the resident companies and rendering a wide spectrum of services on training and retraining of specialists in SEZ «Dubna» the Center for professional training of personnel has been open.

Training of highly competent specialists is also done by branches of Scientific Research Institute of Nuclear Physics of Moscow State University named after M.V.Lomonosov, Moscow Institute of Radio Engineering, Electronics and Automatics – Technical University, etc.

All conditions have been provided here for those who going in for sports. There are about 20 various types of sports cultivated in the city. Many of them have sportsmen of national and international level. Considerable success have been achieved by the water skiers who repeatedly won the titles of champions and became record-breakers of the World, European, USSR and Russian championships. A modern water stadium of the Europeen level has been built here. Annual competitions of the international and Russian level are held at the stadium. Also here Palace of Sports «Raduga» with 25-meter swimming pool have been built in the territory adjacent to the let-bank site of OEZ «Dubna», a covered artificial ice skating ring, a football field with artificial covering in stadium «Volna». 50-meter swimming pool «Arkhimed» in «the institute district of the city» and 25-meter swimming pool in «the Big Volga district» are open for the public.

The health-care services are provided by seven institutions of public health. A domiciliary hospice and a maternity department of the municipal hospital are among the best in this country. Besides the municipal institutions of public health in the city there is Medical Department Nr.9 of Federal Medical and Biological Agency of Russia and Federal State Institution Medical Rehabilitation Center.

Dubna was and remains an attractive place for creative people, scientists, art workers, sportsmen, distinguished politicians. Visitors of the city were the statesmen of our country and those of various foreign countries, outstanding physicists N.Bohr, P.Dirac, F.Joliot – Curie, E.McMillan, G.Seaborg, et al. There was a fruitful cooperation between Dubna scientists/specialists and academicians A.P.Alexandrov, N.A.Dollezhal, M.V.Keldysh, L.D.Landau, A.A.Mints, D.V.Skobeltsyn et al., aircraft designers G.E.Lozino-Lozinsky, P.V.Tsybin, V.N.Chelomej. The creative biographies of many writers and poets have been linked to Dubna. Among them B.Akhmadulina, G.Backlanov, A.Voznesensky, A.Zinoviev, I.Zolotussky, S.Mikhalkov, B.Polevoj, V.Polyakov, R.Rozhdestvensky.

The international relations of Dubna are versatile. They cover a science, manufacture, business, education, culture, public health. The sister-cities of Dubna: La – Crosse(USA), Givat – Shmuel (Israel), Alushta (Ukraine).

CULTURAL ENVIRONMENT OF THE CITY

Since the first years in Dubna started to form special cultural environment: physics and lyrics poetry always supplemented and enriched each other. For stage performances this city of science located near Moscow used to visit the stars of the world and Russian culture, the best creative collectives of the country. Dubna stage keeps memories of David Ojstrah and Leonid Utesiv, Irina Arhipova and Arcady Raikin, Mark Bernes and Lyudmila Zykina, Andrey Tarkovsky and Zinovy Gerdt, Muslim Magomayev and Ljubov Kazarnovskaya, Vladimir Vysotsky and Vladimir Spivakov... In Dubna Michael Romm's well-known film «Nine days of one year» was shot. Poet Andrey Voznesensky wrote:

I love Dubna. There are my friends.
Birches there grow through sidewalks.
And likewise independent and thawed
Are the eyes of wonderful inhabitants.

Bright creative persons and collectives work in the city also, Dubna is obliged to them in many respects for the deep traditions in development of culture. In 1965 choral school « Dubna «was established in the city (the art director – Olga Ionova, honoured cultural worker of the Russian Federation) which gave an impulse to development of choral art in the city. Today in Dubna there are more than 10 choral collectives, among them choral school of boys (the art director – Olga Mironova, honoured cultural worker of the Russian Federation) which pupils act on stages of leading opera theatres of the country, including Bolshoi theatre. There are musical and art schools, choreographic collectives and studios of modern ball dance working in the city.

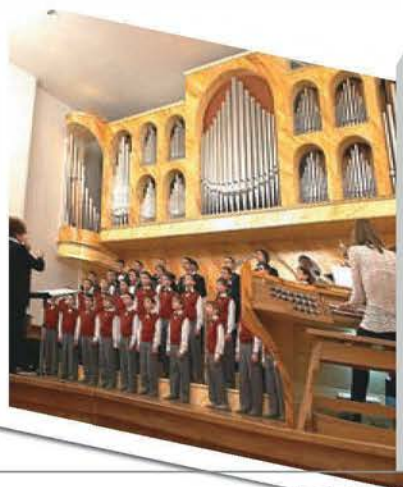
Festivals of classical music «The Sounds of Soul «, holidays of choral music, competitions of violinists, show of young talents, the All-Russia festivals of choruses of boys and young men are conducted on a regular basis . Creative collectives of the city invariable occupy prize-winning places at the international festivals and competitions in different countries of the world.

Great creative work is conducted by Municipal Palace of Culture «Octiabrj» and Palace of Culture «Mir» (JINR). All in all there are 18 establishments of culture and arts in the city with 95 creative collectives of different genres and more than 4000 persons are engaged in them.

Artists of the city actively participate in the cultural life of the region, their works are shown not only at regional, but also at Russian exhibitions as well. Literary and poetic evenings are very popular with city dwellers, including those with participation of fellow-townsmen – literary and poetic creativity in Dubna develops very actively.

Dubna remains to be one of the cities in Moscow region where citizens are interested in reading. There are more than 20 libraries here.

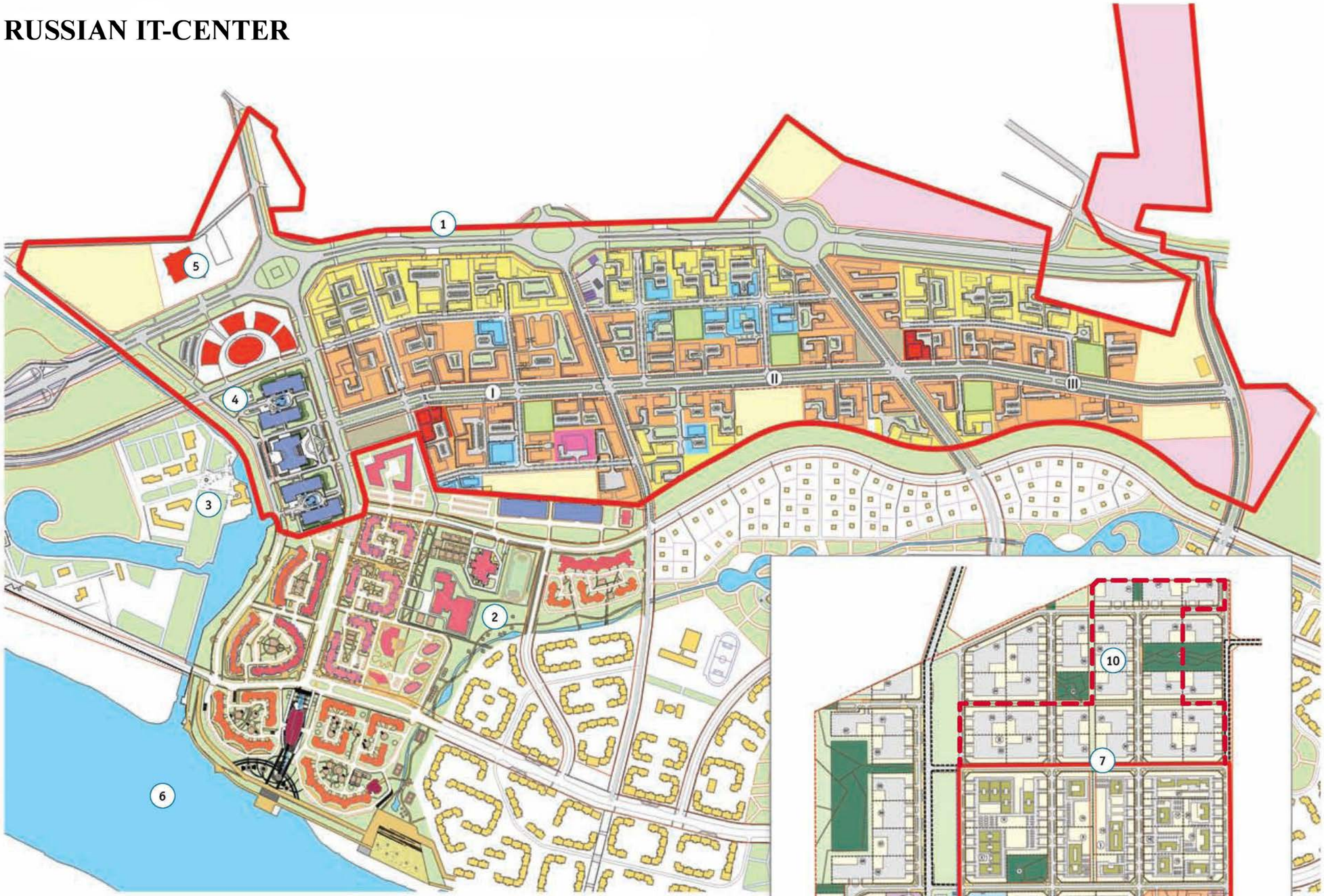
There are three museums in the city: Museum of History (State Engineering Design Bureau «Raduga», Museum of History, Science and Technology (JINR) and the City Museum of Archeology, Local History, Geography and Culture. They conduct active educational and research work, organize thematic exhibitions.



1. Левобережный участок ОЭЗ
2. Городок программистов
3. Правобережный участок ОЭЗ
4. Граница участка ядерно-физических и нанотехнологий
5. Река Волга
6. Иваньковское водохранилище
7. Канал имени Москвы
8. Река Сестра
9. Река Дубна
10. Иваньковская гидроэлектростанция
11. Объединенный институт ядерных исследований
12. Университет «Дубна»
13. Автодорога на Москву
14. Автодорога на Тверь, Санкт-Петербург
15. Приборостроительная площадка
16. Авиапромышленная зона
17. Центр космической связи
18. Проектируемая рекреационная зона «Озеро Лебяжье»
19. Проетируемый спортивно-развлекательный парк «Ратмино»

1. Left-bank site of SEZ
2. Programmers's township
3. Right-bank site of SEZ
4. Nuclear physics and nanotechnologies site border
5. Volga river
6. Ivankovskoe water reservoir
7. Moscow Canal
8. Sestra river
9. Dubna river
10. Ivankovskaya hydroelectric power station
11. Joint Institute for Nuclear Research
12. «Dubna» University
13. Highway to Moscow
14. Highway to Tver, Saint-Petersburg
15. Instrument-making site
16. Aviation industrial zone
17. Space communication center
18. Designed recreation zone «Lebiazhie Lake» (Swan Lake)
19. Designed Sport & entertainment park «Ratmino»

RUSSIAN IT-CENTER



Район российского центра программирования

1. Граница левобережного участка ОЭЗ
2. Городок программистов
3. Парковая зона, яхт-клуб
4. Инновационно-технологический центр
5. Дворец спорта «Радуга»
6. Река Волга

Участок ядерно-физических и нанотехнологий

7. Граница правобережного участка ОЭЗ
8. Таможня
9. Центр коллективного пользования в сфере нанотехнологий
10. Резервная территория ОЭЗ

■ Парки и скверы

NUCLEAR PHYSICS AND NANOTECHNOLOGIES AREA

Russian IT-center

1. Left-bank site border of SEZ
2. Programmer's township
3. Park zone and yacht club
4. Innovation Technology Center
5. Palace of Sport "Raduga"
6. Volga river

Nuclear physics and nanotechnologies area

7. Right-bank site border of SEZ
8. Customs House
9. Shared Use Center (nanotechnologies)
10. Reserved territory of SEZ

■ Public garden

TRANSPORT AVAILABILITY

Dubna is situated in northern part of Moscow region and is connected to Moscow and nearby cities by federal motorway A-104 “Moscow-Dubna”, territorial motorway P-86 “Dubna-Kimry” and territorial motorway “”Rossia”-Konakovo-Dubna”.

Distances:

- 100km to Moscow,

- 80km to Sheremetevo Airport,

- 80km to Tver’,

- 40 km to Dmitrov (see Attachment 1).

TECHNICAL-INNOVATION SPECIAL ECONOMIC ZONE (SEZ) «DUBNA»

The plan for development of special economic zone in Dubna provides for not only construction of engineering, transport and innovation infrastructure of the special economic zone, but also the housing construction program for the adjoining territory, development of social infrastructure including children's preschool establishments, a school, a polyclinic, a new medical building, sport complexes, hostels and a hotel for sojourn of arriving specialists. The program also provides for development of material resources of University « Dubna «, development of cooperation of the university with higher educational establishments of the Russian Federation and the CIS countries, creation of outsourcing system for personnel provision of SEZ resident companies.

Within the framework of the project for creation of special economic zone in Dubna there are clusters being generated in the field of information technologies, design of complex technical systems, nuclear physics, nanotechnologies and biotechnologies. However, it does not mean, that organizations specializing only in specified areas can become SEZ residents.

The location of organizations (businessmen) in the territory of the technical-innovation special economic zone is carried out in accordance with Federal Law « On special economic zones in the Russian Federation » of 22.07.2005 Nr.116-ФЗ. Normative documents regulating particular features of SEZ legal order and the obtaining routine for the status of SEZ resident, as well as other information on activities in the territory of SEZ see on Web-site www. dubna-oez.ru

The organizations which have received the status of SEZ resident are offered:

• land plots for construction of the industrial and/or office buildings, provided with all kinds of engineering communications and a transport infrastructure (on lease terms during construction and into the ownership after completion of construction);

• office and production floor spaces in buildings of the Innovation Technology Center of the SEZ on lease terms.

Prior to the status of the SEZ resident the small businesses which activity conform to the established by the legislation concept of technical- innovation activity, can be placed in the Business-Incubator of the Iinnovation Technology Center.

The Innovation Technology Center (ITC) of Special Economic Zone «Dubna» represents a complex of five buildings with total area of above 55 thousand sq.м, located in the territory of the special economic zone. The complex includes the Congress-center, the Business-Incubator, the Laboratory Building, the office/production building and the hotel. The complex is provided with parking lots and parking garages, the fenced territory, own automatic telephone exchange, the service infrastructure.

All buildings are equipped by ventilation systems of forced-circulation and air-conditioning, local computer networks in the buildings allow to ensure data transfer rate up to 10 Gb/sec. with possible development of DTR on existing fiber-optical channels to Moscow up to 720 Gb/sec.

The infrastructure of the Congress Center building allows to hold seminars and conferences of any level. The hotel rooms of the Innovation Technology Center give an opportunity of both short-term stay of specialists (for the period of seminars, conferences), and long stay (for the period of work on the project or sojourn until the construction of permanent housing facilities). The prices for these kinds of services are differentiated.

For the personnel of SEZ resident companies, except for an opportunity to sojourn in the hotel, Dubna administration offers accommodation (including separate apartments for management of the companies) in the well-appointed hostel with residence suites and stay up to three years.

Payments of the rent of office and production premises in the territory of the ITC (including payment for municipal services, such as electric energy, costs of maintenance and service of engineering systems in the buildings, security, cleaning of public places, etc.) are as follows

• In 2010 – 2012 for SEZ residents at the rate of 300 roubles a month for one square meter (including VAT).

From 2010 federal law №116 allows placing production lines on the territory of special economic zone of innovation type "Dubna".

In the territory of ITC ,besides the business-incubator, function organizations as follows:

The Center for training of personnel of University « Dubna « with functions as follows:

TECHNICAL-INNOVATION SPECIAL ECONOMIC ZONE (SEZ) «DUBNA»

• retraining and additional education of scientists and specialists of resident companies or in the interests of residents;

• organization of practice, in-depth training, course and graduation thesis writing for students and post-graduate students of University « Dubna « and other High Schools at resident companies;

• ensuring interactions with High Schools of the Russian Federation, the CIS countries and other states, interested in employment of the students and post-graduate students in SEZ «Dubna» for coordination of work to meet the requirements of «Residents» in human resourses;

• adaptation of educational programs to the requirements of residents.

Centers of intellectual property providing patent and legal support and consulting on the issues of intellectual property;

The Exhibition center equipped by necessary equipment;

The Center for shared use of expensive research and test equipment is to be ready in 2012.

The rent of the land for SEZ resident-companies building own premises is established at the rate of 2 % from cadastral cost of land plots for one year (for 2009 – about 2 roubles a year for one square meter). The payment for connection to networks of engineering and technical support for SEZ residents is not levied in 2009-2010. After completion of the construction the company-resident is offered the right to redeem the land plots.

In accordance with existing federal legislation and the legislation of Moscow region SEZ residents are granted some **privileges** i.e. reduction of the rate of the unified social tax (insurance fees), exemption from the property and land tax, reduction of the tax rate on profit by 4,5 % for five years, exemption from the transport tax for five years, other privileges and preferences.

The territory of the special economic zone pursuant to the legislation of the Russian Federation is a free customs zone, i.e. the foreign goods within the limits of the SEZ territory are placed and used without payment of the customs duties and the VAT. Export of goods and services from the territory of special economic area is also carried out in accordance with the routines of a free customs zone.

NUCLEAR PHYSICS TECHNOLOGIES IN SEZ «DUBNA»

Dubna is a world famous nuclear physics center. Naturally, nuclear physics technologies have initially been named among the priority directions of scientific and technical development of SEZ «Dubna».

Based on the research results of scientists from the Joint Institute for Nuclear Research and other centres of science have been developed the basic scientific and technical directions as follows:

- construction of accelerators, used among other tasks for solutions of applied problems;
- detection of explosives and drugs, radioactive materials;
- technological processes for micro-and nanoelectronics;
- Ion-plasma technologies, technologies of track membranes;
- super capacitors and energy storage systems;
- manufacturing methods and applications of carbon tubes and other nanostructures;
- instruments and procedures of measuring and prototyping at micro level and nano level;
- hardware-software complexes for control of manufacturing processes in nuclear power. engineering;
- light-emitting diodes;
- quantum dots;
- materials and structures of solar batteries.

CLUSTER GENERATION IN THE REALM OF NUCLEAR PHYSICS TECHNOLOGIES AND NANOTECHNOLOGIES

The generated cluster in the realm of nanotechnologies includes structures and mechanisms as follows:

- The Joint Institute for Nuclear Research (JINR) – the research center of the cluster;
- Science and technology council in the realm of nuclear physics technologies and nanotechnologies;
- Federal State Unitary Enterprise «Research Institute of Applied Acoustics» – modern research center and product certification center in the realm of nanotechnologies (in the process of establishment now);
- The International Innovation Center of Nanotechnologies – being created on the initiative of JINR and RRC «Kurchatov institute» organization for international cooperation of the CIS countries and the European Union in the realm of nanotechnologies;
- University « Dubna « – the educational and research center of the cluster providing among others development of cooperation with higher educational institutions of Russia and the CIS countries;
- Nanocenter «Dubna» – the structure for support of business activities, research and development in the realm of nanotechnologies (in the process of establishment together with State Corporation «RUSNANO»), including the Center for Technology Transfer, business-incubator, Center for Shared-Use of research and test equipment. For logistics of Nanocenter «Dubna» and other similar centers State Corporation «RUSNANO» creates funds for seed financing.

The cluster of nuclear physics technologies and nanotechnologies in Dubna is generated within the framework of the Agreement between RusSEZ and State Corporation «RUSNANO» of April 25, 2008.

At present the projects in the realm of nanotechnologies in SEZ «Dubna» are implemented by more than 20 organizations.

BIOLOGICAL AND MEDICAL TECHNOLOGIES IN SEZ «DUBNA»

Inclusion of biological and medical technologies in priority directions of scientific and technical development of SEZ «Dubna» in June, 2009 came as a result of recognition of the interest towards development of this perspective direction shown by residents and potential residents of SEZ «Dubna».

The main scientific and technical directions developed in Dubna in the realm of biological and medical technologies are as follows:

- technologies and equipment for hadron (proton) therapy of oncological deceases;
- medical accelerators;
- devices and consumables for donor and therapeutic plasmaphoresis;
- nanodrugs;
- digital hearing aids;
- nanostructured biocydes;
- nanotechnologies in ophthalmology and stomatology;
- medicine preparation technologies by methods of genetic engineering;
- medical electronics.

CLUSTER GENERATION IN THE REALM OF INFORMATION TECHNOLOGIES

History. Electronic data-transmission channels appeared in Dubna at the end of the seventieth: physicists needed the exchange of large scale arrays of data with CERN (European organization for nuclear research) and other research centers of the world. Then all country was mastering FORTRAN by G.L.Maznyj book «Programming in language FORTRAN in operating system «Dubna». At the same time the largest in the Eastern Europe Space Communications Center was built in Dubna, engineers from Dubna have created one of the first in the country optical data-transmission channels, and the first in the country production of optical cable was organized at Leningrad «Sevkabel» plant on the order from Dubna.

Infrastructure. In 2009 data-transmission channel М9-Дубна with transmission capacity up to 720 Gbit/sec was put into operation. Before spring of 2010 accessibility of two more high-speed channels (10 Gbit/sec.each) will be achieved – Open Joint Stock Company «Center Telecom» and Open Joint Stock Company «Comstar-OTC».

It is possible to actually make connections to the city data-transmission channel with potential capacity of 1 Gbit/sec. (separate links – 10 Gbit/sec.) from any building in the territory of the city.

Business. At present about 50 companies in Dubna are engaged in activities in the realm of information technologies, over 30 of them are residents of SEZ «Dubna».

Projects.

- Created by the Joint Institute of Nuclear Research for basic experiments on Large Hadron Collider, the GRID-segment makes about 45 % of entire Russian segment and it is among the ten world's largest segments.
- Group of companies «T-Platforms» started construction of the supercomputer with capacity 5.0 PFLOPS in SEZ «Dubna».
- Groups of companies IBS, IAG, DB «Software», VNIIPVTI (All Russian Research Institute for Computer Engineering and Information), company «Agava» plan creation of Centers for Data Storage and Processing in Dubna.

Conferences. In 2009 in Dubna conferences are held on the Internet (IntRus, Open Joint Stock Company «Contact»), on space communication (FSUP «Space communication»), on intelligent expert systems (Open Joint Stock Company «Technopark – Dubna»), on high-performance computing (Open Joint Stock Company «SEZ»), on game industry (ACGI, LLC «Studio BIART»).

HOUSING FOR INVITED SPECIALISTS

Project of Special Economic Zone has been implemented on the basis of Agreement between the Government of the Russian Federation, the Government of Moscow region and the Administration of Dubna.

Within the framework of the signed Agreement the Administration of Dubna for temporary residence (up to 3 years) of arriving specialists of SEZ resident companies have been allocated apartments in the municipal housing stock in the city territories and two buildings of an apartment-type hostel have been built.

The temporary housing stock for arriving specialists has furnished rooms and apartments. Accommodations (rooms, apartments) in the temporary housing stock are distributed on a noncommercial basis, in the order, established by the Regulations approved by the Council of Deputies of Dubna by quotas allocated to SEZ resident companies.

Distribution of quotas and provision of temporary accommodation is considered by the Public Commission under the Administration of Dubna with participation of representatives from the resident companies. SEZ resident companies can reserve within the limits of the allotted quotas temporary accommodation for specialists expected to arrive in the future.

Temporary accommodation of arriving specialists is also arranged at the hotel of the Innovative Technology Center of Special Economic Zone. Some of the rooms in the zone have kitchenettes and they can be used for a long stay.

Dubna Council of Deputies has adopted the Municipal Target Program of Housing Construction for the specialists of SEZ resident companies, Research-and-Production Complex of the city and the workers of budgetary sphere. The permanent housing within the limits of the approved Program shall be constructed as target projects.

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