Design and Implementation of Skolkovo Innovation City Concept

Region	**Europe and Central Asia**
Award Scheme	**Dubai International Award**
Sustainable Development Goals	**Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable**

Summary

In December 2010, Dmitry Medvedev specified the location for the first building of Skolkovo Innovation Center. In February 2011, following the advice from the Skolkovo Foundation think tank, whose members include globally recognized stars of architecture and design, the Foundation Council approved the resulting urban development concept, taking into account the feedback from the first innovation center participants, business partners, neighborhood residents and other civil society activists.

Background and Objective

Situation Before the Initiative Began: Skolkovo Innovation Center is the first of its kind in Russia. It was supposed to manifest a new vision of a city, to establish key parameters and guidelines for design and development of an innovations city, the new standards for design and construction, urban environment and spatial planning. The new vision was shaped into a roadmap, and the innovation center is and will be developing based on this roadmap. The urban design code pursues the only goal: creation of the most enabling environment, a whole ecosystem, to facilitate concentration of the intellectual capital capable of generating innovations. Skolkovo is a unique project in the country with its experience in generation of innovation space on 400 hectares. Establishment of Priorities: 1. Compact and multifunctional development: residential and public areas, services and jobs are expected to be within a walking distance from each other. Such development saves the city from commuting and boosts a more diversified and activity-intense living environment. 2. High-density of low rise buildings, viewed as the most effective and human friendly utilization of urban space. 3. Sufficient area of public spaces to promote communication, recreation and work of creative people. Public spaces determine the urban life quality and generate an urban community. 4. Transport accessibility is an inherent attribute of a city with a high quality of life. Having a rather dense network of streets and roads is not enough to achieve it, since a modern city should employ information and communication technologies to manage transport infrastructure and traffic. The ultimate goal is to have a smart car, bus, or tram on a smart road. The smart infrastructure would continuously monitor and control the street network utilization rate to ensure the best possible comfort level for all city traffic participants. The core idea is separation of transport flows by levels where pedestrians and cyclists, public transport and personal cars do not cross and do not impede each other’s progress. 5. Polycentric city concept, where autonomous and multifunctional neighborhoods and stand-alone settlements are connected by high speed transport. Each component of such city is an island encircled by green spaces, where buildings and utilities do not cut through the natural landscape and do not divide it. That said, a high density of utilities is required: logistic supplies, power grids, communal utilities, and information communication lines shall be pulled together to make most of the space. 6. Redundant information and telecommunication infrastructure and remote access to services. Any services shall be available by internet – from social and health services to a grocery store. 7. Energy efficient city with low or zero emissions of domestic/municipal waste. There are proven solutions of the problem used in many developed countries. The most prominent ones include energy-passive or active houses. Town planning is also important, as it helps to maximize day light benefits. Smart power and utility grids supporting a supplier-user interface, self-diagnostics, automatic regulation of power consumptions and peak shaving. These solutions include environmentally safe and complete disposal of household and municipal waste. Individual buildings and neighborhoods are expected to have independent power supply and waste disposal systems. The above priorities are identified with a wide participation of all project stakeholders, including professional urban specialists, investors, academia and residents of adjacent settlements. Formulation of Objectives And Strategies: 1. Open communications: effective interaction between project implementation participants. Mechanism: provision of locations and events for communications. 2. City as a laboratory: the city shall be ‘the 6th cluster’, the biggest laboratory for project participants in terms of continuous development and commercialization of energy efficient, information, communication, health, education and other technologies. Mechanism: redundancies for transformation and implementation of new technologies. 3. Competitive advantage: better quality of urban environment in the Center compared to that in other cities of technological excellence in Russia and other countries. Mechanism: adaptation of best architectural, engineering, communication, environmental and social practices. 4. Equity: provision of equal access to the Center resources and their most cost effective use. (The Center should serve a model of comfortable and cost effective urban environment). Mechanism: provision of equal access to public centers and shared services. Thus, the 4 Es principle shall be implemented: environmental safety, cost-effectiveness, ergonomic design and energy efficiency. Mobilisation of Resources: 1. Financial resources: 4/5 of the budget for building of the city shall be raised as investments, and 1/5 is a government’s subsidy for the

Center development. Investors are mobilized for the project implementation following the Project Rules endorsed for various levels as related to the land management, urban development and construction activities and use of parcels of land. 2. Technical resources: The complex provided special economic conditions for the companies working in priority sectors of the Russian economy modernization: telecommunications and space, biomedical technologies, energy efficiency, information technologies and nuclear technologies. The project established 5 clusters: Cluster of Energy Efficient Technologies, Cluster of Nuclear Technologies, Cluster of Biomedical Technologies, Cluster of Information and Computer Technologies, and Cluster of Space and Telecommunications Technologies. The clusters involve various R&D institutes in their activities. 3. Human resources: Skolkovo Foundation established a number of councils/boards to support decision making processes and seek competent advice on various activities undertaken by the Center. They take an active part in the life of the innovations city: Board of Trustees, Skolkovo Foundation Council, Research Advisory Council, Industrial Advisory Board, City Planning Board, Foundation Council, and Grant Committee. The key steering body of the Foundation – the Foundation Council – is managed by the Board Chairperson.

Actions and Implementation

Such a remarkable initiative as Skolkovo has demonstrated that there are no off-the-shelf solutions for the project development, and they can hardly emerge overnight. The main challenge for this ambitious project was the mere novelty of this initiative in Russia, and all urban development and engineering solutions were unprecedented. To minimize potential risks, the Foundation leadership proposed a master planning method encouraging a productive dialogue between the best specialists in different areas. A dialogue became a key feature of the Skolkovo project implementation experience. Effective communication chains at various levels pursued continuous brain storming among engineers, researchers, urban residents, as well as city planners. The study of an innovation process life cycle resulted in the description of city parameters and portrayal of an innovator. This informed the conclusion about the target group of the Center beneficiaries. Review and detailed analysis of source data formed the basis for development of the Center Master Plan, Conceptual Designs (Sketches) of Planning Areas, Area Planning Design, Boundary-Setting Plan, Land Use and Development Regulations. They formed an urban development framework for the area with a high density of intellectual activity, which may become a fertile ground for the rise of a totally new quality of life for self-realization of creative people and self-reproduction of a human being-knowledge system. The Center shall produce new human resources, brought up with new technologies, as well as the technologies themselves. In terms of the urban development policy, the Center will become the first small Russian city built in accordance with the most advanced principles and on a single Master Plan, based on understanding of its end users' needs. This experience would encourage modernization of small and medium-size cities of Russia, contribute to the improvement of life in the big cities and promote transformation of megacities into agglomerations.

Outcomes and Impacts

The innovation environment development strategy is working today as approved. A successful model of engaging potential investors continues to draw new participants, an example being Sberbank of Russia, which is developing its own Technopark in Skolkovo in cooperation with a greatest architecture bureau Zaha Hadid Architects; it is also building its own data processing center here. Every year Skolkovo is attracting new participants, and the current year is no exception: the Government of Moscow City has joined the city with its Health Cluster Project. A diagnostics and health center are being built in the Center today. Skolkovo is a place of social lifts and opportunities: any startup may find its investor here, while a research capable of changing our life for the better may be undertaken and reach its beneficiary. Social life is booming under the project: the 2nd annual music festival Skolkovo Jazz Science took place this year, encouraging more interest to research among the project participants and festival guests, as well as exposing them to jazz. Skolkovo also hosts lectures on culture and innovations, science and technologies, drawing more and more people to contribute to innovations environment. Innovations are interwoven in all aspects of the project life: Skolkovo is an energy efficient project with a dedicated waste management system and recycling of grey water, with on-site water treatment facilities serving the project needs, it also has semi-underground and fully buried substations built in Russia for the first time. The project required local regulations and standards to define the city life. Having mobilized relevant specialists we had the following documents developed and approved: City Development Sketch and Design Code, Urban Environment Design Code, Conceptual Design of Urban Environment Elements and Advertising Infrastructure Layout, Technical Policy, Green Code, and Project Rules.

Gender and Social Inclusivity

A transport concept developed in Skolkovo provided an impact on the vision of transport infrastructure of Moscow City (which became a pedestrian-centered one), and such a system is currently under implementation. As mentioned above, Skolkovo is a place for regular contacts and exchange of lessons learnt between project participants, international specialists from various sectors and officials from other cities.

Innovative Initiative

Our team is confident that many lessons will be learnt in the course of project implementation and operation, but a key lesson we have already learnt is as follows: an in-depth review of international practices and standards would result in the development of new local standards incorporating specific requirements, area specific features, climate and other project needs to help build a city, which in its turn, would produce an innovative ecosystem working as a single entity bringing about many benefits for the people.

Resources devoted to delivery

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Conclusion

At the inception stage of the Skolkovo Innovation Center, Federal Law #244 On Skolkovo Innovation Center was issued to guide the project team activities. The Law authorizes the Skolkovo Foundation to regulate its activities, approve the city planning documentation and develop its own urban environment standards. One output of the Foundation team is development and approval of the Rules on Land Use and Development of Skolkovo Innovation Center long before a similar document was issued for Moscow. Also, special standards to govern the downtown development were issued: Design Code of Urban Environment and Conceptual Design of the Urban Environment Elements of Skolkovo Innovation Center. As above mentioned, Skolkovo transport concept informed the My Street Initiative implemented in Moscow. Skolkovo team undertook the research, which found some transport standards and requirements unreasonable for the project, hence they were amended: 42.13330 SNiP 2.07.01-89* City Development. Planning and Development of Urban and Rural Settlements. Following the Skolkovo's precedent, design code would be developed now for any new area. The project demonstrated the importance of continuity of urban development solutions (from an area planning to a comprehensive design).