



PROJECT SUMMARY

Organization:
BRT Architekten

Solution:
Building

Location:
Moscow, Russia

Project Objective:
To design a mixed-use development, including offices, retail, entertainment, hotel, and residential units for a public client at or below budget

Products used:
GenerativeComponents®

Setun Hills Business Park

BRT Architekten Uses GenerativeComponents® (GC) to Integrate Moscow Business Park into a Greenfield Environment

When BRT Architekten began its design of the award-winning Setun Hills Business Park in Moscow, it knew it had to employ innovative technology to achieve an inspiring deliverable.

This massive-scale, four-building development covers more than 550,000 square meters. The scope of the project includes a semicircular, 12-story main building that opens impressively onto Minskaya Street, along with three, eight-story spherical buildings in a park-like setting. The main challenge for the BRT Architekten design team was that of integrating the organic forms into a greenfield environment, creating a relatively flat building geometry in its cross section, and interlocking it with the landscape in plan.



Successful project completion hinged on the team being able to consider and evaluate the multiple relationships between interior and exterior spaces using special forms and interlocking concepts. Its ability to accomplish this difficult task was facilitated by its deployment of GenerativeComponents (GC). This associative and parametric modeling system enables architects and engineers to pursue designs and achieve results that were virtually unthinkable. GC enabled the BRT Architekten team to respond rapidly to the project's changing parameters and optimize the design architecturally, environmentally, and economically, while monitoring and controlling the impact on the gross floor areas.

Indeed, by using the powerful GC parametric and generative tools, the team enhanced the process of defining the design intent and creating

numerous variations and alternatives in shape and size during more advanced planning stages. Despite Setun Hills Business Park's considerable construction volume, the buildings are truly a modern integrated implant that blends into the landscape. The design of the office complex incorporates hemispherical, curved roof cladding, and centrally located, partially underground entrances on a private access road.



Among the most fascinating features of the BRT Architekten design is a five-spoke, glass-roofed courtyard that interconnects one building's offices in an inner circle. The business park includes a central plaza that creates a relaxing internal urban environment for the park's occupants. Each of the three spherical buildings contains a central lobby with a staircase and elevators in its symmetry axis and internal fire-escape stairs in each wing.

In addition, the flexibility of the design allows offices to be divided into functional units that range from 400 square meters to 1,600 square meters. The 12-story, semicircular structure comprises public underground parking, retail stores, a 250-room executive-class business hotel, a restaurant with panoramic views, and a fitness center. It also features a cinema under a nine-spoke, domed structure that creatively aligns with the three other buildings and encloses a courtyard with pools.

Designing a building complex on this massive scale would have been too time consuming and expensive without the use of GenerativeComponents. This innovative technology allowed BRT Architekten to automate the design processes and accelerate design iterations. Moreover, the firm was able to transfer data from GC directly into MicroStation®,

FAST FACTS

- Gross floor area is 570,000 square meters
- Main building contains public underground parking, retail shops, a 250-room executive-class hotel, restaurant with panoramic views, fitness center, and movie complex
- BRT Architekten completed detailed design evaluation in half the time originally scheduled using six architects

"BRT Architekten's use of GC on the Setun Hills Business Park enabled the firm to balance and optimize the complexity of this revolutionary project."

ABOUT BENTLEY

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greatly simplifying the building of cardboard models from Setun Hills' highly complex building shapes.

In fact, combining MicroStation V8 and GC helped the project team manage and streamline the design process from preliminary design sketches in GC. It was able to create convincing design visualizations and produce construction documents all within a truly coherent and synergistic workflow. This combination of capabilities enabled BRT Architekten to complete the detailed design evaluation in just a few weeks during the feasibility phase. Based on its experience using similar design tools, the firm had estimated 50 percent more design time for this phase of the project.

BRT Architekten's use of GC on the Setun Hills Business Park enabled the firm to balance and optimize the complexity of this revolutionary

project. As a result, the project now serves as an excellent example of the firm's capabilities. Through its use of GC, BRT Architekten was able to integrate, in less time than it originally anticipated, the mass of the buildings and the sensitive environment in terms of scale, size, and sensibility, while satisfying the gross floor area requirements. This technique greatly impressed the public client and helped it win the contract.

