

SKOLKOVO

Innovation center district 11



bechu +
associés

Skolkovo Innovation center district 11



« Like penguins on an ice floe »

C r é d i t s

Programme :

Single family homes, housing for researchers and professors

Client :

ООО ODAS SKOLKOVO

Surface area:

17 000 m²

Status :

Competition winner – Delivered in 2017

Architecte :

Agence d'Architecture A. Bechu & Associés

Chef de projet : Pablo Lorenzino, associate



Introduction

In early 2010, the Russian President Dmitri Medvedev announced the creation of a vast technology innovation centre in the suburbs to the south of Moscow.

The intention is that this centre should be able to rival California's Silicon Valley. Imagined by Vladimir Putin to resemble the famous Star City in the ex-Soviet Union and transposed to a universe incorporating all leading edge technologies, this complex will house research and university laboratories, established and start-up companies, networking and seminar hubs, as well as friendly residential zones. On conclusion of a Russian competition, each district has been given to a different internationally known architect (Sanaa, OMA, Boeri, etc.).

The AAAB et associés agency is experimenting with a new approach to ecological town planning for this complex which will be housing researchers and their families in single family homes as well as providing them with a living environment that encourages social interaction.



The ‘tortoiseshell’ arrangement that inspired the site plan allowed for a 5°C temperature reduction. By huddling in very tightly packed groups (8 to 10 per square metre) and only exposing their upper backs to the cold wind, penguins

The project

Much like penguins on an ice shelf forming a circle to share their heat, a hundred villas are grouped ten by ten in a vast clearing surrounded by a waterway able to drain away the melting snow. The ‘tortoiseshell’ arrangement that inspired the site plan allowed for a 5°C temperature reduction. By huddling in very tightly packed groups (8 to 10 per square metre) and only exposing their upper backs to the cold wind, penguins limit their heat loss.

The intention is to create micro-communities organised around a central space that provides the atmosphere of a village square. All the low energy houses are different from one another, providing each occupant with his or her specific identity within this urban complex. Their modular framework design – initially intended to be in wood but finally constructed in concrete by a Russian contractor while nevertheless retaining their planted roofs – permits the low-cost, rapid and diversified construction of the complex.

Integrated into the topography, the public and shared services located in the heart of the project provide a landmark for cars entering the site and a real social link for all the inhabitants. While respecting the continuity of the biotope, the project recommends soft modes of transport, the use of renewable energies, and the intelligent collection of water with conservation of natural flow rates.



The Skolkovo project consists of a set of 90 individual dwellings. Originally, the walls and floors of the houses were intended to be built entirely of wood (rather than concrete), and they were also designed to be energy self-sufficient. The general energy source was in the central building, which also houses a spa and common room. For the wood frame, we consulted the Austrian company KLH. Their calculations classified the design as meeting the LEED Gold standard.

The houses are designed based on 3 different room 'families':

- 1) the living rooms on the ground floor
- 2) the bedrooms
- 3) the loggia rooms

We envisaged a maximum of 2 different components for each room family, and thus a maximum of 6 rooms per house.

Using different assembly combinations, we created 9 types of house (all different in accordance with the sun's orientation). We therefore ended up with 9 mini-districts, with the aim also being to create a different perception of each individual mini-district among the executives living in them.

Each district is made up of 9 houses arranged around a shared courtyard in which cars are prohibited. Each house has its own private entrance, terrace, and south, southeast or southwest-facing garden.

The houses are raised 80 cm above the level of the courtyard, allowing them to handle up to 80 cm of snow in winter. Each private entrance therefore has its own ramp, a built-in feature of the landscape design (also handled by us).



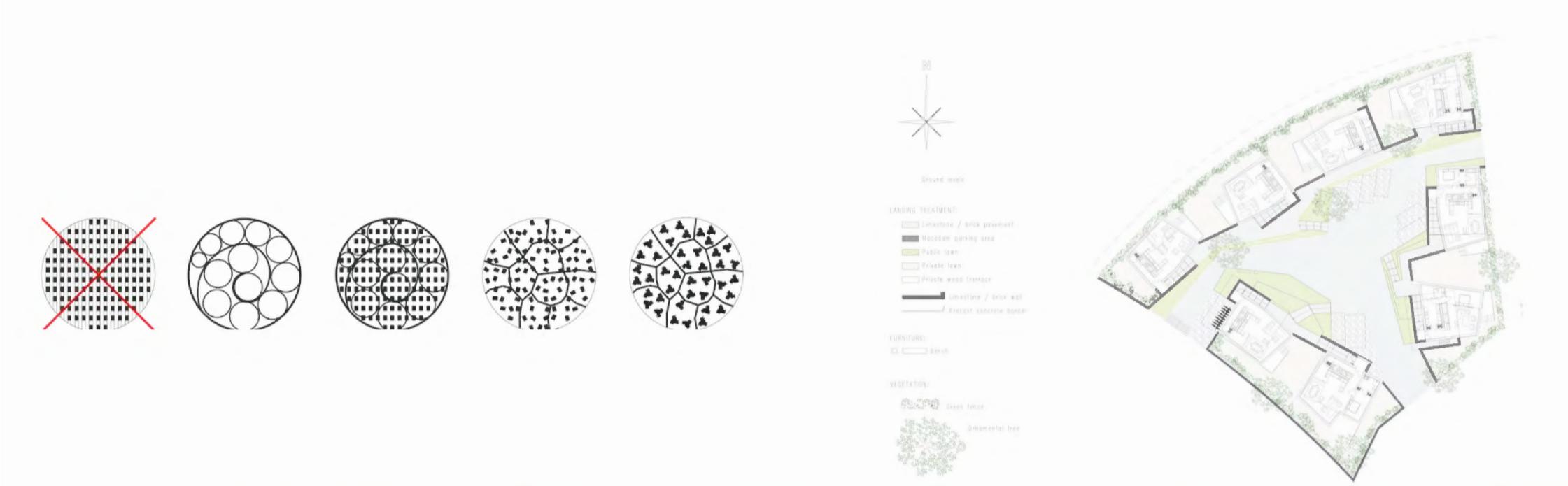
To summarise

- 90 houses
- 9 types
- 2-storey and 3-storey
- 3 rooms, 4 rooms or 5 rooms (disabled access is also available for each type, with the option of a ground-floor bedroom)
- 125 to 155 m² per house
- Wooden terrace on the ground floor/1st floor depending on house type
- Private garden of 150 to 200 m² for each house
- General heating provided by district heating and in-house radiators
- Triple-glazed aluminium/wood doors and windows
- Compulsory security door for all houses

When it came to installing the houses, their modular nature allowed us to predict the manpower and time requirements: 5 people, a crane and 2 days per house was the company's calculation for shell assembly.





















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