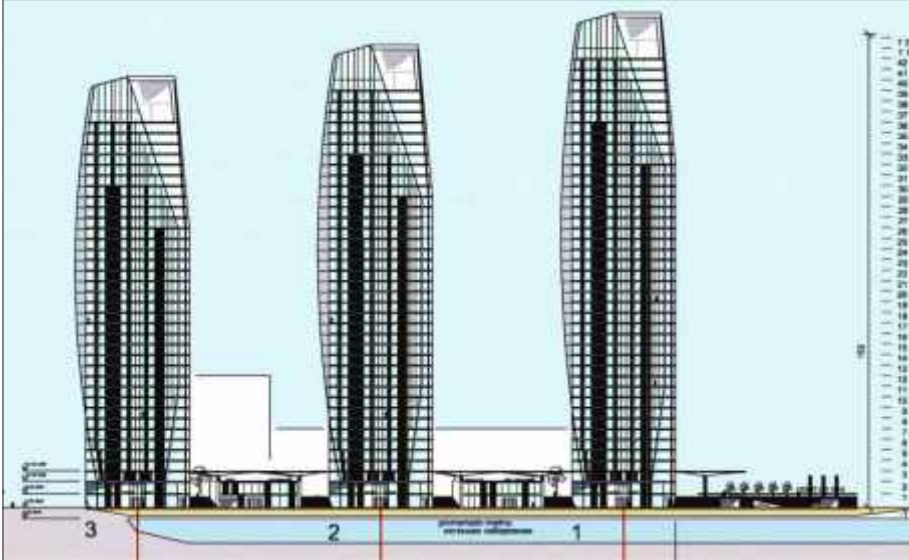


MARINA TOWERS

St. Petersburg, Russland



View from the west

The “Marina Towers of St. Petersburg” project covers the development of an entire tongue of land just to the north and opposite St. Petersburg’s stadium.

The site is located at the mouth of the Neva River and extends into the river. It has an area of ca. 3,5 ha. At ground level and below ground, the entire site will be occupied by an underground car park with more than 2,000 parking spaces. At the edges of the site, five buildings surround a public park which is being created for the local residents. Three up to 150 m high residential and office towers are located directly adjacent to the yacht harbor (which is also being planned) and to the riverside promenade to the west.

Small commercial and restaurant pavilions are to be built between the towers. On the north-eastern and south-eastern side, there will be two residential buildings 100 m and 140 m long with up to 15 storeys. Like the towers, their lower floors will accommodate offices and businesses as well as a kindergarten for the new city district.

The three towers are stiffened by their corridor walls and by the stairway and elevator shaft cores. The structural system for the floors consists of a ribbed slab

with downstand beams in the façade that are the same width as the ribs. The dimensions of the columns are graduated according to height; their design is tailored to the concrete qualities manufactured in Russia and to the permissible reinforcement percentages.



Location plan

Owner

AT Allianz Development GmbH, Yakobshtatski pereulok 5, 198103 St. Petersburg

Client

Braun & Schlockermann - ARCADIS Planungsgesellschaft mbH, Hansaallee 2, 60322 Frankfurt/Main

Architect

T. Dreesen, architect, Managing Director of Braun & Schlockermann - ARCADIS Planungsgesellschaft mbH

Planning period

June - December 2007

Start of construction

2009 (planned)

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Peripheral buildings to the north-east

Project data:

- Gross floor area: 200.000 m²
- Gross volume: 780.000 m³
- Height of towers: up to 150 m
- Height of peripheral buildings: up to 60 m

Krebs und Kiefer services

Structural design up to preliminary planning phase taking Russian norms into consideration (HOAI Phases 1 - 3)

The foundations of the towers consist of piles located in the areas of the load-transferring columns and wall connections. Concentrated loads are distributed via the thicker foundation slab beneath the towers

The peripheral buildings also have pile foundations. Optimized foundations in the form of combined pile and slab foundations must be agreed with the soil expert and the construction authorities before the authorization phase starts.

The residential buildings on the periphery of the site are also stiffened by their elevator and stairway cores, in connection with the gable walls. Because of the length of the buildings and the requirements of the Russian norm (SNIP), there are joints in the building components at intervals of ca. 50 m.

Especially in the longitudinal direction of the building, in which only core stiffness around the weak axis is available, the stiffening elements must be coupled in order to meet the comfort requirements (acceleration at the top of the building less than 0,08 m/s²).

The floors are planned as ribbed slabs, or where more flexibility is required for residential floor plans, as flat slabs. As in the case of the towers, the column dimensions are graduated over their height.



Cross-section of peripheral building