

POLITECNICO DI TORINO
FIRST SCHOOL OF ARCHITECTURE
Master of Science in Architecture (Construction)
Honors theses

OLYMPEKed: Beijing-Torino Design Studio 2008; merged design of a water museum and an urban wastewater recovery system

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Masterplan

This project stems from the master-plan designed during the workshop labelled “OLYMPEKed: Beijing-Torino Design Studio 2008”, dealing with the reuse of the Olympic Rowing and Canoeing Park in Shunyi (Beijing), and aimed at maintaining its principles, namely the creation of three new axes (re-establishing the connection between the river and the settlements) and the division of the Park in three areas (from south to north: sportive-recreational, cultural-directional, sportive-specialized) in order to ensure proper usage for the whole year. By covering the warming-up course (in the western part of the Park) the project ensures, via the synergy of its components, water autonomy for the Park (which currently uses the groundwater destined to the population) and the creation of several economical, environmental and social sustainability scenarios.



Treated water usage scenarios

The recovery system, including a primary treatment plant, a rainwater harvesting system, a constructed wetland and several tanks, is designed to satisfy both performance standards and landscape-architectural values (splitting the constructed wetland's plant into several cells, for example, allows on one hand to reduce the polluting of about 100%, hence optimizing the required maintenance, and on the other hand to create paths which guarantees a complete usage of the plant, this way becoming part of the adjacent natural park). The recovery system, involved in treating the outlet of 12500 inhabitants, is able to guarantee both water self-sufficiency for the courses and the creation of possible scenarios like, for example, an usage which supplying domestic-use water to the same quantity of persons (located in an area on the west bank of the river) whose sewages are treated and whose houses' roofs are used for harvesting rainwater, creating an independent, environmental-friendly water circulation system.



Bird's eye view of the museum

The museum's design wants to create a synergy (both formal and functional) between the architectural construct and the outer context: thanks to his pedestrian roof it becomes part of the park created by the tanks laying behind, and the arrangement of the entrance, aligned to the constructed wetland's main path, creates a visual and physical link between the different parts of the whole; the water surface facing the building gets over the very aesthetic value, performing also as a natural filter for water before reaching the tanks, which proximity allows for the use of its content as a thermal mass, reducing the inside-outside temperature differential. A significant role is given to water: it becomes the pivot around which the various spaces rotate: the entrance of the building takes place through a "water gallery", created by the reflection of water on the auditorium's intrados; in the hall a huge glass façade reveals, like in an aquarium, the water stored in the tanks, emphasizing its significance; in the west wing a patio, which all the public spaces face, is drawn as if it were the prosecution of the small lake, ideally joining the inside and the outside; both in the exhibition and in the educational areas, two high walls, facing the whole levels, thanks to water dripping on their rough concrete surface, creates a suggestive visual and acoustic choreography which accompanies the visitor.

The functions have been chosen with respect to the geographical and symbolic location of the building in the whole intervention: besides the presence of traditional exhibition spaces, some others, dedicated to workshops and meetings enable a more direct transmission of water culture, promoting public interest around the issue. In addition, the inclusion of all the relevant administrative and managerial offices for the cycling unit enhances the symbolic and functional value of the building.

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