Ellinikon White Water Stadium

Athens 2004

TECHNICAL PRESENTATION

RIVER DESCRIPTION

The entire white water river (except the arrival basin) will be constructed with a concrete lining. The total length of the course is 480 meters. For the first time in the history of the Olympic games the white water course uses sea water. All the structures in the project were designed to meet the Greek seismic regulations. The architect of the project is Mr Nikos Fintikakis, and the river was designed by Hydrostadium.

A – Competition course

1 – Starting basin

The basin will receive water from the pumping station and the boat lift coming from the intermediate basin. The Olympic course will depart from here. The surface area of the starting basin is 1020 m².

2 –Olympic course

The Olympic course is realised between the departure basin and the intermediate basin. The course is composed of three visually distinct sections, seperated by two resting areas.
The main characteristics are :

Length: 270 meters
Width on the bottom of the river: approx. 10 meters
Discharge: 10,5 to 17,5 m³/s
Average slope: 2,1% including small drops
Slop bank: to 2/3 (L/H)
Depth of the channel : 1,70 meters
Average depth of the water for Olympic flow : 1,20 meters

The Olympic course will be entirely modular in design. The river is equipped with the EDF Hydrostadium “Omniflots” mobile obstacle system to allow the best adaptation of the river to the type of users and their level of skill.

3 –Connection channel

A section of 44,50 meters and a slope of 1,6% passing under the bridge joins the intermediate basin. The banks are vertical to minimise the span of the bridge. It will also be equipped with mobile obstacles.

4- Intermediate basin

Its surface area of roughly 2200 m² makes the user traffic easy and heavily reduces the error risks regarding the course and the amenities to use. The zone where the boat lifts are located is a zone with calm water with no flow.

B – Initiation and training course

The initiation and training course links the intermediate basin to the arrival basin.
The main technical characteristics are:

Length: 120 meters
Width of the river bottom: approximately 10 meters
Discharge: 7 to 17,5 m³/s
Average slope: 0,75%
Slop bank: 3/2 (L/H)
Depth of the channel : 1,70 meters
Average depth of the water for Olympic flow : 1,10 meters

The initiation and training course will be completely modular as it is equipped with the EDF Hydrostadium “Omniflots” mobile obstacle system to allow the best adaptation of the river to the type of users and their level of skill.

C – “New generation” course

This course allows the practise of new disciplines such as kayak surf, rodeo…. It is marked by the presence of an important drop to allow the creation of the wave necessary for these new spectacular sports. This wave is optimised by the presence of mobile obstacles.
The main technical characteristics are:

Length: 50 meters
Width of the bottom of the river: 10 to 23 meters
Discharge: 4 to 14 m³/s
Drop: 0,94 meters high

D - Arrival basin

This basin is integrated in the lake and acts as a water tank for the amenities. The lakes surface area is 25.000 m². The river bottom at the level of 19,30 meters allows the draught of a minimum of 1 meter while the installation functions at full discharge.

E – Pumping station

The pumping station is equipped with six Flygt submersible axial flow propeller pumps with a total flow of 21 m³/s (3,5 m³/s each). So the operating flow of the river will be comprised between 7 and 17,5 m³/s, the flow regulation being made by the starting up of one or several pumps.

F – Conveyor belt

The installation is equipped with two conveyor belts. A small conveyor belt of length 23 meters and width 2.10 meters joins the arrival basin to the intermediate basin. A long conveyor belt of length 53 meters joins the intermediate basin to the starting basin.