

Montreal – Aquatic Complex for 2005 FINA World Championships

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Summary

The existing open air aquatic complex on Sainte-Hélène Island in Montréal was chosen to host 2005 Aquatic Sports World Championships. The old concrete pools built in 1953 had to be replaced by new structures and the new pools and bleachers had to fit in the existing site. In the new layout, the swimming pool was relocated which led to some problems due to soil conditions. The soil was sensitive and heterogeneous therefore differential settlements and resulting lateral displacements had to be considered in the design in order to respect the strict dimensional criteria for Olympic pools. To guarantee the quality of works within a very tight schedule, the upper section of the walls was made of prefabricated steel panels. As a result, the rigid continuous “box” originally formed by the concrete corridor around the pool was lost. Consequently, a combination of soil consolidation, interaction of soil-structure and phasing of construction-backfilling became part of design.

Keywords: Olympic pools, soil settlement, deformations-displacements, prefabricated panels, construction, backfilling.

1. Introduction

In 2001 Montreal was chosen by FINA (Fédération Internationale de Natation) to host the 2005 Aquatic Sports World Championships. Two locations were evaluated at the beginning as potential sites for the event. One on the grounds of the Olympic Stadium, in the east part of the city. The other, in the existing Aquatic Complex of the Jean-Drapeau Park on Sainte-Hélène Island in the middle of the St-Lawrence River, vis-à-vis downtown Montréal.



Fig. 1: Jean-Drapeau Park, Ste-Hélène Island

The proximity of the city centre and in particular the “green” character of the environment on Sainte-Hélène Island oriented the choice to Jean-Drapeau Park. The map on Figure 1 shows the location of the site.

The pools at Jean-Drapeau Park were built in 1953 as part of a public recreational complex and were completely inadequate for the event. The pools did not respond to the dimensional criteria defined by FINA for Olympic pools, their concrete structures were marked by almost 50 years of service and there was no space for bleachers. It became clear that the pools have to be demolished and rebuilt to meet the new criteria. After the championships, the pools had to return to their original purpose and to serve the general public as a recreational complex.