

INTERNATIONAL FORUM ON SPORTS INSTALLATIONS

TURIN – OCTOBER 21 2005

PALAHOCKEY 1

***Sports Installation for Ice Hockey Competitions
at the Torino 2006 Winter Olympic Games¹***

by

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¹ Only text version available.

FOREWORD

Palahockey: February 2002 (project service tender) – October 2005 (work end)

The procedures for the installation assigned to ice hockey competitions at the Torino 2006 XX Winter Olympic games start with project conception and end with works final implementation, covering a period of some 1300 days (Cf. General Time Programme at Figure 1).

The following text describes the main steps of the process for this installation and the various administrative decisions made and implemented. Details of critical items and the more pertinent unforeseen events of the whole project and implementation process are also given.

MAIN DESIGN STEPS

The Olympic games Action Plan included overall restructuring the former Municipal Stadium area, for a long time of Turin's main strategic and programming objective and the Township approved location there of the new installation for the Olympic ice hockey competitions.

The internal call for design tenders was made in February 2002; it included construction of a new ice hockey competition installation capable of accommodating 12,500 persons. Official plant design started after the contract was underwritten by the winning designer at end-October 2002.

The Agency assigned the overall **Preliminary Project** to the designer in December 2002; it was approved by the latter on January 21 2003 after which **definitive design** divided into two separate lots started:

- Lot 1 – demolition, digging, clearing, removal and dismantling operations followed by construction of new installation perimetral walls.
- Lot 2 – construction of the new ice hockey installation

Lot 1

On January 7 2003, the designer submitted the definitive project to the control body that expressed a favourable opinion on the project that was subsequently approved by the Agency on January 21 2003. At about the same time, January 24 2003, go-ahead was granted to the executive project and the Agency simultaneously forwarded the related paperwork for the lot under review to all the bodies responsible for issuing opinions and granting authorisations, namely: the Regional Public Works Committee, the NHS Turin Office ASL 1, The Regional Environmental Protection Agency ARPA and Turin Municipality Town Planning and Building Division Construction Hygiene Department.

The Agency received all requisite Definitive Project opinions and authorisations in January and February 2003 and obtained the project itself with subsequent variations pursuant on Control Body in-progress checks and controls, during the first week of March 2003.

The Agency approved lot 1 executive project works as specified above on March 6-03 2003.

Lot 2

On March 31 2003, the Agency informed the designer of its decision to go ahead with lot 2 works with an integrated contract in compliance with Article 19 item 1, letter b), point 4 of Law 109/1994 and modifications thereto, so design would only be at the definitive and not the

executive level. Going ahead with an integrated contract for lot 2 meant the Contracting Station saved the time executive designing would have required.

The designer made the first partial delivery of the definitive project to the Agency on June 2 2003. The designer gradually completed documentation with repeated integrations further transmitted to the validation Company, the last delivery for final checks being dated June 19 2003.

The Agency forwarded the definitive works project to the same ad hoc Bodies responsible for opinion and authorisation release as for lot 1 and ultimately received Turin Township construction permit 509/2003 of August 1 2003.

The lot works definitive project was definitively approved by the Agency on June 25 2003 and Toroc approval too was issued in June 2003. The Agency immediately prepared all technical and administrative paperwork required for implementing the tender for integrated contracting.

On September 26 2003, the Process Manager instructed the Contractor to start executive design for the works it was involved in, as the Agency had awarded the contract that same date and decided to go ahead with completing, validating and approving the executive project by steps and in progress with works completion, so the Process Manager disposed executive project approval to be always updated and approved by the Contracting Station. The first partial executive project approval was dated February 24-2004 and final overall approval June 27-2005.

ACTION LOTS

Lot 1

This lot covered completion of demolition, excavation, area clearing, removal and disposal operations and construction of ground perimetral walls for the new Ice Hockey installation in the Township Stadium area of Turin. Overall works expenditure amounted to some 5.3 million Euros.

On May 13 2003, the Agency awarded the works contract to the Company Vitali S.p.A. Works started on June 10 2003 and were completed on February 22 2004.

The Inspection Committee released a regular Inspection Certificate on January 26 2005.

Lot 1: digging and perimetral wall construction

Lot 2

This lot covered executive designing and implementation of the Ice Hockey installation at the Township Stadium area of Turin. Overall works expenditure amounted to some 58 million Euros.

At call for tenders completion, on September 26 2003, the Agency awarded executive design and works contract to the Companies Torno Internazionale S.p.A., Lorenzon Techmec System S.p.A., Carlo Gavazzi Impianti S.p.A. and Edoardo Lossa S.p.A.

Works started on December 11 2003 and advanced delivery of the sports installation to Toroc is scheduled for the month of October 2005 for organising and performing pre-Olympic test events to be held in November 2005.

CRITICAL ITEMS AND UNFORESEEN EVENTS

The following are some remarks on the situations and mostly unforeseen events that occurred during design and implementation of the new sports installation and conditioned process progress and induced a series of repercussions on the procedures and operating steps.

The main critical items can be summarised as follows:

- incomplete area availability;
- finding three war bombs;
- overlapping of the two lots;
- interference with nearby jobsites;
- expensive steel

Incomplete Area Availability

The decision to advance the first lot of dismantling, preparation and safety operations for the area with works start simultaneous to lot 2 design proved significant. Organic and timely lot 1 works start however proved impossible, as not all the area involved for new jobs was available as some sports installations were to remain operational. In particular, the existing Olympic swimming pool covering about one quarter of the overall area was still fully active in May 2003, and was available only starting from the month of July that same year.

This required more articulated works programming by lot 1 Contractor and adapting jobsite activities to area only made available later on. Delivery of the first jobsite area part was thus made on May 26 2003 and final complete delivery was postponed to July 10 2003, some two months later.

Three War Bombs Found

The main unforeseen event during lot 1 works that caused the longest delay in completing the whole job was the unexpected finding of three unexploded WWII bombs. The first was found on July 9 2003 during diggings for reaching the new installation foundation laying level and caused immediate suspension of all work in-progress and the intervention of the Army Engineering Corps that in view of the danger in moving the 500-lb bomb across town, decided to have it explode on site, an operation that was done in August 2003 after moving out the inhabitants of the nearby quarters.

Systematic removal and safetying war bombs throughout the entire jobsite area was meanwhile decided, which meant stopping practically all lot 1 operations to allow a specialised enterprise to take over and operate as required. During these operations two other unexploded bombs were unfortunately found on August 21 and September 2 respectively; these too were made to explode on site.

Besides additional expenditure as bomb processing required two project variations, these vents also caused longer contractual timing for lot 1 and works went on until the month of February 2004, while the original date had been set for November 2003.

Lot Overlap

The Agency had planned that lot 1 and 2 works would overlap only for about one month to guarantee work continuity without the two contractors having to interfere with each other, but delays accumulated after the events mentioned above made overlap for more significant so as to make immediate start on lot 2 at the rate planned will-nigh impossible for the Contractor. The overlap of the two jobsites, as specified clearly at the time programme shown in Figure 3 also had repercussions during the months after lot 2 delivery, during the works for which Contractors had to cope with some quite remarkable difficulties on their own jobs and in splitting up a jobsite area already per se rather limited in size when compared with the size of the new sports installation.

Interference with nearby jobsites

The problems caused by the proximity of other jobsites should also not be underestimated. The new ice hockey stadium jobsite was close to three other simultaneously active jobsites, as shown in Figure 4, namely:

- Township Stadium and Maratona Tower restructuring
- re-qualifying the Piazza d'Armi before the main entry to the new Palahockey and definitive closing of a stretch of Corso Sebastopoli;
- re-building the Teatro dei Ragazzi on the corner of Corso Galileo Ferraris and Corso Sebastopoli;
- re-qualifying the Municipal Swimming Pool where Corso Galileo Ferraris intersects Via Filadelfia;
- restructuring the two swimming pools along Corso Galileo Ferraris bordering the Municipal Swimming Pool;
- constructing the new Via Filadelfia Swimming Stadium

The main consequence of all this was very limited space available for the Palahockey jobsite with enormous difficulties in managing supply stores and in handling and assembling large size components such as the great columns supporting the roof and its reticular beams, for instance.

Another issue connected with the proximity to other jobsites was frequent Palahockey jobsite area adaptation to enable other operations on the new building contracted to other Companies, such as external paving for instance,

Last but not least, coordinating all enterprises operating inside the block between Corso Agnelli, Via Filadelfia, Corso Sebastopol and Corso Galileo Ferraris was not always simple and immediate, as all had to co-exist inside the same area. On several occasions in fact, especially when completing general external systems and common services for the new block, it became necessary to manage and coordinate Contractor overlaps into areas others held responsibility for. Internal jobsite traffic was of course also affected, as it often became congested by the simultaneous inflow of operating machinery, such as 50 special transports need for the new metal carpentry, for instance.

Expensive Steel

Another critical item that had rather serious consequences on lot 2 works was the great cost increase of certain ferrous material categories.

The great amount of steel needed for manufacturing all the main vertical support 8 column structures, for the higher and lower roof elements, for the external vertical support closures and the first ring mobile grandstands had the Contractor come up against the issues of supply and production of all the project metal artefacts due to significant price increases to raw material first found after the tender had already been closed and that were totally borne by article Vendors and producers against. This situation created a certain number of problems for Companies involved in producing and supplying and metal products to project specifications, issues that were however only solved during work in-progress thanks to a Government Decree that defined steel market price adaptation.