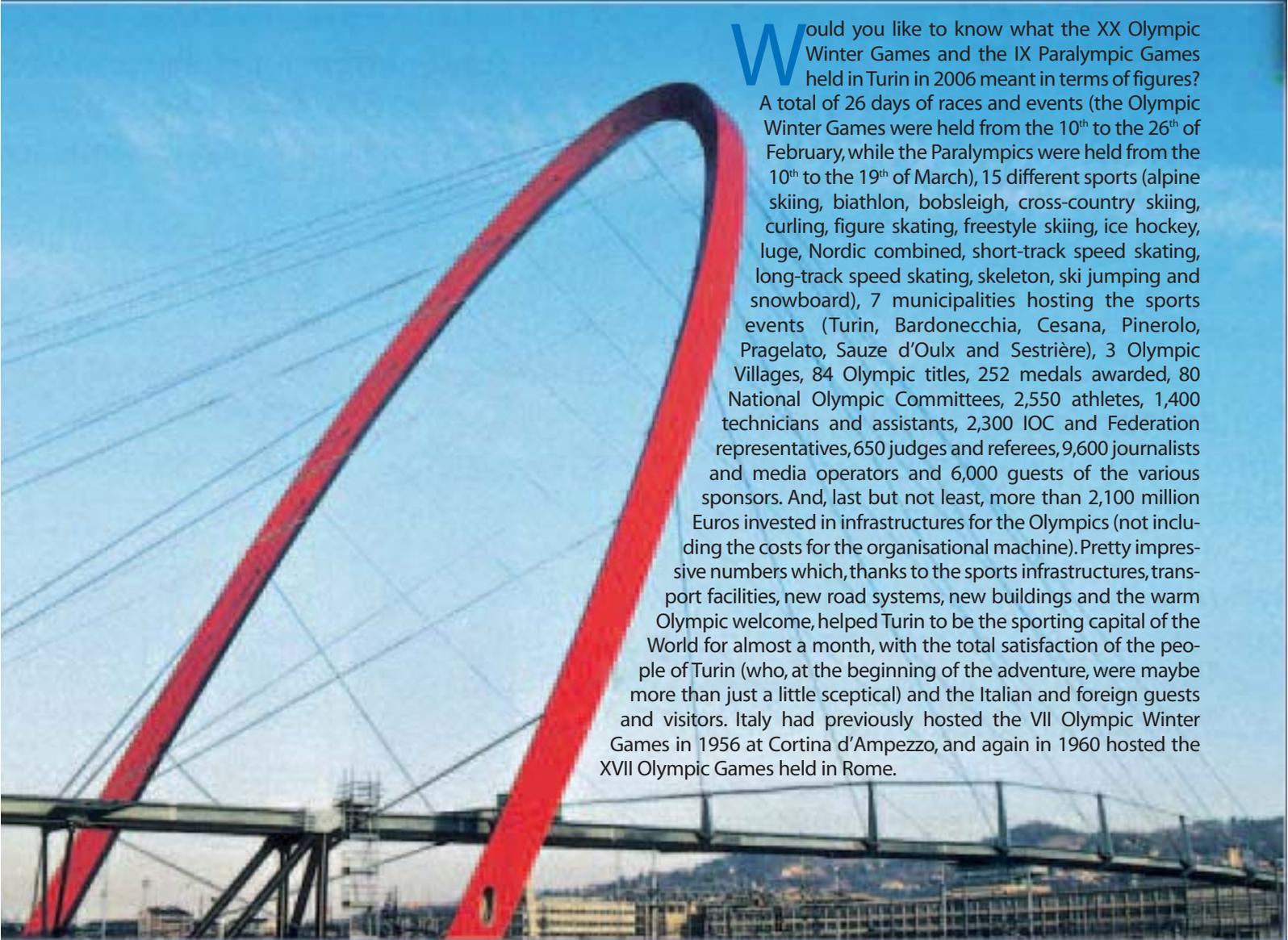


The 2006 Turin Olympic Winter Games: Mapei also takes to the slopes



Would you like to know what the XX Olympic Winter Games and the IX Paralympic Games held in Turin in 2006 meant in terms of figures? A total of 26 days of races and events (the Olympic Winter Games were held from the 10th to the 26th of February, while the Paralympics were held from the 10th to the 19th of March), 15 different sports (alpine skiing, biathlon, bobsleigh, cross-country skiing, curling, figure skating, freestyle skiing, ice hockey, luge, Nordic combined, short-track speed skating, long-track speed skating, skeleton, ski jumping and snowboard), 7 municipalities hosting the sports events (Turin, Bardonecchia, Cesana, Pinerolo, Pragelato, Sauze d'Oulx and Sestriere), 3 Olympic Villages, 84 Olympic titles, 252 medals awarded, 80 National Olympic Committees, 2,550 athletes, 1,400 technicians and assistants, 2,300 IOC and Federation representatives, 650 judges and referees, 9,600 journalists and media operators and 6,000 guests of the various sponsors. And, last but not least, more than 2,100 million Euros invested in infrastructures for the Olympics (not including the costs for the organisational machine). Pretty impressive numbers which, thanks to the sports infrastructures, transport facilities, new road systems, new buildings and the warm Olympic welcome, helped Turin to be the sporting capital of the World for almost a month, with the total satisfaction of the people of Turin (who, at the beginning of the adventure, were maybe more than just a little sceptical) and the Italian and foreign guests and visitors. Italy had previously hosted the VII Olympic Winter Games in 1956 at Cortina d'Ampezzo, and again in 1960 hosted the XVII Olympic Games held in Rome.

TRANSFORMING AN INDUSTRIAL ZONE INTO A CULTURAL AND TOURISM CENTRE: THIS WAS TURIN'S AMBITIOUS BET WHEN THE CITY PROPOSED ITS CANDIDACY AS AN OLYMPIC HOST. MAPEI ALSO DECIDED TO TAKE PART AND "COMPETE" WITH ITS PRODUCTS.



Olympic Turin

The dream of many medium and large-sized cities in recent decades has been to host international events, such as the Olympic Games, and this dream often provides a kick-start towards drastic urban transformation.

A model for all town and city Mayors is the one set by Barcelona, which hosted the 1992 Olympic Games, which bore witness to the rebirth and growth of the city which has lasted over the years, unlike many other cities where the long-lasting effect is decidedly less impressive. For obvious reasons, this objective is not normally associated with winter sports, which are often held in areas quite distant from large urban centres; at least, not until this edition. Indeed, even though more than half the events of the Turin Games were held in the surrounding towns, a number of events and all of the awards ceremonies were held in the city itself, with all the localities being within easy reach of the city and well-connected to the main hub.

As with the examples of Barcelona and Athens, the city of Turin had prepared a comprehensive strategic plan before being chosen for the Games. This plan included building a new underground railway system with fifteen stops, reclaiming old, unused industrial areas, upgrading the airport, constructing a number of underground car-parks in the most important squares in the city and renovating (and in some cases rebuilding) entire wards of the city.

Turin's Olympic dream dates back to 1997, when local institutions gave the go-ahead for the official candidacy.

The capital city of the Piedmont region was finally awarded the XX Olympic Winter Games on the 19th of June, 1999 in Seoul, with Turin being

preferred to the Swiss town of Sion by just a few votes.

Since that date, local government, institutions, Olympic bodies and a number of volunteers worked incessantly to be ready for the start of the Games on the 10th of February, 2006.

A total of 65 different building projects were completed to stage the Olympic Games, including sports facilities, new roads, villages for the athletes and venues for journalists and media operators. Some of the most significant projects include the renovation of the Olympic Stadium and the surrounding areas; the building of three new sports arenas and the upgrading of two old ones in Turin; the construction of three Olympic villages, in Turin, Bardonecchia and Sestriere; the renovation of the Ice Stadium in Pinerolo and the building of a new one in Torre Pellice; the construction of twelve new ski-lifts, the new ski-jumping ramp in Pragelato and the Olympic archway which connects the Olympic Village to the Lingotto district in Turin. And it was precisely the latter structure which became the symbol of the twentieth edition of the Olympic Games; a large, inclined, bright-red arch reaching a height of 40 metres, which was designed to look like an Olympic gangway. Another project to remember is the completely-automatic Turin underground railway, the works which are still being carried out on the railway link and the widening and upgrading of a number of by-passes which connect Turin to the other Olympic towns.

In order to repeat the success of Barcelona, during the design phase the architects, town planners and local administrators took into consideration how a large part of the sports infrastructures and buildings could be put to good use once the Olympic Games were over.

And now that the curtain has gone down on Turin 2006, the city steps down in favour of Vancouver, capital city of the XXI Olympic Winter Games that will be held in 2010.



TOROC HEADQUARTERS - TURIN

Work: preparing the substrates and laying the carpet

Year: 2005

Contractor: Gilardi

Installation Company: G.R. Pavimenti, Turin

Mapei Distributor: G.R. Pavimenti

The organising committee of the XX Olympic Winter Games, known as Toroc (Turin Organising Committee), was especially founded for this occasion by the city of Turin and by CONI, the Italian National Olympic Committee. Its mandate was to plan all the works required for the Olympic Games.

Toroc was also responsible for the actual organisation of everything related to the Olympics: the sports events, awards ceremonies, hospitality for the athletes, administration of the Olympic villages, transport, public relations with the press and the sponsors, fitting-out the temporary structures, etc.

The operative base of this "war machine" was located in a building owned by the Turin City Council. The building was refurbished using the colour scheme chosen for the Olympics, blue and white, which decorated the outside of the building. The building is nine storeys high and is divided into various offices and open-space areas. A total of almost 500 people worked there during the Games. The substrates for the floor coverings were made using ULTRA-PLAN* self-levelling compound. The 40x40 cm carpet tiles were laid using ULTRABOND ECO FIX* adhesive, which has an extremely low emission of volatile organic compounds.



SKI-JUMPING RAMPS - PRAGELATO

Work: supplying admixtures for concrete and laying and grouting all the ceramic tile floorings

Year: 2004

Architectural, Environmental and Structural Project: Studio Pedrolli, Scandiuzzi and Vanzo, Wolfgang Happle, Sintecna, Giorgio Marè, Marco Zocco and Stefano Seitza

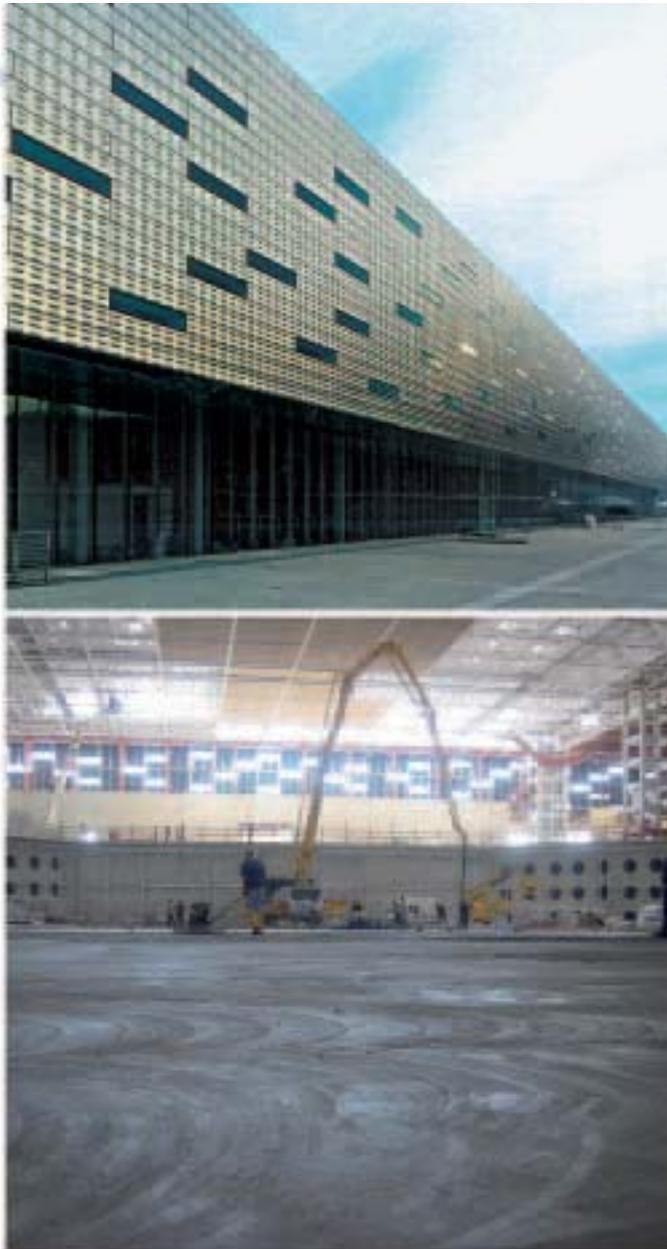
Contractors: Consorzio Ravennate Cooperative Produzione e Lavoro, Consorzio Coop. Costruzioni, Selghis Calcestruzzi

Installation Company: Turco Ceramiche - Turin

Mapei Distributor: Turco Ceramiche

Pragelato played host to the Nordic combined and ski-jumping events. It is situated at an altitude of 1,518 m, where there are two ski-jumping ramps (the K95 and K120), three learner ramps and all auxiliary services required for the events. These included the starting gates, the judges tower, a two-seater ski-lift, workshops, a multi-functional centre with 100 sleeping places and a spectator stand with 2,500 seating places. The track for the cross-country events was also built in Pragelato.

Both structures were supplied with Mapei products, such as DYNAMON SX 14* superplasticiser for concrete and ANTIFREEZE S* for preparing the concrete and the cementitious mortar at temperatures as low as -10 °C. Ceramic tiles were laid on all the floors in the service areas using ADESILEX P9* and grouted with KERACOLOR FF*.



OLYMPIC ICE-HOCKEY RINK 1 - TURIN

Work: supplying admixtures for concrete

Years: 2004-2005

Project: Arata Isozaki & Ass. and architect Pierpaolo Maggiora - Archa

Plant and Structural Project: Giuseppe Gasparro Amaro, Marco Brizio, Arup

Contractors: Vitali, Torino Internazionale, Lorenzon, Carlo Gavazzi and Edoardo Lossa

Works Management: architect Pierpaolo Maggiora

Customer: Agenzia Torino 2006

Mapei Distributor: I.CO.S. - Turin

The design by this renowned Japanese architect features an impressive parallelepiped shape, covered with glass on the ground floor and stainless steel panels with oval pressings on the top floor. It is five storeys high and holds almost 8,500 spectators. During the Olympics, it was the venue for the ice-hockey matches. After the Games, the rink will become a multi-functional centre, thanks to the intelligent use of its retracting spectator stand.

Mapei took part in this project by supplying technical assistance for both the formulation of the most suitable mix of concrete and the cast of the concrete. Mapei Technical Service Department recommended the following admixtures for concrete which were indeed used on site: the superplasticiser DYNAMON SX 14* (50,000 litres), the air-entraining agent MAPEPLAST PT1* (1,000 litres) and the expanding agent EXPANCRETE* (14,000 litres).



OLYMPIC STADIUM – TURIN

Work: supplying admixtures for concrete; renovating and smoothing the internal perimeter surfaces

Year: 2004

Project: Stadium Service, Giovanni Cenna, Luciano Cenna and Artec

Structural Project: Augusto Bianchi

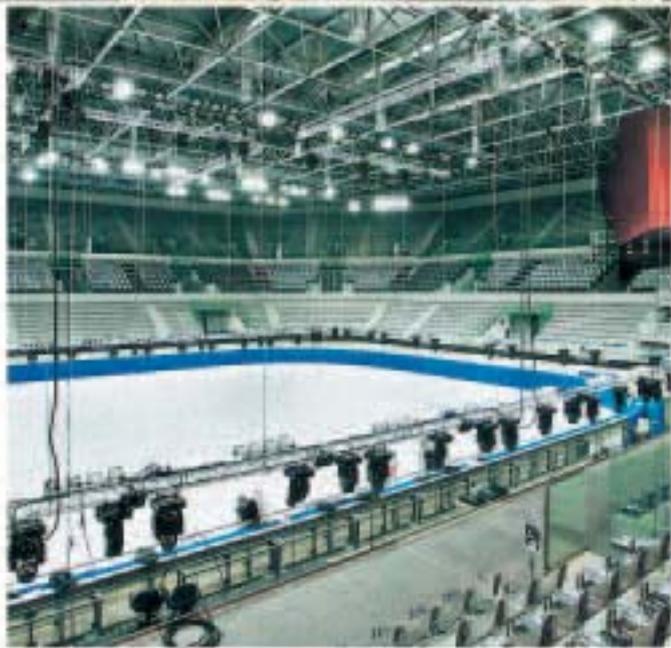
Contractors: Mazz Costruzioni and Kopa Engineering Inc.

Installation Company: Beton Rossi and Tecnoresin

Mapei Distributor: Provera - Turin

Turin Municipal Stadium was built in 1933 and the Olympics was the ideal occasion for renovation, after which it was renamed "Olympic Stadium". This structure was the very heart of the entire event: in fact, this was the venue hosting both the opening and closing ceremonies of the Olympic Games. The renovation work maintained the original structure, while all the plant and fittings were upgraded to conform to the latest safety standards. The number of places available was reduced from 65,000 standing spectators to 27,000 all seated and a new, partially-transparent steel roof was installed.

Mapei was involved in formulating the most suitable mix for the concrete and supplied the following admixtures for concrete: the superplasticiser DYNAMON SX 14* and the expanding agent EXPANCRETE*. The renovation and smoothing of all the perimeter walls inside the stadium was carried out using MAPEGROUT THIXOTROPIC* shrinkage-compensated, fibre-reinforced mortar and PLANITOP 20* one-component cementitious mortar, respectively.



THE PALAVELA STADIUM - TURIN

Work: supplying admixtures for concrete, renovating the stands and installing steel sheets on the roof

Year: 2003

Project: Gae Aulenti and Arnaldo De Bernard

Contractors: Maire Engineering, Impresa Costruzioni Rosso, Edil Rivvek, Quadrifoglio, Unicalcestruzzi, Coipa and Al.FA

Installation Company: Covecom

Mapei Distributors: Ravizza, Coipa and Ce.Pa.

This building, with its characteristic sail-like shape, was built underneath the original reinforced-concrete covering and hosted the figure-skating and short-track speed skating events. Once the Olympics were over, the Palavela Stadium became the venue for concerts, exhibitions and conventions. Mapei supplied DYNAMON SR3* super-plasticiser based on modified acrylic polymer for ready-mix concrete. Renovation work on the reinforced concrete structures was carried out using PLANITOP 400* fast-setting thixotropic mortar and PLANITOP 200* single component cementitious mortar. For the renovation work on the reinforced-concrete spectator stands, on the other hand, MAPE-GROUT BM* two-component, cementitious mortar was used for the restoration work, while MAPEFINISH* two-component, cementitious mortar was used for levelling the concrete surfaces. The roof was waterproofed using steel sheets. However, since the external face of the sail-shaped concrete elements could not be perforated, the framework (on which the waterproofing sheets were then fixed) was bonded using KERALASTIC-T* two-component, high-performance polyurethane adhesive.



OLYMPIC VILLAGE - SESTRIÈRE

Work: preparing the screeds, levelling the substrates, waterproofing the surfaces in the changing rooms and showers, laying and grouting tile coverings in several areas

Years: 2003-2006

Architectural and Environmental Project: Giuliano Spinelli, Paola Tagliabue, Stefano Trucco and Fabrizio Vallero

Plant Project: Giorgio Formia

Structural Project: Roberto Lucchini and Michele Pacielli

Contractors: Iter Cooperativa Ravennate Interventi sul Territorio

Mapei Distributor: Turco Ceramiche - Turin

The screeds inside the Olympic Village in Sestrière were prepared with TOPCEM* rapid-drying hydraulic binder. They were then levelled off using ULTRAPLAN* ultra-fast drying self-levelling compound. MAPELASTIC* cementitious mortar was then used to waterproof all the surfaces in the changing rooms and showers of the various gyms.

All the tiles in the village were laid using ADESILEX P9* cementitious adhesive with no vertical slip. Tile joints were grouted with KERACOLOR FF* cementitious grout which, thanks to the use of special hydrophobe additives (Mapei DropEffect® technology), endows the joints with highly water-repellent properties.



MOI OLYMPIC VILLAGE - TURIN

Work: laying and grouting ceramic tiles, laying linoleum floorings in the sleeping areas

Years: 2003-2006

Architectural and Urban Project: Benedetto Camerana & Ass.

Structural Project: Agibat Ingegnerie, Hugh Dutton Associès and Faber Maunsell Ltd

Contractors: Maire Engineering, Garboli Conicos, Consorzio Cooperative Costruzioni, Semeca, F.lli Falcone, Demonte Ambiente, Massucco Costruzioni and Crastore

Installation Companies: Galmarini, Edilomnina and Fornengo

Mapei Distributors: Fornengo, Edilomnina and Alfa

The Olympic village was built on an area of more than 100,000 m² and the ancient structure of the old market was included in the site. This complex is located in the southern part of Turin opposite the Lingotto district and up until 2001 it was the home of the wholesale fruit and vegetable markets (MOI) which were built in 1932. The tender included the construction of a village covering an area of 90,000 m², which was to be home for 2,500 athletes during the Olympics, and the renovation of the old buildings. The ceramic tiles were laid using ADESILEX P9* adhesive with no vertical slip and KERASET* cementitious adhesive. The tile joints were grouted using KERACOLOR FF*.

The linoleum covering was laid using ADESILEX F57* synthetic resin based adhesive.



GOLDEN PALACE STELLA - TURIN

Work: waterproofing and laying the porcelain tile covering in the bathrooms; laying and grouting the clinker tile covering in the kitchens; laying the parquet in the suites and beauty farm; laying and grouting the external coverings.

Year: 2004

Customer: Toroc 2006

Contractor: Rosso Costruzioni

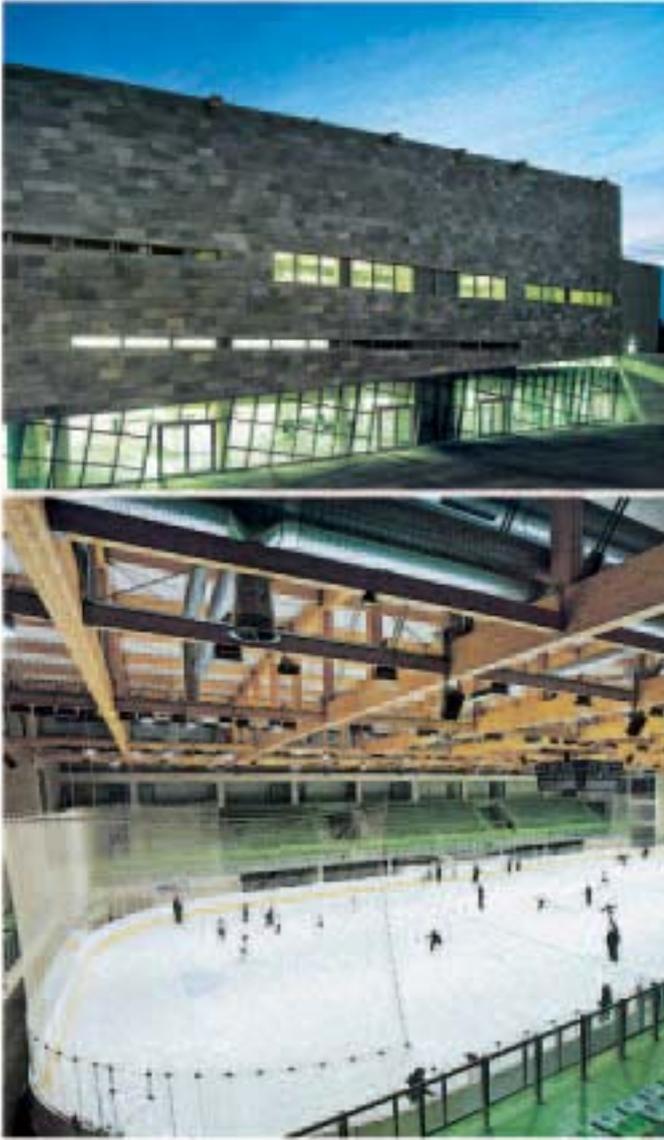
Installation Companies: Ce.Pa., Rech&C. and Ver.Pont

Mapei Distributors: Ce.Pa., Rech&C. and Ver.Pont

The hotel is enclosed in the building that once hosted the headquarters of the Toro Assicurazioni company. It covers a total of 18,000 m² and has approximately 200 rooms and suites equipped with the latest technology.

ADESILEX P22* adhesive with no vertical slip was chosen for laying the 20x20 cm porcelain tiles on the floors and walls of the en-suite bathrooms. Before laying, the surfaces were waterproofed using MAPEGUM WPS* flexible liquid membrane, while MAPEBAND* rubber-coated polyester tape was applied on the corners.

Approximately 1,300 m² of clinker tiles were also laid and grouted in the kitchens, using KERAPOXY* two-component epoxy adhesive. The parquet in the suites and in the beauty farm was laid using ULTRABOND P990 1K* one-component polyurethane adhesive. KERACOLOR GG* was used to grout all the joints in the external coverings of the hotel.



ICE STADIUM - TORRE PELLICE

Work: supply of admixtures for concrete and laying and grouting of tiles in the restaurant, service areas and entrance hall
Year: 2004
Architectural Project: Claudio Lucchin, Roberto D'Ambrosio, Studio Lee and Studio De Ferrari Architetti
Structural Project: Guglielmo Concer
Contractors: Consorzio Cooperative Costruzioni, Iter and Calcestruzzi Gallo
Installation Company: Turco Ceramiche - Turin
Mapei Distributor: Turco Ceramiche

The Ice Palace in Torre Pellice was built as a training centre for the ice-hockey teams. The covered area totals 5,000 m² and may house up to 2,500 spectators. It will be used as a multi-functional ice rink after the end of the Olympic Games. To reduce the visual impact on the surrounding landscape, the designers decided to build it at 3 m below ground level. Mapei supplied DYNAMON SX 14* superplasticiser for concrete and PLANITOP 400* thixotropic mortar, used to repair the imperfections in the spectator stands. In the restaurant, entrance hall and service areas, the ceramic tiles were laid on the floors using ADESILEX P9* and then grouted with KERACOLOR FF*.



NEW RING-ROAD - PINEROLO

Work: supply of admixtures for concrete
Years: 2004-2006
Project: Sintecna and So.Tec. (Engineer Barra)
Works Management: Engineer Giorgio Mancini
Contractors: Consorzio Ravennate delle Cooperative di Produzione e Lavoro and Torino Scavi Manzone
Ready-mix Concrete Suppliers: Selghis Calcestruzzi (Villanova Solaro, Cuneo), Calcestruzzi Gallo (Turin) and Holcim Calcestruzzi (Milan)

While the construction and renovation work for the Olympics only involved buildings located in some limited areas, the new roads were part of a much larger territorial strategic plan which covered the Chisone Valley and the Susa Valley. The aim of the plan was to finally solve old problems by intervening on certain critical road hubs, making communications between Turin and the valleys much easier. In this case too, some roads were simply upgraded, while others were built completely new. Mapei products were particularly used for upgrading (and make safer) the new by-pass (the old N° 589 Provincial Road), which runs in the Pinerolo area between the Porporata zone and the old N° 23 Regional Road. For this operation, the admixtures DYNAMON SX 14* (approximately 90,000 litres) and DYNAMON SX 18* (approximately 60,000 litres) were used. Mapei technicians were also present to supervise the mixing of the concrete. They pursued a technical study to devise the correct mix and provided technical assistance when the concrete was cast on site.



UNDERGROUND RAILWAY LINE 1 - TURIN

Work: supply of admixtures for concrete and waterproofing of the concrete structures

Years: 2003-2006

Contractors: Metrocentro and Betonrossi

Mapei Distributor: Betonrossi - Turin

After the Second World War, Turin became the most important industrial city in Italy and the capital of the automobile industry. To accommodate the thousands of people who had to travel every day, an overland transport system was built, while an underground rail system had not been considered. This goal was finally reached thanks to the Olympic Games, which witnessed the inauguration of fifteen stops along Line 1 of the Automatic Underground Railway network. Line 1 runs underground from the west towards the east, from Collegno to Porta Nuova station, with no driver on board. Mapei supplied the superplasticiser for concrete DYNAMON SX 14* and the polyurethane resin RESFOAM 1 KM*. The resin was used to waterproof the concrete structures, for both the underground work and the work carried out above ground.

The Turin 2006 building sites were supervised and coordinated by a technical and commercial team from Mapei, which included the following people: Stefano Broggio, Cristian Cavallari, Silvio Cenci, Pietro Lattarulo and Valerio Mandelli.

***Mapei Products:** the products referred to in this article belong to the "Building Speciality Line", "Products for Ceramic Tiles and Stone Materials", "Products for the Installation of Resilient, Textile and Wood Floor and Wall Coverings" and "Admixtures for Concrete" ranges. The technical data sheets are available on the "Mapei Global Infonet" CD/DVD or at the web site: www.mapei.com. Mapei's adhesives and grouts conform to EN 12004 and EN 13888 standards.

Adesilex F57: adhesive based on synthetic resins in alcohol for textile floor and wall coverings.

Adesilex P22 (D1TE): ready-to-use paste adhesive with no vertical slip and extended open time for ceramic tiles.

Adesilex P9 (C2TE): high performance cementitious adhesive with no vertical slip and extended open time for ceramic tiles.

Antifreeze S: chloride-free antifreeze for cementitious mortars and concrete.

Dynamon SX 14: fine aggregate supplementing superplasticizer for ready mix concrete with low loss of workability and high reduction of mixing water.

Dynamon SX 18: superplasticizer and fine aggregate supplementing for concrete with high reduction in mixing water and high early mechanical strength.

Dynamon SR3: superplasticizer based on modified acrylic polymer for ready mix concrete with low water/cement ratio, extremely high mechanical strengths and long slump retention.

Expacrete: expansive agent for concrete.

Keracolor FF (CG2): high performance cementitious grout, polymer modified, water-repellent with DropEffect®, for joints up to 6 mm.

Keracolor GG (CG2): high performance cementitious grout, polymer modified, for joints from 4 to 15 mm.

Keralastic (RT2): high performance cementitious adhesive, with no vertical slip and extended open time for ceramic tiles and stone material.

Kerapoxy (R2T): two-component acid-resistant epoxy grout, available in 26 colours, for joints of at least 3 mm. Can also be used as an adhesive.

Keraset (C1): cementitious adhesive for ceramic tiles.

Mapeband: polyester rubber tape for the flexible sealing and waterproofing of interior and exterior expansion joints.

Mapefinish: two-component cementitious mortar for finishing concrete surfaces.

Mapegrout BM: two-component thixotropic cementitious mortar with low modulus of elasticity for the repair of concrete.

Mapegrout Thixotropic: controlled-shrinkage fibre-reinforced mortar for the repair of concrete.

Mapegum WPS: fast drying, liquid elastic membrane for interior waterproofing.

Mapelastic: two-component flexible cementitious mortar for waterproofing concrete, balconies, terraces, bathrooms and swimming pools.

Mapeplast PT1: air-entraining plasticiser for concrete and mortars.

Planitop 200: normal setting one-component cementitious mortar for smoothing old cementitious renders and textured coatings.

Planitop 400: fast setting, shrinkage compensated, thixotropic mortar for cortical restoration and the finishing of reinforced concrete by applying in a single coat a thickness of mortar variable between 1 and 40 mm.

Resfoam 1 KM: ultra fluid, one-component polyurethane injection resin for waterproofing concrete or masonry structures, grounds and rocks subject to intense water seepage with adjustable reaction times.

Topcem Pronto: ready to use prepacked mortar for fast-drying (4 days) normal setting screeds with controlled shrinkage.

Ultrabond Eco Fix: adhesive in water dispersion with permanent tack and very low emission of volatile organic compounds (VOC) for dry-lay floor tiles. Tiles can be removed and replaced several times.

Ultrabond P990 1K: ready-to-use polyurethane one-component, solvent-free, elastic adhesive for all types of wooden and laminate flooring.

Ultraplan Eco: ultra-fast hardening self-levelling smoothing compound for thicknesses from 1 to 10 mm per coat.

