

Minoru Aquatic Centre

Richmond, BC, Canada



Project Information

Project category:
Sport Facilities

Years of construction:
2018-2020

Years of MAPEI involvement:
2018-2020

MAPEI representative:
Anthony Petrunia

MAPEI distributor:
Daltile (Vancouver)

Project owner:
City of Richmond

General contractor/installer:
Omicron Construction Ltd.

Installers:
Apex Granite and Tile Inc., Maxwell Floors Ltd. and M.A. Concrete Ltd. (leveling)

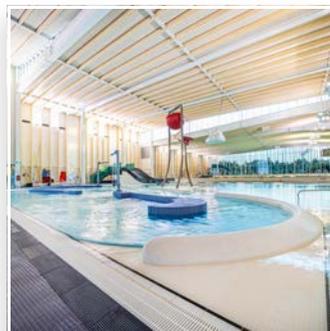
Architect:
HCMA Architecture + Design

Photography:
Take Off Photography



Project Overview

With its legendarily damp and rainy weather, the West Coast of Canada is a welcome place for an indoor swimming pool. How about six of them under one roof, including a polar-plunge pool and Canada's largest hot tub? MAPEI products proved to be up to the challenge.



Products Used

- 4 to 1™ Mud Bed Mix**
- Fiberglass Mesh**
- Kerabond®**
- Keraply®**
- Kerapoxy® CQ**
- Mapeguard® 2**
- Mapelastic® 315**
- Mapesil® T**
- Novoplan® 2 Plus**
- Planicrete® AC**
- Planiseal® MSP**
- Planiseal VS**
- Planitop® 23**
- Primer L™**
- Ultracolor® Plus FA**
- Ultraflex® LFT™**

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For new swimming pools, MAPEI products make big splash

Minoru Park in Richmond, British Columbia, dates to 1909 and sits on a plot of land that was originally the Minoru Racetrack—so named after King Edward VII's cherished thoroughbred racehorse, Minoru.

Edward's imperial reign ended with his death the following year. Nevertheless, over a century later, the City of Richmond retained the name for posterity's sake when it embarked on an ambitious new-build community project aside the park: the Minoru Centre for Active Living, which includes the Minoru Aquatic Centre.

The \$80 million Minoru Centre for Active Living comprises no fewer than six distinct indoor swimming pools within the Aquatic Centre, as well as a fitness gym elsewhere within the facility.

The site of the Minoru Centre for Active Living is very close to both the Strait of Georgia, which is about 2.48 miles (4 km) to the west, and the Fraser River, which is roughly 0.62 miles (1 km) away to the north. Construction would span three years before the facility's 2020 opening.

MAPEI on the job

The many features needing to be built within the Minoru Centre for Active Living included:

- A leisure pool with a "river run," slide and rain shower.
- Two 82-foot (25-m) pools with a total of 14 lanes.

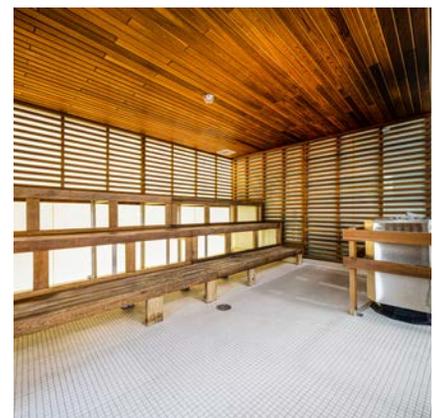
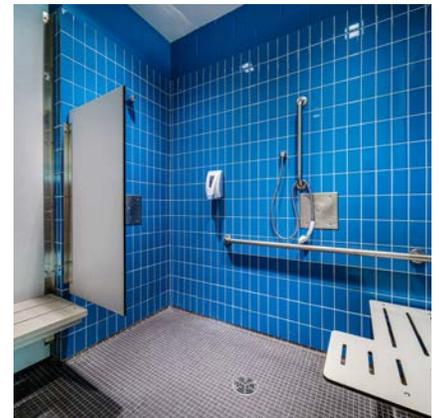
- A family hot pool (Canada's largest hot tub at 1,200 square feet [111 m²]).
- An adult hot pool.
- A polar-plunge cold pool that is set at 59°F (15°C).
- A steam room and two saunas.
- Men's, women's and unisex changing rooms.
- An 8,500-square-foot (790-m²) workout and fitness center.

"It was quite an intricate install," explained MAPEI sales representative Anthony Petrunia. Between 2018 and 2020, Petrunia helped guide three separate installation teams on the use of MAPEI products for the project, which covers over 110,000 square feet (10 219 m²).

One aspect of the facility that received special focus was the Aquatic Centre and its design elements that were required for the pool area.

"The unique design includes 'infinity edges' and tiered tanks so that from the north end of the pool area looking south, it looks like one large tank," Petrunia said.

The architect plans had all the pools installed at-grade, which posed a challenge for the deep end of one of the two lap pools because it meant that the concrete-pool basin was quite deep in relation to the water line.



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Addressing moisture issues

Installers from Apex Granite and Tile had just recently completed work on a similar, if slightly more modest, indoor pool complex (the Delbrook Community Recreation Centre in North Vancouver, British Columbia). The water-vapor seepage that was experienced at the Minoru site, though, created a setback that required additional work.

Once the issue of water-vapor seepage was addressed, installers at the Aquatic Centre could then complete the bonded mortar bed – as specified by HCMA Architecture + Design – for the lap pool's deep end.

Luckily, there was a solution from MAPEI's Concrete Restoration Systems line: **Planiseal VS**, an alkali-resistant epoxy coating that effectively stops moisture-related problems.

Adding *Planiseal VS* as an underlayment for the lap pool's deep end was completed by crew members from Apex Granite and Tile; according to Petrunia, they added a sand broadcast as well to provide good adhesion.

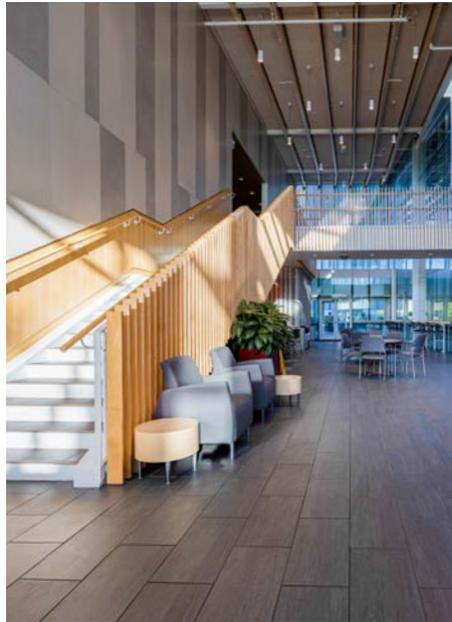
The main lobby floor of the Minoru Centre for Active Living also exhibited a high moisture level and required an initial double coat of **Planiseal MSP**. This product is a polymer-based adhesive isolator, sealer, moisture-control membrane and self-leveling primer. **Mapeguard 2** membrane was also used on the lobby floor as an anti-fracture membrane.

Sloping and formwork

Installing all six pools – including 110 jets for the large hot pool alone – within an open main area of about 26,910 square feet (2 500 m²) meant that there was a significant amount of plumbing for the crews to work around. Such a challenge added to

the complexity of each step in the construction.

All the spaces that are in and around the pools in the main area required exact sloping. The sloping was achieved using **Planitop 23** cementitious mortar, followed



by **4 to 1 Mud Bed Mix** sand and cement mortar that was mixed with **Planicrete AC** latex admixture in place of water for added compressive strength. All of these materials were applied with a bonding coat of **Kerabond** mortar that was mixed with **Keraply** latex admixture.

Waterproofing and crack isolation

All the pools and the three changing rooms required a proven waterproofing barrier, for which the Apex Granite and Tile crew applied **Mapelastix 315** cement-based waterproofing membrane that was embedded with **Fiberglass Mesh** in areas where tiling would be fully submerged. *Mapelastix 315* exceeds ANSI A118.10 requirements for waterproofing and provides crack isolation.

Thin-set tiling of the pool areas and changing-room areas was completed using the mortar mix of **Kerabond** and **Keraply**. For grouting of these wet areas, the Apex Granite and Tile installers turned to **Kerapoxy CQ** premium epoxy grout and mortar, which contains BioBlock® technology to help protect against mold and mildew; it is also stain- and chemical-resistant.

Lobby wall tiles

The ceramic wall tiles that were selected for the Minoru Centre for Active Living lobby were very large, requiring a mortar with good non-sag properties.

Therefore, the Apex Granite and Tile team used **Ultraflex LFT** premium, large-and-heavy-tile mortar, which has a high content of unique dry polymer, resulting in excellent adhesion to the substrate and tile. *Ultraflex LFT* is formulated with Easy Glide Technology™ for ease of application.

All tile grouting of dry areas was completed using the polymer-modified **Ultracolor Plus FA** grout, which maintains color consistency and inhibits efflorescence for easy maintenance. Finally, **Mapesil T** 100%-silicone sealant was used for expansion/movement joints.

Leveling of lobby and upper-level floor

Installers from M.A. Concrete Ltd. took on the task of leveling the floors of the Minoru Centre for Active Living's upper level and lobby to prepare concrete slabs for their eventual floor coverings.

The concrete slabs were verified to an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #2. Installers then applied **Primer L** advanced-technology acrylic primer (or *Planiseal MSP* wherever substrate moisture levels were

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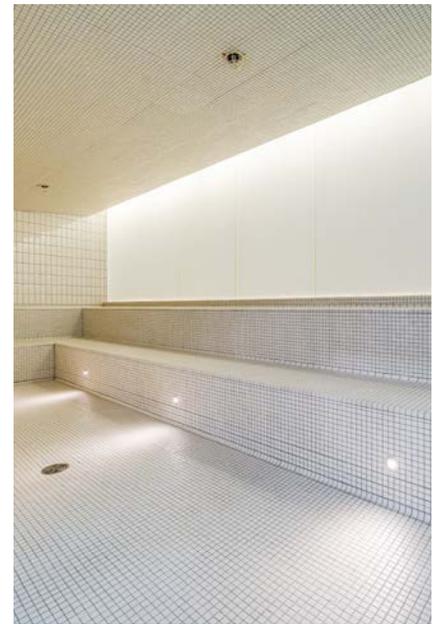
exceedingly high) to enhance the adhesion of **Novoplan 2 Plus** high-strength, cement-based, self-leveling underlayment.

As an added benefit, all products used in this project were third-party tested and third-party certified for low VOC content and low VOC emissions. As a result, the products achieved Indoor Advantage Gold certification from SCS Global Services to meet California Department of Public Health (CDPH) Standard Method v1.2-2017. The testing of these products is the most stringent type of testing that is available in North America.

Novoplan 2 Plus is also Red List Free, having been verified per the most current Red List on the Living Building Challenge (LBC)'s Website.

With the job completed in 2020, the Minoru Centre for Active Living and its Aquatic Centre was able to open its doors once COVID-19 protocols allowed the facility to do so.

Richmond's citizens can now flock to the Aquatic Centre during all seasons for swimming, rock climbing and family fun – despite the West Coast of Canada experiencing rain for nearly half the days of any given year.



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