

Bill Fisch Forest Stewardship and Education Centre – York, ON, Canada

Project overview

MAPEI products were used in the construction of one of the first facilities in the Americas to meet the Living Building Challenge, an environmental standard that reflects the most advanced measure of sustainability in today's built environment. MAPEI met the challenge by providing transparent environmental information for all its products that were used on the project.



Project information

Project category:	Public Building
Period of construction:	2015
Year of MAPEI involvement:	2015
MAPEI coordinator:	Jeff McCoppen
Project owner:	Regional municipality of York
MAPEI distributor:	Durox
Architect:	Dialog Design
General contractor:	Struct-Con Construction Ltd.
Decorative concrete contractor:	Struct-Con Construction Ltd.
Tile and stone installer:	B.J. Tiles & Marble
Photographer:	Olivier Gariépy
Project size:	4,000 sq. ft. (372 m ²) (MAPEI products – 400 sq. ft. [37,2 m ²])

MAPEI products used

- Mapelastic®
- MAPEI Ultralite™ Mortar
- Ultracolor® Plus
- Planibond® EBA
- Ultratop®
- Planiseal® HG



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Forestry education center meets Living Building Challenge

A small building has accomplished a monumental goal. The Bill Fisch Forest Stewardship and Education Centre (FSEC), located in the regional municipality of York, Ontario, was built to meet the Living Building Challenge.

The Living Building Challenge is an international sustainable building certification program created in 2006 by the non-profit International Living Future Institute (ILFI). ILFI describes the Living Building Challenge as “the built environment’s most rigorous performance standard. It calls for the creation of building projects at all scales that operate as cleanly, beautifully and efficiently as nature’s architecture. To be certified under the Challenge, projects must meet a series of ambitious performance requirements over a minimum of 12 months of continuous occupancy.”

The Living Building Challenge comprises seven performance areas, called “Petals.” These Petals consist of Place (relationship to natural environment), Water (respecting a natural resource), Energy (renewable and pollution-free), Health & Happiness (environments that optimize well-being), Materials (non-toxic, ecologically restorative, transparent and socially equitable construction), Equity (supporting a just, equitable world) and Beauty (design that uplifts the human spirit). Petals are subdivided into a total of twenty imperatives, each of which focuses on prescriptive or performance-based goals that contribute to the overarching goals of sustainability, equity and regeneration.

Dialog Design, the architecture and design firm selected to design the Bill Fisch FSEC, recognized that “many common building materials have some toxicity and none can be present in a Full Petal LBC building. As a result of extensive research, huge commitment and exceptional collaboration from the entire team to meet the LBC criteria, the new centre not only looks beautiful but feels healthier.”

To meet the Materials Petal requirements, Dialog and the regional municipality of York asked for sustainability and

transparency in the products that were used to construct the building. According to one of the engineers on the projects, “one of the biggest challenges of the project was working with the ‘Red List,’ trying to get particular information from suppliers about the materials’ ingredients and find alternatives to the materials/products that were not permitted under LBC guidelines.”

MAPEI was able to provide Health Product Declarations (HPDs) and/or Environmental Product Declarations (EPDs) for each of its products that were selected for use in the center.

MAPEI products at work on the jobsite

MAPEI’s Technical Services Department has been proactive in developing HPDs and EPDs for its flooring installation products and surface preparation materials. Rigorous testing and results analysis have produced reliable results that MAPEI has been able to publish along with its Technical Data Sheets on MAPEI’s Website.

For the Bill Fisch FSEC project, MAPEI products were used in a number of areas:

- As part of the surface preparation before the installation of tiles in the bathroom areas, **Mapelastick** all-climate, flexible, cementitious membrane was used for waterproofing. The membrane waterproofs and protects concrete and masonry. **Mapelastick** can also be used for applications on new concrete structures with hairline cracks, as well as on any cementitious surface that may be subject to vibrations and subsequent cracking.
- **MAPEI Ultralite Mortar** was then used to install 12" x 24" (30 x 61 cm) custom concrete tiles on the walls in the bathrooms. The tiles were manufactured locally by Mondo Pietra Ltd. of Whitchurch-Stouffville, ON. In addition to its HPD pedigree and

certification by the Tile Council of North America’s Green Squared Program, **MAPEI Ultralite Mortar** has many qualities that recommend it for use by installers. These include its lightweight technology, excellent vertical application with large-format tiles, and a creamy consistency that promotes ease of use.

- **Ultracolor Plus** grout was used to fill the joints between the concrete tiles. **Ultracolor Plus** with DropEffect™ technology is a fast-setting, color-consistent grout that eliminates the efflorescence often seen in Portland cement grouts. DropEffect technology reduces surface absorption to help repel water, dirt and grime from penetrating grout joints. **Ultracolor Plus** demonstrated that it met the environmental requirements of the designers, and its ease of use was a real benefit to the installers.
- In order to accommodate the floor-to-ceiling windows in the center, the contractor poured the concrete floor with a slight depressed area where the windows were installed. This necessarily created a trough between the window area and the rest of the floor. The contractor needed a product to infill that area, and he wanted something that had the look of natural concrete to flow with the rest of the area. MAPEI’s **Ultratop** was the solution. **Planibond EBA** was used as the bonding agent between the concrete and the **Ultratop**. **Planiseal HG** solvent-free, moisture-tolerant, 100%-solids, clear, high-gloss epoxy sealer was used over the **Ultratop**. All three products met the environmental requirements for the Living Building Challenge.

The regional municipality of York has made great strides in restoring the York Regional Forest, and the construction of the Bill Fisch FSEC adds to that exemplary environmental effort. The building shows the world how construction should be for the future, and MAPEI is proud to have had a part in the project.

