

# The Ora

Richmond, BC, Canada (2013)

PRODUCTS USED:

**Krytol Internal Membrane™ (KIM®)** **Krytol® Waterstop System**  
**Krytol® Leak Repair System**

## OWNER/DEVELOPER/CONTRACTOR:

Onni Group

## ARCHITECT:

IBI Group Inc.

## ENGINEER:

BC Building Science Ltd.

## READY-MIX SUPPLIER:

Lafarge

## DISTRIBUTOR:

Kryton International Inc.

## BACKGROUND

Planning to transform the area around Elmbriage Way and Hollybridge Way into the largest urban community in Richmond, the Onni Group started off with an ambitious design for a structure known as the Ora. This design called for three splendid towers that would be between 11 and 14 stories high and would house 323 residential units alongside 5,760 m<sup>2</sup> (62,000 ft<sup>2</sup>) of retail space. At this stature, these structures would be perfectly situated to take full advantage of the natural light and mountain views. They would also be in the perfect area for easy access to the nearby waterfront.

To make it all last a long time, the structures would need to be both durable and watertight. Like any other development in Richmond, it would need these qualities to contend with the area's high water table. That meant the Onni Group would also need to protect the structures' below grade section from any potential flooding.

Furthermore, the Onni Group wanted to use shotcrete as the application method for the project's structural exterior walls. That meant an external waterproofing membrane was not an option as the shotcrete could tear or puncture it. To complicate matters further, the project couldn't include a drain board, under-slab drainage, or sumps. It would also be completely tanked with water above its base slab by 2 m (8 ft) at all times, which would be subject to the Pacific Ocean's tidal levels. To keep this innovative project alive then, the group needed a waterproofing solution that would be just as innovative.

## SOLUTION

The Onni Group decided that their best bet in dealing with the area's hydrostatic pressure and the inherent risks associated with combining the application of shotcrete and external waterproofing membranes was to waterproof the concrete with Kryton's KIM admixture.



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With that in mind, they used KIM to waterproof the one-and-a-half-meter- (five-foot-) thick raft slab that they needed to keep the Ora building anchored. They also used it to fully tank the structure's one-level below grade area.

That allowed them to completely eliminate the need for external waterproofing membranes and avoid the risks they posed. In return, they were able to benefit from KIM, which is a permeability-reducing admixture for hydrostatic conditions and a recommended solution for concrete that is subject to constant hydrostatic pressure.

For extra protection, the Onni Group also applied Kryton's Krytol Waterstop System to the external below grade walls and the Krytol Leak Repair System to areas with defective concrete. Combined with KIM, this complete Kryton system would ensure that the Ora project would remain durable and watertight for the life of its structure.

Living up to this feature, the Ora is currently home to satisfied residents who experience dry living conditions despite the high water table in Richmond.



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