As Canada’s largest builder of condominiums, Tridel is committed to building healthy towers that significantly reduce energy and water usage. As Tridel Innovation Manager and Project Director Subhi Alsayed sees it, achieving this green-minded goal requires both “the brightest minds” and the latest in advanced design technology. So, to test the potential of Revit’s new Building Information Modeling (BIM) technology, Tridel approached the Centre for Construction and Engineering Technologies at George Brown College.

Building Information Modeling (BIM) allows architects, designers and architectural technologists to design in 3D. In effect, says Alsayed, you can create “a virtual building before you start breaking ground.”

Unlike the traditional 2D-Autocad drawing, 3D-REVIT supports Building Information Modelling (BIM), a technology that enables ongoing improvement and optimization, allowing the building design to be as green and sustainable as possible. It permits for more accurate and efficient use of building materials and predicts environmental impacts, creating a platform for monitoring water and energy usage. However, these 3D virtual models are an investment, costing more upfront to produce than the 2D Autocad drawings that builders typically rely on.

With funding from the Natural Sciences and Engineering Council of Canada (NSERC), the project was this: take Tridel’s existing 2D drawings of the planned 20-story MaRS Tower and convert them into 3D drawings using Revit BIM. The research question became the potential return-on-investment Tridel could realize by using this advanced technology.

For Principal Investigator Dante Casasanta, designing with Revit BIM tools make sense. In his view, “Building Information Modeling tools such as Revit Architecture produce a better end product thereby improving building performance.” In other words, the cost upfront may alleviate spending down the road.

He explains, “The implementation of BIM tools such as Revit allows the consultants to work as a team from the preliminary stages of any project sharing a single database.”

Casasanta suggests the return on investment is time, energy and money saved: “[BIM tools] allows for reduced errors in coordination and a more efficient control over quality and cost.”

Six students enrolled in George Brown’s Architectural Technology program were selected to function as an independent consultant team. Students Catherine Illingworth, William Zver, Ian Koudstaal, Marianne Yeung, Subenthira Karunenthiran, and Yong Joo completed the conversion over a twelve week period. From pilot to sustainably focused practice, Towerlabs is helping the Toronto skyline stand a little greener.