A lightweight portable crane small enough to fit into a construction elevator—that’s what Christian Sos of SOS Customer Services had in mind when he approached George Brown College in February 2011.

SOS bills itself as “leader in the maintenance and installation of material handling equipment in Canada.” The company’s primary market is in the manufacturing sector, but Sos imagined opening a new market in the construction industry.

Current approaches to window installation on commercial residential construction sites are outdated—the process is time-consuming, costly, and puts workers at risk. SOS had a new idea for a lightweight crane: easier to transport, assemble and less costly than competitors. To turn the idea into reality, George Brown offered the interdisciplinary expertise they needed for the project. For Professor Jamie McIntyre, the collaboration was a natural fit: “We’ve got the mechanical engineering lab and expertise as well as access to working construction sites.”

To start, McIntyre put five of his graduating students to work on the problem as a class project. Over the course of a year, this team conducted onsite and market research, designed the crane, and created a first generation prototype.

GBC graduate John-Allan Ellingson was hired as a student researcher on the project after graduation. Ellingson continued to work on the crane, collaborating with student researchers Georgi Barnev and Mat Nettleton to design, develop and test a second generation prototype.

The finished product is a mobile, compact crane with a lifting capacity of one tonne. With boom extended, it’s 5 feet tall yet retracts to fit into a service elevator.

SOS intends to certify, manufacture and market the crane. Christian Sos sums up the 2 year journey with a message to industry partners: “Not only will the students learn something [by partnering with George Brown] but you will yourself.”

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JAMIE McINTYRE, FACULTY