

Manufacturers turns to Niagara College’s R&D team to stay competitive in today’s marketplace

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Keeping Niagara’s manufacturing sector competitive is a key motivator for the team of the Advanced Manufacturing Innovation Centre.

Located at the Welland Campus of Niagara College, the Advanced Manufacturing Innovation Centre provides small- and medium-sized regional manufacturers access to needed facilities, equipment, technical expertise – including 3D technologies, such as Computer-Aided Design (3D CAD), additive manufacturing (3D printing) and co-ordinate measurement (3D scanning) of objects as small as a dime and as large as a whole factory – and serves to assist them in product development, technology adoption, expansion into new markets and commercialization.

These services help reduce production costs and minimize production time, and bring the talent and expertise of Niagara College’s students and faculty members together with local industry.

For example, the Innovation Centre team recently worked with Kwik Mix, a Port Colborne-based company planning a facility expansion.

“Working with Niagara College, it’s



From left, Marcia Porter, owner-operator, Kwik Mix, and Jim Roy, plant manager, Kwik Mix, discuss placement of components for their new plant with Ben Laurence, mechanical engineering student and research associate, and Costa Aza, faculty researcher and industry liaison. /PHOTO NIAGARA COLLEGE

nice to be able to talk to people who speak using the same vocabulary, in terms of the engineering aspects,” notes Jim Roy, plant manager, adding, “especially since there isn’t anyone else on our staff who is able to do that.”

Kwik Mix is a manufacturer of high-quality premixed concrete products and related items, serving independent lumber

dealers and specialty masonry yards.

Originally locating its production facility on the site of a quarry, next to a cliff, Kwik Mix has been able to use natural energy from gravity to move the aggregate. However, the company recently decided to relocate production to its warehouse site, to upgrade and expand its capabilities in a very competitive market.

From the inception of the project – long before thinking about breaking ground – the company turned to the experts at the Advanced Manufacturing Innovation Centre.

Through the Centre, research and development teams work with SMEs to meet their innovation goals, and to keep them competitive, leveraging funding from various regional, provincial and federal agencies.

Kwik Mix turned to the team because it provides the only Niagara location housing the necessary software and expertise to deliver 3D imaging and computer-aided design (CAD) drawings to allow Kwik Mix to plan a new production facility in an existing building.

The research team used the FARO Focus to scan the inside and outside of the existing building, including the placement of equipment.

The Focus essentially takes pictures with lasers, creating 3D images, but by using CAD software, the research team has now been able to transform those 3D pictures into graphics. The factory components – silos, robotics, conveyers and palletizers, for example – are then moved around within the graphic to match the needs of the company, according to building and safety codes, accessibility needs, etc., before a single dime is spent on construction.

“Niagara College is leading the industry with what we have been able to accomplish with this software,” notes Ben Laurence, a mechanical engineering student and research associate on this project. “We can do much of the planning this way and avoid plenty of potential errors.”

This project was made possible with funding from the Federal Economic Development Agency of Southern Ontario’s Prosperity Initiative.

The Advanced Manufacturing Innovation Centre recently broke ground on a new facility at the Welland Campus, thanks to \$4.2 million in funding from the Province of Ontario.

The Centre was launched in May 2013 thanks to funding from the Federal Economic Development Agency for Southern Ontario’s Prosperity Initiative fund, and support from the Province of Ontario and key regional partners such as Niagara Economic Development, the Niagara Industrial Association, Rankin Construction Inc., and Mountainview Homes.

In April 2014, the Centre received \$1.75 million over five years to expand its services and equipment, thanks to funding from the Natural Sciences and Engineering Research Council of Canada.

For more information on the Centre, visit NiagaraCollege.ca/Research.



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