Walker Advanced Manufacturing Innovation Centre

Technical Service Bulletin

Service For: School of Trades, Niagara College Sector: Building Construction

Niagara College Canada
APPLIED DREAMS.

The Niagara College Canada School of Trades offers a variety of trades programs and apprenticeships in: automotive and motive power, cabinetmaking, construction and renovation, electrical, electronics, general machining, hairstyling, industrial automation, mechanical, metal fabricating (fitting) and welding.

TECHNICAL SERVICE CHALLENGE:

The Niagara College School of Trades had been working on a project for the Hotel Dieu Shaver & Renovation Centre in St. Catharines, involving a student-based renovation of medical space. A fast and highly accurate method of floor-leveling, and spatial mapping was desired to ensure the renovations were achieved quickly and successfully. The Walker Advanced Manufacturing Innovation team was tasked with developing a novel way to use its spatial-scanning and software capabilities to produce the required results.

DELIVERABLES:

Research & Innovation utilized a dual-axis laser scanner to quickly capture approximately 1,500 ft^2 of floor area in three dimensions. This data was then merged together, providing a highly-accurate digital recreation of the space in three dimensions. From this data, a photo-realistic 3D visual of the space was created for use in the customer's CAD software package, and a colourized topographical map of the floor allowed for an easy way to level the floor's concrete pad.

EQUIPMENT USED:

- Faro Focus 3D scanner, which was acquired thanks to an NSERC grant
- Autodesk ReCap 360
- Revit 2017

RESOURCES:

- 2x Niagara College TAC Staff
- 1x – 2nd year Niagara College Mechanical Engineering Technology co-op student

DURATION:

1 Week

BENEFITS TO INDUSTRY PARTNER:

A complete set of accurate (±2mm) floor plans allowed the industry partner to have an extraordinarily high degree of confidence with the intended renovations. As well, the colourized topographical floor map allowed for a very simple way to ensure the floor was levelled correctly.

BENEFITS TO NIAGARA COLLEGE:

Real world job experiences for our students, which foster further learning opportunities utilizing innovative solutions using advanced manufacturing technologies.

For more information, contact Charles Lecompte, Senior Application Specialist, at 905-735-2211, ext. 7173 or clecompte@niagaracollege.ca

Walker Advanced Manufacturing Innovation Centre

Access Technical Services at the Walker Advanced Manufacturing Innovation Centre, your company's R&D partner, located at the Welland Campus of Niagara College. We provide a key competitive advantage to industry, offering access to cutting-edge equipment – and related services – for the development of products and manufacturing processes.

We specialize in

TECHNICAL SERVICES
Including: 3D Printing, 3D Design, 3D Measurement and Scanning, Finite Element Analysis (FEA), Computation Fluid Dynamics (CFD)

AUTOMATION
Mechanizing a process to decrease human labour and increase efficiency

PRODUCT DESIGN AND DEVELOPMENT
Creating a new product for deployment within your business or to be sold to a customer

REVERSE ENGINEERING
Discovering the technological principles of a device, object or system through analysis of its structure and functions

LEAN MANUFACTURING ASSESSMENT
Analyzing and improving an existing process within your operations

PRODUCT RE-DESIGN AND IMPROVEMENT
Revamping an existing product to improve quality and/or adapt to changing market conditions

Resources & Capabilities

- ***Sratasys Material Beta Testing Facility***
- ***Laser Scanners (small-scale & factory-size)***
- ***Vision Systems***
- ***Rapid Prototype Machines (FDM & Polyjet)***
- ***3D Computer-Aided Design***
- ***3D Factory Design***
- ***Physical Simulations and Modelling***
- ***Engineering Design***
- ***Electronics and Electrical***

"Niagara College brings youth, enthusiasm and knowledge to a tough playing field where every dollar is critical to the survival of many small businesses."

~Bob Benner, Hamill Machine Company Inc.

Niagara Region · NSERC CRSNG · NRC-CNRC Canada · NRC Industrial Research Assistance Program · Programme d'aide à la recherche industrielle du CNRC · Ontario Centres of Excellence · Ontario

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APPLIED DREAMS.

Start the conversation today

Together, we will determine how best to meet your needs, whether we perform a quick turnaround service, or a full innovation project. For R&D partnership opportunities, contact us:

ncinnovation.ca