

CASE STUDY

Atlantic Technological University Sligo Campus Hydraulics and Renewable Energy Laboratory

INTRODUCTION

Atlantic Technological University (ATU) is one of the largest multi-campus universities in Ireland, serving a diverse group of learners, staff, communities and organisations.

Built on 50 years of teaching within its historical higher educational institutes, ATU Sligo is one of Ireland's leading third-level institutions and is a great destination to receive a high-quality education. The Sligo campus has an important role in driving economic and social development in the Northwest of Ireland.

Over the last decade they've created a stunning 21st century learning environment making the Institute a modern campus.



Ollscoil
Teicneolaíochta
an Atlantaigh

Atlantic
Technological
University

THE CHALLENGE

Aware of the need to update their hydraulics lab plus Health and Safety advisories from Engineers Ireland, ATU Sligo set about gaining funding to replace the lab equipment in their Hydraulics lab.

They sought to procure new laboratory equipment, in the fields of Hydraulic Engineering, Fluid Machinery, Thermodynamics, and Fluid Mechanics Fundamentals. Investment in this lab equipment will enhance the delivery of QQI Levels 6 to 10 in the various engineering disciplines of the Institute's engineering departments.



Having been granted a COVID fund and internal funding from the University, GUNT Technology Limited entered in a four lot tender process to replace and extend the scope existing equipment as well as providing new areas of teaching/learning

- Lot 1 - Hydraulic Engineering Laboratory Equipment
- Lot 2 - Wind Tunnel, Wind Energy, Hydro Electric Power, Pumps
- Lot 3 - Thermodynamics Lab Equipment
- Lot 4 - Fluid Mechanics Fundamentals Remote Lab Equipment

This Equipment will be used for teaching/training, from novice to expert level. Therefore, it needed to be easy to use, robust, and capable of withstanding rigors of student use while still providing the required didactic materials for the courses offered. The build quality should provide years of excellent service, with minimum maintenance required. The equipment should conform to industrial standards in terms of design, safety, functionality, and training purposes.



THE SOLUTION

GUNT Technology Limited worked closely with the University to specify, install and give training on 14 pieces of engineering educational equipment and the respective accessories. Consideration was made with regards to layout, power sockets, water supply/outlets and other infrastructure needed to operate the equipment within the laboratory footprint.

Today the newly refurbished facilities are top spec, highly functional laboratories.

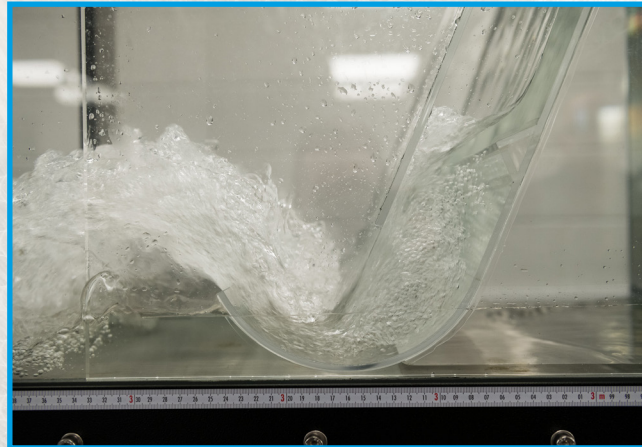
The labs also allow the university to run commercial courses which bring in essential funding.

For students, the new labs complement more courses than they could previously whilst continuing to support and enhance existing teaching.

The new GUNT equipment offers advanced digital tools, hybrid teaching and self-learning opportunities, enhancing student motivation and prepare them for the future, meeting the demands of the surrounding industries.

BENEFITS

- Brand new equipment.
- Complete replacement of out-dated equipment.
- Encompassing more courses therefore the lab is being utilised much more.
- Ability to run commercial courses.
- Promotes enhanced engagement with students.
- Meets Health and Safety requirements.
- Equipment is mobile and can be used in other areas of the university, for open days for example.



EQUIPMENT FOR THE HYDRAULICS AND RENEWABLE ENERGY LABORATORY

- HM 163** - Experimental Flume
- HM 170** - Open Wind Tunnel
- ET 210** - Fundamentals of Wind Power Plants
- ET 224** - Operating Behaviour of Wind Turbines
- HM 450C** - Characteristic Variables of Hydraulic Turbomachines
- HM 365** - Universal Drive and Brake Unit
- WL 110** - Heat Exchanger Supply Unit
- WL 440** - Free and Forced Convection
- WL 920** - Temperature Measurement
- WL 205** - Vapour Pressure Curve of Water - Marcet Boiler
- WL 420** - Heat Conduction in Metals
- WL 422** - Heat Conduction in Fluids
- ET 405** - Heat Pump for Cooling and Heating Operation
- HM 250** - Fundamentals of Fluid Mechanics

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