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 are one of Ireland's leading third level institutions and is a great destination to get 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.

GUNT TECHNOLOGY LIMITED

ATU 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.

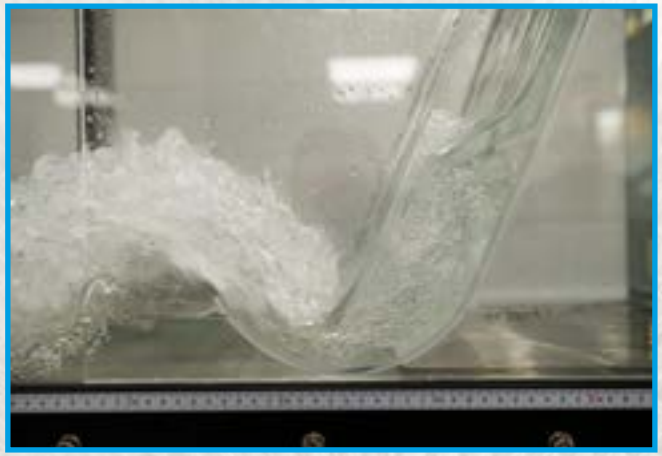
The labs also allow the university to run commercial courses which bring in essential funding.

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