

The Questor Centre Applied Technology Unit



Since its foundation in 1989, the QUESTOR Centre has worked with over 200 companies in Northern Ireland, Great Britain and further afield. Below is an outline of some of the work in which we have been involved.

Examples of Commercial Contracts with Industrial / Government Agency Clients.

Textiles

- Flow and Composition Surveys;
- Effluent Treatment recommendations; and consent negotiations;
- Life Cycle Assessment;
- Product development and technical support for fabric scouring;
- Waste and Energy Minimisation;
- Monitoring Natural Attenuation;
- Development of novel test for technical finish on fabric.

Plastics and Rubber

- Anaerobic digestion of effluent;
- Effluent Analysis;
- Investigation into reason for fabric failures;
- Developing new uses for post-consumer derived tyres;
- Life Cycle Assessment;
- Waste Minimisation.

Engineering and Construction

- Quality control analysis;
- Development and design of novel septic tank;
- Recovery of chemi-milling solution;
- Investigations into fabric failures causing pollution;
- Preliminary environmental impact for recreation facility;
- Waste Minimisation.
- Groundwater monitoring, sampling and analysis.

Food and Drink

- Investigation of residual metals in plant materials to assess suitability for composting;
- Independent assessment for in-vessel composting processes;
- Investigation to speed up plant drying and curing process;
- Anaerobic digestion of effluent;
- Grading of Tallow for subsequent re-use;
- Effluent monitoring and subsequent minimisation recommendations;
- Waste Minimisation;
- Investigation of water potability.
- Sludge to Land Risk Assessment.

Pharmaceutical and Chemical

- Waste minimisation;
- Process development for recovery of metal from waste sludges.
- Soil and Water treatability tests.

Handling and Distribution

- Investigation into energy production from waste.

Electronics

- Flow and composition surveys;
- Effluent analysis;
- Waste and Energy Minimisation;
- Troubleshooting.

Environmental

- Assisting in the design of appropriate effluent treatment systems.
- Site investigations to assess level of contamination and source of odour problems;
- Drinking water reservoir surveys and associated analysis;
- Modelling of nuisance and heat loss;
- Fresh water surveying.
- Groundwater sampling and Analysis.
- Hydrocarbon spill investigation and remediation design.
- Environmental Risk Assessment.

Government Agencies

- Development of Energy from Waste Demonstrator Centre;
- Development of tender proposals;
- Development of novel extraction technologies;
- Product/process development.

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European Union Projects – Completed and Current

PIWAMAS (FP5, Craft)

Develop and implement a closed cycle water management system for recycling water produced at dry docks.

www.piwamas.de

SESCOWA (FP5, Craft)

Selectively remove valuable organic compounds from wastewater streams, using specialised halophilic bacteria and membrane technology.

www.ifmb.uni-bonn.de/SESCOWA/index.html

SophieD (FP6, Integrated Project)

Develop novel sustainable bioprocesses for the European colour industries - new dye compounds and wastewater treatment processes.

www.sophied.net

WAPSCIENCE (FP6, Cooperative Project)

Wastewater treatment plant improvement through the use of smart in-line sensors and computational intelligence.

PRODESTS (FP6, Coordination Action, ETI)

Promotion, Demonstration and Development of Sustainable Environmental Technologies for SMEs. Opinions of SMEs around Europe will be gathered through surveys and questionnaires.

www.prodests.org

INDUS (Asia Pro Eco)

Develop a training course & manual to permit improvement of the efficiency of water use in the food & drink and textile industries in India.

www.indus-project.org

TIPOT (Asia Pro Eco)

The aim is to treat arsenic contaminated water in an arsenic alert zone in eastern India, making it suitable for drinking and irrigation purposes.

www.tipot.net

NEPTUN (Leonardo da Vinci)

The project aim is to develop a web-based European “learning community” for exchange of know-how and information based on the Water Framework Directive. People in public administration will use this tool to increase their technical knowledge in the field of water management.

www.neptun-info.net

WW Treat (LIFE-Environment)

The project aim is to improve the efficiency of wastewater treatment systems in small communities.

This will be implemented through audits and research into BAT.

Knowledge Transfer Projects with Small Companies Successfully completed Programmes

1. Atlanfish - Waste Minimisation and Cleaner Processing.
2. Microclean - Ground remediation company who wanted to diversify into effluent treatment through the development of a novel low maintenance septic tank.
3. Francis Dinsmore - Embedding of Environmental Management knowledge into the company.
4. John Hanna Ltd - Effluent management.
5. Clendinnings - Process Optimisation and LCA.
6. Riverside Textiles - production process optimisation.
7. RA Irwin - Practical Waste Minimisation
8. Kitchen Master - Development of environmentally friendly products.
9. Waste Water Controls - transferring design concept.

Current Programmes

1. Greyhound Recycling - Recycling company who wanted to diversify into the development of new product - Biodiesel.
2. Reduce, Re-use and Recycle - Recycling Company who wanted to turn waste generated on their own site into Refuse Derived Fuel.
3. ART Generation - Anaerobic digestion of waste to optimise use of waste in Biogas Production.
4. FM Environmental - Development of novel effluent treatment systems, specifically for the rural community
5. Pressure Hydraulics - Company wants to diversify into wastewater treatment - development of new product.
6. TE laboratories - Development of additional analytical services and capabilities

