

Managing the might of the sea



Over half of the world's population lives within 25 kilometres of the sea, but for many of them, that zone is rapidly dwindling. Global warming has caused sea levels to rise, accelerating the rate at which coastlines are being eroded - a significant factor in coastal flooding and the cause of hugely expensive damage. But a project led by Edinburgh-based WFS Energy & Environment, a division of WFS Technologies, will revolutionise our management of coastal erosion, providing rapid, accurate data to allow earlier and more effective intervention.

Technology Strategy Board

Driving Innovation

Attempts to understand coastal erosion processes have until now been largely limited to periodic surveys, often from the air, which have provided little more than an historical record of erosion. But the ASTEC (Automated Sensing Technologies for Coastal Monitoring) project will go beneath the sea to harvest information key to understanding and predicting erosion patterns.

A series of sensors on the sea bed will monitor and measure the movement of sediment around the coasts every 15 minutes, effectively measuring the movement of the beach; this data will be transmitted by radio to a collection buoy, which will use the mobile phone system (GSM) to transfer the information to shore. Accurate and detailed information will be gathered in real time, which will lead to more effective sea defences – in the past, paucity of information has meant that some protective measures have simply moved the problem along the coast, or even exacerbated it.

The applications of ASTEC are global – a fifth of the EU's coastline is already severely affected; in the UK £140bn of homes and businesses are estimated to be at risk from coastal flooding and erosion; and in the US, where areas of New England and the tourist beaches of California and Florida are under threat, billions of dollars have been spent on coastal defences and rebuilding infrastructure. ASTEC will be an important weapon in the armoury of those fighting the sea's costly encroachment.



'The expertise our partners brought to this project was invaluable. Forging partnerships can sometimes be difficult, but the Technology Strategy Board played a significant and helpful role in making this a very smooth process.'

IAN CROWTHER, WFS TECHNOLOGIES

Collaborative research and development projects are one of the tools that the Technology Strategy Board uses to drive innovation in the UK. The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve the quality of life. It is sponsored by the Department for Business, Innovation and Skills (BIS).
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Project number

100614

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18 months from
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Technology Strategy Board investment

£435,000

Total project investment
£670,000

Project partners

WFS Technologies,
Livingston, Scotland
Swansea Metropolitan
University

Valeport Ltd,
Totnes, Devon