

# Geo-Environmental and the University of Brighton win innovation funding



Early in 2011 Geo-Environmental's Technical Director Jonathan Tingley led discussions with Professor Andy Cundy, Assistant Head of School (Research), School of Environment and Technology at the University of Brighton to discuss how the two organisations could collaborate together.



Jonathan had a very specific aim in achieving a collaboration with the University *"As a specialist consultancy we are always trying to find new and*

**Cockcroft Building Reception, University of Brighton**

*innovative ways of advancing the methods and techniques of geotechnical and environmental investigations. Brighton University already had a strong track record of innovative research so we were keen to find a way for us to work together."*



Professor Andy Cundy was also keen to establish a collaborative relationship *"What the University of Brighton has been very good at is forming working relationships with local companies and industry in general to create very relevant research projects. This is of course very good for the University, but also good for our students when they finish their courses and enter the job market."*

**Geo-Environmental's Team working on the Thameslink Expansion at Borough Viaduct**

The SEEDA Innovation Voucher Scheme offered a vehicle to support the working relationship. The scheme was designed to enable businesses in the South East to develop technology, start research, and access equipment/expertise or technical consultancy from universities or Public Research Establishments.

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The next step in the process was for both sides to agree a project. Jonathan felt that there was scope for exploring whether Portable X-Ray Fluorescence [PXRF] (A technique that analyses the chemical properties of a material, specifically looking for heavy metal contamination by using the emission of characteristic "secondary" (or fluorescent) X-rays when it has been excited by bombarding it with high-energy X-rays) could be explored in more detail:

*“Despite the acceptance of PXRFs a valid technique by the Environment Agency and its successful use in major sites, such as the Olympics and Heathrow Terminal 5, there is still a general reluctance for the technique to be used on smaller sites.”*



**Example of a PXRF in the field**

Professor Andy Cundy agreed *“The University has done a number of projects using the technique and as the technology improves it yields ever better results. With the availability of green-field sites becoming increasingly scarce in the South East, developers will have to resort to building on potentially contaminated sites and this technique could have real benefits.”*

From his practical experience Jonathan had noticed that *“Current investigation techniques, that use boreholes and laboratory samples only provide small datasets in small portions of the site. Contamination could therefore be missed which may have to be remediated later in the development cycle at much greater expense. PXRF could mitigate this problem by providing much larger datasets at a fraction of the cost of an increased scope intrusive investigation.”*

It was agreed that Geo-Environmental Services and the University of Brighton submit a proposal for funding to SEEDA to explore this further. It was proposed that for investigations that specify conventional sampling methods and on selected sites, Geo-Environmental Services partner with the University to conduct parallel samplings with the PXRF and build up a suite of data that can be compared against conventional sampling methods and prove whether or not this technique is applicable for small to medium sites.

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The benefits that we hope to get from the project are as follows:

- There is an anticipation that this technique could greatly assist in managing risks on small to medium sites in brownfield areas, improving profitability and protecting margins.
- We saw this as an opportunity to contribute to the development of innovative new techniques for the area and the furthering of educational development in the area.
- If the study proves successful this could be promoted as an alternative to traditional methods and techniques.
- There is a possibility of a larger project emerging from work. We believe that there is general issue with classification of waste and the safe disposal of this waste, we would like to see this project collect data for a bigger project that suggests ways of potentially making safe certain types of waste without resorting to landfill.
- Finally Geo-Environmental want to be seen as a leading supplier of innovative services in our sector and we believe that we can give the University the opportunity to collect real world data that can help support and develop their academic research. The University staff have undertaken research and consultancy using PXRF since 2005, and the University has recently procured a state of the art PXRF detector with low ppm detection limits for key heavy metals (e.g. Cd), and rapid analysis capability.



**Portable XRF**

Geo-Environmental Services and the University of Brighton were granted the funding by SEEDA and the project is due to start on the 1st May 2011.

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Brighton's Palace Pier

The Managing Director of Geo-Environmental is very pleased that we have laid the foundations for closer collaborations with the University of Brighton. *“As an organisation, we have historically recruited a large number of our graduates from the University of Brighton. This partnership allows us to be more than a receiver of the excellent pupils that the University produces, but also to help shape them. We have an ambition to grow through the development of new services to support our customers, we believe that this partnership will help us achieve this.*

If you would like to know more, please call us on +44 1273 699399 or email us on [mike@gesl.net](mailto:mike@gesl.net)

**Geo-Environmental is an independent practice of geotechnical engineers, environmental consultants, and investigation contractors, who have been established since 1996.**

Our clients benefit from the pragmatic and flexible approach we take to delivering services and our ability to combine the geotechnical and environmental expertise that is required to provide cost-effective and focused site assessments. In the South East, London, South West and Anglian regions we have undertaken more than 5,000 investigations. The detailed knowledge base that we have built up from these investigations, allows us to provide an informed view of potential geological and contamination risks to our clients for most sites within these regions, even before visiting site.

Our aim is to be the supplier of choice for Geotechnical and Environmental Services for our customers by delivering consistent quality and reliability, taking seriously our obligations to operate safely and sustainably, valuing and supporting our workforce and delivering value for money for our customers.

