Brown and pleasant land

Government targets for house-building on brownfield sites are challenging. So experts on cleaning-up land are at a premium

The government wants 60 per cent of new housing to be on brownfield sites and to regenerate derelict areas, and this has led to a boom in business for experts on contaminated land. Given government targets for 240,000 homes to be built every year by 2016, as well as flagship projects on contaminated sites – such as the 2012 Olympics complex in East London – it's no surprise that land remediation is a £1.1bn sector.

Developers have to show that no suitable brownfield site is available before a greenfield site will even be considered and "for pretty much every brownfield commercial transaction, the question will be asked is: is this land contaminated?" says Merlin Hyman, chief executive of industry body the Environmental Industries Commission.

As a result, he says, there is a major demand for survey work. The former uses of brownfield sites ranges from petrol stations to factories, so each contaminated site will require different solutions. But it's vital that the land is decontaminated if family homes are to be built on the land.

> "Increasingly, landfill will become less environmentally, economically and socially acceptable"

In the past, a great deal of remediation involved wholesale excavation of a site and sending the contaminated material to landfill. Material from contaminated land was traditionally the biggest source of hazardous waste in the UK, says Mr Hyman.

However, since the Landfill Directive tightened up the rules in 2004, it is not possible to send waste to landfill without pre-treating it, says Professor Paul Nathanail, Head of Land Quality Management at the University of Nottingham. "The economics of landfill disposal make it more favourable to do something on site rather than move the contaminated material," he adds. "Increasingly, landfill will become less environmentally, economically and socially acceptable."

Ultimately demand is dependent on the property market. "With the property market stagnating and builders' margins beingsqueezedevenfurther,thelikelihood of sites that require remediation being developed is diminishing," says Graham Sprigg, managing director of consultancy IMS. This is true, agrees Prof Nathanail, "but in the long run, we will need these sites, because we don't have any more land."

Bio-treatment

As a result of the regulatory and economic climate, thermal, physical, chemical and biological techniques are becoming more popular.

Bio-remediation uses bacteria to clean up low level of contamination, while soil with a wide range of contaminants can be cleaned up using physical separation techniques such as soil washing, taking advantage of the difference in density or size of the contaminants. Soil treatment centres are widely used in continental Europe, but have not taken off in the UK to the same extent because regulations make it difficult to get decontaminated soil reclassified so it is no longer treated as waste, says Mr Hyman.

Chemical treatment is a useful option when both soil and groundwater are affected, while thermal treatments – where the soil is excavated and heated to 600ºC – are effective for organic contaminants.

"The increasing emphasis on treatment on site means the industry will need new skills – more chemical and environmental engineers as well as microbiologists." says Prof Nathanail.

COMMERCIAL FEATURE

CleanTech revolution forming the dot-green era

When organisations evaluate carbon emissions, the immediate reaction is to target behavioural activities. However, the 'cycling to work scheme' approach, although important, can only partially address a company's CO^2 reduction targets. Energy alone accounts for 80% of all greenhouse gas emissions in the European Union making it a crucial area of focus. Companies like Tesco, Mothercare, YMCA, London Fire Brigade, Sandwell council, Thatcham Research Centre and Thistle hotels are leading the way in addressing the energy issue.

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Energy accounts for 80% of all greenhouse gas emissions in the European Union

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