Remediation of a research and development facility

ABB initiatives save client £500k in remediation costs.

A major petrochemical company wished to dispose of a redundant research and development facility located in a sensitive rural location. Their objective was to demolish and remediate the site in order to sell the land for future commercial development.

The project had to be delivered to meet the following stringent requirements:

- High standards of health and safety
- Local Authority planning conditions regarding environmental assessment, remediation and validation
- A challenging programme
- Minimal off-site disruption or impact

ABB was engaged as project manager; the scope of work included management of environmental consultants and demolition and remediation contractors, acting as CDM coordinator and providing a full-time site presence.

“The approach I saw being taken by ABB to dealing with health and safety issues in demolition and remediation was impressive. Not only was the site a first class example of safe demolition, it was also clear that the work was being done more efficiently because of the way it had been organised.”

Judith Hackett, Former Chair of the Health and Safety Executive (HSE)
Solution
The project was complex, with the following issues:

- History of R&D operations since the 1940s over a large site area (10 hectares)
- Limited historical data and site knowledge.
- Decaying oil storage infrastructure with a history of leakage
- Complicated pattern of hydrocarbon contamination in soils and groundwater
- Asbestos presence in all forms throughout the site
- Neighbouring businesses that could be impacted by dust, vapours, noise and vibration
- Coordination of simultaneous demolition, site investigation, remediation and validation activities
- Client requirement for a sustainable approach to both demolition and remediation

ABB followed accepted UK guidance for the remediation of contaminated land for this project (Model Procedures for the Management of Land Contamination - CLR11, produced by DEFRA / EA). A series of site investigations were carried out (pre and post demolition) to locate and quantify contamination in the sub-surface.

Risk assessments were performed to develop site specific treatment levels that were suitable for future commercial development and a series of remedial plans defined clean up requirements. In addition, a site waste management plan was implemented to control waste materials and ensure that the majority were re-used or recycled on site.

As a result, only 150m³ of hazardous soils (asbestos contaminated) were disposed off site; the remainder (approximately 10,000 m³) were suitable for re-use as backfill after treatment.

The ABB role of client representative included the proactive management of environmental consultants and remediation contractors. In particular, the scope and cost of proposed works were regularly challenged and a number of ABB initiatives resulted in a cost saving of over £500k and a significant reduction in environmental impact, these included:

- Implementation of a pilot trial to demonstrate that planned remediation and installation of a cut-off wall were not needed in one area of the site
- Substitution of in situ remediation in place of excavation and bioremediation in another area of site saved costs and reduced the overall project programme
- Modification of proposed re-use criteria for demolition rubble, which resulted in greater use of this material on site

The project was completed ahead of programme, within budget, without reportable incident or injury and to the satisfaction of the client, HSE, Local Authority and Environment Agency.

Benefits
- The client was able to sell the land for future commercial development.
- Efficient and effective completion of the remedial works without complaint from the local community ensured that the client’s reputation was enhanced
- Cost savings of over £500k were identified through a proactive management approach that challenged proposed works