Remediation of a former fuels storage depot

The client requested assistance from ABB to procure and steward a remedial solution for the remediation of its former oil storage depot.

The site is approximately 10,500 m² in area and located approximately 30m above ordnance datum. The objective of the project was to voluntarily remediate the site to allow divestment of part of the site and lease surrender for the remainder, as well as reducing the client’s on going environmental liability. The project had to be delivered to an agreed timeline, with high standards of safety and with minimum off site disruption given its location in a mixed commercial and residential area.

ABB were engaged to procure, manage and steward the project and contractors, this involved; support from procurement, acting as CDM coordinator, consulting engineers, environmental consultants as well as providing full time site presence.

The remediation plan required the excavation of 11,500 m³ of material, of which 8,100 m³ was estimated, by the incumbent environmental consultant, as requiring treatment. Dewatering of the excavation in association with product skimming would also be required to prevent cross contamination of the backfilled material, this water would need to be treated and disposed of. In addition the impacted material extended to the site boundary with the river, to maximise the effectiveness of the remediation an engineered support would be required.

The site, as well as being located in a sensitive location, had some interesting additional challenges that required consideration prior to award and implementation of the remedial solution:

- A river forms the north-western boundary, as is designated as being of Grade A (good) for Chemistry and B (good) for biology
- Residential properties are located to west and south
- The geology beneath the site was heterogeneous consisting of granular and cohesive made ground materials
- A 3rd party foul sewer bisects the main excavation area
- Wide spread contamination comprising separate and dissolved phase hydrocarbon plumes
- Rapidly changing groundwater levels due to unseasonably high precipitation
- Disposal of extracted groundwater would require permitting if it was to be economically disposed of
Solution
Five remedial specialists were approached in the tender process, following evaluation of the submissions by ABB for technical competence and cost effectiveness, the contract was awarded to the proposal for excavation, segregation of impacted soils, treatment using static aerated biobeds, product recovery, dewatering with treatment of the extracted water through a water treatment plant prior to discharge to the river under license. In addition the proposal included for the removal of the impacted length of sewer and its replacement.

Stewardship of the works is currently on-going with the volume for excavation having increased to 12,100m³ however the amount of material requiring treatment has decreased to 7,800m³, in addition 2,520m³ of treated groundwater has been discharged to the river. Currently the successfully biotreated materials have been reinstated and the groundwater quality remaining is being validated.

Benefits
ABB have, and continue too, provide the following services during the life of this project:

- Tender / procurement management
- Leading feasibility studies on proposed remediation methods
- Prepared Pre-Construction Information Pack (PCIP)
- Overall project management
- CDM coordinator
- Full time on-site management / supervision
- Waste management advice
- Safety, training auditing and monitoring
- Planning and progress meetings and reporting
- Cost management

As a consequence of ABB stewardship and on site presence the project is scheduled to still finish ahead of original programme and budget, and to date, without a reportable incident or injury.