The client wished to close and remediate an industrial landfill facility. Its site was adjacent to a sensitive residential area.

The project was complex and involved the following issues:

- The site had been the location for a variety of chemical manufacturing plants and their waste for over a century
- A large site area (18 hectares) with a waste settling lagoon and steep embankments
- Alkaline leachate generation was taking place
- The presence of asbestos in a section of the landfill
- The site neighboured a residential area that could be impacted by dust, vapours, noise and vibration
- Environmental and geo-technical site investigation, waste reprofiling, drainage and capping works and validation activities all needed to be co-ordinated
- The client required a sustainable approach to remediation and landscaping activities

Their objective was to remediate and landscape the site in order to create a public park. The project had to be delivered to meet the following stringent requirements:

- High standards of health, safety and environmental protection
- Regulatory authority conditions regarding environmental assessment, remediation and validation
- Minimal off-site disruption or impact
- Ongoing management of the former landfill area

ABB were asked to manage the remediation project.
Solution
The scope of work included managing environmental consultants as well as remediation and landscaping contractors. We were asked to act as the client’s representative and to provide a full-time site presence during the site works. Ongoing management of maintenance, monitoring and security operations was also entrusted to us.

The following works were carried out to remediate the landfill:

- A detailed historical desk study to characterise and locate waste deposits
- Comprehensive environmental and geo-technical site investigations to quantify contaminant concentrations and location and to ascertain settlement potential and slope stability
- Risk assessment and a detailed design of the landfill capping system to control and manage identified risks.
- Agreement of proposed works with the local authority and Environment Agency
- Landfill re-profiling and slope stabilisation
- Installation of internal and external drainage systems (including leachate and lagoon drainage)
- Capping of the landfill with a combination of low permeability clay and geo-membrane lining materials; the cap was keyed into underlying low permeability boulder clay
- Landscaping works to create a public park
- Validation, monitoring and production of a final validation report and subsequent regulator approval

Ongoing management
We managed the ongoing maintenance of the remediated landfill for the client; this included landscape maintenance, site security and drainage monitoring and maintenance. We also monitored and reported on surface water leachate and groundwater.

Our role as client representative included the proactive management of consultants and contractors as well as regular liaison and communication with regulators and local community groups.

As a result, the project was completed to programme and within budget, without reportable incident or injury and to the satisfaction of the client, regulatory authorities and local community.

Benefits
- Project completed to time and cost
- Site decontaminated and the new park established
- The support of community groups and regulators gained through regular communication
- High safety standards maintained throughout the project