

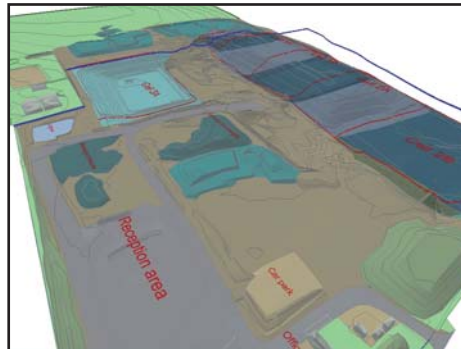
LANDFILL

GWP has considerable knowledge and experience relating to landfill design, specification and construction. Our expertise in related disciplines such as geotechnical engineering, hydrogeology and hydrology ensures that our designs are stable, safe and will satisfy the demands of increasingly stringent environmental legislation in the UK, continental Europe and elsewhere in the World.

We offer a full construction design and supervision service to landfill operators. This includes surveying and the related accurate verification of waste, liner and cap levels and thicknesses as well as the provision of experienced Construction Quality Assurance Monitors and Engineers.

Our Services include:

- Surveying of landfill cells for accurate verification of waste, liner and cap levels and thicknesses.
- Provision of experienced Construction Quality Assurance (CQA) monitors and engineers.
- Designs prepared in accordance with best practice whilst ensuring practical site development, operation and sustainability.
- Designs to meet the requirements of the Landfill Directive as interpreted in regulations.
- Innovative designs that maximise void space whilst maintaining the highest levels of environmental protection.
- Designs with liners of engineered natural clays, geomembranes and geosynthetic reinforcement.



Landfill Services

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Landfill Design

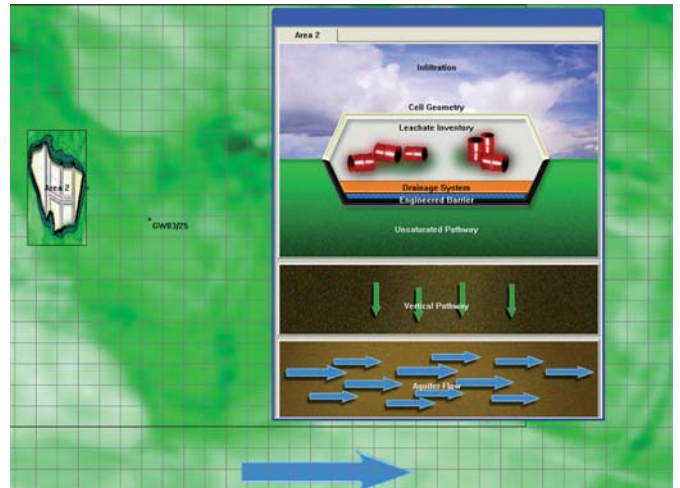
We create landfill designs that:

- are prepared in accordance with best practice whilst taking into account economic and logistical factors that may affect site development, operation or long term sustainability;
- include innovative features that allow efficient and safe working and maximise void space, whilst maintaining the highest level of protection for the environment;
- meet the requirements of the Landfill Directive as interpreted in national legislation and regulations;
- use both natural and synthetic lining and capping materials combined with leachate and gas management systems.

Selected projects

- **Landfill cell and capping design:** GWP designed a cell and cap using site derived engineered clay with an additional geosynthetic capping element.
Full CQA monitoring and survey backup was provided together with CQA drawing and CQA report preparation.
- **Design of hazardous waste cells:** In consultation with the EA, GWP designed an engineered clay and HDPE lined landfill cell at a hazardous landfill site. This included obtaining all necessary risk assessments and a comprehensive CQA plan. Following approval, we provided CQA supervision and survey.
- **PPC Permit Application:** GWP has successfully applied for PPC Permits at inert landfill sites, including preparation of required environmental setting reports, and additional stability, gas and hydrogeological risk assessments.
Once permitted we have implemented CQA monitoring plans and provided all necessary reports.
- **Equivalence Study using LandSim:** GWP undertook an equivalence study on a currently permitted scheme to demonstrate that a liner comprising 1.2m of compacted clay could be substituted by a 0.5m thick bentonite enriched sand alternative.

The BES solution resulted in significant savings on materials, installation costs and in waste volumes.



Key contacts

For details and to discuss your requirements, please contact the following:

Dr. David Jameson, Partner. Geotechnical Engineer with experience in landfill design, specification and construction. E-mail: DaveJ@gwp.uk.com