

herrington  
Part of 

# Effective solutions for the built environment.

Planning assessments | Engineering solutions | Numerical modelling | Expert advice



[www.herringtonconsulting.co.uk](http://www.herringtonconsulting.co.uk)







# Our Expertise & Experience

With over 20 years' industry experience in environmental assessments and the built environment, Herrington has advised thousands of clients working across multiple sectors. From individual householder developments to large strategic sites comprising several thousand homes, we believe in the power of innovation to transform the ordinary into the extraordinary.

Our strength comes from having the collective skill set to deliver all aspects of a project from feasibility stages to construction, while maintaining a size and culture which enables dynamism with continued accessible and consistent working relationships between our people and our clients.

In 2022, Herrington Consulting joined the in-ground risk specialist Environmental Protection Strategies (EPS), bringing significant enhancement and expansion of our capabilities and expertise for the whole group. Our comprehensive range of services are designed to bring efficiency and creativity and realise opportunity.

## Water Services

Flood Risk Management

Drainage Engineering

Numerical Flood Modelling

Coastal Modelling and Engineering

## Light Services

Daylight & Sunlight Assessment (DSA)

External Lighting Impact Assessment

Transient Overshadowing Assessment

Glint & Glare Assessment

## EPS

Ground Investigation

Geotechnical Support

Geomatics

Materials Management & Earthworks Modelling





## Flood Risk Management

Flood Risk Management is a critical aspect of environmental planning and civil engineering aimed at reducing the socio-economic and environmental impacts of flooding. It involves a comprehensive approach that encompasses assessment, planning, and implementation of measures to mitigate flood risks to protect people, property, and the environment.

From basic to complex flood risk assessments, Herrington applies site specific data to appraise the risk of flooding to a site. Where necessary, numerical modelling can be undertaken to derive flood depths and velocities. We are always available to advise - whether to discuss BREAAAM credits or offering bespoke advice on how to manage flood risk and surface water runoff from developments, including acting as an Expert Witness.

### Our services include:

- Flood Risk Assessment (FRA)
- Sequential Test Statements
- Flood Evacuation Plans (FEP)
- Compensatory Flood Storage
- Feasibility and Scoping Report
- Hydrological Assessment
- BREAAAM
- Expert Witness Service



Thames Barrier protecting London from flooding



Localised temporary flood defences



Beach management works, protecting coastal towns from flooding

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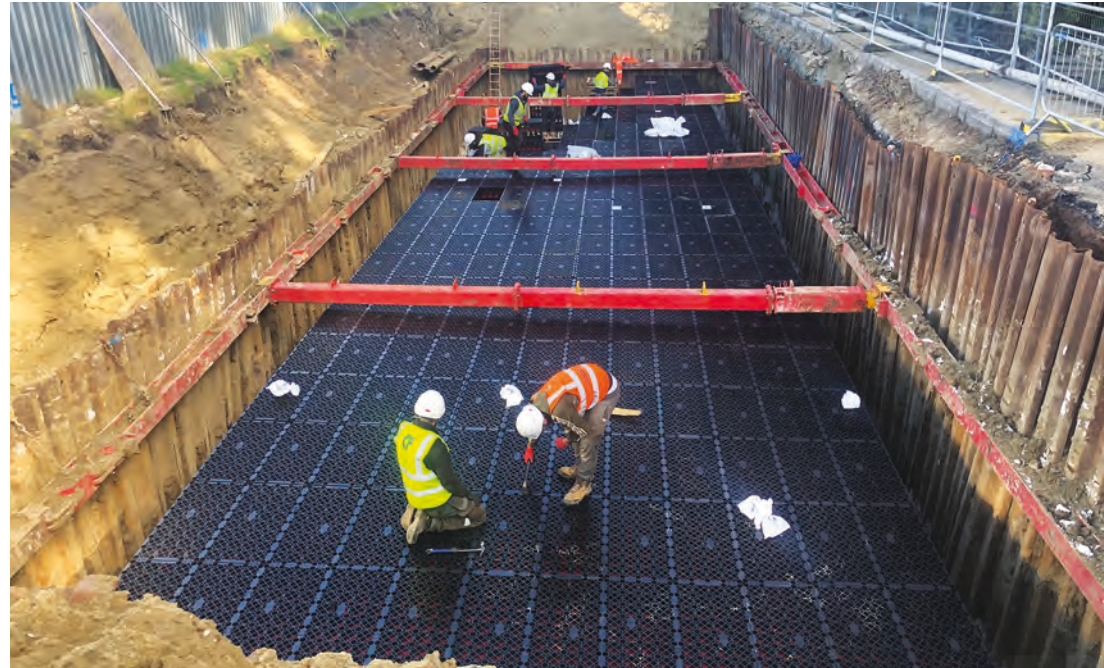
## Drainage Engineering

Drainage engineering is a specialised field within civil engineering that focuses on the design, implementation, and maintenance of systems for the transportation and management of water. It plays a vital role in urban planning and environmental protection, ensuring that communities are safeguarded against water-related hazards such as flooding.

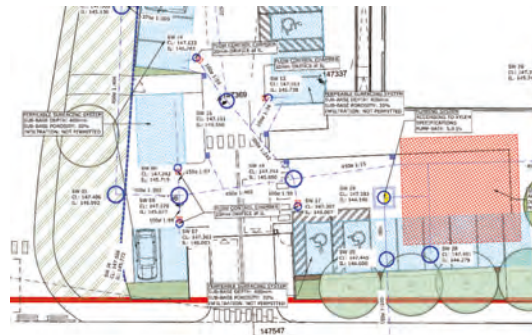
Herrington has extensive experience of devising effective solutions that cater for the unique conditions on each site; from appraising and designing suitable solutions for surface and wastewater management on new and proposed developments, to Verification Reports designed to evidence that a drainage system has been constructed to the appropriate standard.

**Our services include:**

- Surface Water Management Strategies
- Sustainable Drainage Systems (SuDS)
- Foul Water Management Strategies (FWMS)
- Detailed Drainage Design
- Section 106 and 98 Applications
- Hydraulic modelling
- Verification Reports



Installing SuDS in the form of cellular storage



Example of HCL drainage design



Drainage is not only about sewers

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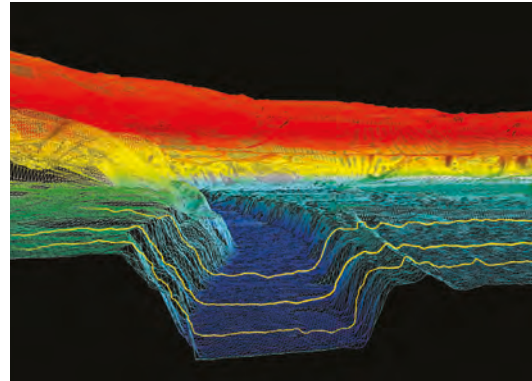
## Numerical Flood Modelling

Numerical flood modelling is a dynamic field that continues to evolve with advancements in technology and computational power, providing more accurate and detailed predictions to aid in flood risk management. It involves the development of mathematical models that are essential tools in flood risk management, allowing for the anticipation of flood events and the planning of mitigation strategies.

Our Numerical Modelling experts can construct bespoke flood models which better quantify the risk of flooding to a site and test proposed options to mitigate flood risk. This process can help to unlock areas which were previously considered undevelopable.

Our services include:

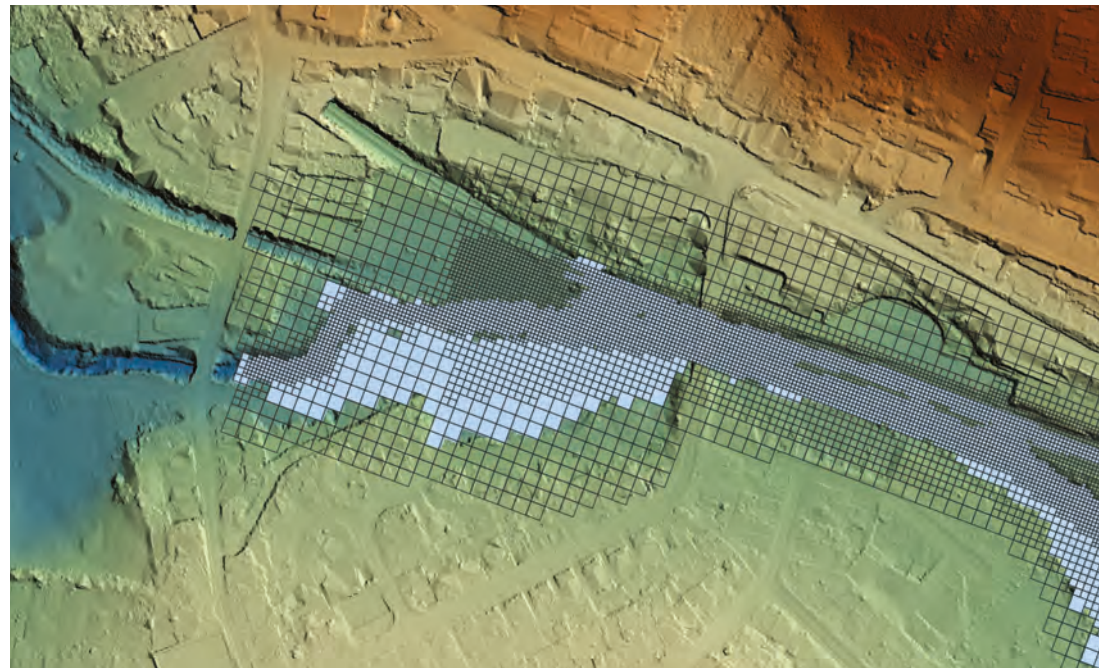
- Pluvial (Rainfall) Modelling
- Fluvial (River) Modelling
- Tidal Models
- Breach Models
- Combination 1D/2D Hydrodynamic Models



Cross section through numerical model



Numerical flood model showing outputs



Numerical flood model showing variable resolution

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## Coastal Modelling and Engineering

Coastal modelling and engineering are branches of civil engineering that consider the design, construction, and maintenance of structures in coastal areas. Addressing the challenges posed by the marine environment, such as wave dynamics, tides, storm surges, and coastal erosion, they are integral to integrated coastal zone management, which aims to balance ecological, social, and economic objectives in coastal areas.

Coastal models are essential for effective coastal engineering solutions and for managing coastal resources sustainably. Our coastal consultants are experts in model building, from waves to sediment movement and can assess, design, and implement solutions for coastal and marine environments.

### Our services include:

- Inspecting coastal structures and devising maintenance plans
- Coastal and tidal modelling; wave modelling, wave overtopping, current and sediment transport
- Supporting permitting process
- Obtaining approvals and funding requests
- Assessing environmental impacts of coastal structures
- Design of coastal structures
- Expert Witness Services



Margate Coast Protection Scheme - modelled by Herrington, who supported Thanet District Council to deliver the scheme



Boussinesq wave model



Outfall design for Southern Water



Rock revetment testing, Dungeness





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## Daylight and Sunlight Assessment (DSA)

A Daylight Sunlight Assessment (DSA) is often required during the planning process for new developments. Its role is to ensure that new developments provide reasonable levels of daylight and sunlight within and around the proposed structure, which is particularly important for city centre high-rise developments and conversions, but also applies to lower density residential settings.

Optimising lighting conditions contributes to human wellbeing and helps to meet energy and carbon reduction targets. At Herrington, we are experienced in constructing 3D computer models to assess the impact on neighbouring residential buildings, and in providing advice on various sized schemes in accordance with the BRE Guidelines. Whether it's about the neighbouring property's daylight needs or the impact of surrounding trees on your project, talking to us early on in the design process will maximise design envelope and optimise project scheduling.

## Our services include:

- Impact on neighbour
- Internal light analysis
- Maximum envelope
- BRE AAM



Existing (Baseline) model



Proposed development model



Skyline with proposed development

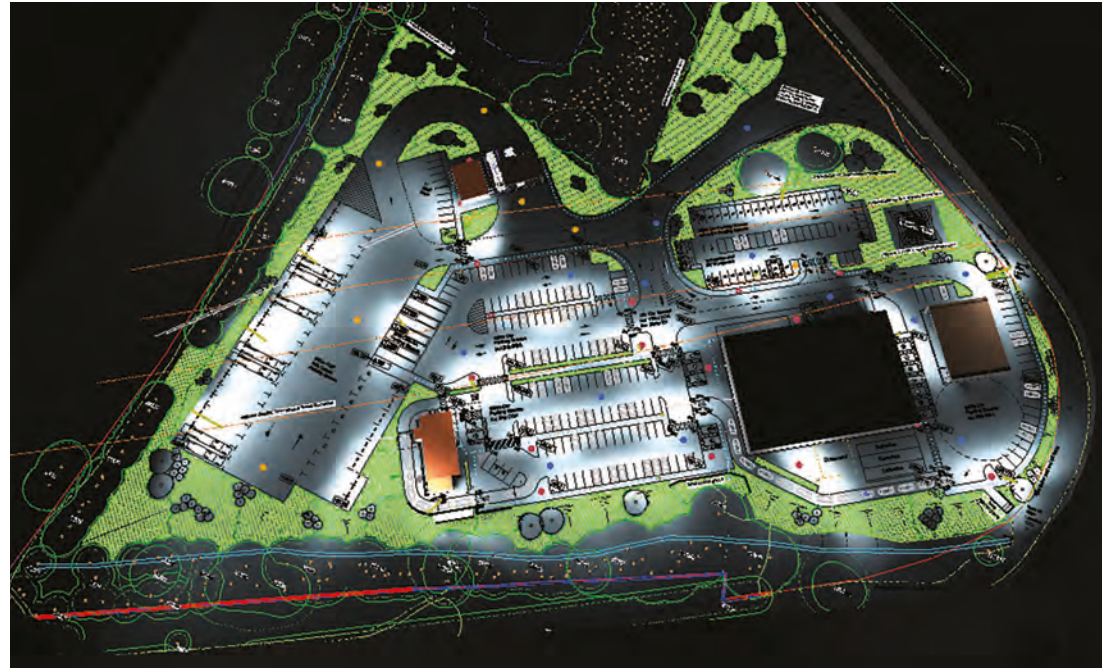
## External Lighting Impact Assessments

An External Lighting Impact Assessment (ELIA) evaluates the potential effects of artificial lighting from a new development or construction project on the surrounding environment – be it neighbouring residents or ecological receptors. It is an essential part of the planning process, especially for projects that could introduce significant changes to the existing lighting conditions.

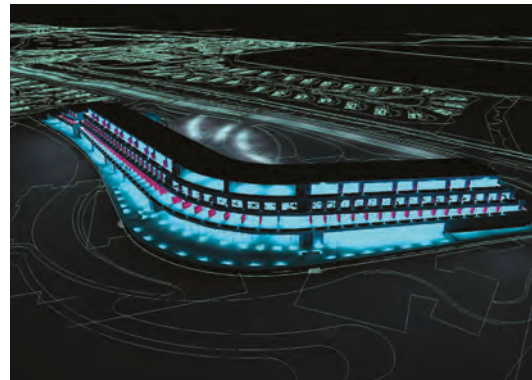
Herrington advises on the impact of light pollution on receptors such as local amenity, intrinsically dark landscapes and nature conservation. Our expertise can also be applied to commercial developments where facilities, such as restaurants and gyms, also need consideration. A lighting strategy based on the SLL and SLP guidance can be assessed to address specific concerns with light spill to surrounding properties and sensitive species e.g. bats.

Our services include:

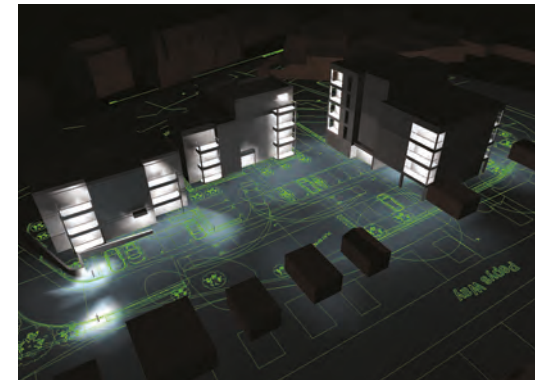
- Residential and Protected Rural Areas
- Industrial
- Recreational and Sports Pitches



Car park lighting plan



3D luminance for hotel complex

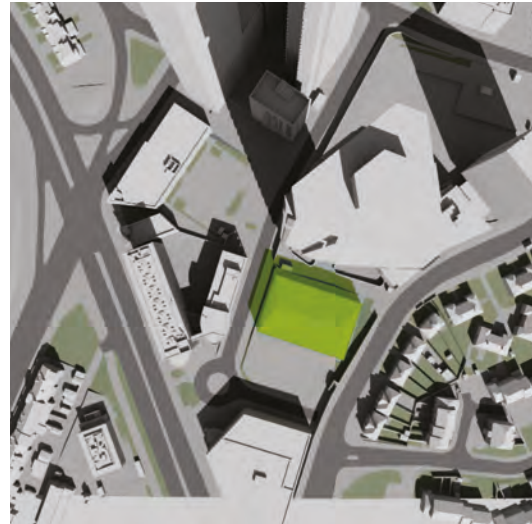


Luminance for residential development

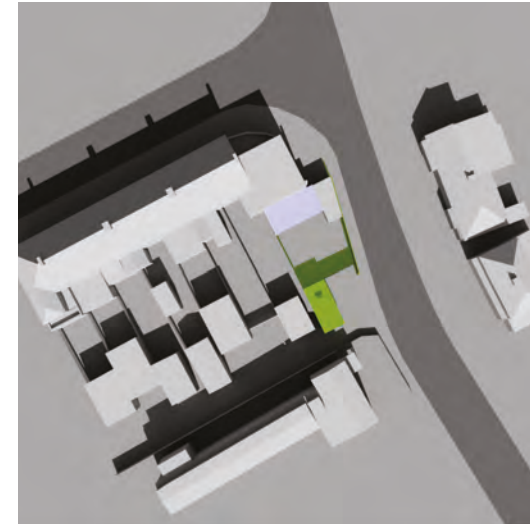
## Transient Overshadowing Assessment

Crucial in the planning process, transient overshadowing assessments ensure that new developments do not adversely affect the existing light conditions of nearby spaces. Transient overshadowing refers to the temporary shadows cast by a new development on surrounding areas, particularly on amenity spaces. The aim is to understand the impact of the proposed development on the access to sunlight for neighbouring properties and public areas, through studies that simulate the path and extent of these shadows at various times throughout the year.

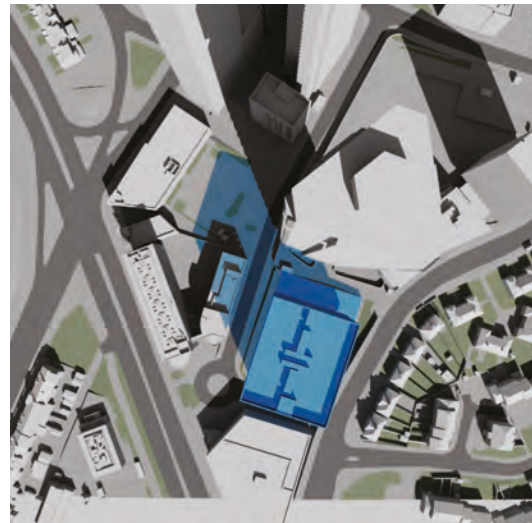
Where a proposal is likely to overshadow adjacent amenity spaces, the local planning authority may require a more in-depth overshadowing assessment. The objective is to simulate the path and extent of the shadows cast by new developments at hourly intervals and at different times during the year. Our Light Team has the capability to produce the necessary simulations and illustrate the shadow paths as part of a transient overshadowing assessment.



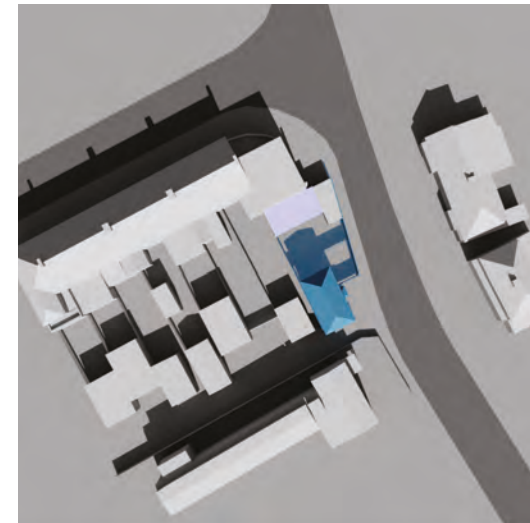
Pre-Development Scenario (Large Scheme – 10+stories)



Pre-Development Scenario (Householder Scheme – 2 storey)



Post Development Scenario (Large Scheme – 10+stories)



Post Development Scenario (Householder Scheme – 2 storey)



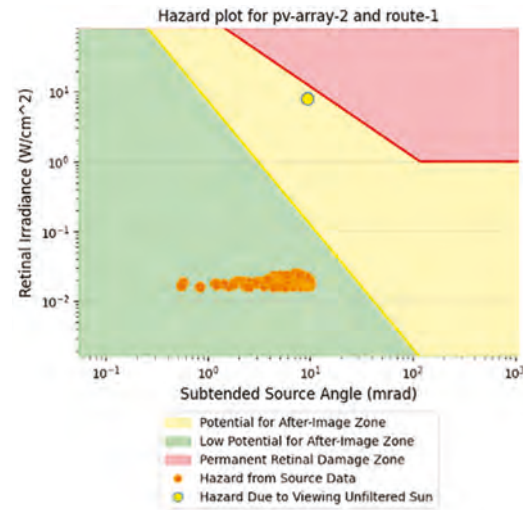
## Glint and Glare Assessment

Glint and Glare Assessments are technical evaluations conducted to understand the potential impact of reflective surfaces, such as solar panels, on the surrounding environment. These assessments are often required to support planning permission and they are particularly important for developments that include solar photovoltaic (PV) installations or buildings with large glass surfaces and/or are located near infrastructure such as airports or railways.

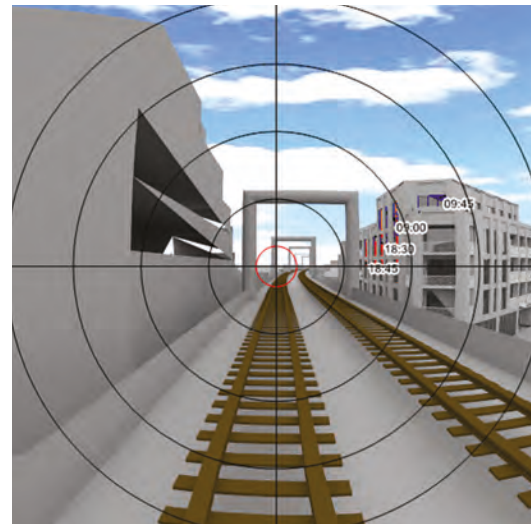
Where solar PV developments or highly reflective building façade materials are proposed in the proximity of an airport, rail line or road, the risk of glint and glare needs to be assessed. Following Civil Aviation Authority (CAA) guidance, Herrington offers alternative solutions to mitigate glare exposure from solar PV near airports. The use of 3D numerical modelling allows the calculation of veiling luminance from building facades. Applying the latest technologies, we can determine the ocular impact of solar glare, quantify it, and establish the level of risk.

Our services include:

- Aviation
- Rail
- Roads
- Solar PV
- Facades
- Analysis and Modelling



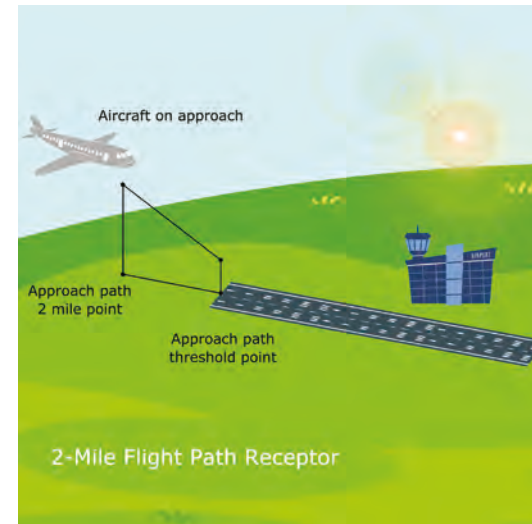
Hazard plot for PV array



Train driver view



Solar PV farm



2 mile flight path receptor





In December 2022, Herrington Consulting joined the in-ground risk specialist Environmental Protection Strategies (EPS). Established in 2001, EPS has extensive experience across a wide range of geotechnical and environmental consultancy projects.

Working with top names in the residential, retail, industrial, and petrochemical sectors, the core of the business has always been in-ground risk, helping clients and project teams understand and manage development constraints around the three key areas of ground quality, strength, and drainage potential, on brownfield and greenfield land.

The reputation the company has maintained for two decades has been built on a genuine understanding of clients' needs and the delivery of consistent quality. EPS' collective skill set allows for the delivery of all aspects of environmental consultancy, from feasibility to resolution, while maintaining a size and culture which enables dynamic client working relationships that are consistent and accessible.

- Feasibility Support
- Geo-Environmental Site Assessments
- Environmental Risk Assessment
- Geotechnical Support
- Geomatics for Construction & Asset Management
- Air Quality Assessments
- Materials Management Plans
- Remediation



## Ground Investigation

EPS offers comprehensive geo-environmental ground investigation services from desk study to technical risk assessment. These investigations support due diligence for site acquisition and marketing for the planning, design, and construction of greenfield and brownfield development. A well-planned and thorough ground investigation undertaken during the early stages of a project will highlight potential constraints, as well as opportunities that can be designed to minimise risk and optimise opportunity.

EPS's expertise includes:

- Geo-environmental desk studies (Phase 1)
- Phase 2 Geo-Environmental Site Assessments
- Ground Gas and Vapour Assessment
- Waste Characterisation
- Coal Mining Risk Assessment
- Hydrogeological Assessment



Groundwater monitoring



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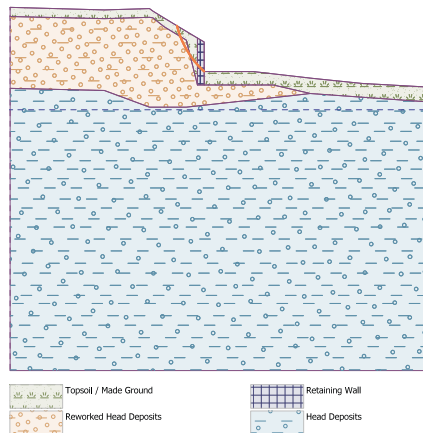
Materials Management & Earthworks Modelling

# Geotechnical Support

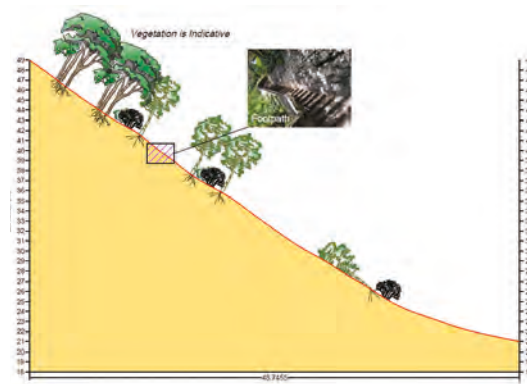
EPS's geotechnical investigations provide clear, concise data to allow critical aspects of the development to be designed such as foundations, ground floor slabs, pavement and drainage. The team will also, where necessary, comment and provide advice with respect to slope stability, basement and retaining structure design. EPS Geomatics can further enhance the modelling process for slope stability assessment by undertaking detailed surveys which can form the basis for site specific modelling.

EPS's expertise includes:

- Geotechnical Ground Investigations
- Soakaway / Ground Permeability Testing
- Slope Stability Assessments



Model of retaining wall stabilising slope



Section generated from LiDAR survey



Slope failure on coastal footpath



Slope failure adjacent to residential property

## Geomatics – 3D Topographic Mapping & Ground Modelling

EPS Geomatics undertakes precise, measured surveys of land and buildings using specialist drones, photogrammetry and LiDAR pointclouds. Large or hard to reach areas, along with cross-boundary features and highways can be captured with ease, satisfying the highest professional standards in project requirements. Data appreciation is enhanced by 3D digital model creation on every project. Traditional surveying techniques are incorporated to supplement or replace drone data wherever appropriate for the project success.

EPS's expertise includes:

- Aerial Topographic Surveys
- Asset & Thermal Inspection
- Detailed Cut & Fill Assessment



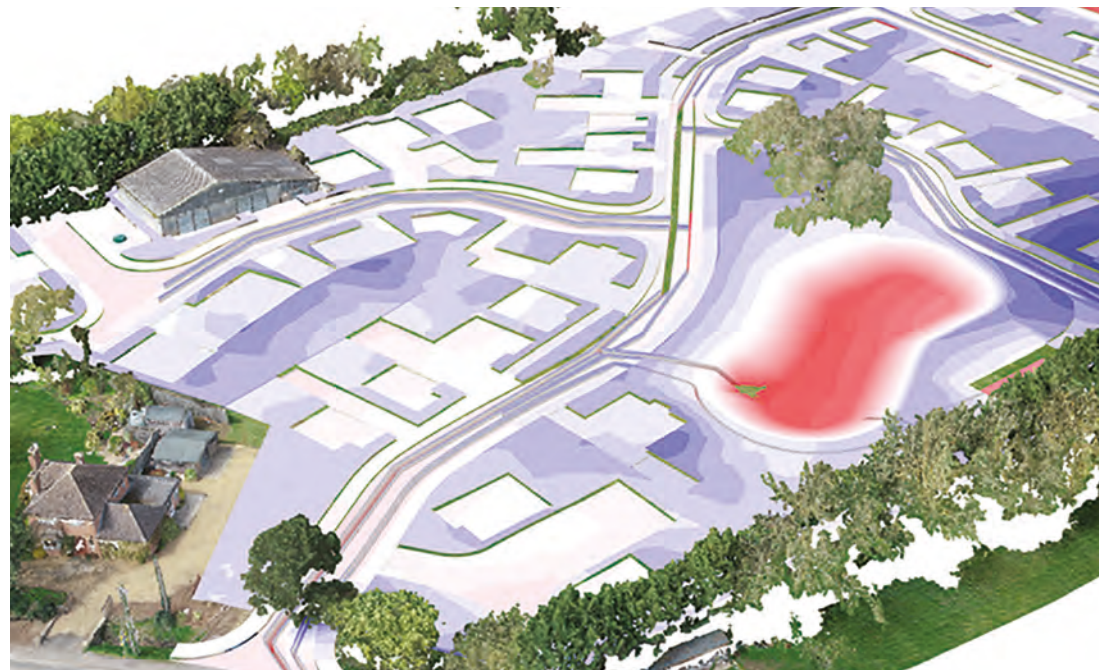
Drones facilitate rapid, high-resolution surveys of large areas



Topographic survey output including stockpile volumetrics



Interactive geo-referenced 3D digital model



Isopachyte illustration of cut and fill area

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## Materials Management & Earthworks Modelling

Transfer of clean soils between sites or appropriate re-use of contaminated soils within the site of origin are the most common earthworks reuse applications requiring a Materials Management Plan (MMP) under the CLAIRE Definition of Waste Code of Practice (DoWCoP). EPS is highly experienced in the application of DoWCoP, as well as other Environment Agency Permit Exemption mechanisms, while there is also Qualified Person expertise in-house.

In tandem, EPS has the necessary modelling skills to balance earthworks to save money. In-ground costs will always require careful management and control to deliver developments on time and on budget. EPS' services include the full range of soil characterisation, waste classification consultancy and engineering modelling to provide optimised development platforms for onward detailed design, and soil reuse. The primary aim is to reduce both design and construction process costs and anticipate / support opportunities for efficiency.

EPS's expertise includes:

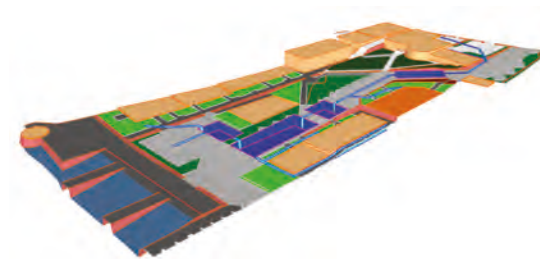
- Materials Management Plans
- Qualified Person Review
- Optimised Earthworks Modelling



EPS possess a wealth of experience in managing material reuse through MMPs



Early earthworks optimisation saves costly movement/disposal



Cut/Fill modelling of development against topographic surface



## Get in touch

How can our team of specialists help you?

[enquiries@herringtonconsulting.co.uk](mailto:enquiries@herringtonconsulting.co.uk)

01227 833855 - Monday to Friday



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