



CIVIL ENGINEERING

www.vkhp.co.uk

vkhp-consulting
civil and structural





INTRODUCTION

vkhp-consulting is a firm of civil and structural engineers and surveyors operating nationally and internationally from our offices in Tunbridge Wells, Kent, Dorking in Surrey and Storrington, West Sussex.

We wish to take the opportunity to present our Civil Engineering department. Our Civil Engineering team provides expert advice on highways, drainage and external works including paving, finishes and retaining walls.

The practice regularly provides advice on flood risks, including the production of Flood Risk Assessments and the implementation of SUDS recommendations for sustainable urban drainage systems.

Where a property has been designated to a minimum Code for Sustainable Homes or BREEAM standard, the team produces calculations and statements supporting the application to ensure the maximum number of points are obtained in the SUR 1 and POL 3 categories.

vkhp prepares designs, details and specifications for foul / surface water drainage, attenuation and distribution for a variety of

projects from the smallest residential scheme through to large housing estates, commercial and industrial developments. Additionally we have a wealth of experience negotiating with Councils, utility and water companies.

When a project includes a public sewer which can include a drain serving a neighbour, recent changes to legislation mean that Build-Over Agreements have to be agreed with the water company before site work can start. Often contractors miss this requirement until construction has started. So if there is a sewer serving the site, early involvement allows an efficient course of action to be planned with delays minimised.

Our services can be tailored to suit each of the key stages of a project:

- At project feasibility stage
- Up to Planning Application stage
- During Detailed Design





AT PROJECT FEASIBILITY STAGE

When a project is proposed, an important first step towards making it happen is to assess the value, plausibility and potential of the work. A feasibility study involves an in-depth exploration that looks at every aspect, aiming to generate an objective picture of cost, benefits and risks before going ahead, essentially to determine whether or not it's realistic.

PRELIMINARY SITE FEASIBILITY REPORTS

These are preliminary studies undertaken in the very early stage of a project and tend to be carried out when a project is large or complex, or where there is some doubt or controversy regarding the proposed development. If an environmental impact assessment (EIA) is required, this may involve assessments best undertaken as part of feasibility studies.

SITE ACCESSIBILITY AUDITS

These Audits carried out at the earliest stage of a project relate to highways and transportation issues, typically in the first instance the viability of connecting to the road network. Matters such as visibility splays for pedestrians and vehicles are covered, together with cycle, bus and rail transport accessibility.

UTILITY OVERVIEWS

Is the site likely to be served adequately by drainage, water supply, gas and electricity supplies including broadband internet and mobile telecommunications services? Answering this question forms the basis of the Overview in order to establish the quality of anticipated services and what might be expected in the future as part of utility company development programmes

CONDITIONS ASSESSMENTS

A thorough investigation and assessment of ground conditions and stability is an essential stage of any project in order to determine issues such as:

- Whether a site is suitable
- Where the best place to locate any buildings or infrastructure might be
- Types and sizes of any foundations

DRAINAGE AND FLOODING ASSESSMENTS

- A Flood Risk Assessment is a requirement of all planning applications for major developments and developments proposed in areas at risk of flooding. A Flood Risk Assessment may also be requested for sites in a low risk flood zone where a risk from another source is identified such as surface water.
- Site specific Flood Risk Assessments, for all types of developments, in all Flood Zones countrywide, in accordance with the requirements of the National Planning Policy Framework, TAN 15 (Wales) and the detailed guidelines set out in CIRIA Report 624. This work is done for all types of developments from single units through to major residential, office, retail and industrial developments

UP TO PLANNING APPLICATION

Making a Planning Application and gaining Planning Permission is important, often making the difference between whether or not a project proceeds to design. Many clients will be unwilling to commit to detailed design until they have achieved a Planning Permission.

TRANSPORTATION PLANNING

Is the process of defining policies, goals, investments and designs to prepare for the needs to move people and goods to destinations. It involves the input of stakeholders including government agencies, the public and private businesses.

UTILITY COORDINATION

Utility coordination comprises organising electricity, cable telecommunications, water, gas, drainage and sewerage installation.

SURFACE WATER AND FOUL WATER DRAINAGE STRATEGY

Planning applications for major developments are required to submit a Sustainable Drainage Strategy showing how sustainable drainage systems (SUDS) will be used, it includes determining methods of sewage disposal from sites.

FLOOD RISK ASSESSMENTS (FRA)

The FRA determines the chance of flooding from all flooding mechanisms, identifying mitigation measures and advising on actions to be taken when flooding occurs due to:

- Groundwater, vadose water and surface water
- Burst water mains, canals, rivers, streams, watercourses, sewers

GEO-ENVIRONMENTAL ASSESSMENT

An assessment of ground conditions for projects includes geology, hydrology, hydrogeology and soil conditions of a site including contaminated land involving:

- outline foundation assessments, soil sampling, remediation method statement
- chemical and geotechnical testing, risk assessments of soil and ground water

ECOLOGICAL ASSESSMENT (EA) – BIRD, BADGER, LIZARD AND HABITAT SURVEYS

This is the monitoring of ecological resources to discover current and changing conditions, being required components of hazardous waste site investigations.

INVASIVE SPECIES (KNOTWEED, GIANT HOGWEED) CONSULTANCY AND ERADICATION

If there are invasive species on your site we have the necessary experience and expertise to advise of legal and commercial implications of the issue.

LAND AND ARBORICULTURAL SURVEYS

What is the extent of the site? What services, structures, trees and significant features are on it? Are there trees and of which species? Will the trees cause subsidence affecting the design of foundations? Where are the utility services?

INFILTRATION TESTING (SOAKAWAYS)

Soil percolation tests are required to determine the absorption rate of soils for the design of soakaways. Percolation testing is observing how quickly a known volume of water dissipates into the subsoil of a hole of known surface area.

CONTAMINATED LAND ASSESSMENT

Contaminated land has substances in or under it hazardous to health or the environment. It includes mining, chemical/oil spills and waste sites and can occur naturally as a result of the geology of the area or through agricultural/industrial use.



DETAILED DESIGN

SLOPE STABILITY

Slope stability is the potential of soil covered slopes to withstand and undergo movement. Stability is determined by the balance of shear stress and shear strength.

SOAKAWAY DESIGN

Soakaways have been the traditional way to dispose of storm water from buildings and paved areas remote from a public sewer or watercourse. In recent years, soakaways have been used within urban, fully-skewered areas to limit the impact on discharge of new upstream building works and to avoid costs of sewer upgrading outside a development.

DRAINAGE DESIGN

There are numerous permutations for drainage design and optimising the solution can have a significant impact on development costs and opportunities.

HIGHWAYS DESIGN

This work must take into account future traffic flows, the design of highway intersections/interchanges, geometric alignment and design, highway pavement materials and design, structural design of pavement thickness, and pavement maintenance.

SWEPT PATH (TURNING CIRCLE)

Swept Path or vehicle tracking is a comprehensive transportation analysis and design solution, used to evaluate vehicle movements where space constraints are an issue.

CUT AND FILL / VOLUMES

Optimising cut and fill earthwork volumes created through the moving or processing of parts of a site is an important aspect of civil engineering.

BASEMENT IMPACT ASSESSMENT (BIA)

The Utilisation of basement opportunities for new and refurbished developments is increasingly common.

OTHER AREAS OF EXPERTISE

At vkhp-consulting, we offer design services to all sectors of construction for projects of all sizes. With an expertise in high quality, one off residential properties in the southeast, we also have an outstanding reputation for commercial, and public projects.

We are specialists in basement design, ground movement and subsidence, and all aspects of insurance claims following damage from escape of water, fire, flood, impact and storm. We act for loss adjusters, insurance companies, banks and private clients. We are also members of the Faculty of Party Wall Surveyors and can provide expert advice on the Party Wall Act 1996.

Visit our website for more information on the design services we can offer.



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