

FLOOD RISK ASSESSMENTS

Curtins | Building a
better future

FLOOD RISK SERVICES AT PRE-PLANNING

At Curtins, we provide robust, planning-compliant Flood Risk Assessments (FRAs) that help unlock development potential while ensuring long-term resilience for people, places and infrastructure.

Our experienced flood risk and drainage specialists work closely with clients, regulators, local authorities and design teams to provide clear, actionable strategies that meet national policy and local authority requirements.

DE-RISKING COMPLEX CHALLENGES

As engineering consultants with deep experience across the full built environment lifecycle, from early site due diligence and pre-planning through design, construction and ongoing maintenance, we bring valuable insight into de-risking complex challenges. By identifying issues early and integrating our wider civils, structural, transport planning and environmental specialisms, we help ensure a smooth planning process and deliver coordinated, resilient outcomes for every project.

OUR FLOOD RISK SERVICES INCLUDE:

- Flood Risk Assessments (FRAs) / Flood Consequence Assessment to support planning applications
- Open Channel Hydraulics
- Surface Water Drainage Strategies
- Pipe-Network Modelling
- Drainage Strategies
- Evacuation Planning
- Flood Risk Permitting (FRAP)
- Hydraulic Modelling
- Sequential and Exception Tests

Our FRAs not only identify potential sources of flood risk, they also outline clear, pragmatic recommendations to ensure the safe development and long-term operation of the site. This includes:

- Assessment of site vulnerability and development compatibility
- Recommendations for safe access and egress
- Mitigation measures to reduce flood risk
- Advice on finished floor levels and flood resilience
- Clear conclusions aligned with planning policy tests

AUTHORITY LIASION

We liaise directly with the Lead Local Flood Authority (LLFA), Environment Agency (EA), Natural Resources Wales, SuDs Approvals Board, Scottish Environment Protection Agency (SEPA), Risk Management Authority, Internal Drainage Boards and utility providers where needed, ensuring a smooth and coordinated approach throughout.





EVIDENCE-LED FLOOD RISK ADVICE

Every development is unique, and so are the flood-related challenges they face. Curtins' FRA service assesses all potential sources of flooding to your site and helps our clients strategise management measures to address:

- Fluvial (River) Flooding
- Tidal Flooding
- Pluvial (Surface Water) Flooding
- Overland Flow Routes
- Groundwater Flooding (GWF)
- Sewer Flooding
- Risks Associated with New Drainage Infrastructure (Alongside Drainage Strategies)
- Reservoir Inundation Mapping and Breach Assessments
- Impacts of climate change and future flood scenarios

Our assessments follow the requirements of the National Planning Policy Framework (NPPF) and relevant Lead Local Flood Authority (LLFA) guidance, ensuring your planning application is fully supported with compliant, high-quality technical evidence.



DRAINAGE STRATEGIES

Our expert teams can provide additional Surface Water and comprehensive Drainage Strategies, aligned with Sustainable Drainage Systems (SuDS) guidance. This includes:

- Assessment of infiltration potential (supported by ground investigation data)
- Surface water disposal following the SuDS hierarchy
- Concept drainage layouts
- System sizing and hydraulic calculations
- Foul drainage connection strategy

This combined approach provides developers with a single, coordinated drainage and flood risk package, supporting efficient planning, cost certainty and a smoother path through technical approvals.



FLOOD RISK PERMITTING

Flood Risk Permits are required in England and Wales for sites near main rivers, sea defences, or within floodplains. Our team can support you in obtaining these permits, as well as Ordinary Watercourse or Land Drainage consents, bringing in deep experience with regulatory frameworks to achieve a smooth approvals process.



ENVIRONMENTAL STATEMENTS

We prepare robust Environmental Statement chapters, which are supported by Flood Risk Assessments and Drainage Strategies, as part of the Environmental Impact Assessment process. Our work helps you understand and mitigate the water related impacts of your development, ensuring it protects the wider environment and meets all regulatory expectations.

An aerial photograph of a landscape featuring a winding river, a dense forest with some autumn-colored trees, and a line of wind turbines on the horizon under a cloudy sky. The text 'ADDITIONAL SERVICES' is overlaid on the left side of the image.

ADDITIONAL SERVICES

CORE SPECIALISMS

As a leading, award-winning consultancy, we work within the built environment to provide a diverse range of services. Our broad experience across diverse projects has shaped our people and solutions. We bring rich learnings and rounded thinking from our expert areas of specialism.

CIVIL & STRUCTURAL ENGINEERING

Our specialised structural engineering service touches every stage of the development process, from feasibility, through the investigation and maintenance of existing structures and heritage buildings, to the design of striking new developments, all with sustainable engineering at the forefront of our approach.

Complimenting our structural engineering expertise, our civils team create underground worlds of intricate networks that are essential to any building. Our services include drainage, highways, flood risk, drainage and earthworks from concept stage through to design and construction.

By adopting a pro-active approach to infrastructure engineering and working closely with others, we provide sustainable, cost-effective solutions for our clients.

TRANSPORT PLANNING

We provide expert transport planning and engineering advice from the initial concept stage through to detailed design and implementation. Our focus is on providing innovative and cost-effective transport solutions to support both private and public sector development, including due diligence, accessibility planning, strategic regeneration initiatives, town centre studies and masterplanning.

GEOTECHNICAL & ENVIRONMENTAL

Our geo-environmental expertise allows our clients to unlock the potential of sites, as we tailor our outputs to their risk profile and quantify the hidden risks from contamination. Our advice extends across projects to include soil investigations, basement assessments, slope stability assessments, earthworks designs and expert advice on geotechnical failures.

CLICK THE ICONS FOR MORE INFORMATION



CIVIL & STRUCTURAL
ENGINEERING



TRANSPORT
PLANNING



GEOTECHNICAL &
ENVIRONMENTAL

DUE DILIGENCE	FOURSITE	TECHNICAL MASTERPLANNING	PLOT DELIVERY
Benefits to You			
✓	Co-ordinated servicing strategy for the development		
✓	Pre-determined STATs requirement for each plot		
✓	Opportunity for a holistic approach to SUDs and renewables		
✓	Potential for earthworks Cut & Fill Balance		
✓	Remediation considered globally and not on a plot by plot basis		
✓	Single source library of information will simplify plot development		
✓	Single source management of title plans will simplify plot disposal		
✓	Significant value can be realised		



FOURSITE

Our innovative approach to due diligence, pre-planning and other development services.

Our bespoke Foursite service helps our clients unlock site constraints, optimise value and realise the development potential of assets. Clients tell us that our resourcefulness, creativity and joined-up approach mark us out from the crowd.

Click [here](#) for more information.



TRANSPORT PLANNING

Highways and transportation issues are often a major factor in the viability and value of sites. We secure cost-effective and deliverable planning consents across a diverse range of sectors. Our services cover all stages from pre-acquisition, inception and feasibility, through the development plan and planning application stages, including planning appeals.



GEO-ENVIRONMENTAL

We tailor our outputs to our client’s risk profile and quantify the hidden risks from contamination and geotechnical issues. We present clear summaries, with outcome-focussed cost modelling based on real-life scenarios at transaction stage, which is refined at later stages. After the deal is done, we continue to maximise value by providing the necessary support to negotiate through the planning process.



INFRASTRUCTURE AND F.R.A

Our technical expertise in developing economic highway and ground modelling solutions can optimise value and unlock sites. We offer a range of ever more important sustainable flood management and drainage services, including flood risk assessments which protect investments and deliver peace of mind.



BUILDINGS AND STRUCTURES

Working with developers and contractors, we can provide early structural advice to enable the quantification of potential site risks and cost-effective solutions – whether it be for old structures, dilapidated buildings or vacant sites.

SUSTAINABLE DRAINAGE DESIGN (SUDS)

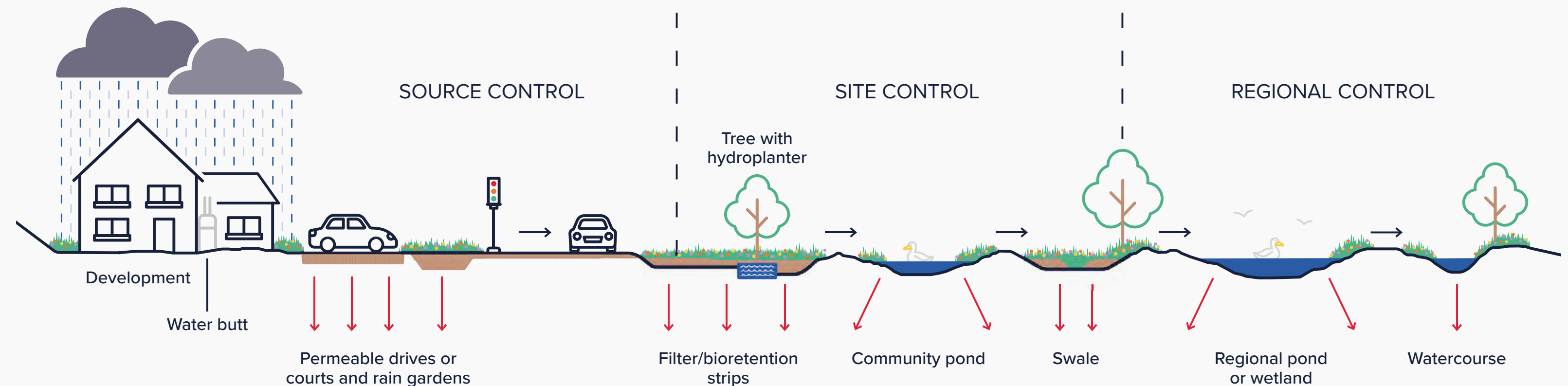
We have extensive experience in sustainable drainage design and take a green infrastructure-led approach.

SuDS replicate natural drainage processes by managing surface water close to its source, helping to mitigate the impacts of climate change and urbanisation. By applying the SuDS 'management train', we design integrated systems that control runoff flow, volume and frequency while improving water quality, ensuring safe, reliable and sustainable water management throughout the lifecycle of a development.

SAB

In Wales, SuDS schemes require approval from the SuDS Approving Body (SAB), typically the local authority, while in England these requirements are addressed through the planning process with LPAs and water authorities. We support clients through early engagement with regulators, leveraging strong relationships to understand site constraints and streamline approvals.

For more information, click [here](#).



THANK YOU

Get in touch
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