



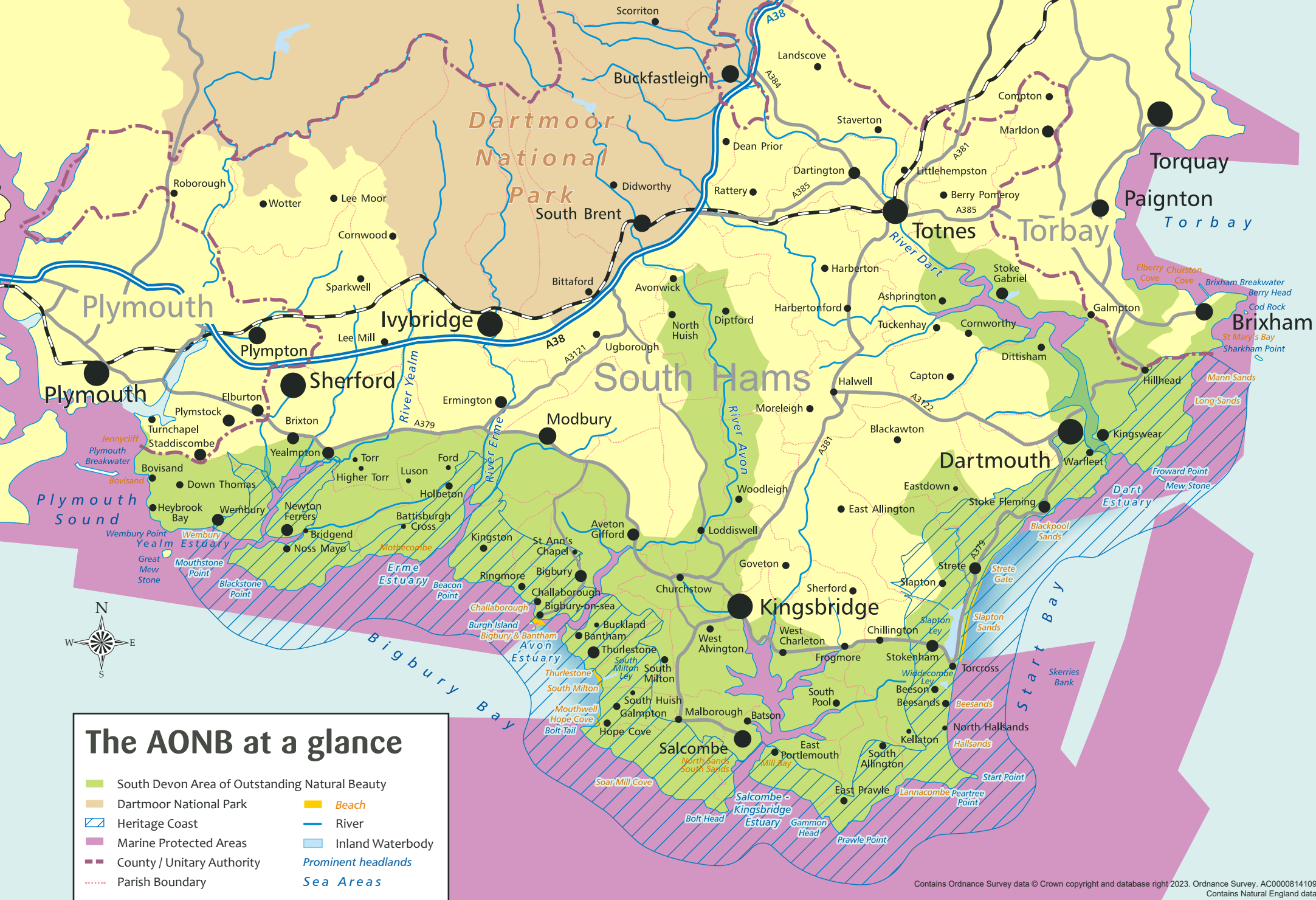
South Devon AONB

A guide to the production of a Construction Environmental Management Plan (CEMP)

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www.southdevonaonb.org.uk





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The South Devon AONB unit wish to acknowledge and thank all colleagues and partners for their advice and comments in producing this guide, and in particular Alice Watts and Dr Sam Lew, and also Anna Henderson-Smith, Melanie Croll, Sarah Alsburry and Kate Hind.

Nigel Mortimer
South Devon AONB Estuaries Partnership
May'23

Introduction



The South Devon Area Of Outstanding Natural Beauty (AONB) is designated for its special qualities that, together, give the area such a unique sense of place and identity. The wild and rugged coastline, rolling farmland, landscape rich in wildlife and network of streams, rivers and estuaries, all draw people to visit, live and work in our local area. There is significant pressure for further built development along estuary shorelines, with a long history of cumulative impact on the landscape, habitats, species and water quality.

As we strive to meet the demand for the housing and infrastructure to serve and grow our communities, it is paramount that development is environmentally and socially sustainable. The construction sector has a responsibility to protect, conserve and, where possible, enhance the locality and environment, safeguarding the valuable services the surrounding ecosystem provides the community. This is particularly important within the nationally designated landscape of the South Devon AONB.

With the environmental pressures caused by development only set to increase, the South Devon AONB Unit has produced this guide to encourage and aid the production of considerate and complete Construction Environmental Management Plans.

What is a CEMP?

A Construction Environmental Management Plan (CEMP) is a working document that considers and details how a development will protect, and increasingly conserve and enhance, the environment and mitigate against any potential impacts to the local community and species - particularly during the construction phase. Some consideration should also be given to how the development might ultimately be most sustainably repurposed, deconstructed and/or recycled.

Ideally, the ethos of the CEMP should carry through the full 'cradle to grave' life of any development project with the relevant consideration given from the initial planning and design stages to minimise the project's environmental footprint, right through to the development's end use and maintenance.

A CEMP is produced, depending upon the circumstances of the project, by the site developer, owner, or contractor. It can be thought of as the equivalent of a health and safety risk assessment for the surrounding environmental and social landscape into which the development is embedded.

For development in the South Devon AONB area, the production of a comprehensive CEMP informs and reassures the AONB Partnership, the Local Planning Authorities¹ and local people that you have carefully considered the complete construction process, identified all foreseeable issues and detailed how you will prevent, mitigate and compensate any negative impacts. *Where a Marine License is required, the Marine Management Organisation will also be involved.*

Importantly, it may help to provide the Local Planning Authority with all the information needed to make an informed decision regarding approval. Indeed, for some developments, the production of an approved CEMP may be required as a condition of approval prior to the commencement of any development on the site, to allow for direct contractor involvement.

The length and content of a CEMP will vary depending upon the size of project, some of the construction processes involved and the relative sensitivity of the development site. As a rule of thumb, the more comprehensive the plan the stronger the safeguards for yourself and the surrounding environment.

It is important to carefully consider impacts and produce an appropriate and proportional CEMP. This relates equally to landscape projects, not just those in close proximity to estuaries and water courses, though this guide - produced by the AONB Estuaries Partnership - has an enhanced focus upon marine and estuarine impacts.

Why You Should Produce a CEMP

For some developments within the South Devon AONB, producing a CEMP will be a conditioned planning requirement. For others, it is a prudent insurance policy - a responsible and ethical requirement for the construction process and the development's use and maintenance. It should ensure that the dwelling or infrastructure can be built, used and maintained in a manner that:

- fulfils regulatory requirements;
- protects and enhances return on investment;
- avoids unforeseen delays in the construction process;
- mitigates against negative impacts upon the environment and local community, and maximises and enhances their potential benefits that should result in a net gain.

This is achieved through operating with an awareness of the local land and waterscape from the conception of the project, taking steps to protect, conserve and enhance the locality and its natural environment throughout construction and beyond.

Where a formal Environmental Impact Assessment (EIA) has been required / prepared, a CEMP provides a way of ensuring that environmental mitigation commitments

identified by the EIA are actioned through the pre-construction and construction phases of the project and possibly beyond, to the operational / management phase.

Every construction site has a geographical, environmental and social context. It is, in fact, likely that this context made the site initially attractive for development. Conserving and enhancing the unique features that encompass the site can **safeguard your return on investment**, by protecting and raising the value of the development.

Although the effects of a single site's development may seem small, the continued greatest threat to the environment and estuaries within the South Devon AONB is through **cumulative impacts**. For this reason, it is essential to be aware of how all individual actions on site - no matter how small - can contribute and impact both positively and negatively.

The **South Devon Estuaries Environmental Management Plan 2018 – 2024**¹ flags that unsympathetic development contributes to habitat loss, runoff of nutrients and other pollutants, litter and wildlife and habitat disturbance – all of which are key issues of concern across the AONB.

In a planning and development landscape where individuals and businesses are increasingly called upon to display awareness and green practice, identifying and managing all potential issues through a CEMP maintains and bolsters **professional reputation**.

Producing a CEMP will help to ensure that legal and regulatory requirements are met. Polluting and causing environmental damage is **illegal**, with offenders risking court and significant fines. In the event of any incident, a comprehensive CEMP may help afford a level of protection, displaying the awareness and actioning of safeguarding and mitigation measures. Your CEMP may help to display that an occurrence was unforeseeable and not due to negligence.

¹ www.southdevonaonb.org.uk/estuaries-management-plan



The scoping process to produce your CEMP fosters an early understanding of the environmental context of the site, which may also help to **save time and money** by flagging (and/or resolving) potential issues pre-construction, and licensing or permissions required by regulating authorities, reducing unforeseen delays mid-project.

Managing the issues highlighted within your CEMP may also aid **community support and integration**, demonstrating that you have recognised that your site has the potential to impact upon, and is ultimately a part of and not apart from, the local community and environment. In some circumstances, your CEMP may also be an opportunity to constructively mitigate a history of landscape modification, damage and loss for your land ownership - for example, the shoreline within a **Heavily Modified Water Body**.

Managing construction impacts helps to protect the services and benefits that the surrounding ecosystem provides the local community (**ecosystem services**). These may include food, improved water and air quality, raw materials, tourism, recreation and business opportunities, mitigation of climate change (such as carbon storage enhancements – sourcing/buying locally, tree and hedge planting, etc.) and positive impacts upon health and well-being. These benefits and attributes help to support the community both socially and economically, and their positive conservation safeguards the long-term future of the local area - and your development's place within it.

A comprehensive CEMP is an opportunity to strive for more - in terms of environmental conservation, social benefit and your investment. The aim is to create a construction process and resulting development that goes beyond neutrality, providing a positive influence upon the local community and environment.

Your CEMP will help you to consider and reduce your carbon emissions, including but not limited to site set-up, construction processes, waste management/minimisation and sourcing of materials and reduction in the use of natural resources, such as water and energy, for instance onsite rainwater harvesting and using a hierarchy of plant and equipment (opting first for renewable/ electric powered equipment).

The following pages aim to act as an accessible guide to help the production of high-quality, environmentally effective and detailed CEMPs for developments within the South Devon AONB area and beyond.

This guide focuses solely on how to produce an effective CEMP. For information on aesthetic, visual and landscape considerations, local AONB sensitivities and potential environmental effects, please consult the [South Devon AONB Planning Guidance](https://www.southdevonaonb.org.uk/planning)².

² www.southdevonaonb.org.uk/planning

What is the South Devon AONB Partnership?

The **South Devon Area of Outstanding Natural Beauty**³ was designated in 1960, one of 46 UK areas designated for their special qualities. The **South Devon AONB Partnership**⁴, hosted by South Hams District Council, exists to ensure the management and protection of 340 square kilometres of coastline, estuaries and countryside.

The AONB encompasses five unique and diverse estuaries – the Yealm, Erme, Avon, Salcombe-Kingsbridge and Dart. The source of all but the Salcombe-Kingsbridge Estuary can be found on the wilds of Dartmoor National Park.

As almost 170km of estuarine shoreline and over 1,000 hectares of intertidal habitat fall under the AONB's designation, the **South Devon AONB Estuaries Partnership** exists within the AONB Partnership, to encourage the conservation, sustainable use and enjoyment of these valuable estuaries for all.

Working alongside the **South Devon Catchments Partnership**⁵ ensures our waterways are protected, conserved and sustainably managed from source to sea.

³ www.southdevonaonb.org.uk

⁴ www.southdevonaonb.org.uk/partnership

⁵ <http://south-devon.org>

What is the South Devon AONB Partnership's Role in Planning and Development?

The AONB sits within the jurisdiction of four local planning authorities: South Hams District Council, Torbay Council, Plymouth City Council and Devon County Council. These authorities create the planning policies that apply to the AONB and determine all planning permissions.

If your site is within the AONB, your proposal will be considered against Development Plan policies that require development to conserve and enhance the natural beauty of the AONB (See links below).

The **South Devon AONB Management Plan**⁶ is not part of the Development Plan but National Planning Policy says that conservation and enhancement of natural beauty must be given great weight within AONBs, and the Management Plan shows how this can be done. It is therefore a material consideration and may impact planning decisions.

The **Planning Guidance**⁷ provides further information on how development can be sustainable and conserve and enhance the area.

For information on policies and guidance relevant to your proposal and the likelihood of it being approved, contact your local planning authority. To find and ensure your application complies with any local **neighbourhood plan**⁸ as well as your local plan:

- **South Hams and West Devon neighbourhood planning website**⁹.
- **Torbay neighbourhood planning website**¹⁰.

If your development is also likely to need an environmental permit¹¹ you should seek advice through the **Environment Agency pre-approval portal**¹².

You should also consider any implications of the inshore **South West Marine Plan**¹³. Section 58(3) of the Marine and Coastal Access Act (2009) indicates that 'a public authority must have regard to marine plans in taking any decision which relates to the exercise of any function capable of affecting the UK Marine area'. Further guidance on marine plans for applicants is available at **GOV.UK**¹⁴.

If you are unsure whether your development falls within the AONB boundary, you can consult **Natural England's interactive map**¹⁵.

⁸ www.gov.uk/guidance/neighbourhood-planning--2

⁹ www.neighbourhoodplanning.swdevon.gov.uk

¹⁰ www.torbay.gov.uk/council/policies/planning-policies/neighbourhood-plans

¹¹ An Environmental Permit can be required for waste management, water discharge or groundwater activities, or work on or near a main river or sea defense.

¹² www.gov.uk/guidance/get-advice-before-you-apply-for-an-environmental-permit

¹³ www.gov.uk/government/collections/south-west-marine-plan

¹⁴ www.gov.uk/government/publications/using-marine-plans

¹⁵ <https://magic.defra.gov.uk>

⁶ www.southdevonaonb.org.uk/management-plan

⁷ www.southdevonaonb.org.uk/planning

CEMP Production Guide Checklist

This step-by-step checklist will ensure you have considered each issue. Producing a comprehensive CEMP, as shown on the right, might help secure planning permission to undertake a proposed development.

How to Prepare a CEMP for Your Site

The following sections outline an easy, no fuss approach to preparing your own CEMP. This step-by-step process will help you consider each issue and the necessary safeguards and/or mitigation needed, alongside the monitoring provision required.

Each section signposts to further relevant information; in each case the resources with the most pertinence and longevity at the time of writing have been carefully selected.

Topics to include in your CEMP:	Notes:	✓
Construction Works description	<i>Use this guide to ensure your CEMP considers all issues</i>	
Programme of Works		
Project Participants		
Background and Site Location		
Local Residents		
Water Quality		
Chemical and Hazardous Substances		
Waste Disposal and Management		
Noise and Vibration		
Air Quality		
Light Spill and Site Lighting		
Use of Barges and Other Vessels		
Archaeology and Cultural Heritage		
Ecology		
Soil and Geology		
Accidents and Emergencies		
Protection of Trees and Hedges		
Reducing Carbon Emissions		



Section 1

General Information



1.1. Document Control Sheet

To ensure the CEMP is effective as a practical working document, the first page should detail the revision history of the document and indicate who has prepared, checked, reviewed and approved each revision of the plan. Names, dates and signatures should all be included.

1.2. Introduction

A very brief introduction to the project and the document. It should reference the topics encompassed by the CEMP (e.g. waste management, hazardous substances, use of heavy plant, etc.) and outline or signpost any documents that must be read in conjunction with the plan, such as drawings, construction notes, etc.

1.3. Description of Construction Works

In this section you need to include a brief description of the construction work and any other works to be carried out on site. Outline the chosen method of approach and the plant that will be used (e.g. scaffolding platforms, barges, excavators, piling rig, tower crane etc). At this stage listing the equipment will suffice. Consideration of mitigation measures surrounding their use comes under Section 2 of your plan, *Environmental Management and Pollution Prevention*.

1.4. Programme of Works

The programme of works section should indicate the duration of the work, ideally broken down into construction phases, and the site operating hours.

It is important that the placement, timing and duration of construction phases have been duly considered, particularly regarding **wildlife disturbance** and **seasonal sensitivities**. Fish migration and bird and reptile nesting, for example, can be disproportionately impacted by ill-timed construction and road closures during peak holiday times may not be given a license.

The ecological sensitivity of your site must be considered carefully. If your site is potentially sensitive, an ecological assessment – beyond the simple scope of bats and birds – will be needed. The Local Planning Authority will expect an accompanying report from a qualified ecologist, particularly if the landscape surrounding or near to the site supports protected habitats, wildlife communities and/or species.

The **MAGIC tool**¹⁶ and **Devon County Council Environment Viewer**¹⁷ are free online mapping systems that can be used to identify the presence of important, sensitive and legally protected wildlife habitats, species and communities.

1.5. Project Participants

This section should list the client, designer(s) (if applicable) and contractor(s) engaged in the project, with the organisations, full names and roles of those involved. It is also good practice to include contact information for accessibility in case of an incident.

¹⁶ <https://magic.defra.gov.uk/MagicMap.aspx>

¹⁷ <https://maptest.devon.gov.uk/portaldvl/apps/webappviewer/index.html?id=82d17ce243be4ab28091ae1f15970924>

Whilst not all involved need to be formally listed in the CEMP, it is important that there is an awareness across the site of the collective responsibility for the sustainable management and maintenance of the development. This should include all crew and maintenance staff.

The **Construction Industry Research and Information Association (CIRIA)**¹⁸, offers **resources and toolbox talks**¹⁹ on environmental issues.

1.6. Background and Site Location

This section should detail information regarding the location of the site and its surrounding environment. The site **dimensions**, **key features** in proximity to the site and **distances** should be included. For example, the distance of the site from a watercourse, including the estuarine and coastal foreshore.

A **map and photographs** of the site should be included. A basic map can be pulled from **Google Maps**²⁰, but consider also using resources such as **OS Open Rivers**²¹ or **GaugeMap**²². Inclusion of a **topographical map**²³ may also help in the consideration of water flows during flash flooding and runoff impacts to, and from, the site. This information forms the basis of your drainage plan, which helps guard against discharging pollutants from your site into local waterways.

A **6 figure grid reference** should also be included. This is of particular importance for developments on or by the foreshore. The baseline height used within site diagrams and plans *must be given relative to a comparable and relevant datum height* - either Chart (CD) or Ordnance Datum (OD).

¹⁸ www.ciria.org/

¹⁹ www.ciria.org/Resources/All_toolbox_talks/env_toolbox_talk.aspx

²⁰ www.google.co.uk/maps

²¹ www.ordnancesurvey.co.uk/business-government/products/open-map-rivers

²² www.gaugemap.co.uk

²³ <https://en-gb.topographic-map.com/maps/snh5/Devon>

If the site is within (or near to) an area with a special **designation**, cite this in this section. For example, for projects within the AONB, this section should (at a minimum) indicate that the site is within an Area of Outstanding Natural Beauty.

Depending upon location, it should also indicate any further relevant designations which may be subject to conditions attached to planning permission(s). For example:

- **Site of Special Scientific Interest (SSSI)**²⁴ status.
- **Bass Nursery Areas** and **Shellfish Waters**²⁵.
- **Special Area of Conservation (SAC)**²⁶.
- **Local Nature Reserve (LNR)**²⁷.
- **Marine Conservation Zone (MCZ)**²⁸.
- **Protected Wreck Sites**²⁹.
- Designated **Bathing Waters**³⁰.
- Many of the historic towns and villages are **Conservation Areas**³¹.
- Listed buildings, scheduled monuments and archaeology.

²⁴ www.gov.uk/guidance/protected-areas-sites-of-special-scientific-interest

²⁵ www.gov.uk/government/publications/water-framework-directive-shellfish-protected-areas

²⁶ <https://jncc.gov.uk/our-work/special-areas-of-conservation-overview>

²⁷ www.gov.uk/guidance/create-and-manage-local-nature-reserves

²⁸ www.gov.uk/government/collections/marine-conservation-zone-designations-in-england

²⁹ <https://historicengland.org.uk/advice/planning/consents/protected-wreck-sites>

³⁰ www.gov.uk/government/collections/bathing-waters

³¹ www.southhams.gov.uk/article/7346/Conservation-Areas-in-the-South-Hams



To review the designations that may have relevance to your site, use the Department of Environment, Food and Rural Affairs' [MAGIC maps](https://magic.defra.gov.uk/MagicMap.aspx)³² maintained by Natural England. Select 'Designations' within the table of contents and zoom in to view the relevant area. You should check for both 'Land-Based' and 'Marine Designations'. You might also try the [Devon County Council Environment Viewer](https://maptest.devon.gov.uk/portaldvl/apps/webappviewer/index.html?id=82d17ce243be4ab28091aelf15970924)³³.

It is important to remember that areas without an official designation may also support rich plant and wildlife communities which could be detrimentally, and sometimes irreversibly, impacted through unconsidered and poor practice on construction sites.

A designation emphasises the need for extra care but should not be needed to inspire responsible management. Be aware of the surrounding streams, rivers, estuaries and coast as a water catchment system, where actions upstream may have **downstream impacts**.

Consideration should also be given to any site potentially supporting **legally protected species**³⁴, either growing or temporarily such as bats, that may require specialist consideration, protection and conservation, working practices and licensing – you may need an ecologist to advise you on this.

Remember that even small issues may become significant if they are repeated and/or occur frequently, causing **cumulative impacts**.

Further information on the local designated areas can be found within *Section 2.8: Archaeology and Cultural Heritage* and *Section 2.9: Ecology*.

³² <https://magic.defra.gov.uk/MagicMap.aspx>

³³ <https://maptest.devon.gov.uk/portaldvl/apps/webappviewer/index.html?id=82d17ce243be4ab28091aelf15970924>

³⁴ www.gov.uk/guidance/protected-species-how-to-review-planning-applications

1.7. Local Residents

Your CEMP should indicate that you have considered any potential impacts upon local residents and have open channels of communication for any concerns or complaints that may arise throughout the construction process.

This section should outline your engagement and communication process. It should highlight the written communication that will be sent to residents and when, the key liaison for the site (likely the site manager) and the procedure for queries, concerns and complaints. Good communications are key to good neighbourliness.

It should also include details such as whether there is a comments book for review and discussion at site progress meetings, or whether an open-door policy exists at the site office.

It is good practice to keep a **complaints register**³⁵ regardless of the size of the project.

1.8. Geological Model

This section should include detail on pertinent aspects of the geology of the site. The [Geology of Britain Viewer](https://www.bgs.ac.uk/map-viewers/geology-of-britain-viewer)³⁶ provides information on bedrock geology and superficial deposits. JNCC's [Geological Conservation Review Sites](https://jncc.gov.uk/our-work/geological-conservation)³⁷ highlight areas of particular geological importance.

³⁵ <https://ccsbestpractice.org.uk/entries/compliments-comments-complaints-record>

³⁶ www.bgs.ac.uk/map-viewers/geology-of-britain-viewer

³⁷ <https://jncc.gov.uk/our-work/geological-conservation>



Section 2

Environmental Management and Pollution Prevention



This part of the guide will help you consider the potential sources and pathways of pollution within your site, the impacts you will avoid by adopting best practice, and where to find further information on specific issues.

It covers: Water Quality, Chemical and Hazardous Substances, Waste Disposal and Management, Noise and Vibration, Air Quality, Light Spill and Site Lighting, Use of Barges and Other Vessels, Archaeology and Cultural Heritage, Ecology, and Soils and Geology.

When composing your CEMP, you should seek to record considerations and actions around these topics including each topic within an **environmental impact table**.

An example table format is provided below. Having this framework in mind when reading through the following sections may help to structure your thinking.

Objective			
	Requirements	Responsibility of ...	Timing
Action			
Performance Indicators			
Monitoring			
Reporting			
Corrective Actions			

What is Pollution?

Pollution happens when substances released into water, land or air have a damaging impact on the health of the natural environment and the communities it supports. Pollution can affect drinking water supplies, business activities, wildlife and habitats, as well as our own health and wellbeing, enjoyment and use of the natural world.

There are a vast range of pollutants but the most likely culprits from construction sites include silt, cement, concrete, grout, oil, fuel, chemicals, sewage, waste materials, dust and smoke. When viewed individually, each pollutant may not seem a serious issue. Every impact matters, however, as pollutants may negatively interact or accumulate to a critical level.

Pollution can happen accidentally or deliberately, and common causes include illegal discharge, burning of waste, surface run-off, poor site maintenance, spillage and vandalism.

What Are the Consequences if You Cause Pollution?

The most serious consequences from pollution incidents on your site are those to the local environment, wildlife and community. However, if your site causes pollution then you, your subcontractors and your client could all end up in court, possibly facing hefty fines, fixed penalty notices, stop work notices and even prison.

In almost all cases the polluter will have to pay for all restoration costs under the 'polluter pays' principle. Prosecutions could also affect your ability to win future work as clients increasingly request declaration of any prosecutions on tender applications.

Pollution of the surrounding environment can lead to a loss on your investment and is costly to clean up. It is important to have **adequate insurance** that can cover the resulting costs of an oil or chemical pollution incident on site. Your insurance policy should be tailored for your site's specific issues and risk, so seek professional advice if you

are unsure. Generally, as a minimum, your policy should cover environmental clean-up for accidental oil loss and deliberate oil loss through vandalism, along with liability to cover neighbouring land and impact to boreholes.

Legislation and Enforcement

It is your responsibility to understand and comply with all relevant legislation. Remember, ignorance is no defense under law, so you must understand how it applies to your work.

If you are ever unsure, contact your local regulator before starting work. They will be happy to help and provide advice to ensure your site's environmental success.

Further Resources

The following are useful references for construction site environmental management.

- A **general checklist**³⁸ for your site environmental management plan.
- Construction site specific **pollution prevention guidance**³⁹ and a series of best practice case studies.
- General guidance if your activities are in **close proximity to water**⁴⁰.
- General guidance for the **prevention of industrial and commercial pollution**⁴¹.

³⁸ https://webarchive.nationalarchives.gov.uk/ukgwa/20140328093246/http://cdn.environment-agency.gov.uk/LIT_7254_63a82a.pdf

³⁹ www.netregs.org.uk/media/1672/ppg-6.pdf

⁴⁰ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328095328/http://cdn.environment-agency.gov.uk/pmho1107bnkg-e-e.pdf>

⁴¹ https://webarchive.nationalarchives.gov.uk/ukgwa/20140328093257/http://cdn.environment-agency.gov.uk/LIT_7481_364b76.pdf

2.1. Water Quality

Protecting and conserving the water quality of the **marine environment, rivers, estuaries and groundwater** is a top priority. Good water quality is vital to all: to humans for drinking, industry, agriculture and recreation, and to the natural environment for sustaining habitats, their wildlife communities and ecosystem services.

What is Groundwater?

Groundwater is stored naturally in porous rocks called aquifers. It is important for industrial, agricultural and domestic use - 35% of public water supply is taken from groundwater. It is also important for maintaining river flows and rich wetland habitats. Groundwater cannot be seen, but it is essential that it is protected from pollution.

Spills and careless or illegal disposal of oils, chemicals or waste materials can cause serious damage to groundwater. Discharging effluent to open ground, on porous surfaces or into soakaways can also cause pollution. Once contaminated, groundwater pollution is difficult and expensive to clean up.

Always make sure to find out whether your site is in a sensitive groundwater area. For example, it may be within a water catchment for a drinking water borehole. In certain instances, you will need to take special measures to ensure you avoid groundwater pollution. Remember, if unsure, always contact your local regulator.

Discharges into surface waters, groundwater and watercourses are controlled by the **Environmental Permitting Regulations (England and Wales) 2016 and as updated for Brexit**. These regulations apply to all direct contaminated discharges into surface waters or groundwater.

By definition, a **watercourse** includes all rivers and streams and all ditches, drains, cuts, culverts, dikes, sewers other than public sewers within the meaning of the Water Industry Act 1991 and passages, through which water flows.

For a deeper understanding of why protecting water quality in the area matters, the **Water Framework Directive**⁴² status maps for **overall**⁴³, **ecological**⁴⁴ and **chemical status**⁴⁵ can be viewed.

Further information on the local water quality can be found within the South Devon Management Catchments within the Catchments Data Explorer:

- Rivers: <https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3081>
- Estuaries and Coast: <https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3086>
- Groundwater: <https://environment.data.gov.uk/catchment-planning/ManagementCatchment/1016>

Helpful Hint: the “Help” tab opens a particularly useful index of background information pages.

With appropriate planning, you can minimise and avoid the potential for any pollution of the water and waterways downstream. Aim to ensure that your site and development has a net positive impact on your local and downstream water quality and biodiversity, and that you grow your reputation as an environmentally responsible construction professional or neighbour.

⁴² https://ec.europa.eu/environment/water/water-framework/index_en.html

⁴³ <http://south-devon.org/wp-content/uploads/2018/08/South-Devon-WFD-Overall-Status.pdf>

⁴⁴ <http://south-devon.org/wp-content/uploads/2018/08/South-Devon-WFD-Ecological-Status.pdf>

⁴⁵ <http://south-devon.org/wp-content/uploads/2018/08/South-Devon-WFD-Chemical-Status.pdf>

If the surface flows and their destination are not considered, drains are poorly connected or worse, misconnected, your activities can cause severe pollution and overland flooding to water courses and adjacent neighbours and residents.

When preparing your CEMP, water quality impacts should be considered from the perspective of the following activities and pathways:

- Site drainage.
- Surface Flow and sediment release.
- Cleaning and plant washing.
- Dewatering and excavations.
- Sewerage and waste water treatment.

If a development has the potential to threaten the status (qualitative or quantitative) of any waterbody, it is likely to require a **Water Framework Directive (WFD) assessment**⁴⁶. This will be a requirement for the granting of permissions, helping you and the regulator understand the possible impact of your activity on the immediate water body (and any linked water bodies) and whether the activity is compliant with the area’s river basin management plan (RBMP).

Drainage

Almost all construction sites produce wastewater, which can cause pollution if it enters the groundwater, water course or water body. Sources can include everything from excavations, kitchen and bathroom facilities and vehicle and plant washing to rainwater run-off from dirty areas and liquid wastes or trade effluents.

The topography of the development site should be carefully considered for rain and flash flood water flows, with vulnerable water courses and water bodies identified. Note that some may be connected to the site via road drainage, which may impact your initial design.

⁴⁶ www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters

The landscaping of the site and management of rainwater entering, crossing and leaving your site should aim to play a part in improving water quality within your local catchment – as part of the **Catchment Based Approach**⁴⁷.

It is essential that the drainage system on site is set up to manage waste water effectively during the construction process, as well as ensuring that the drainage systems of the finished property/development are fully fit for purpose. It is worth considering at this point whether the new development might be extended in the future and if over-engineering the systems at the initial build stage would be a prudent investment.

There are two main types of drainage system; separate and combined.

Separate drainage systems have two different drains – wastewater (foul and grey waters) and surface water. The surface or rain-water drains should only ever carry natural and uncontaminated rainwater as these drains will normally lead directly to the nearest watercourse or soakaway. Wherever possible, runoff from new developments should be drained separately via a **Sustainable Drainage System (SuDS)** in line with government planning policy. Rainwater can be considered as a free resource and, at its very simplest, can be collected in rain butts for watering gardens. With imagination, however, it may be used for filling garden ponds, driving water features and even for the flushing of toilets. For further guidance see the resources at **Susdrain**⁴⁸.

The waste-water drainage system, or sewer, carries contaminated waters (including sewage and trade effluent) to a wastewater treatment works. The waters will normally be treated within a municipal facility but may also be treated locally via a private system, septic tank or cesspit.

⁴⁷ <https://catchmentbasedapproach.org>

⁴⁸ www.susdrain.org/delivering-suds/using-suds/background/sustainable-drainage.html

Combined drainage systems carries both rain and foul water to a wastewater treatment works. This kind of system is more common within older properties, urban areas and city centres. As combined water systems require that all of their waters are treated, they can be wasteful and unnecessary regarding surface and rainwater.

The capacity of combined water systems is becoming increasingly stretched by the intensity of rainfall brought about by climate change, with many systems becoming overloaded by the volume of flash flood waters. This necessitates the release of untreated water, including sewage, into the waterscape via Storm Water Overflow releases.

The water companies do carry out surface water separation schemes, where there are existing combined sewers, by building a new surface water system thus removing rainfall runoff into overstretched combined systems thus reducing instances of diluted untreated sewage water spills into the waterscape.

To help avoid pollution, identify the type of drainage system you have and where your drains go. It can be useful to colour code the manholes to help yourself, others and your client to identify them. Typically, red is used for waste drains and blue for surface water drains.

Surface Flows and Sediment Release

Devon is a rainy county, which feeds the lush green countryside. Construction sites can be dusty and dirty places, with stockpiles of sand, soil, waste and other materials easily moved by the wash of stormwater and rainfall flows. This can be a waste of your resources and may also lead to siltation and pollution problems downstream, so needs consideration and potential management.

If run-off water from your site is heavy with silt, it must not be pumped or allowed to flow into surface waters or groundwater without prior treatment. This is particularly important if you are working close to a water course. Groundworks may also disturb the structure of the earth and result in large discharges of sediment into waterways, which can have significant environmental impacts.

Our catchment waterways are naturally silty systems, but when quantities of sediment are released, it can be devastating. Local estuarine seagrass beds, for example, are extremely sensitive to smothering and are an important, vulnerable ecosystem that is in decline.

Discharge of silty water from sites to surface waters and groundwater requires consent⁴⁹ & ⁵⁰. Contact your regulator as early as possible to check, to make sure your timeframe is not disrupted.

Reducing the risk of pollution from surface flows and sediment release on site is cost effective and fairly simple with a little forward planning. Here are a few things to consider:

- If discharging water directly into a foul sewer, always secure permission from the **local sewerage provider**⁵¹.
- Collect run-off into a settlement sump and remove and recycle/dispose of settled solids regularly.
- Slow the flow of run-off through hay bales, which will help trap, settle and filter the silt - this should only be done as part of a permit or on EA advice.
- Consider the use of a **Sustainable Drainage System**⁵². For example, why not be creative and add a pond in your landscaping?
- Ensure materials like sand, soil and especially concrete are protected from rain and water flows.
- Bring materials such as asphalt or concrete directly to the site when required and have them immediately placed.

⁴⁹ www.gov.uk/government/publications/temporary-dewatering-from-excavations-to-surface-water/temporary-dewatering-from-excavations-to-surface-water

⁵⁰ www.gov.uk/government/publications/treating-and-using-water-that-contains-concrete-and-silt-at-construction-sites-rps-235/treating-and-using-water-that-contains-concrete-and-silt-at-construction-sites-rps-235

⁵¹ www.ccwater.org.uk/households/whos-my-water-supplier

⁵² www.susdrain.org

This advice is not comprehensive but gives an idea of how small adjustments can have large positive impacts. For more advice on how to manage flows and sediment release on site please refer to *Section 2.10: Soils and Geology*.

Cleaning and Plant Washing

Vehicle and plant washing, along with other general cleaning activities, may result in the run-off of pollutants that can damage the environment, groundwater and watercourses. A wide range of pollutants can accumulate on vehicles including dirt, brake dust, traffic residue and oil. When washed off, these can all be environmentally damaging. Even biodegradable cleaning agents can be poisonous to life in water courses in the short-term, or when present in high concentrations.

It is important to consider this form of trade effluent whether you are cleaning a fleet of vehicles, or just one. If managed improperly, the cumulative impact of vehicle cleaning in the area can have serious environmental impact. Remember, it is illegal to discharge trade effluent to the environment or into drains without permission.

It is simple to reduce the risk of pollution from vehicle and plant washing. Here are a few options to consider:

- Carry out all cleaning in a designated area where the sediment etc. can be contained and settle (at least 10 metres from any watercourse or surface water drain), removing and disposing/recycling the sediment regularly.
- Discharge foul water directly to a wastewater treatment system and always get permission from the local waste treatment provider.
- Take vehicles to an off-site licensed vehicle washing facility.

If you are cleaning vehicles/plant on your site please see these **pollution prevention guidelines**⁵³ for more comprehensive information.

⁵³ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140329111638/http://cdn.environment-agency.gov.uk/pmho0307bmdx-e-e.pdf>

Dewatering and Excavations

It is often necessary to pump out water from foundations and underground ducts and chambers on site - this water can accumulate pollutants and unless you are careful, dewatering can result in release of the substances into water courses.

The release of cement from concrete and mortar is of particular risk on construction sites. Cement is highly alkaline and corrosive, so it is essential that care is exercised when pumping out water. Release of cement into water courses can be very damaging to all aquatic life, much of which is extremely sensitive to changes in pH. Whilst many pollutants are easy to see, changes in pH are invisible, so can go unnoticed resulting in long-term damage to wildlife.

With just a few small changes to your ways of working, you can drastically reduce the likelihood of localised pollution through the pumping out of water from excavations, chambers, and ducts on your site. Here are options to consider:

- Discharge excavation waters into the foul sewer - it is essential that you gain permission from your local wastewater treatment provider for this.
- Use a contained area for cement mixing of concrete and mortar and dispose of collected waste appropriately.
- Always site any materials containing concrete at least 10 meters away from any water course or areas prone to stormwater flows and flooding.
- Consider settlement and recirculation systems to minimise water use and reduce pollution.

For construction projects adjacent to or in water, there are special concrete mixes (including some for use within salt water), that minimise pollution. Your project design should consider this from the outset. If working near or in natural water courses, ensure that you use the correct specified cement and carefully consider your methods to minimise pollution incidents.

The above advice is not comprehensive but gives an idea of how a few simple steps can result in positive contributions to your site's environmental management. If you are dewatering on site, please read the [Environment Agency advice](#)⁵⁴ on dewatering underground ducts and chambers, and how to avoid pollution.

Sewerage & Wastewater Treatment

Effective consideration and management of a fit for purpose sewerage system during construction works is essential. Unintended release of sewage is not only a health risk to yourself and workers but can have drastic consequences for the local environment and seriously impact the health and livelihoods of local people.

Untreated and unless 'tertiary' treated, sewage is particularly high in gastroenteric and pathogenic microorganisms - when released into local water courses, these pathogens may impact bathing and recreational waters. In some instances, they may also bioaccumulate within edible shellfish, risking human health and livelihoods supported by tourism, recreation, fisheries and aquaculture. As the South Devon AONB area contains four [designated shellfish waters](#)⁵⁵, this issue is particularly pertinent. Gladly, most of our beaches do meet adequate [bathing water standards](#)⁵⁶, which is great for public health and wellbeing, and the businesses that depend upon their conditions – visit [Swimfo](#)⁵⁷ for a

⁵⁴ www.gov.uk/government/publications/temporary-dewatering-from-excavations-to-surface-water/temporary-dewatering-from-excavations-to-surface-water

⁵⁵ www.gov.uk/government/publications/water-framework-directive-shellfish-protected-areas

⁵⁶ www.gov.uk/government/collections/bathing-waters

⁵⁷ <https://environment.data.gov.uk/bwq/profiles>

current bathing waters classification. Wherever possible, you should still aim for a net improvement in water quality always.

A number of local rivers and estuaries are suffering from nutrient overloading through sewerage related releases, horticulture and farming runoff. In these instances, the treated effluent may be further stripped of its nutrients through 'slowing the flow' through the likes of reed and iris beds. Seek further specialist advice if this could be relevant to your development.

Many authorities and local people are working hard to reduce pollution and bring our rivers and estuaries back to good health for wildlife and people. Please make sure that you manage your wastewaters carefully on site to keep Devon a beautiful and healthy place.

Managing Sewage

Most construction sites will use portable cabin loos (portaloos) that are managed by an external contractor. Leaks and, in rare cases, upturning of cabins, can result in release of sewage and the treatment chemicals used in the storage system. For this reason, it is essential that you keep all portable toilets securely sited and away from water courses.

When using conventional toilets, ensure the drainage systems are properly connected to the foul sewer. Always seek permission from your local sewerage provider, as discharges to public sewers require prior permission.

In rare cases, you may need to seek advice on the treatment and disposal of sewage where no foul drainage is available. The Environment Agency have already thought this through and have provided [advice for sewage pollution prevention](#)⁵⁸.

⁵⁸ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328095108/http://cdn.environment-agency.gov.uk/pmho0706bjgl-e-e.pdf>

Why Make a Drainage Plan?

Drainage activities will often vary from site to site and each issue must be considered on a case-by-case basis to find the best solution to avoid pollution. We have given a small amount of information on some common issues and why it is important to consider them. We highly recommend you create a drainage plan for your construction site. It is also highly likely that drainage plan will be required by the Local Planning Authority in order to register any planning application you may make.

By spending a little bit of time at the beginning of your project, you can avoid a lot of stress, minimise pollution risk and enhance your reputation as an environmentally aware construction professional. Your drainage plan will help you to decide where to carry out activities safely and how to maintain and inspect your drains. It must be available to everyone who works on the site (including visitors) and your clients.

When making your drainage plan, it is worthwhile considering the use of sustainable drainage systems (or SuDS).

Sustainable Drainage Systems (SuDS)

SuDS imitate natural processes. Considering this form of drainage at the planning stage of your project can have wide ranging benefits including:

- Reducing flood risk from development.
- Minimising pollution to groundwater and that arising from surface water run-off.
- Minimising environmental damage, such as bank erosion and damage to habitats.
- Maintaining the natural flow of water and recharge to watercourse and ground water.
- Achieving improvement to wildlife habitats, amenity and landscape quality.

2.2. Chemical and Hazardous Substances

Globally, over 100,000 different chemicals are used commercially. Many of the chemicals and hazardous substances and materials you store and use on site (including oils, cleaning products, paints, solvents, and pesticides) could cause serious pollution if they spill onto land, enter surface waters or infiltrate groundwater, as they will contaminate our land and waterscapes. Many of these chemicals are highly toxic to a range of marine animals and habitats, which can result in mass mortality and, in some cases, bioaccumulate within organisms. In this way, chemicals may enter the food chain and even end up on our dinner plates. The impacts of chemical and hazardous substance pollution can take a while to become apparent but are often long-lasting and particularly difficult to resolve within the aquatic environment.

Oil is one of the most common pollutants. As it is less dense than water, it floats on the surface and smothers the environment unless physically or chemically dispersed. Some oils, such as diesel, are a cocktail of chemicals, many having quite different effects and impacts within the environment. In the case of diesel, a fraction of the cocktail quickly evaporates, a fraction floats just below the surface and a further fraction sinks to the bed, all with significant environmental impacts. Many oils do eventually biodegrade, but this too can be highly problematic in aquatic environments - biodegradation can result in a localised removal of oxygen, suffocating wildlife in that area.

The release of chemicals and hazardous substances can severely impact water quality, tourism and recreation, livelihoods and local economies. It can cause the destruction of the environment and sense of place that makes the area such a desirable place to live. The best thing is to use non-toxic alternatives and design with more natural materials. Where there is no alternative, then it is essential to take management on site seriously.

The polluter is liable for the costs of cleaning up pollution and can be prosecuted or served with a civil sanction (an “on-the-spot” fine).

Management of Chemical and Hazardous Substances

Whilst every drop does and should matter, it is difficult to completely avoid spills and leaks on site. Careful planning and ongoing management can, however, greatly reduce the risk of pollution. It is essential to consider the substances you have on site and their associated hazards, using these to inform handling and storage. Operating with awareness - having considered the impacts to the environment and community around the site - will reduce the chance of incidents, prosecution and negative impacts.

Chemical safety data sheets (COSHH) must be available for (and should be supplied with) all chemicals and hazardous substances. They will provide the information you need to adequately store, use and dispose of chemicals and hazardous materials safely and responsibly. If you cannot find the relevant Safety/ Chemical Data Sheets, contact your supplier to request them – they may also be available online.

The pathways for chemical and hazardous substances released on construction sites are wide ranging and all risks need to be considered and planned for on a case-by-case basis. There are, however, a handful of common sources and issues to consider. The following sections provide guidance on their risks and signposts to further advice on how to effectively plan and mitigate any potential pollution incident.

To effectively manage chemicals and hazardous substances on site, consider taking action related to the following topics:

Refuelling

Refuelling at storage and dispensing facilities is probably one of the most common causes of hazardous substance release on construction sites and has the potential to cause significant damage to the environment - threatening water supplies, human health and wildlife. Refuelling incidents on site most commonly occur during fuel delivery or the refuelling of plant and heavy machinery.

For more information on the safe operation of refuelling facilities, covering fuel type, quantity, facility type, intended use and environmental sensitivity, please see the [pollution prevention guidelines](#)⁵⁹.

Storage and Secondary Storage

Chemical and hazardous substance storage facilities on construction sites are commonplace - particularly for oil fuels - and may take the form of underground storage, [drums, intermediate bulk containers](#)⁶⁰, large industrial [oil tanks](#)⁶¹ or vehicle dispensing storage.

In many cases, only suitably qualified, competent contractors are approved for working with chemical and hazardous substance storage facilities. There are often special conditions for storing materials that are not liquid or solid at ambient temperatures. Always get advice from your supplier before working on this kind of storage on site.

It is essential that all storage containers are fit for purpose, regularly inspected and well maintained. Planning the storage design, location and maintenance schedule is essential to avoid unintended and polluting leaks.

⁵⁹ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328155438/http://cdn.environment-agency.gov.uk/pmho0711btzl-e-e.pdf>

⁶⁰ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328154052/http://cdn.environment-agency.gov.uk/pmho0511btpg-e-e.pdf>

⁶¹ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328154124/http://cdn.environment-agency.gov.uk/pmho0811bubp-e-e.pdf>

Many construction sites use [secondary storage](#)⁶², also known as bunded storage, to prevent materials from escaping and, in many cases, it is a legal requirement for storing particularly unpleasant chemicals. Always inspect your containment system, sealing any cracks or holes, making sure any walls or floors are rendered impermeable and safely removing any rainwater that can readily accumulate. Rainwater overflow is a common cause of pollution from secondary storage so, where possible, protect your storage area with a roof or use self-bunded tanks which avoid this problem.

See the [pollution prevention guidelines](#)⁶³ on the installation, decommissioning and removal of storage tanks for further information.

CHECK: Are your storage areas and containers sited away from watercourses, surface water drains and unsurfaced areas?

Never store materials near open drains, on bare ground, near to watercourses, soakaways or other sensitive areas. You should store all potentially polluting substances on leak-free (impermeable) surfaces. Leaks and spills to ground could pollute groundwater, which is expensive and difficult to clean up, and may affect drinking water supplies.

Oil Separators

On construction sites with large oil storage facilities, or where oil use is common, oil separators can be fitted to surface water drainage systems to remove oils from water flows. These are particularly useful for containing oil leaks from vehicles and plant, and accidental spillages. Though, to be effective, oil separators need to be correctly designed, installed and maintained.

⁶² <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328154142/http://cdn.environment-agency.gov.uk/pmho1001aycj-e-e.pdf>

⁶³ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328155441/http://cdn.environment-agency.gov.uk/pmho0402bgsh-e-e.pdf>

The sensitivity of your local area to pollution is a key factor to consider when deciding whether to install an oil separator. If you are working close to a borehole for drinking water or anywhere near the estuaries, rivers, or coasts of south Devon, then installing an oil separator is a good idea.

More information on oil separators can be found in the [pollution prevention guidelines](#)⁶⁴ on the use and design of oil separators in surface water drainage systems.

Guidance for Dealing with Accident and Emergencies Involving Chemicals and Hazardous Substances

- [Pollution incident response planning](#)⁶⁵. This guidance can help you produce an incident response plan for your site to deal with accidents and spills.
- [Dealing with spills](#). This guidance can help you plan how you will respond to a spill on your site or during transportation. e.g. having a suitable spill kit to hand.
- [Oil clean-up products and their application](#)⁶⁶. Here you can find information and guidance on spillages to different water courses and oil clean up strategies, tools and how they work.
- [Managing fire water and major spillages](#)⁶⁷. Information is available to help you identify equipment and techniques to prevent damage caused by fires and major spillages.

⁶⁴ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328095359/http://cdn.environment-agency.gov.uk/pmho0406biyl-e-e.pdf>

⁶⁵ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328090931/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx>

⁶⁶ https://webarchive.nationalarchives.gov.uk/ukgwa/20140328110000/http://www.environment-agency.gov.uk/static/documents/Business/Oil_Clean-Up_product_guidance.pdf

⁶⁷ <https://webarchive.nationalarchives.gov.uk/ukgwa/20140328095428/http://cdn.environment-agency.gov.uk/pmho600bbud-e-e.pdf>

Security and Vandalism

Site security is also very important as vandalism, arson and theft are some of the most common pathways for pollution. In the case of these incidents, you are still responsible for what happens under the eyes of the Law. Always ensure you have adequate security and store all oils and chemicals in a secure place under lock and key. There are many professional security companies that can come to your site and advise on the best course of action to make sure equipment and facilities are impenetrable.

2.3. Waste Management and Disposal

Aim to produce as little waste as possible by designing out waste. It is important to think about the types of waste each of your activities generates and how waste can be minimised and managed - including considerations of storage, transport, treatment and disposal.

By using the resources you have on site carefully and efficiently, you can reduce the amount of waste you produce, save money and preserve the natural beauty of the environment around you. Using local resources, where possible, can significantly reduce the carbon footprint of your development, and contribute to supporting the local economy. If despite careful planning there are surplus materials, they can be donated to local charities or found a home in waste re-use centres or through the Waste Exchange.⁶⁸

A good first step to understanding your waste footprint (and how to avoid it) is to carry out a **waste review**. This could include energy, water and trade effluent, alongside raw materials. Investing a small amount of time on a waste review can help to save money on materials and the cost of disposal.

When doing your review, look at your materials and use the refuse, **reduce, reuse, recycle** principle. Look at what you buy and consider how you could use less, get more out of what you do use and recycle what you cannot reuse. Disposal should always be the last option.

In England, you should demonstrate that you have considered waste hierarchy before disposing of your construction waste. In order of preference, the waste hierarchy is as follows:

- **Reduce** – Minimise what you use to decrease waste generation.
- **Re-use** – Use items and resources as many times as possible.
- **Recycle** – Use materials to make new products.
- **Recovery** – Recover energy from waste.
- **Disposal** – The safe disposal of waste to landfill.

Poor waste management is a common cause of pollution at construction sites and, sadly, illegal disposal such as fly tipping and burning of waste happen frequently, spoiling the local area for wildlife and the community.

Storing and Handling Waste

Sorting and storing different types of waste separately, where possible, is the easiest way to take stock of your waste and make sure you reuse, recycle and protect the natural environment.

Store your waste containers securely and use a designated and clearly labelled storage area. This will help to prevent waste blowing around (and out of) the construction site and prevent access by people or animals.

Site security is also important for waste management. Unfortunately, any waste fly-tipped on your site becomes your responsibility and you will have to bear the cost of having it removed.

Disposing of Waste

When removing waste, it is essential to use a registered waste carrier and/or contractor to ensure legal disposal. Make sure your carrier takes your waste to a site permitted to deal with your type of waste, as not all disposal facilities accept all waste. To help minimise problem and pollution risk, have your waste collected regularly and do not let it build up. Non-hazardous waste must be accompanied by a waste transfer note as soon as it leaves site. Most contractors provide these or there is a template and further guidance on the .gov website.⁶⁹

If you are a business transporting your waste to a licensed disposal facility, then you must register as a carrier.⁷⁰

Burning waste on site is illegal except for certain quantities of clean vegetation and untreated virgin timber offcuts, having applied for a waste exemption.⁷¹ Dispose of waste in a way that is legal and of least harm to the environment.

Hazardous Waste

If hazardous waste is produced on site, there are much stricter controls for its storage and movement, as the potential impacts from spillage and improper disposal are far greater.

It is your responsibility to dispose of all chemicals and hazardous substances appropriately. Careless disposal onto land or into drainage systems, groundwaters, rivers or estuaries is an offence, and any person found doing so will likely be prosecuted and fined if found guilty.

Most construction sites will produce some hazardous waste, such as asbestos (common during demolition), plaster board, treated wood products, electrical waste (including fluorescent tubes, tools, equipment, batteries) and contaminated packaging (like plastic, glass, paper drums, bottles, bags or containers) with residues of hazardous chemicals.

⁶⁹ www.gov.uk/government/publications/duty-of-care-waste-transfer-note-template

⁷⁰ www.gov.uk/register-renew-waste-carrier-broker-dealer-england

⁷¹ www.gov.uk/guidance/register-your-waste-exemptions-environmental-permits

⁶⁸ <http://wastechange.com/cgi-bin/freexchange.cgi?gid=100273>

It is illegal to mix non-hazardous waste with hazardous waste, or allow different hazardous wastes to be mixed without a permit.

There are regulations covering the movement and disposal of hazardous waste. All hazardous waste can only be disposed of by licensed contractors for that type of waste. It must be accompanied by a consignment note as soon as it leaves site.

Waste contractors often provide a consignment note or a template Consignment Note is provided here:

www.gov.uk/dispose-hazardous-waste

As the producer, **you are responsible** for ensuring that Part A and Part B are completed accurately.

There are three codes on the form:

- SIC (Standard Industrial Classification).
- EWC (European Waste Code).
- Hazard types H1 – H16.

The guidance covers where to find them.

There are regulations around [consignment notes](#)⁷², [consignee returns](#)⁷³ and [rejected loads](#)⁷⁴ that must be followed.

See the [Government advice on hazardous waste](#)⁷⁵ for further information and *Section 2.2* of this guide for more on chemical and hazardous substances. You have a duty of care whether you are a producer, holder, carrier or consignee of hazardous waste.

⁷² www.gov.uk/guidance/hazardous-waste-consignment-note-supplementary-guidance

⁷³ www.gov.uk/guidance/hazardous-waste-returns-supplementary-guidance

⁷⁴ www.gov.uk/guidance/hazardous-waste-rejected-loads-supplementary-guidance

⁷⁵ www.gov.uk/dispose-hazardous-waste

2.4. Noise and Vibration

Noise is the most cited complaint on construction sites. Loud noise from heavy machinery, tools and radios, as well as the accumulation of voices, carries into the surrounding environment.

It is important to consider the noise generated on your site - and how it can best be managed - to keep the local community and government agencies onside and your workers safe. Noise also has a detrimental impact upon wildlife, disturbing natural behaviour and impairing hearing. This can impact ability to decipher signals, such as those indicating danger or nearby prey.

A certain level of elevated noise on site is inevitable but with a conscious and sensitive approach, noise pollution can be controlled and mitigated without impacting site progress.

If noise on site is deemed excessive and receives complaints with merit, the local authority can use Section 60 of the Control of Pollution Act 1974 (COPA) to **impose restrictions on permitted working hours**. A notice can also be issued under the Environmental Protection Act 1990 (EPA) if your site is considered a statutory nuisance. An unexpected order can be costly and impact your programme of work. Failure to comply can lead to prosecution and a significant fine.

Noise and percussive vibration can be a particular issue within and nearby aquatic and coastal environments: sounds travel much faster and further in water than in air. Cetaceans, whales, dolphins and porpoises can be significantly impacted as they use sound and vibration to navigate and communicate. In some circumstances, they may even be attracted to percussive noise – to their detriment if they get too close and damage their hearing. Piling or sinking of piles can create very loud underwater noise and should follow the current best practice to minimise disturbance to wildlife underwater. Piling is most likely to be a specialist activity - always speak to your equipment supplier and/or subcontractor to ensure

measures are taken to minimise underwater noise. They may be able to advise on ‘soft-start’ and vibration piling.

Tidal water sites are also very likely to require a Marine Management Organisation Marine License application. Understanding of the potential impact of underwater noise on animals and illustration of mitigation will be expected.

The following noise control practices can be embedded on site to minimise disruption to the surrounding area:

Conducting Noise Monitoring

Noise monitoring can be undertaken to measure noise on site so that you are aware whether it is falling within acceptable levels. Monitoring protects you against unfair complaints and litigation, whilst frequency monitoring helps to protect your workers. Noise monitoring can be documented using a simple **noise monitoring report template**, detailing equipment used and findings. A useful example can be found on [Sitemate](#)⁷⁶. Noise level monitoring may even be undertaken using smart phone apps.

Substitution of Methods

Where possible, consider substituting loud methods of work for quieter approaches. Understandably, project progress may take precedent but consider whether there is another efficient method which would safeguard your relationship with your neighbours, avoiding complaints and the delays caused by cease orders.

Isolation of Areas

Consider attempting to isolate areas and equipment when loud work is taking place. For example, using baffles, attenuators and silencers can reduce noise – both for worker safety and community harmony.

⁷⁶ <https://sitemate.com/uk/resources/articles/environmental/construction-site-noise-pollution-control>

Check the Condition of Your Equipment

Ensuring tools are properly maintained and serviced when appropriate can aid in ensuring noise is reduced as much as possible. Auditing your equipment can help you keep track of when older models are due to be replaced – for newer, more efficient and likely quieter pieces. Using the equipment best suited to the job at hand also prevents unnecessary noise.

Set Your Own Noise and Vibration Limits

Discussing noise pollution and putting into place best practices on site will encourage responsibility around noise management. Consider setting your own time limits on noisy activity and put operating rules into place. These regulations will supplement those of the local council around working hours and noise levels, helping to keep the authorities and community onside. Always seek to be flexible. Certain circumstances may mean that specific days or times require stricter noise control, so you may need to make plans to adjust accordingly.

Use Equipment Thoughtfully

When using vehicles or plant, be aware of the noise you are generating. Turn off engines when not in use, minimise the use of vehicle reversing alarms, use horns only in an emergency and check brakes are properly adjusted. You may also consider erecting temporary solid panelled fencing around your site, as this will reduce noise carry.

Notify Local Residents and Businesses

Communication with the local community is key to maintaining a good relationship. Talk with your neighbours from the beginning of the project so they know what to expect from the construction process and, if a particularly disruptive activity needs to take place, alert them beforehand to show respect. Communicate the steps you are taking to keep noise to a minimum, ensure there is a platform for open discussion and put a complaints procedure in place. These are actions that will convey you are responsible and possess an awareness of local impact.

Circulating regular progress updates – or displaying updates in a publicly accessible area (for larger projects) – is an inclusive gesture.

Apply for Prior Consent

If certain works are going to be particularly noisy, you can apply for prior consent under Section 61 of COPA. This will act as defence against a Section 60 cease/restriction notice, if one is issued.

Include Best Practice Adherence in Contractor/Subcontractor Contracts

The site will likely involve the labour of more than one company. Ensure, if you have multiple contractors and subcontractors on site, that they all have an obligation to adhere to your best practice around noise and vibration.

2.5. Air Quality

Air pollution occurs when chemicals and compounds that pose a risk to human and environmental health are released to the air. It is another significant potential source of pollution from a construction site. Air pollution can take the form of gases, exhaust or solid matter particles suspended in the air and has a detrimental impact on air quality, and subsequently the quality of the life of the local community. Remember, winds have an impact on air pollution. The capacity to suspend and carry a greater volume of particles (and larger particles) increases with high wind speed.

On site, air pollution can occur during the build, when clearing land, during excavation and demolition, through burning of materials, vehicle operation or when working with toxic chemicals and materials. Be aware that contaminants can travel long distances and impact the environment and local community far from the building site.

The Effects of Air Pollution

Construction Workers and Local People

Air pollution can be hazardous to health for the staff working on a construction site and for people living nearby. Depending on the type of pollutant released and the degree of exposure, symptoms can range from skin irritation, coughing and the irritation of the respiratory tract, to acute problems like the exacerbation of asthma and chronic lung diseases.

Prolonged inhalation of pollutants can in some cases cause cells to become cancerous. In fact, construction workers are at the greatest risk of health complications through poor air quality and over half of all occupational cancers in the UK are found in men working in the construction industry.

Local Environment

Air pollution can have a serious impact on the local environment, leading to significant decreases in health and biodiversity. Contamination stifles the growth and development of plants and animals, with toxic pollution leading to poisoning and potential mass fatalities.

Causes of Air Pollution on Site

The main causes of air pollution from construction sites include:

- **Construction dust** - Concrete, cement, wood, stone and silica are common on construction sites and can release huge amounts of dust. Construction and demolition activities can result in windblown dust which can remain in the air for weeks, travelling - and causing impacts - many miles from the site.
- **Diesel** - Plant and vehicles including breakers, bulldozers, diggers, dumpers and excavators are typically fuelled by diesel. The combustion of diesel releases particulate matter and poisonous gases (such as carbon monoxide, carbon dioxide, nitrogen oxides and hydrocarbons) into the atmosphere via engine exhausts.
- **Smoke** - Burning materials on a building site is illegal (except for some clean vegetation and untreated timber offcuts) and can lead to significant amounts of smoke billowing out into adjacent or nearby residential areas and causing health issues for local people, especially those with respiratory conditions. Burning plastic is especially dangerous for health and has been linked to a number of serious respiratory illnesses including cancer.
- **Noxious vapours** - Common hazardous chemicals found on construction sites, including oils, glues, cleaners, treated woods, thinners and paints, all release noxious fumes and can contribute to air pollution.

Reducing Your Contribution to Air Pollution

Steps should be taken to minimise the air pollution caused by your site. Consider the following measures:

- Use environmentally friendly tools and materials that can help to minimise waste and energy consumption.
- Never burn anything on site and instead follow good waste management procedures outlined in *Section 2.3* of this guide.
- Keep stockpiles of sand and dusty materials moist by hosing regularly, particularly on windy days. This will help to minimise the dust blown away.
- Where possible, turn plant and vehicles off when not being used.
- Always store hazardous chemicals in suitable storage areas and follow good management procedures outlined in *Section 2.2* of this guide.
- Ensure any **asbestos**⁷⁷ is removed according to the **proper procedures**⁷⁸.
- Seek to install features that maximise the development's contribution to improving air quality long-term, such as green walls and roofs, landscaping and trees.

2.6. Light Spill and Site Lighting

Construction sites must be well lit to ensure staff can work effectively and safely. If sites do not meet the minimum on-site lighting requirements, you will risk the health and safety of your workers and the wider public. Appropriate levels of light levels can also illuminate emergency exits and prevent trespassers. Excessive lighting can, however, be detrimental for the health of your staff, the surrounding natural environment and local people.

⁷⁷ www.gov.uk/government/publications/asbestos-properties-incident-management-and-toxicology/asbestos-general-information

⁷⁸ www.hse.gov.uk/asbestos/regulations.htm

Appropriate lighting is the legal responsibility of the employer under the **Health and Safety at Work Act of 1974**⁷⁹. Every construction site must provide the following:

- Suitable and sufficient lighting.
- Natural light, as far as possible.
- Suitable and efficient emergency lighting.

Site lighting must also be fully considered for the **completed development** with regards to light pollution and light spill.

Light Pollution

Excessive and obtrusive outdoor artificial light is considered **light pollution**. At night, stars are becoming increasingly difficult to see due to the glow of artificial lighting - only one tenth of rural England has truly dark skies. Light pollution is not just unpleasant for local people, but very disruptive to local wildlife. It can affect the natural body cycles of all living things through sleep disturbance, resulting in stress and anxiety. It can also significantly interrupt the breeding patterns of nocturnal animals, especially those that take a lunar cycle timing cue.

As a rule-of-thumb, all lighting should be contained and directed upon the development / construction area itself with absolute minimal spill outside this footprint - especially near to water courses where many organisms take their reproductive timing cue from the lunar cycle and/or light sensitive animals such as bats, badgers and birds may be active.

Waterside properties must also consider their impact upon the safe night-time navigation of vessels, again avoiding all but necessary light spill out across or onto the water (necessary navigation marks are naturally exempted). This will need to be formally discussed with your relevant Harbour Authority.

To avoid necessary light pollution, site lighting should be used appropriately and sensitively.

⁷⁹ www.legislation.gov.uk/ukpga/1974/37/contents

How to Minimise Your Light Pollution

The [Clean Neighbourhoods and Environment Act 2005⁸⁰](http://www.legislation.gov.uk/ukpga/2005/80) was established with the aim of controlling light pollution, alongside noise and odours. All are considered statutory nuisances and the Act allows the Local Authority to act against premises that produce excessive or obtrusive amounts of light.

The following actions can help you to manage light levels on your site:

- Use a light or lux meter to measure lighting levels on site, so you can prevent unnecessary light spillage and pollution.
- If lighting is required at night, direct and shield (shutter) your lighting units to reduce spillage and focus light to the area of work only.
- Confirm the site's operational hours with all staff to ensure the expectations of your crew and local people are aligned. Many sites will be in operation 24/7 and will need lighting throughout the night. In such instances, consider prioritising indoor work where possible to minimise the use of bright safety lights.
- Ensure compliance with the regulatory guidance or luminance requirements at the design stage.
- Consider hiring a lighting specialist to ensure your site lighting is safe, not obtrusive or excessive, and energy efficient, helping you to save money. Within environmentally sensitive areas, a lighting specialist may also be able to advise on the least harmful light levels, wavelength and quality to minimise its impact.

2.7. Use of Barges and Other Vessels

The transportation of building materials, plant and waste by water can often be a more sustainable method of transport - when the operations are carefully considered, planned and mitigated with the local environment in mind. Managed poorly, however, such operations can cause considerable environmental damage which may take significant time to recover.

Here are a few things to consider when working from barges and other vessels on water:

- Vessel operations often require special licensing, considerations and permission. Always speak to the local Harbour Authority at the earliest opportunity, to avoid timing conflicts and ensure that you can be accommodated. You are very likely to need their cooperation and assistance. They will also be able to inform you about any buried cables and pipelines in your area of work, special navigational conditions and mooring/anchoring requirements.
- Investigate and consider the local environmental designations, sensitivities and conservation requirements. You may need to commission an environmental survey and impact assessment that will help inform the detail of your CEMP.
- Drying and jack-up barges must seek to minimise their direct impact upon the seabed. If repeated visits are required, it may be better to limit the footprint of the damage to the same place each time or in some conditions use load spreaders. Remember that prolonged shading of seabed plants and seaweeds can harm or create dead zones which will have lengthy recovery times. Minimise time spent within any given area.
- Only move your vessel during the slack waters of high tide, ensuring you navigate at dead slow speed. Propellor strikes and thrust disturbance can be damaging to the seabed habitat and marine

community. Impacts are likely to be far worse when there is little water beneath the vessel. You may also be restricted by your planning/license conditions from navigation below a particular agreed tidal height, wind strength and/or wave height.

- Severe weather conditions must be considered with plans in place to cause the least impact possible. It may be required to move the vessel away from the shore during such conditions, as uncontrolled vessel movement could be destructive to habitats and dangerous to local people.
- Ensure you have equipment on board to retrieve lost materials to minimise the damage caused if an accident happens. This may include bunding and sorbents to contain spills. All usage information should be available from your supplier. Ensure staff are suitably trained and all materials are appropriately stored to minimise the possibility and impact of pollution events.
- Ensure an emergency plan and the accompanying staff training is in place, in the event of plant or vessel breakdown.
- If deploying piles, always plan to minimise sound disturbance to marine wildlife and consider using low vibration pile-sinking techniques. Keep an eye out for dolphins and whales as they are sensitive to sound. If you see them, always stop work in a safe manner. Contact local wildlife groups to find out how you can avoid unnecessary distress.
- Be aware of other foreshore users and vessels. Consider the potential for your vessel to block pedestrians from foreshore egress on a rising tide and mitigate for this.
- Liaise with the harbour authority and council to avoid interference with local events, such as regattas.
- Follow best practice and adhere to relevant local biosecurity plans to minimise the transfer and introduction of invasive species. See *Section 2.9* of this guide, on Ecology.

⁸⁰ www.legislation.gov.uk/ukpga/2005/16/contents

2.8. Archaeology and Cultural Heritage

The South Devon AONB area is rich in cultural as well as natural heritage. There are many **scheduled monuments** - from Dartmouth Castle to Bantham Ham and the Iron Age promontory fort at Oldaport - and **listed buildings** including castles, limekilns, boathouses and coastguard cottages.

Alongside these are hundreds of **undesigned archaeological and historical sites** - from submerged prehistoric forests to Second World War defences. **Registered parks and gardens**, such as Flete on the Erme estuary, also contribute to a cherished landscape made up of important and distinctive sites.

Most of the towns, villages, harbours and quays within the AONB contain **Conservation Areas**⁸¹, recognised for their architectural and historic interest. For example, Dartmouth, Tuckenhay, Noss Mayo and Kingsbridge are all valued for their unique historic character. The character and appearance of these areas must be conserved or enhanced by any further development.

Conservation Areas are subject to extra planning controls, which must be adhered to if your site is situated within the boundary. Contact your local authority for advice on how being within a Conservation Area may impact your planning proposal and construction works.

Within the South Devon AONB, Historic England records show that there are 55 scheduled monuments and 1293 listed buildings. The **Devon Historic Environment Record**⁸² can be used to locate known features of the archaeological and historic environment.

For development affecting a historic building or deemed to be in an archaeologically sensitive area by the local planning authority, you will need to be aware of the requirements of the NPPF and have displayed that you are aware of all heritage assets that could be affected, understand their significance and show that this significance will not be detrimentally impacted.

When carrying out development on, related to, in close proximity of a heritage asset, you must have all required **consents**⁸³ and operate in accordance with **the law**⁸⁴.

New sites of importance are discovered regularly, in fact, between 2016 – 2018, 5052 archaeological or historic sites, 87% of which had not been previously recorded, were identified from aerial imagery and recorded on the relevant Historic Environment Record (HER).

An awareness of the potential for new archaeological finds on your site is important. Any excavation works will need to be subject to archaeological monitoring. If any potential archaeological features are discovered during works, further action may be required to mitigate and ensure the protection of the find. These could include preservation in-situ or by record, and the site would be subject to further archaeological monitoring.

If considered from the outset, archaeology and historic preservation need not inconvenience a construction project.

For further advice, **Historic England's Heritage Protection Guide**⁸⁵ is comprehensive. For more information on designated conservation areas, visit the available council records for **South Hams**⁸⁶, **Torbay**⁸⁷ and **Plymouth**⁸⁸.

⁸³ <https://historicengland.org.uk/advice/hpg/consent>

⁸⁴ <https://historicengland.org.uk/advice/hpg/compliantworks>

⁸⁵ <https://historicengland.org.uk/advice/hpg>

⁸⁶ www.southhams.gov.uk/article/7346/Conservation-Areas-in-the-South-Hams

⁸⁷ www.torbay.gov.uk/planning-and-building/caa

⁸⁸ www.plymouth.gov.uk/planningandbuildingcontrol/conservationandheritage/conservationareas

2.9. Ecology

Throughout the development process, it is important to consider the flora and fauna that lives within your site and amongst the surrounding landscape, and the habitats and conditions that support them. Having an ecology section in your CEMP helps embed ecological considerations within your work, ensuring any required actions for best practice are carried out.

Developments will need to contribute positively to natural habitats above and beyond just compensation or mitigation, known as biodiversity net gain, in line with the Government's 25 Year Environment Plan, and the Environment Act 2021. This will become a statutory requirement in the near future but is already being implemented in Plymouth and South Hams through planning policies and supplementary planning guidance.

The **Biological Record Centre**⁸⁹, hosted by **Devon Wildlife Trust**⁹⁰, contains comprehensive data on the species and habitats in the area - there may be a charge for retrieving the data and information.

There are also several areas designated as Marine Protected Areas within all South Devon estuaries and along much of the adjoining coast:

The **Erme**⁹¹, Upper **Dart**⁹² and **Avon**⁹³ Estuaries are designated as Marine Conservation Areas to protect important, rare and threatened habitats and species.

⁸⁹ www.dbr.org.uk

⁹⁰ www.devonwildlifetrust.org

⁹¹ www.gov.uk/government/publications/marine-conservation-zones-erme-estuary

⁹² www.gov.uk/government/publications/marine-conservation-zones-dart-estuary

⁹³ www.gov.uk/government/publications/marine-conservation-zones-devon-avon-estuary

⁸¹ <https://historicengland.org.uk/advice/hpg/has/conservation-areas>

⁸² www.devon.gov.uk/historicenvironment/the-devon-historic-environment-record

The Yealm Estuary is designated in areas as a **Special Area of Conservation (SAC)**⁹⁴ and **Site of Special Scientific Interest (SSSI)**⁹⁵.

The Salcombe-Kingsbridge Estuary is designated as a marine **Site of Special Scientific Interest (SSSI)**⁹⁶ and **marine Local Nature Reserve (LNR)**⁹⁷.

The MPA maps and features lists can be found by clicking on the relevant estuary or designation above. Further information can also be found via the MAGIC map system **MAGIC tool**⁹⁸ or **Devon County Council Environmental Viewer**⁹⁹.

If your site and its surrounds are likely to be occupied by any **Protected Species**, or a Protected Habitat or Wildlife Community, a more thorough **ecological survey** by a chartered ecologist will be required. Disturbing or destroying the habitat of a protected species or the species itself (depending upon the legislation - deliberately and/or recklessly) is illegal and may also carry a fine and potential jail time. In some cases, you may need to apply for a license or permit to carry out an otherwise illegal operation or action.

Further information on Protected Species, such as bats, great-crested newts and otters, and other protected species such as badgers, water voles and wild birds can be found on the **GOV.UK website**¹⁰⁰.

When landscaping and planting your site, aim to use predominantly **native species – particularly along watercourses where the water flow may disperse potentially invasive and non-native species**. The Royal Horticultural Society offers advice on **native trees and shrubs**¹⁰¹, and planting to encourage **pollinators**¹⁰², **ground-active**¹⁰³ and **plant-dwelling invertebrates**¹⁰⁴. Carefully considered planting and landscape management can be massively important in attracting and supporting wildlife to and on your site. In cases where there is a lack of a suitable ‘wildlife corridor’ link, it can provide a route for wildlife to spread and link to otherwise isolated sites (or ‘wildlife islands’).

Using species data, you can discover if there are any local communities of plants or wildlife that could be encouraged. Planting choices and placements, though they may seem like small, individual actions, can have a positive impact on the broader ecological communities and their natural migration.

Through landscaping in an aware and thoughtful manner, your site can help to create new colonies and link or reconnect species communities.

You may also be able to grow native trees on your site and create woodland linkages. Guidance on **establishing trees and hedges**¹⁰⁵ and **Right Place Right Tree**¹⁰⁶ guidance is available.

Invasive Non-Native Species

Invasive Non-Native Species (INNS)¹⁰⁷ are a significant issue within the AONB and surrounding area. Take care to avoid introducing or spreading INNS that could dominate to the detriment of the existing environment, smothering or diluting adjacent native wildlife communities and in cases radically altering the habitat – for example, Giant Rhubarb (*Gunnera tinctoria*). Under the Wildlife and Countryside Act 1981 it is, in fact, an offence to plant or cause growth of this species in the wild. Prevention is always better than subsequent management, as it can be extremely difficult to contain prolific species.

If any invasive plant species are identified on site, controls – such as cleaning of footwear and tools – may need to be put in place to avoid spread and contamination between sites.

The AONB has supported the development and production of Marine Biosecurity plans – visit the **South Devon AONB webpage**¹⁰⁸ and the appropriate Estuary page to download the relevant Estuary Biosecurity Plan.

Healthy natural & diverse marine communities tend to be more robust and resilient to invasion and swamping by INNS. Within the design of your development, try to ensure that new structures placed within the aquatic environment have a degree of habitat ‘naturalness’ and complexity, as this tends to support native wildlife communities. By contrast, exposed ironwork unfortunately seems to act as a magnet to the non-native Pacific oyster (*Magallana gigas*).

⁹⁴ <https://sac.jncc.gov.uk/site/UK0013111>

⁹⁵ <https://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=S2000131&SiteName=Yealm%2520Estuary&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=>

⁹⁶ <https://designatedsites.naturalengland.org.uk/SiteList.aspx?siteName=Kingsbridge&countyCode=&responsiblePerson=&DesignationType=All>

⁹⁷ <https://designatedsites.naturalengland.org.uk/SiteList.aspx?siteName=Kingsbridge&countyCode=&responsiblePerson=&DesignationType=All>

⁹⁸ <https://magic.defra.gov.uk/MagicMap.aspx>

⁹⁹ <https://maptest.devon.gov.uk/portaldvl/apps/webappviewer/index.html?id=82d17ce243be4ab28091ae1f15970924>

¹⁰⁰ www.gov.uk/guidance/construction-near-protected-areas-and-wildlife

¹⁰¹ www.rhs.org.uk/plants/types/trees/native-tree-shrubs

¹⁰² www.rhs.org.uk/wildlife/native-and-non-native-plants-for-pollinators

¹⁰³ www.rhs.org.uk/wildlife/native-non-native-plants-for-ground-invertebrates

¹⁰⁴ www.rhs.org.uk/wildlife/plants-for-plant-dwelling-invertebrates

¹⁰⁵ www.devon.gov.uk/environment/landscape/trees-and-woodland

¹⁰⁶ www.devonlnp.org.uk/knowledge-hub/trees-and-hedges/right-place-right-tree

¹⁰⁷ www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales

¹⁰⁸ www.southdevonaonb.org.uk/estuaries-management-plan

2.10. Soils and Geology

It is important to have an awareness of the geology and soil profile of your site and how it could impact the construction processes and associated pollution risks. **Soil conservation** is a particular issue during excavations and landscaping. Your site may not be large, but the cumulative impact of any number of developments can be significant and soil conservation protects against erosion and reduced soil fertility. On construction sites, these issues can also be caused by heavy plant movements and chemical contamination.

Accompanied by the loosening and churning on the topsoil by site movements, heavy rain or flows due to construction activity can cause runoff that significantly washes away the soil. Every site should have an erosion control system in place.

For certain sensitive sites, your actions around soil management will need to be outlined in an accompanying **soil management plan**.

To reduce soil erosion and associated issues on site, consider:

- Dividing the site into sections so the process, and impacts, are phased.
- Soil stabilisation (using blankets, mulch and wood binders).
- Slope protection (using geo-textiles, mats, fibre rolls, turf blankets and silt fencing).
- Stabilising the entrances to your site (e.g. using crushed stones).
- Taking extra care when dewatering (see *Section 2.1* of this guide).
- Washing plant carefully (see *Section 2.1*).
- Using sediment control traps.
- Inspecting your site regularly, particularly after any runoff events.



You are required to hold an authorisation from the Environment Agency if you import soil onto the site. Please contact 03708 506 506 for information on permits and exemptions.

Piles of soil stored on site for long periods of time should be covered to manage the dust and minimise runoff.

Any extra material could be removed from the site for licensed disposal. Alternatively, **CL:AIRE**¹⁰⁹ provides a process where clean soil can be transferred from one site to another, or contaminated/uncontaminated to be re-used or treated so they can be re-used.

Check for the presence of **historic landfill sites**¹¹⁰ using Environment Agency data.

DEFRA's **Code of Practice for the sustainable use of soils on construction sites**¹¹¹, contains relevant advice and is useful for reference purposes.

¹⁰⁹ www.claire.co.uk

¹¹⁰ www.data.gov.uk/dataset/17edf94f-6de3-4034-b66b-004ebd0dd010/historic-landfill-sites

¹¹¹ www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites

2.11. Protection of Trees and Hedges

Trees and hedges may be protected through Hedgerow Regulations and TPO (Tree Preservation Order) Regulations- therefore may be a legal requirement to protect these features e.g. trees protected by a TPO, or hedges that are 'Important' as defined under the Hedgerow Regs. If development is subject to planning consent then there is likely to be a planning condition requiring protection of trees and hedges prior to, during and after construction to BS5837:2012 '**Trees in relation to design, demolition and construction- Recommendations**'.¹¹²

You may need to identify actions for the protection of trees e.g. to erect temporary protective fencing around trees and hedges adjacent to the construction zone, and on bigger schemes to identify a 'Construction Exclusion Zone' that is fenced and that has signs stating what is not allowed e.g. no storage of materials, no excavation, no spillage of diesel or other substances damaging to plant health etc.

¹¹² www.malvernhillsgov.uk/planning/heritage/the-natural-environment/trees-and-development/bs-5837-2012



Section 3

Accidents and Emergencies: Guidance



It is your responsibility to be adequately prepared for any eventuality regarding incidents on site and the potential impacts to your local environment and neighbours. Even with the best of intentions, there is no way to eradicate the chance of human error, and accidents do happen.

Make an Incident Response Plan

The best way to effectively deal with accidents or emergencies on site is to have an **Incident Response Plan** in place. Taking a small amount of time to create a plan at the beginning of your project ensures there are outlined procedures to deal with all potential incidents, protecting your workers and the surrounding environment, whilst safeguarding time and money. Due to their nature, construction projects rarely go without incident, so an incident plan should be considered an essential part of good site management.

Your Incident Response Plan should be built into your CEMP and be tailored to your specific needs and risks. It is not possible, therefore, to be specific about what it should contain, but as a general guide it is good practice to consider the inclusion of the following:

- A list of important contacts and their contact details.
- Reporting procedures for all potential incidents.
- A site description and layout including the location of storage areas, refuelling areas and your drainage plan.
- A comprehensive list of stored materials, their locations, and specific advice for best practice management.
- Details of local environmental sensitivities.
- The location of all equipment for dealing with incidents, including where the incident management procedures can be found.

Training

Staff training is an essential part of an effective incident response plan. Allocating management of the Incident Response Plan to a dedicated member of staff who can manage, review and update the plan where necessary is recommended.

Training needs and provision will relate to your plan but should include environmental awareness, correct procedures, how to respond to a pollution incident and how to manage and dispose of waste materials legally.

It is essential that everyone who uses and visits the site is aware of the incident management procedures. The first point of contact, responsible for overseeing responses, should be made clear. The plan should always be accessible, and a copy should also be kept off site.

Emergencies

All serious incidents, including issues that you do not know how to, or are not able to, deal with - such as spills reaching surface drains or onto ground or hard surfaces - must be reported to your local environmental regulator straight away. This will ensure the impact to the wider environment and local community is minimised as far as possible.

The health and safety of you and your staff should always come first, so never put yourself in danger to manage an incident. In extremely serious situations, or when staff health has been compromised, do not hesitate to call 999.

Reporting an Environmental Incident

Call the Environment Agency incident hotline 0800 807060 to report:

- Damage or danger to the natural environment.
- Pollution to water or land.
- Dead fish or fish gasping for air.
- **Main rivers¹¹³** blocked by a vehicle or fallen tree, causing risk of flooding.
- Flooding from any river, stream, canal, natural spring or the sea.
- Illegal removals from watercourses.
- Collapsed or badly damaged river or canal banks.
- Poaching or illegal fishing.
- Incidents at Environment Agency regulated waste sites.
- Unusual changes in river flow.

¹¹³ <https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a56386>



Section 4

Suggested Appendices



You may wish to attach the following documents in appendix to your CEMP:

- Site Layout Plan.
- Detailed Activity Schedule / Programme.
- Environmental Policy Statement.
- Introductory letter to local residents.
- Weekly environmental checklist or daily environmental log.

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