

# Coastal and marine working on site

Martin Budd  
Siân John  
Jonathan Simm  
Elizabeth Holliday



*sharing knowledge*  
■  
*building best practice*

## Summary

### Environmental good practice – working on coastal and marine construction sites

This pocket book was produced as a result of CIRIA Research Project RP646 *Coastal and marine environmental site guide*. The work was carried out by Posford Haskoning Ltd (Martin Budd, Sian John and Mark Wilkinson) with support from HR Wallingford (Jonathan Simm). This booklet was prepared by Elizabeth Holliday (CIRIA).

The research leading to the publication of the more detailed handbook *Coastal and marine environmental site guide* (CIRIA publication C584), from which the pocket book is derived, was funded by DTI, Environment Agency, English Nature, Crown Estate, Van Oord ACZ Ltd, Royal Society for the Protection of Birds and Department of the Marine and Natural Resources, Ireland.

CIRIA wishes to express its thanks to the members of the Project Steering Group for their contributions. CIRIA's research managers for this project were Daniel Leggett and Elizabeth Holliday.

#### Keywords:

coastal and marine, construction management, environmental good practice, materials, piling, pollution prevention, recycling and reclaimed materials, regulation, site management, sustainable construction, water quality.

#### Reader Interest

contractors, site workers, site managers, engineers, supervisors, architects, consultants, designers and regulators

#### Classification

Availability: Unrestricted  
Content: Advice/Guidance  
Status: Committee guided  
Users: Construction professionals and managers

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, including photocopying or recording, without the written permission of the copyright-holder, application for which should be addressed to the publisher. Such written permission must also be obtained before any part of this publication is stored in a retrieval system of any nature.

## Contents

About this pocket book	4
Benefits	5
On site in coastal and marine environments	6
General site rules	7
Waste	8
Noise and vibration	9
Dust	10
Emissions and odours	11
Ground and sediment contamination	12
Water quality	13
Wildlife and natural features	15
Shellfish and fish	16
Archaeology and heritage	17
Useful contacts	18

## About this pocket book

This pocket book provides advice on carrying out construction works in coastal and marine environments whilst minimising impacts to these sensitive areas.

It covers the following environmental issues:

- Waste
- Noise and vibration
- Dust
- Emissions and odours
- Ground and sediment contamination
- Water quality
- Wildlife and natural features
- Shellfish and fish
- Archaeology and heritage

It provides the background to a number of important environmental issues and identifies what you can do during construction that will mean the difference between good and bad environmental practice.

For more detailed guidance and further information see *Coastal and marine environmental site guide* C584, published by CIRIA.

## Benefits

Following good environmental practice means you are reducing the risk of pollution, or other damage, to the local environment and minimising nuisance to the local community. This means less risk of prosecution, fewer complaints and delays and less bad publicity.

Good environmental practice need not be costly, and sound environmental practice makes both good environmental and economic sense.

Good environmental practice in coastal and marine areas has the following benefits.

### Environmental benefits

- Reduced damage to the coastal and marine environment and its associated flora and fauna
- Reduced demand for natural resources
- Reduced disruption to local residents and businesses and visitors/tourists
- Meeting the requirements of recognised standards, consents and licences.

### Economic benefits

- Less money wasted on environmental fines
- Less money spent on restoration of coastal and marine habitats
- Increased investment and funding
- Reduced risks
- Improved opportunities to tender
- Improved market image.



### Checklist: Environmental obligations

Make sure you are aware of any environmental obligations you need to comply with when working on site.

## On site in coastal and marine environments

When working in coastal and marine environments you will come across elements you may not have experienced during inland operations. These need to be considered during operations if they are not adversely to impact on, and present risks to, your works. Remember to consider waves, tides, currents, strong winds or any combination of these elements.

If ignored, these elements will not only increase the likelihood of an accident but also the potential for environmental damage. Remember that coastal and marine environments can often be sensitive habitats and that the elements, for example currents, can mean that pollution can have far reaching effects.

You should also remember that the area may be important plant, bird or sea life habitats and your activities may impact on local trades that depend on these, such as fishing and tourism.



### Checklist: At the start of each day think about

- Wind – how this may affect land-based plant and floating craft
- Waves – how these may affect deliveries to site and temporary or incomplete works
- Currents – how these may affect vessels working in, or approaching from, offshore
- Tides – how these may affect access to site and may cut off works.



- Remember that plant cannot be abandoned in tidal areas

## General site rules

Following general good practice is the first step to minimising impact on any site. Successful environmental management also relies on communication. It is crucial that you are aware of the key issues, have the relevant information to deal with them, understand your responsibilities and feedback to those in charge.



### Checklist

- Find out who is responsible for the environmental management of the site
- Consult any consents and controls for the site
- Make yourself aware of the sites environmental issues and sensitivities
- Follow good housekeeping practices
- Ensure site security
- Make sure materials are safely and securely stored
- Follow pollution prevention practices
- Monitor the site and report any concerns
- Make yourself aware of emergency equipment and who to contact on site for environmental incidents.

- Take note of any signage on the site



## Waste

By following good waste management practices you can help reduce pollution to the coastal and marine environment, save costs and avoid possible prosecution.

Before disposing of waste consider the “4 Rs” – it may help save money and minimise waste:

- **Reduce** – take only what you need from the materials store. Use less, don't damage materials and do the job “right first time”
- **Reclaim** – can the waste materials be reclaimed for use?
- **Reuse** – use it more than once, if safe to do so.
- **Recycle** – metal, aggregate, plastics, glass, timber can all be sent for recycling.

Pollution can be minimised by the correct and safe storage of waste:

- Segregate different types of waste as they are generated
- Mark waste containers clearly with their intended contents
- Use containers suitable for their contents
- Check condition of waste containers before use
- Place containers in impervious bunded areas
- Ensure that containers are securely covered.

Waste producers are legally responsible for ensuring that disposal of material is carried out correctly. When wastes are being transported from your site:

- Check that a copy of the carrier's registration document is on-site
- Check that the carrier's registration document is valid.
- Ensure the waste carrier is authorised to carry the type of waste for disposal
- Complete transfer notes accurately and in full
- Keep copies of all transfer notes of waste sent off-site.

## Noise and vibration

Noise and vibration can have wide-ranging effects during construction on the coastal and marine environment. Remember in this environment it may disturb marine and coastal birds, fisheries and other aquatic life in addition to local communities and visitors. And consider the far-reaching effects of noise – water allows noise to travel greater distances.



### Checklist

Noise limits and restrictions on working time or areas may be specified by local authorities or environmental regulators – check site management plans and consents before commencing work.

The following practices will help to reduce the impacts of noise and vibration:

- **Site management** – consideration of timing, duration and phasing of noisy operations
- **Construction method** – consideration of suitable methods for the environment. For example in the aquatic environment, blasting can result in extremely high noise levels
- **Plant selection** – careful selection of plant and equipment; only use plant conforming with the relevant standards and directives on emissions; avoid using older noisier plant in sensitive areas; fit silencers to all vehicles and plant
- **Reduce noise levels** – noise levels can be reduced by: silenced piling techniques; adhering to good practice guidelines such as BS5228 (1997); fitting plant with appropriate silencers and acoustic enclosures and/or hoods; siting stationary noise sources as far as possible from sensitive noise receptors
- **Minimise vibration** – vibration can be reduced by: using vibrating machinery rather than piling or driving machinery; using machinery that creates high frequency vibration rather than low frequency; using heavy bases rather than light bases; when working in water, undertake activity during low tide.

Be considerate to your neighbours – imagine what it would be like to live next door to the site you are working on.