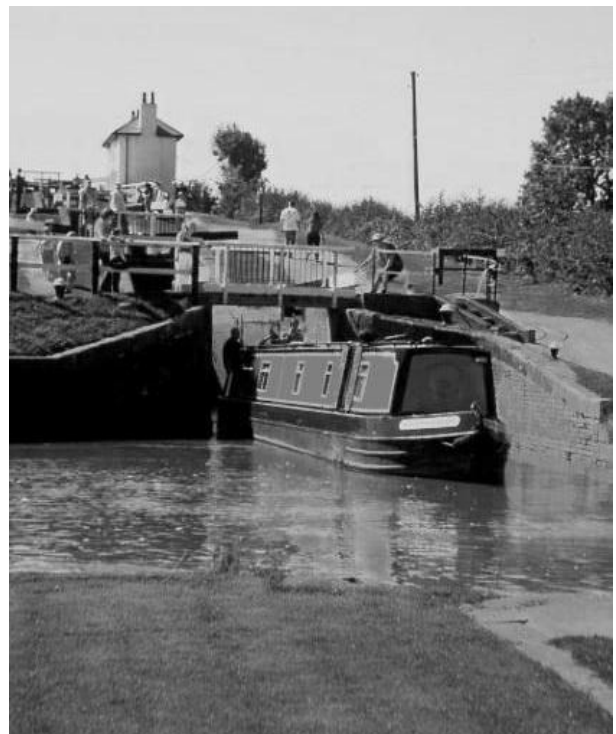


THIRD PARTY WORKS' PROCEDURES

SECTION 2

CODE OF PRACTICE



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1 **INTRODUCTION**

1.1 **Purpose of this Code**

This Code of Practice gives guidance and procedures to Developers, Local Authorities, Statutory Undertakers and their consultants, Contractors, Voluntary groups, Householders or any other individuals or groups wishing to carry out Works for their purposes, which may or will affect the Waterways. This Code safeguards the interests of British Waterways in protecting the Waterway.

It forms the basis on any relationship with any organisation (being the third party) wishing to undertake works on British Waterways canals and rivers and/or gain access over these waterways. *Section 1: Guidance Notes; Section 3, Design Guidance and Section 4: Documents* must be read in conjunction with this Code of Practice.

British Waterways has a separate process to facilitate new canal marina (enclosed basin and lay-by) developments by providing specialist information. This is accessed via the link www.britishwaterways.co.uk/marinadevelopment and is managed by a dedicated British Waterways team, the New Marinas Unit (NMU). (Please refer to Part 7 of *Section 3: Design Guidelines* for definitions and for information relating to non-mooring basins, on-line moorings and river navigation marinas).

1.2 **Need for a Contract**

It will usually be necessary for the Promoter to enter into a Contract to licence the Works on British Waterways' property. In order to safeguard the Waterway, the Contract will normally be based on the following principles:

- protection of the Waterway from the effects of the Promoters' temporary and permanent works.
- no perpetual term will be granted
- the Works shall be kept in good repair by the Promoter
- no imposition of irrecoverable costs.
- the prevention and making good of any damage.
- no contingent liabilities.
- a payment reflecting the value to the Promoter of the Contract offered.

Further information can be found in [Appendix 2](#).

1.3 **Works adjacent to the Waterway**

In the case of works adjacent to British Waterways Property, the principles are that no support is offered and no loads are to be imposed on the property. The Party Wall etc Act 1996 is usually applicable and application should be made in accordance with that Act. When a Contract is not needed the technical provisions of this Code will apply.

2 PROCEDURE

2.1 **Early Discussions**

The importance of having discussions with British Waterways at the earliest opportunity cannot be over-emphasised. It is always beneficial to have an early meeting with British Waterways when guidance its requirements and the use of this Code will be given.

2.2 **Costs Undertaking and Application Fee**

If the Promoter has no existing contract with British Waterways and before British Waterways is involved in spending significant time on a project, the Promoter will be, required to enter into a Costs Undertaking (*Section 4: Documents, Appendix 2*), giving a contractual means of recovering costs.

A fee as advised by the Works Engineer is required with this undertaking. This represents a contribution towards the administrative costs of British Waterways in making an initial assessment of the Application. The payment of that sum to British Waterways does not imply that British Waterways will ultimately accept the Promoter's Works. That sum will not be returnable irrespective of whether or not the Application proceeds

Parties with Omnibus Agreements or other existing contractual arrangements will be governed by the terms of those agreements, which commonly require an application fee.

Statutory Undertakers holding Omnibus Agreements with British Waterways will also need to complete the Application form prescribed in the Omnibus Agreement.

2.3 **Notification Form**

A Notification Form (*Section 4: Documents Appendix 1*) must be completed as soon as possible. This provides the information for British Waterways to carry out preliminary technical, environmental and commercial appraisals. The Works Engineer will assist in the completion of the form at an initial meeting.

Statutory Undertakers holding Omnibus Agreements with British Waterways will also need to complete the Application form prescribed in the Agreement.

2.4 **Communication**

Discussions usually take place directly between the Promoter's representative and the Works Engineer. The Waterway Manager is sometimes present at meetings but normally acts through the Works Engineer and Estates Surveyor. Depending on the type of works proposed, the Water Engineering, Environmental, Heritage, Utilities, Freight or other specialist teams may be involved and attend meetings.

Generally all communications should go to the Works Engineer, except in the case of proposals which are solely for abstraction, or discharge of water. These should be via the utilities team in the first instance

If several consultants or contractors are tendering for work, communication should be through the Promoter until the contract is awarded. This minimises British Waterways' workload and ensures a fair and consistent approach.

2.5 Preliminary Appraisal

The notification form together with supplementary information will enable the Works Engineer to carry out a preliminary technical and environmental appraisal. The technical appraisal will consider aspects such as:

- navigation
- the integrity of the canal
- flooding risk
- maintenance of feed flows
- water supply and water control
- safety
- design
- programme
- construction.

The environmental appraisal, which will be in accordance with British Waterways' *Environmental Management System*, will consider site specific issues such as:

- protection of landscape and heritage
- maintaining access
- contamination of ground, water or sediment
- presence of protected species such as bats or water voles
- protection of valuable habitats and features.

And construction impacts such as:

- noise
- access to site
- pollution control
- waste management.

The Promoter may be asked to undertake surveys or investigations / assessments to consider technical and environmental impacts identified in the preliminary appraisals. British Waterways has in house expertise, available through the Works Engineer, in all aspects of waterway management.

The preliminary appraisals and any supplementary studies will be used by the Promoter at feasibility, design and construction stages to ensure the waterway environment is protected and that all opportunities are taken to enhance it.

2.6 Viability of Proposals

Early discussions may reveal that the proposed Works cannot proceed for technical, environmental or commercial reasons.

2.7 Detailed Discussions and the Submission

Discussions will then proceed. This Code suggests engineering and environmental issues, which may need to be considered. The discussions will include the Promoter's responses to the issues raised by the initial appraisals and actions that will be taken to:

- avoid impacts where possible
- mitigate damage or replace elsewhere when impacts cannot be avoided
- enhance the waterway environment overall at the end of the works.

The discussions will take the form of meetings, submission of draft drawings, site visits, etc., The form of the Submission will be agreed. Once everything is agreed the 'Submission' is prepared and sent to the Works Engineer. Earlier documentation will be superseded by the Submission.

2.8 Acceptance of Works

The Works Engineer will write to the Promoter, or his or her agent, stating that the proposed Works are generally acceptable to British Waterways.

If execution of the Works is then delayed for more than 12 months, the Acceptance will lapse and need to be reviewed, in the light of changes to the waterway, changes in techniques and changes in policy.

2.9 The Contract

The Works may not be executed until the Contract has been completed or that the Promoter has been advised that none is required. The Contract will have been prepared by negotiation between the Promoter's agent and the Estates Manager. It is important that engineering and commercial discussions proceed in parallel, otherwise a delay in the commencement of the Works will result.

In some cases there may be relevant existing contract such as an Omnibus Agreement with a Statutory Undertaker or an Agreement for existing works. In cases where such a contract exists, the Works can proceed on acceptance by the Works Engineer of the Promoter's Design & Construction Stage Submissions.

2.10 Pre-works Meeting

Once a 'Contractor' has been appointed, a pre-works meeting usually takes place, normally on site, to discuss the execution of the Works and the means of safeguarding the canal, its visitors and the waterway environment. The Contractor's proposed working method will be discussed with a view to refining the Promoter's initial Method Statement and making a Construction Stage Submission.

2.11 Execution of Works

British Waterways will inspect the Works during execution to ensure that the interests of the Waterway are being safeguarded.

2.12 As Built Drawings

After the Works are completed, the 'As Built Drawings' etc. will be supplied to the Works Engineer, together with a full copy of the Health & Safety file.

3 **THE SUBMISSION**

At the appropriate times, the Promoter will be required, unless otherwise agreed, to submit in **triplicate** (unless advised otherwise) the following for inclusion in the Contract:

3.1 **Feasibility Stage**

On major schemes, the Promoter will be required to provide technical and environmental appraisals considering all the available options, measures to avoid impacts, mitigate damage and enhance the overall waterway environment.

3.2 **Design**

As appropriate:

3.2.1 CDM Regulations

The promoter should ensure that where appropriate a suitably qualified CDM Coordinator is appointed for the project. Where appropriate Design Risk Assessments and details of temporary works, which have been specified at this stage, should be produced. The Promoter should take into account the age and condition of the Waterways and their usage by leisure and commercial craft, pedestrians, cyclists and anglers. Hazards associated with working near water such as drowning or chemical and biological hazards should also be addressed.

3.2.2 Site Plan

A location plan to a suitable scale, such as 1:1250.

3.2.3 Drawings

Drawings, including a general arrangement, to suitable scales sufficient to illustrate the effect of the Works on the Waterway.

3.2.4 Design Certificate

A certificate from a suitably qualified engineer confirming that the Works are fit for purpose, designed in accordance with relevant codes and standards and do not impact adversely on the interests of British Waterways. This certificate may need to be supplemented later for Contractor designed elements.

3.2.5 Site Investigation

Site investigation information as appropriate.

3.2.6 Programme

The Promoter's anticipated overall programme with specific reference to matters of interest to British Waterways such as stoppages and installation of bridge decks should be provided.

3.2.7 Works Contract Documentation

The Promoter shall include within his or her Submission copies of contract clauses provided within the Works Contract for the protection of British Waterways. The standard 'Special Requirements in relation to the British Waterways Board' (*Section 4: Documents Appendix 15*) should provide the basis for these clauses, additional site specific clauses being added as necessary. There should be a plan depicting the extent of the Contractor's site.

3.2.8 Tenderer Notification

Before issuing tenders for the Works, British Waterways will be notified of the names of the contractors it is intended to invite to submit tenders and due consideration will be given to any observations British Waterways may make regarding their suitability for employment to carry out Works affecting British Waterways' property or other interests. British Waterways reserves the right to veto unsuitable Tenderers.

3.3 Construction Stage

A second phase of the Submission is to be provided by the Promoter when a Contractor has been appointed but before Works commence on site. The Promoter remains responsible to British Waterways for the actions of the Contractor. Where appropriate, the promoter shall ensure the Contractor is capable of undertaking the Principal Contractor role as required by the CDM regulations.

3.3.1 Site Contacts

The Promoter shall submit to British Waterways in writing the names, telephone and fax number and email addresses of the point(s) of contact on site together with their powers and duties under the Works Contract.

3.3.2 Emergency Contact

The Promoter shall submit to British Waterways in writing the name and address and telephone number of the Promoter's Engineer or other such competent Persons responsible for the supervision of the Works including twenty-four hour telephone number for emergency contact.

The Promoter shall submit to British Waterways in writing, where applicable, the name, address and telephone number of the Contractor and Sub-Contractors, the site telephone number of his or her Agent including twenty-four hour number for emergency contact.

3.3.3 Supervision

The Promoter shall submit details of the Promoter's arrangements for providing supervision of the Contractor

3.3.4 Contractor's Temporary Works

The Promoter shall submit details of all applicable temporary works including piling and other supporting structures may be required. These shall include a certificate of adequacy provided by a competent person.

Where for the purpose of completing the Works in accordance with the Works Contract any Temporary Works are required above the Waterway the Contractor shall, except where otherwise specified in the Works Contract, provide and maintain a minimum headroom clearance level as specified by the Works Engineer.

3.3.5 Contractor's Method Statement

The Promoter shall submit a concise Method Statement, with Risk Assessments, prepared by the Contractor indicating how the works will be carried out, without prejudicing the interests of British Waterways. Detailed Method Statements for individual tasks will be submitted as the Works progress.

The Contractor should take into account the age and condition of the Waterways and their usage by leisure and commercial craft, pedestrians, cyclists and anglers and also matters such as historical features, trees, hedgerows, vegetation, habitats and water quality. Hazards associated with working near water such as drowning or waterborne disease should also be addressed. The Planning Supervisor and Safety Officers should be named.

3.3.6 Contractor's Programme

The Promoter shall submit a programme in bar chart form showing clearly the anticipated duration of the major stages of the work relating to the Waterway. Individual detailed programmes for critical items may be needed.

3.3.7 RIDDOR

British Waterways should be advised of any Reportable Injuries, Diseases or Dangerous Occurrences and supplied with copies of forms F2508 or F2508A.

3.3.8 Enforcement Action

British Waterways should be advised of any enforcement action taken by the Health & Safety Executive, Environment Agency (Scottish Environment Protection Agency in Scotland) or any other regulator.

3.4 Post Construction Stage

3.4.1 As Built Drawings

Within six weeks of completion of the Works, two copies of the 'as-built' drawings, for those aspects of the Works of interest to British Waterways, are to be provided for the Works Engineer and the Estates Manager. These drawings are to be based on the Submission Drawings amended to show changes made during construction.

3.4.2 Maintenance

Within six weeks of completion of the Works the Promoter shall provide a maintenance and management plan and a landscape re-instatement /maintenance plan, including relevant extracts from the Health & Safety File. The eventual decommissioning / removal of the Works must be addressed.

4 GENERAL INFORMATION & REQUIREMENTS

For the protection of British Waterways in connection with the Works, the Promoter shall be required to accept and meet the following requirements and conditions, in addition to any other requirements set out by other relevant legislation. The Promoter must ensure that his or her agents and contractors abide by them by inserting suitable clauses where relevant into the Works Contract.

4.1 Programme

Where the Works affect navigation or the amenity of the canal, they should preferably take place between November and March, when the leisure use of the canal is least intensive.

4.2 Stoppages (Closures of the Navigation)

Generally no stoppages of the canal or navigation or towpath will be allowable, except for technical reasons. The Promoter must adopt designs and construction methods, which do not affect navigation. Overnight closures, width restrictions, working between boats, temporary troughs etc. must be considered in order to avoid stoppages albeit at extra cost. On certain Commercial Waterways stoppages of more than a few hours duration may not be permissible in any circumstances.

If the Works Engineer agrees that a stoppage is unavoidable, such closure should generally take place only between November and March and will be subject to consultation with all British Waterways User Groups at national and local levels. The dates of the closures will be at the discretion of the Works Engineer, who will take into account traffic patterns, other nearby stoppages, alternative routes etc. Certain key national through routes are maintained free of closures for periods in the winter whilst works take place on alternative routes.

All stoppages must be of minimised duration. Where feasible the waterway should be re-opened to traffic at weekends. On longer indivisible jobs, weekend and, where appropriate overnight, working is required in order to minimise the length of the stoppage. There should generally be no stoppages exceeding six weeks in duration but when the Works Engineer accepts that longer unbroken stoppages are necessary, transfer of boats around the works by road may be required at the Promoter's expense.

All such proposed stoppages should be agreed and paid for whether or not these closures are used, before the end of the April prior to the closure. Stoppage charges are shown in *Section 4: Documents Appendix 13* In some cases stoppages may be agreed for emergency works, or essential maintenance after the April deadline, by the Waterway Manager. These will always be subject to the increased rates in the above appendix for late applications. For projects requiring only night closures, restrictions or short delays to traffic, where this timescale may not be feasible, a minimum period of six weeks before the works commence is required in order that notices may be published and distributed.

4.3 Towing Paths

The towing path must remain open wherever possible. If a diversion is unavoidable, the Promoter must submit his or her proposals for the acceptance of the Works Engineer and, where a Public Right of Way is involved, to the local Highway Authority. Diversions should be localised, for instance around the rear of the Works and be fit for purpose. Such diversions may be used by the British Waterways maintenance plant and be of a standard to allow continued use by existing visitors – walkers, anglers, people with disabilities, cyclists etc.

The towing path should not be used for access to the Works because of conflict with visitors and the unsuitability of the towing path for vehicular use. In the unusual event that plant is permitted to use the towing path, this will be after an assessment of the suitability of the access with full regard to the stability and integrity of the towing path and consideration of the risks to towing path users.

4.4 Water Level Control Structures and Cross Sections

The water level is normally controlled by waste weirs, byweirs and sluices and fluctuations in level can occur for a number of reasons, particularly during storms at the site and upstream, and during dewatering downstream. Care should be taken to define normal water level and maximum water level at the survey stage in consultation with the Works Engineer. Detailed surveys of weirs and sluices together with cross-sections of the Waterway may be required and these shall be submitted before and after the Works at the Promoter's expense. The Contractor should particularly note when planning any work in relation to the Waterway that British Waterways cannot guarantee any particular water level or depth and not prevent any fluctuations to such water level depth or speed of flow in any Waterway.

Requests to lower and maintain water levels slightly below those normal for that location are particularly difficult to achieve without alterations to structures, will usually cause navigation problems and even if possible will require constant monitoring and adjustment, all at the Promoter's expense.

4.5 Water Control

At his own expense the Promoter will be required to maintain navigation feed flows and flows being transferred to abstractions past the site and to also deal with storm flows reaching the site at all times including outside normal working hours.

4.6 Fishery

Where stoppages and dewatering occur, the Promoter will be responsible for the fish rescue and re-stocking. In England and Wales, fish rescues must be licensed by the Environment Agency. The Promoter must demonstrate to British Waterways that the Agency has approved fish rescue.

Any valuable or protected species, such as white-clawed crayfish, must be reintroduced to an adjacent suitable habitat.

The Promoter will ensure that where any protected species need to be handled or moved, all necessary authorisations are obtained from the relevant wildlife and environmental regulators, and copies provided to the Works Engineer.

Any non-native crayfish or zander (a non-native fish found in some Midlands Canals) found during fish rescues should be humanely destroyed as introduction into the wild is illegal.

4.7 Design and Build

The use of Design and Build contractors on small projects needs careful consideration. Unless parameters critical to British Waterways are defined before a contractor is appointed, an unsatisfactory result and/or escalating costs to the Promoter may result. For structures, the concept should be considered as 'Detail and Build' not 'Design as you Build'. For trenchless crossings, the early input of a specialist is essential. The Promoter must advise on the extent of the responsibilities that have been delegated but remains responsible for the proposals.

4.8 Insurance

The Promoter will be liable for any damage arising from the activities of his or her Agents, such as Consulting Engineers, Contractors and Sub-Contractors. In the event of a claim, the first course of action by British Waterways would be directed towards the Promoter, though others may be joined in. It is in the Promoter's interest to ensure that his agents have adequate insurance to protect him or her from action. However, it is the Promoter's responsibility to ensure the appropriate level of cover is taken. If a Promoter, or his or her contractor, causes damage to British Waterways property then it will seek reinstatement of such damage, plus any inconvenience costs, loss of profits etc., which British Waterways might incur, in full and without monetary limit.

Levels of insurance will be specific to the risks attached to the proposal. The design and construction of the Works should minimise risk to a reasonable level such that insurance for £5,000,000 should suffice. If the potential consequences demand, insurance up to £25,000,000 may be necessary.

4.9 Right of Support

British Waterways enjoys a right of support under Common Law. It is important that support is not removed by excavation, dewatering undermining etc. In areas of mining subsidence canals can be of great depth due to bank raising - 10m is not unknown. Factors of safety are often not great and ill-considered actions can be disastrous.

A less obvious consequence of excavating near to canals is that of increasing hydraulic gradients. Not all canals are lined. Seepage rates are increased. Permanent leakage or piping failure can result.

4.10 Support to New Works

British Waterways offers no support to new works. Loads should not be placed near to cuttings, over tunnels etc. without being independently supported. Should a British Waterways structure withdraw support from later development, British Waterways would accept no liability. When building over tunnels, for example, not only should the new structure span independently the old but the effect of a collapse of the tunnel should be considered.

4.11 Cofferdams

The usual options are, stop planks, piling, clay tanks and fabric dams. Stop planks are rarely located at convenient points, resulting in extensive dewatering leading to safety and environmental concern. Piling is generally deprecated unless it can be cut off at bed level because of the damage to the lining caused by withdrawal. Clay dams can displace fluid silts over considerable distances, leading to access difficulty for removal by conventional plant and can cause water quality problems with dispersed silt on removal. Fabric dams are readily portable, can be supplied with flumes for water transfer, but are subject to undercutting, vandalism and boat impact. Inflatable dams may not be used. If large quantities of water could escape from the canal, it is usual to use a secondary bund.

Fabric dams and stop planks must be protected from boat impact.

4.12 Canal Linings

Although not all existing canals have an artificial watertight lining, works must be designed so that the canal is watertight. Puddle clay is the most common lining material used in existing canals. It was rarely used with a thickness less than 750 mm.

Modern compaction plant needs clay of a somewhat lower moisture content, which is therefore less impermeable and a minimum thickness of 1000 mm is now normal. There is evidence that canals in sandy areas were lined in the 18th Century with manure to accelerate the rate at which the surface is sealed.

Modern lining materials include reinforced concrete, butyl and geotextile/bentonite membranes. Bentonite must not be used in areas with high sulphate levels, or with lime stabilised materials. Membranes must be protected from boat propellers, boat-shafts and dredgers.

The old and new linings must be tied in using a suitable detail.

Puddle clay must be supplied from an approved source and placed in accordance with the requirements of the *British Waterways Specification for Puddle Clay*. Compaction of puddle clay into pile pans must receive special attention. Lime stabilised clays must not be used.

Interlocking sheet steel piles cannot be regarded as a lining unless backed in puddle clay, used in soils of low mass permeability, and / or clutch sealant such as 'Wadit' or 'Britseal' is used.

4.13 Bank Protection

Many forms of existing bank protection are encountered and have to be tied into the new works. The interface will need to be detailed to prevent an erosion pocket forming.

It is often necessary to use a structural system of bank protection, such as interlocking sheet steel piling, for instance to act as a cofferdam to allow bridge footings to be built below water level or to allow British Waterways plant to pass along the towing path under a new bridge. Piling is also used in open cut service crossings to act as a water cut-off. Non structural systems require the canal bank to slope into the channel and navigation must be considered in the design.

Although galvanised trench sheets are often used on smaller canals without pile capping, it is usual to install a reinforced concrete capping beam to structural piles. This beam should generally be made to accord visually with vernacular building materials for instance by laying brick or stone masonry to the upper face and fendering the vertical face.

Concrete and masonry walls are sometimes used but are difficult to construct without dewatering.

Although the nature of the Works often dictates a 'hard' bank protection system, there are landscape and ecological issues raised. 'Soft' systems which allow a natural vegetation to develop at the water's edge should be employed wherever possible. A range of techniques are available, including reed planted coir fibre rolls, brush wood rolls and hazel wattles. Sometimes timber washboards, gabions and stone filled mattresses, pitching and dry stone walls are appropriate. Guidance is contained in the Environment Agency R&D Publication No. 11 *Waterway Bank Protection: A Guide to Erosion Assessment and Management*.

The interface between the water's edge and the canal bank is one of the most valuable of the waterway habitats. Where installation of bank protection will involve disturbance to this area, surveys for the presence of water voles or white clawed crayfish are required at the early stages of the project. If found, the method of bank protection must be agreed with the Works Engineer to ensure their habitat is conserved, as required by law. In addition, all soil and plants (including reeds and aquatic vegetation) which are removed should be reinstated adjacent to the works. Where original plants cannot be reinstated equivalent planting agreed with the Works Engineer must be carried out.

In addition to the effects on flora and fauna existing between the water's edge and the canal bank, disturbance of the bank can lead to increased sediment flow into the canal/reservoir itself. This should be managed in order to reduce the impact of sediment on the waterway habitat. Appropriate erosion protection measures and work practices should be employed to reduce this environmental risk.

Future maintenance of bank protection systems must be addressed at the design stage.

4.14 Fendering

The permanent and temporary works must be fendered to protect the works from craft *and vice versa*. Modern narrow canal craft have overhanging bows and the steering skill of some boatmen leaves something to be desired. Fendering materials include cast iron (used sometimes for heritage reasons), steel bullhead rail, recycled timber or timber obtained from legal and sustainable sources, polyethylene (which has low friction properties) and polyethylene faced rubber (which absorbs energy). The durability and maintenance of fendering must be considered and addressed at the design stage.

Bolt heads must not project. There should generally be no external angles; radii should be employed.

4.15 River Navigations

River navigations are affected by currents, floods and in some cases tides. There will be a deep navigation channel, not necessarily in the centre of the river. Elsewhere there may be insufficient depth to navigate. It is less easy to control vessels travelling in the same direction as the flow than those travelling against it. The former can move at considerable speed and need sufficient visibility and space to manoeuvre. Temporary and permanent works in the river can produce turbulence affecting navigation. The effects will vary in different river conditions. Environment Agency / SEPA consent as drainage authority will be needed as well as that of British Waterways as navigation authority. The effects of all works on river navigations will need careful and specific consideration. Sailing vessels use some river navigations.

British Waterways has powers and duties as Navigation Authority on those rivers listed in Statutory Instrument No 1195 "*The Inland Waterways of the British Waterways Board Order 1965*" as amended. British Waterways is usually the freeholder for artificial sections but in general not so for natural river channels. Where British Waterways is not the landowner, there will be no need for a contract with the Promoter however the principles of this Code will apply, particularly with regard to the contents of the Submission. British Waterways has Bye Law powers to control works affecting river navigations. The Bye Laws are published on the British Waterways website. The procedure outlined above must be followed except where it refers to the contract.

4.16 Services

The Promoter must enquire of the appropriate authority as to the location of, and the need to protect or divert any pipe or service, and take all reasonable steps to ensure that these are not damaged and is to arrange to repair or replace any damaged services. When required, British Waterways will endeavour to inform the Promoter of such service information British Waterways may have, but the Promoter is advised to make his or her own extensive searches and enquiries as British Waterways' records cannot be relied upon.

The Promoter should be aware that fibre-optic telecommunication cables are situated in many canal towing paths. The Promoter must ensure that this network is protected from the effects of the Works. Detailed consultations, prior to work commencing will be needed to ensure this is so. The procedure for working adjacent to the fibre optic cables owned by Sky Network Services is set out in Appendix 6 of *Section 4: Documents*.

The towing paths are also used as routes for services such as oxygen mains, oil pipelines and 'Government apparatus'. This equipment must not be overlooked.

Services such as electrical cables pose a threat to life. In addition repair and loss of revenue costs resulting from damaged services are substantial. Some electrical, gas and other services are privately owned and their location will not be identified using normal utility company searches.

4.17 New Roads & Street Works Act

Where services are being installed across British Waterways' structures under the above statute, the principles of this Code, will apply, particularly with regard to the contents of the Submission.

4.18 Discharges and Abstractions

No water abstractions or discharges (permanent or temporary) are permissible without British Waterways' permission. If British Waterways does accept a temporary installation, it will be subject to separate engineering approval and commercial contract. It should not be assumed that an existing discharge can be retained when a site is redeveloped for a new use, if permission is given to retain and re-use an existing discharge a new commercial contract will normally be required.

In some circumstances separate authorisation from the Environment Agency (Scottish Environment Protection Agency in Scotland) is needed.

Consultation with the Environment Agency (Scottish Environment Protection Agency in Scotland) is recommended. The Promoter should demonstrate to British Waterways that these consultations have taken place.

It is possible that there are abstractions from, or discharges to British Waterways or neighbouring waters which may be affected by the Works or which may affect the Works. The Promoter should make inquiries, to establish whether such abstractions or discharges exist. Where they do exist, the Promoter should discuss the works with the abstractor or discharger with a view to making suitable arrangements.

4.19 Disposal of Waste

The Promoter shall make all necessary arrangements for the disposal of waste materials leaving site in accordance with current legislation.

Promoters should be aware that silts and other materials recovered from canal beds or elsewhere might contain chemical contaminants, or biohazards such as used hypodermic needles. The necessary steps must be taken to identify the nature and degree of contamination and dispose of such wastes appropriately to a site identified to the Works Engineer. Compliance with the requirements of the relevant statutory bodies must be demonstrated to British Waterways.

Desk studies and site investigations are required to identify contaminated land issues in advance of the works. A waste management plan to deal with resulting issues must be drawn up and agreed with British Waterways.

Where contaminated material is exposed during works, steps must be taken to protect workers and the public from contact with the material or with gases or liquids arising from it.

The Promoter is encouraged to recycle construction waste, where appropriate. See Section 4.38.5.9 for further details.

4.20 Stability of Structures

Many existing structures were built before slope stability, foundation design etc were understood. Materials and methods now taken for granted were not available. Compaction of embankment fill was not possible. It was not practice to prepare engineering drawings until the 1820's. Calculations were not undertaken until later in the 19th Century.

Old structures often have factors of safety close to unity. Factors of safety for embankments and cuttings reduce with time. Old structures are therefore particularly vulnerable to nearby works. Ill-considered excavations at the toe of an embankment, for instance, can have disastrous consequences.

All work near old structures must be carried out with great care and forethought. It is the Promoter's responsibility to demonstrate that there will be no detrimental impact on existing structures.

4.21 New Aqueducts, Locks etc

If it is necessary to build a structure which is of major significance to British Waterways such as a new lock, a canal re-alignment, a mooring basin or the construction of a new aqueduct carrying the canal over a road, watercourse etc, British Waterways reserves the right to carry out the design and supervise the construction on behalf of the Promoter.

4.22 Heritage structures

Many elements of the waterway fabric are 200 years old. The following two paragraphs deal with statutory controls on Listed Buildings and Scheduled Ancient Monuments. Even where no statutory protection is in force British Waterways seeks to protect and enhance all structures, surfaces and features with heritage/historic value.

4.23 Listed Buildings

Many waterway buildings and structures are listed buildings and are subject to historic building legislation. Works to listed buildings often require listed building consent from the local planning authority and this should be negotiated and applied for well in advance of any works. Works to adjoining non listed structures may also be classed as 'development affecting the setting of a listed building'. Listed buildings also enjoy a measure of 'curtilage' protection.

4.24 Scheduled Ancient Monuments

A number of waterway sites and structures are scheduled monuments and are protected under special legislation. Many works affecting them require scheduled monument consent which must be obtained from the appropriate Secretary of State, via the statutory agencies (English Heritage, Historic Scotland, Cadw). Gaining scheduled monument consent can take time. Works to scheduled monuments almost always require archaeological recording conditions to be met.

4.25 Conservation Areas

Conservation Area controls affect many waterway sites and early consultation with the local planning authority is advised before works take place in a conservation area. Demolition of any building or structure (whether listed or not) may require conservation area consent. Felling, lopping or topping of trees calls for six week's notice to be given to the local planning authority.

4.26 Setting and character

While it is difficult to define "character" objectively; any repair, refurbishment or new build should be carried out so as to be in keeping with the general setting and landscape of the waterway corridor.

Selection of materials should seek to match existing or surrounding styles and reinstatement of the site should take account of the need to restore the overall setting of the waterway (for instance replacement or enhancement of vegetation, historic surfaces or features).

4.27 Archaeology

Archaeological remains associated with waterways represent an important and finite resource. They may comprise buried remains of past waterway structures such as old basins, now infilled; or they may be remains of activities that took place alongside the waterways such as housing, stables, water mills, pumping stations, warehouses and 'ridge and furrow' fields.

Sites of archaeological interest may be Scheduled Monuments or may appear on the County Sites and Monuments Record

It is British Waterways' policy to ensure that archaeological remains are not destroyed or unnecessarily removed. Offsite preservation and re-use of complete structures must be considered, where applicable. The archaeological recording of structures to be demolished must be undertaken, where applicable. Artefacts should be preserved. British Waterways retains ownership of such materials.

4.28 Demolition Materials

British Waterways requires that materials, re-usable for waterway works, particularly those, which are no longer readily available, such as copings and castings, be carefully removed and transported to a storage area for use in canal maintenance. British Waterways retains ownership of such materials.

See Sustainable Deconstruction (para. 4.38.5.8) for further information.

4.29 Biodiversity

There is a great variety of wildlife along the inland waterway network. British Waterways has committed itself to developing a Biodiversity Action Plan (BAP) for each of its Waterways, which will identify objectives for species and habitats in need of protection and enhancement. These plans should be consulted when carrying out any environmental appraisals.

The following sections deal with statutory controls on protected sites, protected species, trees and hedgerows and invasive species.

4.30 Protected Sites

Some of the waterways and adjacent land are designated under UK legislation as Sites of Special Scientific Interest (SSSI). Some SSSIs are further protected by European law. Consultation with Natural England (or Scottish Natural Heritage or Countryside Council for

Wales) is required before any Potentially Damaging Operations identified in each SSSI Notification is carried out.

The Natural Environment and Rural Communities Act 2006 (Section 55), amended several sections of the Wildlife and Countryside Act 1981 (WCA), and created an offence, incurring a fine of up to £20,000, for permitting any operation that damages a Site of Special Scientific Interest (SSSI), without having first followed the process set out within the WCA (Section 28I) . All SSSI have a list of Operations Likely to Damage them (referred to as the OLD list) produced by Natural England (NE) or the Countryside Council for Wales (CCW). The list will include a wide range of activities from grass cutting, to modifications to the structure of the watercourse, to various recreational activities. If BW are required to permit a third party to undertake any activity on the OLD list, either within or adjacent to a SSSI, the process set out below must be followed to ensure that BW complies with S28i of the WCA.

The process below does not apply where a contractor is acting on behalf of BW; in these cases section 28H applies rather than section 28I.

General Process for Third Party Permissions

If the third party is acting independently, **the following procedure must be applied.**

When advising a third party, the Works Engineer should highlight any concerns specific to British Waterways, which must be addressed in its risk assessment and method statements. The contractor should be advised of the SSSI location, of whether its activity is included on the OLD list and of British Waterways' obligation to consult NE/CCW.

Notification Procedure The following process must be followed, by British Waterways.

1. British Waterways must notify NE/CCW of the proposed operation (even if the activity is outside the SSSI).
2. British Waterways must wait 28 days from the date of notification before deciding whether to give its permission, unless NE/CCW have notified BW that it may proceed before this.
3. British Waterways must take into account any advice received from NE/CCW:
 - 3.1. in deciding whether or not to permit the proposed operation
 - 3.2. and deciding what (if any) conditions may be required.
4. If NE/CCW advise against permitting the operation, or advise that certain conditions should be attached, but BW does not follow that advice, BW must:
 - 4.1. notify NE/CCW of its intention to give permission, and of any conditions, including a statement of how we have taken account of NE/CCW advice, and
 - 4.2. not permit the operation to start within 21 days from the date of the second notice.

Application

The process applies for all operations included on the OLD list for sites in England and Wales. BW must fulfil this procedure, even where the operation has been permitted by another authority

(e.g. Environment Agency or Local Planning Authority), as it is not possible for BW to rely on the notification or decision of another body.

Records

Copies of all correspondence with the NE/CCW and third party should be kept by the Water and Environment team for Environmental Compliance audit purposes, including notification letters, any conditions imposed by NE/CCW, and contractors' risk assessment and method statements.

4.31 Protected Species

Several plants and animals (including birds) which occur on the waterway network are legally protected. These include Floating Water-Plantain, Bats, Badgers, Otters, Water Voles, native Crayfish, nesting water birds and Great Crested Newts. There are statutory requirements relating to the conduct of works, which may affect protected species or their habitats. Formal consent is often required from Natural England (or Scottish Natural Heritage or Countryside Council for Wales) before any work, which may affect a protected species, or its habitat can be carried out.

Bridges, walls, large culverts and other structures have been found to be ideal bat roosts, especially where there are small crevices leading to voids within the structure. It is an offence, intentionally or recklessly, to damage or destroy any structure used by bats, or to disturb them whilst occupying the structure. Professional surveys of existing structures are recommended at an early stage of any widening or refurbishment scheme to avoid delays.

Where a species protected by European legislation may be affected, consent is required from the Department of Environment, Food and Rural Affairs (in England), the Scottish Executive, or the National Assembly for Wales.

4.32 Trees and Hedgerows

Under Town and Country Planning legislation, trees may be protected by Tree Preservation Orders or by virtue of being in Conservation Areas designated by the Local Authority. Written consent must be obtained from the relevant Local Authority prior to any work on protected trees, and care must be taken with the methods of working to avoid unnecessary damage to the tree.

Under the Hedgerow Regulations 1997, most countryside hedgerows are legally protected from removal without the written consent of the local authority.

Trees and hedgerows can also be damaged by the tracking of heavy plant or excavation around the roots. Works in proximity to trees should be carried out in accordance with BS 5837: 1991 Trees in relation to construction and the National Joint Utilities Group Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees. (Publication No. 10, 1995).

4.33 Invasive Species

Three invasive weeds are a cause for concern along waterways - Giant Hogweed, Japanese Knotweed and Himalayan Balsam. These plants spread rapidly by colonising disturbed ground and can be distributed by water, and in soil or waterway sediments. Under the Wildlife and Countryside Act 1981, it is an offence to plant or cause Japanese Knotweed or Giant Hogweed to grow in the wild. See Environment Agency leaflet *Guidance for control of invasive plants near watercourses*.

If invasive species need to be removed, they must be disposed of responsibly.

Some non-native animals are also of concern, principally the zander (a fish), and three species of crayfish – noble, signal and turkish. It is an offence to introduce these species into the wild, so if they are caught, e.g. as part of a fish rescue or survey, they should be humanely killed.

4.34 Publicity

Press and publicity contacts, regarding the intended Works must have the approval and prior knowledge of British Waterways if in any way they affect the canal or river.

4.35 Signs

Site signs of agreed format should be erected indicating the organisation responsible for the Works including a description of the Works and telephone numbers for twenty four hour emergency contact and provide an apology for disruption caused to British Waterways' customers. Appropriate wording may be required regarding British Waterways' involvement with the project.

4.36 Works to the Works Engineer's Satisfaction

All work shall be properly completed and full reinstatement carried out to the satisfaction of the Works Engineer before the Promoter's contractor leaves the site. All contract work and reinstatements shall have a maintenance and defects correction period. (Normally one year for hard landscaping, building and engineering works and three years for soft landscaping (including replacement of dead or damaged flora)).

When re-seeding or planting trees or shrubs, native seed or plants of local provenance should be used. Species which reflect the local flora should be selected.

4.37 Sustainable Development Considerations

Sustainable development, or sustainability, is all about ensuring a better quality of life for everyone, now and for future generations to come.

British Waterways has a corporate commitment to maintain and develop Britain's inland waterways in a sustainable manner so that they fulfil their full economic, social and environmental potential.

British Waterways has identified four objectives in relation to sustainable development:

1. Effective protection of the environment.
2. Minimising waste and using energy and resources effectively.
3. Recognising the needs of everyone.
4. Maintaining economic growth and employment.

As part of this commitment BW now uses Forest Stewardship Council (FSC) certified timber where possible, it has targets for the use of recycled aggregates and every major engineering project undergoes a sustainability review.

Where proposed third party works affect waterways, the Promoter is required to consider the following sustainability issues and demonstrate aspects where appropriate, via the Notification Form submitted to British Waterways.

4.38 Social

The Promoter is required to consider the following social issues as part of any proposed works affecting British Waterways.

4.38.1 Access for All

British Waterways has a corporate priority to encourage the use of its network of canals and rivers by people with disabilities. British Waterways also recognises its responsibilities under the Disability Discrimination Act to take reasonable steps to improve access to its waterways and associated services (including works undertaken by third parties).

Where works affect British Waterways, the Promoter is required where possible to provide suitable access for all people. The Promoter is required to demonstrate to British Waterways that the access needs of all people will be met during and after construction, where the project allows.

4.38.2 Community Consultation

Consultation with various community groups is an important planning issue for any new development. With works affecting the British Waterways network and infrastructure the Promoter is required to consult with various groups to gain approval for the proposed development and to assure user groups that the development will not adversely affect the waterway environment and associated uses. Community consultation will also be integral to delivering a project that considers the needs of all people, e.g. consult with people with disabilities to ensure that local needs are taken into account.

4.38.3 Vandalism

A significant social issue is potential damage to works, equipment and the environment due to vandalism. In particular damage to plant and equipment or fuel storage tanks can be costly in both financial and environmental terms. The Promoter is responsible for all fuel, oil and chemicals that are present on the site and for their appropriate containment. The Promoter should be aware of its legal obligations in regards to a pollution incident. Measures should be implemented to reduce the risk of vandalism on-site including risks to British Waterways infrastructure and the waterway environment.

4.38.4 Economic

British Waterways encourages projects which promote local economic growth and employment. As a result the Promoter is encouraged to utilise local labour and materials within the project that affects British Waterways, where appropriate.

4.38.5 Environment

The Promoter is required to consider all potential environmental impacts throughout the life of the project, and to demonstrate to British Waterways that all potential environmental risks that affect British Waterways will be mitigated. Environmental risks and control measures will be identified via the completion of a preliminary appraisal.

Where works affect British Waterways, the Promoter is encouraged to work in a sustainable manner and is required to consider (and demonstrate where appropriate) the following issues.

4.38.5.1 Flora and Fauna

- Fishery
- Protected Sites
- Protected Species
- Trees and Hedgerows
- Invasive Species

4.38.5.2 Heritage Structures

- Listed Building
- Scheduled Ancient Monuments
- Conservation Areas
- Setting and character
- Archaeology

4.38.5.3 Prevention of Pollution

The following are considerations for the prevention of pollution from major construction sites:

- Air Quality – To ensure there is no health risk or loss of amenity due to emission of exhaust gases to the environment, ensure that all vehicles and machinery are fitted with emission control equipment and are maintained and serviced on a regular basis. In addition, consideration should also be given to the potential for odorous gases being released from the site (e.g. the opening up of old tips or odorous wastes).
- Stormwater Management – Employ appropriate measures to manage contaminated runoff and train staff to be responsible when disposing of paints and other chemicals.
- Sediment Control – Water containing silt should never be pumped directly into a river, stream or surface water drain. All discharges off the site will require Environment Agency approval. Minimise the impact of contaminated runoff on receiving waters by employing erosion and sediment control measures, if possible before construction. The Environment Agency recommends the following measures for controlling sediment pollution at construction sites:
 1. For excavations use cut-off ditches to prevent entry of surface water and well point dewatering or cut-off walls for ground water.
 2. Stockpiles can be seeded or covered, and silt fences constructed from a suitable geotextile may be useful.
 3. Suitable treatment of silt laden water will be required on construction sites, which could involve the use of a settlement lagoon or tank or grassed area (of sufficient capacity).

Any measures installed require adequate inspection and maintenance, particularly after a storm event. Where these measures are put into place, the Promoter / Contractor must assess the effectiveness of sediment control measures and make improvements to ensure their efficiency.

For Environment Agency references see *Section 4: Documents Appendix 11 – References for Sustainable Projects*.

- Contaminated Soil – Ensure that all contaminated material uncovered (e.g. dredgings) on a construction site are excavated and disposed of in an environmental and sustainable manner and in compliance with current legislation.
- Dust Control – Ensure there is no health risk or loss of amenity due to emission of dust to the environment. The main dust suppression method is to apply water to exposed areas when visible dust is observed.
- Noise – In order to ensure nuisance from noise does not occur fit and maintain appropriate mufflers on earth-moving and other vehicles on the site, and enclose noisy equipment (where appropriate). The Promoter should be aware of the operating hours and of the location of the works to minimise the effect on nearby residents. Where appropriate, the installation of noise attenuation barriers may be required, particularly when working in close proximity to residential areas (including schools and office buildings).

- Storing Fuels and Chemicals – Ensure that fuel and chemical storages are safe, and that any materials that escape do not cause environmental damage. Suggested control measures include; minimising fuels and chemicals on-site; installing bunds to reduce the risk of spills; having designated re-fuelling and equipment maintenance areas and implement a contingency plan to handle spills, e.g. train staff in the use of on-site spill kits. In the case of hazardous chemicals being allowed on site, the relevant COSHH information should be kept on site and a properly maintained chemicals inventory.
- Road Cleaning – Ensure roads are kept clean of soil, which could otherwise contaminate nearby water bodies. All points on the site where vehicles regularly leave should have rumble grids installed. The Environment Agency advises that the inclusion of small dams in roadside ditches may assist silt retention, especially on steep slopes.

4.38.5.4 Erosion

The following should be considered to minimise the quantity of soil lost during construction:

- Schedule measures to avoid and reduce erosion by phasing the work programme to minimise land disturbance
- Where possible, keep the areas of land cleared to a minimum
- Protect slopes and cleared areas with appropriate geotextile products and vegetation
- Rehabilitate cleared areas promptly and
- Restrict vehicles to designated haul roads to avoid erosion of the site.

See above for further information on bank protection.

4.38.5.5 Water Use

As part of the principles of sustainable development, the Promoter is encouraged to consider the efficient use of water during construction and throughout the life of the project.

- Design Measures – Good building design can greatly reduce the amount of water used. Water efficient design measures include installing water efficient fittings and appliances to reduce demand. The use of alternative water sources such as rainwater and grey water (typically wastewater from the laundry & bathroom) will also reduce the demand on potable water supplies. British Waterways also has specialists in the area of water management issues.
- Sustainable Drainage (SUDS) – SUDS techniques allow natural drainage processes to function in the landscape surrounding development and include: filter strips and swales; filter drains and permeable surfaces; infiltration devices; ponds and basins.

For references refer to *Section 4: Documents Appendix11 – References for Sustainable Projects.*

4.38.5.6 Energy Use

As part of the principles of sustainable development, the Promoter is encouraged to consider the efficient use of energy throughout the life of the project. This will decrease the use of fossil fuels and contribute to the reduction of greenhouse gases to the environment.

- Energy Efficiency in Design – e.g. maximise natural sunlight and ventilation, installation of energy efficient lighting, heating systems and other equipment.
- Consideration of alternative energy sources within the project, e.g. solar panels, to reduce consumption of valuable fossil fuels and decrease emissions of greenhouse gases to the environment.

4.38.5.7 Green Procurement

As part of its commitment to the environment British Waterways has developed policies and operating procedures in relation to the procurement of sustainable materials. Where third party works affect British Waterways, the Promoter is required to consider the purchasing of recycled materials for use within the proposed development. Where works are adjacent to the waterway environment, environmentally sensitive materials will be implemented at all times. The following are examples of such materials:

- Timber – Recent regulations have restricted the sale and use of timber treated with creosote or chromated copper arsenate (CCA). As of June 2004, it is an offence to place CCA treated timber on the market for any application where there is a risk of repeated skin contact, for use in marine waters, inside of building and for agricultural purposes other than for livestock fence posts and structural uses. The Promoter should be aware of this new legislation when purchasing timber. Refer to British Waterways 'Restrictions on the Use of Treated Timber' for further detail, where available.

In addition sustainable procurement of timber is a high priority objective for British Waterways. Where third parties are working on British Waterways premises, it requests the specification of "properly certified and approved timber, from well managed forests, which can demonstrate sustainability", wherever possible, e.g. the Forest Stewardship Council (FSC) has the objective of promoting environmentally responsible, socially beneficial and economically viable forest management.

- Aggregates – British Waterways has a corporate commitment to increase the use of recycled and secondary aggregates within British Waterways major works. The Promoter is to use recycled aggregates within developments where appropriate. This increased use of recycled aggregates reduces the amount of waste materials being sent to landfill.

For references refer to *Section 4: Documents Appendix 11 – References for Sustainable Projects.*

4.38.5.8 Sustainable Deconstruction

See also [Specific Requirements for Demolition](#).

Sustainable deconstruction is the process of carefully dismantling a building in order to salvage components for reuse and recycling. While traditional demolition is highly mechanised, capital-intensive, and waste generating, deconstruction (combined with demolition or used as an alternative) supports community development with environmental, economic and social benefits, including:

- Reducing pollution, greenhouse gas emissions, and the need for landfill and incineration
- Conserving energy and natural resources
- Creating job training and employment opportunities
- Improving the bottom line through avoided waste disposal and/or demolition costs
- Generating revenue from salvaged building materials and
- Salvaging high-quality used building materials for reuse in new construction or renovation projects.

In a deconstruction, hazardous materials are removed, reusable structural and/or non-structural building materials are salvaged, demolition materials are recycled and only a small percentage of demolition waste typically ends up in landfill.

The following steps should be taken to successfully deconstruct buildings for salvage and recycling:

1. Identify Salvage and Recycling Opportunities: The amount and type of materials that can be salvaged/recycled depends on time available, type, size and condition of the building and the existing markets for the materials.
2. Plan for Deconstruction: The Contractor should prepare a plan for deconstruction including; assessment and abatement of hazardous materials, type & number of materials for reuse, quantities of materials for recycling, on-site procedures for separating recyclables, quantities of waste to be disposed, and details of recycling and disposal facilities.
3. Schedule Time for Deconstruction: Deconstruction is more labour-intensive than conventional demolition. Allowing a suitable time frame for deconstruction results in reduced waste disposal costs and potentially more revenue from salvaged materials (or a reduced cost if reuse of materials).
4. Monitor Salvaging and Recycling Activities: This will ensure materials are salvaged, recycled and disposed of as specified.
5. Evaluate Project Performance: This will assist in measuring performance against any set targets. Where this method is employed, the Contractor should keep records of the volume/quantity of materials recycled and disposed of & the name and location of recycling or disposal facilities.

For large value projects contractors should follow the former DTi voluntary Code of Practice, *Site Waste Management Plans, Guidance for Construction Contractors and Clients, 2004* (This document covers the topics of waste minimisation on construction sites, and the need to reduce waste material going to landfill sites, following the implementation of the EU Landfill Directive.). For low value projects the same principles can also be followed.

The waste management hierarchy given below should be followed:

Reduce waste	Most sustainable
Re-use materials	
Recover / Recycle	
Disposal	Least sustainable

4.38.5.9 Waste Management

To minimise waste generation throughout the construction phase, reuse/reduce/recycle construction and demolition waste where practicable, and incorporate waste minimisation targets and measures into the planning phase. Opportunities for waste minimisation include the following:

- Obtain construction materials, paints, lubricants and other liquids in reusable packaging or containers
- Where possible, purchase pre-fabricated materials
- Send waste concrete from demolition activities to a concrete recycler instead of landfill
- Where possible, provide receptacles for the segregation of solid waste generated by construction activities and offices to be collected for recycling
- Use overburden to construct temporary noise barriers and
- Collect lubricating oil from the construction vehicle fleet to send to a recycler.

4.39 Suspension of Work

If the Works Engineer considers the Waterway, Waterway users, or environmental or heritage features are at risk until his or her reasonable requirements or conditions have been met, the Works Engineer reserves the right to order operations to be suspended and cannot accept any liability for any costs or claims which may be incurred by the Promoter as a result.

4.40 Notice of Works Contract Maintenance and Defects Correction Period

The Works Engineer shall be given twenty eight days notice of the end of the maintenance Defects Correction Period of the Works Contract and/or seven days notice of any meeting in connection therewith, to enable an inspection to be made to ensure all outstanding works have been completed.

4.41 Further Works

No works of maintenance, alteration or demolition may be carried out unless further submissions have been agreed and a new Contract formed, where required.

4.42 Promoter's Safety File

The Promoter's Safety File should include reference to this Code or a statement that British Waterways' agreement must be obtained before any works of maintenance, alteration or demolition are undertaken, and that new submissions, along with a Safety Plan needs to be agreed by the Promoter or his or her legal successor. 'Special Requirements in relation to the British Waterways Board'

The Promoter's attention is drawn to this section. The requirements of British Waterways with regard to working near to the waterway are defined in this *Section 4: Documents*, Appendix 15. The Promoter should include these clauses in the Works Contract and ensure that the Contractor complies.

4.43 Display of Public Notices

1st notice: 'towpath closure notice'

The notice is displayed at either of the nearest points of access two weeks ahead of the date of closure. It is located flush against the fence in clear view at eye level.

The notice title is: ADVANCE NOTICE TEMPORARY TOWPATH CLOSURE

2nd notice: 'towpath closure and diversion route notice'

The 'towpath closure notice' is removed and replaced with this notice on the date of closure of the towpath. The notice is displayed alongside the towpath diversion route map, flush against the fence in clear view at eye level. If the point of closure of the towpath is not at the points of access but set back to maintain emergency exits open, the 'towpath closure and diversion route notice' is displayed at both the nearest point of access as well as at the point of closure.

The notice title is: NOTICE TEMPORARY TOWPATH CLOSURE

3rd notice: 'works notice'

The 'towpath closure and diversion route notice' is removed on reopening of the towpath. This notice is displayed at the worksite. It is located flush against the fence in clear view at eye level.

The title of the notice is: NOTICE OF WORKS ON TOWPATH

The notice title is: ADVANCE NOTICE TEMPORARY TOWPATH CLOSURE

On completion of the works all notices and diversion route maps are removed.

4.44 Diversion Route

The diversion route along the public highway is indicated on a suitable plan and should be displayed alongside the 'public notice' of the works. The road names of the roads to follow should also be provided in a corner of the map.

4.45 Method of Closing the Towpath

The towpath is closed over the entire width in a manner that prevents people moving past or climbing over the barrier and moving up to the works. A suitable barrier is a fence, or similar fence/wall panels, used to make a solid barrier over the entire width of the towpath installed perpendicularly to the navigation. The barrier is self supporting. To provide additional stability a fence panel is installed perpendicularly behind the face panel to either end. Barrier footings point inwards towards the worksite. No part of the barrier extends past the face pointing away from the worksite.

The fences/barriers left in place overnight across the towpath is a blind obstacle and is lit. The lamps/lights trace the outline/shape of the fence line to make it discernable to towpath users that there is a barrier across the towpath.

The temporary lighting is made as red coloured lamps, 'bulk head lights' or similar lighting in the form of flashing, battery powered lamps. It is not required to illuminate the structure. Lights are switched on during hours of low ambient light, at night, and in the evening, early morning and during inclement weather.

4.46 Access to Closed-off Areas of the Towpath by Utilities Companies

Access in the event of an emergency by utility companies is made by removing the fence/barrier/hoarding. The fence is such that it can be lifted off the ground and moved aside. Utility Companies will without notification require access to the towpath for undertaking emergency repairs to their infrastructure at any time. The Promoter's responsible person, as indicated on the public notice may be contacted and will be requested to immediately make arrangements for assisting the work crew in gaining access to the towpath

4.47 Hazards and Risks

4.47.1 General

This section highlights some types of hazard that might be encountered in the canal and waterway environment.

Whilst the examples outlined are believed to be comprehensive, they cannot be seen as exhaustive as with 3000km of canals and waterways there can be specific hazards and conditions which maybe unique at a location. You are advised to seek more detailed information.

British Waterways canals in general are not hazardous environments but there are some elements that need to be considered when working, or seeking access along, our property.

The canal system does not have an easy reference system for locating yourself when compared to most works where an address is often enough for suppliers and emergency services to locate your works. Site staff and suppliers need to be given accurate information to allow them to locate you from the adjacent road system. This may be a problem in both rural and urban areas.

Large areas of the canal network have poor reception for mobile phones and you should test coverage at the start of the works. Be aware that different networks have different coverage so there may not be universal coverage. Towpath conditions can vary throughout the year with some surfaces becoming wet and slippery particularly during the winter months. Some lengths of canal can be very exposed and changing weather conditions can present new hazards.

4.47.2 Public Access

British Waterways invites the general public onto its property to enjoy both boating as well as towpath access for walking, cycling and fishing etc. It must be assumed that these people are unfamiliar with the risks associated with your activity and you may need to take additional precautions to protect them.

4.47.3 Plant and Vehicle Access

The towpath, the path adjacent to the waterway, is not usually suitable for vehicular traffic. You may have been given specific permission to use the towpath if it is suitable, otherwise you must gain access by alternative routes.

Where permission has been given then the requirements of the approved method of access must be strictly adhered to. Driving too close to water's edge or with larger plant than specified, can lead to the failure of the towpath edge and vehicles capsizing into the canal. There is the risk of occupants being trapped in their vehicle.

Particular attention needs to be paid to ensuring that vehicles and plant can be safely turned around. Reversing vehicles down the towpath is not acceptable and safe turning areas need to be identified as part of any method statement.

In public access areas such as car parks etc all reversing manoeuvres must be supervised and banksmen used where necessary.

4.47.4 Water and its hazards

Canal water represents a number of hazards. The obvious risk of drowning is in fact less than that of the shock of falling into the water, particularly in cold conditions which can cause heart spasm. Despite the majority of canals being relatively shallow dragging oneself out of the water when cold and wet can be energy sapping particularly if you are some distance away from welfare facilities. BW advises that suitable life jackets are used when working near water.

Water levels on rivers in particular can change rapidly as a result of river flows upstream or the operational need to transfer water. Particular areas to avoid are weirs and sluices where water speeds can be higher than expected.

The water and canal sediments can be potential sources of infection, in particular leptospirosis, which is a life threatening disease which most doctors are unfamiliar with. This can lead to delays in treating the disease and long periods of rehabilitation. (See HSE's Document [INDG84](#)) Other more obvious health problems are stomach bugs and the possibility of infections entering your body through cuts and abrasions.

In certain areas there is a hazard from discarded syringes and other antisocial activities. Accessing these areas unaccompanied, particularly at night, may not be advisable.

4.47.5 Services and other hidden hazards

Buried within the towpath and also present overhead are large number of services all of which have the potential to cause injury or disruption to the local community if damaged. Risks from striking underground high voltage electricity cables and gas services are significant. Some of these services maybe unfamiliar to vendors as they include strategic oil pipelines, fibre optic cable networks and occasionally private services such as oxygen mains linking parts of adjacent factories together.

Increasingly BW has its own apparatus within the towpath providing power to locks and other structures.

Many of our structures are old and were never designed to accommodate the activities of the 21st century. Some modern plant and equipment can gain access to the canal in a way that was never envisaged when the system was constructed. It is worth remembering that the original canal system was operated by men with horses!

Some of the canalside buildings have fallen into disuse and entering them can present particular hazards ranging from weak floors through to abandoned materials which maybe unstable or harmful.

Preserving the heritage of the canal system sometimes means that trip hazards and some unguarded falls may not be safeguarded in the way you may expect.

Some of our structures particularly those below ground, such as culverts, can harbour poor air conditions sometimes with fatally low oxygen levels.

4.47.6 Mechanised Structures

Increasingly some of our structures are mechanised and this can lead to entrapment hazards with structures such as lock and bridges Moving unexpectedly, giving the potential for people to be crushed between the Moving and static elements of the structure. It is essential that agreed lock-off procedures are implemented when it is necessary to work within the confines of such structures.

Sometimes the hazard can change as a result of the day-to-day operation, for instance a full lock does not represent such a hazard to falling from a height as does an empty lock.