

Broadland Flood Alleviation Project
Strategic Environmental Statement

Environmental specifications

May 2003

Halcrow Group Ltd

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1 Introduction

1.1 *Introduction*

1.1.1 This document is part of a series of reports that makes up the Strategic Environmental Assessment (SEA) on the Broadland Flood Alleviation Project. The SEA for the Broadland Flood Alleviation Project sets out environmental standards for flood defence maintenance, improvements and first-time flood defences at undefended communities. These standards are the long-term context for BESL's work in Broadland during the Project.

1.1.2 The new SEA document is comprised of six parts:

1. Environmental Standards;
2. Environmental Baseline;
3. Environmental Specifications (**this document**);
4. Environmental Monitoring;
5. Consultation Framework; and
6. Strategic Appropriate Assessment (European sites).

It serves as a Code of Practice by providing a consistent approach to a broad range of environmental issues at an early, strategic stage. It is a statement of commitment to integrate environmental issues into strategic decision-making. Although the SEA cannot give binding commitments, it does seek to reflect stakeholder consensus. The SEA process will therefore ensure that scheme details are consistent with the agreed environmental objectives, policies and specifications.

1.1.3 The new SEA will update and replace the work previously carried out by the Environment Agency on SEA to provide a broader, topic-based approach to environmental objectives. This update has been developed through extensive dialogue with stakeholders as well as specific consultations.

1.1.4

The environmental specifications have been drawn from existing practice-based guidance and many are driven by legislation. The generic specifications contained in this document are included in contract specifications for the implementation of all BESL's construction work. They are not intended to duplicate the relevant sections of the 'Civil Engineering Specification for the Water Industry' (CESWI, 5th Edition, Water Industry Research Limited, 1998) or site specific specifications that are prepared and detailed on a site-by-site basis.

2 Specifications

2.1 *Introduction*

The environmental specifications contained within this chapter have been grouped into topic areas and will apply to all work BESL undertakes.

2.2 *Environmental best practice*

BESL is committed to the environmental principles of stewardship and sustainability and has corporate goals to maintain and enhance the water environment.

In addition to this general requirement, particular areas for action are:-

- Avoidance of pollution of any waters (surface or underground)
- Avoidance of pollution of any land
- Preservation of flora and fauna
- Avoidance of noise nuisance, vibration and dust

Proposals to minimise environmental impact and satisfy the above requirements will be demonstrate in the contractors written Method Statement.

2.3 *Landowners*

Formal agreements will be finalised with the landowners regarding the use of their access tracks, the site of the Contractor's compound, the fields proposed for use as storage areas and the areas located for clay extraction prior to commencement of the works.

2.4 *Public access and signage*

The working area shall be defined by a temporary fence.

Temporary fences shall be maintained until reinstatement is completed.

The site will be adequately signed so that the public are informed of the nature and duration of the works as well as names and contact details for complaints and comments.

Advance warning of the works will be provided to river craft using high visibility warning signs to be located upstream and downstream of the working area. In addition, high visibility warning signs shall be displayed on the working platforms/barges/pontoons used in the works.

Temporary signs detailing the official footpath diversion route will be erected and maintained for the duration of the works.

2.5

Work affecting watercourses

At all times the contractor should comply with the navigation authority byelaws and instructions relating to safety of navigation.

Where possible, a clear navigable channel will be maintained at all times.

Water from the soke dykes and internal dykes shall not be mixed together under any circumstance.

2.6

Storage, handling and use of materials

The handling and storage of topsoil and excavated material will be carried out in such a manner as to minimise compaction at all times.

Topsoil shall only be stripped when soil moisture conditions will not result in damage to the soil structure.

All topsoil over the working area and any additional working area(s) required for the passage of vehicles, construction equipment, etc., (not necessarily the whole of the available working area) shall be stripped after completion of temporary fencing and prior to any excavation or filling.

Topsoil will be stored separately from all other materials within designated storage areas.

All stored materials within the designated storage areas will be placed on a geotextile.

Topsoil will be stored in heaps no greater than 1.5m high to minimise excessive compaction and loss of soil structure.

On completion of the work, the topsoil shall be replaced and the land restored as closely as possible to its original condition.

2.7

Fertiliser

Fertiliser shall not be used.

2.8

Field gates and stiles

Wherever possible, the re-use of materials will be maximised for the replacement of field access crossing, gates and stiles.

Gates shall provide a clear opening of 3.50m. Gate posts shall be concrete and will be securely fastened to the adjacent fence or other permanent boundary.

Stiles shall be timber complying with BS 5709 : 1979.

Timber shall be one of the following species: Oak (English and European); European Larch; Redwood (Red Deal and Scots Pine); Douglas Fir; Sweet Chestnut; Donta; Markore; Mansonia; Utile.

Gates shall be made secure from removal by outside parties. Suitable measures should be taken to ensure gates cannot be lifted off supports or holding bolts removed.

2.9

Topsoil

The existing topsoil and grass on the floodbank crest will be removed, the topsoil stored, and reinstated once the works have been completed. The grass shall be disposed of off site.

The topsoil shall be reduced to a fine tilth and wherever practicable used immediately after its stripping. If not, it shall be stored separated from other spoil.

The topsoil should be adequately damped down when necessary to control dust.

Slopes to be topsoiled shall be harrowed diagonally to a depth of 50mm. Such harrowing shall be carried out immediately prior to topsoiling.

2.10

Material

Wherever possible, locally sourced clay material from soke dykes and internal drains will be used for all flood defence works.

All material should be free from any inorganic debris such as glass, pottery, plastic, concrete etc.

Any imported materials used in the works shall be free from leachates that are harmful to the natural environment of the site. Fill materials shall be free from Rhizomania and other diseases and also from invasive plant species. Leachate analysis shall be undertaken for all material required for the works from an approved independent testing laboratory.

No topsoil or fill materials shall be removed from the site without prior permission.

2.11

Reinstatement

On completion of works, all land, tracks, footpaths, road surfaces, private paved areas, tracks and grass roads affected by the Contractor's operations will be reinstated as closely as possible to the original condition.

Whenever the Contractor has no further use of a temporary storage area, working area or a temporary access, they will be removed. All hardcore etc will be broken up and the surface of the affected land will be cultivated to a depth of 300mm. Topsoil shall be replaced and the area reinstated, including grass seeding, so the land is restored as closely as possible to its original condition.

Topsoil will be replaced and grass seed sown on floodbanks as soon as the bank works have been carried out.

Reinstatement shall, wherever practicable, be undertaken immediately the earthworks preceding it have been completed.

2.12

Trees

The existing trees located on the floodbanks, rond or folding within the vicinity of the works will be felled. Either the trunks and roots will be removed as part of the

works or the trunks will be drilled by a qualified tree surgeon and “Amcide” or similar product will be applied to prevent further growth of the trees. Trees shall not be removed if there is evidence of bird nests.

A qualified tree surgeon should be used to carry out any tree felling and lopping if deemed necessary.

The tree trunks from the felled tree shall be stacked tidily on the folding to provide a habitat for wildlife. The branches shall be burnt on the folding. English Nature will need to approve any burning if within or close to a designated site.

2.13

Grass seed

Grass seed shall be blended to the following mixture.

Species	% by Weight
	Type 1
<i>Festuca rubra</i>	50
<i>Agrostis stolonifera</i>	10
<i>Arthenatherum elatius</i>	10
<i>Dactylis glomerata</i>	10
<i>Trisetum flavescens</i>	-
<i>Hordeum secalinum</i>	-
<i>Holcus lanatus</i>	10
<i>Poa pratensis</i>	-
<i>Cynosurus cristatus</i>	-
<i>Lolium perenne</i>	-
<i>Poa trivialis</i>	10

Only seed of native species to be used. Certificate of purity and germination should be provided.

Grass seed shall be to an application rate of 25g/m².

2.14

Public rights of way

If a public right of way exists along the crest of a floodbank, that is to undergo improvement, the footpath will temporarily diverted.

The footpath diversion will be installed prior to any construction works being undertaken.

The diverted footpath shall be maintained until reinstatement is complete and the footpath can be returned back onto the floodbank. Where the footpath is reverted to the original location, the diverted footpath will be restored to at least its original condition.

The public footpath should remain open and safe for the public to use. There should be no swinging of machinery over the footpath and public access should not be prevented.

The diverted footpath will be signed to inform the general public of the route to be taken.

The footpath alignment will comply with the County Councils conditions.

2.15

Nature conservation

All planting, translocating and seeding works shall be carried out by appropriately trained staff or sub-contractors in the appropriate season with correct ground and weather conditions.

Appropriate prevention measures will be taken to prevent the spread of notifiable pest plant species such as Japanese Knotweed and Giant Hogweed and thistles.

The rare plants will either be fenced off and remain in situ if possible, or translocated under direct supervision of an environmental specialist or an appropriately trained sub-contractor.

2.16

Archaeology

The Broads is in an area of archaeological interest, an archaeologist may be appointed to ensure that:-

- Any excavations are undertaken with archaeological supervision to allow for the identification and recording of any archaeological material that might be uncovered.
- Access to the site should be afforded to the appointed archaeologist at all reasonable times.
- All finds would remain the property of the landowner.

2.17

Reed rhizomes

The reed ronds and edges of the enlarged soke dykes shall be planted with existing reeds sourced locally and translocated from within the area of works. The precise area, extent and location of the donor reedbeds shall be agreed on site. The Contractor shall excavate between 300 – 500 mm of the reedbed topsoil containing the rhizomes using a suitable machine with excavator bucket (approximate dimensions 1.8m by 0.5m by 0.5m deep) and transporting them immediately to the site. The topsoil containing the rhizomes shall be spread at least 250mm deep at a location agreed on site.