

**Right Hand Bank: Green Engineering
& Stabilisation Scheme
River Clydach, Neath**

METHOD OF WORK

Version 1: issued June 2026



1. Introduction

This Green Engineering Stabilisation Scheme has been prepared by Spectrum Ecology to address the potential erosion of the right hand bank of the River Clydach at 20 Neath Road, Fforest Goch, Neath.

The scheme has been prepared for the discharge of conditions application to the LPA to provide a simple, low-intervention approach to bank stabilisation using natural materials and native riparian planting. The purpose of the scheme is to support the establishment of vegetated bank protection without introducing hard engineering, narrowing the watercourse channel or undertaking works to the riverbed.

For the purposes of this report, the right hand bank is taken to mean the right hand bank when looking upstream from the old bridge. The final location and treatment extent shall be confirmed on site prior to implementation.

The scheme is intended to provide a practical specification for soft bank stabilisation, planting and aftercare. It is not a hydraulic design, flood-risk assessment, structural assessment or geotechnical design.

2. Purpose of the Scheme

The purpose of the scheme is to provide soft green engineering treatment to the right hand bank and assist with localised bank stabilisation. In addition the planting scheme will improve riparian vegetation cover, avoid the introduction of hard revetment and avoid narrowing the active channel.

The scheme has been carefully designed by Spectrum Ecology to avoid works within the bed of the watercourse, provide planting and maintenance specifications and provide a 5-year establishment, maintenance and replacement period.

3. General Approach

The proposed approach comprises a simple green engineering treatment based on the use of live willow staking, native riparian planting and, where appropriate.

The treatment shall be positioned at the existing bank edge and shall not project into the active channel in a manner that narrows the watercourse or alters channel capacity. The works shall be installed from the bank wherever practicable and shall avoid excavation, dredging or disturbance of the riverbank or bed ensuring that a FRAP requirement is not triggered.

The scheme shall use products supplied by Salix River & Wetland Services Ltd, or an equivalent UK specialist supplier of riverbank bio-engineering and native wetland planting products.

Relevant Salix products may include:

- live willow revetment material;
- native wetland plants;
- biodegradable erosion-control products;

The final product specification may be adjusted by the supplier or contractor to suit the confirmed bank conditions, provided that the principles of this scheme are retained.

4. Location and Extent of Works

The treatment shall be applied to the affected section of right hand bank downstream of the new bridge and within the bank protection influence zone, where localised erosion or reduced bank stability is evident.

The final length shall be confirmed on site and marked prior to installation. The treatment shall extend for at least 10m downstream and further downstream, if there is a visibly affected section of bank and shall include short upstream and downstream tie-ins.

The treatment extent shall commence at the edge of the new concrete abutment and continue for a minimum of 10m downstream of the right hand bank. The treatment should continue downstream along any visibly affected bank edge and terminate only where the bank is stable, vegetated and not showing active erosion. The works shall start tight to the abutments to ensure no scour begins immediately after the abutments.

The proposed works shall not extend into the opposite bank and shall not involve works to the existing concrete block stabilisation.

5. Proposed Green Engineering Treatment

The proposed treatment shall comprise the following treatments to ensure a total green engineered solution for bank stabilisation and protection.

5.1 Live Willow Stakes

Live willow stakes shall be installed further into the bank face and upper bank edge where suitable. Stakes shall be installed during the dormant season and shall be pushed or driven into firm bank material and shall consist of the following native species.

Item	Specification
Willow Species	Native willow, preferably <i>Salix viminalis</i> , <i>Salix purpurea</i> , <i>Salix cinerea</i> or other suitable native <i>Salix</i> species
Stake length	Approximately 1.2 m to 1.5 m
Stake diameter	Approximately 40 mm to 75 mm
Spacing	Approximately 450 mm to 600 mm centres
Installation depth	Minimum one-third to one-half of stake length below ground
Timing	November 2026 to March 2027, subject to river conditions

Willow shall be fresh, viable and installed the correct way up, with buds facing upwards.

Pre-established rolls shall use native wetland / riparian species appropriate to the River Clydach corridor.

5.2 Native Riparian Seeding

All bare soil disturbed by the works shall be seeded using a native riparian grassland and wet meadow seed mix of UK provenance.

The seed mix shall be suitable for damp bank conditions and shall include a mix of native grasses and herbaceous species capable of providing soil-binding vegetation cover and shall consist of a mix of the following species:

Species	Common name
<i>Agrostis capillaris</i>	Common bent
<i>Agrostis stolonifera</i>	Creeping bent
<i>Festuca rubra</i>	Red fescue
<i>Deschampsia cespitosa</i>	Tufted hair-grass

Cynosurus cristatus	Crested dog's-tail
Filipendula ulmaria	Meadowsweet
Lotus pedunculatus	Greater bird's-foot trefoil
Lythrum salicaria	Purple-loosestrife
Mentha aquatica	Water mint
Achillea millefolium	Yarrow

5.3 Plug Planting

Along the bank tops and alongside the access tracks faster establishment is required, therefore native plug plants shall be installed. In addition some of the species below should be used behind the coir roll and along the lower bank. Plug planting shall be grouped naturally and shall avoid a formal ornamental appearance and consist of the species below.

Species	Common name	Stock type
Filipendula ulmaria	Meadowsweet	Plug
Lythrum salicaria	Purple-loosestrife	Plug
Mentha aquatica	Water mint	Plug
Silene flos-cuculi	Ragged-robin	Plug
Iris pseudacorus	Yellow flag	Plug, used sparingly
Juncus effusus	Soft rush	Plug, used sparingly

6. Working Method and Environmental Safeguards

The works shall be undertaken using hand tools and light equipment wherever practicable and the chosen contractor shall comply with the following safeguards:

- no narrowing of the active channel;
- no excavation or dredging of the riverbed;
- no placement of concrete, rubble or imported hard material into the channel;
- no storage of fuels, oils or chemicals within 10 m of the watercourse;
- spill kit to be available on site;
- all materials to be stored away from the bank edge;
- no cementitious material or washout to enter the watercourse;
- exposed soil to be kept to the minimum necessary;
- any loose soil to be stabilised and seeded as soon as practicable;
- works to be paused during heavy rainfall or rising river levels;
- all tools, footwear and equipment to be clean before arrival to reduce biosecurity risk.

Any invasive non-native species identified during the works shall be avoided and shall not be disturbed, tracked through or spread onto the site. Once an invasive species is identified all works must cease until appropriate advice is sought.

7. Supplier Details

The proposed supplier is:
Salix River & Wetland Services Ltd
Croxtan Park
Thetford
Norfolk
IP24 1LS

Products to be sourced may include pre-established coir rolls, native wetland plants, willow revetment material, chestnut stakes or equivalent biodegradable bank-stabilisation products.

Equivalent products may be used where agreed in writing, provided that they are suitable for riverbank bioengineering, native planting establishment and the site conditions present.

8. Maintenance Specification

The treated bank shall be maintained for a period of five years from completion.

Year 1 maintenance shall include:

- inspection following installation by a suitably qualified ecologist
- inspection after significant high-flow events where safe to do so
- replacing failed willow stakes;
- reseedling bare soil where establishment has failed;
- controlling excessive competing vegetation around young plants;

Years 2 to 5 maintenance shall include:

- two inspections per year, preferably spring and autumn by a suitably qualified ecologist
- additional inspection after significant flood events where safe and necessary;
- replacement of failed planting;
- light selective coppicing of willow if required to prevent excessive top-heavy growth;
- retention of a varied vegetated bank structure;
- avoidance of wholesale strimming or clearance of the stabilised bank.

Vegetation shall be managed sensitively and the aim is to establish a naturally vegetated riparian edge, not to maintain a short ornamental grass bank.

9. Five-Year Defect and Replacement Period

Any trees, shrubs, willow stakes, willow spiling, coir roll planting, plug plants or seeded areas which fail, die, are removed, become seriously damaged or are otherwise defective within five years of implementation shall be replaced during the next suitable planting season.

Replacement planting shall be of similar species, size, number and stock type to that originally approved, unless otherwise agreed in writing with the Local Planning Authority.

The five-year defect period shall commence from the date of practical completion of the approved bank stabilisation works.

10. Completion Record

Following implementation, the contractor or applicant shall retain a short completion record including:

- date of installation;
- photographs before and after works;
- final length of bank treated;
- products installed;
- species and quantities planted;
- supplier delivery notes where available;
- confirmation that the treatment has not narrowed the channel;
- confirmation that no works were undertaken to the riverbed;
- details of any minor amendments made on site.

11. Consenting Note

This scheme has been designed as a low-intervention green engineering and planting scheme located at the existing bank edge. It does not propose hard engineering, channel narrowing, dredging, riverbed excavation or works to the opposite bank.

The applicant and contractor remain responsible for confirming any separate consenting requirements with Natural Resources Wales, the Lead Local Flood Authority or any other relevant authority prior to implementation.

12. Conclusion

The proposed scheme provides a proportionate green engineering approach to the stabilisation of the right hand bank of the River Clydach at the development site. The use of live willow staking and native riparian planting will allow the bank to develop a vegetated root structure and provide naturalised erosion resistance over time.

The scheme has been designed to avoid channel narrowing and avoid works to the riverbed, while providing a practical planting, maintenance and replacement specification. Subject to implementation during the first available planting season and completion of the five-year maintenance period, the proposals are considered suitable to support localised soft stabilisation of the affected bank.

13. Competence and Resourcing

All activities will be undertaken by suitably experienced and competent personnel appropriate to the nature of the works.

This includes provision of appropriate manual handling capability, suitable access equipment, spill response materials, waste containment, and any ancillary tools necessary to complete the works without resorting to unplanned methods or ad hoc changes on site.

14. Weather, Water Conditions and Stop-Work Triggers

Works will only proceed where site and weather conditions remain suitable for safe and controlled installation, use and removal of the temporary works.

Works will be paused, modified or stopped where any of the following apply:

- elevated or rapidly rising flows within the Clydach River;
- adverse weather conditions, including strong winds or heavy rainfall;
- unsafe river affecting access, visibility or control of materials;
- any inability to safely maintain positioning, stability or supervision of willow structures;
- unexpected bed, bank or shoreline disturbance;
- any pollution incident, material loss, or debris entering the river water environment;
- any complaint or concern raised by Natural Resources Wales, Neath Port Talbot CBC, or the Ecological Clerk of Works which indicates that the works may no longer be proceeding in accordance with approved controls.

Works will not recommence until the cause has been identified and suitable corrective measures have been implemented.

15. Environmental Protection and Biosecurity

All equipment will be visually clean prior to deployment. Biosecurity controls will be applied in accordance with the approved ecological / environmental controls for the project, including measures to minimise the risk of transferring invasive non-native species, pathogens or contaminated sediments between locations.

Biosecurity controls, including appropriate cleaning and disinfection of equipment (e.g. **Virkon Aquatic** where required), and will be implemented throughout.

No waste, litter, packaging, or redundant materials will be left on site on completion of the works, and the site close to the river will be left in a clean and tidy condition.

16. Completion and Reinstatement

On completion all materials will be removed in full. A final visual inspection will be undertaken to confirm that no debris, loose materials, pollution residues, or avoidable disturbance remain.

Any minor localised disturbance arising from the temporary works will be addressed promptly using low-impact manual reinstatement methods where appropriate and agreed with the landowner and ecological oversight.

17. Works Summary

The land owner will manage the works in accordance with this written management approach and any permit conditions that may be required, using sufficient competent persons and resources to minimise risks of flooding, impacts on drainage, and environmental harm so far as is reasonably practicable.

Disclaimer

This method statement has been prepared by Spectrum Ecology based on the proposed bank stabilisation activities and site information available at the time of preparation (June 2026). It should be read alongside the associated ecological reports and supporting planning consent documentation.