Greengage

22 Riverside Thinking Space Ltd
Construction Environmental Management Plan, January 2022

QA

22 Riverside – Construction Environmental Management Plan

Issue/Revision:	Draft	Final v2
Date:	January 2022	January 2022
Comments:		
Prepared by:	Morgan Taylor	Morgan Taylor
Signature:		
Authorised by:	Mike Harris	James Bumphrey
Signature:		
File Reference:	551771mtDec21DV01_CEMP.docx	551771mtJan22FV01_CEMP.docx

CONTENTS

1.0 INTRODUCTION 1

2.0 SITE DESCRIPTION AND CONSENTED WORKS 2

3.0 CONSTRUCTION PROGRAMME AND WORKING METHODS 2

4.0 NOISE AND VIBRATION 4

5.0 MATERIALS AND WASTE 5

6.0 AIR QUALITY, DUST AND EMISSIONS 6

7.0 ECOLOGY 7

8.0 CONSTRUCTION TRAFFIC, PLANT AND EQUIPMENT 9

9.0 OPERATION 10

10.0 ENHANCEMENTS 11

APPENDIX 1 CONSTRUCTION METHODOLOGY DRAWINGS 12

APPENDIX 2 SALTMARSH RELOCATION METHOD 13

1.0 INTRODUCTION

1.1 Greengage Environmental Ltd was commissioned by Thinking Space Ltd to produce a Construction Environmental Management Plan for construction of the proposed houseboat at 22 Riverside in Shoreham by Sea.

1.2 This CEMP highlights the construction programme and working methods and outlines the environmental control measures to be adopted by the Contractor to manage and mitigate any actual and potential environmental impacts arising from the construction of the scheme. Detail within industry best practice has been followed and in particular guidance from the Environment Agency Pollution Prevention and Guidance (PPG) notes (PPG5, PPG21 and PPG 22) , and CIRIA (Environmental Practice on Site C692) .

1.3 Given the sensitive nature of the site and receptors that have potential to be affected and for clarity, so that all measures are presented in a single document, additional chapters are included in this CEMP which relate to operational environmental protection measures and specific ecological enhancement.

2.0 SITE DESCRIPTION AND CONSENTED WORKS

2.1 The relevant site area, centred at National Grid Reference TQ216047, extends to approximately 0.0915 hectares and comprises a houseboat berth on the south bank of the Adur Estuary. An existing houseboat (Valeur) is berthed at site alongside another smaller boat moored to its north with surrounding debris and other small fibreglass row boats. Both boats are entirely derelict and are fully settled in the mud with neither boat now floating. With an approximate 6m tidal range water is understood to only reach the berth at spring high tides with the boats sitting on the open mudflat for the majority of the time. The site is shallowly shelved towards gullies to the north which drain into the main river channel. The red line boundary also encompasses a small terrestrial plot with includes a thin strip of marginal land and then a section of flood defence wall (recently installed in the past 2-3 years) and a patch of ruderal weeds/spoil on the southern landward side of the wall.

2.2 The consented scheme seeks to deliver a new 4 bedroom floating home & associated access and ancillary solar array, bike storage, plant room, shower and wc enclosure.

3.0 CONSTRUCTION PROGRAMME AND WORKING METHODS

3.1 The construction programme for the scheme in total is 12-18 months starting in March 2022. The contractor will be Thinking space Ltd..

3.2 The following sequencing method plans are provided for the proposed construction works:

- Existing boat removal
- New boat construction

3.3 The plans show how construction activities are to be undertaken. For full details, the reader should refer to the individual plans contained within Appendix 1.

4.0 NOISE AND VIBRATION

4.1 Table 4.1 outlines the noise and vibration issues requiring attention and identifies the control measures to be implemented.

Table 4.1 Noise and vibration management

Noise and vibration issue	Control measure
Site set-up and operating hours	Normal working hours will be 8.00am - 6.00pm Monday to Friday, and 9.00am -1.00pm Saturday. No work will take place on a Sunday, Bank/ Public holiday.
Construction traffic (delivery vehicles, site personnel etc.)	All goods, equipment, plant and materials will be transported by road. Deliveries times will be planned to minimise potential nuisance to the local community.
Construction plant and equipment	Any static plant to be sited away from sensitive receptors on the landward side of site within the fenced of compound. Plant and equipment to be switched off when not in use. Plant and equipment to be maintained and operated in accordance with operators' instructions.

5.0 MATERIALS AND WASTE

5.1 Table 5.1 outlines the materials and waste issues requiring attention and identifies the control measures to be implemented.

Table 5.1 Materials and waste management

Materials and waste issue	Control measure
Storage, handling and management of materials and waste	The landward part of site to the south of the flood defence wall will be fenced off with Heras panels to encompass the area designated for the shoreside working compound. Materials and waste to be stored in a commercial skip before removal from site. Waste containers to be securely covered to ensure wastes cannot be blown or washed away. Any oils, fuels and liquids used are to be securely stored and sited away from the water (storage to include bunding and tamper proof and lockable valves, as appropriate). Spill kits to be located near to the works areas and within storage compounds, with personnel being trained in their use. Daily walkover (including on mudflats at low tide) will be undertaken to collect other material.
Waste disposal strategy	Domestic waste shall be taken ashore and disposed of daily. Recyclable waste shall be taken for disposal at the available recycling facilities; metalwork for example will seek to be recycled through the local scrapyard or reused.

6.0 AIR QUALITY, DUST AND EMISSIONS

6.1 Table 6.1 outlines the air quality, dust and emissions issues requiring attention and identifies the control measures to be implemented.

Table 6.1 Air Quality, Dust and Emissions management

Air Quality, Dust and Emissions issue	Control measure
Site set-up and operation	Use of debris shields/mesh around all sides of the construction zone.
Air quality and emissions	Vehicles, plant and equipment on site to be well maintained and regularly serviced. Vehicles, plant and equipment to be switched off when not in use.
Dust/debris	Manual road/ path sweeping to be employed to remove excess build-up of material, as appropriate. Any dust generating materials transported to and from site to be securely covered. Any dust generating materials stored on site to be located out of the wind, screened or covered.
Monitoring	Regular visual checks for dust, debris and emissions arising to be undertaken across the site and log of results maintained.

7.0 ECOLOGY

7.1 Table 7.1 outlines the ecological issues requiring attention and identifies the control measures to be implemented.

Table 7.1 Ecological management

Ecology issue	Control measure
Timing of construction works	Timed works on the river to avoid sensitive period October – March (inclusive) Seasonal clearance of landside vegetation and features on the boat superstructure where common birds may nest. Works should take place outside of the nesting season (March to August) unless birds are confirmed as absent by an ecologist prior to works taking place.
Noise impact on birds	Piles/stakes for the debris shield will be hand augured to avoid noise and vibration impacts. Moveable, temporary screens to be place around construction zone to minimise disturbance to sensitive receptors, as appropriate.
Saltmarsh vegetation disturbance	Replanting of patches of purslane and glasswort into adjacent bare areas of mudflat. This will follow the saltmarsh relocation method described in the note 551771mt15Oct21P01 included at Appendix 2.
Disturbance of sediments and associated contaminants	Debris shield to be installed to isolate the working area and capture any disturbed sediment, as appropriate. All hydraulic oil in the construction equipment will be specified as biodegradable to mitigate effects should there be an accidental spillage. All material removal will take place at low tide, so the risk of material and spillage into water is low.
Invasive species	Whilst the proposed construction works are not expected to result in the introduction of non-native/invasive species, biosecurity information boards with details of the 'Check Clean Dry' campaign will be included at the site, and contractors will be made aware of the campaign.

Ecology issue	Control measure
Bats	No works are proposed at night and no lighting proposed, so no increased light spill is predicted.
Reptiles	Undertake sensitive precautionary staged site clearance for reptiles and compensate for habitats lost through new landscape design. This should include hand removal of waste materials and cutting of vegetation in stages; first to 20cm height and then to ground 24 hours later in a phased approach from the centre of site to the fringes;

8.0 CONSTRUCTION TRAFFIC, PLANT AND EQUIPMENT

8.1 Table 8.1 outlines the construction traffic, plant and equipment issues requiring attention and identifies the control measures to be implemented.

Table 8.1 Construction Traffic, Plant and Equipment management

Construction traffic, Plant and Equipment issue	Control measure
Construction traffic routing	All goods, equipment, plant and materials will be transported by road. Deliveries times will be planned to minimise potential nuisance to the local community. Site access to be controlled with any deliveries, site visitors etc. booked 'in' and 'out' of site.
Location of works base	Undertake construction works from the landward side of site to reduce area of saltmarsh subject to direct disturbance;

9.0 OPERATION

9.1 The client has committed to an operational waste management plan preventing litter and other waste from falling into the estuary. Bins will be stored on the landward part of site, with waste removed by sturdy bin bags from the houseboat. Regular checks of the surrounding foreshore for incidental litter (arising from elsewhere) will also be undertaken. The boat will be connected to the mains sewer so there is no actions with regards to effluent output from the boat.

9.2 A sensitive operational lighting scheme which avoids light spill over surrounding saltmarsh habitat and uncontrolled upward spill is committed to. No upward lighting is proposed and any lighting will be on timer and motion sensor, using LED bulbs with low UV component warm-white light.

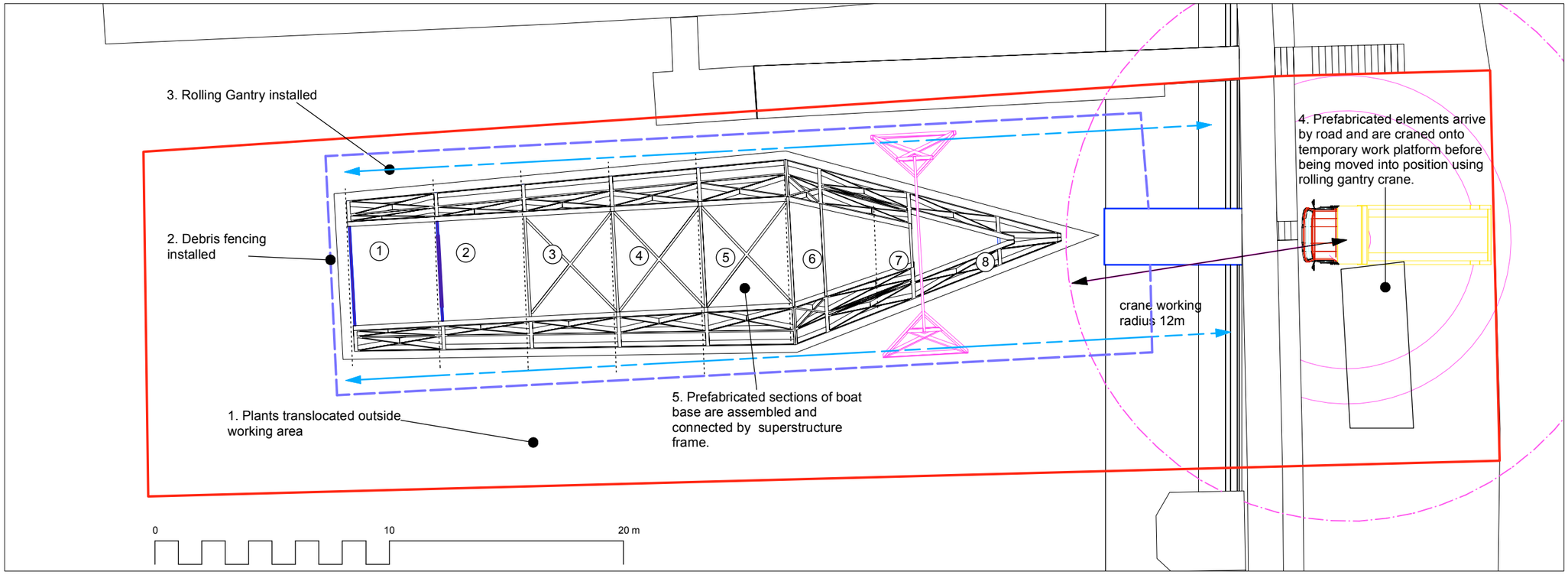
10.0 ENHANCEMENTS

10.1 Habitat will be created to provide value for priority species in line with local and regional conservation objectives.

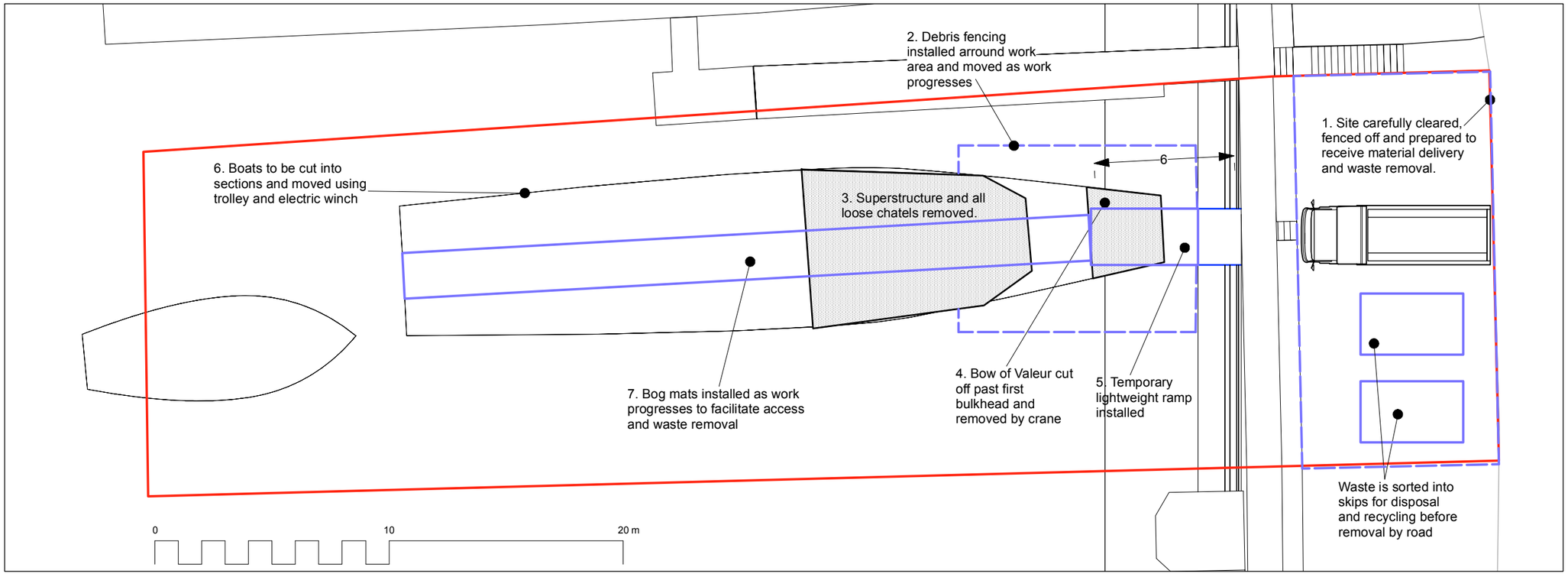
10.2 Specifically, the following enhancement features will be included:

- Wildlife friendly planting – new landscaping will provide a diverse mix of species of demonstratable value for wildlife known to be at site/have the potential to be encouraged to the site. Landscaping will account for climate risk through providing appropriate species mixes which are drought resilient. Herbaceous beds which draw inspiration from coastal shingle habitats found along the south coast are recommended, with a swathe of wildflower planting provided along the seawall edge in the garden, as well as along the strip of vegetation between the sea wall and the estuary;
- Bird and bat boxes – nesting opportunities for birds and roosting opportunities for bats, particularly targeting BAP species like house sparrow, will be maximised. These will be hung from features on the landward side of the site.
- Invertebrate habitat features –terrestrial invertebrate habitat features will be included in the new garden space. Solitary bee hotels and habitat panels will be placed in suitable locations in sunny areas close to landscaping.

APPENDIX 1 CONSTRUCTION METHODOLOGY DRAWINGS



Phase 2- New boat structure
April- August



Phase 1- Site establishment and boat removal.

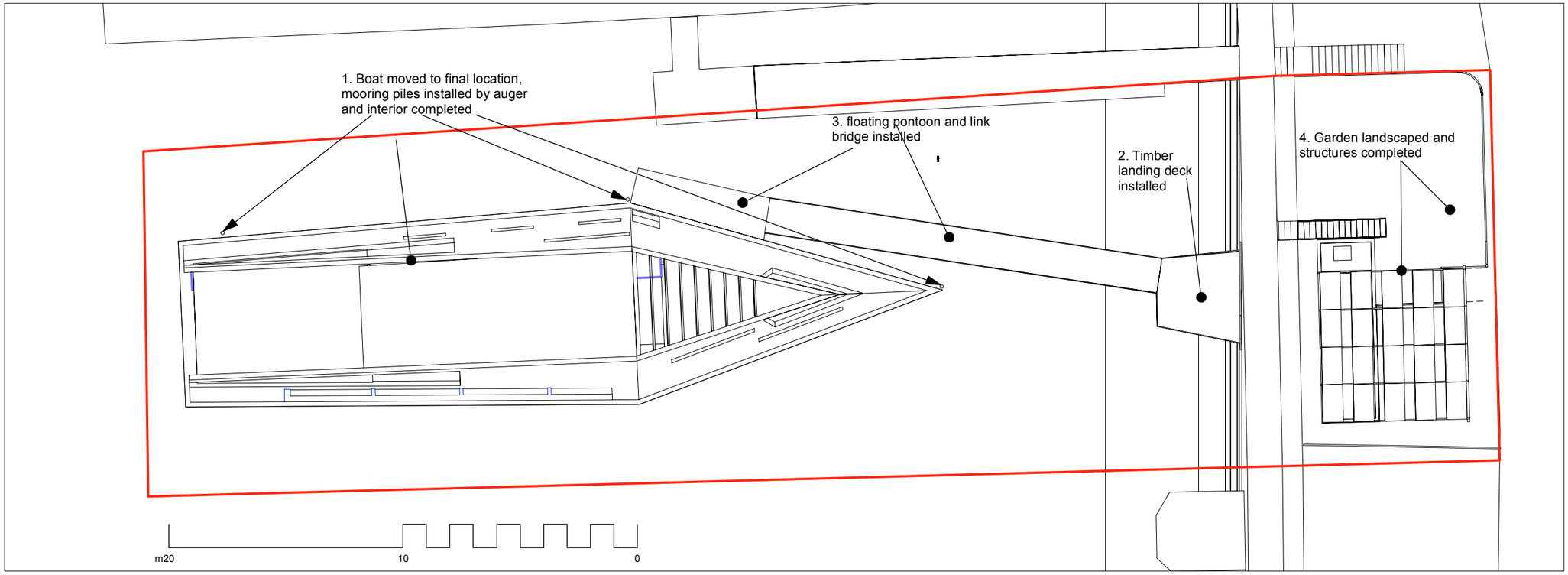
January - March

©*thinkingspace ltd 2021

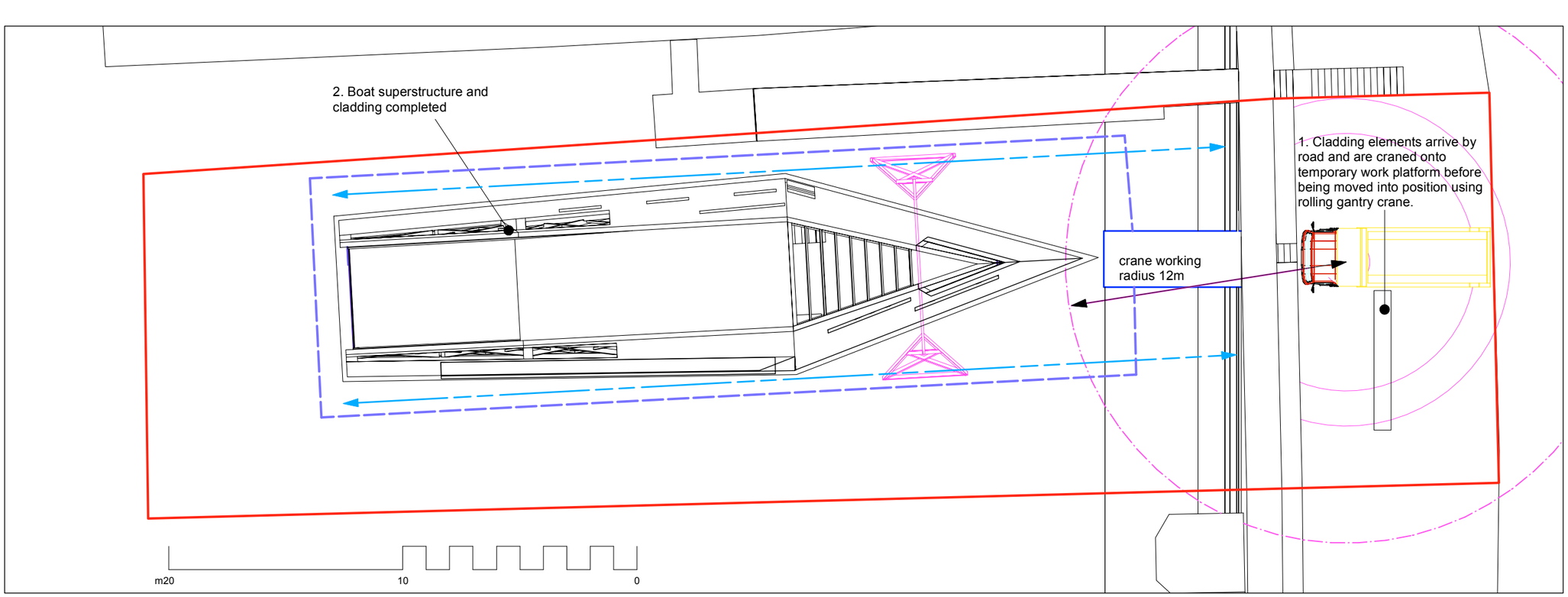
*thinkingspace ltd
18 Kings Walk, shoreham by sea, west sussex, bn43 5lg
07931314858 hc@thinkingspace.co.uk

New floating home
22 Riverbank, Shoreham by Sea, BN43 5YH

01: 11.01.2022-work method ammended
Construction Methodology sheet 1
1:200 @A3
SK/2005/2010/01



Phase 4- project completion
October- February



Phase 3- Boat superstructure completion
August- October

©*thinkingspace ltd 2021

*thinkingspace ltd
18 Kings Walk, shoreham by sea, west sussex, bn43 5lg
07931314858 hc@thinkingspace.co.uk

New floating home
22 Riverbank, Shoreham by Sea, BN43 5YH

01: 11.01.2022-work method ammended
Construction Methodology sheet 2
1:200 @A3
SK/2005/2011

APPENDIX 2 SALTMARSH RELOCATION METHOD

Howard Carter
By email only

9 Holyrood St
London SE1 2EL
T: 0203 544 4000
E: info@greengage-env.com

15th October 2021
Our ref: 551771mt15Oct21P01

Dear Howard

Houseboat Valuer, 22 Riverside, Shoreham by Sea – Additional Ecology Mitigation Information

We understand Natural England have responded with a request for the following additional information relating to ecological mitigation for the proposed houseboat project at 22 Riverside, Shoreham by Sea.

- details/plan on how and where the saltmarsh habitat would be transplanted and showing how & where an area 1.5-2 times the affected area will be established.
- monitoring plan

The plan appended to this letter show the location of the existing saltmarsh vegetation and the locations where this saltmarsh will be translocated and replanted; this shows an area double the size replanted (although in the first instance of course, this will be at a lower plant density than currently exists). The plants will be spread throughout this wider area to encourage a net increase in salt marsh vegetation growth surrounding the new boat.

This will be undertaken following guidance described in the Environment Agency's Saltmarsh Management Manual[i]. This document states:

Saltmarsh vegetation can only be established successfully, however, if the physical as well as biological conditions are satisfactory. Natural colonisation should, therefore, be considered as the preferred option for saltmarsh vegetation establishment rather than artificial transplantation

The bare mudflat appears suitable to support vegetation patches and is subject to the same physical and biological conditions as the current vegetated areas and therefore the proposed locations and species are considered appropriate. Small (~1-2m length) silt traps/sedimentation fences will however be installed on any small areas where erosion is observed occurring adjacent to the boat to ensure that suitable conditions remain in the relocation areas. These traps will simply comprise wooden poles with geotextile membrane and brushwood spanned between the poles. The use of these fences will be reactive to conditions at the time of translocation as they are a simple and cheap intervention to make minor changes to the local sedimentation regime. As the salt marsh is a constantly changing environment it is not necessary to say with certainty that these will be appropriate at the time of works but an ecologist will be present at the commencement of works to inform the need.

The translocation will take place in mid-spring to early summer (as per best practice guidance). An ecologist will be present to oversee the plant translocation and signage will be erected so that construction teams are aware of the areas to be protected. Plants in patches of ~0.5x0.5m square 'turf blocks' will be carefully excavated to a depth of at least 0.4m beneath root growth using spades by hand (the vegetation patches are not large enough to justify use of machinery and this allows greater sensitivity). These will be replanted in the translocation areas by an experienced landscaper

Greengage Environmental Ltd Registration No. 08155937 Registered Address: Camburgh House, 27 New Dover Road, Canterbury, Kent, CT1 3DN

with excavations made and turfs installed, pressed down by light foot pressure. The works will be done during neap tides to ensure that relocated plants are not dislodged by tidal movement. The vegetation 'turf's will be stored for a short time and not allowed to dry out; this approach was found to be successful at a translocation project in Dorset[ii].

The future monitoring will follow advice in this document. Annual visits to the site by a suitably qualified ecologist during the summer will be undertaken for the first 5 years following completion of the translocation. Data on the following factors will be collected:

- Percent survival rates of plants, plant vigour and vegetation cover, potentially using aerial photographs to assess spread of vegetation.
- Repeat vegetation mapping to assess change in diversity and to determine whether succession is occurring.

The document also recommends *'topographic contour mapping of the marsh and mudflat, related to Ordnance Datum, and vertical accretion measurements to assess whether the new marsh is accreting sediment'*. This is not considered appropriate given the small scale of the project.

The outcomes of the monitoring will be reported annually to Natural England with associated recommendations for any remedial works to meet the intended conservation objectives and outcomes described in the Ecological Impact assessment report.

We hope the above is all clear. Should you have any questions do not hesitate to contact us.

Yours sincerely



Morgan Taylor

Director

For and on behalf of Greengage Environmental Ltd

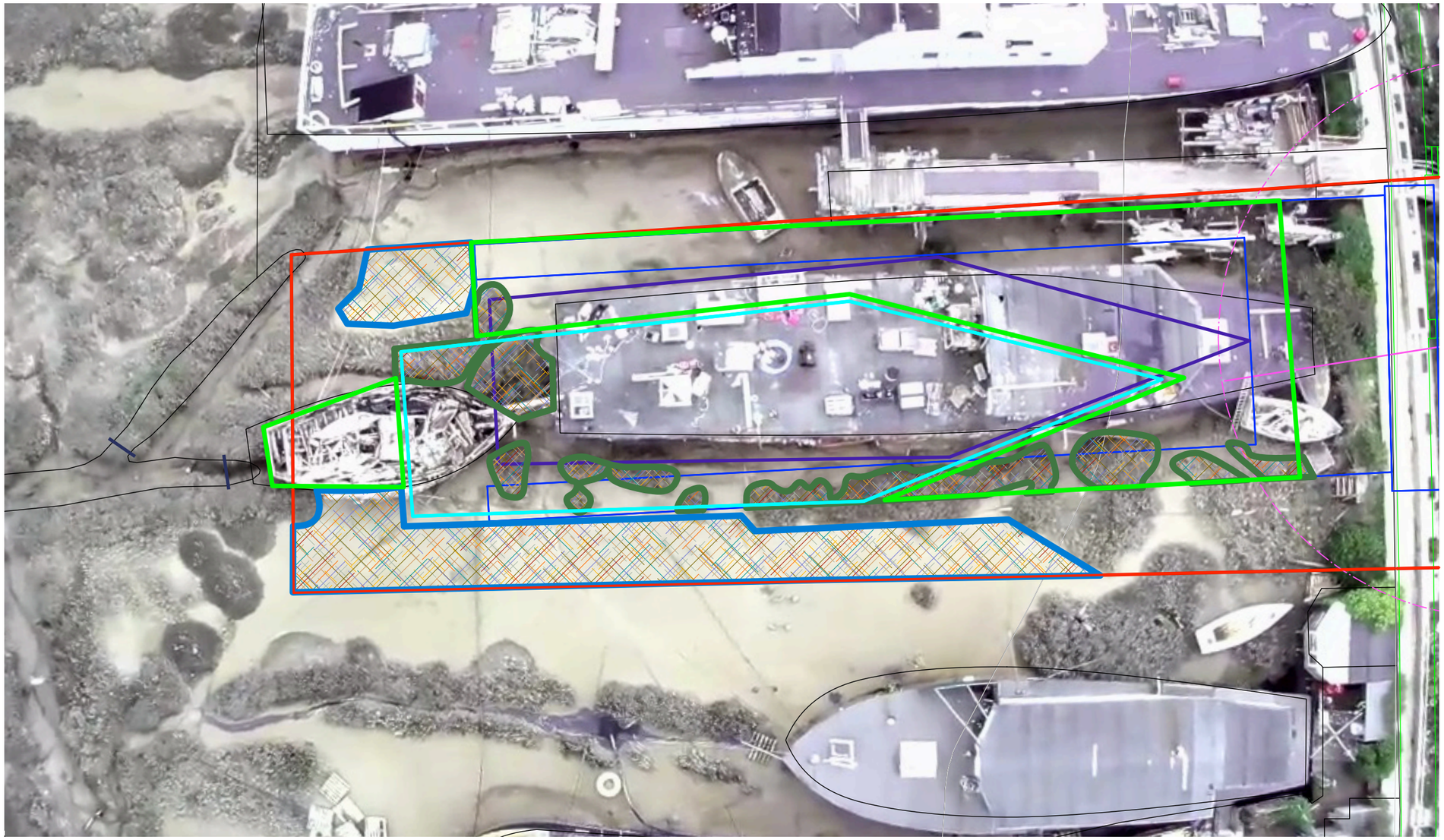
Appendix 1 saltmarsh vegetation translocation plan

---

[i] Joint Defra / Environment Agency Flood and Coastal Erosion Risk Management R&D Programme, Saltmarsh management manual, R&D Technical Report SC030220 https://assets.publishing.service.gov.uk/media/602bf8d8e90e070556671435/Saltmarsh_management_manual_Technical_report.pdf

[ii] Environment Agency, The restoration of vegetation on saltmarshes, R&D Technical report W208, http://ea-

lit.freshwaterlife.org/archive/ealit:4481/OBJ/77105_ca_object_representations_media_182_original.pdf



Saltmarsh Vegetation to be translocated
Total area 53sq.m

Saltmarsh area for translocation
Total area 106sq.m

Final position of new hull

Temporary position of new hull during construction

Temporary gantry platform and scaffold during construction

Saltmarsh area available for replanting after completion
Total area 235sq.m

Potential location for small sedimentation fences (if deemed necessary at time of works)

©*thinkingspace ltd 2021

*thinkingspace ltd
18 Kings Walk, shoreham by sea, west sussex, bn43 5lg
07931314858 hc@thinkingspace.co.uk

New floating home
22 Riverbank, Shoreham by Sea, BN43 5YH

Saltmarsh plant translocation
1:200 @A3
SK/2005/2015