



St Modwen Homes Ltd.

Blythe Bridge, Staffordshire Moorlands

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

(CEMP: Biodiversity)

September 2018

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1.0 INTRODUCTION

- 1.1 The following Construction Environmental Management Plan (CEMP: Biodiversity) has been prepared by FPCR Environment and Design Ltd. on behalf of St Modwen Homes Ltd to discharge condition 22 of planning consent (Staffordshire Moorlands District Council planning ref: SMD/2017/0512) which states;

'22. No development shall commence on any phase until a Construction Environmental Management Plan (CEMP: Biodiversity) for that phase has been submitted and approved in writing by the Local Planning Authority. The CEMP (Biodiversity) shall include:

- a) Risk assessment of potentially damaging construction operations.*
- b) Identification of biodiversity protection zones.*
- c) Practical measures (both physical and working methods) to avoid or reduce impacts during construction. This shall include site clearance, site set up, ground works and construction, disposal of wastes and final site clearance.*
- d) Detailed measures to reduce site run off, effluents or pollution.*
- e) The location and timing of work to avoid harm to biodiversity features.*
- f) Responsible persons and lines of communication.*
- g) The role and responsibilities of an ecologist, ecological clerk of works or similarly competent person.*
- h) Use of protective fences barriers or warning signs.*
- i) Vegetation clearance avoids the hibernation period for Hedgehogs (November-March).*
- j) Creation of sloping escape ramps for hedgehogs by edge profiling excavations or placing planks into them at the end of each working day.*
- k) Open pipework greater than 150mm being planked off at the end of each working day*

The approved CEMP shall be adhered to and implemented throughout the construction period of the relevant phase.

Reason: In the interests of biodiversity'

Site Location and Context

- 1.2 The site is located to the east of Blythe Bridge village, situated between the A50 and the A521. It is flanked by roads to the north, south and west with arable and pasture land extending to the east. The site is made up of five field compartments and an associated derelict bungalow and stable block/open stores accessed by Woodlands Lane to the northeast.
- 1.3 Compartments comprised semi-improved and improved grassland, which varied in management and species diversity. Fields were bound and divided by native species hedgerows. Other habitats within the site comprised ruderal vegetation, scattered scrub and trees. A single waterbody was also present in the north of the site.

- 1.4 The site was subject to detailed ecological (and arboricultural) survey to inform the planning application, with an Extended Phase1 Habitat survey and desk study undertaken, as well as specific surveys for bats, reptiles and great crested newts *Triturus cristatus* (GCN).

Proposals

- 1.5 The development proposals are for the erection of up to 118 dwellings, access, parking, public open space, landscaping and associated infrastructure.

Objectives of CEMP

- 1.6 The objective of this CEMP is to minimise any potential risks to the species and habitats that are or are likely to be present within the site.
- 1.7 This document lists the relevant legislation associated with the species considered likely to be present on site and those for which best practice measures are recommended. The subsequent sections will then detail the recommended working practises to be carried out in each of the following two stages of development:
- Stage 1 – Pre-Commencement
 - Stage 2 – Construction
- 1.8 The CEMP will be reviewed jointly by the Principal Contractor and ECoW every six months until completion of all construction and landscaping works to ensure that it remains suitable to ensure the environmental commitments are being met. Any significant changes to the CEMP will be submitted to the Local Authority for review prior to the relevant construction activity commencing.

2.0 ROLES AND RESPONSIBILITIES

Ecological Clerk of Works

- 2.1 FPCR Environment and Design Ltd have been appointed by St Modwen Homes Ltd. to provide a suitably qualified and experienced Ecological Clerk of Works (ECoW) to supervise the implementation of this CEMP, where required. The Ecological Clerk of Works (ECoW) will be determined before the commencement of works. Once determined, the name and contact of the ECoW will be kept in the site office at all times.

Principal Contractor

- 2.2 For the pre-commencement and construction phases of the scheme (Stage 1 and Stage 2), the Principle Contractor, St Modwen Homes Ltd. will be responsible for the protection, creation and initial establishment of the areas of green space within the site.
- 2.3 The main point of contact at FPCR will be Helen Feetham (Senior Ecologist) who can be contacted on 01509 672772.
- 2.4 All works at all stages are the responsibility of the Principle Contractor who will:
- Appoint the ECoW;
 - Ensure that practical arrangements are in place to comply with the CEMP;
 - Arrange ecological surveys and monitoring as required during the development;

- Oversee the agreed programme of habitat and species protection as described in this document;
 - Ensure that protective fencing and other site protection measures are implemented and adequately maintained throughout all development stages;
 - Contribute to communication on environmental matters with stakeholders and statutory bodies, as required;
 - Keep records to demonstrate implementation of the CEMP;
 - Ensure that an appropriately qualified ecologist undertakes the required on-site surveys, supervision etc. in the event that the ECoW cannot attend site and works cannot be delayed;
 - Monitor the ecological and environmental performance of any sub-contractors and provide correction or direction as necessary;
 - Ensure site staff are given environmental awareness/protected species identification training by the ECoW, as necessary;
 - Ensure that ecological survey reports, CEMP and contact details for the ECoW are available onsite at all times;
 - Ensure that any required corrective ecological actions are taken in line with the relevant procedures as directed by the ECoW;
 - Co-ordinate and undertake periodic reviews of the CEMP with the ECoW;
- 2.5 The Principal Contractor shall be responsible for ensuring an appropriate ECoW is present on-site as required to ensure the measures as recommended within this CEMP (and any other relevant ecological documents) are followed. Further duties of the ECoW include, (i) acting as the Developer's main point of contact in relation to environmental issues and (ii) liaison officer with relevant statutory bodies as necessary.

3.0 ECOLOGICAL FEATURES, RISK ASSESSMENT AND RELEVANT LEGISLATION

Habitats

- 3.1 Table 1 below considers the retained habitats that are sensitive to construction activities and identifies the potential risks to them as a result of construction works. Measures to manage these risks will be discussed in the appropriate section, dependant on the stage of development.

Table 1 –Assessment of Risk to Habitats

Habitat	Relevant Legislation / Policy	Assessment of Risk
Hedgerows and Trees	Hedgerows present on-site (comprising of over 80% native species) are recognised as a Habitat of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.. Hedgerows are listed as a Priority Habitat of the Staffordshire Local Biodiversity Action Plan (SBAP).	There is a risk of: Root compaction, Damage to roots through pollution or incorrect storage of materials, Damage to branches during site clearance, Accidental removal of excessive length of hedgerow or trees.
Waterbody	Although the on-site waterbody does not qualify as a Habitat of Principal Importance under the NERC Act (2006), the waterbody is of intrinsic conservation value to wildlife.	There is a risk of: Pollution from dust, and run off during construction activities, including accidental spillages, Damage to the waterbody during construction.

3.2 Habitats to be lost in their entirety either by land take or through over-seeding comprise:

- Mixed plantation woodland;
- Species-poor semi-improved grassland;
- Amenity grassland;
- Dense scrub;
- Ruderal vegetation; and
- Built structures.

Fauna

3.3 Table 2 below considers the notable and protected faunal species that are known to be present within the site, or may potentially be present and could be affected by development activities.

Table 2 – Assessment of Risk to Fauna

Species	Relevant Legislation / Policy	Assessment of Risk
Bats – A number of the mature trees have the potential to support roosting bats	Bats and their roosts are listed on the Conservation of Habitats and Species Regulations 2017 making it illegal to deliberately disturb any such animal or damage / destroy a breeding site or roosting place of any such animal. Bats are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is illegal to recklessly or intentionally kill, injure or take a species of bat or recklessly or intentionally damage or obstruct access to or destroy any place of shelter or protection or disturb any animal	There is a risk of: Killing or injury of bats roosting if present in trees to be removed. Disturbance of roosting bats, if present

Species	Relevant Legislation / Policy	Assessment of Risk
	whilst they are occupying such a place of shelter or protection. Some bat species are considered to be Species of Principal Importance (SPI) under the NERC Act (2006) with Pipistrelle <i>Pipistrellus</i> sp. bat, noctule <i>Nyctalus noctula</i> and brown long-eared <i>Plecotus auritus</i> species listed on the SBAP.	
Potential for the presence of nesting birds (there is suitable habitat within the site)	Under the Wildlife and Countryside Act 1981 (amended) it is an offence to kill, injure or take a bird, take damage or destroy a nest in use or being built, take or destroy an egg, possession or control of wild bird or any part or object derived from, or egg or part of one.	There is a risk of: Killing and injury of birds and damage to nests during site clearance.
Hedgehog <i>Erinaceus europaeus</i>	Although not protected under legislation, hedgehog are SPI under the NERC Act (2006).	There is a risk of: Killing and injury during site clearance and construction.
Great crested newt <i>Triturus cristatus</i> (GCN) – GCN not recorded within the waterbody on-site, although a small population of GCN recorded in waterbodies within 250m of the site to the south east.	GCN and their places of rest or shelter are listed on the Conservation of Habitats and Species Regulations 2017 making it illegal to deliberately disturb any such animal or damage / destroy a breeding site or resting place of any such animal. GCN are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is illegal to recklessly or intentionally kill, injure or take GCN or recklessly or intentionally damage or obstruct access to or destroy any place of shelter or protection or disturb any animal whilst they are occupying such a place of shelter or protection. GCN are listed as a SPI on the NERC Act 2006 and area also included on the SBAP.	There is a very low risk of: Killing and injury during site clearance and construction; loss of sheltering and resting habitat as a result of site clearance (see paragraph 4.16 below)

4.0 STAGE 1 – PRE-COMMENCEMENT

- 4.1 The following details the necessary avoidance and mitigation measures that will be implemented prior to commencement of site clearance and construction. For a timetable of implementation see Table 4 (page 11).

Biodiversity Protection Zones

- 4.2 Biodiversity Protection Zones are areas of retained land which contain habitats that may be at risk from damage, or habitats which have been identified to be of importance to faunal species which may be harmed or disturbed by construction activities. These are identified on Figure 1 and include the following:

- Root Protection Areas for hedgerows and trees (please refer to the Tree Protection Plan, see Arboricultural Assessment for details (FPCR, July 2017)); an appropriate buffer zone will be created along the length of all retained hedgerows, extending to a greater width where dictated by the presence of Root Protection Areas (RPAs) of hedgerow trees.. Installation of protective fencing will be required to demarcate the buffer zone, installed to the specification provided in the Arboricultural Assessment.

The buffer zone will protect the roots of the hedgerow and protect the ground flora at the base of the hedgerow.

Within the buffer zone behind the protective fencing the following is to be adhered to:

- No soil stripping, excavations or any vegetation clearance is to take place;
 - No site workers or vehicles are permitted;
 - No machinery or materials are to be stored
- Waterbody; A minimum 5m buffer zone will be maintained around the waterbody to protect the integrity of the bank and minimise any risk of accidental pollution events. The following apply to the exclusion zone:
 - Works or the storage of materials will not take place within this zone.
 - The maintenance of this zone will be ensured through the use of bankside fencing.
 - Where appropriate best practice measures will be implemented to ensure works adhere to Environment Agency Guidelines (refer Paragraphs 5.13).

- 4.3 Measures taken will also in turn benefit other species by protecting suitable habitats within the Biodiversity Protection Zones ensuring a consistent foraging and commuting resource.

Fauna

- 4.4 Measures for the protection of fauna that are appropriate to the pre-construction phase are provided below.

General Good Practice Measures

- 4.5 The following precautionary measures will be adopted to avoid any potential for harm to protected and notable species especially hedgehog
- Where possible material will be stored centrally within the site within a fenced compound rather than at the edge or near to retained habitats;
 - Materials should be raised from the ground by storing on pallets to prevent fauna such as GCN from getting underneath.

Bats

- 4.6 All trees within the site to be affected by the development were assessed from ground level for their potential to support roosting bats by FPCR Environment and Design Ltd in August 2018. This data has been used to inform Table 3 below.
- 4.7 Tree protection measures as outlined in the Arboricultural Assessment (FPCR, July 2017) will protect retained trees from damage and allow for retention of roosting features and any potential bat roosts. However, to avoid indirect impacts that could lead to roost abandonment, no construction site artificial lighting should be directed at any retained trees.
- 4.8 One tree (T8 as per the Tree Retention Plan) out of six trees requiring removal and having been identified as having bat roosting potential has been assessed as having moderate potential to support roosting bats following an aerial assessment. A precautionary approach should therefore be adopted, with soft-felling techniques used following an endoscope survey. This involves felling the tree concerned in sections, avoiding cutting through any potential features and carefully lowering felled sections to the ground under the supervision of the ECoW.
- 4.9 A further two trees (T12 & T14) had been identified as having moderate potential to support roosting bats although T14 and the upper section of T12 were deemed unsafe to climb during the aerial roped assessment of the trees on site. As a result two nocturnal surveys comprising an emergence and return-to-roost observation survey will be completed on each tree to fully rule out the presence of a roost or to inform an application for a European Protected Species Licence from Natural England prior to them being felled.
- 4.10 Should the presence of a bat roost be confirmed, the licensed bat worker will provide detailed advice on how to avoid impacts, or, where unavoidable, appropriate mitigation measures will be devised and a licence would be sought from Natural England to allow works to proceed lawfully.

Table 3 – Trees with Bat Roost Potential and Pre-Commencement Considerations

Tree Ref (Arboricultural Assessment; FPCR July 2017)	Tree Ref / Level of Bat Roost Potential Following Aerial Roped Assessment	Pre-commencement Considerations
T6	Negligible	None required
T7	Negligible	None required

Tree Ref (Arboricultural Assessment; FPCR July 2017)	Tree Ref / Level of Bat Roost Potential Following Aerial Roped Assessment	Pre-commencement Considerations
T8	Moderate	Endoscope survey to check for bat roost immediately prior to soft felling
T12	Moderate	Two nocturnal to check for bat roost prior to removal
T13	Low	Soft fell under supervision
T14	Moderate	Two nocturnal surveys to check for bat roost prior to removal

Nesting Birds

- 4.11 The removal of woody vegetation, including sections of hedgerow, trees or areas of scrub should be undertaken outside of the bird nesting season, i.e. avoiding clearance from March to August, inclusive. Where this is not possible, the site will be checked by the ECoW or a suitably qualified ecologist to confirm the absence of nesting birds.
- 4.12 Where nesting birds are present an exclusion zone should be set around the nest (as determined by the supervising ecologist and suitable for the species nesting), cordoned off with high visibility tape or mesh fencing within which no works can occur until the birds have fully fledged.

Hedgehog

Clearance of suitable hibernation habitat for hedgehog (hedgerow bases, tree roots, piles of brash) shall be completed outside of the hibernation period (November – March).

GCN

- During presence/absence surveys for GCN completed in 2015 and 2017, a small population was recorded across three waterbodies within 500m of the site boundary. The waterbody on site did not support breeding populations of GCN during any of the surveys. Following consultation with Natural England using the Discretionary Advice Service (DAS) in August 2018 it was deemed appropriate that the habitats on site could be cleared under a method statement and without the requirement for a European Protected Species License (EPSL) due to the generally sub-optimal nature of the majority of the habitats on site.

4.16

- 4.17 Due to the distance of the working area from the nearest waterbody supporting GCN (150m), it is considered highly unlikely that GCN would be present within the proposed working area. As a result it is considered that an offence under the Conservation of Species and Habitats Regulations 2017 would not be committed and a derogation licence from Natural England is therefore not required. However, the presence of a small area of trees and scrub vegetation surrounding the buildings present on site which requires removal to facilitate the works does provide some limited potential opportunities for GCN and works will therefore be completed under the supervision of a suitably licenced ecologist at an appropriate time of year (outside of breeding season) following appropriate working methods.
- 4.18 All suitable habitats for GCN within the proposed working area will be hand searched by a licenced ecologist prior to clearance of the habitats within. In the highly unlikely event that a GCN is found during hand searching, all works will cease and a licence will be applied for.
- 4.19 Where scrub and tree removal is required, the canopy will be removed down to stump height outside of the bird breeding season. If this is not possible, all vegetation will be checked by a suitably experienced ecologist for the presence of nesting birds prior to removal. All stumps will be removed under the supervision of a licenced ecologist.

Table 4 – Timetable for Stage 1 - Pre-Commencement

Habitat or Feature	Activity	Mitigation	Recommended timing	Responsibility
Designated Sites / Habitats				
Trees and Hedgerows and associated ground flora	Protective fencing to be installed	Fencing shall be erected as per the specifications and to the Root protection Areas calculated within the Arboricultural Assessment (FPCR July 2017) and with consideration to BS5837 <i>Trees in Relation to Construction</i>. Fencing to be erected at an appropriate distance from hedgerows (see Arboricultural Assessment), no machinery, vehicles or materials to enter this protected zone.	All year round as appropriate	Principal Contractor
Waterbody	Protective fencing to be installed	Installation of 5m buffer along length of watercourse. Best practice with regards to working near water and construction.	All year round	Principal Contractor
Fauna				
Bats	Pre-commencement check/survey of trees for roosting bats	T8 to be subject to an endoscope survey prior to soft felling under supervision of ECoW T12 & T14 to be subject to two nocturnal surveys prior to soft felling under supervision of ECoW T13 soft fell under supervision of ECoW.	Maximum of one month prior to commencement	ECoW and Principal Contractor

Habitat or Feature	Activity	Mitigation	Recommended timing	Responsibility
Nesting birds	Site works preparation and pre-commencement nesting bird check	The removal of woody vegetation to avoid the bird nesting season (March – August, inclusive), where possible Clearance of woody vegetation within the nesting season must be preceded by nesting bird check completed by the ECoW or suitably qualified ecologist If nesting birds are present an exclusion zone to be determined by the ECoW should be set around the nest (suitable for the species nesting) within which no works can occur until the birds have fully fledged.	September to February March to August inclusive	ECoW and Principal Contractor
Hedgehog	Clearance of suitable hibernation habitat	Clearance of suitable vegetation under supervision.	April – October	ECoW
GCN	Clearance of vegetation	Hand search of suitable terrestrial habitats and supervision of vegetation removal. Trees and scrub to be removed in two stages; canopy removed to stump height, then stumps removed following hand search.	Outside of hibernation period March – October in suitable weather conditions	ECoW and Principal Contractor

5.0 STAGE 2 – CONSTRUCTION

- 5.1 Table 5 below provides a summary of the works to be undertaken.
- 5.2 A copy of this CEMP will be held at the site office for reference.
- 5.3 The Principal Contractor will monitor the ecological issues during the course of site clearance and construction.
- 5.4 Throughout construction all workers should work with due care and attention with respect to the potential presence of fauna and protected species on site. Any observations of protected species must be reported immediately to the Principal Contractor, who will contact the ECoW for further advice.
- 5.5 Weekly checks of the fencing demarcating the buffer zones and Root Protection Areas will be made by the Principal Contractor and this will ensure:
- The integrity and correct positioning of protective fencing
 - Repairs are made to the fencing as necessary

Protection of Retained Habitats

- 5.6 The potential for impacts on retained habitats (retained hedgerows, waterbody and trees) outside of the immediate working areas during construction activities will be minimised through the erection of protective fencing and creation of protective buffer zones.
- 5.7 The fencing will be located so that it prevents any inadvertent damage to retained or created habitats throughout the construction, particularly in locations where vegetation is to be removed or during works close to retained habitat.
- 5.8 No temporary storage of materials, construction of haul routes, or site machinery would be sited within retained habitats, their buffer zones or outside of the site boundary and unnecessary or informal access to these areas by construction site personnel would be prevented.

Hedgerows and Trees

- 5.9 It is the responsibility of the Principal Contractor to ensure that fencing is maintained, remains in the correct location and is fit for purpose protecting the root protection areas as stipulated on the Tree Constraints Plan detailing the Biodiversity Protection Zones.
- 5.10 The Principal Contractor must also monitor the fencing and buffer zones to ensure that there have been no vehicle incursions and no materials are being stored within the Biodiversity Protection Zones.

Waterbody

- 5.11 A minimum 5m exclusion zone will be maintained around the waterbody during construction. The purpose of the exclusion zone is to avoid the potential for disturbance to the waterbody and to ensure that the bank and bankside vegetation remains intact. The following apply to the exclusion zone:
- Works or the storage of materials will not take place within this zone.
 - The maintenance of this zone will be ensured through the use of bankside fencing.

- 5.12 Any environmentally hazardous material will be kept in dedicated stores, and storage tanks should have appropriate bunding to prevent run-off to the retained habitats and into the waterbody.
- 5.13 The following best practice methodology, which is in accordance with Environment Agency guidance, will also be adopted during construction to protect the waterbody:
- There should be no uncontrolled run-off of water or mud from the site
 - Once hard surfaces are constructed in the form of roads, silt run-off preventative measures in the form of metal plates secured to gulley frames with terram are to be utilised throughout the construction period
 - During works machinery will not be refuelled within 30m of the waterbody to prevent spillage.
 - All machinery will be regularly checked for oil leaks or similar, which, if found, must be prevented from entering the waterbody either through immediate repair of the machinery or through use of a drip tray/spill kit or similar.
 - Any spillages (e.g. diesel) should be cleaned up immediately. Efforts will be made to stop a spill at the source. If the primary container or secondary containment have been breached or failed for any reason, the spill will try to be contained where it's happening. This will reduce the quantity of material released, meaning there's less spilt material that can cause pollution
 - If it is not possible to stop the spill at source, significant attempts will be made to stop it as close to the source as possible. If possible the spilling material will be safely moved into another container to limit the size of the spill. Use of a suitable container and pump may be required
 - In the event of a spillage on site, the material should be contained (using an absorbent material such as sand or soil or commercially available booms). Sorbents will be used to soak up a spill and stop it spreading on hard surfaces. Using sorbents generates waste and this method will only be used on small spills, or where a spill has been contained to stop any further spread. All used sorbents will be disposed of at an accredited site for disposal

Fauna

General Good Practice Measures

- 5.14 The following precautionary measures will be adopted to avoid any potential for harm to habitats or protected species:
- Where possible material will be stored centrally within the site within a fenced compound;
 - Where stored onsite, materials will be raised on pallets;
 - All excavations left overnight should be left with one sloping end to allow any animals that may fall in to escape;
 - All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling.
- 5.15 In the event that protected species are discovered during construction, Principal Contractor is to contact the ECoW for further advice

Bats

- 5.16 All trees affected by development works are to be checked at Stage 1 – Pre-Commencement of works. However, should any additional arboricultural works become necessary during construction, the ECoW must be contacted and informed of the necessary tree works to ensure that no features suitable for a bat roost have formed and there is no risk to roosting bats. Avoidance measures or further survey to ascertain that bats will not be affected by the works is to be implemented, as required.
- 5.17 To prevent adversely affecting foraging and commuting habitats utilised by bats, no unnecessary light spill should occur onto the Biodiversity Protection Zones. Lighting must also be turned off when construction is not active.

Birds

- 5.18 During construction, the risk to nesting birds is minimal, as suitable habitat will have been removed during site clearance or protected within the buffer zones of the hedgerows and trees. However, should any additional clearance works be necessary during the period March to August, the affected habitat will be checked by the ECoW to confirm the absence of nesting birds prior to removal.
- 5.19 Where nesting birds are present works must cease in the vicinity of the nest and an exclusion zone will be set around the nest (as determined by the supervising ecologist and suitable for the species nesting) within which no works can occur until the birds have fully fledged

Hedgehog

- 5.22 Suitable hedgehog hibernation habitat on site will have been cleared, however care must be taken to ensure that no hedgehogs become trapped in excavations or pipework (see paragraph

5.20 above), and that materials are stored appropriately to ensure that hedgehog do not hibernate within them.

GCN

- 5.23 The areas of the site that provided limited terrestrial habitat for GCN will now have been cleared. In the unlikely event that a GCN is found during construction, all works must cease and the ECoW contacted for further advice.

Table 5: Timetable for Stage 2 – Construction

Habitat or Feature	Activity	Mitigation	Recommended timing	Responsibility
Biodiversity Protection Zones (retained hedgerows, trees and Waterbody)	Protective fencing to be checked weekly and maintained	Heras-style fencing positioned around the Biodiversity Protection Zones is to be retained in situ and well maintained throughout construction. No machinery or vehicles to enter these zones or materials to be stored at any time.	All year round as appropriate for the duration of Stage 2.	Principal Contractor
General measures	Passive observation	Any observations of protected species must be reported immediately to the Principal Contractor, who will contact the ECoW for further advice.	All year round as appropriate for the duration of Stage 2.	All site staff
	Materials storage	Materials and chemicals will be stored centrally within the site and raised on pallets; where necessary, protective bunds will be created to contain any spillage events. The attenuation ponds should be created as soon as possible to assist with site run-off and drainage.	All year round as appropriate for the duration of Stage 2.	Principal Contractor
	Weekly checks	A walkover of the site will be undertaken weekly to confirm the absence of protected species.	All year round as appropriate for the duration of Stage 2.	Principal Contractor
Bats	Check of any additional trees requiring works for roosting bats.	Any additional trees requiring arboricultural works are to be assessed by a licensed bat worker for features and suitability for roosting bats. Suitable trees that may be affected will be surveyed for the presence of roosting bats. Avoidance or mitigation measures if required will be advised by licensed bat worker.	As required prior to all additional tree works.	ECoW and Principal Contractor
	Construction site lighting	Avoid lighting / light spill on to Biodiversity Protection Zones. Turn off site lighting when the site is not in use.	All year round as appropriate for the duration of Stage 2.	Principal Contractor

Habitat or Feature	Activity	Mitigation	Recommended timing	Responsibility
Birds	Site works preparation and pre-commencement nesting bird check	The removal of woody vegetation to avoid the bird nesting season (March – August, inclusive), where possible. Additional clearance of woody vegetation within the nesting season (where necessary) must be preceded by nesting bird check completed by the ECoW or suitably qualified ecologist If nesting birds are present an exclusion zone to be determined by the ECoW should be set around the nest (suitable for the species nesting) within which no works can occur until the birds have fully fledged.	September to February March to August inclusive	ECoW and Principal Contractor
Hedgehog	Protection of hedgehog on site.	Protection measures as awareness of the potential for hibernating hedgehog within stored materials.	All year round as appropriate for the duration of Stage 2.	All site staff
GCN	Protection of GCN on site	Awareness of the potential for GCN to be present on site.	All year round as appropriate	All site staff

6.0 WASTE MANAGEMENT

- 6.1 The project will produce waste materials as a natural part of the work. This waste material, due to the volumes involved, and the limited space at temporary compounds and depots, will be disposed of swiftly, cost effectively and in full compliance with all legal requirements.

Duty of Care

- 6.2 All those who produce or handle wastes from demolition, earthworks and construction activities have legal responsibilities – Duty of Care – for its safe keeping, transport and subsequent recovery or disposal.
- 6.3 Duty of Care requires you to take care of your waste while it's in your control, check that the person to whom you give your waste is authorised to receive it, make out a waste transfer note when the waste is handed over and to take all reasonable steps to prevent unauthorised handling or disposal by others. For example, checking that your waste goes to the intended facilities can avoid fly- tipping.
- 6.4 Examples of authorised persons are council waste collectors, registered waste carriers, holders of a waste management license or holders of a registration of an exemption from the need to hold a waste license.

Waste Classification

- 6.5 Wastes from construction, demolition and excavation operations will normally be a controlled waste, classified as commercial or industrial waste and hence subject to waste-related legislation.
- 6.6 However, certain types of controlled waste have properties that make them especially hazardous or difficult to dispose of. These wastes are referred to as Hazardous Waste and require a pre-consignment note system for their recovery or disposal.
- 6.7 Although the Site Waste Management Plan (SWMP) Regulations 2008 have now been revoked St Modwen Homes Ltd. will still adhere to the principles of the regulations. The key aim being improving materials resource efficiency, by promoting the economic use of construction materials and methods so that waste is minimised and any waste that is produced during the course of works can be re-used, recycled or recovered in other ways before disposal options are explored.
- 6.8 The plan will describe a set of waste management estimates, against which St Modwen Homes Ltd. will compare performance as the construction project progresses. The plan will forecast how much waste is likely to be produced on site, and then for each type of waste the proportion that will be re-used or recycled on site, or removed from the construction site for re-use, recycling, recovery or disposal elsewhere
- 6.9 St Modwen Homes Ltd. will ensure best practice regarding site waste management, and sort out waste into their appropriate recyclable and land fill skips as required, and incorporate skips/containers for any contaminated material. Waste skips will not be situated:
- Near the site boundary where arson can be a consequence;
 - Close to structures/buildings which can result in the spread of fire, more than 8 meters away;
 - Near to drains, sewers or water courses to prevent contamination.

- 6.10 All wastes generated from the works will be dealt with in full compliance with the statutory duty of care as defined by the Environmental Protection Act 1990 and all subsequent amendments. It is anticipated that the waste planned for disposal will be classified predominantly as non-hazardous waste, although there may be a certain amount of classified as hazardous waste.
- 6.11 St Modwen Homes Ltd. will be the waste producer; it will be a St Modwen Homes Ltd. responsibility to comply with all regulatory and duty of care obligations in the transportation and disposal of these materials. Copies of the licenses of receiving sites will be secured at least 14 days prior to start of disposal. Copies of all consignment and transfer notes will be kept on record for audit purposes.
- 6.12 St Modwen Homes Ltd. will be responsible for the off-site disposal of all unsuitable materials. Materials classified as unsuitable, including waste identified as being hazardous arising from the works, will be tested by St Modwen Homes Ltd. for compliance with the required waste acceptance criteria if disposal to licensed landfill is required.
- 6.13 Acceptable waste is to be transferred by St Modwen Homes Ltd. to a facility licensed to take the waste. St Modwen Homes Ltd. will be responsible for all pre-treatment of waste. St Modwen Homes Ltd. will, before commencing any part of the works, collate a list of locations of tips off site that they propose to use for the disposal of materials arising from the temporary and permanent works, which are authorised by the local authorities.
- 6.14 St Modwen Homes Ltd. will ensure all skips, where required are sheeted prior to removal from site to eliminate airborne debris during transit. If dust and dirt become an issue, St Modwen Homes Ltd. will provide cleaning procedures i.e. wheel wash facility and a road sweeper if required.
- 6.15 Waste material will not be allowed to accumulate within the compound. This means controlling build-up of waste at local points around the site, particularly where they impede access and egress, as well as any major accumulation points.
- 6.16 In accordance with the duty of care St Modwen Homes Ltd. will provide copies of all controlled waste transfer notes relating to the disposal of materials arising from the temporary and permanent works. Cradle to-grave waste audits will be undertaken at regular intervals. Where removal and disposal of waste is sub-let St Modwen Homes Ltd. will ensure that the contractor complies in full with the requirements of the regulations. There will be NO burning of timber, rubbish or any other waste materials on site.

7.0 PROTECTION OF WATER RESOURCES

- 7.1 Water pollution is the contamination of water bodies (e.g. lakes, rivers, oceans, and groundwater). Water pollution affects plants and organisms living in these bodies of water; and, in almost all cases the effect is damaging either to individual species and populations, but also to the natural biological communities. Water pollution occurs when pollutants are discharged directly or indirectly into water bodies without adequate treatment to remove harmful compounds.
- 7.2 Sources of water pollution on building sites include: diesel and oil; paint, solvents, cleaners and other harmful chemicals; and construction debris and dirt. When land is cleared it causes soil erosion that leads to silt being run-off and sediment pollution. Silt and soil, which runs into natural waterways turns them turbid, which restricts sunlight filtration and destroys aquatic life.

- 7.3 Surface water run-off also carries other pollutants from the site, such as diesel and oil, toxic chemicals, and building materials like cement. When these substances get into waterways they poison water life and animals that drink from them. Pollutants on construction sites can also soak into the groundwater, a source of human drinking water. Once contaminated, groundwater is much more difficult to treat than surface water.

Measures to prevent water pollution

- 7.4 St Modwen Homes Ltd. will ensure good construction site practice to help control and prevent pollution; the following measures will be taken to mitigate the risks:
- St Modwen Homes Ltd. will prevent erosion and run-off, minimize land disturbance and leave maximum vegetation cover;
 - Cover piles of building materials like cement, sand and other powders; regularly inspect for spillages, and locate them so they will not be washed into waterways or drainage areas;
 - Use non-toxic paints, solvents and other hazardous materials wherever possible;
 - Segregate, tightly cover and monitor toxic substances to prevent spills and possible site contamination;
 - Cover up and protect all drains on site;
 - Collect any wastewater generated from site activities in settlement tanks, screen, discharge the clean water, and dispose of remaining sludge according to environmental regulations.
- 7.5 Concrete is highly alkaline and corrosive and can have a serious impact on watercourses. It is essential to take particular care with all works involving concrete and cement. Suitable provision will be made for the washing out of concrete mixing plant or ready mix concrete lorries so that washings do not flow into any drain or watercourse or seep underground.
- 7.6 In the event of a spillage on site, the material will be contained (using an absorbent material such as sand or soil or commercially available booms). All spillages will be reported to the Site Manager who will inform the Environment Agency in the event of a significant occurrence.

Run-off waters and silt pollution

- 7.7 All water pollution is an offence under the *Water Resources Act 1991*. The Act makes it an offence to cause pollution to controlled waters either deliberately or accidentally. Controlled waters include all watercourses and water contained in underground strata (groundwater).
- 7.8 Although not so obvious a cause of water pollution as chemicals or farm waste, for example, silt causes six per cent of all water pollution incidents. Any works which create silt therefore pose a serious threat to the water environment.
- 7.9 Silt causes lasting damage to river life by:
- Clogging gills, so fish suffocate and die;
 - Destroying spawning sites;
 - Injuring fish by its abrasive action;
 - Destroying insect habitats on the riverbed, starving fish of their food source;

- Stunting aquatic plant growth, limiting oxygen supplies, shelter and a food source;
 - Building up to cause flooding.
- 7.10 Also, oil and chemicals are often present in silt, especially from roads, land reclamation, and construction sites. This causes even more dangerous pollution. Preventing silt pollution in the first place is the best solution – and can be done by careful planning and taking suitable precautions.
- 7.11 The construction industry is a major cause of silt pollution. There are many reasons such as rainfall running off disturbed or stripped ground, for example.
- 7.12 Virtually all development, construction and maintenance works are likely sources of silt pollution. These include;
- Land reclamation;
 - Any pipelines construction and repairs;
 - Dewatering or pumping out excavation
 - Demolition; Concreting;
 - Culvert cleaning;
 - Sand blasting;
 - Road cutting

Fuels and Oil

- 7.13 Storage and handling of fuel and oil may result in spillages due to operator error or mechanical damage to containers. This may result in soil and surface water contamination, and possibly subsequent groundwater contamination. St Modwen Homes Ltd. will clean up any spillages, to prevent environmental damage. To this end spill kits, with absorbent material and padded bunds will be present on site.
- 7.14 Loss of oil to surface waters is highly visible and likely to attract the immediate attention of the Local Authorities and/or members of the public even if the quantities involved are minute. As little as one gallon of oil can cover an area of water of approximately 100 sq. meters. Oil pollution is currently the single major environmental issue most targeted by the Environment Agency.
- 7.15 Soakage materials will be held on all sites where fuel/oils are stored and staff will be trained in their use. An Emergencies Procedure will be issued when required and it will be prominently displayed in all site/depots accommodation.

Water and Effluent

- 7.16 Water and effluent generated from on-site activities should be treated and disposed of in accordance with the requirements of the Environment Agency. Adequate pollution prevention techniques should be adopted to ensure that any potentially hazardous substances do not come into contact with vulnerable water (e.g. via surface water drainage systems). Recycling water should be encouraged.



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Legend

- ▬ Site boundary
- ▬ Existing Pond
- ▬ Biodiversity Protection Zone

