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SWANSEA BAY CAMPUS

BIRD MITIGATION STRATEGY

Prepared for: St Modwen Development Ltd.

Date: June 2017

Report Reference: JN00268/D02

CONTENTS

1.	INTRODUCTION	1
2.	REVIEW OF EXISTING DATA.....	3
3.	MITIGATION MEASURES	6
4.	MANAGEMENT AND MONITORING	8
5.	SCHEDULE OF WORKS.....	9

DRAWINGS

5104896-ATK-00-XX-SK-Z-3000	Proposed Rock Revetment Plan (Atkins)
JN00268/DW04	Rock Revetment Working Areas Plan (SK)

1. INTRODUCTION

Background

- 1.1 SK Environmental Solutions Limited was appointed by St Modwen Developments Limited, to discharge a condition of planning imposed by Neath Port Talbot Council in relation to improvements to the existing rock armour revetment that separates the proposed academic building and associated curtilage from the beach front at Swansea Bay. The current revetment is not sufficient to protect the building from over topping of waves during periods of heavy wind and high tide. Given the location of the proposed building, improvements to the structure of the existing revetment are required. The works to the rock revetment are covered by planning permission P/2017/80. Condition (1) reads as follows:

“(1) Notwithstanding the details submitted and prior to any development taking place a scheme shall be submitted to and approved in writing by the local Planning Authority that shall include the following;

A survey of the application site, working area and adjacent beach (within 500m of the application site) to ascertain the use of the area and beach fronting the site by wading birds.

A methodology based upon the survey data for construction and details of any mitigation to prevent any detrimental impacts upon wading birds, which may include details of hours of construction and mitigating or preventative measures to ensure that any wading birds within the area are unaffected.

This scheme as approved shall be fully implemented upon commencement of the development, and maintained throughout the construction phase.

Reason

In the interests of ecology and Policies EN6 and EN7 of the Local Development Plan”.

Aims and Objectives

- 1.2 The purpose of this Method Statement is to:

- Mitigate and reduce any potential impacts to wading birds from the proposed improvements to existing rock armour.

Development Proposals

- 1.3 The proposed development involves the re-construction of 150m of existing rock armour revetment to provide adequate overtopping protection to the proposed academic building, located immediately north of the existing revetment. These works are shown on the Proposed Rock Revetment Plan (Atkins, ref: 5104896-ATK-00-XX-SK-Z-3000).
- 1.4 Prior to works commencing it will be necessary to create an access ramp to allow machinery down onto the foreshore. In order to construct the ramp, the existing rock armour revetment will be removed from the ramp location and temporarily stored either

side of the ramp. The bedrock and sand located underneath the removed rock armour will be reprofiled to create the ramp. Location of the access ramp and temporary rock armour stockpile is shown on Drawing Number JN00268/DW04.

- 1.5 Plant will only access the beach from the Swansea Bay Campus development site via the temporary ramp and machines will remain within a 25m strip along the toe of the works area (see Drawing Number JN00268/DW04).
- 1.6 These works will entail the removal of the existing rock armour revetment in approximately 20m sections. Removed rock armour will be placed in temporary stockpiles on the foreshore, within the 25m working strip. Works will progress in an east to west direction.
- 1.7 Within each section, the underlying sand will then be profiled to the required slope and immediately geotextile will be placed on top of this sand. Under layer rock will then be added to initially secure the geotextile in place and then spread to form the required slope and depth. The existing rock armour will then be replaced rock by rock and supplemented by imported natural rock armour from the existing rock armour stockpile, located within the Swansea Bay Campus development site. The revetment will then be backfilled and earth works to the top of the revetment completed from the landward side. Once the revetment structure has been completed the access ramp will be removed and the revetment in that area reinstated in line with the previous levels.
- 1.8 In order to facilitate these works it is proposed that a reptile mitigation strategy involving the two phased, directional strimming of vegetation on the existing fixed dune habitat (located immediately north of the existing revetment) be undertaken prior to the revetment improvement works commencing. Strimming will be undertaken in a west to east direction. The aim of the directional strimming is to encourage any reptiles present in this area to disperse to suitable habitat to the east, within the 'retained dune area'. This methodology will also be followed within the area of proposed access ramp. This methodology is described in detail within the Reptile Mitigation Strategy, June 2017 (JN00268/D04).
- 1.9 Following on from the reptile clearance works, it will also be necessary to strip the top 300mm of material from the fixed dune area that will be affected by the proposed revetment improvement works. This material will be stockpiled in windrows until after the revetment works have been completed, at which time it will be used to create an area of artificial dune grassland on the north facing slope of the reprofiled revetment. Details of this methodology are described within the Fixed Dune Relocation and Artificial Dune Grassland Creation Strategy, June 2017 (JN00268/D02).
- 1.10 The reptile mitigation strategy and dune grassland stripping will be completed before the revetment works commence.

2. REVIEW OF EXISTING DATA

Statutory Designations

Crymlyn Burrows Site of Special Scientific Interest (SSSI)

- 2.1 To the east of the development site lies Crymlyn Burrows SSSI, which is designated for its sand dune and saltmarsh habitat, which supports plant species such as rock sea lavender *Limonium binervosum*, dittander *Lepidium latifolium*, rock hutchinsia *Hornungia petraea*, round-leaved wintergreen *Pyrola rotundifolia*, dutch rush *Equisetum hyemale* and the variegated horsetail *Equisetum variegatum*.
- 2.2 According to the SSSI citation, "...This part of the Neath estuary is also used by part of the population of small waders overwintering in Swansea Bay...". The citation does not make mention of summer or breeding birds.

Blackpill Site of Special Scientific Interest (SSSI)

- 2.3 Blackpill SSSI is located approximately 6km west of the proposed development site. It is designated for its overwintering and passage bird populations. This includes nationally important numbers of ringed plover and sanderling, with numbers reaching over 1% of the UK and western European population.

Non-Statutory Designations

Swansea Bay Site of Importance for Nature Conservation (SINC)

- 2.4 Swansea Bay has been designated by the City and County of Swansea Council as a Site of Importance for Nature Conservation (SINC). This designation does not cover the proposed working area, finishing approximately 3.2km to the west.

Area adjacent and including the proposed revetment works area (not currently designated)

- 2.5 Neath Port Talbot Borough County Council (NPT) is currently reviewing their non-statutory (SINC) designations. Current policy states that all areas/sites that meet the SINC criteria should be considered the same way as those already identified. Given that the area adjacent to the proposed revetment improvement works supports important numbers of wading birds it is considered that the area should be considered as a SINC within the planning process.

Species

- 2.6 A review of WeBS data and previous survey work has identified that wading birds are present on the foreshore and sand flats in the area surrounding the proposed revetment works throughout the year, with numbers being significantly higher during the winter months.
- 2.7 Species recorded during winter survey work (undertaken by SK Environmental Solutions Ltd in 2015/2016 of an area of foreshore located immediately south of the 'retained dune area', approximately 250m east of the revetment working area) include sanderling

Calidris alba, ringed plover *Charadrius hiaticula* and dunlin *Calidris alpina*, as well as gull species including common gull *Larus canus*, herring gull *Larus argentatus*, black-headed gull *Chroicocephalus ridibundus*, lesser black-backed gull *Larus fuscus* and greater black-backed gull *Larus marinus*.

- 2.8 Wetland Bird Survey (WeBS) data was obtained for the years mid-2009 to mid-2014 for the area covering the survey site and Crymlyn Burrows SSSI. The data received correlates with the data from SK Environmental Solutions Limited wintering bird survey. However, the WeBS data also includes summer survey data.
- 2.9 Using the WeBS data set, and combining all five years of data to establish a calendar average, the peak months for bird activity, based on counts of individual birds, are:
- September (975);
 - February (943);
 - December (930); and
 - October (865).
- 2.10 The lowest periods of bird activity appear to be the spring and early summer:
- June (113);
 - May (187);
 - April (216); and
 - July (222).
- 2.11 Sanderling is considered to be a sensitive species at the site due to the nationally important numbers that overwinter in the nearby SSSIs and surrounding area.
- 2.12 Within the WeBS data sanderling are seen to have a maximum count of 456 in December 2012. Whereas they have a peak count of just 90 during June and July of the same year; a figure which in itself is anomalous as during the other four years, July counts have all been 0. Therefore, the average count across all five years is just 18 birds in July and 1.6 in June. Numbers appear to be increase in August (average 81), most likely due to the influence of passage animals, before dropping in September to 24; another anomalous average caused by a count of 120 being recorded in one year and 0 being recorded in the other four years.
- 2.13 The majority of birds recorded during the wintering surveys are waders and gulls. These birds nest in upland and inland locations in the spring and summer, returning to the coastal sites in the late autumn/early winter. Therefore, the foreshore and tidal areas are populated by lower numbers of these species during this period.
- 2.14 The WeBs counts and the wintering bird surveys were undertaken around high tide, when bird numbers are most concentrated. Wading birds are gradually pushed up the

beach by the rising tide, so that by high tide the individuals are gathered in a dense flock and are generally easier to count.

- 2.15 At low tide, due to the open expanse of sand and mud available for feeding birds, individuals are far less densely concentrated. In general, the greater numbers of birds at this point are away from the upper shore as this will have become the driest area of the tidal range and therefore invertebrate prey are likely to have retreated further under the sand into those areas that remain wet or damp permanently.
- 2.16 In addition, the open landscape provided by the retreating tide provides a multitude of alternative feeding and roosting locations to birds away from the development location.
- 2.17 Birds generally roost over-night and during periods of high tide (when foraging opportunities are reduced).

3. MITIGATION MEASURES

- 3.1 It is considered that due to the presence of wading birds the following mitigation measures are required to ensure that disturbance to wading birds, particularly whilst roosting, is kept to a minimum.

Timing of Works

- 3.2 In order to minimise the risk of disturbance to roosting birds, it is proposed to carry out the work to the revetment prior to the main wintering bird activity period. Works will be undertaken between July – September 2017. It is considered that as the works will have been progressing steadily for a number of weeks come September that habituation to the processes will have occurred by this time.
- 3.3 As previously discussed, birds tend to congregate in denser flocks to roost, higher up the shore, during periods of high tide (when foraging opportunities are reduced). Birds do not always use the same roosting area but do appear to favour certain places, which are used on a more regular (but not exclusive) basis.
- 3.4 Although wading bird activity is predominantly influenced by the tide, all bird activity has an increase around the hours immediately after dawn and prior to dusk. These are the hours within which feeding is often the most important, as overnight feeding is often not possible, or reduced.
- 3.5 Therefore, it is proposed that a check be made each morning, prior to works commencing, to identify whether any roosting birds are located within close enough proximity to the working area to be disturbed through the commencement of construction activities.
- 3.6 If it is considered likely that commencement of work activities would cause disturbance to the roosting flock, then work will be delayed until such a time as the flock has begun to wake and move away. Once the roosting flock has moved from their roosting location works will commence.
- 3.7 It is proposed that an experienced ornithologist provides a Tool Box talk to a suitable member of the construction team, who will then be responsible for undertaking the pre-commencement checks. This is considered to be a suitable option given that large flocks of roosting birds are easily identified. This person will be termed ‘Designated Roost Assessor’.

Lighting and Noise

- 3.8 Wading birds can be easily be disturbed by unfamiliar lighting and/or noise. Works will produce some noise through the use of heavy machinery and vehicles. However, it is considered likely that the sequential stockpiling of sections (approximately 20m in length) of the existing rock armour further out on the foreshore (as per the working methodology) may have the added effect of both dampening the sound from the construction processes and act as a visual barrier.
- 3.9 The work to modify the revetment will take place following the commencement of the on-shore work to construct the University building. Therefore, it is anticipated that birds will

gradually become habituated to the presence of vehicles working close to the upper shore. This anticipated habituation, coupled with the timing precautions detailed above, will mean that birds are unlikely to be significantly impacted by vehicle movements or machinery noise on site.

- 3.10 No loud sirens or otherwise high volume novel noises will be used within the working site. Noise impacts will be restricted to the use of machinery and vehicles.
- 3.11 Due to the time of year that works will be undertaken, lighting will not be used on site. Flashing lights will be limited to vehicle mounted beacons required for on-site for construction safety. Therefore, disturbance through artificial lighting will be negligible.

Vehicle Movements

- 3.12 Vehicles and machinery movement, if undertaken within close proximity to feeding or roosting birds, may disturb individual birds and cause displacement. Therefore, a defined working area on the beach will be established as per Drawing Number JN00268/DW04. The working area will not extend beyond 25m from the toe of the existing revetment. This area will be fenced with Heras fencing. All vehicles and construction personnel will enter and leave the working area via the designated access route and ramp, these are also shown on Drawing JN00268/DW04.
- 3.13 Any vehicles, not required for the immediate works will not be brought onto the shore, and should remain on the landward side of the revetment until required.
- 3.14 Birds are more likely to perceive a person on the ground as a threat than a vehicle (which they will likely become habituated to). Therefore, where possible, contractors should be based in vehicles and should not walk around the site unnecessarily.

4. MANAGEMENT AND MONITORING

- 4.1 Fortnightly visits to the site will be made by an experienced Ecological Clerk of Works (ECoW) in order to confirm adherence to the methodology detailed above.

Outputs

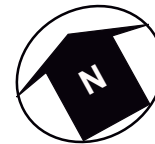
- A log of the start times each day will be kept, detailing if roosting flocks were identified, who undertook the checks and whether any delay to the work start time was needed; and
 - A report detailing the compliance to this methodology following the fortnightly compliance checks (the start time log will be inspected during these visits).
- 4.2 A copy of the 'start times log' and the compliance reports will be sent to the Local Planning Authority upon completion of works.

5. SCHEDULE OF WORKS

- 5.1 Table 1, below, sets out the proposed Schedule of Works for the bird mitigation strategy, as described in this document.

Table 1. Schedule of Works for Bird Mitigation Strategy			
Activity	Timescale	Personnel	Comments
Tool Box Talk	July 2017	Experienced ornithologist (SK) and 'Designated Roost Assessor'	An experienced ornithologist will give the Designated Roost assessor a detailed tool box talk regarding the behaviours of wading birds and distances considered likely to cause disturbance. The tool box talk will be undertaken on site prior to any works commencing. The experienced ornithologist will observe and assist the 'Designated Roost Assessor' for the first two days of works and will be available should questions arise subsequently.
Revetment Improvement Works (from temporary ramp construction to project completion)	July 2017 – September 2017	Designated Roost Assessor – following Tool Box talk from experienced ornithologist (SK)	A check of roosting bird location and assessment of whether works are likely to disturb roosting birds. If works are likely to disturb roosting birds the 'Designated Roost Assessor' will keep checking the roost location until such time as the birds have adequately dispersed and works are no longer considered likely to cause disturbance.
Compliance Visits	July 2017 – September 2017	ECoW	Compliance visits will be undertaken fortnightly by an experienced Ecological Clerk of Works (ECoW) in order to confirm adherence to the methodology.
Submit Compliance Documents	October 2017	ECoW	The site log and compliance reports will be submitted to the LPA following the completion of works.

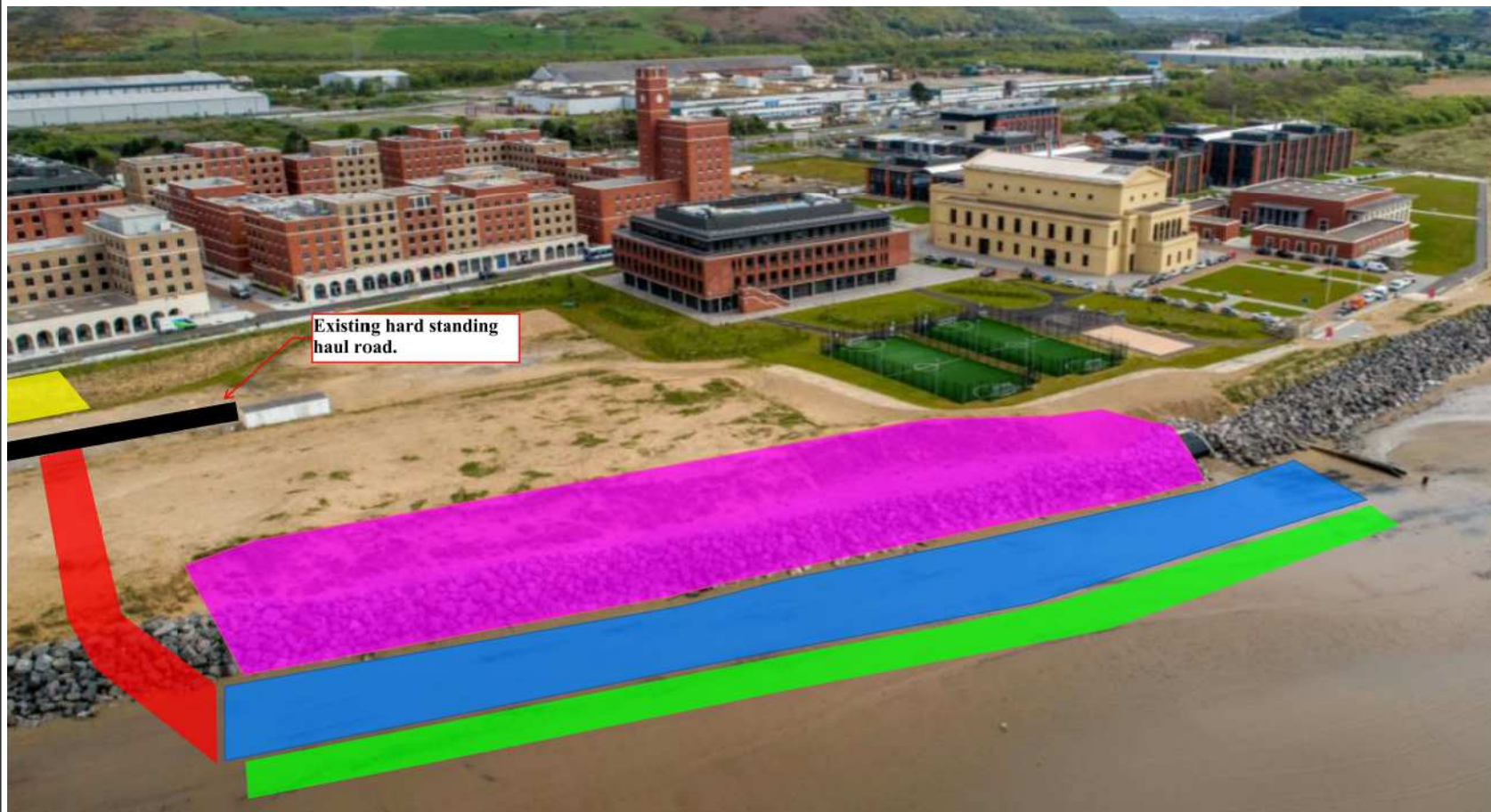
Table 1. Schedule of Works for Bird Mitigation Strategy			
Activity	Timescale	Personnel	Comments
Production of reports for submission to St Modwen and Local Planning Authority	August 2017	SK Environmental Solutions	Reports will detail compliance with method statement and results of vegetation stripping i.e. location of any reptiles moved during clearance.



ROCK REVETMENT WORKING AREAS PLAN

KEY

-  Approximate extent of new revetment works
-  Vehicle/plant route on foreshore during revetment works
-  Approximate location of temp. Access ramp, created to facilitate access to foreshore to undertake works. Area to be reinstated following works and will be subject to vegetation clearance in line with the Reptile Mitigation Strategy (JN00268/D04)
-  Area where existing revetment rock will be stockpiled before being replaced. The removal and replacement will be carried out in sections in accordance with the Construction Method Statement
-  Location of revetment contractor site welfare - Oasis unit and container/small canteen



DRAWING TITLE: Rock Revetment Working Areas Plan

SITE: Swansea Bay Campus

DRAWING NUMBER: JN00268/DW04

JOB NUMBER: JN00268

CLIENT: St Modwen Development Ltd

DATE: June 2017

SCALE: NTS (Do not scale from this drawing)

NB The new imported natural rock armour is stockpiled away from the fixed dune and foreshore areas, on the developer's land