

Intended for
InterGen

Document Reference
876633-1

Date
August 2017

SPALDING ENERGY EXPANSION

SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES

**Details Pursuant to Condition (43) of the 2015 Deemed Planning
Permission**

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

Date **18/08/2017**
Made by **Chris Hodsman**
Checked by **Malcolm Robertson**
Approved by **Emily Agus**
Description **FINAL**
Document Ref **876633-1**
Revision **1**

<i>Revision Request No.</i>	<i>Date Submitted</i>	<i>Raised By</i>	<i>Revision Summary</i>	<i>Date Assessed</i>	<i>Assessed By</i>	<i>Approved (Y / N)</i>

1. INTRODUCTION

1.1 Background

On 11 November 2010, Consent under Section 36 of the Electricity Act 1989 was granted and a direction that deemed planning permission be granted under Section 90 of the Town and Country Planning Act 1990 was made (the Original Consent and the 2010 Deemed Planning Permission) for a generating station to be known as the Spalding Energy Expansion (SEE) at West Marsh Road, Spalding, Lincolnshire. On 30 October 2015, a variation to the Consent under Section 36C of the Electricity Act 1989 was granted and a direction that the Conditions of the 2010 Deemed Planning Permission be varied under Section 90(2ZA) of the Town and Country Planning Act 1990 was made (the Varied Consent and the 2015 Deemed Planning Permission).

Pursuant to the provisions of Condition 4(2) of the Varied Consent and Condition (53) of the 2015 Deemed Planning Permission, the gas turbine technology option selected for SEE comprises that set out at paragraph 2(a)(ii) of the Varied Consent, namely: *“one [Combined Cycle Gas Turbine] CCGT unit including a gas turbine, a heat recovery steam generator (HRSG), a steam turbine with a rated electrical output of up to 645 MW with Open Cycle Gas Turbine (OCGT) unit(s) and associated equipment with a total rated electrical output of less than 300 MW).*

Spalding Energy Expansion Limited (SEEL) are undertaking the development of SEE in phases, of this the first phase entails the commencement of the development of the OCGT unit(s) and associated equipment with a total rated electrical output of less than 300 MW. Further development will be undertaken in a subsequent phase(s).

1.2 Purpose of this Document

Condition (43) of the 2015 Deemed Planning Permission provides that: *“The commencement of the Development shall not take place until a scheme of Environmental Enhancement Measures has been submitted to, approved in writing by the Council in consultation with Natural England. The Measures shall be adhered to in accordance with the required scheme except in so far as any variation has been approved in writing by the Council, in consultation with Natural England. The scheme shall be based on the information outlined in Chapter 13 of the Environmental Statement (March 2009) and Chapter 11 of the Variation Application Environmental Statement Further Information Document (March 2015) and include the following:*

- (i) The measures to be taken to secure and enhance the welfare, on the Site, of flora and fauna (including badgers, bats, otters, amphibians, reptiles, nesting birds and water voles) which are found on, inhabit or use the Site during the construction, operation and decommissioning of the Development.*
- (ii) Agreed monitoring and mitigation as detailed in Chapter 13 of the Environmental Statement (March 2009) and Chapter 11 of the Variation Application Environmental Statement Further Information Document (March 2015)”.*

The Varied Consent states that the reason for imposing this Condition is: *“to ensure that any adverse impact on wildlife is properly compensated for”.* The reason stated for imposing this Condition is to: *“ensure that any adverse impact on wildlife is properly compensated for”.*

This Document is submitted in order to satisfy the requirements imposed by this Condition and discharge Condition (43) to allow for the commencement of the Development.

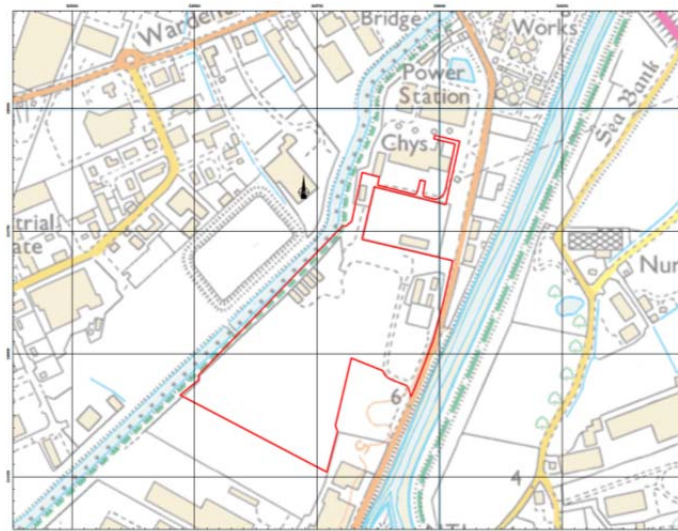
2. RELEVANT BACKGROUND INFORMATION

2.1 The Site

The Site comprises the area of land edged red on Figure 61033586-01, Drawing Number 482302-15-01. The Site lies approximately 2 km to the north east of Spalding town centre. The Ordnance Survey (OS) Grid Reference of the centre of the Site is approximately 525950, 324950. The Site occupies a total area of approximately 14 ha.

Insert 2.1 illustrates the location of the Site. The Site is bounded to the east by West Marsh Road and to the west by Vernatt's Drain.

INSERT 2.1: LOCATION OF THE SITE



Within the surrounding area, the predominant land use is industrial, with some residential properties located further afield. In brief, the land uses comprise:

- To the north, the existing National Grid Spalding 400 kV substation and the existing Spalding CCGT generating station site, beyond which is a sewage treatment works operated by Anglian Water.
- To the north east, across West Marsh Road, the Gas Receiving Facility for the existing Spalding CCGT generating station, and some local authority offices.
- To the east, West Marsh Road and the River Welland which has associated flood defences. Further to the east, across the River Welland, agricultural land with occasional housing.
- To the south east, Springfields Shopping Centre and the Festival Gardens.
- To the south, undeveloped industrial land, with industrial buildings located beyond comprising a mixture of commercial buildings and vehicle parking.
- To the west, Vernatt's Drain which is a man-made drainage channel designed as a flood prevention measure (Vernatt's Drain also has associated flood defences). A public footpath runs along the eastern side of Vernatt's Drain, adjacent to the Site. Further to the west, vacant grassland and the Benner Road Industrial Estate comprising a mixture of industrial premises, including some associated with food storage, processing and distribution.
- To the north west, over Wardentree Lane, a factory, various warehouses and business space.

The wider surrounding area is predominantly rural, with the predominant land uses being agricultural or horticultural, or related to industrial food processing.

2.2 Ecological Baseline Conditions on / at The Site

2008 Surveys

In May 2008, a preliminary ecological walkover survey of the Site was undertaken to establish the ecological baseline conditions, and the need for / scope of any additional detailed ecological surveys. Subsequently, the following additional detailed ecological surveys were undertaken (in chronological order):

- Breeding Bird Survey (June – August 2008);
- Bat Activity (Emergence / Re-Entry) Survey, including 'Transect' Surveys (June – September 2008);
- Otter and Water Vole Survey (September 2008); and,
- Extended Phase 1 Habitat Survey (September 2008).

These surveys followed best practice and, where applicable, the guidelines and techniques which form the survey standard methods.

2014 / 2015 Surveys

In October 2014, a verification ecological walkover survey of the Site was undertaken by Chris Hodsman (MCIEEM, Ramboll Senior Ecologist) assisted by James Fraser (Ramboll Environmental Scientist) in order to verify the ecological baseline conditions. The survey followed the Phase 1 Habitat Survey standard method¹, and was extended to note evidence of, or suitable habitat for, protected / notable species. In support of the survey, an updated search of the data held by Lincolnshire Environmental Records Centre (LERC) was undertaken in order to review any records submitted between May 2008 and October 2014.

In general, the survey indicated no material changes in the ecological baseline conditions with respect to: habitats; badgers; birds; invasive plant species; invertebrates; otters; reptiles; and, water voles. However, due to the British Sugar and Sports Social Club (BSSSC) building offering low potential to support bats, the survey indicated a potential material change in the ecological baseline conditions with respect to bats. Therefore, the following additional surveys were undertaken:

- Roosting Bat Inspection Survey (November 2014); and,
- Bat Activity (Emergence / Re-Entry) Survey (May – July 2015).

These surveys followed best practice and, where applicable, the guidelines and techniques which form the survey standard methods.

2017 Surveys

Further to this, in late March 2017, a second verification ecological walkover survey of the Site was undertaken by Chris Hodsman assisted by James Fraser in order to verify the ecological baseline conditions. Again the survey followed the Phase 1 Habitat Survey standard method, and was extended to note evidence of, or suitable habitat for, protected / notable species.

2.2.1 Summary of the Ecological Baseline Conditions

Table 2.1 provides a summary of the information relating to the ecological baseline conditions (i.e. habitats and protected / notable species).

¹ The standard method is provided by the Joint Nature Conservation Committee (JNCC) in the 'Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit' (2010 Edition).

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

TABLE 2.1: SUMMARY OF INFORMATION RELATING TO HABITATS AND PROTECTED / NOTABLE SPECIES

Ecological Interest	2008 Surveys	2014 / 2015 Surveys	2017 Surveys	Summary of Changes in the Baseline Conditions
Habitats	Habitats present on-site included; • Tall ruderal; • Improved grassland; • Bare ground; • Semi-improved grassland; • Continuous and scattered scrub; • Buildings and hard-standing; • Broadleaved woodland plantation; and, • Standing water.	The survey noted that the habitats identified on / at the site were largely consistent with those reported during the 2008 Surveys. Indeed, the following dominant habitats (in descending order of size) were identified on / at the site: • Tall ruderal; • Improved grassland; • Bare ground; • Semi-improved grassland; • Continuous and scattered scrub; • Buildings and hard-standing; • Broadleaved woodland plantation; and, • Standing water. However, there is evidence of succession of habitats (e.g. increased scrub in areas of tall ruderal vegetation) and scrub encroachment. In addition, an area of impeded drainage and standing water was noted in between and surrounding the tents in the west of the site. The composition of vegetation in this location suggested the presence of standing water was a regular occurrence with common reed (<i>Phragmites australis</i>) dominant in places.	The survey noted that the habitats identified on / at the site were consistent with those reported during the 2008 Surveys and the 2014 / 2015 Surveys. However, the BSSSC building and the disused administration building have been demolished, and the area comprising a redundant bowling green adjacent to these buildings has also been removed. This area now comprises bare ground / rubble piles.	The changes represent those that were anticipated as a result of the development according to the anticipated programme of development for the SEE site.
Badger	No evidence of badger on / at the site was identified.	The data provided by LERC highlighted two additional records for badger. The nearest record was located approximately 650 m to the south west of the site. There were no data records within / immediately adjacent to the site. During the survey, no evidence of badger on / at the site was identified.	During the survey, no evidence of badger on / at the site was identified. Whilst there was significant evidence of mammal digging, this was attributable to rabbit activity. Therefore, the findings of the 2014 / 2015 Survey remain valid.	It is considered that there are no material changes to the baseline conditions with respect to badgers.

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

Ecological Interest	2008 Surveys	2014 / 2015 Surveys	2017 Surveys	Summary of Changes in the Baseline Conditions
Bats	As part of the preliminary ecological walkover survey, the BSSSC building and the disused administration building were identified as having potential for roosting bats. No trees on / at the site were considered suitable for roosting bats. Subsequently, two Bat Activity (Emergence / Re-Entry) Surveys were undertaken of the buildings. During the surveys, no bats were recorded. The Bat Activity (Emergence / Re-Entry) Surveys included 'Transect' Surveys. During the surveys, common pipistrelle (<i>Pipistrellus pipistrellus</i>) and soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) were recorded using the site.	The data provided by LERC highlighted several additional records for bats. These included: common pipistrelle (<i>Pipistrellus pipistrellus</i>); soprano pipistrelle (<i>Pipistrellus pygmaeus</i>); brown long-eared bat (<i>Plecotus auritus</i>); and, Daubenton's bat (<i>Myotis daubentonii</i>). These species were all present in the records provided for the 2008 Surveys. The nearest record, a commuting soprano pipistrelle, was located approximately 520 m from the site. There were no data records within / immediately adjacent to the site. During the survey, the BSSSC building and the disused administration building were identified as having potential for roosting bats. Subsequently, a Roosting Bat Inspection Survey was undertaken in November 2014. Based on the survey: • The BSSSC building was considered to offer low potential for roosting bats. • The disused administration building was considered to offer negligible potential for roosting bats. • No trees were considered suitable for roosting bats. Subsequently, two Bat Activity (Emergence / Re-Entry) Surveys were undertaken of the BSSSC building during the 'active season' (May to September) in 2015. During the surveys, no bats were observed exiting or entering the BSSSC building. Based on this, a bat roost was considered likely absent from the BSSSC building. Furthermore, bat activity levels were generally low, with little foraging / commuting activity identified and, the majority of bat activity was associated with a bund located west of the BSSSC building running in a north – south direction, and with a shelter belt located north of the BSSSC building running in an east – west direction.	The BSSSC building and the disused administration building have been demolished. During the survey, no trees on / at the site were considered suitable for roosting bats. As such, there is no longer any habitat present on / at the site with potential for roosting bats.	The changes represent those that were anticipated as a result of the development according to the anticipated programme of development for the SEE site. Roosting bats are no longer considered to be an ecological constraint.

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

Ecological Interest	2008 Surveys	2014 / 2015 Surveys	2017 Surveys	Summary of Changes in the Baseline Conditions
Birds	Following the preliminary ecological walkover survey, a Breeding Bird Survey was undertaken. During the survey, 18 species of birds were recorded on / at the site (nine species breeding and seven species probably breeding). Of these 18 species: - Two species of high conservation concern were recorded and confirmed breeding. These were: common linnet (<i>Carduelis Cannabina</i>); and, reed bunting (<i>Emberiza schoeniclus</i>) (Note: reed bunting are now Amber not Red Listed species). - Four species of medium conservation concern were recorded. These were: meadow pipit (<i>Anthus pratensis</i>); house martin (<i>Delichon urbicum</i>); common kestrel (<i>Falco tinnunculus</i>); and, barn swallow (<i>Hirundo rustica</i>). - Three UK Biodiversity Action Plan (BAP) Priority species were recorded. These were: common linnet; reed bunting; and, song thrush (<i>Turdus philomelos</i>).	The data provided by LERC highlighted two additional records for birds. These were: buzzard (<i>Buteo buteo</i>); and, bullfinch (<i>Pyrrhula pyrrhula</i>). Bullfinch is an Amber List, UK BAP and Lincolnshire Biodiversity Action Plan priority species. The survey noted that the habitats identified on / at the site were largely consistent with those reported during the 2008 Surveys. Therefore, the species and composition of the bird community using the site is likely to remain the same.	The survey noted that the habitats identified on / at the site were consistent with those reported during the 2008 Surveys and the 2014 / 2015 Surveys. Therefore, the findings of the 2014 / 2015 Survey remain valid. Incidental bird records from the survey included: feral pigeon (<i>Columba livia</i>); carrion crow (<i>Corvus corone</i>); robin (<i>Erithacus rubecula</i>); common kestrel (<i>Falco tinnunculus</i>); pied wagtail (<i>Motacilla alba</i>); pheasant (<i>Phasianus colchicus</i>); magpie (<i>Pica pica</i>); and, wren (<i>Troglodytes troglodytes</i>).	It is considered that there are no material changes to the baseline conditions with respect to birds.
Invasive Plant Species	During the survey, no evidence of invasive plant species was identified on / at the site. However, Japanese knotweed (<i>Fallopia japonica</i>) was identified on the banks of the River Welland.	During the survey, no evidence of invasive plant species was identified on / at the site. However, the Japanese knotweed (with additional stands downstream) remains present on the banks of the River Welland.	During the survey, no evidence of invasive plant species was identified on / at the site. No inspection was made of the Japanese knotweed on the banks of the River Welland.	It is considered that there are no material changes to the baseline conditions with respect to invasive plant species.
Invertebrates	As part of the preliminary ecological walkover survey, a number of dragonfly and damselfly (<i>Odonata</i>) and butterfly (<i>Lepidoptera</i>) species were recorded and were frequent along the margins of both the River Welland (to the east) and Vernatt's Drain (to the west). These species included: brown hawker dragonfly (<i>Aeshna grandis</i>); common hawker dragonfly (<i>Aeshna juncea</i>); common blue damselfly (<i>Enallagma cyathigerum</i>); Peacock butterfly (<i>Inachis io</i>); meadow brown butterfly (<i>Maniola jurtina</i>); speckled wood butterfly (<i>Pararge aegeria</i>); large white butterfly (<i>Pieris brassicae</i>); small white butterfly (<i>Pieris rapae</i>); and, cinnabar moth (<i>Tyria jacobaeae</i>).	The survey noted that the habitats on the River Welland and Vernatt's Drain were largely consistent with those reported during the 2008 Surveys. Therefore, the species and composition of the invertebrate community using River Welland and Vernatt's Drain is likely to remain the same.	The survey noted that the habitats on the River Welland and Vernatt's Drain were largely consistent with those reported during the 2008 Surveys and the 2014 / 2015 Surveys. Therefore, the findings of the 2014 / 2015 Survey remain valid.	It is considered that there are no material changes to the baseline conditions with respect to invertebrates.

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

Ecological Interest	2008 Surveys	2014 / 2015 Surveys	2017 Surveys	Summary of Changes in the Baseline Conditions
Otter	Following the preliminary ecological walkover survey, an Otter and Water Vole Survey was undertaken. During the survey, evidence of European otter was noted along the River Welland (to the east) and Vernatt's Drain (to the west). Indeed, the survey noted: • A sighting of an otter on the east bank of the River Welland; • A footprint in the common reed on the west bank of the River Welland; and, • Two spraints and a footprint on Vernatt's Drain. During the survey, no holts or couches (the below ground and above ground resting places of otters respectively) were recorded.	The data provided by LERC highlighted several additional records for otter. The survey noted that the habitats on the River Welland and Vernatt's Drain were largely consistent with those reported during the 2008 Surveys. In addition, evidence of otters commuting across the site was identified with several otter spraints recorded along the line of the top of the improved grassland mound in the centre of the site.	The survey noted that the habitats on the River Welland and Vernatt's Drain were largely consistent with those reported during the 2008 Surveys and the 2014 / 2015 Surveys. Therefore, the findings of the 2014 / 2015 Survey remain valid. No field signs of otter (footprints, spraints etc.) were noted on / at the site.	It is considered that there are no material changes to the baseline conditions with respect to otters.
Reptiles	During the preliminary ecological walkover survey, no evidence of reptile species was identified on / at the site. However, as part of the Desk Study, two records for reptiles (both grass snakes (<i>Natrix natrix</i>)) were identified in the wider study area.	The data provided by LERC highlighted three additional records for reptiles. These were all grass snakes (<i>Natrix natrix</i>). The survey identified that the habitats on / at the site (notably areas of unmanaged semi-improved grassland and south facing banks) were suitable for reptiles. However, as the site is located between two waterways (east and west) and two industrial uses (north and south) it was considered highly unlikely that any reptile species (other than grass snake) was present on / at the site.	The survey noted that the habitats identified on / at the site were consistent with those reported during the 2008 Surveys and the 2014 / 2015 Surveys. Therefore, the findings of the 2014 / 2015 Survey remain valid.	It is considered that there are no material changes to the baseline conditions with respect to reptiles.
Water Voles	Following the preliminary ecological walkover survey, an Otter and Water Vole Survey was undertaken. During the survey, evidence (e.g. footprints, latrines and feeding signs) of water vole was noted along the River Welland in the common reed marginal vegetation. No evidence of water vole was identified along Vernatt's Drain. However, access was limited due to the presence of dense scrub. Therefore, a precautionary approach to assessment and mitigation was taken (i.e. assuming the presence of water vole in Vernatt's Drain).	The data provided by LERC highlighted several additional records for water vole. The survey noted that the habitats on the River Welland were largely consistent with those reported during the 2008 Surveys, and the habitat suitability along Vernatt's Drain had improved owing to scrub management.	The survey noted that the habitats on the River Welland and Vernatt's Drain were largely consistent with those reported during the 2008 Surveys and the 2014 / 2015 Surveys. Therefore, the findings of the 2014 / 2015 Survey remain valid.	It is considered that there are no material changes to the baseline conditions with respect to water voles.

3. ROLES AND RESPONSIBILITIES

Table 3.1 sets out the specific roles and responsibilities related to the implementation of this Document.

TABLE 3.1: ROLES AND RESPONSIBILITIES

Role	Responsibility
The Employer	<i>The Employer</i> should: • Monitor the works at the Site to confirm compliance with this Document; and, • Liaise with <i>The Contractor</i> on the implementation of this Document.
The Contractor	<i>The Contractor</i> should: • Appoint a <i>Project Ecologist</i> and <i>Project Landscape Architect</i> to implement the ecological obligations and requirements stipulated in this Document; • Continue to develop and update this Document, in consultation with <i>The Employer</i>, <i>The Project Ecologist</i> and <i>The Project Landscape Architect</i>; • Review and update the detail in this Document as and when new relevant information is available; • Deliver the obligations and requirements in this Document; • Implement the measures set out, with advice from <i>The Project Ecologist</i> and <i>The Project Landscape Architect</i> where required; • Ensure that there is no breach in ecological obligations and requirements throughout the duration of the works / activities²; • Ensure that all works are monitored daily, with advice from <i>The Project Ecologist</i> and <i>The Project Landscape Architect</i> where required; • Ensure that sufficient resources are retained to maintain environmental performance until the completion of activities / works, with advice from <i>The Project Ecologist</i> and <i>The Project Landscape Architect</i> where required; • Keep records of any forms / correspondence with <i>The Project Ecologist</i> and <i>The Project Landscape Architect</i> as appropriate³.
The Project Ecologist	<i>The Project Ecologist</i> should: • Following instruction from <i>The Contractor</i>, provide 'toolbox talk' sessions / training to cover specific relevant issues appropriate to the implementation of this Document; and, • Liaise with <i>The Contractor</i> and <i>The Project Landscape Architect</i> regarding the design and application of ecological mitigation, reinstatement and enhancement measures.
The Project Landscape Architect	<i>The Project Landscape Architect</i> should: • Liaise with <i>The Contractor</i> and <i>The Project Ecologist</i> regarding the design of ecological mitigation, reinstatement and enhancement measures.

² In this regard, *The Contractor* is responsible for all their sub-contractors and should ensure they comply with all project-related obligations and requirements.

³ Any forms / correspondence should be retained and stored for a period of 5 years post-construction.

4. GENERAL MITIGATION MEASURES / HABITAT AND SPECIES SPECIFIC MITIGATION MEASURES

4.1 General Mitigation Measures

4.1.1 Environmental Communications and Training

In addition to the species specific mitigation measures, *The Contractor* should instruct *The Project Ecologist* to provide 'Toolbox Talk' sessions / training to cover specific relevant issues appropriate to the ecological and biodiversity issues associated with the Site. The sessions / training should form part of the induction to *The Site*.

The sessions / training should enable personnel to identify sensitive habitats and protected / notable species, with the objective of avoiding damage / injury and implement the mitigation measures required through the Management Plans. Further information is provided in Appendix A (Provisions for Management Plans).

In addition, the sessions / training should include an overview of the procedure for dealing with the presence (or suspected presence) of unexpected protected / notable species. Further information is provided in Appendix B (Procedure for Dealing with the Presence of Unexpected Protected / Notable Species).

4.2 Specific Mitigation Measures: Habitats

4.2.1 Mitigation Required For: Loss of / Damage to Habitat

In order to reduce the potential for loss of / damage to habitat, the following will be adopted:

- During construction / decommissioning:
 - A Pollution Prevention Management Plan. Further information is provided in Appendix A.1 (Provisions for a Pollution Prevention Management Plan).
- During operation:
 - An appropriate layout for the Site. Indeed, the layout of the Site has been designed to ensure that the Development does not encroach into the sensitive habitat surrounding the River Welland and Vernatt's Drain. The River Welland is located to the east of the Site, across West Marsh Road. Vernatt's Drain is located directly adjacent to the west of the Site.

In addition, fencing will be maintained along the western boundary of the Site to prevent unauthorised access to / inadvertent damage to habitats present along Vernatt's Drain.

4.2.2 Mitigation Required For: Disturbance

In order to reduce the potential for disturbance of habitat, the following will be adopted:

- During construction / decommissioning:
 - A Dust and Air Pollution Management Plan and a Noise and Vibration Management Plan. These Plans will detail controls to minimise (so far as is practical) the generation of dust, air pollution, noise and vibration which could impact on adjacent habitats and supported species. Further information is provided in Appendix A.2 (Provisions for a Dust and Air Pollution Management Plan) and Appendix A.3 (Provisions for a Noise and Vibration Management Plan).
- During operation:
 - N / A.

In terms of enhancement (rather than mitigation), the March 2009 ES stated (at paragraph 13.101) that:

- (At bullet point 1) "access to the wetland vegetation which borders Vernatt's Drain will be managed"; and,
- (At bullet point 5) there will be "management of [...] areas of marginal vegetation".

Further information is provided in Section 5 (Enhancement Measures).

4.3 Specific Mitigation Measures: Badgers

Based on the ecological baseline information, construction / operation / decommissioning of the Development on / at the Site has no / limited potential to impact on badgers.

In the unlikely event that a badger is trapped / encountered, activities / works should be stopped, and only resumed following the advice of *The Project Ecologist* (or other suitably qualified ecologist).

4.4 Specific Mitigation Measures: Bats

4.4.1 Mitigation Required For: Timing of Construction Activities / Works

The March 2009 ES stated (at paragraph 13.63) that: *"In order to avoid disturbance to bat species, demolition of the existing buildings on the proposed SEE site with features with the potential to support bat species and the trees due to be removed which have the potential to support bat species will not be carried out until further survey has been completed and an absence of bats confirmed"*.

As part of the March 2015 ES FID, following the Verification Phase 1 Habitat Survey, a Roosting Bat Inspection Survey was undertaken in November 2014. Based on the survey: the BSSSC building was considered to offer low potential for roosting bats; the disused administration building was considered to offer negligible potential for roosting bats; and no trees were considered suitable for roosting bats. Subsequently, two Bat Activity (Emergence / Re-Entry) Surveys were undertaken of the BSSSC building during the 'active season' (May to September) in 2015. During the survey, no bats were observed exiting or entering the BSSSC building. Based on this a bat roost was considered likely absent from the BSSSC building. Overall, bat activity levels at the Site were generally low.

In addition:

- Demolition of the existing buildings (the BSSSC and the disused administration building) took place in July 2016; and,
- Clearance of demolition materials took place in February 2017.

Therefore, with regard to the timing of construction activities / works, no additional specific mitigation measures for bats are required.

4.4.2 Mitigation Required For: Loss of Habitat

In terms of enhancement (rather than mitigation), the March 2009 ES stated (at paragraph 13.91, bullet point 3) that: *"artificial roost boxes will be installed on or integral to built structures in potentially favourable locations"*.

Further information is provided in Section 5 (Enhancement Measures).

4.4.3 Mitigation Required For: Disturbance

In order to reduce the potential for disturbance the bats, the following will be adopted:

- During construction / decommissioning:
 - A Dust and Air Pollution Management Plan and a Noise and Vibration Management Plan. Further information is provided in Appendix A.2 (Provisions for a Dust and Air Pollution Management Plan) and Appendix A.3 (Provisions for a Noise and Vibration Management Plan); and,
 - The layout of the temporary lighting will be designed to avoid light intrusion / trespass beyond the areas that require lighting.
- During operation:
 - The design of the lighting regime will be carried out by a suitably qualified person, using the principles provided by the Institute of Lighting Professionals (ILP) in GN01: 2011 ('Guidance Notes for the Reduction of Obtrusive Light'). The key

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

objective of these principles is to control and minimise obtrusive light, including: sky glow (the brightening of the night sky); glare (the uncomfortable brightness of a light source when viewed against a darker background); and, light intrusion / trespass (the spilling of light beyond the boundary of the area being lit).

Overall, in order to reduce disturbance to bats due to the lighting regime of the Development, light spillage will be reduced (particularly to Vernatt's Drain).

4.5 Specific Mitigation Measures: Birds

4.5.1 Mitigation Required For: Timing of Construction Activities / Works

The March 2009 ES stated (at paragraph 13.64) that: *"Site clearance work will be undertaken outside the breeding bird season of March to August in order to avoid disturbing or destroying any bird's nests"*.

Clearance of demolition materials took place in February 2017. Therefore, with regard to the timing of construction activities / works, no additional specific mitigation measures for birds are required.

Should habitats suitable for nesting birds re-establish, the following precautionary procedure should be adopted to avoid destroying or disturbing any active nests:

- Additional demolition and vegetation clearance should be undertaken outside of the breeding bird season, which is approximately between March and August inclusive;
- If this is not possible, *The Project Ecologist* (or a suitably qualified ecologist) should check for evidence of nesting birds prior to demolition and / or vegetation clearance;
- If nesting birds are present when demolition and / or vegetation clearance is scheduled, activities / works will need to be delayed until all chicks have fledged.

4.5.2 Mitigation Required For: Loss of Habitat

In terms of enhancement (rather than mitigation), the March 2009 ES stated (at paragraph 13.106, bullet point 1) that: *"a variety of bird nest boxes, chosen to support as wide a range of bird species as possible, will be positioned around the SEE site"*.

Further information is provided in Section 5 (Enhancement Measures).

4.6 Specific Mitigation Measures: Invasive Plant Species

In terms of enhancement (rather than mitigation), the March 2009 ES stated (at paragraph 13.77) that: *"the small patch of Japanese knotweed on the bank of the River Welland adjacent to the proposed SEE site will be treated and removed in order to prevent its spread further along the watercourse or into the proposed SEE site"*.

Further information is provided in Section 5 (Enhancement Measures).

4.7 Specific Mitigation Measures: Invertebrates

Based on the ecological baseline information, construction / operation / decommissioning of the Development on / at the Site has no / limited potential to impact on protected or notable invertebrates.

No specific mitigation is proposed with respect to invertebrates.

4.8 Specific Mitigation Measures: Otters

4.8.1 Mitigation Required For: Disturbance

In order to reduce disturbance to otter, the following will be adopted:

- During construction / decommissioning:
 - A Pollution Prevention Management Plan, a Dust and Air Pollution Management Plan and a Noise and Vibration Management Plan. Further information is provided in Appendix A.1 (Provisions for a Pollution Prevention Management Plan),

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

- Appendix A.2 (Provisions for a Dust and Air Pollution Management Plan) and Appendix A.3 (Provisions for a Noise and Vibration Management Plan); and,
- The layout of temporary lighting will be designed to avoid light intrusion / trespass, in particular to the marginal vegetation / to the River Welland and Vernatt's Drain.
- During operation:
 - The design of the lighting regime will be carried out by a suitably qualified person, using the principles provided by the Institute of Lighting Professionals (ILP) in GN01: 2011 ('Guidance Notes for the Reduction of Obtrusive Light').

In terms of enhancement (rather than mitigation), the March 2009 ES stated (at paragraph 13.101, bullet point 4) that: an artificial otter holt will be created "*somewhere along Vernatt's Drain, adjacent to the proposed SEE site*".

Further information is provided in Section 5 (Enhancement Measures).

4.9 Specific Mitigation Measures: Reptiles

Based on the ecological baseline information, construction / operation / decommissioning of the Development on / at the Site has no / limited potential to impact on reptiles.

In the unlikely event that a reptile is trapped / encountered, activities / works should be stopped, and only resumed following the advice of *The Project Ecologist* (or other suitably qualified ecologist).

4.10 Specific Mitigation Measures: Water Vole

4.10.1 Mitigation Required For: Disturbance

In order to reduce disturbance to water vole, the following will be adopted:

- During construction / decommissioning:
 - A Pollution Prevention Management Plan, a Dust and Air Pollution Management Plan and a Noise and Vibration Management Plan. Further information is provided in Appendix A.1 (Provisions for a Pollution Prevention Management Plan), Appendix A.2 (Provisions for a Dust and Air Pollution Management Plan) and Appendix A.3 (Provisions for a Noise and Vibration Management Plan); and,
 - The layout of temporary lighting will be designed to avoid light intrusion / trespass, in particular to the marginal vegetation / to the River Welland and Vernatt's Drain.
- During operation:
 - The design of the lighting regime will be carried out by a suitably qualified person, using the principles provided by the Institute of Lighting Professionals (ILP) in GN01: 2011 ('Guidance Notes for the Reduction of Obtrusive Light').

5. ENHANCEMENT MEASURES

5.1 Implementation

The enhancement measures will be delivered via commitments in the Section 106 Agreement. With regards to the implementation, the Section 106 Agreement includes two triggers: the date of commencement of the development of the OCGT unit; and, the date of commencement of the development of the CCGT unit.

The commitments related to the development of the OCGT unit are provided at Schedule 1A. The commitments related to the development of the CCGT unit are provided at Schedule 1B.

With regards to the enhancement measures, Biodiversity Works are noted at Part H of both Schedule 1A and Schedule 1B.

For the development of the OCGT unit, Part H of Schedule 1A notes that: *"Biodiversity Works have been deleted from the Schedule as the Biodiversity Works will impact on the CCGT land only"*.

For the development of the CCGT unit, Part H of Schedule 1B notes that SEEL shall:

- No later than six months after the date of commencement of the development of the CCGT unit, prepare and use *"all reasonable endeavours"* to agree with the Welland and Deepings Internal Drainage Board (WDIDB), a Programme / Specification of Enhancement Measures to enhance the area surrounding the Site based on the March 2009 ES and the April 2015 ES FID;
- Upon agreement, promptly submit details of the Programme / Specification of Enhancement Measures (including timescales) to South Holland District Council; and,
- Undertake the Programme / Specification of Enhancement Measures in accordance with the timescales.

The Section 106 Agreement also notes that the obligation to undertake the Programme / Specification of Enhancement Measures will be subject to obtaining the necessary consents, permits, licences, approvals, authorisations and / or exemptions with the relevant statutory authorities.

SEEL are undertaking the development of SEE in phases, of this the first phase entails the commencement of the development of the OCGT unit(s) and associated equipment with a total rated electrical output of less than 300 MW. Further development will be undertaken in a subsequent phase(s). Therefore, the preparation of the detailed Programme / Specification of Enhancement Measures will be undertaken as part of the subsequent phase(s).

Nevertheless this Section set out enhancement measures (based on the March 2009 ES and the April 2015 ES FID) which should be considered in the preparation of the detailed Programme / Specification of Enhancement Measures. Supporting information is provided in Appendix C (Proposed Specifications of Enhancement Measures).

5.2 General Enhancement Measures

5.2.1 Environmental Communication

The March 2009 ES stated that: *"a number of interpretive signs [...] could be provided at key points along the banks sides [of the River Welland]"*. The interpretive signs could describe the flora and fauna likely to be found along the River Welland, as well as the adopted enhancement measures.

Figure 1 illustrates the locations which should be considered for the interpretive signs.

5.3 Enhancement Measures: Habitats

5.3.1 Creation of New Habitat: The Site

Pursuant to the provisions of Condition 5(40) of the Varied Consent, a scheme of Landscaping and Creative Conservation will be implemented at the Site. Amongst other matters, the scheme covers (pursuant to the provision of Condition 5(41)(vi)): *"details of the measures to be taken to create*

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

new flora and fauna habitats and of the management of such new habitats, including the Sustainable Urban Drainage [System (SUDS) ...] feature".

In terms of the SUDS feature, the March 2009 ES stated (at paragraph 13.72) that: *"the margins of this feature will be planted with marginal vegetation, such as: common reed, rushes; and, other wetland species"*. In addition, the March 2009 ES noted that although the SUDS feature was unlikely to provide habitat for otter or water vole species, it could provide habitat for both bird and invertebrate species.

Details on landscaping and creative conservation have been separately submitted pursuant to Condition (40) of the Deemed Planning Permission. In particular it is noted that the Plan for the first phase of development includes native species and / or species with wildlife value (e.g. fruit trees, species-rich hedging, locally-appropriate rich grassland and wildflower species). These species will be managed in accordance with good industry practice, including measures to secure the ecological value of habitats in the long term.

5.3.2 Management of Habitats: Vernatt's Drain Access Demarcation and Signage

The March 2009 ES stated (at paragraph 13.101, bullet point 1) that: *"access to the wetland vegetation which borders Vernatt's Drain will be managed"*. The access to angling points could be clearly demarcated, with appropriate signage, to avoid trampling of emergent vegetation. In addition, fencing will be maintained along the western boundary of the Site to prevent unauthorised access to / inadvertent damage to habitats present along Vernatt's Drain. However, it should be noted that a public footpath runs along Vernatt's Drain (outside the Site) for which SEEL have no control.

Although not required as a specific mitigation measure, this would also reduce disturbance to otter and water vole species.

5.3.3 Management of Habitats: Reed Bed Enhancement / Management

The March 2009 ES stated (at paragraph 13.101, bullet point 5) that there will be: *"management of [...] areas of marginal vegetation"*. In particular, the following will be considered:

- Enhancement of reed beds, where areas of little / no reed cover would be planted with common reed seeds or rhizomes to create a larger and more cohesive reed bed unit. Within any such planting scheme, the possibility of adding new emergent species would be considered to increase biodiversity.
- Annual removal of encroaching species, such as bramble (*Rubus* sp.) and field bindweed (*Convolvulus arvensis*), from the reed bed areas to improve the habitat quality. For any such removal scheme, the possibility of this being undertaken by boat would be considered in order to avoid disturbing the banks of the watercourses. In addition, any removal should be done outside the breeding bird season (e.g. outside late March to August) in order to avoid disturbing or destroying bird's nests.
- Annual cutting of reed beds, where a programme of hand cutting would be undertaken each winter to promote vigorous re-growth. With any such hand cutting scheme, only small sections of reeds would be cut each year to provide a mosaic of old and new growth, ensuring that sufficient habitat remains.
- Bi-annual litter removal, where a programme of litter removal from reed beds would be undertaken⁴. To support this scheme, the provision of litter bins at key locations could be considered to discourage cyclists / walkers from littering the banks.

Figure 1 illustrates the locations which should be considered for the reed bed management and enhancement. However, it should be noted that these would be subject to approval and discussion with the respective land owners / occupiers, and may also be subject to change. Additional information is provided in Appendix C.1 (Proposed Reed Bed Annual Cutting Regime Specification).

⁴ Much litter is washed into the reed beds from the tidal River Welland. This litter piles up in particular locations (e.g. around sluice gates).

Although not required as a specific mitigation measures, these would also benefit bird, invertebrate, otter and water vole species.

5.4 Enhancement Measures: Badgers

N / A

5.5 Enhancement Measures: Bats (Provision of Artificial Roost Boxes)

The March 2009 ES stated (at paragraph 13.91, bullet point 3) that: *"artificial roost boxes will be installed on or integral to built structures in potentially favourable locations"*.

In terms of *"potentially favourable locations"*, there are two factors which affect a site's suitability for bat species: food; and, places of shelter. Food (in the form of prey species (e.g. insects)) is abundant along the River Welland and Vernatt's Drain. Therefore, to maximise the suitability of these two watercourses, places of shelter (in the form of artificial roost boxes) could be provided on some of the mature trees along the River Welland and / or Vernatt's Drain. On these mature trees, a variety of artificial roost boxes, chosen to support as wide a range of bat species as possible, could be provided.

Specifically, the March 2009 ES noted there was a population of Daubenton's bat using the River Welland for foraging, with an unconfirmed bat roost under Platt's Bridge on Vernatt's Drain. However, the March 2009 ES noted but that there was limited availability of mature trees on the River Welland and Vernatt's Drain close to the Site. Therefore, the March 2009 ES noted that a number of artificial roost boxes could be provided under Platt's Bridge. Specifically in terms of artificial roost boxes for Daubenton's bat species, the March 2009 ES noted that *"a woodcrete Schwegler 2F Bat Box with double front panel"* would be suitable as this mimics the crevices commonly used by this bat species.

Based on the 2014 / 2015 Surveys, and the 2017 Survey, the trees along Vernatt's Drain have matured. Therefore, rather than under Platt's Bridge, (subject to approval and discussion) artificial roost boxes could now be provided on the mature trees along Vernatt's Drain. This is considered to be a better option as the potential for disturbance of the unconfirmed existing roost (which would constitute an offence if works / activities were not subject to an appropriate European Protected Species (EPS) Licence) would be reduced. In addition, risks associated with maintenance of the artificial roost boxes (for mature trees, on land / for Platt's Bridge, over water) would be reduced.

Within the Site, no structures proposed under the first phase of development are suitable for the installation of bat boxes are to be provided as part of the development of the OCGT units. Should subsequent phases include suitable structures, consideration should be given to the potential onsite locations for artificial roost boxes.

Figure 1 illustrates the locations which should be considered for the artificial roost boxes. Additional information is provided in Appendix C.2 (Bats: Proposed Artificial Roost Box Specification).

5.6 Enhancement Measures: Birds (Provision of Bird Nest Boxes)

The March 2009 ES stated (at paragraph 13.106, bullet point 1) that: *"a variety of bird nest boxes, chosen to support as wide a range of bird species as possible, will be positioned around the SEE site"*.

In terms of potentially suitable locations, there are two factors which affect a site's suitability for bird species: food; and, suitable nesting locations. Therefore, to maximise the suitability of locations both on / at the Site and offsite (e.g. the River Welland and Vernatt's Drain), the March 2009 ES noted that following would be considered:

- For the common kingfisher (*Alcedo atthis*) and the sand martin (*Riparia riparia*), the provision of either a new section of bank or artificial nest tunnels within the existing bank along Vernatt's Drain (the March 2009 ES notes that there were some possible common kingfisher nest tunnels and a large population of sand martins approximately 1.5 km upstream of The Site).
- For the common swift (*Apus apus*), the provision of bricks and boxes (at least 5 m above the ground) within new buildings.

SPALDING ENERGY EXPANSION
SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES
Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

- For passerine bird species:
 - The provision of boxes on mature trees bordering the River Welland and Vernatt's Drain; and,
 - The provision of boxes within available reed beds on the River Welland and Vernatt's Drain (However, the limited area of reeds may be a limiting factor for some bird species).
- For house sparrow (*Passer domesticus*), the provision of boxes close to any climbing plant.

Based on the 2014 / 2015 Surveys, and the 2017 Survey:

- For the common kingfisher and the sand martin, an artificial nest platform should now be considered to avoid the need for intrusive bank works (given the presence of water vole). Subject to the necessary approvals and discussion, the artificial nest platform would be mounted on the bankside away from any water vole burrows / suspected burrows. The artificial nest platform would be on poles with predator guards to protect against predation. Additional information is provided in Appendix C.3 (Birds: Proposed Artificial Nest Platform Specification).
- For the common swift, within the Site no structures proposed under the first phase of development are suitable for the installation of bricks / boxes. Should subsequent phases include suitable structures, considered should be given to the potential onsite locations for bricks / boxes. Additional information is provided in Appendix C.4 (Birds: Proposed Common Swift Nest Box Specification).
- For passerine bird species, the provision of boxes within available reed beds on the River Welland and Vernatt's Drain is no longer proposed, due to the potential conflict with reed bed management and enhancement.
- For the house sparrow, within the Site no structure proposed under the first phase of development are suitable for climbing plants. Should subsequent phases include suitable structures, considered should be given to the potential onsite locations for boxes. Additional information is provided in Appendix C.5 (Birds: Proposed House Sparrow Nest Box Specification).

Figure 1 illustrates the locations which should be considered.

5.7 Enhancement Measures: Invasive Plant Species

At the time of treatment and removal, the best approach will be determined. However, this is likely to comprise a combination of cutting and certified spraying with a suitable herbicide (e.g. a formulation approved for use near water). Approval will be sought from the Environment Agency. At the time of treatment and removal, a standalone Japanese Knotweed Management Plan should be provided following consultation with the land owner / occupier.

Figure 1 illustrates the locations which should be considered for treatment and removal.

5.8 Enhancement Measures: Invertebrates

See measures relating to 'Management of Habitats: Reed Bed Management / Enhancement / Annual Cutting' which would also benefit invertebrate species.

5.9 Enhancement Measures: Otters (Artificial Otter Holt)

The March 2009 ES stated (at paragraph 13.101, bullet point 4) that: an artificial otter holt will be created "somewhere along Vernatt's Drain, adjacent to the proposed SEE site".

Figure 1 illustrates a location which could be considered for the artificial otter holt. However, the final location would have to be confirmed following consultation with the land owner / occupier and where it would be possible to ensure minimum disturbance. Any site could be enhanced with native species screening, such as hawthorn (*Crataegus monogyna*) and / or buckthorn (*Rhamnus cathartica*).

SPALDING ENERGY EXPANSION

SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES

Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

Additional information is provided in Appendix C.6 (Otter: Proposed Artificial Otter Holt Specification).

5.10 Enhancement Measures: Reptiles

N / A

5.11 Enhancement Measures: Water Vole

See measures relating to 'Management of Habitats: Reed Bed Management / Enhancement / Annual Cutting' which would also benefit water vole species.

6. ENVIRONMENTAL MONITORING AND AUDITING

Environmental monitoring and auditing is an essential tool to ensure all environmental requirements are achieved and environmental performance is continually improved. An environmental monitoring and auditing programme will be implemented during construction and operation.

Specific environmental and monitoring related to this Document include monitoring of the ecological baseline conditions on / at the Site and at any location where enhancement measures have been implemented.

6.1 Monitoring of the Ecological Baseline Conditions on / at the Site

To ensure that there are no material changes to the ecological baseline conditions on / at the Site, *The Project Ecologist* (or other suitably qualified ecologist) should undertake site walkovers at appropriate timetabled intervals. The site walkovers should consider:

- Whether any trees / hedgerows / vegetation have been damaged / cleared unnecessarily;
- Whether any fences protecting trees / hedgerows / vegetation have been damaged / cleared unnecessarily;
- Whether any fences protecting other ecological assets have been damaged / cleared unnecessarily;
- Whether any activities / works affected sensitive ecological / biodiversity areas (e.g. the River Welland and Vernatt's Drain);
- Whether there have been any complaints from local businesses / residents; and,
- Whether there are any other issues to be considered.

For each of the site walkovers, *The Project Ecologist* should prepare a Site Walkover Report. The Site Walkover Report should be the primary source of information relating to ecological inspection.

6.2 Monitoring at Locations where Enhancement Measures have been Implemented

In order to verify the success of the enhancement measures, *The Project Ecologist* (or other suitably qualified ecologist) should undertake a 5-year post-implementation survey programme. The survey programme should be considered:

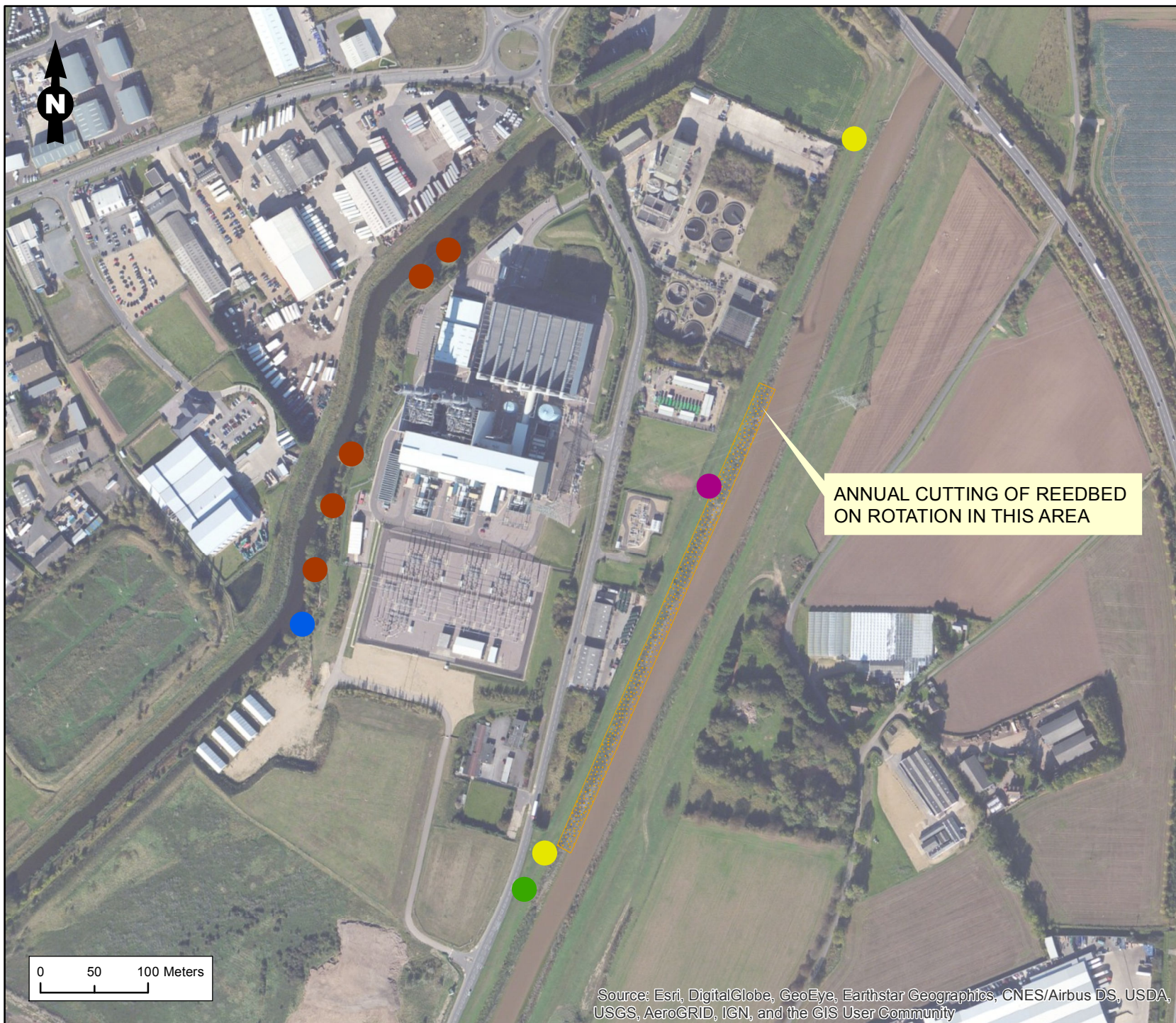
- For bats, a bi-annual (once every other year) Bat Activity Survey, including an inspection of the artificial roost boxes;
- For birds, an annual Survey of the nest boxes; and,
- For otter (and water vole), an annual survey of riparian habitats for signs of otter and water vole activity, with particular attention paid to the artificial otter holt.

SPALDING ENERGY EXPANSION

SCHEME OF ENVIRONMENTAL ENHANCEMENT MEASURES

Details Pursuant to Condition (43) of the 2015 Deemed Planning Permission

FIGURES



Legend

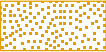
-  Reedbed enhancement and management
-  Interpretive sign
-  Treatment of stand of Japanese knotweed
-  Sand martin nesting provision
-  Artificial otter holt
-  Schwegler 2F Bat boxes

Figure Title
ENVIRONMENTAL
ENHANCEMENT
MEASURES

Project Name
SPALDING ENERGY
EXPANSION

Project Number
61033586

Figure No.
1

Date
JUNE 2017

Prepared By
EM

Scale
1:5,000 @A4

Issue
1

Client
INTERGEN

RAMBOLL ENVIRON

APPENDIX A: PROVISIONS FOR MANAGEMENT PLANS

APPENDIX A.1: PROVISIONS FOR A POLLUTION PREVENTION MANAGEMENT PLAN

These provisions seek to prevent potentially polluting land and water emissions from finding pathways to 'at risk' receptors. Accordingly, the measures comprise:

- Identification of potential receptors;
- Identification of the pollution sources and pathways (i.e. any emissions / discharges / spillages); and,
- Isolation of the pollution source and / or pollution pathway and establishment of effective contingency procedures (i.e. mitigation and management measures).

Identification of Potential Receptors

Land and water environment, including the River Welland and Vernatt's Drain. Species using these environments, including otters and water voles.

Identification of Pollution Sources

Potential pollution sources include:

- Fuels / oils (i.e. diesel / lubricating oil) during storage or re-fuelling operations, and from static plant / equipment.
- Miscellaneous chemicals (e.g. thinners).

Mitigation and Management Measures

<u>Site Management</u>
The following measures should be implemented: • Use of appropriate Personal Protection Equipment (e.g. gloves, overalls and masks); • 'Toolbox Talk' sessions / training to cover specific relevant issues appropriate to the ecological and biodiversity issues associated with the Site; • Fencing maintained along the western boundary of the Site to prevent unauthorised access to / inadvertent damage to habitats present along Vernatt's Drain; and, • Use of hoarding at the Site to display the name of the site representative (a person with appropriate authority to act to resolve any problems that may occur).
<u>Fuels / Oils: Storage</u>
Wherever relevant, the following measures should be implemented: • The storage of potentially polluting materials near watercourses / waterbodies (i.e. within 30 m) should be prohibited as far as reasonably practicable; • The storage of all potentially polluting material should be within an impervious bund with a capacity greater than 110 per cent of the total potential stored contents; and, • The maximum holding capacity of all storage equipment should be displayed on the side.
<u>Fuels / Oils: Re-Fuelling Operations</u>
The probability of small spillages is greatest during re-fuelling operations. Accordingly, wherever relevant, the following measures should be implemented: • Transportation of fuel across the Site in drums or other containers should be avoided as far as reasonably practicable; • Re-fuelling operations near watercourses / waterbodies (i.e. within 30 m) should be prohibited as far as reasonably practicable; • All re-fuelling operations should be carried out by suitably trained and experienced personnel; • Re-fuelling should always be carried out with the correct equipment (i.e. nozzles of the appropriate size); • All fuel / hydrocarbon dispensing nozzles should be securely locked to the vessel when not in use; and, • All mobile plant / equipment (including, but not limited to: cranes; compressors; generators; and, tanks) should be maintained and operated such that all leaks and spills of oil are minimised.

Fuels / Oils: Static Plant / Equipment

Wherever relevant, the following measures should be implemented:

- Drip trays and bunds should be used for static plant / equipment; and,
- Drip trays and bunds should be checked and cleaned regularly by a designated member of personnel using appropriate equipment (i.e. absorbent materials and, if necessary, small electric pumps).

Miscellaneous Chemicals

Wherever relevant, the following measures should be implemented:

- All chemicals should be stored appropriately (i.e. in accordance with the relevant safety requirements) in clearly marked containers and in a manner that prevents emissions / discharges / spillages.

Pollution Prevention Control Equipment

As a minimum, the following pollution prevention control equipment should be available in all areas where fuels, oils and other chemicals are being used:

- Absorbent granules; and,
- Plastic bags and cable ties.

The following equipment items should be available in high-risk areas:

- Absorbent booms (large and small);
 - Absorbent granules;
 - Absorbent pads;
 - Plastic bags and cable ties; and,
 - Spades.
-

APPENDIX A.2: PROVISIONS FOR A DUST AND AIR POLLUTION MANAGEMENT PLAN

These provisions seek to prevent potentially polluting dust and air emissions from finding pathways to 'at risk' receptors. Accordingly, the measures comprise:

- Identification of potential receptors;
- Identification of the pollution sources and pathways (i.e. any emissions / discharges); and,
- Isolation of the pollution source and / or pollution pathway and establishment of effective contingency procedures (i.e. mitigation and management measures).

Identification of Potential Receptors

Air environment. Species using these environments, including bats, birds, otters and water voles.

Identification of Pollution Sources

Potential pollution sources include:

- Dust emissions from construction works.
- Dust emissions from construction traffic.
- Air pollution from construction plant / construction traffic.

Mitigation and Management Measures

<u>Site Management</u>
The following measures should be implemented: • Use of appropriate Personal Protection Equipment (e.g. gloves, overalls and masks); • 'Toolbox Talk' sessions / training to cover specific relevant issues appropriate to the ecological and biodiversity issues associated with the Site; and, • Use of hoarding at the Site to display the name of the site representative (a person with appropriate authority to act to resolve any problems that may occur).
<u>Dust Emissions from Construction Works</u>
Wherever relevant, the following measures should be implemented: • Planned construction areas so that dust and air pollution causing activities / works are located as far away from receptors as possible; • Ensure adequate water supply on site for effective dust suppression; • Cutting and grinding operations to be conducted using plant / equipment which reduce the potential for dust and air pollution to a minimum and, where possible, incorporating any suppression measures; • Scabbling (roughening of concrete surfaces) should be avoided where possible; and, • Appropriate delivery and storage procedures, including : - Ensure delivery vehicles entering / existing the Site are covered; - Bulk cement and fine powder delivery in enclosed tankers and storage in silos with suitable emission control systems; and, - Fine powder bags to be sealed after use.
<u>Dust Emissions from Construction Traffic</u>
Wherever relevant, the following measures should be implemented: • Use of a wheel cleansing facility; and, • Use of water assisted dust sweeper(s) on the access and local roads, to remove any material tracked out of the Site.
<u>Air Pollution from Construction Plant / Construction Traffic</u>
• Construction plant / equipment should be maintained in accordance with the manufacturer's specification to comply with all relevant regulations. • Unnecessary idling for mobile construction plant / equipment should be avoided with engines turned off during periods of inactivity.

APPENDIX A.3: PROVISIONS FOR A NOISE AND VIBRATION MANAGEMENT PLAN

These provisions seek to prevent potentially polluting dust and air emissions from finding pathways to 'at risk' receptors. Accordingly, the measures comprise:

- Identification of potential receptors;
- Identification of the pollution sources and pathways (i.e. any emissions); and,
- Isolation of the pollution source and / or pollution pathway and establishment of effective contingency procedures (i.e. mitigation and management measures).

Identification of Potential Receptors

Air environment. Species using these environments, including bats, birds, otters and water voles.

Identification of Pollution Sources

Potential pollution sources include:

- Noise and vibration generating construction works.

Mitigation and Management Measures

Site Management

The following measures should be implemented:

- Construction activities / works should be restricted to the approved hours;
- All construction activities / works to be carried out in accordance with British Standard 5228:2009 +A1:2014 ('Code of Practice for Noise and Vibration Control on Construction and Open Sites': Part 1 (Noise); and, Part 2 (Vibration));
- Use of appropriate Personal Protection Equipment (e.g. gloves, overalls and masks);
- 'Toolbox Talk' sessions / training to cover specific relevant issues appropriate to the ecological and biodiversity issues associated with the Site; and,
- Use of hoarding at the Site to display the name of the site representative (a person with appropriate authority to act to resolve any problems that may occur).

Noise and Vibration Emissions from Construction

Wherever relevant, the following measures should be implemented:

- Wherever possible, construction plant / equipment should be located and orientated away from Noise Sensitive Receptor (NSR) locations (i.e. appropriate selection of "*working width*");
- Wherever possible, inherently quiet construction plant / equipment should be selected to provide a reduction of noise at source (it is noted that reducing the number of construction plant / equipment items can reduce the intensity of the noise, although this will serve to prolong the period of noise);
- Noise should be controlled at source by effective silencers on machines;
- Unnecessary running of construction plant / equipment should be avoided;
- Acoustic covers on construction plant / equipment should be used wherever practical; and
- Construction plant / equipment should be regularly maintained.

APPENDIX B: PROCEDURE FOR DEALING WITH THE PRESENCE OF UNEXPECTED PROTECTED / NOTABLE SPECIES

Overview

There remains potential for protected / notable species to be present on / at the Site. For this reason, this procedure has been prepared.

Procedure

Provide Environmental Communications and Training

The Contractor should instruct *The Project Ecologist* to provide 'Toolbox Talk' sessions / training to cover specific relevant issues appropriate to the ecological and biodiversity issues associated with the Site. The sessions / training should form part of the induction to the Site, and should enable personnel to:

- Identify sensitive habitats and protected / notable species, with the objective of avoiding damage / injury;
- Implement the mitigation measures required through the Management Plans; and,
- Take appropriate action should the presence (or suspected presence) of unexpected protected / notable species be identified.

Monitor Baseline Conditions on / at the Site

To ensure that there are no material changes to the baseline conditions on / at the Site, *The Project Ecologist* (or other suitably qualified ecologist) should undertake site walkovers at appropriate timetabled intervals. For each of the site walkovers, *The Project Ecologist* should prepare a Site Walkover Report. The Site Walkover Report should be the primary source of information relating to ecological inspection.

Actions where the Suspected Presence of Unexpected Protected / Notable Species is Identified

Should the suspected presence of a protected / notable species be identified, this information should be passed to *The Project Ecologist* (or other suitably qualified ecologist).

Subsequently, *The Project Ecologist* (or other suitably qualified ecologist) will visit the location of the sighting. This initial visit will include viewing any evidence of the species, and undertaking a discussion with those involved in the sighting. Photographs of the species will be taken if it is still present.

Based on the initial visit:

- Where the suspicions are unfounded, the decision will be recorded and kept on file; or,
- Where the suspicions are confirmed, the 'Actions where the Presence of Unexpected Protected / Notable Species is Identified' will be taken.

Actions where the Presence of Unexpected Protected / Notable Species is Identified

Should the presence of a protected / notable species be identified, *The Project Ecologist* (or other suitably qualified ecologist) will prepare two Action Plans. These will comprise:

- An Initial Action Plan; and,
- A Full Action Plan.

Initial Action Plan

The objectives of the initial action plan should be to confirm identification and provide immediate protection of the unexpected species.

Accordingly, the plan should define:

- A mechanism for confirming the identification of the species; and,
 - Whether activities / works should either:
-

- Continue;
- Continue in different areas;
- Continue using different methodologies or programme; or;
- Cease.

Full Action Plan

Based on the findings of the initial action plan, the full action plan should where deemed necessary update the assessment of potential impacts of the Development on the unexpected species, and review the recommended mitigation / enhancement measures. This should be done at the earliest opportunity if shown to be required as part of the initial action plan.

The full action plan should also define the need for further licences.

Any changes to the roles and responsibilities, and environmental monitoring, should be defined. The changes to the environmental monitoring should aim to verify that any actions taken have been successful.

APPENDIX C: PROPOSED SPECIFICATIONS OF ENHANCEMENT MEASURES

APPENDIX C.1: PROPOSED REED BED ANNUAL CUTTING REGIME SPECIFICATION

Proposed enhancement measures include the annual cutting of reed beds. This comprises a programme of hand cutting which would be undertaken each winter to promote vigorous re-growth.

Within the area defined for the annual cutting:

- Approximately one third of the length should not be subject to the annual cutting; and,
- During each cutting, a gap of between 10 and 20 m should be left untouched as refuges for water vole; and,
- Cutting should be undertaken so as to retain 10 – 15 cm of vegetation (e.g. a high cut).

Other bankside vegetation (e.g. not reeds) should be cut on a 3 - 5 year rotation on different lengths of the area defined for the annual cutting (e.g. a late autumn cut would encourage a rich grass sward to develop).

To minimise the potential for impacts to water voles, the timing of the cuttings will be coordinated throughout the year as follows:

- a) Mowing and weed cutting shall not take place during April, May and June inclusive;
- b) Weedraking shall not commence before 1 August;
- c) Cutting of phragmites / common reed shall be left until mid-August or later (the later the better); and,
- d) Tree and brush management works shall only be undertaken between October and early March.

Proposed Locations: Refer to Figure 1

APPENDIX C.2: (BATS) PROPOSED ARTIFICIAL ROOST BOX SPECIFICATION

Target Species: Bats ('smaller species')

Proposed Quantity: 5

Specification:

Model: 2F Schwegler Bat Box (General Purpose)

Material: Schwegler Woodcrete (a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for 20 to 25 years).

External Dimensions: 33 cm (h) x 16 cm (d)

Weight: 4 kg

The artificial roost box is designed as a summer roosting space and has a simple entrance hole at the front. The material is breathable and allows a stable temperature to be maintained inside the box. The proposed model is also painted black to absorb warmth.

It also provides a good rough surface for bats to cling on to and climb.



Image Source:

<http://www.nhbs.com/title/158629/2f-schwegler-bat-box-general-purpose>

Proposed Locations: Refer to Figure 1.

Siting / Fixing Requirements:

Boxes should be sited on suitably mature trees at a height between 3 to 6 m. Ideally, the boxes should be sited:

- In open positions allowing unhindered access / egress; and,
- In groups, facing different directions, to provide a variety of micro-habitats.

Monitoring:

- Biannual Bat Activity Survey, and checks of box condition, by a suitably licenced bat ecologist.

Maintenance:

- The box should be replaced if its condition deteriorates or if it is damaged. , However, if the box is occupied, bats can only be disturbed by a suitably licenced bat ecologist.

APPENDIX C.3: (BIRDS) PROPOSED ARTIFICIAL NEST PLATFORM SPECIFICATION
Target Species: Sand Martin (*Riparia riparia*)

Proposed Quantity: 1

Specification:

- Six 1 m-deep holes to hold upright posts;
- A timber platform approximately 1.8 m off the ground;
- Anti-predator skirts on the upright posts to deter land predators (e.g. foxes);
- Exterior shell of nest box from treated plywood;
- Approximately 36 PVC pipes fitted into exterior shell, part filled with sand, to mimic nesting preference of sand martin; and,
- A sand-covered front fascia panel to hide PVC pipes and provide rows of offset entrance holes, with each offset hold big enough for the sand martins, but too small for prefatory birds (e.g. gulls).


cc-by-sa/2.0 - The Sand Martin Nesting Box... by Chris Reynolds - geograph.org.uk/p/4763160
Proposed Locations: Refer to Figure 1.

Monitoring:

- Annual Survey.

APPENDIX C.4: (BIRDS) PROPOSED COMMON SWIFT NEST BOX SPECIFICATION

Target Species: Swift (*Apus apus*)

Proposed Quantity: 3

Specification:

Model: WoodStone Swift Nest Box

Material: FSC Certified WoodStone

External Dimensions: 24.5 cm (h) x 38 cm (w) x 26.5 cm (d)

The nest entrance is on the underside of the box. This type of nest entrance is preferred by swifts, and discourages house sparrows (*Passer domesticus*) and starlings (*Sturnus vulgaris*) from occupying the box.



Image Source:

http://www.birdfood.co.uk/ctrl/product:1584:/woodstone_swift_nest_box#.VwTs7vkrKM8

Proposed Locations: To be Confirmed.

Siting / Fixing Requirements:

Boxes should be sited:

- Out of direct sunlight, under deep eaves or on walls that do not receive much sun (e.g. north, east or west-facing, if shaded. Not south-facing);
- At least 5 m from ground level; and,
- In uncluttered adjacent airspace (for a clear flight path).

Monitoring:

- Annual survey.

Maintenance:

- If properly installed, the box will not normally need any cleaning or maintenance.

APPENDIX C.5: (BIRDS) PROPOSED HOUSE SPARROW NEST BOX SPECIFICATION

Target Species: House Sparrow (*Passer domesticus*)

In addition to the house sparrow, the nest box will also attract: great / blue / marsh / coal / crested tit; redstart / nuthatch / collared / pied flycatcher; and, wryneck / tree sparrow.

Proposed Quantity: 3

Specification:

Model: 1B Schwegler Nest Box (32 mm)

Material: Schwegler Woodcrete

External Dimensions: 23 cm (h) x 16 cm (d)

Hole Diameter: 32 mm

Weight: 3.6 kg



Image Source:

<http://www.nhbs.com/title/158587/1b-schwegler-nest-box>

Proposed Locations: To be Confirmed.

Siting / Fixing Requirements:

- Out of strong sunlight (e.g. north or east-facing);
- Tilted slightly so that any driving rain will hit roof and bounce off;
- At least 2 m from ground level;
- In uncluttered adjacent airspace (for a clear flight path); and,
- Where landscaping permits, adjacent / within climbing vegetation (e.g. honeysuckle).

In addition, as house sparrows nest in loose colonies, two or three boxes can be sited in the same area (with appropriate spacing).

Monitoring:

- Annual survey.
- Check box condition and fixing every 2 – 3 years (as the tree grows).

Maintenance:

- Debris should be removed from boxes outside of the nesting season (i.e. between September to February).
- The box should be replaced if its condition deteriorates or if it is damaged.

APPENDIX C.6: (OTTER) PROPOSED ARTIFICIAL OTTER HOLT SPECIFICATION

Target Species: Otter (*Lutra lutra*)

Proposed Quantity: 1

Specification:

Recommended Materials:

- Approximately 20 logs (30 – 40 cm diameter);
- Large number of Wooden Stakes / Branches (3 – 10 cm diameter); and
- Large pile of brash.

Dimensions:

The holt is to be built to incorporate a bedding chamber measuring 450 mm (h) x 600 mm (w) x 600 mm (d) with an internal entrance measuring 200 to 250 mm, and an external corridor with two exits to the outside measuring a minimum of 250 mm.

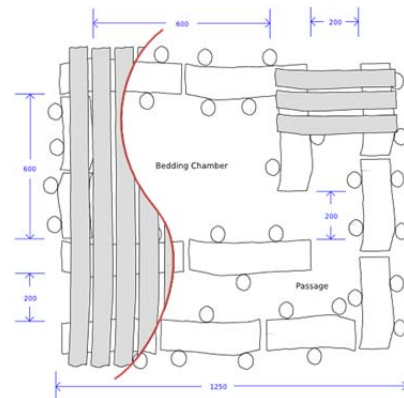


Image Source:

<http://www.conservationgroups.org.uk/article/building-an-otter-holt/>

Proposed Locations: Refer to Figure 1.

Siting / Fixing Requirements:

Stage 1: Building the Walls

Logs of 30 – 40 cm diameter should be placed on the ground to mark out the shape of the holt, including the outline of the bedding chamber. These logs should be secured in place with wooden stakes 3 – 10 cm diameter. Corridors and exits should be at least 200 mm wide to allow otters to turn around. If necessary, pile logs on top of each other and stake to secure them, so the roof of the holt is 450 mm above the ground. One exit should face towards water and one exit should face towards dry land.

Stage 2: The Roof

Once the walls are 450 mm high and stabilised, branches 3 – 10 cm diameter should be placed across the top of the logs to form roof struts. These can be nailed on to walls if required. The roof struts should be covered with brash until no light enters the bedding chamber. The roof should be tied down with wire and stakes. Brash should be stacked high, as fresh brash will dry down and disintegrate over time.

In order to provide camouflage, other vegetation can be placed over the holt.



Monitoring:

- Annual survey.