SPALDING ENERGY EXPANSION LIMITED

SPALDING ENERGY EXPANSION
DESIGN AND ACCESS STATEMENT

March 2009

Prepared by
Parsons Brinkerhoff Ltd
Amber Court
William Armstrong Drive
Newcastle Upon Tyne
NE4 7YQ

Prepared for
Spalding Energy Expansion Limited
81 George Street
3rd Floor
Edinburgh
EH2 3ES

Report Title	:	Spalding Energy Expansion Design and Access Statement
Report Status	:	Final First Issue as Document No PBP/INT/SH/000005
Job No	:	63295
Date	:	March 2009
Prepared by	:	..... Kevin Barker
Checked by	:	..... Emily Agus
Approved by	:	..... John Toman

CONTENTS

		Page
LIST OF ABBREVIATIONS		
SECTION 1		**1**
DESIGN AND ACCESS STATEMENT		**1**
1.1	Introduction to the Project	1
1.2	The Reason for the Design and Access Statement	1
SECTION 2		**3**
THE PROJECT AND CONSULTATION		**3**
2.1	Overview	5
2.2	Physical Context	5
2.3	Social Context	6
SECTION 3		**9**
DESIGN		**9**
3.1	Overview	11
3.2	Appropriateness of Use	11
3.3	Amount of Development	12
3.4	Layout	13
3.5	Scale	16
3.6	Table 3.1 – Maximum Plant Dimensions	16
3.7	Landscaping	16
3.8	Appearance	18
SECTION 4		**21**
ACCESS		**21**
4.1	Overview	23
4.2	Access during Construction	24
4.3	Access during Operation	24
4.4	Inclusive Access	25

LIST OF ABBREVIATIONS

ACC	air cooled condenser
AGI	above ground installation
BSSSC	British Sugar Sports and Social Club
CCGT	combined cycle gas turbine
CCR	carbon capture ready
CCS	carbon capture and storage
CCTV	closed circuit television
CHP	combined heat and power
CO_2	carbon dioxide
DECC	Department for Energy and Climate Change
EA	Environmental Agency
EIA	Environmental Impact Assessment
ES	Environmental Statement
HGV	heavy goods vehicle
ha	Hectares
HRSG	heat recovery steam generator
ILE	Institution of Lighting Engineers
kV	Kilovolts
LCC	Lincolnshire County Council
LDF	Local Development Framework
m	Metres
MW	Megawatts
MWe	electrical megawatts
MWth	thermal megawatts
NGC	National Grid Company
PB	Parsons Brinckerhoff
SECL	Spalding Energy Company Limited
SEE	Spalding Energy Expansion
SEEL	Spalding Energy Expansion Limited
SHDC	South Holland District Council
SUDS	Sustainable Urban Drainage Systems
UK	United Kingdom
WDIDB	Welland and Deepings Internal Drainage Board

SECTION 1

DESIGN AND ACCESS STATEMENT

1 DESIGN AND ACCESS STATEMENT

1.1 Introduction to the Project

1.1.1 Spalding Energy Expansion Limited (SEEL) proposes to construct and operate a Combined Cycle Gas Turbine (CCGT) Power Station in Spalding, Lincolnshire. The proposed power station will be known as the 'Spalding Energy Expansion' or 'the proposed SEE' and will be an expansion of the existing Spalding Energy Company Ltd (SECL) power station. SEEL is an affiliate of SECL and both companies are owned by InterGen, a global power generation company with extensive experience in CCGT development. The proposed SEE will be capable of generating up to a nominal 900 MW and will be located on land immediately adjacent to the existing SECL power station. The existing SECL power station was commissioned in 2004 and is a CCGT plant with an output of 880 MW.

1.1.2 To ensure that the project has taken into consideration the potential environmental and social issues associated with the development, SEEL commissioned Parsons Brinckerhoff (PB) to provide the technical support to the development and ENVIRON to undertake an Environmental Impact Assessment (EIA) of the project, the findings of which have been summarised in an Environmental Statement (ES). The ES has been prepared to accompany an application to the Secretary of State at the Department of Energy and Climate Change (DECC) for consent to construct the proposed SEE under Section 36 of the Electricity Act 1989.

1.2 The Reason for the Design and Access Statement

1.2.1 This Design and Access Statement has been prepared to accompany an application for Section 36 Consent for the proposed SEE, to demonstrate that the applicant has fully considered the design and access issues associated with the development of the proposed SEE in accordance with Government Circular 'Guidance on Changes to the Development Control System', which became effective as of 10th August, 2006 and the South Holland District Council document 'Design and Access Statements, A Guidance Note', published in August 2006.

1.2.2 The application for Section 36 Consent includes an application for a direction under Section 90(2) of the Town and Country Planning Act 1990 that planning permission for the development be deemed to be granted, requiring that a Design and Access Statement is prepared.

1.2.3 The Circular advises that the Design and Access Statement submitted should cover the following:

The Design element – to show the process undertaken to explain the scheme in terms of its:

- Amount – how much is to be built on the site;
- Use – what the buildings and spaces will be used for;
- Layout – how the buildings and public and private spaces will be arranged and how they interact with the site;

- Scale – how big the buildings and spaces would be (their height, width and length);

- Landscaping – how open spaces will be treated to enhance and protect the character of the place; and

- Appearance – what the building and spaces will look like, for example, building materials and architectural details.

The Access element – which should include details of consultations:

- Vehicular and transport links – why the access points and routes have been chosen, and how the site responds to road layout and public transport provision; and,

- Inclusive access – how everyone can get to and move through the place on equal terms regardless of age, disability, ethnicity or social grouping.

SECTION 2

THE PROJECT AND CONSULTATION

2 THE PROJECT AND CONSULTATION

2.1 Overview

2.1.1 The proposed SEE will involve the construction of a CCGT power plant, which will consist of two gas turbines, each capable of producing approximately 300 MW (ie 600 MW in aggregate), connected to heat recovery steam generators (HRSGs) that will serve steam turbine(s) capable of producing approximately a further 300 MW. The total electrical output of the proposed SEE will, therefore, be a nominal 900 MW at typical site ambient conditions, with an efficiency of up to around 55 percent. The electricity generated will be exported to the National Grid via a new substation that will be constructed adjacent to and connected with to the existing SECL substation (where appropriate). The proposed SEE would have an operational life of about 35 years.

2.1.2 The final detailed design of the proposed SEE will not be completed until a construction contract(s) is in place and, therefore, the final configuration of the plant cannot be confirmed until that time. Thus, a degree of flexibility with regard to the positioning and scale of the components for which SEEL is seeking consent, is required to allow for minor changes to the layout as the project progresses. As such, a 'Parameter block model layout' has been developed to establish the maximum extent of the physical development of the proposed SEE and is shown in Figure 4.1 in Appendix A.

2.1.3 In order to provide the proposed SEE with a gas supply, it will be necessary to construct a new gas pipeline approximately 7.5 km in length and an above ground installation (AGI) linking the proposed SEE with the Gas National Transmission System located to the north east, near Wragg Marsh. The pipeline will be subject to a planning application made to South Holland District Council (SHDC) and will be accompanied by a separate ES.

2.1.4 The electricity generated by the proposed SEE will require transmission by a new 400 kV overhead transmission line to the National Grid, including construction of new transmission towers. An application accompanied by a separate ES will be made by National Grid to DECC for Section 37 consent under the Electricity Act 1989.

2.1.5 The proposed SEE is anticipated to take 5 years to construct and test from the date the application for Section 36 Consent is submitted. Full details of the project can be found in the ES which accompanies the application for Section 36 Consent.

2.2 Physical Context

2.2.1 The proposed SEE site is located approximately 2 km to the north east of Spalding town centre, Lincolnshire at National Grid Reference TF 259 249 (Figure 1.1 of Appendix A), and comprises a total area of approximately 13 ha. The proposed SEE site is located immediately to the south of the existing SECL power station, as shown on Figure 1.2 of Appendix A. Both parcels of land were occupied formerly by a sugar factory, which was owned and operated by British Sugar plc, prior to demolition in 1996.

2.2.2 The proposed SEE site is bordered to the north by the existing SECL power station, to the east by West Marsh Road and then the River Welland, to the west by Vernatt's Drain and to the south by undeveloped industrial land.

2.2.3 The proposed SEE site is predominately open and grassy in nature. A disused office block, a group of buildings and a bowling green owned by SECL (and subject to a short term lease to the British Sugar Sports and Social Club (BSSSC)), are located to the north east of the site. The northern part of the proposed SEE site comprises made ground in the form of a large flat-topped mound up to 4 metres above ground level. The mound is formed from washings from the former sugar beet settlement lagoons that were relocated from the site of the existing SECL power station at the time of its construction. The southern extent of the site is vacant grassland.

2.2.4 The immediate surrounding land use is predominantly industrial, with some residential properties located further afield. The wider area is predominantly rural, dominated by agriculture, horticulture and food processing industries. The landscape is generally open and flat. Outside of Spalding town centre, the area is sparsely populated with occasional farmsteads.

2.3 Social Context

2.3.1 SEEL has endeavoured to maintain an appropriate level of consultation with statutory and non statutory consultees throughout the development process including in respect of design and access issues. Extensive and ongoing consultation has been undertaken with a variety of groups, including SHDC, Lincolnshire County Council (LCC), statutory consultees such as DECC, the EA and Anglian Water, and the local community, via a series of meetings and exchanges of correspondence.

2.3.2 The feedback from this consultation has been used to shape the design of the proposed SEE, for example, visual appearance; and floor levels to mitigate against flood risk.

2.3.3 A stakeholder and community consultation strategy has been developed to ensure that there is effective consultation as the project advances through the various regulatory approval and consent procedures. This consultation will continue to feed into the detailed design process.

2.3.4 In November 2008 an EIA Scoping and Consultation Report was issued to statutory and non-statutory consultees. This document described the key environmental issues that would require detailed evaluation. Consultation with these interested parties has continued throughout.

2.3.5 A four page newsletter was circulated to approximately 3,500 homes and businesses in the wider Spalding community on 7 November 2008, detailing the proposals for the proposed SEE site. The Statement of Community Involvement summarises the outcomes of this event. Key themes included:

- the use of land that is designated for industrial use;
- it will be located adjacent to the existing SECL plant, therefore reducing the visual impact;
- the utilization of existing traffic routes; and

- environmental impacts of the proposed SEE including air emissions, noise, visual, ecology, re-use of heat and environmental impacts associated with infrastructure connections (gas pipeline and overhead transmission line).

2.3.6 The wider community was invited to comment on the proposals at a public exhibition held over three days (Thursday 20 November – Saturday 22 November 2008) at the Broad Street Business Centre in Spalding town centre. The purpose of the public exhibition was two-fold – to provide the community with an understanding of the proposed SEE, and to provide SEEL with an understanding of local opinion. The exhibition material consisted primarily of a range of display boards with information about the project and a selection of views from various locations. In addition, member of the proposed SEE project team were present to answer any questions.

2.3.7 Another consultation exercise is planned to take place on the Thursday 26 March - 28 March 2009 in Spalding. A second newsletter was issued on 18 March 2009 explaining the feedback from the consultation process and how this has been addressed in the proposed SEE application.

SECTION 3

DESIGN

3 DESIGN

3.1 Overview

3.1.1 This section describes the processes undertaken during the design of the proposed SEE to highlight that the design process was carried out in a structured rigorous manner.

3.1.2 The design of the proposed SEE reflects the overall objective which is to provide an efficient, controlled, working environment within which high efficiency CCGT technology will be operated by experienced personnel.

3.1.3 A full EIA has been undertaken for the proposed SEE and this has informed the design of the plant. The EIA can be broken down in to three basic process components:

1. collection of baseline data against which the impact of the project is considered;

2. assessment of the impacts of the project; and

3. development of monitoring and mitigation measures to minimise any identified impacts, and ensure that the project is environmentally and socially acceptable.

3.1.4 These components are discussed in detail in the ES, which also includes discussion on how the EIA process has shaped the design of the project. Additionally, the site layout and composition has been refined during the EIA process to incorporate the views of the statutory and non-statutory consultees wherever possible.

3.1.5 Throughout the design of the proposed SEE, SEEL has sought to minimise the impact of the project. In particular, additional care has been taken in minimising impacts of noise, air and water quality and visual appearance, which are typically the main impacts associated with power plants. This has been achieved through listening to the concerns of interested parties including all statutory and non-statutory consultees, as well as members of the general public.

3.1.6 In addition, careful consideration has been given to all relevant planning policies in the refinement of the plant design.

3.2 Appropriateness of Use

3.2.1 The proposed use is power generation. The proposed SEE will provide a nominal 900 MW of power generation capacity at site rated conditions and will burn natural gas only. The application for Section 36 Consent follows an in-depth site selection process and a number of feasibility studies to establish that the site is a suitable location for a gas-fired CCGT power station.

3.2.2 The reasons for selection of the proposed SEE site are discussed in depth within Chapter 3 of the ES - Alternatives and Design Evolution, and are summarised below. They include:

- the opportunity to utilise existing infrastructure where possible, which means that items such as the workshop would not be duplicated;
- the presence of a skilled workforce at the existing SECL power station, with its established operational systems, will be available for training new employees;
- the electrical grid connection, north east of Spalding is accessible to key areas of UK electricity demand;
- the national gas supply pipeline north east of Spalding is accessible and has capacity;
- there is sufficient land available for carbon capture and storage, and transport of CO_2 from this location appears to be feasible;
- the land use characteristics of the adjoining industrial estate and the existing SECL power station site provide an appropriate environment for the development of the proposed SEE;
- proximity to potential heat and power off-takers; and
- SECL has a strong existing relationship with key stakeholders and the local community.

3.2.3 The project is supported by national energy policy and the Planning Statement submitted with the Section 36 application demonstrates that the project is consistent with all relevant planning policies, including the Regional Spatial Strategy, the Lincolnshire Structure Plan, the South Holland Local Plan and the East Midlands Regional Plan.

3.3 Amount of Development

3.3.1 The proposed SEE site is 13 hectares (ha) in total and the land will be used as follows:

- 2.3 ha of land lying directly south of the existing SECL substation. This is the location of a proposed 400 kV substation which will export the electrical energy generated by the proposed SEE to the National Grid Transmission Network;
- 4.9 ha of land lying to the south of the existing SECL power station. The main buildings and structures of the proposed SEE will be constructed within this area; and
- 3.3 ha of land lying to the south of the proposed SEE site. This area will be used temporarily for car parking and the storage of materials and equipment during the construction of the proposed SEE. This area has been set aside for the installation of CCS equipment should this be required in the future.

3.3.2 The layout of the plant showing the above land utilization can be found on illustrative layout provided as 63114-PBP-108A in Appendix A.

3.3.3 The amount of development is appropriate because this is the area required for all the plant associated with the proposed SEE. Table 3.1 (later in this Section) details the main equipment boundary sizes.

3.4 Layout

3.4.1 The layout of the Development is a consequence of the existing site and design of the existing SECL power station.

3.4.2 The main items of plant listed below, which comprise the proposed SEE power station, are described in the ES in Chapter 4 which identifies items of plant to be located in the respective parts of the Parameter Block Model Layout (see Figure 4.1 in Appendix A). These are also shown in an illustrative layout provided as 63114-PBP-108A, also in Appendix A. The detailed design of the power station will not be completed before a construction contract is in place; accordingly, final design details will be submitted to SHDC for approval before the main development can commence. All aspects of the proposed SEE have therefore been considered on a "worst case basis", for example, the stack heights for purposes of visual assessment have been assumed to be 82 metres but, for purposes of air quality modelling, a height of 78 metres has been adopted, comparable to the present stack heights (ES paragraphs 2.54-2.56).

3.4.3 The main process plant to be situated on the 13 hectare Site, will include:

- 2 gas turbines;
- 1 or more steam turbines;
- 2 heat recovery steam generators (HRSG);
- 1 or more auxiliary boilers;
- 2 stacks;
- Air cooled condensers (ACC) and ancillary cooling;
- 2 or more transformers;
- Gas reception facility;
- Other plant and equipment;
- Water treatment plant;
- 2 water tanks; and
- sub-station/extension.

3.4.4 In addition to the above, landscaping and biodiversity provision will be incorporated into the scheme.

3.4.5 The layout and design of the proposed SEE gives consideration to environmental impacts, in particular noise, emissions and visual appearance. Many of the same

technologies used within the existing SECL power station will be employed and the plants will be of a similar size. All equipment used in the plant will be modern and proven in the power generation industry. A full description of the project is included in Chapter 4 of the ES - Development Description. This chapter includes detailed discussion of the layout, and all on site processes.

3.4.6 The proposed SEE will incorporate a number of sustainable design and specification measures. This includes low energy building design, brown/green roofs, habitat creation, rainwater harvesting, specification of materials with recycled content, Sustainable Urban Drainage Systems (SUDS) pond(s).

3.4.7 The layout of the proposed SEE takes the following factors into consideration:

- the presence and form of the existing SECL power station, including potential for interconnections and shared services;
- the availability of land;
- access arrangements;
- technical requirements;
- reduction of environmental impacts, including:
  - noise;
  - emissions;
  - visual impacts;
  - water use and protection of the water environment;
- opportunities for ecological enhancement;
- government guidance and regulatory requirements;
- requirement for CCR;
- infrastructure connections (i.e. gas pipeline and overhead transmission line);
- implementation of a CHP scheme or schemes;
- design feedback from the EIA and stakeholder consultation process; and
- financial considerations.

3.4.8 The parameter block model layout (Figure 4.1 in Appendix A) consists of a block model of the proposed SEE, demonstrating the maximum deviations that may occur within a series of three dimensional envelopes. This parameters plan comprises five distinct envelopes of varying heights based on the maximum height of structures or buildings that may occur within each area of the proposed SEE site. Despite the potential variation in site layout, the anticipated electrical generation capacity of a nominal 900 MW remains the same.

3.4.9 The main gas turbines and steam turbine(s) will be located in the central part of the proposed SEE site and enclosed within the main power building (orange block, Figure 4.1 in Appendix A). The HRSGs will be situated outwith the turbine hall, however they will be enclosed within acoustic walls to provide noise attenuation.

3.4.10 The stacks for the flue gases will be situated close to each gas turbine unit and will be between 78 – 82 m in height (blue hatching, Figure 4.1 – Appendix A).

3.4.11 The ACC will be located close to the steam turbines to allow for an appropriate air flow to the condenser intakes (orange block, Figure 4.1 – Appendix A).

3.4.12 Export of electricity from the proposed SEE will be achieved via a new 400 kV substation located in the northernmost area of the proposed SEE site, adjacent to the substation for the existing SECL power station (blue block, Figure 4.1 – Appendix A).

3.4.13 New on-site roads and paved areas will be provided as required. The primary site access for staff and visitors during operation of the proposed SEE will be via the security controlled Gate A on West Marsh Road, which is also the main access to the existing SECL power station site. It may be that Gate C becomes the main access gate for the proposed SEE if the station were to be standalone. Access is discussed further in Section 4 of this statement.

3.4.14 Lubricating oils will be stored on site within steel tanks in an impermeable bund sized to contain 110 percent of the contents of each tank. This is in line with the Oil Storage Regulations. Used lubricating oils will also be stored on site for re-use or will be disposed of off-site by an approved and licensed contractor. Storage facilities will also be provided for the small quantities of sodium phosphate, oxygen scavenger, ammonia and other chemicals used in boiler water dosing. All such chemicals will be retained in suitable containment areas. A demineralised water storage tank will be provided on the proposed SEE site. The demineralised water for this tank will be supplied from either the existing SECL plant's water treatment plant or from a new demineralisation plant on the proposed SEE site. Miscellaneous materials such as oils, greases, cleaning substances and materials, laboratory chemicals etc, will be stored in suitable storage conditions or containers on site.

3.4.15 The layout of the proposed SEE site has been designed with its servicing in mind and sufficient space has been provided for a large refuse vehicle to enter and leave the site in a forward gear. Service vehicles such as these are expected to be very infrequent and will access the proposed SEE site via Gate C by prior arrangement.

3.4.16 Various facilities at the existing SECL power station have sufficient capacity to be utilised for the proposed SEE. These facilities include: administration buildings; workshops; stores; the water treatment plant; and the control room.

3.4.17 A steel palisade fence will be constructed around the proposed SEE site for security reasons, and the proposed SEE site will be fitted with closed circuit television (CCTV). Both of these items will link into the security fence and CCTV for the existing SECL power station.

3.4.18 Included within the application boundary is an area of land to be used temporarily for car parking and storage of materials and equipment during the construction phase of the proposed SEE. This area of land has been set aside for the installation of the equipment necessary to capture and compress CO_2.

3.5 Scale

3.5.1 The maximum dimensions of the main plant items for the proposed SEE are shown in Table 3.1 below (Table 4.3 of the ES). The exact dimensions cannot be identified until the detailed design process is completed and a contractor is selected.

3.6 Table 3.1 – Maximum Plant Dimensions

Plant	Height (m)	Area (m^2)
HRSG (2 No.)	39.5 m	1 600 m^2
Steam Turbine Hall	36.5 m	2 250 m^2
Gas Turbine Hall	36.5 m	2 300 m^2
Substation	12 m	22 572 m^2
ACC	36 m	6 400 m^2
Stack (2 No.)	82 m	226 m^2
Water tanks (2 No.)	21 m	930 m^2
Office, workshop, warehouses, control room	20 m	2 795 m^2

3.6.1 The majority of the remaining plant and equipment will be housed in relatively low buildings, up to around 10 m in height, as is the case for the existing SECL power station.

3.6.2 The building/plant give a site cover ratio of about 50 per cent, the remaining hard areas comprise mainly roads/footpaths/surface yards and car parking (56 no. cars, 3 no. disabled car parking spaces, 6 no. motorcycle spaces and secure storage for 10 no. bicycles).

3.6.3 Again it should be noted that full details of the project are included in Chapter 4 of the ES – Development Description.

3.7 Landscaping

3.7.1 The proposed SEE is located within an industrial/commercial area but its amenity will be improved by a comprehensive scheme of landscaping with native species along the combined site frontage of the SECL power station and through perimeter planting. Biodiversity enhancement will be achieved by the provision of new SUDS water features of approximately 1,000 m^3 in total to provide similar wildlife habitat to that used by birds and invertebrates along Vernatts Drain and the River Welland. InterGen is discussing with the Welland and Deeping Internal Drainage Board (WDIDB) the potential to collaborate in biodiversity enhancement along Vernatts Drain and it will explore a similar option with the EA.

3.7.2 The proposed SEE has been designed to avoid, reduce and remediate impacts on the landscape resource as follows:

- the layout of the proposed SEE will avoid the need to alter or remove the bund along the eastern bank of Vernatt's Drain. This will maintain the visual screening that this bund currently creates between areas to the west, particularly from the Leisure Wheel route, and the proposed SEE site.
- planting will be located around the periphery of the site, where possible, and once established this will provide screening and filtering of views of the lower level elements of the proposed SEE;
- planting of native woodland, trees and hedges around the site will remediate the physical loss of the hedges, trees and young woodland that will be removed as a result of the proposed SEE; and
- the landscaping strategy will aim to enhance the ecological resource of the proposed SEE site and to maintain to connectivity to ecological resources in the wider area.

3.7.3 Landscaping proposals for the proposed SEE are discussed within Chapter 7 – (Landscape and Visual Amenity) and Chapter 13 (Ecology) of the ES.

Planting

3.7.4 Landscape planting will incorporate native species and include the following:

- planting of hedgerow and hedgerow trees along the boundary with West Marsh Road to provide screening of the perimeter security fence and low level elements of the proposed SEE. Poplar species may be suitable as they are fast growing, provide excellent screening and are in keeping with the surrounding landscape (poplars are present immediately across Vernatt's Drain);
- perimeter planting of woodland, trees and shrubs where possible to create screening and linear habitat corridors. Native oak *Quercus robur* would be appropriate;
- shrub planting in various locations around the proposed SEE site (e.g. car parking areas), incorporating berried species to encourage birds into the site. Species could include elder *Sambucus nigra*, hawthorn *Crataegus monogyna*, and wayfaring tree *Viburnum lantana*. It is anticipated that climbing planting and other native flowering plants will be positioned within the proposed SEE as the layout allows;
- the CCR area will be planted as a mixed species grassland following construction. A mixed species, herb-rich grassland would provide habitat for birds, invertebrates, reptiles and small mammals and would need minimal maintenance once established; and
- All planting is proposed at a distance of greater than 9 m from Vernatt's Drain, as required by the WDIDB.

SUDS Water Feature

3.7.5 The proposed SEE site will include a new SUDS water feature(s) of approximately 1,000 m^3 in total. This feature will be planted with a fringe of emergent and marginal vegetation such as common reed, rushes, reed sweet grass, marsh marigold, yellow iris, water mint and other wetland species to provide similar wildlife habitat to that used by birds and invertebrates along Vernatt's Drain and the River Welland, as well as treating and detaining water on the site as required.

Riparian Habitat Management

3.7.6 Although Vernatt's Drain lies outside the proposed SEE site, discussions have been held with the WDIDB which is the authority responsible for the management of this waterway. As a result of these discussions, WDIDB has indicated that annual management work will be undertaken to remove the encroaching bramble and field bindweed *Convolvulus arvensis* from the reedbed areas along the eastern bank of Vernatt's Drain, thereby enhancing the habitat quality for species such as water vole. This will be undertaken outside the breeding bird season in order to avoid disturbing any breeding wildfowl. Where possible, this will be carried out from a boat in the channel to avoid disturbing the banks where water voles are suspected to exist.

3.7.7 Access into the wetland vegetation which borders Vernatt's Drain will be managed with clearly demarcated angling points created and signed, thereby avoiding trampling of other areas of emergent vegetation.

3.7.8 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.

3.7.9 The exact details of the landscaping strategy including the management of the landscaping will be confirmed post-consent in consultation with SHDC. A landscaping parameters plan can be found on Figure 4.6 in Appendix A. to illustrate where landscaping will be incorporated across the proposed SEE site.

3.8 Appearance

3.8.1 The proposed SEE has been designed to avoid, reduce and remediate impacts on the visual resource as follows:

- the tallest structures of the proposed SEE will be set back from the edges of the site to reduce their impact on key routes and receptors; and
- it is likely that the material, colour and construction of the proposed SEE will be similar to that of the existing SECL power station, however this will be confirmed through liaison with the local community, SHDC and other relevant stakeholders. This would provide consistency between the developments, resulting in a more unified and integrated visual image within views.

3.8.2 The external surfaces of the buildings will be designed such that there will be no material deterioration in the appearance of the proposed SEE over its 35 year operational lifetime.

3.8.3 A limited combination of materials will be used in the construction of the external structures to give a cohesive appearance to the plant.

Lighting

3.8.4 The lighting design will be carried out by a professional lighting design engineer with the aim of minimising light pollution.

3.8.5 Subject to feedback from SHDC, it is proposed that the external lighting will be designed in compliance with guidance published by the ILE[1]. The objectives of this guidance are to limit:

- the average upward light ratio of luminaries to restrict sky glow;
- illuminance at the windows of nearby sensitive properties;
- the intensity of each light source in potentially obtrusive directions; and
- the average illuminance of a building, where it is floodlit.

3.8.6 Lighting will, wherever possible, utilise low or high pressure sodium lamps instead of mercury or metal halide lamps. Lighting will be directed to where it is needed, and measures will be taken to avoid light spillage. This will be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

3.8.7 The proposed SEE will be operational 24 hours per day, however, between 2300 and 0700, the external safety and security lighting levels will reduce to lower levels of lighting, as recommended by the ILE.

3.8.8 The plant lighting will mainly be provided for access areas as required, the main areas being the HRSG staircase and platforms and the outer access platform and staircase of the ACC. This lighting is expected to be inward facing.

3.8.9 Further information on the appearance of the plant is provided in Chapter 7 of the ES - Landscape and Visual Amenity.

[1] Institution of Lighting Engineers (ILE) (2005) Guidance Notes for the Reduction of Obtrusive Light

SECTION 4

ACCESS

4 ACCESS

4.1 Overview

4.1.1 The proposed SEE site benefits from a high level of transport accessibility being close to the A 16(T), a strategic route, within 1 km. The primary site access for staff and visitors during operation will be via the security controlled Gate A on West Marsh Road, which is also the main access to the existing SECL power station site. It may be that Gate C becomes the main access gate for the proposed SEE if the station were to be standalone. In terms of servicing, it is proposed that all deliveries will be made via Gate B from where deliveries will be distributed to both the proposed SEE and the existing SECL power station as appropriate.

4.1.2 HGVs for skip uplift will be by arrangement via Gate C, also situated adjacent to West Marsh Road. Gate C will normally be locked, as is currently the case for Gate B unless a delivery is scheduled. Access for emergency vehicles during both construction and operation of the proposed SEE will also be via Gate C.

4.1.3 A car parking area for approximately 56 vehicles will also be provided on the proposed SEE site, along with:

- secure cycle storage for ten bicycles;
- three disabled car parking spaces; and
- six motorcycle parking spaces.

4.1.4 During construction it is proposed that all construction traffic will access the proposed SEE site from Gate C. This access already takes the form of a priority junction, constructed to current design standards with an 8.8 m carriageway width and 12 m kerb radii, and benefits from very good visibility splays in both southbound and northbound directions.

4.1.5 West Marsh Road benefits from an off carriageway cycle lane connecting to the A151 to the south in Spalding and on Wardentree Lane to its north. It is anticipated that cyclists can access the proposed SEE site in less than 15 minutes from anywhere within Spalding.

4.1.6 Bus and rail services are also available to provide public transport options to access the proposed SEE site. The closest bus stop is located on West Marsh Road, approximately 1 km to the south of the proposed SEE site, with Spalding railway station situated approximately 3 km to the southwest.

4.1.7 All delivery of natural gas to fuel the proposed SEE will be via a new gas pipeline therefore the only HGV movements arising from the operation of the proposed SEE will be associated with the delivery of process materials, for example water treatment chemicals, or maintenance equipment associated with its servicing needs. It has been identified that up to 10 HGVs may visit the proposed SEE site daily, and most of these movements are expected to be outside of the AM (0800 - 0900) and PM (1700 - 1800) peak hours.

4.1.8 The layout of the proposed SEE site has been designed with its servicing in mind and sufficient space has been provided for a large refuse vehicle to enter and leave the

site in a forward gear. Service vehicles such as these are expected to be very infrequent and will access the proposed SEE site via Gate C by prior arrangement.

4.1.9 It is considered that the proposed SEE supports and reflects national, regional and local policy with respect to transport planning. In particular, the proposed SEE site is in a suitable location for strategic-scale development within the Eastern Sub-area, consistent with national, regional and local transport policy objectives.

4.1.10 Further information is provided in Chapter 8 of the ES - Transport and Access.

4.2 Access during Construction

4.2.1 Construction traffic will consist of staff transport movements, civil works traffic, mechanical works traffic and a small number of abnormal loads for components such as the gas and steam turbines. The average number of construction workers over a month is expected to range between 18 and 455 per day, depending on the stage of construction. A more detailed description of the traffic movements associated with the construction phase is provided in Chapter 8 of the ES - Transport and Access.

4.2.2 The local authorities will be notified, well in advance, of the transport of abnormal loads. Full route surveys will be undertaken by the contractor to ensure the structural suitability of any proposed route. All abnormal loads will be moved in accordance with local authority instructions including use of a police escort, where necessary.

4.3 Access during Operation

4.3.1 Operation of the proposed plant will naturally result in much fewer traffic movements than those associated with construction.

4.3.2 The proposed SEE will require approximately 15 to 20 direct staff to satisfy the daily operational and maintenance requirements, with the equivalent of a further 28 indirect full time equivalent jobs for contracted engineering staff during regular maintenance shutdowns during the operational life of the proposed SEE. During certain maintenance operations at the proposed SEE (typically once every 3 years) there may be a peak of up to 250 direct and contract maintenance staff in total for a period of up to 4 weeks.

4.3.3 It is anticipated that approximately 10 direct staff will work day shift hours (0800 - 16.15). The balance of staff will work either 0700 - 1900 or 1900 - 0700, with a security staff member working either 0500 - 1700 or 1700 - 0500. These employees will access and exit the proposed SEE site via Gate A. In addition, there are expected to be up to a further 15 visitor trips daily, all entering the proposed SEE site via Gate A.

4.3.4 It is, however, possible that the proposed SEE site will operate as a wholly stand alone power station, in which case approximately 40 direct full time equivalent staff will be employed at the proposed SEE site with a further 28 indirect full time equivalent jobs for contracted engineering staff during regular maintenance shutdowns. Under this scenario the maximum number of staff accessing the site will therefore be 68 (40 direct and 28 indirect) plus daily visitor, security staff movements and likely deliveries. Under this scenario access to the proposed SEE site will be via Gate C.

4.3.5 Operational traffic generated by the proposed SEE is assessed as negligible, during normal operations with a maximum increase in traffic of 7 per cent (or 9 per cent for the scenario with the proposed SEE as a wholly stand alone project) on West Marsh Road. This increases to a temporary peak 30 per cent increase in traffic on West Marsh Road when taking account of the peak maintenance situation, however the impact remains negligible. Gate A (or Gate C if SEE is a wholly stand alone plant) will operate well within capacity under all scenarios.

4.3.6 SEEL will offer a voluntary Travel Plan in their commitment to encourage staff to travel to the site by the most sustainable mode practical. The Plan will include measures to promote walking, cycling, the use of public transport and car sharing and endeavour to achieve mode shift targets. The Travel Plan will primarily be aimed at staff, although information will be made available to visitors of opportunities (and advantages) to travel to the site by modes other than the private car.

4.3.7 The proposed SEE site is accessible by pedestrians, with a footway present on the west side of West Marsh road. The proposed SEE site lies within 20 - 25 minutes walk of Spalding town centre and the residential areas to the south and north of the A151 Holbeach Road.

4.4 Inclusive Access

4.4.1 The development will not be open to the general public and will be maintained by a team of dedicated engineers. Provisions for disabled access for any disabled workers and/or visitors to administration and control room facilities will be accommodated in the plant design.

4.4.2 Given that the detailed design of the plant cannot be identified until a contractor is appointed the design specifics of the plant in this regard will be considered at a later date.

APPENDIX A

APPENDIX A:

This Appendix incorporates the following Figures referenced in the Design and Access Statement:

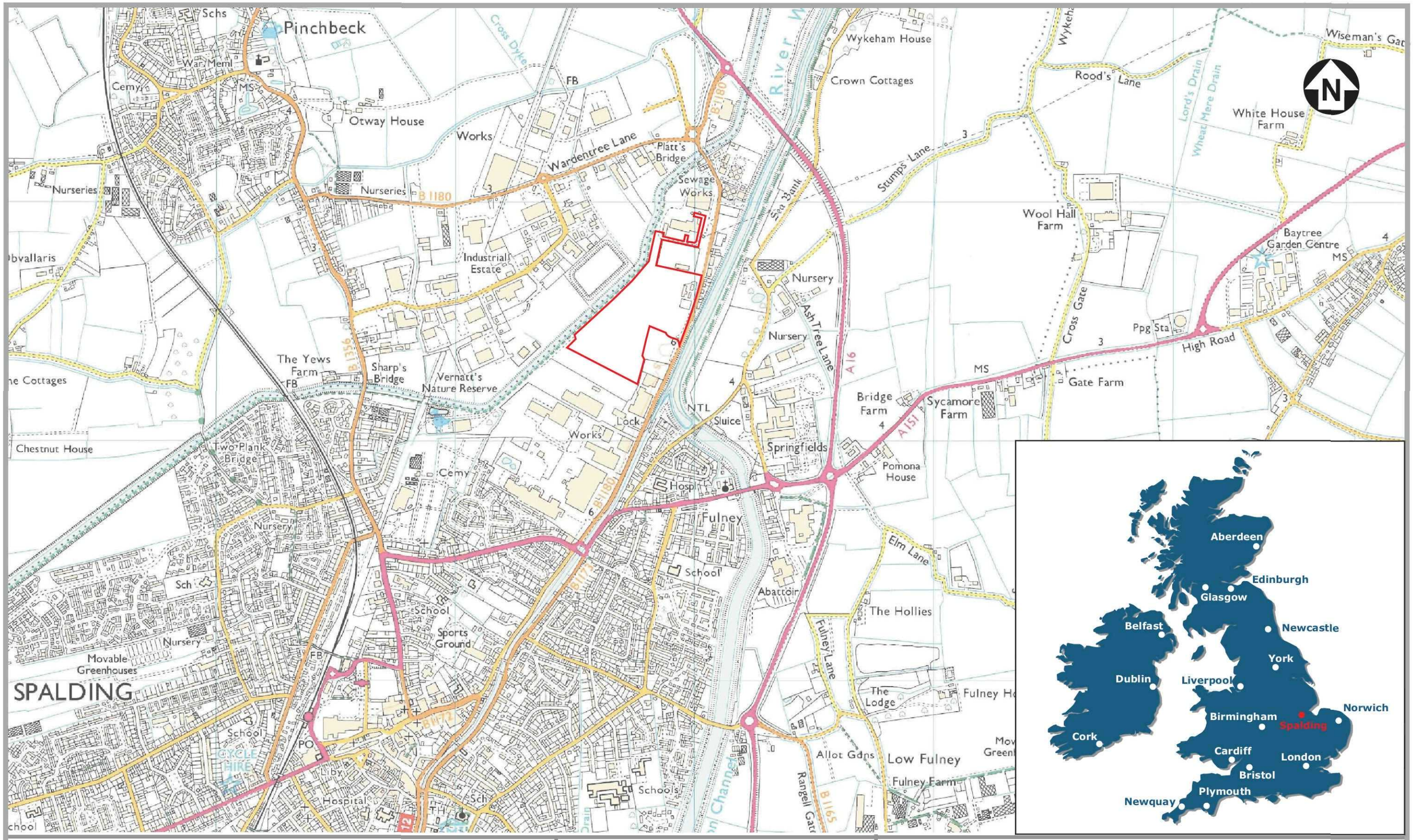
Figure 1.1

Figure 1.2

Figure 4.1

Figure 4.6

63114-PBP-108A



ENVIRON

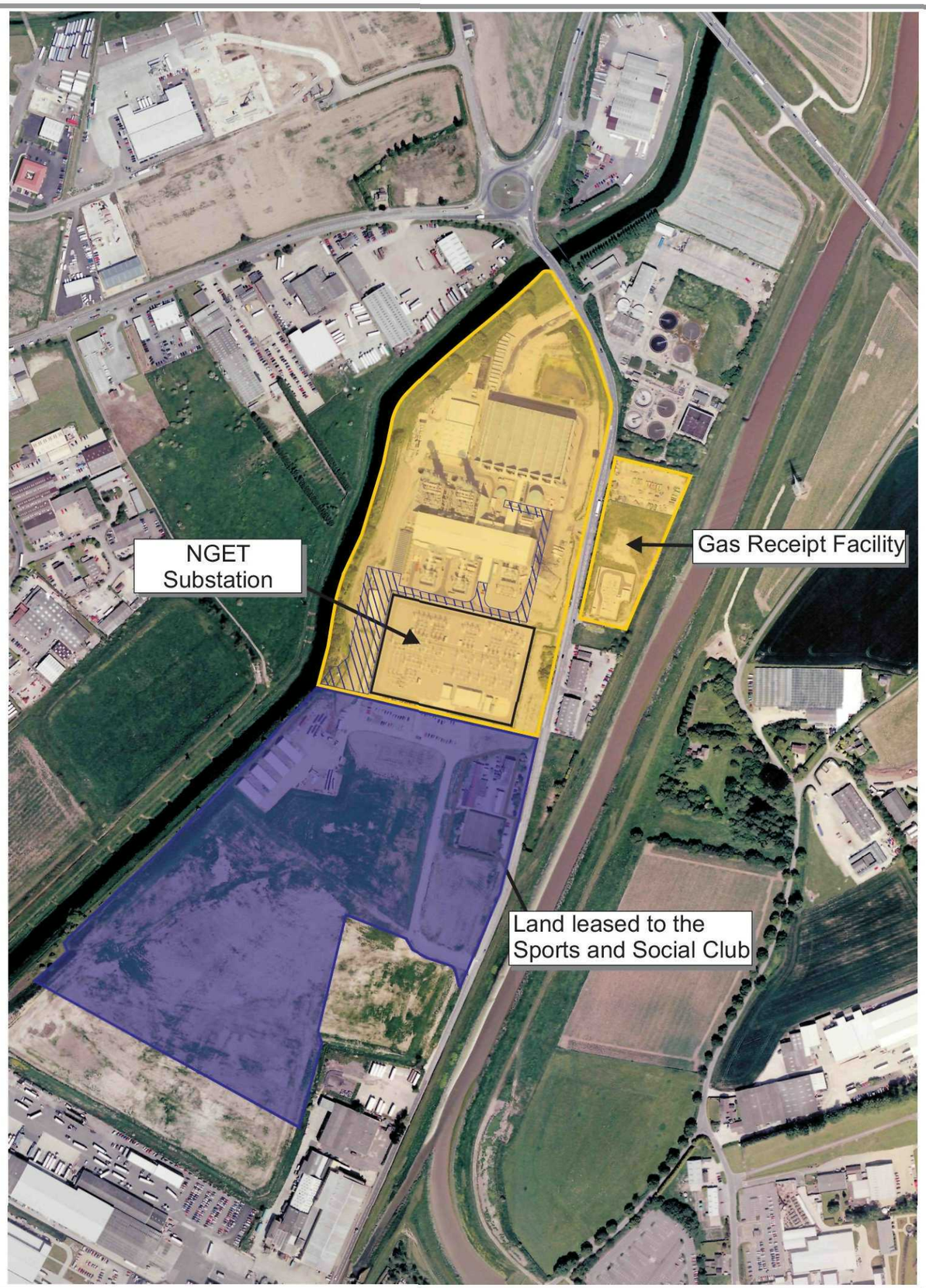
ENVIRON UK Limited

7 Walker Street
Edinburgh EH3 7JY
Tel. +44(0)131 225 9899
Fax.+44(0)131 220 3411

Figure 1.1
Location of Proposed SEE Site

Client	**SEEL**				
Project No	**64C13376**	Drawn by	**CC**	Date	**March 2009**
Scale	**NTS**	Version Control	**7**		

Reproduced from the Ordnance Survey with the permission of the controller HMSO Crown Copyright Reserved. Licence No. ES 100012174



© GeoPerspectives

LEGEND

- Existing SECL Power Station Site
- Proposed SEE Site
- Corridor for Interconnections

ENVIRON

7 Walker Street
Edinburgh EH3 7JY
Tel. +44(0)131 225 9899
Fax.+44(0)131 220 3411

ENVIRON UK Limited

Figure 1.2
Location of SECL and Proposed SEE Sites

Client	**SEEL**		
Version Control	**7**		
Scale	**NTS**	Date	**March 2009**
Project No	**64C13376**	Drawn by	**RC**



ENVIRON
ENVIRON UK Limited
7 Walker Street
Edinburgh EH3 7JY
Tel. +44(0)131 225 9899
Fax.+44(0)131 220 3411

Figure 4.1
Parameter Block Model Layout

Client	**SEEL**				
Project No	**64C13376**	Drawn by	**RC**	Date	**March 2009**
Scale	**NTS**	Version Control	**5**		

Reproduced from the Ordnance Survey with the permission of the controller HMSO Crown Copyright Reserved. Licence No. ES 100012174



LEGEND

- Red Line Site Boundary
- Existing tree retained
- Proposed Hedge with Individual Trees
- Proposed Woodland
- Fence
- Area to contain SUDS pond and further woodland, shrub and tree planting as layout allows.
- Woodland boundary planting with maximum 12m gap for potential access road.
- CCR Area

ENVIRON

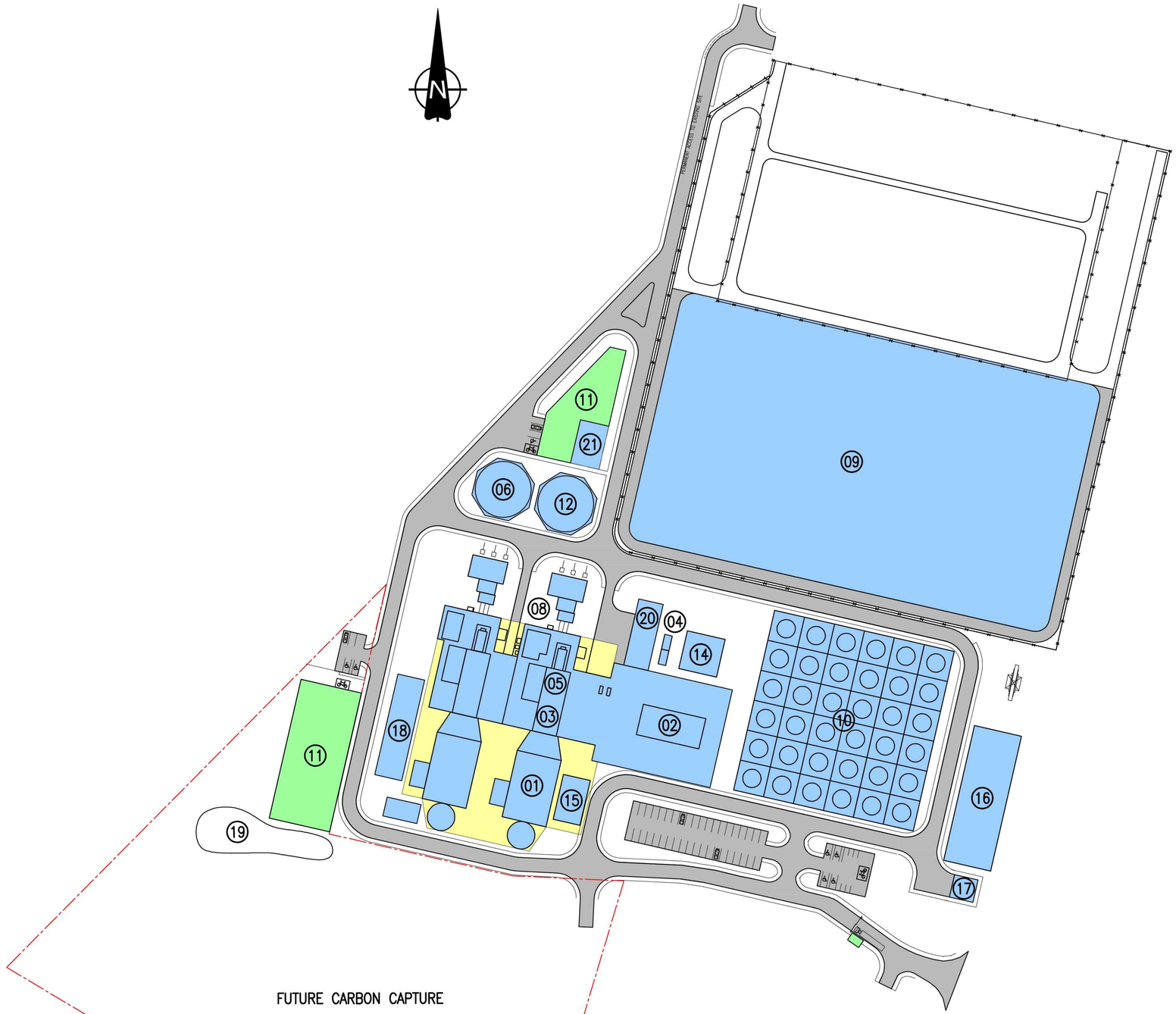
7 Walker Street
Edinburgh EH3 7JY
Tel. +44(0)131 225 9899
Fax.+44(0)131 220 3411

ENVIRON UK Limited

Figure 4.6
Landscape Parameter Plan

Client	**SEEL**		
Version Control	**4**		
Scale	**NTS**	Date	**March 2009**
Project No	**64C13376**	Drawn by	**RC**

Reproduced from the Ordnance Survey with the permission of the controller HMSO Crown Copyright Reserved. Licence No. ES 100012174



INDICATIVE ONLY
SUBJECT TO FURTHER DESIGN WORK.

LEGEND

01 HEAT RECOVERY STEAM GENERATOR
02 STEAM TURBINE AREA
03 GAS TURBINE AREA
04 CO2 LOW PRESSURE STATION
05 GAS TURBINE INLET FILTER
06 DEMINERALIZED WATER STORAGE TANK
07 CTG MAIN TRANSFORMERS
08 STATION SERVICE TRANSFORMER
09 SWITCHYARD
10 AIR COOLED CONDENSER
11 WAREHOUSE/MAINT./ADMIN./CONTROL BDLG.
12 WATER/ FIREWATER STORAGE TANK
14 STG MAIN TRANSFORMER
15 AUXILIARY BOILER
16 GAS CONDITIONING FACILITY
17 REFUSE COLLECTION/STORAGE
18 FIN FAN COOLERS
19 SUDS POND
20 ELECTRICAL ANNEX
21 WATER TREATMENT PLANT

THIS DRAWING WAS PRODUCED USING AUTOCAD AND SHOULD ON NO ACCOUNT BE AMENDED BY HAND

REV	DATE		BY	CHKD	APPD
A	16.03.09	ORIGINAL ISSUE	DD	MLC	KB

NOTES

0 10m 20m 40m 60m
BAR SCALE 1:1000

- CLIENT
INTERGEN

- PROJECT
SPALDING ENERGY PROJECT

- TITLE
POWER STATION LAYOUT

- DATE 16.03.09
- SCALE 1:1000 @ A1
- CAD REF

DRAWN BY MLC
PRODUCED BY DD
CHECKED MLC
APPROVED KB

Parsons Brinckerhoff Ltd
Amber Court, William Armstrong Drive, Newcastle upon Tyne, NE4 7YQ
Tel: 44-(0191) 2261234 Fax: 44-(0191) 2262345

- DRAWING NUMBER
63114–PBP–108 | A

© Copyright Parsons Brinckerhoff

00/00/00