SPALDING ENERGY PARK

PROPOSED BATTERY ENERGY STORAGE SYSTEM (BESS)

LAND AT WEST MARSH ROAD, SPALDING, LINCOLNSHIRE

DESIGN & ACCESS STATEMENT

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REVISION	DATE ISSUED	STATUS	COMMENT
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1. INTRODUCTION

1.1 Overview

1.1.1 This Design and Access Statement has been prepared by Weedon Architects on behalf of Spalding Energy Park Limited ('the Applicant') (an company controlled by InterGen UK Developments Limited) in support of an application for planning permission ('Application') to South Holland District Council for a proposed Battery Energy Storage System (BESS). The BESS will be connected into the National Grid Electricity Transmission System via the National Grid 400 kV Spalding North Substation.

1.1.2 It should be noted that the exact Spalding Energy Park BESS characteristics have yet to be confirmed pending the selection and appointment of a BESS integrator; detailed design; the selection and appointment of a Construction Contractor(s); further ground investigations; the accuracy of existing services / utilities information; and, agreements with existing services / utilities operators.

1.2 Parameters

1.2.1 In particular, it should be noted that the exact area required and the associated layout and visuals, will be dependent on a number of factors, including the selected / appointed BESS integrator; the initial BESS power capacity (MW) and energy storage capacity (hours / MWh); and, the subsequent BESS augmentations.

1.2.2 Therefore, a degree of flexibility has been incorporated into the application and supporting reports / studies.

1.2.3 To support this approach, a parameter envelope has been determined based on the required flexibility. Within this parameter envelope, an initial indicative layout has also been determined.

1.2.4 As such, this Design & Access Statement provides a description of the Spalding Energy Park BESS characteristics, covering both the parameter envelope and initial indicative layout.

2. PLANNING

2.1 Planning Policy on Design and Access

2.1.1 This section identifies local policies from the South East Lincolnshire Local Plan 2011 – 2019 (adopted March 2019) prepared by South Holland District Council in partnership with Boston Borough Council and Lincolnshire County Council, that are most relevant to design and access and land-use at the site.

2.1.2 Policy 2 (Development Management) of the Local Plan states that *"Proposals requiring planning permission for development will be permitted provided that sustainable development considerations are met, specifically in relation to:*

1. *size, scale, layout, density and impact on the amenity, trees, character and appearance of the area and the relationship to existing development and land uses;*
2. *quality of design and orientation;*
3. *maximising the use of sustainable materials and resources;*
4. *access and vehicle generation levels;*
5. *the capacity of existing community services and infrastructure;*
6. *impact upon neighbouring land uses by reason of noise, odour, disturbance or visual intrusion;*
7. *sustainable drainage and flood risk;*
8. *impact or enhancement for areas of natural habitats and historical buildings and heritage assets; and*
9. *impact on the potential loss of sand and gravel mineral resources."*

2.1.3 Policy 3 (Design of New Development) states that *"All development will create distinctive places through the use of high quality and inclusive design and layout and, where appropriate, make innovative use of local traditional styles and materials. Design which is inappropriate to the local area, or which fails to maximise opportunities for improving the character and quality of an area, will not be acceptable."* It goes on to state that development proposals will demonstrate how a number of issues, where relevant to the proposal, will be secured, including relating to accessibility by a choice of travel modes, provision of parking, lighting, orientation of buildings, residential amenity and flood risk.

2.1.4 Policy 7 'Improving South East Lincolnshire's Employment Land Portfolio' identifies the Spalding Energy Park BESS site as a 'restricted use employment site' (reference SP037) to encourage investment in power generation-related industries.

2.1.5 Policy 30 'Pollution' states that development proposals will not be permitted where, taking account of any proposed mitigation measures, they would lead to unacceptable adverse impacts on health and safety, air quality, lighting, noise and vibration.

2.1.6 Policy 31 'Climate Change and Renewable and Low Carbon Energy' states that all development will be required to demonstrate that the consequences of current climate change has been addressed, minimised and mitigated by measures such as high-quality design, sustainable transport, flood risk and enhanced biodiversity.

3. DESIGN

3.1 Location

3.1.1 The proposed Spalding Energy Park BESS site is located approximately 2 km to the northeast of Spalding town centre, Lincolnshire at National Grid Reference TF 259 249.

3.1.2 The Spalding Combined Cycle Gas Turbine (CCGT) Power Station is located to the north of the BESS site, and the Spalding Open Cycle Gas Turbine (OCGT) Power Station is located adjacent to the east of the BESS site.

3.1.3 The land was formerly occupied by a sugar factory, which was owned and operated by British Sugar plc, prior to its demolition in 1996. Spalding CCGT Power Station was constructed between 2000 to 2004, with commissioning in 2004. Spalding OCGT Power Station was constructed between 2018 and 2019, with commissioning in 2019.

3.1.4 The Application site area as identified with the red line boundary in figure 1.0 on the right measures 12.55Ha / 125,507m2

3.1.5 The proposed BESS site is bordered:

- to the north by the existing CCGT power station
- to the east by the newer OCGT power station and West Marsh Road
- to the west by Vernatt's Drain
- to the south by commercial and industrial buildings, including the Fowler Welch Transport Depot.

3.1.6 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.

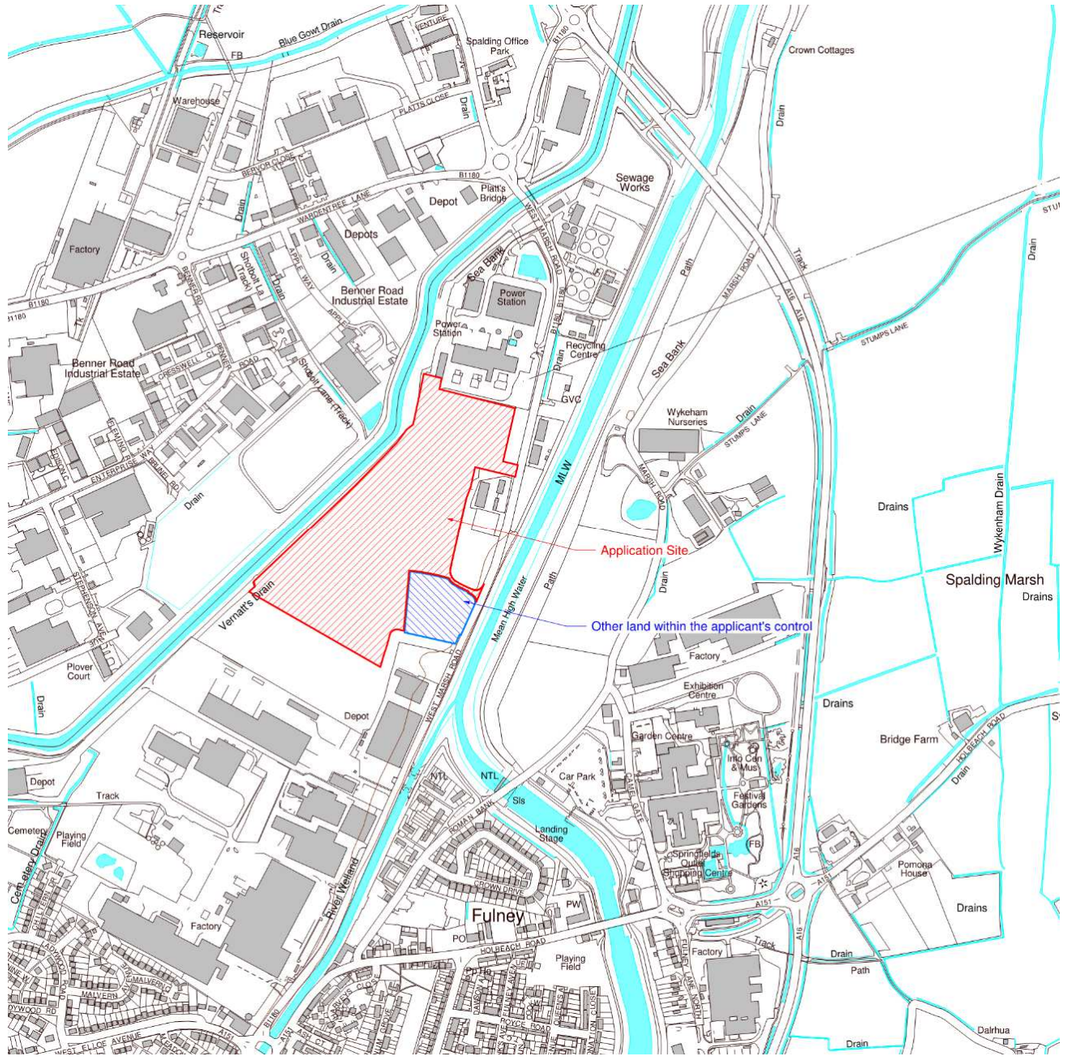


Fig 1.0 - Location Plan

3.2 Use

3.2.1 The BESS comprises mostly of batteries, housed in containers / enclosures, also including:

- Control and protection systems;
- Power conversion systems and associated transformers; and,
- Temperature regulation systems;

3.2.2 The BESS functions by taking energy from the electricity grid when demand is low or supply high, and feeding it back on to the grid when demand is higher or supply lower. Operating in either 'energy charge', 'energy storage' or 'energy discharge' modes (or else will be providing ancillary (support) services to the National Grid). Between each mode, there will be no material difference in the Spalding Energy Park BESS operational characteristics

3.2.3 The total Spalding Energy Park BESS power capacity will be up to 550 MW.

3.2.4 When fully charged, a 550 MW BESS (assuming a two-hour discharge capacity) would be able to supply approximately 277,000 homes per year, or fully charge up to approximately 19,600 electric vehicles.

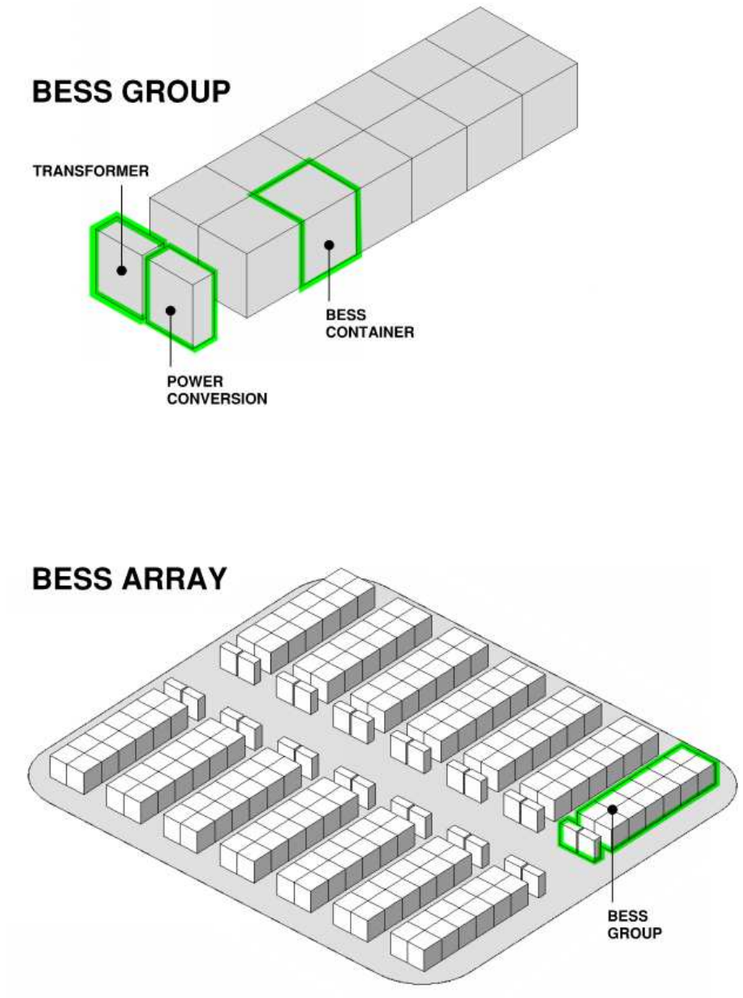


Fig 2.0 - Typical BESS equipment

3.3 Outline Proposals

3.3.1 The land within the Application Site generally comprises part previously developed industrial land to the North and part undeveloped land to the South. The site is relatively level there are some re-profiling works currently being undertaken as part of the Spalding Energy Expansion Works under a Section 36 agreement which will ultimately provide a level platform to facilitate the development of the BESS. The proposed Grade level should be in the region of +6.7m AOD

3.3.2 As identified in the parameters plan extract below (Figure 3.0), the Spalding Energy Park BESS will comprise of the following zones;

- BESS ZONE (Blue Hatch) – This is the primary area which houses the battery arrays and also includes; the control and protection systems, temperature regulation systems and power conversion systems.
- ELECTRICAL BANKING STATION ZONE (Green Hatch) – This area will contain the electrical banking station compound and house the associated equipment.
- WELFARE COMPOUND (Orange Hatch) – These will be located next to the electrical banking station and comprise offices facilities, changing and toilet facilities and car parking.
- Laydown Area (Purple Hatch) – for maintenance / outages for BESS development and wider site
- Access Road, Drainage Connection Works and Electrical Connection Works (Grey hatch)
- Landscaping / Bund zone (Yellow hatch)
- Site security (including: fencing; CCTV / security cameras; and, emergency lighting columns)

3.3.3 Other associated work will include;

- Site preparation (including any necessary ground works to raise the site to the required levels);
- Provision of Site drainage.

3.3.4 For technical information relating to the above please refer to the Main Environmental and Technical Report, supported by the following documents:

- Appendix A: Accepted Environmental Envelope for the Spalding Energy Park BESS Site
- Appendix B: Outline Construction Environmental Management Plan Aspect-Specific Management Plans
- Appendix C: Ecological Impact Assessment
- Appendix D: Ground Conditions Phase 1 Preliminary Environmental Risk Assessment
- Appendix E: Flood Risk Assessment
- Appendix F: Indicative Landscaping Plan
- Appendix G: Noise Impact Assessment
- Appendix H: Transport Statement

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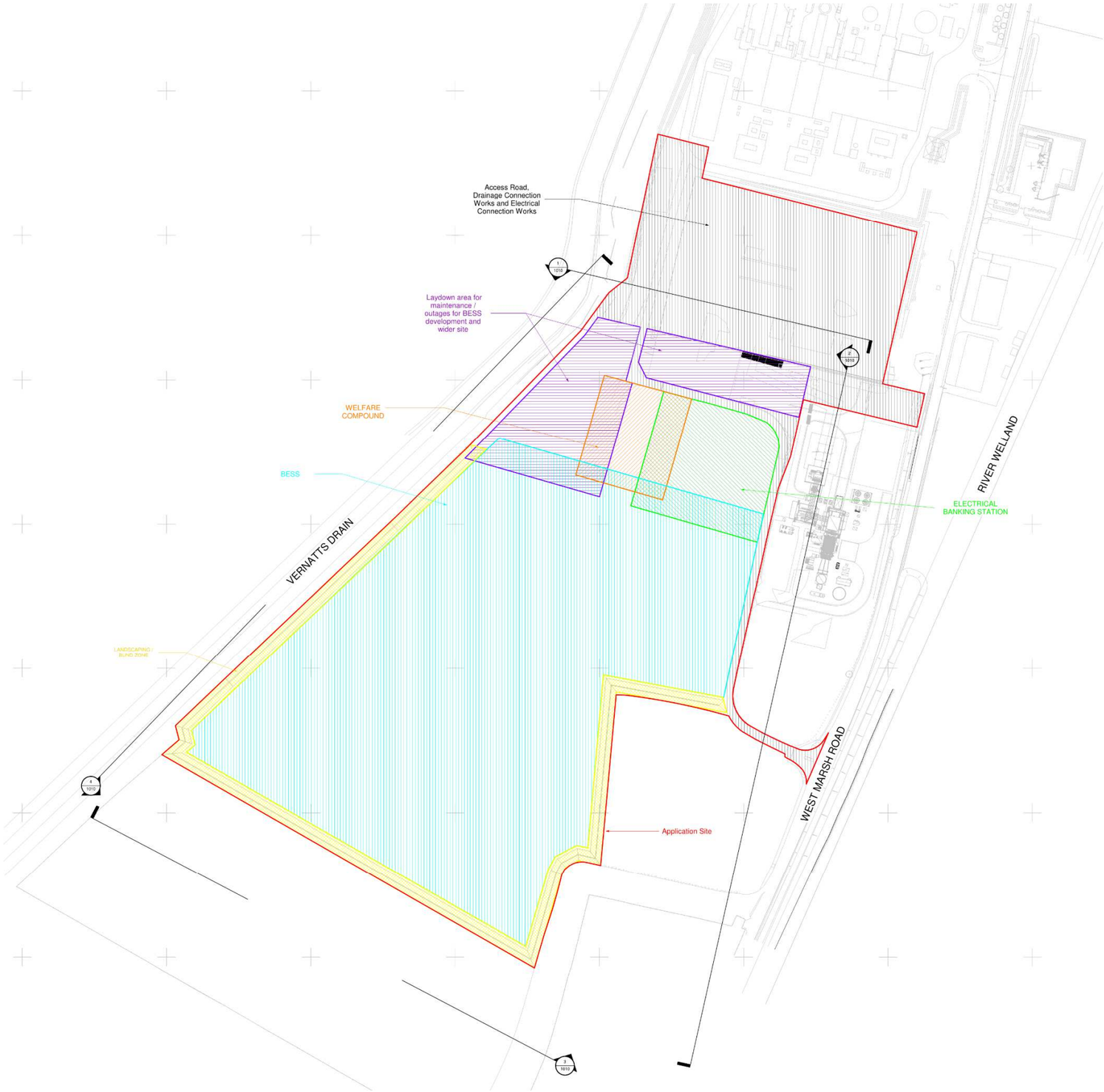
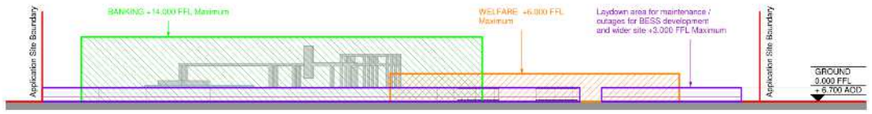
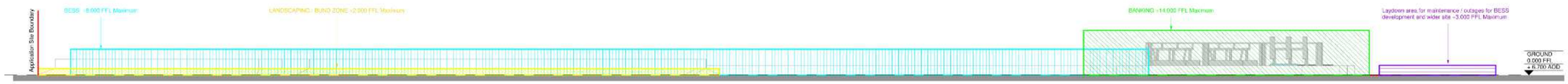


Fig 3.0 - Parameters Plan

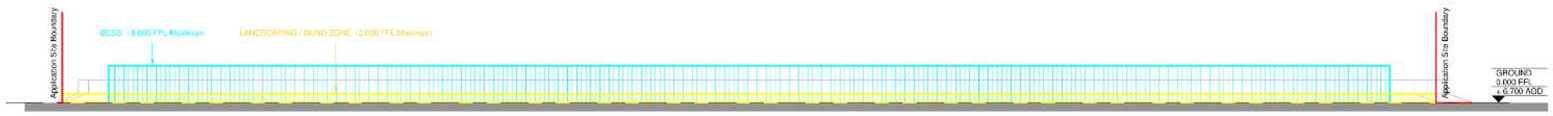
Drawing 16181-WDN-XX-XX-DR-A-1000



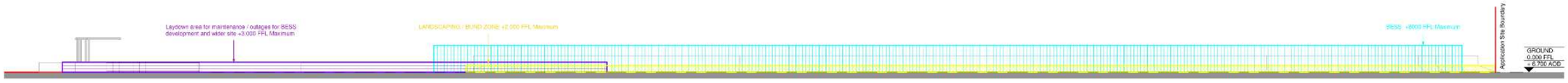
1 NORTH ELEVATION - PARAMETERS
1 : 500



2 EAST ELEVATION - PARAMETERS
1 : 500



3 SOUTH ELEVATION - PARAMETERS
1 : 500



4 WEST ELEVATIONS - PARAMETERS
1 : 500

Fig 4.0 - Parameters Elevations

Drawing 16181-WDN-XX-XX-DR-A-1010

3.4 Layout

3.4.1 The Electrical Banking Station and Welfare Compound are located on the North side next to the BESS Entrance point.

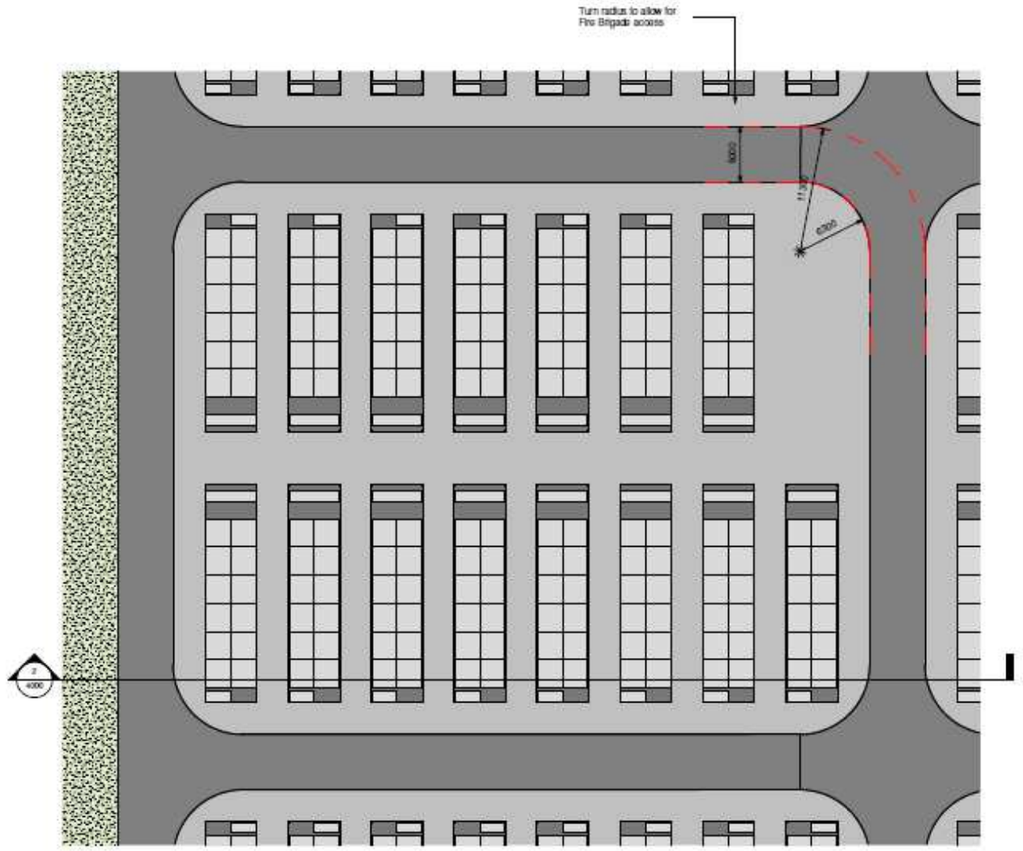
3.4.2 The internal roadways throughout the BESS areas form an orthogonal grid and provide access to the perimeter of each array, for ease of maintenance and emergency access.

3.4.3 The final design will largely depend on a number of factors, in particular: the selected / appointed BESS integrator; the initial BESS power capacity (MW) and duration / energy storage capacity (hours / MWh); and the subsequent BESS augmentations. Therefore, a degree of flexibility has been incorporated into the application and supporting reports / studies. In this regard, Figures 3.0 & 4.0 present the Parameters Plan and Parameters Elevations, which intend on providing flexibility on the exact location, extent, and height of the main components of the development.

3.4.4 Typically, a number of BESS containers / enclosures are linked together into a group, and each group is then connected to an associated power conversion system and associated transformer. These BESS 'groups' are subsequently linked together to form BESS 'arrays'. Therefore, the Spalding Energy Park BESS will ultimately comprise a number of BESS 'arrays' (refer to Figure 5.0).

3.4.5 The container / enclosure number depends on the BESS integrator, which is not selected yet. More details can be found in the "Spalding Energy Park BESS Characteristics" section of the Environmental and Technical Report.

3.4.6 BESS integrators offer both single and double storey (single-stacked and double-stacked) solutions. In the case of single storey, the BESS container / enclosure height would be up to approximately 3.0 m. In the case of double storey, the BESS container / enclosure height (with the required separation) would be up to approximately 8.0 m. The Parameter Plan assumes the use of a double storey solution to optimise the use of land (refer to Figure 9.0).



3.5 Scale

3.5.1 As identified in the parameter plan and elevation drawings 16181-WDN-XX-XX-DR-A-1000 & 16181-WDN-XX-XX-DR-A-1010, the scale and massing of the proposed development is relatively low in scale compared to its surrounds with a proposed parameters height of 8m above grade level for the BESS containers / enclosures and 14 m for the Electrical Banking Station.

3.5.2 This is also evident in the below contextual which illustrate a typical double stack array at 7m AOD (refer to Figures 7.1 to 7.4).

3.5.3 The Welfare facilities buildings at the north part of the site will comprise office facilities, kitchen facilities, changing / toilet facilities and car parking. These will be accommodated in prefabricated portable cabins and will not exceed 6m in height, as seen in the Parameters Elevations. These buildings are marked in light blue colour in the Indicative computer generated images below.

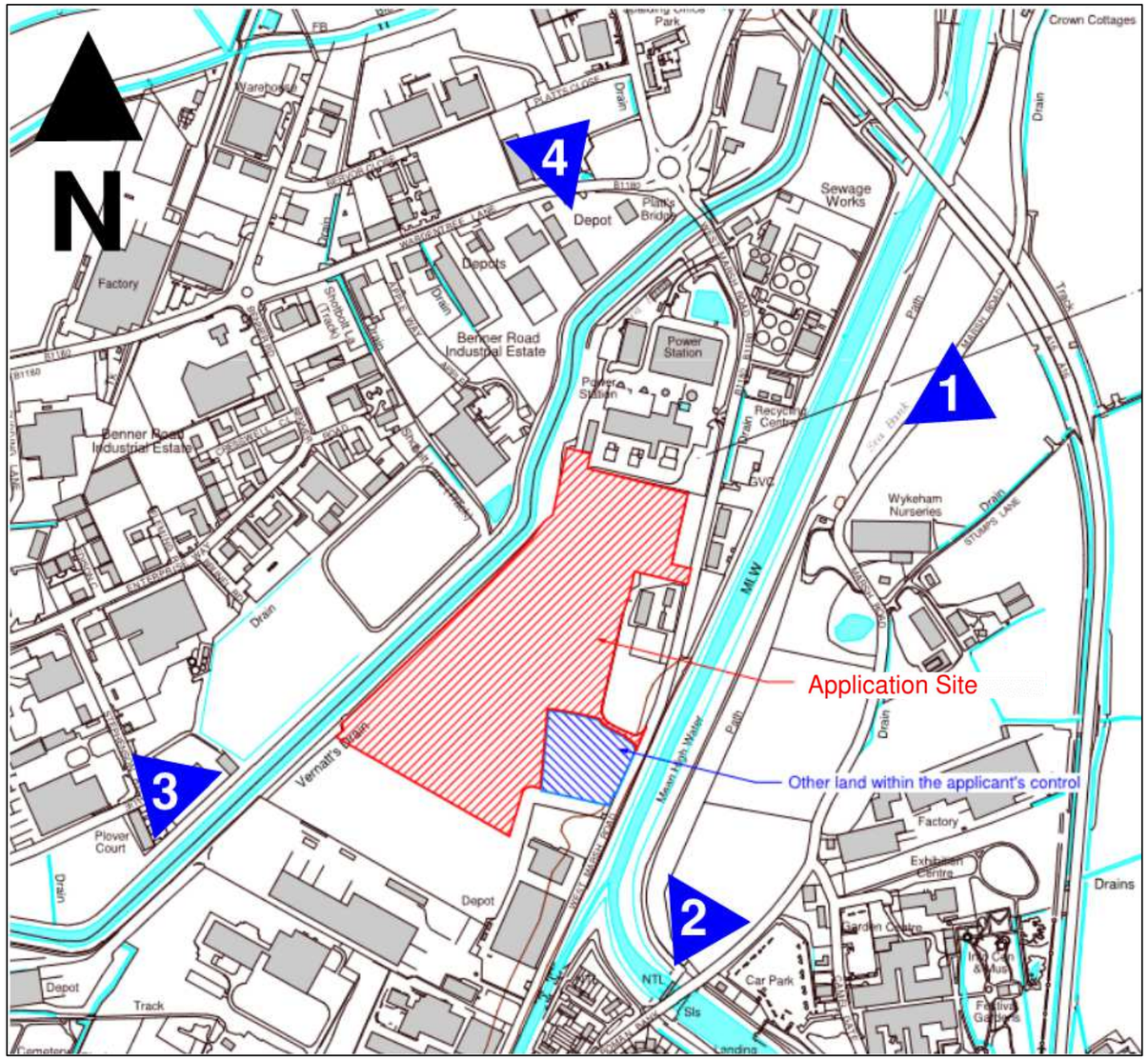


Fig 6.0 – View Location Plan



Fig 7.1 – Indicative CGI - 01



Fig 7.0 – Indicative CGI - 02



Fig 7.3 – Indicative CGI - 03



Fig 7.4 – Indicative CGI - 04

3.6 Landscaping

3.6.1 The proposed BESS is located within an industrial/commercial area. There are no areas or features on / around the Spalding Energy Park BESS site which are classified / designated (or important) for their landscape and scenic value which are likely to be affected. Furthermore, the Spalding Energy Park BESS site is not in a location where it is likely to be highly visible to many people, and there are limited visual receptors in the immediate surrounding area.

3.6.2 The amenity will be improved with the introduction of soft landscaping around the perimeter of parts of the Application Site. The purpose of the soft landscaping proposals is to create a soft edge between the and accessible areas, creating a more visually pleasing boundary for the site as well as offering security through defensive planting.

3.6.3 Biodiversity enhancement will also be provided; refer to the Environmental and Technical Report Appendix C, Ecological Impact Assessment and Appendix F, Indicative Landscaping Plan.

3.7 Appearance

3.7.1 The final design will largely depend on a number of factors, in particular: the selected / appointed BESS integrator; the initial BESS power capacity (MW) and duration / energy storage capacity (hours / MWh); and, the subsequent BESS augmentations. Therefore, a degree of flexibility has been incorporated into the application and supporting reports / studies.

3.7.2 The design of the BESS will minimise both regular and long-term maintenance requirements. Materials and finishes will be selected to meet this objective and to ensure that the appearance of the Spalding Energy Park BESS does not materially deteriorate over its operating lifetime.

3.8 Security

3.8.1 Access to the Spalding Energy Park BESS site will be strictly controlled. Security of the Spalding Energy Park BESS site will be achieved by providing suitable site fencing on the site perimeter (approximately 2.9 m in height), and security will be monitored via the use of CCTV / security cameras (attached to operational (intermittent) lighting columns, up to approximately 4 m in height).

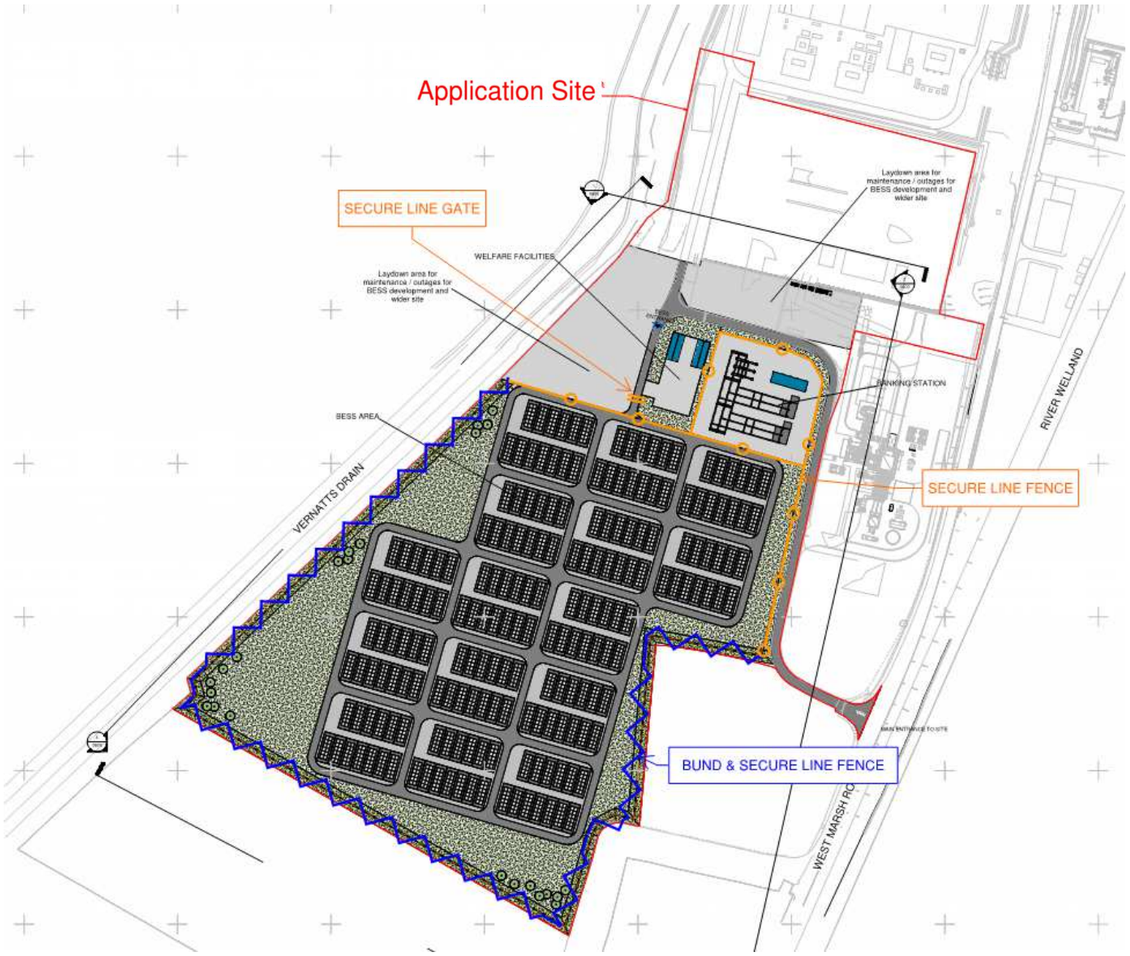


Fig 8.0 - Indicative GA Security Plan

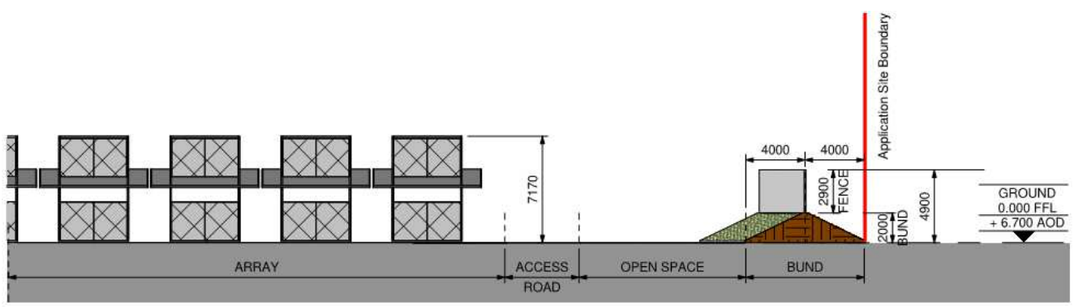


Fig. 9.0 - Indicative Section through site perimeter – Secure Line fence

3.9 Sustainability

3.9.1 At the current time, the UK's energy market continues to evolve rapidly, both pressured and supported by the UK Government's 2050 'Net Zero' target. A key enabler to the 2050 Net Zero target, and wider energy market decarbonisation, is the development and deployment of energy storage technologies, including BESS.

3.9.2 BESS technologies offer great potential to support the UK's electricity transmission and distribution network system, helping to integrate low carbon generation. The Climate Change Committee's Net Zero Balanced Pathway forecast include the development and deployment of 18 GW of BESS capacity by 2035.

3.9.3 Within this context, the Spalding Energy Park BESS will be able to provide essential support to the UK's energy market evolution, delivering significant benefits, such as:

- ensuring security of supply by storing energy and providing network system stability
- assisting zero-carbon renewable energy technologies handle peak demand
- containing energy costs for businesses and consumers

3.9.4 A more detailed description of the benefits of battery storage can be found in the Environmental and Technical Report.

3.9.5 A number of feasible SuDS techniques were identified in Appendix E, Flood Risk Assessment submitted alongside this application. The final detailed design of surface water drainage will be developed in parallel with the Spalding Energy Park BESS detailed design and agreed with the Council via planning condition.

4. ACCESS

4.1 Overview

4.1.1 The Spalding Energy Park BESS site benefits from a high level of transport accessibility.

4.1.2 Site access will be via the existing Spalding CCGT Power Station / Spalding OCGT Power Station Gate C, off West Marsh Road.

4.1.3 This access already takes the form of a priority junction, and benefits from good visibility splays in both northbound and southbound directions.

4.1.4 Within the wider surrounding area, the dominant strategic routes are:

- The A15, running north to south between Kingston-upon-Hull and Peterborough;
- The A16(T) (within 1 km), running north east to south west between Grimsby and Peterborough, via Boston and Spalding; and,
- The A17, running north west to south east between Newark-on-Trent and King's Lynn.

4.1.5 In particular, the A16 (at Peterborough) links with the A47, providing further routes to Leicester and the M1.

4.1.6 On site car parking will also be provided for maintenance personnel and visitors during operation next to the welfare facilities.

4.2 Access during Construction

4.2.1 Site access will be via the existing Spalding CCGT Power Station / Spalding OCGT Power Station Gate C, off West Marsh Road.

4.2.2 During construction, the Spalding Energy Park BESS will generate additional traffic due to:

- Construction HGV movements, including:

  Delivery of construction equipment / plant; and,

  Construction vehicles (i.e. delivery of construction materials / removal of construction wastes);

- Construction personnel movements.

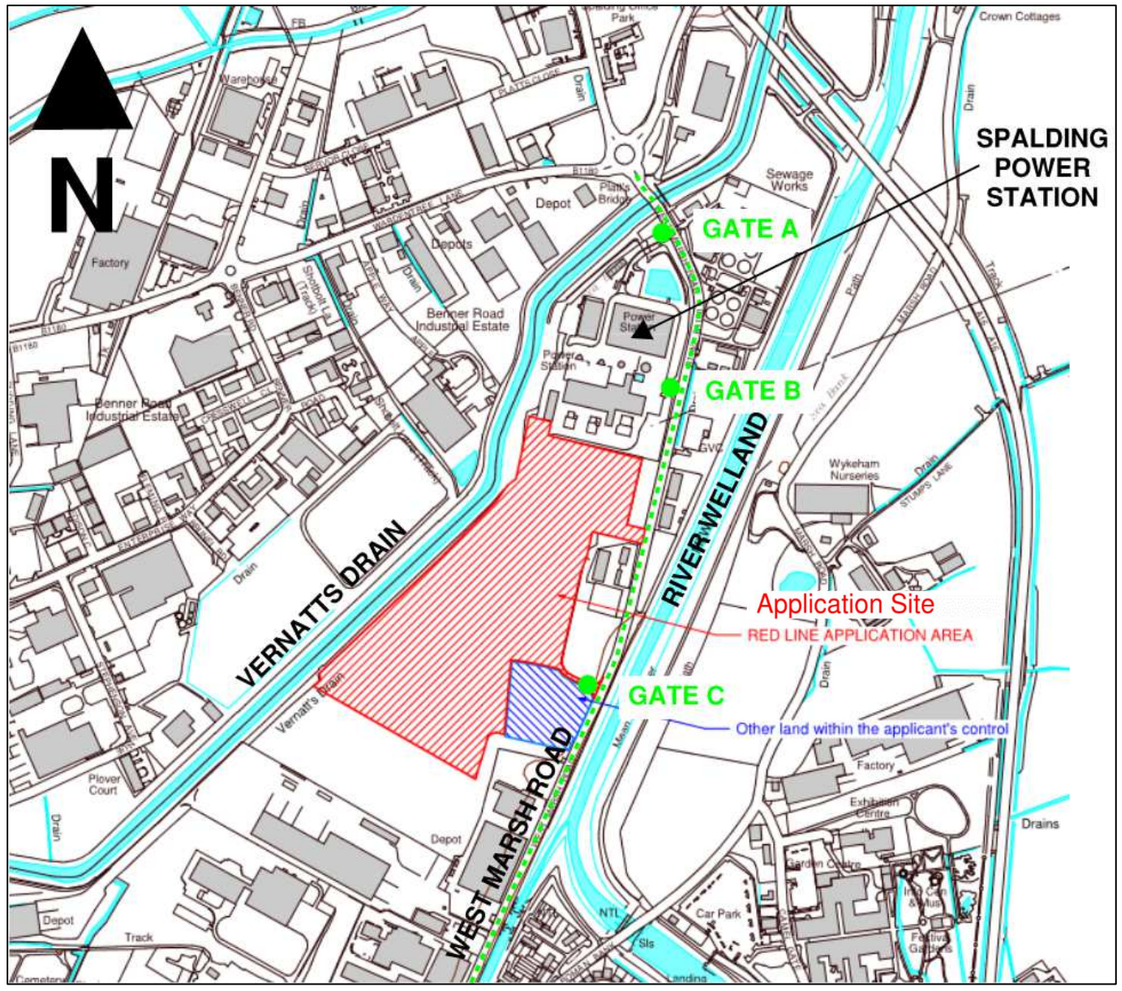
4.2.3 The proposed working hours for construction HGV movements will be 07:00 to 19:00 (Monday to Friday), and 08:00 to 16:00 (Saturday). During the peak of construction, the maximum construction HGV movements will be an average of up to 5 (two-way) per hour throughout the working day.

4.2.4 The proposed general working hours will be 07:00 to 19:00 (Monday to Friday), and 07:00 to 17:00 (Saturday). Therefore, construction personnel movements are anticipated to occur outside of the traditional AM and PM 'peak' periods (i.e., on Monday to Friday, before 07:00, and after 19:00).

4.2.5 It is currently anticipated that there will be limited Abnormal Indivisible Load (AIL) movements associated with the main step-up transformer(s). Any AIL movements will:

- Adhere to the protocols set out in 'Aide Memoire for notification requirements for the movement of Abnormal Indivisible Loads or vehicles when not complying with The Road Vehicles (Construction and Use) Regulations 1986' ; and,
- Be transported in accordance with a sustainable modes of travel strategy.

4.2.6 A more detailed description of the traffic movements in the Environmental and Technical Report Appendix H, Transport Statement.



4.3 Access during Operation

4.3.1 Site access will be via the existing Spalding CCGT Power Station / Spalding OCGT Power Station Gate C, off West Marsh Road.

4.3.2 The Spading Energy Park BESS will be an unmanned operational facility, noting that continuous and remote monitoring / regular inspection and maintenance visits will be undertaken, and each phase will have an operational lifetime of approximately 20 to 25 years. As such, during normal operation, the Spalding Energy Park BESS will not generate material / significant traffic movements.

4.3.3 Notwithstanding, it is anticipated that regular (approximately every three years) battery augmentations will take place to ensure that the batteries are returned to their original capacity. The augmentations are also not anticipated to generate material / significant additional traffic movements.

4.4 Inclusive Access

4.4.1 The Spalding Energy Park BESS 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 detailed design.

4.5 Fire Service Access

4.5.1 Access for fire service vehicles during both construction and operation will be via the existing Spalding CCGT Power Station / Spalding OCGT Power Station Gate C, off West Marsh Road.

4.5.2 As noted previously, the exact Spalding Energy Park BESS characteristics have yet to be confirmed. As a result, we are unable to advise on specific fire strategy criteria at this stage. However the indicative layout shown on drawing 16181-WDN-XX-XX-DR-A-0500 is based on the space separation recommendations from one of the BESS integrators, and does allow for fire service vehicle entry and movement around the site.

5. SUMMARY AND CONCLUSION

5.1.1 This Statement supports the application by Spalding Energy Park Limited for the works required to develop and operate a battery energy storage facility.

5.1.2 This Design and Access Statement confirms that the design of the facility is in keeping with the nature and context of the site, and the site could be adequately accessed from the public highway for the intended development.

5.1.3 The proposed development is entirely suitable within the parcel of land, given the scale of the development and the site isolated from sensitive receptors.

5.1.4 This statement confirms that the site could be adequately accessed by those who would need to access the site.