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1.0 Introduction
1.0 Introduction

This Design & Access Statement has been prepared on behalf of This is Protos (a company of Peel Environmental Limited) in support of its proposals for the development of a proposed Energy from Waste (EfW) Facility (up to 35MW) and associated development ("the Proposed Development") at Protos (formerly Ince Park) Cheshire.

Background

The Proposed Development is located on Plot 8 of Protos, which is an intended hub for energy and resource development. Plot 8 has an existing consent (Section 36 of the Electricity Act 1989) and deemed planning permission (Section 90(2) of the Town and Country Planning Act 1990) for a 95MW Refuse Derived Fuel (RDF) Plant, which was granted in August 2009 (reference GDBC/001/00265C and 01.08.10.04/36C) ("the Section 36 Consent" / "the Deemed Permission").

The RDF Plant consent has been implemented by the commencement of development (construction of an acoustic timber fence) and is consequently 'safeguarded', but the RDF Plant has not otherwise been built out.

The RDF Plant is a similar facility to the Proposed Development, in that it would process waste to produce energy; however, the consented RDF Plant is on a larger scale than the Proposed Development. The Proposed Development is an alternative to the RDF Plant.

The Proposed Development site forms one part (Plot 8) of a wider authorised and emerging development known as 'Protos'. Protos comprises a Resource Recovery Park or 'RRP', one component of which is the authorised RDF Plant (to be replaced by the Proposed Development).

The RRP development covers a total of approximately 134 hectares of land at Ince Marshes, off Pool Lane / Grinsome Road, Ince, Cheshire. Plot 8 is part of the RRP, but is subject to separate planning permission as referred to above.

The RRP will comprise a waste reprocessing and renewable energy facility to be developed on a 'plot' basis, organised around principal infrastructure and a landscape framework.

Since the original grant of planning permission there have been a number of planning permissions granted and amendments approved to alter the originally approved RRP development, each supported by environmental assessments.

After a review of the consented development, and in light of an altered market context, a smaller EfW Facility is proposed as an alternative to the larger consented RDF Plant.

The Proposed Development is a viable and valuable project that would make a substantial contribution to both sustainable waste management and the generation of low carbon energy.
2.0 Context
2.1 Site Location & Surroundings

The Proposed Development site (Plot 8) comprises approximately 10 ha of relatively flat marshland which is currently used for agricultural purposes. The site is located within the jurisdiction of Cheshire West and Chester Council. It is approximately 1.2km northeast of the village of Elton and approximately 2km northwest of the village of Helsby.

The site is immediately bounded by a block of woodland on its eastern boundary, and further expanses of flat marshland on its northern and western boundaries. There is an existing drainage network within the expanses of the surrounding marshland; the West Central Drain travels north and south along the western boundary of the site and the Tang Running is one of the main drains that runs across the northern part of the site. The construction of the BREP bounds the site to the south.

The site is set within a wider industrial context, with the CF Fertiliser plant approximate 200m south of the site; ENCIRC glass plant approximately 650m west of the site; and Stanlow Oil Refinery complex approximately 2km west of the site. Frodsham Windfarm, which is currently being developed, is approximately 850m east of the site and will comprise 19 turbines at 125m tall. The Manchester Ship Canal is approximately 600m north of the site and the M56 is approximately 1.5km south of the site. Holme Farm is approximately 950m northeast of the site.

Two ecological areas are currently being created: one approximately 600m northwest of the site; and one approximately 200m west of the site.
2.2 Access & Transport

There is an existing bridleway (known as Marsh Lane Bridleway) which runs across the wider area connecting the village of Ince (approximately 1.6km west of the site) to Frodsham (approximately 4.5km east of the site). This is currently being diverted. However, there is currently no direct pedestrian access to the site.

Similarly, there is no direct vehicular access to Plot 8. However, there is vehicular access to the surrounding area; the main access to the surrounding area is from Junction 14 of the M56 Motorway and the A5117. From the A5117, access can be made via Pool Lane and then Grinsome Road. Grinsome Road serves the CF Fertiliser plant and is a private road. Construction works to the Pool Lane roundabout and Grinsome Road are currently being undertaken.

A passenger rail service on the Ellesmere Port to Helsby line, providing links to Liverpool and Warrington, via Runcorn, Frodsham and Helsby, stops at Ince and Elton. There are bus services serving Elton village.

With regard to freight movement, rail access to the CF Fertiliser plant is provided in the form of a rail siding from the Ellesmere Port to Helsby line which lies approximately 350m south of the site. There is no current rail access to the site. There is a partly derelict liquid berth facility along the Manchester Ship Canal approximately 700m north of the site, which formerly served the Ince B Power Station.

![Transport to site. Map courtesy of RSK](image)
3.0 Constraints & Opportunities
3.0 Constraints & Opportunities

By establishing the existing physical and locational context of the application site and its wider surroundings, it has been possible to identify a number of constraints and opportunities which have informed the design development. These are outlined below:

Constraints:

- The application site (plot 8) is located within the consented RRP, the northern boundary of which is situated adjacent to the Mersey Estuary Special Protection Area (SPA), Site of Special Interest (SSSI) and RAMSAR.
- Plot 8 and the wider Protos development is situated within Ince Marshes which is designated as a Site of Biological Importance.
- The site is situated within the relative proximity to the residential areas of Ince & Elton.
- The previously consented RDF scheme and associated Environmental Permit will determine the location of the stack.
- The consent and development of the Biomass facility on Plot 9 to the south of the application site will influence the design and material treatment of the proposed EfW project.

Opportunities:

- The proposed EfW scheme will form a central role in the wider Protos development that will promote the recovery of energy from waste materials.
- The Proposed Development is located close to existing industrial facilities particularly the CF Fertiliser facility to the south that will partially screen the development from the villages of Frodsham and Helsby.
- The Proposed Development will utilise latest technology and therefore enable a smaller compact facility to be designed. The scheme will comprise of a smaller combined footprint to that already consented for the RDF plant.
Comparison of the consented RDF Plant (ES 2007) and proposed Project (2016). In particular:

- The proposed EfW Facility would have a smaller footprint in the same location within Plot 8 at Protos.

- The proposed main EfW Facility building would be the same height or lower than the consented RDF Plant (i.e. no greater than 60m);

- The proposed stack at the southern end of the EfW Facility would be the same height as the consented RDF Plant i.e. 100m and in the same location.

- The design and external surface treatment of the EfW Facility would be of equivalent or improved design quality, reflecting the design of the adjacent BREP and of modern EfW Plants across the UK and Europe.

- Lower level ancillary buildings and structures at the EfW Facility would be fewer e.g. the RDF store and Ash Maturation Unit have been removed, and no greater in height than for the consented RDF Plant.

- The location and extent of the associated committed development including Dry Cargo Facility, Rail Head and Rail Line, Ecological Mitigation Areas and Landscape Mitigation Areas would be the same.
4.1 Proposed Development

In order for the volume of waste to be treated and the amount of energy to be generated the proposed Development will comprise of the:-

- The EfW Facility.
- Access roads extending from a new roundabout on Grinsome Road.
- Landscaping, soft and hard landscaping will be incorporated into the design of the site. Hard landscaping will be used for the access roads, hardstanding areas for the equipment/components, and for parking areas. Soft landscaping will be incorporated around the perimeter of the site with grass and vegetation. A detailed landscaping plan is submitted with the planning application.

Figure 4.1. Location Plan

4.2 Description of Development

Energy from Waste Facility

The EfW Facility is designed to generate up to 35MW of electricity to export to the national grid or use within Protos. To produce this energy, it would combust approximately 350,000 tonnes per annum (tpa) of waste. This compares to the 95MW electrical output and 850,000 tpa throughput anticipated for the consented RDF Plant.

Waste Feedstock

The waste feedstock for the EfW Facility will comprise commercial and industrial (C&I) waste and municipal solid waste (MSW) from the UK. No hazardous waste would be used in the proposed EfW Facility. This is consistent with the intended waste feedstock (type and derivation) for the consented RDF Plant.

Waste Transportation

It is expected that the plant will receive waste fuel on 5.5 days per week all year. As per the consented RDF Plant, it is the ambition for the proposed EfW Facility to be a multi-modal facility. The delivery of the multi-modal infrastructure will be a commitment of the Proposed Development which will be secured through planning obligations and planning conditions of any permission.

It is the intention to source waste feedstock from within the UK and from a variety of sources, where possible from the regions surrounding the EfW Facility within a 2-hour drive. Road deliveries could be from (but not limited to):

- Cheshire West and Chester
- Cheshire East
- Lancashire
- Warrington
- Stoke-on-Trent
- Greater Manchester
- Merseyside

Process

The process of generating energy from the waste feedstock within the EfW Facility is shown graphically at Figure 4.2 and described below. This is the same process as would occur within the consented RDF Plant.

- Waste is taken to the EfW Facility;
- Waste is transferred to the EfW tipping hall and transferred to the boiler hall;
- Waste is combusted to produce heat;
- Heat is used to boil water to create steam;
- The steam is then used to generate electricity through the movement of turbines, which takes place in the turbine hall. The electricity is distributed to the national grid;
- State of the art air pollution control equipment cools and cleans the gases, and a baghouse controls the emissions. This takes place in the air cooling condenser and flue gas treatment building, and released via the stack. Emissions are continuously monitored;
- Particular matter is collected, and metals are recovered for recycling.
- Residual material is beneficially reused. That which cannot be
Figure 4.2. Energy from Waste flow diagram
4.3 Comparison of the Proposed Development with the Consented Plant

The table on the right summarises the differences between the Proposed Development and the consented RDF Plant.

<table>
<thead>
<tr>
<th>Summary of differences</th>
<th>Consented RDF Plant</th>
<th>Proposed Development</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>183m</td>
<td>176m</td>
<td>-7</td>
</tr>
<tr>
<td>Width</td>
<td>132m</td>
<td>120m</td>
<td>-12</td>
</tr>
<tr>
<td>Height</td>
<td>60m</td>
<td>60m</td>
<td>0</td>
</tr>
<tr>
<td>Stack Height</td>
<td>100m</td>
<td>100m</td>
<td>0</td>
</tr>
<tr>
<td>Location</td>
<td>346797,376620</td>
<td>346797,376620</td>
<td>Same location</td>
</tr>
<tr>
<td>Waste Feedstock</td>
<td>C&amp;I waste and MSW from the UK</td>
<td>C&amp;I waste and MSW from the UK</td>
<td>No difference</td>
</tr>
<tr>
<td></td>
<td>No hazardous waste</td>
<td>No hazardous waste</td>
<td></td>
</tr>
<tr>
<td>Waste Throughout</td>
<td>600,000 – 850,000 tpa</td>
<td>350,000 tpa</td>
<td>Reduction of 250,000 – 500,000 tpa</td>
</tr>
<tr>
<td>Energy Output</td>
<td>95MW</td>
<td>35MW</td>
<td>Reduction of 60MW</td>
</tr>
<tr>
<td>Ancillary Structures</td>
<td>Unit A Reception - 1800m²</td>
<td>Gatehouse - 30m²</td>
<td>Reduction of 11,162m²</td>
</tr>
<tr>
<td></td>
<td>Unit B RDF Store - 3600m²</td>
<td>ACC - 1785m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ash Maturation Unit - 6000m²</td>
<td>Grizzly Building - 125m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>North Gatehouse - 15m²</td>
<td>CEM - 45m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>South Gatehouse - 10m²</td>
<td>Ash Residue Treatment - 752m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hybrid Cooling Tower - 2824m²</td>
<td>Standby Generator - 80m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total - 14,249m²</td>
<td>Water Tank &amp; Pump House - 270m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total - 3087m²</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4.3. Footprint comparison - solid red line indicates consented RDF Plant
4.4 Other Considerations

**Associated Committed Development**

There are other principal elements associated with the Proposed Development, which already have planning permission and will be (or are already being) delivered alongside the Proposed Development. These comprise the following "Associated Committed Developments":

- Dry Cargo Facility (first phase);
- Rail line and rail head (first phase);
- Ecological Mitigation Areas, namely areas A, C and E;
- Landscape mitigation areas, beyond those to be contained within the planning application.

**4.5 Planning Policy**

The development proposals have had regard to and been informed by relevant national, regional and local policies.

An assessment of the development proposals against wider policy considerations is undertaken in the Planning Statement. It is not the intention to reiterate these conclusions in the Design & Access statement.

*Figure 4.4. Ecological & Landscape mitigation measures*
5.0 Design
5.1 Design

This section of the statement provides a comprehensive review of the proposed design of the development. This section is structured to reflect the guidance set out in Circular 01/2006, addressing each of the following:

- Amount of development
- Layout
- Scale & appearance and
- Landscaping.

5.2 Amount of Development

The development of the proposed EfW Facility and associated infrastructure will result in permanent land take. The table on the right sets out the extent of this permanent land take.

The total built floor space to be created across Plot 8 equates to 20,371 m². As already discussed this area is less than the currently consented for the RDF facility – with a built floor space of 32,000m² – and is considered to represent a benefit of this proposed scheme.

<table>
<thead>
<tr>
<th>Component</th>
<th>Land Take m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principle Building -Tipping Hall, Boiler Hall, FGT, Turbine Building &amp; Control / Welfare Facilities</td>
<td>11,503</td>
</tr>
<tr>
<td>ACC Cooling System</td>
<td>1785</td>
</tr>
<tr>
<td>Fire Fighting Tank &amp; Pump house</td>
<td>270</td>
</tr>
<tr>
<td>Ash Residue Treatment Building</td>
<td>768</td>
</tr>
<tr>
<td>Grizzly Building</td>
<td>125</td>
</tr>
<tr>
<td>Stack &amp; CEM’s Building</td>
<td>60</td>
</tr>
<tr>
<td>Electrical Switchyard</td>
<td>441</td>
</tr>
<tr>
<td>Standby generator</td>
<td>80</td>
</tr>
<tr>
<td>FGT Residue Silos</td>
<td>120</td>
</tr>
<tr>
<td>Ammonia &amp; Fuel Store</td>
<td>113</td>
</tr>
<tr>
<td>Settling Basin</td>
<td>42</td>
</tr>
<tr>
<td>Equipment Fuelling Station</td>
<td>15</td>
</tr>
<tr>
<td>Gatehouse</td>
<td>30</td>
</tr>
</tbody>
</table>
5.3 Layout & Use

The EfW Facility comprises a principal building divided into internal subcomponents. The internal access road will loop around the main components of the EfW Facility.

Improvements in technology, the reduced waste through-put, and the reduced energy out-put have enabled the proposed EfW Facility to be designed on a smaller scale than the consented RDF Plant.

The components of the EfW Facility comprise the following:

- **Tipping Hall**
- **Boiler Hall**
- **Turbine Hall**
- **Air Cooled Condenser**
- **Flue Gas Treatment Building**
- **Stack**
- **Residue Building**
- **Fuel Oil and Ammonia (or Urea) Storage**
- **Switch yard and HV Transformer**
- **Fire Fighting Water Tank**
- **Standby Diesel Generator**
- **Gatehouse**
- **Grizzly Building**
- **Settling Basin**
- **Continuous Emissions Monitoring (CEM)**
- **Control and Administration Building**
- **Equipment Fuelling Station**

**Principal Building**

Due to the smaller throughput of waste, only two streams of waste are required, compared to the consented RDF Plant which required three streams of waste. Furthermore, the pretreatment of waste can now be accommodated within the principal building, rather than at a separate part of the site as previously consented. This allows for a more compact EfW Facility compared to the consented RDF Plant. The EfW Facility will have a length of c.176m and a width of c.120m. The principal building has a maximum height of 60m.

The components of the EfW Facility are described below:

Other components of the facility adjoin and/or are adjacent to the principal building: the control and administration room, turbine hall, residue building, grizzly building, and fuel tanks adjoin the principal building. The air cool condenser, stack and silos are adjacent to the principal building.

**Tipping Hall**

The tipping hall is where the waste is first taken to, and is designed to allow for the HGVs to back-in toward the pit. The tipping hall shall be totally enclosed except for the roll-up doors, one each at the entrance and exit. The design shall be provided to prevent release of dust and odours. Odours will be controlled by continuously drawing air from the refuse pit for the combustion units i.e. the negative air pressure will suck any odours into the building rather than let them out. The tipping floor material will be concrete, suitable for HGV, and the floor will be sloped to the pit to contain any spillage.

**Boiler Hall**

The boiler hall is where the waste feedstock combusts in a furnace, releasing heat. There will be two streams transferring waste into the boiler (rather than three as previously consented). The hot gases which are generated pass through the boiler, which contains steam and water. As the combustion gases from the furnace pass through the boiler, they are cooled to a temperature suitable for the flue gas cleaning system.

Fuel oil is required to start and shutdown the plant but once operating temperatures are reached, waste can be burned without the need for auxiliary fuel.
Turbine Hall

The steam generated by the boilers passes a single condensing steam turbine generator. The steam expands through the turbine, so releasing its energy, which is converted into electricity by the generator.

The overall net efficiency of the energy conversion process at the power plant is expected to be around 25% when the plant is producing electricity only (fully condensing mode).

Air Cooled Condenser

The steam is exhausted at low pressure from the turbine into an air-cooled condenser which condenses the steam back into water. The water is then pumped back into the boiler to produce more steam. The heat lost by the steam when it condenses is transferred to the atmosphere. The air-cooled condenser has fans which draw air across the condenser tubes, so there is no visible plume.

Flue Gas Treatment Building

The flue gas treatment (FGT) building houses air pollution control (APC) equipment for the boilers, which cleans the gas prior to being discharged at atmosphere.

Stack

Once cleaned, the flue-gases from the boilers are discharged to atmosphere via a stack. Consistent with the consented RDF Plant, the stack will be located to the south of the site (grid references 346797, 376620) and will be 100 metres high. A single circular outer shell chimney will cover the two insulated steel flues.

Residue Building

Recovered metals and residual bottom ash will be stored in a residue storage bunker building. Storage bunkers will be sized to store 3 days of residue and metals generation.

Boiler fly ash and FGT residue are collected and transferred to storage silos. The silos will feed transfer trucks and will be sized for 3 days of storage.

Fuel Oil and Ammonia (or Urea) Storage

Fuel oil will be utilised for the refuse boilers which will accommodate fuel for the start-up and shutdown at outage periods of the EfW Facility.

A fuel oil storage tank, with a secondary containment, will be provided. A HGV unloading area adjacent to the road will also be provided.

Aqueous ammonia (or Urea solution) will be used on site. Ammonia (or Urea) solution will be delivered to the facility in tank HGVs and stored in a storage tank, which will be sized to hold 7 days of expected consumption.

Fire Fighting Water Tank

A fire protection water storage tank will be provided on site.

Switch yard and HV Transformer

The turbine generator will generate power at 11 kV. The electrical system shall include a generator step-up transformer from 11 kV to 33 kV. An interconnection study between the facility and utility will be performed to ensure that the interconnection is designed and established in accordance with local grid code and utility requirements.

Standby Diesel Generator

In case of a power interruption or outage, a standby diesel generator is provided to power the auxiliaries necessary to assure an orderly shutdown of the plant in the event of a total loss of power. The generator and the diesel engine will be mounted on a steelbase frame. The diesel generator shall be enclosed.

Gatehouse

The gatehouse will be located adjacent to the HGV weigh scales at the entrance to the site, which shall house the scale control room and a single restroom. The scale house shall be a pre-engineered metal frame structure designed to complement the aesthetics of the main plant building.

Grizzly Building

The grizzly building is used to move the bottom ash up to the residue building. Larger items of ash will be removed.
Settling Basin
This is a small open basin that accepts the water that has been used to cool down the hot bottom ash as it is moved from the boiler hall. It allows any solids to settle so the clean water can be pumped off. The solids are removed on a regular basis and sent for disposal.

Continuous Emissions Monitoring (CEM)
The CEM is a small building that will house equipment to continuously monitor the flue gasses as they pass up the stack.

Control and Administration Building
This houses the main control room for the facility and includes changing rooms, locker and mess facilities for operatives and training, and administration and management facilities for staff.

Equipment Fuelling Station
This is a bunded area that has the connection points for the fuel oil tank so that in the event of leakage the spillage is contained.

The clockwise circulation of the delivery vehicles permits a safe reversing manoeuvre in the tipping hall. A separate entry and exit ramp also avoids the need for HGV to cross paths in the tipping hall.

The layout of the design proposal has sought to incorporate the concept of defensible space and self-policing to minimise the possibility of crime and ensure a safe and secure working environment.

Appropriate levels of illumination in all car parks, on walkways and in open spaces will ensure that they remain a safe environment during the evening and at night.

The landscape scheme will be modelled to provide natural surveillance and safety by way of limited blind spots and concealed spaces. Further details of the landscaping scheme are provided in the landscape appraisal report.

The requirements for health & safety and security of the facility will require enclosed with a 2.4m high galvanized chain link fence. The fence enclosing the switchyard shall be 2.1m high with 0.3m of barbed wire as required by NFPA-70. The main entrance shall be secured by a motorized chain link slide gate with local key access and an intercom to the main control room. The exit gate shall have a loop detector inside the gate which will automatically open the gate. The exit and entrance gates shall close automatically. Additional gates for emergency vehicle access, shall be manual operated slide chain link gates with padlocks.

The proposed EfW facility will be manned on a consistent 24-hour basis, with additional CCTV monitoring equipment installed around the principal buildings and associated structures and roadways.
5.4 Scale & Appearance

The Proposed Development is centred around the ‘Principal’ Building that consists of the delivery area, storage boiler and flue gas treatment facility. These functions are required to be linear and with the final connection to the stack of critical importance. With the stack location fixed as a result of the consented Environmental Permit for the RDF Plant the alignment of the Principal building will follow that of the consented RDF scheme.

The mass of the Principal building has been designed to be an efficient use of space and reflects the space requirements of the process equipment in the building. The boiler hall forms the highest element and this is reflected as the tallest part of the building. The other zones have a reduced internal height requirements and so have been designed to sit below in a stepped fashion the ‘shell’ over the boiler hall. The junction between each part of the building has been articulated with a raking edge to the shell, and rounded eaves profile, partially to reflect the form of the consented RDF scheme but also to pick up on the architectural treatment of the consented Biomass facility on the adjacent Plot 9.

The use of natural light inside the facility is important so elements of translucent panels are designed in each gable and at the overlapping of each shell. This will make the shells appear as floating prevent the facility as being a ‘blind’ box.

The scale and massing of the ‘Principal Building’ is such that the associated functional elements, turbine house and ash residue building can be treated as subservient structures. These buildings are treated very simply to not detract from the main form. All are considerably lower in height and screened by the Principal Building.

The change in the technology to be used in the cooling system has enabled the size of this structure to be considerable reduced from that of the consented RDF scheme and through its repositioning close to the eastern elevation of the building reduces the overall spread of the development and allows a greater opportunity for landscaping to the eastern boundary of the site.

This approach of locating ancillary accommodation close to the main building elevations has allowed the ‘developed footprint’ to be efficient and compact and when viewed from the key viewpoints will minimise any ‘clutter’ surrounding the building.

As previously discussed the stack height and location has been previously determined through the granting of an environmental permit for the RDF Plant. The height will remain as consented but the diameter of the stack can be reduced as there are now only two boiler streams as opposed to three for the consented RDF scheme. The stack will have a slenderer profile and will be consistent with the adjacent stacks of the CF fertilizer and Plot 9 Biomass facility. The impact of the stack will now also be viewed in the context of the adjacent windfarm (in the course of erection).
5.5 Materials & Finishes

A simple palette of materials has been utilised that are robust and appropriate for an EfW facility. The materials have been used to articulate the elevations and with the massing to emphasise the articulate the form of the structure. The selection of the materials has recognized the products and colours that have been selected and are being utilised on the adjoining Plot 9 Biomass Facility and that form part of the design intent for the wider Protos development.

All the major elements have been considered and the materials selected for the building fabric have been selected to suit the function of the building or the internal environment of the particular building. The materials reflect an ‘honest’ approach with the products selected reflecting the function of the facility.

The schedule of materials and finishes comprise the following:

- Profiled Metal Wall Cladding
- Profiled Metal Roof Cladding
- Single Ply roof membrane
- Translucent Cladding
- Metal framed Curtain Walling
- Fair faced Concrete
- Metal Louvres & Doors
- Galvanized Steel tanks
- Coloured Metal Cladding to the Stac
5.6 Landscape Strategy

The landscape strategy will be an important part of the scheme to visually mitigate, improve and ameliorate the ‘industrial’ nature of this development. The landscaping will have an important role in the quality of the amenity spaces and routes for staff and visitors around the facility.

The landscape proposals are provided in detail at plan references:

660941.03.01  
660941.03.02  
660941.03.03  
660941.03.04  
660941.04.01  
660941.04.02
6.0 Access
6.1 Access

In determining the appropriate access arrangements for the proposed EfW Facility it is necessary to have regard for the consented Protos development. To inform the consented proposals, the applicant has had regard to a number of policy documents and publications to ensure that the development and each element of the design provides ‘access for all’, these include:


Standards

The standards applicable to this preliminary review include:

- BS8300: 2001 Design of Buildings and their approaches to meet the needs of disabled people
- Approved document Part M of the Building Regulations 2004

Associated with the Equality Act, are a number of guidance notes and standards that illustrate good practice in terms of meeting the needs of disabled people.

Listed below are the more onerous documents that will be utilised for the purpose of this report and future designs.

- Centre for Accessible Environments Guides.
- Ellesmere Port & Neston Borough Council Local Plan (gen 06 Access for Everyone)
- Cheshire County Council Local Transport Plan
- Code of Practice – Rights of Access
- DCLG Circular 01-2005
- DfT Inclusive Mobility
- DCLG/DfT Manual for Streets
- PPG13 – Transport

Areas of conflict

When setting out the principles in this preliminary access appraisal, an element of common sense has been applied; for example, the provision of special sound buffering within areas in order to minimize background noise for hearing impaired visitors. Health & Safety and Security issues relating to the plant and plant operations are considered to take precedence over the free access to all elements of the facility in all cases.

It should be noted that there will be no ‘free’ access to the site and facilities for members of the general public. Access will be pre-arranged and escorted with induction facilities to ensure visitors remain safe.
6.2 Access for All

Staff & Visitors

It is identified that there are to be three ‘categories of users’ for this facility, these are identified as the following groups–

- Visitors – Such as invited members of the public (this group may include children on school age), visiting site managers and visiting staff.
- White shirt staff members (WSS) – People employed to undertake administration duties where manhandling or physical wellbeing are not a requirement for employment.
- Blue shirt staff members (BSS) – People employed to work on the items of plant, machinery and maintenance where there are physical requirements for the job, hence Health and Safety takes precedence over the Equality Act.

Areas designated for visitors or white shirt staff WSS will be designed with accessibility in mind to limit potential legal implications under the Equality Act. These areas and key facilities will include the following areas of the facility

- The Gatehouse
- Reception desk and any visitors check in area
- External Areas
- Car parking and approach routes
- Office/ Administration
- Entrance reception
- ‘Shared Accessible WC’
- Male/Female locker rooms
- First Aid rooms
- Stairways Lift lobbies
- Male/Female WCs
- Meeting Rooms
- Open Plan Offices/Administration Offices
- Reception
- Kitchens
- Accessible WCs
- Individual/shared Offices
- Training Meeting Rooms
- Various Offices such as Shift Supervisor

General Access Issues

External Approach

Access to the site will be as previously consented: access for the operation of the EfW Facility will be from Junction 14 of the M56 Motorway and the AS117. From the AS117, access will be made via Pool Lane and then Grinsome Road, which is currently being widened pursuant to the RRP Section 73 Permission 2015 ref 14/02277/S73.

A proposed access road will connect into Grinsome Road and extend north, then east, and split to access the EfW Facility from the north and south, as shown in Figure 6.1.

Operational HGVs, and other operational vehicles, will access the site from the north.

Once within the plot, the internal site roads will operate on a one-way clockwise system.

Access to the site is also available at the southern boundary for emergency vehicles.

During the construction of the Proposed Development, the same access route will be used from the M56 to Grinsome Road. From Grinsome Road, the temporary haul roads will be utilised (which are being constructed pursuant to permissions 14/04225/FUL and 14/02268/FUL until such a time as the internal estate roads will be completed. (The haul roads are identified in Figure 6.1).

The proposed access arrangements to the site have been fully designed in accordance with current legislation both at national, regional and local level with the design principles shown to be wholly supported by inclusive mobility guidance and DDA compliance.

Accessible routes for users of all abilities have been provided to the site from footpaths on approach considered in the layout of the facility for the external areas within the site. The external routes illustrated on the provided plans will be graded to be generally level.

All of the external surfaces will be of even and durable materials such as concrete blocks or concrete paving (which will be flush and with no up stands), this will ensure a firm, slip resistant surface suitable for all users. Consideration will be given to paving of differing colour, tone and pattern or with contrasting delineation to help all users distinguish between: the pedestrian path section and the surrounding paved areas. This gives a durable, aesthetically pleasing approach which also prevents potential trip hazards.
Figure 6.1. Associated infrastructure works
The design of external signage will be considered, clear and defining signage will be provided to all external routes. This will include directional signage and location signage at entrances.

Bollards and gaps in protective barriers will be positioned at least 1800mm apart to allow unimpeded wheelchair access. Bollards will be at least 1000mm high and not linked with chains to avoid being hazardous to users with visual impairments.

All items of external furniture or items of equipment in the vicinity of external circulation routes will be made to contrast adequately in colour and luminance with surroundings. The furniture or plant must be logically positioned as not to protrude into routes of traffic.

Security Gatehouse

All staff and visitors to the site will be admitted via a controlled turnstile in the perimeter fencing of the site (pedestrian) or at the security gatehouse located close to the site entrance. Staff & visitors will then proceed to the staff/visitor car parking located to the south of the main facility.

Car Parking

The new facility lies within the wider Protos development and access for staff and visitors will ultimately fall under the control of Protos. In relation to the new EfW facility the scheme will consist of a dedicated car park with a dedicated vehicular route from the main site access. The car park is located close to main administration building’s entrance. Accessible bays will be specifically marked out in accordance to BS8300 with sufficient transfer zones and provided as near as possible to the main entrance.

The parking provision will consist of :-
- 50 parking spaces
- 4 disabled parking spaces
- 14 cycle spaces
Of which 10% will have electrical hook ups.

Building Entrances

The entrance point for the facility for all visitors and WSS is located at ground level in the administration building.

All visitors and WSS will initially access this building before moving onto their place of work within the administration building or being met or directed by staff to the reception.

It is proposed that BSS will also use this entrance before accessing changing and welfare facilities in the administration building and then proceeding to their place of work in the plant areas.

The main entrance will be security controlled and be easy to find with adequate signage and colour contrast.

External features such as barriers and benches will be positioned to indicate the best route to the entrances and not to restrict circulation.

Adequate manifestations will be provided as the entrances are fully glazed. This will enable people with vision impairments to determine the position of the glass and avoid collisions. The appearance of the manifestations will take into account both daylight and illumination at night.

Weather mats inside of the entrances will be a firm texture, and suitable for wheelchair travel, it will be flush with the floor and be of a sufficient length to cover the whole entrance. This will potentially reduce trip and slip hazards.
6.3 Internal Access Principles

Reception Areas

The reception for visitors is located on the ground floor. Access to other areas will be available via stairs (designed in accordance with AD part M) and dedicated passenger lift. A reception desk with hatch will be designed to include a lowered section which can be accessed by wheelchair users.

Additionally, it will be possible for wheelchair users to work at the desk. The desks will have contrast to the edges and have induction loops installed to aid people with hearing impairments.

Welfare Facilities – Accessible WCs

Within the scheme Accessible WCs for disabled persons will be provided on various floors of the office/visitor building. All accessible WCs will be equipped in accordance to Approved Document M and BS8300. Entrances to the accessible WCs will be a minimum of 1000mm. The entrances will also open outwards. All fittings and fixtures will contrast visually with surrounding wall. All WCs will be equipped with a cord alarm system linked to the main reception or site maintenance.

Grab rails will be provided to one urinal within the Male WCs. These will be positioned to both sides with the centre being positioned at no more than 1100mm. To exceed good practice and allow wheelchair users the option of using the facility, consideration to providing an additional horizontal grab rail above the urinal.

Wash basins will be installed in all WCs to contrast in colour and luminance with the walls and surfaces around them so that they can be easily distinguished by visually impaired people. Contrast and finger guards will be provided to all of the cubical doors.

Vending machines supplying sanitary goods will have all operating parts at no more than 1200mm off the ground floor level.

Taps will be of mixer style with an up and down action to control water flow or individual hot and cold lever operated taps with not more than a quarter turn from off to full flow.

Automatic hand dryers will be provided in addition to paper towel dispensers, this will aid people who have weakness in the arms.

Showers and changing facilities are to be provided for BSS working on the maintenance and operation of the plant. These will be provided on the first floor of the office/visitor building. Wheelchair accessible facilities are also provided on the control room level. A shower facility will be provided for WSS to encourage the use of cycles etc.

Lockers if required, for WSS are to be possible for use by wheelchair users – they will be at least 300 mm wide, not more than 600 mm deep and with their bases set between 400 mm and 800 mm above floor level.

Coat pegs/hooks will be positioned at 1050 mm and 1400 mm from floor level. Additionally, there will be a contrast against the background upon which they are seen.

Mirrors are to be provided sited at least 600mm off the floor level and at least 1200mm long to allow wheelchair users to view with ease.

Shower - Hot water, where controls are operated independently by a disabled person, they will be regulated not to exceed 41°C. The markings on shower controls should be logical and clear to visually impaired people. A grab rail should be provided within the shower unit and controls should contrast with the surroundings.

Welfare Facilities – General

It is deemed unnecessary to provide ambulant cubicles within the WCs as an accessible WC will be available on all of the WSS/Visitor floors, however the following will be considered within the general WCs –
Horizontal Circulation

The proposals and layouts will generally be a mix of cellular and open plan office areas with sufficient space to provide convenient access and the ability to turn 180 degrees in accordance to BS8300.

To increase the flow of pedestrian traffic and general accessibility all corridor doors will have a door and half systems. Specifications to doors will be developed at the next stage, however the following will be considered –

Where appropriate, door opening furniture with a lever action will be used with a profile that is spherical, circular or similar. This will aid people with ambulant disabilities that have arthritis or a weak grip. It should be easy to operate door opening furniture one handed, without tightly grasping it or twisting the wrist, e.g. by using a closed fist.

All door furniture should contrast in colour and luminance, to aid people with visual impairments.

All doors for general use, will be configured so as not to have an opening pressure that is greater than 30 Newtons. Single axis hinges will conform to the requirements of BS 7352. Fixing positions of hinges will conform to the requirements of BS 4787-1. If it is not feasible to provide opening pressures of less than 30 Newtons, management procedures will need to be implemented.

Where door entry systems are to be installed to restrict access. They will be located on the latch side of the door with the activation pad positioned within 200 mm of the door and at a height of between 750 mm and 1000 mm from the finished floor level.

All doors will be distinguishable against the surroundings upon which they are seen via adding contrast to the frames or panel. Vision panels will be provided (where appropriate). The minimum zone of visibility will be between 500 and 1500 mm from the floor. Should a door require two panels, the bottom should have a zone of visibility between 500 mm and 800 mm from the floor and the other accommodating a zone of visibility between 1150 mm and 1500 mm from the floor.

Vertical Circulation - Stairwells

The contract documents state that all stairs should be ‘Public Stairs’. This has been interpreted that all stairs should be available or to the standard required should members of the public ambulant or ambulant disabled require to use them. Therefore, all stairwells will be designed to conform to Approved Document Part M. Detailed design features of these steps will consider; tactile warnings, level signage, handrails, nosing, suitable treads etc.

Vertical Circulation - Lifts

Lift shafts which are designated for WSS and public visitors will conform to AD M with the following design aspects; Audio, support rails, Braille/Tactile buttons, induction loop coupler to the internal controls, mirror etc. Additional lifts are available in stair cores 1 & 3.

Vertical Circulation - Stairwells

Induction loops will be provided to aid people with hearing impairments to all of the reception points. Induction loops should be provided within the Conference/meeting rooms. An induction loop will enhance group speaking sessions for hearing impaired people. For visitors with hearing impairments undertaking a tour, a portable induction loop which can be worn will be extremely beneficial where there is no protection from the background noise such as the main viewing balcony. People who wear hearing aids suffer in locations where there is excessive background noise. The provision of auxiliary aids for communication will be incorporated into the design to ensure suitability with the structure, fixtures and fittings.

Should there be a degree of privacy required ie within the training/meeting rooms then an infra-red system will be used as opposed to other forms of hearing enhancement systems.

The use of natural lighting within the training/meeting rooms will be monitored to ensure there is no glare or direct sunlight which can hinder people who lip read.

Tea kitchens and mess facilities are proposed for WSS on the second floor third and fifth floors, these will be designed with accessibility in mind. Taps will be of a swivel neck mixer style, with clear markings to indicate hot and cold settings to aid people with vision impairments. The tap with a quarter turn lever operation from off to full water flow will be fitted to the sink within easy reach of wheelchair users, if necessary at the side of the sink bowl.

All appliances and equipment will contrast in colour and
luminance to aid people with visual impairments. Switches and controls within the kitchen, where mounted on a wall will be fully accessible to wheelchair users if feasible and be mounted with their centre lines between 750 mm and 1200 mm from floor level.

A combination of standard height and lowered work surfaces will be provided for wheelchair users with the suitable knee recess. Lighting to be specified within the kitchen area will be in the range of 150-300 Lux without providing glare, shadows or reflections to the sink, worktops or equipment. Fluorescent lights with electronic ballasts will be used rather than inductive chokes which can cause interference to hearing aids.

Additional mess facilities are to be provided at 1st & 5th floors in the office/visitor building for BSS. If this area is to be accessed by WSS or visitors it will comply with the requirements listed above.

Signage & Way-finding
Details of signage are not available at this stage of the design, however they will be designed and located to meet the requirements of BS8300 – 9.2 and the JMU: Sign Design Guide. Where applicable, the signage will be complemented with pictorial information to assist people with cognitive difficulties. Consideration will also be given to provide information in tactile form. For example, tactile signage and embossed pictograms. Signs giving the same type of information will have the same shape, positioning, colouring and format. A tactile way finding plan located on the ground floor of the main building, will aid unfamiliar visitors around the site.

Materials
Information of detailed colour schemes and materials to be used are not formulated at this stage of the design. The colour and luminance of the walls will be noticeably different from that of the ceilings and of the floor area. Consideration will be given to using the appropriate non reflective glass within viewing areas.

Lighting & Acoustics
Details of lighting schemes were not available at this time. As part of the lighting rationale, the design will assist in way-finding and orientation through a strategy of balanced lighting. The absence or limited use of day-lighting to various areas of the facility emphasises the importance of sufficient luminance, in terms of general ambience lighting as well as task lighting.

Means of Escape
It is envisaged at the waste plant a specific evacuation procedure will be in place.

Evacuation chairs should be provided at all points of vertical circulation. An intercom should be installed within the refuge areas.

Intercoms should have an LED display to allow hearing impaired people to use them.

Visual beacons supplementing the fire alarm system to aid hearing impaired will be provided where staff members could potentially be sited alone.
7.0 Photomontages
7.1 Photomontages

Photomontages have been prepared to show the proposed EfW Facility in the context of the built RRP development at Protos. The viewpoints of the photomontages were agreed with Cheshire West and Chester Council. The photomontages allow a direct comparison of the those completed for the ES 2007 for the consented RDF Plant with the proposed EfW Facility and are considered to give a reasonable indication of the scale and form of the Proposed Development (viewpoints VP1, VP2, and VP3 were used in the ES 2007 for the consented RDF Plant).

An updated 3D model has been prepared to complete the photomontages. The 3D model is of good quality to allow comparison between the consented RDF Plant and the proposed EfW Facility. There are some differences between the photography from the ES 2007 and the updated images due to the time of day the photos were taken, the weather conditions, camera type and setup.

The photomontages have been prepared assuming 15 years following the completion of the Proposed Development, wider RRP, and maturation of landscaping. This is a standard assumption.
7.0 Photomontages - Viewpoint Map
Viewpoint Title: Hale Point
NGR: 347315, 381410
Direction of View: 192.5°
Included Angle of View: 75°
Elevation Above Ordnance Datum: 19.2m
Distance to Site Boundary: 4.3km
Date of Photograph: 23rd June 2016
Time of Photograph: 09:30
Camera Height Above Ground: 1.5m
Correct Viewing Distance: 30cm at A3

Viewpoint 3: Existing View
Hale Point
(Viewpoint 9.1 in ES 2007)

Energy from Waste Facility
Plot 8, Protos
Viewpoint Title: M56 Motorway Bridge
NGR: 348978, 376247
Direction of View: 287.5°
Included Angle of View: 75°
Elevation Above Ordnance Datum: 12.8m
Distance to Site Boundary: 2.2km
Date of Photograph: 23rd June 2016
Time of Photograph: 13:38
Camera Height Above Bridge Surface: 1.5m
Correct Viewing Distance: 30cm at A3

Viewpoint 4: Photomontage View
M56 Motorway Bridge

Energy from Waste Facility
Plot 8, Protos
8.0 Conclusion
8.0 Conclusion

This Design & Access Statement has demonstrated that the application site represents a suitable location for the development of the proposed EfW Facility and the required associated infrastructure. The final design solution has had full regard to the application sites physical and locational context, in addition to affording careful consideration to its relationship with the consented Protos development and Biomass facility on the adjacent Plot 9.

The proposed scheme design will ensure a coherent approach to the development across Protos with the proposed surrounding buildings which are sensitive to the sites surroundings.

The proposal has responded to and will enhance the other consented elements of the Protos development.

The development has the potential to make an important contribution towards the regional and sub-regional waste management strategy with an energy generating capacity of up to 35MW per annum to serve other consented and existing developments within close proximity to the application site.

Taken together with the design, the proposed EfW Facility is considered to represent a suitable use of the application site (plot 8) sitting in context of the consented Protos development and its surroundings.