



**ENERGY FROM WASTE FACILITY, TRIDENT PARK, CARDIFF  
AND ANCILLARY DEVELOPMENT**

**STATUTORY INSTRUMENT 1999 No. 293**

**THE TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT)  
(ENGLAND AND WALES) REGULATIONS 1999**

**REGULATION 10: REQUEST FOR A SCOPING OPINION**

**OCTOBER 2007**

**SLR REF. 402.0036.00306**

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## 1.0 INTRODUCTION

1.1 **Viridor Waste Management Limited** ('Viridor'), owned by the Pennon Group is part of a major PLC that is focused on the water and waste management industries. Viridor is one of the UK's leading waste management companies that operates 25 regional landfill sites, numerous regional recycling facilities and over 189 waste processing sites throughout the UK. The Company is at the forefront of high quality environmental performance and over 100 of its operational centres are accredited to the ISO14001 Environmental Management System, the highest recognised international industry standard.

1.2 Waste management services offered by Viridor include:

- Materials Recycling Facilities (MRF);
- Bulking and transfer stations
- Materials collection
- Glass reprocessing
- Composting (Windrow and In-vessel)
- Waste treatment
- Transportation
- Household Waste Recycling Centres
- Product destruction/recovery
- Residual waste disposal
- Landfill gas utilisation
- Energy from Waste (EfW)

1.3 **Viridor** is proposing to develop an Energy from Waste (EfW) Facility at Trident Park, Cardiff. The development would involve the construction of a modern energy from waste facility that would accept some 400,000 tonnes of residual non-hazardous waste per annum.

1.4 Trident Park is located to the south-east of Cardiff City Centre at Glass Avenue. **Drawing TP1** illustrates its location. The site and its surroundings formed part of the East Moors Steelworks that closed in 1978. Following its reclamation the Nippon Electric Glass (UK) Limited developed a cathode ray tube components factory on the land, which ceased production in 2005.

1.5 This report marks the first formal stage in the preparation of a planning application and is intended to provide the Planning Authority (Cardiff Council) and any external bodies it may consult with sufficient information to provide an opinion on the likely environmental effects that need to be addressed by the required Environmental Impact Assessment (EIA).

## Benefits of the Development

1.6 The proposal for an Energy from Waste facility in Cardiff has the potential to make a fundamental contribution to waste management in the City and South-East Wales. The introduction of an EfW plant into the region will result in a move away from reliance on landfill as the means of disposing of waste, towards a system by which residual waste (i.e. pre-sorted wastes) is effectively and efficiently dealt with by means of an industrial combustion process. This process will generate significant

amounts of energy to be harnessed for use within the EfW and for export to the National Grid. There is also the potential to utilise excess heat generated by the facility in local homes and businesses.

- 1.7 The need for a facility of this nature reflects the significant changes to the way in which the United Kingdom is planning to treat its waste. The adoption of the EC Framework Directive for Waste 75/442/EEC (as amended by EC Directives 91/156/EEC and 91/692/EEC) has been implemented in Wales by means of a variety of national policy documents including Technical Advice Note (Wales) 21: Waste and Planning Policy Wales, and at a more local level by Regional Waste Plans. Each of these reflect the core objective of the National Assembly for Wales that places environmentally sustainable development at the very heart of its decision making functions.
- 1.8 The EfW facility proposed at Trident Park would provide:
- a safe and sustainable alternative to landfill for locally created wastes after the materials that can be recycled have been removed;
  - up to 20 Megawatts of electricity a year to the National Grid;
  - a potential source of heat for local homes and businesses, which will improve resource efficiency and reduce the dependence on fossil fuels; and
  - up to 50 permanent jobs plus further contract/temporary employment;

### **Environmental Impact Assessment**

- 1.9 The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999, as amended by the Town and Country Planning (Environmental Impact Assessment) (England and Wales) (Amendment) Regulations 2000, (hereafter jointly referred to as the EIA Regulations) implement Council Directive No 85/337/EEC (as amended) on the assessment of the potential effects of specified development proposals on the environment. The Regulations came into force on 14th March 1999. Prior to the grant of a planning permission in respect of any proposal to which the EIA Regulations apply an Environmental Impact Assessment (EIA) is required. Responsibility for compiling information regarding environmental effects lies with the developer, and the information is presented as an 'Environmental Statement'.
- 1.10 The EIA Regulations specify the types of development for which an EIA is mandatory (Schedule 1 Projects) and categories of development where an EIA may be required (Schedule 2 Projects). In connection with the proposal at Trident Park, it is considered to be a Schedule 1 development: "waste disposal installations for the incineration....of non-hazardous waste with a capacity exceeding 100 tonnes per day." (Category 10). Accordingly Viridor has commissioned SLR Consulting Limited to prepare an Environmental Statement to accompany the planning application currently being prepared.
- 1.11 SLR is a multi-disciplinary environmental consultant to, amongst others, the minerals and waste management industries, and also provides advice to local authorities and

the Environment Agency on strategic issues. SLR is a registered Environmental Impact Assessor Member of the Institute of Environmental Management and Assessment (IEMA).

### Scoping Exercise

- 1.12 Having established that an Environmental Statement is required to be prepared to accompany the proposed scheme, the Town & Country Planning (Environmental Impact Assessment)(England & Wales) Regulations 1999 (EIA Regulations) stipulate that the Applicant may make a request for a formal Scoping Opinion (Part IV Regulation 10).
- 1.13 This report forms Viridor's written request to the Local Planning Authority, Cardiff Council, under Regulation 10 of the EIA Regulations, for its opinion as to the information to be provided in the Environmental Statement.
- 1.14 Regulation 10(1) of the EIA Regulations provides for a developer to obtain a formal 'Scoping' Opinion' from the relevant planning authority on the topics that should be focussed upon in the Environmental Statement (ES) prior to embarking on an EIA. Referring to Regulation 10(2), requests for Scoping Opinions should be accompanied by:
- “(a) a plan sufficient to identify the land;*
  - (b) a brief description of the nature and purpose of the development and of its possible effects on the environment; and*
  - (c) such other information or representations as the person making the request may wish to provide or make.”*

This information is provided in Drawings TP1 and TP2, and in Sections 3 and 4 of this report.

- 1.15 The purpose of the scoping exercise is:
- to focus the EIA on the environmental issues and potential impacts which need the most thorough attention;
  - to identify those which are unlikely to need detailed study;
  - to provide a means to discuss methods of impact assessment and reach agreement on the most appropriate.
- 1.16 The following sections are intended to provide Cardiff Council and the relevant consultees with the information necessary to come to an opinion on the issues that should be addressed in the ES. The value of the statutory consultees in inputting to the Scoping Opinion is recognised by Viridor and SLR and both parties would be pleased to discuss any aspect of the proposed scheme with any organisation. Further information in this respect is offered in Section 5 below.
- 1.17 It is anticipated that the Scoping Opinion will focus on the key issues to be addressed in the EIA process. Whilst the EIA Regulations require all environmental considerations to be addressed, it is important to clearly identify the main environmental issues which allows for a more detailed and targeted assessment to

be carried out. In this respect, Section 4 of this report sets out the issues SLR considers the EIA should specifically focus on.

- 1.18 It should be noted that the completed ES will be submitted as part of the planning application. This application will also be accompanied by a Non Technical Summary, Design and Access Statements, and a Planning Statement that will include, inter alia, a comprehensive review of planning policies relating to this proposal, and any technical assessments as required. In order to ensure that these issues are recognised at the outset of the process, the scope of these issues is also considered as part of this report.

### **Planning and Pollution Control**

- 1.19 The Integrated Pollution Prevention Control Directive (96/61/EC) instructs the manner and procedures for the licensing of Energy from Waste plants and other facilities. The EC Directive has been translated into national legislation by the Pollution Prevention and Control Act 1999 and the Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended).
- 1.20 Once constructed the EfW at Trident Park will need to operate under an Integrated Pollution Prevention and Control (IPPC) permit. However, this can only be issued after planning permission has been granted. In addition to commissioning an EIA and submitting the requisite Environmental Statement, an application for an IPPC permit in respect of Trident Park EfW will be submitted to Environment Agency Wales. In accordance with recommended practice for new facilities, the permit application is being prepared in parallel with the planning application. This ensures that there is consistency between the data gathering and assessment stages of both planning and permitting regimes during the design exercise and the preparation of documents.
- 1.21 Planning Policy Wales (PPW) considers the interaction between the planning and licensing regimes. It gives advice on the relationship between the different planning development and pollution control regimes and requires local planning authorities to work closely with pollution control authorities when determining applications. The systems are separate but complementary in that both are designed to protect the environment from the potential harm caused by development and operations, but with different objectives. In recent years, increasing awareness of environmental priorities has led local planning authorities to take a greater interest in controlling potentially polluting activities and at the same time, the effectiveness and scope of environmental protection legislation has expanded rapidly.
- 1.22 Paragraph 13 of PPW provides that the planning system should not operate so as to duplicate controls which are the statutory responsibility of other bodies. The role of the planning system focuses on whether the development itself is an acceptable use of the land rather than the control of the processes or substances themselves. It also assumes that the pollution control regime will operate effectively. Planning controls are therefore not an appropriate means of regulating the detailed characteristics of potentially polluting activities.

## 2.0 SITE LOCATION AND DESCRIPTION

### Location

- 2.1 The EfW application site is located some 2 kilometres south-east of Cardiff City Centre and immediately north of Cardiff Docks, as shown on **Drawing TP1**. It is situated within the administrative area of Cardiff Council.
- 2.2 Access to Trident Park is gained via Glass Avenue which has a four-arm roundabout junction with the A4232, Ocean Way. Ocean Way is part of the Strategic Road Network and to the east and north leads into Rover Way and ultimately the A48(M) and M4.
- 2.3 The site is in close proximity to the Cardiff Bay redevelopment area to the west, and Cardiff Docks to the south. The Bay area is defined on the sea-ward side by the Cardiff Bay Barrage and provides a varied mixed-use that includes retail, residential, office and administrative uses.

### The Site

#### Background

- 2.4 The total area of the Trident Park site extends to 20.18 hectares, of which the application site occupies 4.63 hectares. The extent of the application area is shown in red on **Drawing TP2**, with the remainder of the Trident Park site outlined in green.
- 2.5 The southern boundary of the application site is defined by a palisade fence associated with the neighbouring uses. These include an oxygen pumping station, railway lines and a scrap metal storage facility. The remaining application site boundaries are currently defined by the internal road system of the larger site.

#### Site History

- 2.6 The land originally consisted of tidal marshes associated with the Bristol Channel. The expansion of Cardiff Docks in the middle of the 19<sup>th</sup> Century led to large tracts of land being reclaimed from the sea using imported material. The first recorded operation on the site appears to have been a copper smelting works that occupied the eastern part of what is now known as the Trident Park site. Iron and steel manufacturing was initiated in the western part of the site in 1891. Copper production ceased in 1902 and steel manufacturing expanded over the entire site during the early years of the 20<sup>th</sup> Century. The site became incorporated within the East Moors Steel Works which encompassed some 120 hectares of Cardiff and the Docks. The steel works closed in March 1978 and the majority of the associated buildings were demolished in the ensuing two years.
- 2.7 The site and much of the surrounding area lay dormant until the 1990s when the Welsh Development Agency started to attract inward investment to this part of Cardiff. Planning applications in 1994 proposed site remediation works, and an outline scheme for the construction of a television component manufacturing facility, and subsequently a full application for the initial phase of the development.

- 2.8 The following year, planning permissions were granted for the expansion of the first phase and the construction of a television screen manufacturing facility with ancillary uses for the Nippon Electric Glass Company. The latter included the construction of a substantial building extending up to 38 metres in height and with a footprint of 37,600m<sup>2</sup> together with an 80 metre high chimney stack that remains on site today.
- 2.9 The Nippon Electric Glass facility ceased operations in December 2005 and the site was purchased by PMG Estates in 2007. The main manufacturing building is currently being demolished, and the various ancillary buildings to the western end of the site will also be demolished during the latter part of 2007. The remaining land will be occupied by some 60,000sq.m. of building footprint including offices and warehousing facilities. Planning applications for an office development (to the north of Glass Avenue) and the refurbishment and sub-division of units to the south of Glass Avenue were submitted in August 2007.

#### Geology

- 2.10 The solid geology of the site consists of Triassic Rocks overlapping elements of the Silurian Penylan Mudstones of low inherent permeability. The Drift geology is classified as Quaternary and consists of marine and estuarine alluvium deposited as a consequence of the sea level rise associated with the end of the last Ice Age. These deposits consist of soft clays and silts.
- 2.11 The site itself is made ground of some five metres depth. The fill is likely to have been imported from the local area, and the site includes foundations and obstructions associated with the historic uses of the site.

#### Topography

- 2.12 The site is generally flat and lies at an elevation of about 9 to 10 metres AOD. The surrounding area mainly comprises reclaimed tidal marshes and is generally at the same level.

#### Access

- 2.13 Glass Avenue is currently the main means of access to Trident Park and it is via this access that, subject to capacity assessments, the access to the proposed EfW facility will be sought. Glass Avenue is an established access road built to adoptable standard and is accessed from the 40m radius roundabout on Ocean Way.
- 2.14 There is no public access to the site itself or the surrounding roads or land, and no rail or dock infrastructure associated with the site.
- 2.15 A proposal exists to extend the A4232 westwards, parallel with Roath Dock Road, to the Ocean Way roundabout. This would pass to the south of the site boundary. There are currently no proposals to provide a direct access from this road to the site.

#### Water Environment

- 2.16 There are no water features within the application boundary itself. Information gained from the *Technical Advice Note 15: Development and Flood Risk (TAN15)* indicates that the proposed application site lies within Flood Policy Zone B associated with the

Cardiff Bay area. Zone B is defined as being areas that have previously been subject to flooding in the past.

#### Nature Conservation

- 2.17 The southern part of the proposed application site is occupied by scrub vegetation. It is understood that this area has remained vacant since the late 1970's. There are no other known features of ecological interest within the site.
- 2.18 There are no statutory designated sites within the application site itself or its immediate vicinity. At its nearest point, the site lies within approximately 600m of the Severn Estuary. The Estuary is of national and international importance due to the presence of extensive areas of intertidal habitats (eg, mudflats, sand banks, rocky platforms and saltmarsh). The estuarine fauna include internationally important populations of wintering and passage waterfowl; invertebrate populations of considerable interest; and large populations of migratory fish, including the nationally rare and endangered Allis shad. The estuary has a diverse geological setting and a wide range of geomorphological features, especially sediment deposits.
- 2.19 As a consequence, a range of statutory designations are applicable to the Estuary: the Severn Estuary Site of Special Scientific Interest (SSSI); the Special Protection Area (SPA); the Ramsar site; and the possible Special Area of Conservation (pSAC). The sensitivity of these areas will be considered as part of the EIA and the PPC permit process considered at paragraph 1.11 above.
- 2.20 A review of the Countryside Council for Wales and Cardiff Council websites has not identified any other areas of ecological importance within a 2km radius of the proposed application site which could be adversely affected by the proposed development.

#### 2.21 Landscape

The site and its surrounding area are not subject to any statutory designations. The Caerphilly Mountain Special Landscape Area lies some 10 kilometres to the north of the site.

#### 2.22 Cultural Heritage

There is no known archaeological interest within the site. The disturbed nature of the site and its previous reclamation suggest that it is unlikely that significant archaeology exists. The site lies within 2km of a number of Listed Buildings at and around the Cardiff Bay area.

### **Surrounding Land Use**

- 2.23 The proposed development site comprises land with a long history of industrial development. As referenced above, the former buildings associated with the glass manufacturing process are currently being demolished, and the land to the south consists of scrub vegetation. In the vicinity of the site, potentially sensitive receptors are described below:

### Residential development

- 2.24 The closest residential properties to the proposed development are located at Queensgate North (the Water Quarter) located some 500 metres to the south-west of the site. The development is currently under construction and partly occupied. It consists of four apartment blocks of between 6 and 11 storeys height. To the north and west of this new development are the existing residential areas of Atlantic Wharf, Rhodfa Lloyd George and Butetown.
- 2.25 To the south of the Water Quarter is Adventurer's Quay, an apartment development completed in the late 1990's of up to 6 storey height. Adventurer's Quay is approximately 650m south of the site. The 2004/5 Celestia development is adjacent to Adventurer's Quay and includes 608 apartments of up to 15 storeys.
- 2.26 In addition to these existing residential properties are two further proposed major residential developments, at Lewis Road and Roath Basin. The Lewis Road site, approximately 600 metres to the north, is currently under construction and consists of approximately 100 flats of up to 6 storeys. The Roath Basin proposal is a mixed-use development that includes:
- 112,000m<sup>2</sup> of office space;
  - 11,100m<sup>2</sup> of leisure, retail and hotel uses; and
  - 65,130m<sup>2</sup> of housing development.
- 2.27 The planning application, submitted in 2003, remains undetermined pending legal agreements, but proposes that the residential element would generally consist of low and medium rise buildings of between 2 and 6 storeys, with two feature buildings of between 10 and 12 storeys.

### Commercial Development

- 2.28 Commercial development in the vicinity of the site is characterised by Port-related industrial development to the south, office buildings to the north, B2 and B8 uses to the east and mixed uses associated with Cardiff Bay to the west.
- 2.29 The industries associated with the Docks include fuelhandling, waste and minerals-related uses. The Port also handles considerable tonnages of steel, animal-feed products and timber, and benefits from linkages to the national railway system. Operations take place on a 24-hour, 7-days a week basis. At the western end of the Docks is Cardiff Heliport, a local authority owned operation.
- 2.30 The office developments to the north include Neptune Park, Cardiff Bay Business Centre and the Charnwood Estate. The buildings generally consist of two and three storey offices constructed since the mid-1990's, and are interspersed with retail units and leisure facilities, for example the Denvale Trading Park and the Wales National Tennis Centre .
- 2.31 All of the land to the north and north-east was previously occupied by the East Moors Steel Works, and to the north-east of the site are a number of industrial estates typified by B2 and B8 industrial, storage and warehousing developments. These include the Portmanmoor Road Industrial Estate and the Tremorfa Industrial Estate.

- 2.32 The immediately neighbouring use to the west of the site is a steel manufacturing operation. Beyond this, and to the west of the A4234 Central Link lies Bute Dock East, Atlantic Wharf and the mixed-use areas of Butetown and Cardiff Bay. The Senedd, at the heart of Cardiff Bay is located some 1.2 kilometres to the south-west of the application site.
- 2.33 In addition to the residential areas described above, included within a 1500 metre arc south-west of the site are office developments at Pierhead Road and Maritime Road, retail and leisure uses on the Cardiff Bay waterfront, the St. David's Hotel and the administrative offices of Cardiff Council and the Welsh Assembly Government.

#### Education Facilities

- 2.34 The closest educational establishment to the site is the Moorland Junior & Infant School. This is situated approximately one kilometre to the north off Moorland Road, Splott.
- 2.35 The Mount Stuart and St. Mary the Virgin Junior & Infant Schools lie approximately 1.5 kilometres to the west and north-west of the site respectively.

### 3.0 DEVELOPMENT PROPOSALS

- 3.1. The planning application will seek permission to construct an Energy from Waste (EfW) facility designed to accept some 400,000 tonnes per year of residual waste. All waste accepted at the plant would be non-hazardous material. EfW facilities use proven, highly regulated technology to extract energy from the residual wastes that remains after materials suitable for recycling and composting have been removed.
- 3.2. The proposed EfW facility will be totally enclosed within a purpose-built new building that is appropriately designed for its surroundings. It is expected (subject to detailed design) to be in the region of 40 to 50 metres in height. It is anticipated that the associated chimney stack would be of a similar height to that already within the Trident Park site (i.e. 80 metres) and this will be determined using appropriate air dispersion modelling. The footprint of the building and associated plant would accommodate some 2.4 hectares of the total site area of 4.63 hectares. The remaining land would be associated with traffic movements and car-parking. All reception and treatment of wastes would take place within the building itself.
- 3.3. The operation of an EfW plant consists of five key elements. This process would be contained within two production lines that would operate side-by-side.

- 1. Waste Reception:** The previously sorted waste would be delivered via Glass Avenue to a dedicated handling area using bulk transfer and street refuse collection vehicles (RCV's). All vehicles delivering residual waste will be weighed when entering the site and proceed to a vehicle delivery and tipping hall where they would back up and discharge the waste into a pit or storage hopper. From here waste is transferred to the two parallel "energy-from-waste" process lines and to each combustion chamber via dedicated feed chute and airlock section using grab cranes.

The cranes are also used to mix and break-up the incoming materials to ensure homogeneity of feed to the combustion chambers. A shredder is provided to process any bulky household waste received in the hoppers and to reduce material to an appropriate size before returning shredded materials to the hoppers for processing.

Air is extracted from the waste reception hall and used as waste combustion air which helps control odours arising in this area. This reception area is enclosed with access doors and air louvers to manage traffic and air movements;

- 2. Combustion:** Combustion takes place in two stages, with primary combustion undertaken on a moving mechanical grate to promote the mixing of burning/unburnt wastes. The combustion gas from the primary stage is heated further in the secondary combustion chamber to reach the specified minimum temperature of 850<sup>0</sup>C for a minimum of two seconds. The burnt waste from primary combustion on the moving grate is removed as an ash.

- 3. Energy Recovery:** The heat from combustion of the waste is recovered initially to form steam and ultimately as electrical energy at approximately 20 mega watts. The heat that is produced is recovered within a waste heat boiler to form high pressure steam, which is used to drive turbines

to generate electricity. A proportion of this site generated energy would be used within the facility itself, but the majority would be exported to the National Grid.

The design of the heat recovery boiler is particularly suited to waste combustion and incorporates facilities to minimise dust carry-over and for online cleaning through rapping systems and soot blowers to minimise maintenance impacts. Dust collected from the boilers is discharged as fly ash and collected with the flue gas treatment residues.

The power generation and auxiliary equipment provided include turbine/generator sets, air condensers and a facility with the potential to extract further value from the partially cooled steam or hot water after it has been through the turbines. This could be used to provide heating or process heat for homes and businesses within a reasonable proximity to the site.

**4. Flue Gas Treatment:** An air pollution control system forming an integral part of the plant will enable operation at any load within the design limits treating all flue gas prior to emission such that human health and amenity guidelines on emissions are not exceeded; Emission limits will meet stringent EC Waste Incineration Directive (WID) (2000/76/EC) standards, which will be enforced by the Environment Agency Wales.

The flue gas treatment would be a dry process, managed through a combination of four key processes; Selective Non-Catalytic Reduction (SNCR) to manage emission of oxides of Nitrogen (NO<sub>x</sub>); neutralisation of acid gases by injection of hydrated lime in a dry process; dioxin reduction through injection of activated carbon; and, dust removal through a bag filter.

Residues collected in the final bag house filter process are collected in hoppers with up to 3 days of storage

**5. Residue Handling:** Of the waste material that is introduced to the EfW process, three main waste residues would be generated. Bottom ash from the grate combustion unit (which amounts to approximately 25% of input material) would be re-used or recycled and ferrous metals recovered from the bottom ash would also be recovered and sold as scrap. Fly ash from the heat recovery system would be collected and combined with the flue gas treatment residues and landfilled.

- 3.4. The EfW facility would operate continuously on a 24-hour, seven days per week basis. The proposal to construct two production lines at Trident Park means that it is unlikely that the entire operation would be shut down for maintenance.
- 3.5. The construction period for the scheme is likely to take up to three years. It is anticipated that all parking and functions associated with this phase would be accommodated on the Trident Park site.
- 3.6. Any development of this nature would be subject to a range of ancillary uses including offices, control rooms, welfare facilities and car-parking. The operation and location of these elements will be considered as part of the planning application and EIA process.

## 4.0 ENVIRONMENTAL CONSIDERATIONS

### Background

- 4.1 The following section of this document provides Cardiff Council (the Planning Authority) and relevant consultees with the information necessary to come to an opinion (a Scoping Opinion) on the issues that need to be addressed in the Environmental Impact Assessment, and the scope of their consideration.
- 4.2 The range of information proposed for each topic is based on the experience of Viridor in proposing and operating schemes of a similar nature; the technical knowledge of SLR in relation to Energy from Waste facilities and a joint understanding of the regulatory system and the issues associated with the site and the surrounding area.
- 4.3 The scope of work for each issue is defined in respect of the identification of potential elements of the development that could lead to impacts, the manner in which the impact could manifest itself and the scope for considering this in the EIA process.
- 4.4 In order to consider the likely environmental impacts, the site and the proposed development need to be described so as to provide the baseline data against which the proposals can be assessed. Defining the scope of an EIA is a fundamental element of the process. Based upon discussions with Viridor, together with SLR's experience of undertaking EIAs for similar developments, a range of environmental issues has been identified for investigation.
- 4.5 As stated above, Regulation 2(1) specifies that an Environmental Statement is a statement "which includes such information referred to in part 1 of Schedule 4 as is reasonably required to assess the environmental effects of the development...." The information described in Schedule 4 includes at paragraph 3 to Part 1 the following requirement:

*"A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors".*

- 4.6 This scoping report identifies a range of potential environmental issues, which may be: temporary or permanent; direct or indirect; and positive or negative.

### Temporary/Permanent Effects

- 4.7 The potential for effects to occur is dependent on the two key periods associated with the development: the potential disturbance as a result of the construction period; and the longer term influence of the operational Efw facility.

### Direct/Indirect Effects

- 4.8 The proposed development could have direct effects upon nearby properties and settlements, together with the environment as a whole in relation to issues such as

air quality, noise, and the changing appearance of the site. Indirect impacts can also occur, largely in relation to the transportation of waste to the site.

#### Positive/Negative Effects

- 4.9 The proposed development has the potential to generate benefits as well as negative effects. These benefits might include the reduction of volumes of waste that would otherwise be disposed of to landfill, the potential to generate energy from waste as opposed to by means of burning fossil fuels; the effective use of otherwise vacant land, and the potential socio-economic benefits of the development.
- 4.10 Having considered the above issues, and taking into account the guidance contained in the DTLR publication “Environmental Impact Assessment: A Guide to Procedures” the potential environmental effects resulting from the proposed development have been identified below along with intended assessment methodologies.
- 4.11 The key environmental considerations identified in relation to the Trident Park site and the EfW proposal are:
- Air Quality;
  - Landscape & Visual Impact;
  - Transportation;
  - Noise;
  - Ground Conditions;
  - Water Environment;
  - Nature Conservation;
  - Cultural Heritage;
  - Needs & Alternatives;
  - Socio-Economic Assessment; and
  - Cumulative Impact.
- 4.12 In addition, the planning application will also consider a range of issues relevant to a development of this nature. These include the following, which are considered from paragraph 4.41 below:
- Design Statement;
  - Access Statement;
  - Sustainability Assessment; and
  - Policy Review.

#### **Air Quality**

##### 4.13 *Aspects Of Proposed Development Giving Rise To Potential Impact*

- Impact of traffic on concentrations of Air Quality Strategy pollutants;
- Dust impacts from transportation; and
- Emissions of pollutants from combustion sources.

##### 4.14 *Potential Impacts*

Disturbance/loss of amenity at sensitive properties;  
Loss of amenity for residents;  
Potential effect of emissions on designated areas of nature conservation.

#### 4.15 *Scope of Assessment*

The impact of atmospheric emissions will be predicted using approved air dispersion modelling software that takes account of the concentration of a range of pollutants (as specified in the WID), the height and exit diameter of the flue, the exit velocity of the gases and local meteorological and topographical conditions. The effect of nearby buildings on plume dispersion is also taken into account by the modelling software. The model calculates ground level concentrations of different pollutants and these can be added to the baseline concentrations of pollutants and compared to Air Quality Standards. The Air Quality Standards are protective of human health and the environment. The dispersion modelling will be extended to include any European designated ecological sites within 10km of the site, so that the potential effect of stack emissions on these sensitive sites can be predicted and assessed.

The baseline local air quality would be derived from data obtained from published sources and measurements as appropriate. Existing air quality data would be used and supplemented, as appropriate, by additional baseline monitoring carried out specifically for this planning application to obtain baseline local air quality data.

Subject to monitoring being required in support of the assessment, baseline air quality will be monitored for a period of 3 months in relation to nitrogen dioxide (and oxide), sulphur dioxide, hydrogen chloride, hydrogen fluoride and VOCs (BTEX, trichloromethane, vinyl chloride and total VOC's). Monitoring will be undertaken using passive absorption tube techniques with data ratification in line with the requirements of LAQM TG(03) where applicable.

The potential effect of the Trident Park EfW development on health issues will be considered. The objective of the assessment would be to consider the potential exposure and health response to activities associated with the construction and operation of the Facility. The more expansive scope would be subject to detailed technology and site layout design, but is likely to focus on emissions to air from the facility itself and from associated road traffic. Additional effects that may be pertinent might include the potential risk from road traffic accidents, noise levels, and socio-economic changes.

### **Landscape & Visual Impact**

#### 4.16 *Aspects Of Proposed Development Giving Rise To Potential Impact*

- ◆ Erection of new buildings, including a stack of some 80 metres in height within the site;
- ◆ Movement of plant, machinery and vehicles within the site
- ◆ Lighting associated with 24 hour operations.

#### 4.17 *Potential Impacts*

Loss of visual amenity from sensitive properties, highways, public rights of way and public areas.

Influence on areas of redevelopment.

Disturbance/loss of amenity to sensitive properties.

#### 4.18 *Scope of Assessment*

The Landscape and Visual Impact Assessment (LVIA) would be undertaken by a Chartered Landscape Architect in accordance with the Guidelines for landscape and visual effects assessment (Landscape Institute and Institute of Environmental Management and Assessment, Second Edition, 2002) and would incorporate a seascape assessment based on the Guide to Best Practice in Seascape Assessment (Countryside Council for Wales, March 2001).

The LVIA would consider a study area of up to 10km from the centre of the site, which would include the following:

- An analysis of the existing landscape character and visual baseline condition of the study area, with specific reference to the urban and seascape environments;
- Proposals for the mitigation of potential impacts (including impacts occurring during the commissioning and eventual demolition of the development) with specific focus upon building and site layout design considerations; and
- An evaluation of the potential direct and indirect residual effects on the character and visual amenity of the study area. This would include general assessment of effects upon nearby residential areas, tourist and leisure facilities, and would draw upon detailed assessment of up to 15 representative viewpoints located across the study area.

The LVIA would be accompanied by the following figures:

- A Landscape Designation Plan showing the location and extent of any relevant landscape designations that may have a bearing on the development or the sensitivity of the landscape of the study area;
- A Character Plan indicating the location and extent of specific landscape character types;
- A Zone of Theoretical Visibility plan showing the potential visibility of the proposed development;
- A series of figures showing existing views from representative viewpoint locations, and up to five photo-real visualisations depicting the appearance of the proposed EFW in the context of the existing coastal and urban environment.

### **Transportation**

#### 4.19 *Aspects Of Proposed Development Giving Rise To Potential Impact*

- ◆ Lorry movements associated with site preparation and construction works;
- ◆ Lorry movements associated with waste transportation and egress from site;

#### 4.20 *Potential Impacts*

Loss of amenity at/disturbance to properties in the vicinity of the site;

Capacity of road network to accommodate changes to traffic levels; and  
Capacity of road junctions to accommodate changes to traffic levels.

#### 4.21 *Scope of Assessment*

The transport implications associated with the proposed development will be considered in the form of a full Transport Assessment (TA). The TA will be produced with guidance from the document 'Guidance on Transport Assessment' published by the Department for Transport in March 2007 and TAN18: Transport (Annex D). The key items to be considered are summarised as follows:

Site Access – we will consider the suitability of the Glass Avenue roundabout as a means of access. The Nettlefold / Ocean Way T-junction may also be required as an access and therefore its suitability as a secondary access will be considered.

Parking – Parking at the development will be in accordance with Cardiff Council's 'Access, Circulation & Parking Requirements' document.

Sustainability – A review will be made of the facilities available for travelling to the site by non-car modes.

Traffic Impact – We will assess the impact on the Glass Avenue roundabout and Nettlefold T-junction with Ocean Way

Mitigation – Any mitigation as a result of the traffic impact assessment will be illustrated using AutoCAD.

The TA will seek to demonstrate how the proposed development will address and conform to the relevant national and local transport policies. It should be noted that a full and detailed stand-alone TA Scoping Report has been produced by SLR and submitted to Cardiff Council separately.

### **Noise**

#### 4.22 *Aspects Of Proposed Development Giving Rise To Potential Impact*

- ◆ Site preparation and construction works;
- ◆ Lorry movements associated with waste transportation and egress from site;
- ◆ Generation of noise from process;

#### 4.23 *Potential Impacts*

Loss of amenity at/disturbance to noise sensitive properties in the vicinity of the site.

#### 4.24 *Scope of Assessment*

Existing noise sources around Trident Park consist of existing heavy industry surrounding the site and the strategic road network, primarily Ocean Way. The presence and proximity of noise-sensitive receptors will be discussed and agreed with Cardiff Council, although these are initially anticipated to be the office complexes close to the site, the residential development between Lewis Road and Portmanmoor Road and the mixed-use development at Cardiff Bay. If necessary, a baseline noise

survey will be undertaken to include measurements over a typical 24-hour period to establish existing noise levels at any identified noise-sensitive properties around the site.

Where noise-sensitive receptors are identified, the noise assessment will consider the potential noise impact from the industrial processes contained within the EfW Plant in accordance with *British Standard 4142: Rating of industrial noise affecting mixed residential and industrial areas*. Additionally, the localised noise impact of increased heavy goods vehicle movements associated with the EfW plant will also be considered. Such predictions will be undertaken using the proprietary noise modelling software CADNA/A.

The assessment will set out outline mitigation measures and residual impacts will be quantified.

## **Ground Conditions**

### *4.25 Aspects Of Proposed Development Giving Rise To Potential Impact*

- ◆ Site preparation and construction works;

### *4.26 Potential Impacts*

Effect of excavations and construction on prevailing ground conditions.

### *4.27 Scope of Assessment*

Previous studies for the site have identified that a significant amount of land quality (contamination) assessment was undertaken in the early/mid 1990s prior to the construction of the glass production factory.

In assessing the impacts of any potential redevelopment this data will provide an invaluable source of baseline land quality data.

A Phase 1 desk study will be undertaken using this data along with other environmental data, e.g. a review of environmental database information, historical land use, etc in order to produce a Preliminary Conceptual Model for soil and groundwater contamination. The results of the Phase 1 study will be used to inform the undertaking of a Phase 2 Investigation.

Although significant information exists for the site for historic contamination sources at the site, there is also a requirement to supplement this data with up to date ground investigation data in order to:

- assess potential sources of contamination from the most recent site activities.
- allow an assessment of the ground conditions using current best practice techniques that will necessitate the need for further land quality data including soil, groundwater and soil gas information.

The output of the Phase 2 Investigation will be a review of existing and newly generated data using SLR's in-house Generic Assessment approach which has been developed using current best practice.

The Phase 1 and Phase 2 investigations will be reported as a chapter within the EIA.

## **Water Environment**

### *4.28 Aspects Of Proposed Development Giving Rise To Potential Impact*

- ◆ Potential pollution of surface and ground water from site operations
- ◆ Alteration of catchment areas and surface water flows
- ◆ Storage of oils on site

### *4.29 Potential Impacts*

Contamination of surface water by pollutants.  
Adverse effects on the groundwater and surface water regime.  
Risk of flooding  
Indirect impacts on any ecological interests in nearby water bodies.

### *4.30 Scope of Assessment*

The EIA will:

- establish the hydrogeological baseline conditions at the site, prior to the proposed development;
- include a qualitative hydrogeological risk assessment that covers the impact on the groundwater resources from the proposed development;
- consider the cumulative impact of the proposed development;
- demonstrate that groundwater quality will be protected and that the proposals will not result in the unacceptable discharge of pollutants to groundwater;
- evaluate the groundwater / surface water interactions and demonstrate that the proposed development will not have any significant negative impacts on any surface water features located in the vicinity of the site; and
- include a flood consequences assessment, in line with TAN15: Development and Flood Risk, focusing on surface water management at the site, detailing an appropriate management plan if necessary with supporting calculations, as output from the assessment.

## **Nature Conservation**

### *4.31 Aspects Of Proposed Development Giving Rise To Potential Impact*

- Site preparation;
- Operation of the facility; and
- Emissions from stack

### *4.32 Potential Impacts*

Potential damage to designated sites  
Loss of habitats, disturbance to protected species.

### *4.33 Scope of Assessment*

The ecological impact assessment would follow the data gathering guidelines recommended by the Institute of Environmental Assessment and the most recent

guidance on site evaluation and impact assessment, as issued by the Institute of Ecology and Environmental Management.

It is anticipated that the work associated with this project would include:

*Desk top study* – Data on statutory and non statutory wildlife sites obtained from Countryside Council for Wales (CCW), the local biological records centre/county ecologist and other local specialist groups (where appropriate) would be compiled and considered.

*Phase 1 Habitat survey* - An extended Phase 1 habitat survey of the site including EfW site and proposed infrastructure locations, would be carried out. During this survey we would carry out an appraisal of the likelihood of any protected species being associated with the site and the habitats present.

*Appropriate Assessment* - The site's proximity to the Ramsar/SPA/SAC/SSSI of the Severn Estuary is such that the relationship between emissions and this feature is likely to be subject to detailed analysis in the form of an Appropriate Assessment.

*Ecological Impact Assessment* - The assessment will apply IEEM methodology and identify the significance of any impacts. The findings and any critical constraints would contribute to the refinement of the proposed site layout and the report will recommend mitigation measures for any residual impacts where appropriate. Particular attention will be paid to assess the potential of aerial deposition of nitrogen dioxide and sulphur dioxide upon any potentially sensitive ecological receptors, in liaison with the findings of the air quality assessments.

*Mitigation Measures* – in the event that mitigation of impacts is required, the implications of these would be considered as part of the EIA process.

## **Cultural Heritage**

### **4.34 Aspects Of Proposed Development Giving Rise To Potential Impact**

- Change in Cultural Heritage setting

### **4.35 Potential Impacts**

Potential visual impact of development;  
Damage to archaeological remains

### **4.36 Scope of Assessment**

The location, previous uses and remediation of the site are such that it is unlikely that any remnants of archaeology, industrial or otherwise, are present on site. A desk-top study would be undertaken.

To reflect the location of the site and the potential prominence of the stack, a review of the potential impact that the development would have on any historic features would be undertaken.

## **Needs and Alternatives**

### *4.37 Aspects Of Proposed Development Giving Rise To Potential Impact*

- Change in Land Use

### *4.38 Scope of Assessment*

The requirement to consider the needs and alternatives for a development is a core principal of the preparation of an Environmental Statement. In respect of the proposed development at Trident Park, a consideration of potential alternative sites will be undertaken, as well as the consideration of alternative options for the design and technology of the waste management facility. This exercise will be undertaken in the context of a Best Practicable Environmental Option (BPEO).

The scope of the BPEO exercise is set out in Planning Policy Wales and Technical Advice Note 21: Waste. It establishes that where a proposed development does not form part of the regional BPEO analysis, further assessment may be required from potential developers as part of the EIA process. The assessment of environmental, economic, social and the practicality of the technology proposed would be brought together within the EIA process to consider the implications of this development on the wider “environment” of Cardiff.

## **Socio-Economic Assessment**

### *4.39 Aspects Of Proposed Development Giving Rise To Potential Impact*

- Opportunities for regeneration

### *4.40 Scope of Assessment*

The proposed development would represent inward investment to the area and would generate both short-term employment during the construction phase, and long-term employment during the operational phase. In addition, indirect benefits to the local area would flow from the provision of services and materials to the proposed facility.

A review of the existing economic and employment profile within the local area would be undertaken, together with any proposals as put forward in the Development Plan, Wales Economic Framework Strategy and other documents. Against this baseline the potential direct and indirect, positive and negative impacts that would arise as a result of the proposed development would be considered. In particular attention would be given to the perceived effect of the proposals on attracting new inward investment to the area, and the realisation of any urban regeneration/ improvement schemes.

## **Cumulative Impact**

### **4.41 *Aspects Of Proposed Development Giving Rise To Potential Impact***

- Opportunities for Additional Development

### **4.42 *Scope of Assessment***

The consideration of cumulative impacts is an integral part of the EIA process. It is customary to assess effects that have the potential to arise from the combination of activities at a development site (e.g. noise and transport) and those that might occur from different developments (e.g. cumulative traffic impacts) in a particular area. In the case of the Trident Park EfW, the cumulative impacts would generally be considered on a qualitative basis and would apply equally to the construction and operational phases of the development. In the case of transport movements and emissions, qualitative modelling will be implemented where necessary. These would be undertaken in accordance with best practice.

In the event that cumulative impacts are identified, mitigation measures will be proposed where necessary and practicable to address any issues that arise.

## **Design Statement**

### **4.43 *Scope of Assessment***

Viridor Waste Management is aware of the location of the Trident Park site in the context of Cardiff Bay, and the City Centre and have therefore placed the design of the facility at the very heart of the proposal. An architect with considerable experience of EfW design has been appointed to ensure that a design is achieved that is appropriate and acceptable to the location identified. The architectural practice will work closely with the Landscape and Visual Impact team and the technology providers to ensure that the scheme is relevant and capable of implementation in terms of the plant proposed for the Trident Park EfW.

The results of the design exercise will be reflected in the terms of the planning application that would be accompanied by a Design Statement prepared in accordance with the provisions of Technical Advice Note 12: Design.

## **Access Statement**

### **4.44 *Scope of Assessment***

The requirement for an Access Statement to accompany a planning application has been a statutory requirement since June 2007. The content and format of Access Statements in Wales is to be enshrined in a revised TAN12 to be issued during the latter part of 2007, and the Access Statement to accompany the planning application will reflect the guidance offered therein.

## **Sustainability Assessment**

### **4.45 *Scope of Assessment***

There is currently no statutory requirement to undertake a sustainability assessment of a development, but it is considered that in accordance with good practice such an appraisal gives an opportunity to assess the extent to which social, environmental considerations have been incorporated within the proposed development and the scope for improvement of these matters. Much of the input to this element will be derived from the broader work undertaken as part of the EIA process, and include consideration of what overall impact the scheme (both during construction and operation) would have on the wider environment.

In addition to the broad sustainability assessment, the planning application will be accompanied by a Building Research Establishment Environmental Assessment Method (BREEAM) for Industrial Predictive Assessment. This exercise will consider the performance of the buildings proposed in respect of aspects such as efficiency, energy consumption and land-use. The application of a number of criteria set by the BREEAM will result in the building being awarded a rating of Pass, Good, Very Good or Excellent.

The additional element of sustainability that would be considered as part of the assessment of the scheme would be the appraisal of the Carbon Footprint of the development. The carbon footprint is the total amount of carbon dioxide (CO<sub>2</sub>) and other gases emitted over the full life cycle of a development. The carbon footprint of Trident Park EfW facility, both during construction and operation would be calculated using the Life Cycle Assessment (LCA) method. This would be an iterative process that would be an important part of the design and EIA process.

## **Policy Review**

### **4.46 *Scope of Assessment***

The Planning Application will be accompanied by a Planning Statement that will include an exhaustive review of prevailing policies relating to the proposed use and site. At a strategic level, the review will consider the European context of waste policy, and appropriate National guidance both in terms of planning and waste. Additional consideration will be given to the range of applicable Technical Advice Notes as they relate to the scheme, and the Regional Waste Plan (both adopted and emerging).

At a more local level, the Adopted Cardiff Local Plan will be considered alongside those elements of the draft Unitary Development Plan adopted for development control purposes, and the emerging Local Development Plan. The range of Supplementary Planning Guidance issued by Cardiff Council will also form an integral part of the review, with particular reference to the document "*Locating Waste Management Facilities*".

## 5.0 CONCLUSION

- 5.1 Viridor Waste Management Limited ('Viridor') is proposing to develop an Energy from Waste (EfW) Facility at Trident Park, Cardiff. The development would involve the construction of a modern energy from waste facility that would accept some 400,000 tonnes of residual non-hazardous waste per annum. This facility has the potential to make an important contribution to waste management in the City and South-East Wales.
- 5.2 While not exhaustive, this Scoping Report has been prepared to provide Cardiff Council and other relevant bodies with the key environmental issues that are anticipated to be associated with the proposal to enable the scope of the EIA to be finalised. The design of the scheme, in terms of appearance, technology, footprint and relationship with the wider environs is an iterative process that will form an integral part of the EIA process.
- 5.4 Although the formation of a Scoping Opinion by the Planning Authority is a statutory process, both Viridor and SLR value the input of the statutory consultees and stakeholders and would be pleased to discuss any aspect of the proposed scheme with any organisation or individual. SLR Consulting Limited is contactable at:

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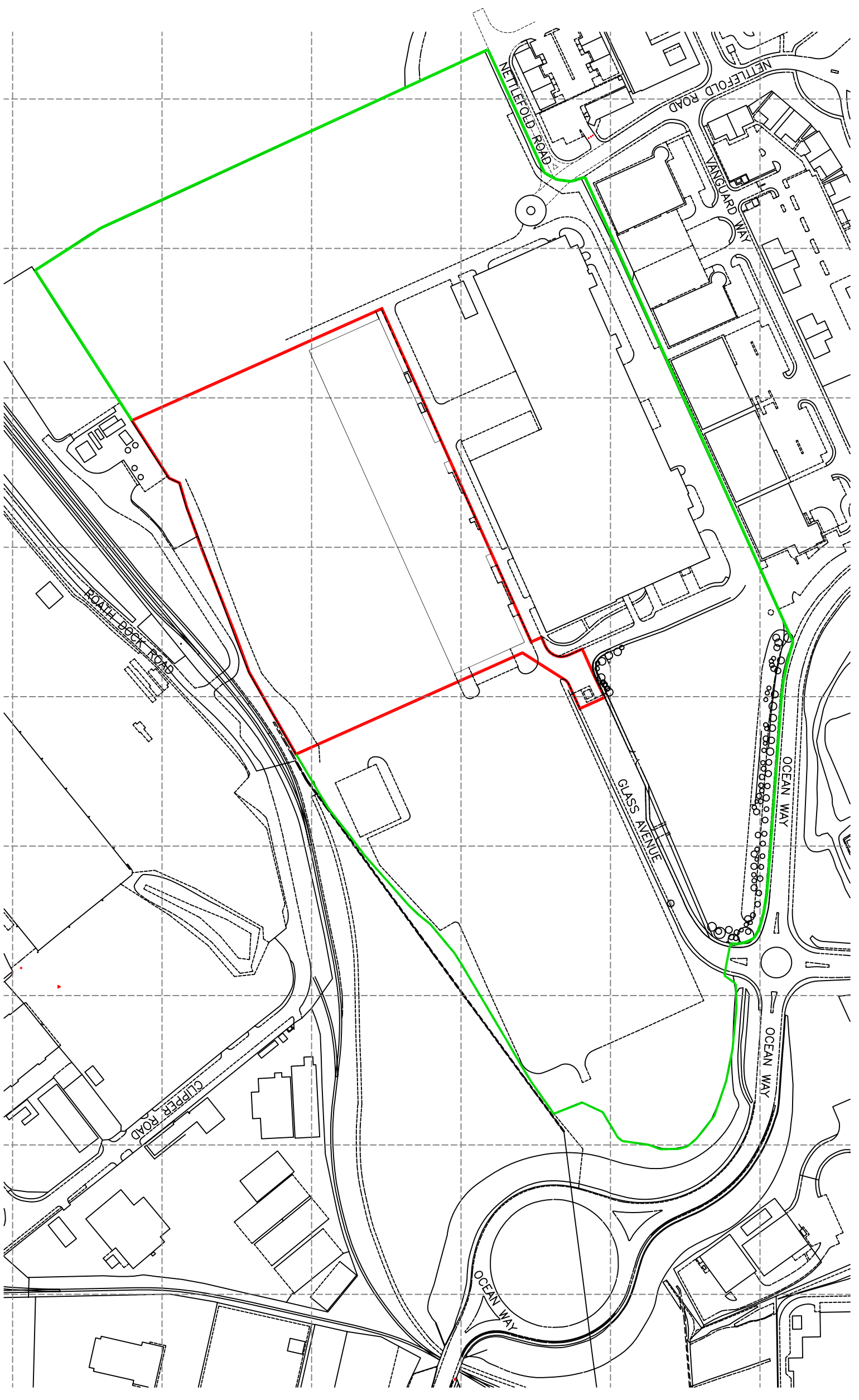
NOTES



LEGEND

PROPOSED LOCATION OF ENERGY FROM WASTE FACILITY

TRIDENT PARK



Revision	Issue Date	Issued By	Comments
0	OCT 07	DW	

**Viridor**  
WASTE MANAGEMENT

Site: TRIDENT PARK, CARDIFF  
Project: ENERGY FROM WASTE PLANT

Drawing: PROPOSED APPLICATION SITE

Date: OCTOBER 2007  
Scale: 1:2000 @A2

Drawing No. **TP2**

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