

VIRIDOR

**Proposed Development of a
Waste Treatment Plant,
Lostock Gralam**

**Volume 3 – Design and Access
Statement**

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Proposed Development of a Waste Treatment Plant, Lostock Gralam

Volume 3 – Design and Access Statement

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CONTENTS

1	Introduction.....	1
2	Site Context and Surroundings	2
3	Proposed Use and Policies.....	3
4	The Development	6
5	Layout, Design Principles and Concept	15
6	Scale of the Development.....	23
7	Site Appearance and Landscaping	24
8	Access.....	25
9	Conclusions	26

DRAWINGS

LE10104/EIA 001A	Site Location
LE10104/EIA 002A	Site Setting
LE10104/EIA 003B	Proposed Site Layout
LE10104/EIA 006A	Aerial Photograph with Development
LE10104/EIA 007	Existing Topography (as at April 2009)
LE10104/EIA 009	Palisade Fencing
LE10104/EIA 010	Proposed Process Building Floor Plan
LE10104/EIA 011	Education Centre Ground Floor and First Floor Plans
LE10104/EIA 014	Proposed Weighbridge Office Plan and Elevations
LE10104/EIA 029A	Visualisation
1239 002 031 Rev A	Site Office and Education Centre Proposed Elevations
1239 002 083	Process Building Proposed Elevations

1 INTRODUCTION

- 1.1 Viridor is one of two remaining bidders that have reached Stage 3 of Cheshire's Waste Treatment PFI Contract.
- 1.2 Through the contract, Cheshire West and Chester, and Cheshire East will establish how they will address the management of residual waste over the next 25 years. Like all local authorities, they have to meet challenging targets to divert large volumes of waste away from landfill in order to avoid increasing rates of landfill tax and large potential fines (under the Landfill Allowance Trading Scheme).
- 1.3 This Design and Access Statement is being submitted in support of a detailed planning application for the development of a Waste Treatment Plant (WTP) at the former chlorine chemical works at Lostock Gralam, near Northwich, Cheshire. The site location is shown on Drawing Number LE10104/EIA001A. The development will be in a strategic location for the treatment of all kerbside collected and Household Waste Recycling Centre (HWRC) derived residual municipal waste from across the areas of Cheshire West and Chester, and Cheshire East.
- 1.4 The proposed development of the WTP at Lostock Gralam will form an important part of the strategy to ensure that the majority of wastes generated within the Cheshire area can be managed within the region. In doing so, the location of the proposed site will accord with locational principles and will minimise waste transport.

2 SITE CONTEXT AND SURROUNDINGS

- 2.1 The site is located off Griffiths Road, Lostock Gralam, approximately 2km east of Northwich town centre. The site is located in an industrial setting consisting of existing and former chemical works close to the A559 (Manchester Road). Access to the site is located off the A530 Griffiths Road, via a private estate road which is shared with the other uses of the chemical complex. The site is located wholly within Chester West and Chester Unitary Authority, and its location is shown on Drawing Number LE10104/EIA 001A.
- 2.2 The site of the proposed Waste Treatment Plant (WTP) is circa 3.66 ha in size and presently comprises derelict industrial buildings, tanks and pipework, having been used formerly for chlorine manufacture up until 2001. Railway sidings are present along the northern edge of the site. The site is part of a larger chemical industrial complex. Drawing Number LE10104/EIA 002A shows the setting of the site.
- 2.3 The site is bounded to the north by the Altrincham and Chester railway line. Beyond the railway line to the north lie a number of light industrial units and residential properties. The closest industrial unit is approximately 143m to the northwest. The closest residential property is approximately 200m to the north, on Manchester Road.
- 2.4 There are also proposals for residential developments at Hargreaves Road and Wade Works. These are permitted developments, and lie approximately 250m or more to the south west of the Lostock Gralam site.
- 2.5 An area of open land lies to the west, beyond which are residential properties, the nearest of which lies some 590m west south west of the site. Bedminster International/Organic Waste Management Ltd have recently received planning permission for the development of a bio-energy plant on part of this open land that lies immediately adjacent to the western site boundary.
- 2.6 Wade Brook runs adjacent to the southern site boundary, in a general east to west direction. To the south of Wade Brook lies open land, on part of which it is understood that a precious and semi-precious metals recovery facility is proposed. Beyond this is, Griffiths Park, a former landfill site. Beyond Griffiths Park are residential properties some 500m from the site. Adjacent to the east of the site is the Solvay industrial plant. Beyond the Solvay facility are further works which make up the Brunner Mond facility.

3 PROPOSED USE AND POLICIES

The Cheshire Consolidated Joint Municipal Waste Management Strategy

- 3.1 The strategy proposed by Viridor is entirely consistent with the preferred approach set out within the Cheshire Consolidated Joint Municipal Waste Management Strategy (CCJMWMS), in that it will ensure that the targets for recycling are met; landfilling is minimised and; a network of facilities are provided across Cheshire West and Chester and Cheshire East. The strategy proposed by Viridor will also ensure the pre-treatment of residual waste, maximise recycling and the production of solid recovered fuel (SRF) which will provide renewable energy to the chemical industry. The approach proposed by Viridor has been designed to ensure that the identified need is satisfied and there is full compliance with the principles outlined in the CCJMWMS and the statutory development plan.

Waste Hierarchy

- 3.2 The facility fits well within the waste management hierarchy by ensuring that maximum value will be recovered from residual waste materials, with the separation of recyclates and water mass loss, and the production of SRF. This will help reduce the amount of waste being disposed of to landfill.

Planning Policy

- 3.3 It has been confirmed that there are no conflicts with existing planning policy in the development of an WTP facility at Lostock Gralam. The detailed findings of the planning policy review are provided in the Supporting Statement (Volume 1).
- 3.4 With regard to waste management the adopted Regional Spatial Strategy (RSS) Policies EM10 – EM13 set out a regional approach. The RSS requires that plans, strategies, proposals and schemes to promote the provision of sustainable new waste management infrastructuring facilities contribute to the development of the north west by reducing the harm to the environment including reducing impacts on climate change, improving the efficiency of resources, stimulating investment and maximising economic opportunities (Policy EM10). Policy EM11 seeks to promote waste minimalisation and securing the management of waste at the highest possible level in the hierarchy. EM11 also seeks to promote a sequential approach to determining waste facilities.
- 3.5 In accordance with the advice in PPS10, Policy EM12 adopts “locational principles”, rather than “proximity principles”, to ensure that communities take

more responsibility for their own waste, enabling the waste to be disposed of in one of the nearest appropriate installations, the principle of this is to avoid unnecessary transportation of waste to distant facilities and the need to achieve regional and sub regional self sufficiency. Policy EM13 requires plans, strategies, proposals and schemes to provide an appropriate type, size and mix of development opportunities to support the waste management facilities and bring forward and safeguard sites for waste management facilities that will deliver the capacity to deal with the indicative volumes of municipal, commercial and industrial and hazardous waste in each sub region.

- 3.6 The Cheshire Replacement Waste Local Plan (CWLP) contains policies which planning applications for waste management facilities should be assessed against and identify sites which are considered appropriate in principle for a waste management use.
- 3.7 The overall purpose of the CWLP is to provide land use policy framework for sustainable waste management in Cheshire having regard to the waste hierarchy, the locational principles, regional self sufficiency and guiding the principles of sustainable development. One of the key objectives of the Waste Local Plan is to reduce the need for the reliance on landfill by identifying sites suitable for the development of facilities for the recycling and recovery of resources and energy from waste.
- 3.8 The CWLP allocates a range of sites to develop a network of waste management facilities to meet Cheshire's identified needs in terms of waste arising. Whilst the site is not specifically allocated within the CWLP as a "Preferred site for Waste Management Facilities" (Policy 4) it lies immediately to the east of two allocated sites WM12A (Lostock West) and WM12E (Lostock East).
- 3.9 The site selection process which was undertaken demonstrated that the development of the application site accords with the advice within Policy 5 of the CWLP and that it is an appropriate site for the MBT facility proposed. It has also been demonstrated that there are no sequentially more preferable sites that are either available or suitable at this time.
- 3.10 Within the Vale Royal Borough Local Plan First Review, the site is allocated within the Town and Village Boundary, as such Policy E7 'Northwich and Winsford Town' is relevant and should be considered. Policy E7 states that within settlement policy boundaries at Northwich a number of categories of development for employment purposes will be allowed including new development in buildings or on sites which are not identified on the proposals map. Whilst the site is not specifically allocated for employment related development, Policy E7 accepts that certain development cannot be located on land which is specifically allocated for

employment, and would support development, such as that proposed, within the defined settlement boundary.

- 3.11 The site lies to the east of land allocated for employment purposes; Policy E5.2 states that this site is suitable for uses falling within Use Class B2 (General Industrial) and B8 (Storage and Distribution). Therefore the principle of development is established on the land to the east; the proposal would form an extension to this allocation and would be compatible with the uses identified in Policy E5.2.

Suitability of the Site for the Development

- 3.12 The proposals present an opportunity to drive forward and implement a sustainable waste management strategy which will help reduce the dependency on landfill, increase recycling and recovery of energy from waste, and reduce the impact on the environment. The proposed WTP facility at Lostock Gralam will help deliver an integrated waste management strategy for Cheshire West and Chester, and Cheshire East.

4 THE DEVELOPMENT

Introduction

- 4.1 Viridor is seeking planning consent for the development of a Waste Treatment Plant (WTP), incorporating mechanical and biological treatment (MBT) processes, at the former chlorine chemical works at Lostock Gralam, together with a site office and education centre. The WTP will be constructed to treat kerbside collected and Household Waste Recycling Centre (HWRC) derived residual municipal waste from across Cheshire West and Chester, and Cheshire East areas. A small percentage of waste treated at the WTP will be residual commercial waste. No other waste types will be treated at the facility. The end products from the MBT process will be recyclates, including plastics, metals and aggregates; solid recovered fuel (SRF); and a small proportion of residual waste to be sent to landfill.
- 4.2 Waste will be delivered to the site by refuse collection vehicles (RCVs) and heavy goods vehicles (HGVs). The end products, i.e. a range of recyclates will be transported by road to third party users. The solid recovered fuel, produced by the process, will be packed in containers and transported by rail direct from the site to a purpose built, SRF fired power station at Western Point, Runcorn. This power station at Runcorn, was granted planning permission in 2008, and is currently under construction. It will provide renewable energy to the chemical industry.
- 4.3 The facility at Lostock Gralam is designed to process up to 250 000 tonnes per annum of residual waste delivered from three waste transfer stations (WTS) and direct from HWRCs across the Cheshire West and Chester, and Cheshire East areas. Kerbside collected residual waste will also be delivered direct from the area surrounding the WTP.
- 4.4 Drawing Number LE10104/EIA 003B shows the proposed site layout while Drawing Number LE10104/EIA 029A shows a three dimensional visualisation of the proposed facility. The current topography is shown on Drawing Number LE10104/EIA 007. The proposed development comprises four main buildings; the mechanical biological treatment processing building; the household waste recycling centre (HWRC) waste treatment facility, the building housing the biofilters for cleaning the process air, and a site office and education centre. Drawing Number LE10104/EIA006A shows the proposed development superimposed on an aerial photograph.
- 4.5 The site will be operated by Viridor for the Contract period of 25 years, after which time it will be returned to the control of the Cheshire West and Chester, and Chester East Unitary Authorities.

Site Access and Infrastructure

- 4.6 The site will be accessed from Griffiths Road, via a private estate road. Heavy Goods Vehicles (HGVs) and Refuse Collection Vehicles (RCVs) delivering residual waste from across Cheshire, will weigh in at the weighbridge, located as shown on Drawing Number LE10104/EIA003B. After weighing in, vehicles delivering residual waste direct from HWRCs will proceed to the dedicated HWRC waste processing building, where they will off load into the waste reception area inside the building. Vehicles transporting residual waste from the WTSs and direct from household collections will proceed to the main MBT processing building and off load their waste in the designated waste reception area, within the building.
- 4.7 The main service yard will be hard paved and will be of sufficient size to ensure that interaction between operational and delivery vehicles poses no interruption to the service or danger to site users. The access points will be clearly visible from the service yard.
- 4.8 Rail sidings will be constructed along the northern boundary of the site, and will be connected to extant sidings that link into the national rail network. The proposed sidings will be equipped with a gantry crane for the loading and unloading of rail wagons, allowing SRF to be transported off site to the thermal power station at Runcorn.
- 4.9 The perimeter of the site will be fenced with 2.4m high security palisade fencing, as shown on Drawing Number LE10104/EIA 009. The location of the fencing is shown on Drawing Number LE10104/EIA 003B. A 2.4m high acoustic barrier is proposed in the north of the site adjacent to the rail sidings. The site will benefit from 24 hour CCTV security monitoring.
- 4.10 An Integrated Management System (IMS) will be used to demonstrate environmental performance. This will include Quality Management, Environmental Management and Health and Safety Management. Prior to construction a Site Waste Management Plan will be drawn up and submitted by the developer.
- 4.11 The site will have adequate foul and surface water drains. Surface water runoff will pass through an interceptor prior to discharge off site. Off site discharges will comply in all respects with the requirements of the Environment Agency.

Staffing

- 4.12 The development will provide both short and long term employment opportunities. Short term opportunities will arise in the form of construction jobs at the site. The operation of the development will create permanent long term skilled positions for operational staff.

4.13 During the operational phase, the WTP will directly provide 45 permanent jobs at the site, as follows:

- 2 x Production Manager/Supervisor
- 8 x Plant Technician
- 1 x Electrician
- 2 x Weighbridge Clerk
- 12 x Plant Loading Operative
- 15 x Truck Drivers
- 5 x Support, Managerial and Educational Staff

4.14 The staff associated with the facility will also undertake the necessary site management and maintenance duties required under relevant Planning Permission and Environmental Permitting, including litter retrieval and inspections.

4.15 Viridor recognise that the required workforce is available locally, and is committed to employing staff from the local area without the need to bring in staff from other regions.

4.16 Viridor technical staff and external consultants will provide further management support for pollution control monitoring, surveying, materials testing and supervision of the engineering works during the construction phase and when the site is operational.

Hours of Operation

Opening Hours

4.17 The WTP will be open to accept waste and dispatch recyclates and unusable residual waste, and load SRF to waiting rail trucks, between the hours of

- 0700 and 1930 Monday to Sunday, including Bank Holidays.

4.18 Waste will be delivered direct from Waste Collection Authorities (WCAs), the HWRC Contractor and from the WTSS between these hours.

Processing

4.19 Waste processing will take place on a 24 hours/day basis, 7 days a week, including Bank Holidays.

Traffic and Parking

4.20 Refuse Collection Vehicles (RCVs) and HGVs will visit the site daily to deliver residual waste and collect recyclates. These vehicles will not be based at the

site. In total, on weekdays, there will be 56 vehicles per day (or 112 vehicle movements) associated with the delivery of municipal waste and removal of recyclates. In addition, there will be a small number of vehicles (approximately 6 per day) delivering industrial and commercial waste to the facility. Vehicle numbers will be substantially reduced at weekends and Bank Holidays.

- 4.21 Parking requirements are based on staff levels. It is proposed that 43 parking spaces will be provided within the WTP, including two allocated for disabled drivers, allowing for visiting supervisory staff as well as regular employees. In addition, one space for coach parking will be provided to accommodate groups visiting the education centre.
- 4.22 A Transport Assessment (see Chapter 11 of the Environmental Statement (Volume 2)) shows that the traffic generated by the proposed WTP will not have a significant impact on the surrounding highway network.

Rail Movements

- 4.23 The SRF produced at the site will be transported directly to Runcorn Power Station by rail. There will be one train leaving the site each day.

The Waste Treatment Plant

Mechanical Biological Treatment Plant

- 4.24 The Mechanical Biological Treatment (MBT) processing building comprises a waste reception hall, a mechanical separation process hall, a biodrying tunnel hall and a refinement processing hall. Together, the MBT processing building will be approximately 159m x 131m, with a maximum height of 18.6m. It is located in the centre of the site, as shown on Drawing Number LE10104/EIA 003B. Drawing Number LE10104/EIA010 shows the internal layout of the MBT building, while Drawing Number 1239002083 shows the elevations.
- 4.25 RCVs carrying residual waste direct from local kerbside collections, and HGVs carrying residual waste collected from the three WTSs, will weigh in at the weighbridge and proceed to the waste reception hall inside the main building. All waste tipping, temporary storage and processing will take place within the MBT building which will be sealed with controlled ventilation to prevent odour release, and to ensure a safe working environment for plant operators. The waste reception hall will be kept under negative pressure through the use of an air extraction and biofilter system. This will prevent the release of odours from the doors of the building during waste deliveries and will treat odorous air prior to its release from site.

- 4.26 Once tipped in the waste reception hall, residual waste will be initially screened for oversized objects and transferred using a loading shovel and a wheeled 360° excavator with a grab attachment, into the processing equipment. A first-in first-out operating procedure will apply in order to ensure good management of waste to comply with Environmental Permit storage conditions and prevent waste material from being left for long periods in the reception hall.
- 4.27 The waste reception hall will have six entrances to allow the entry/exit of delivery vehicles. These doors will be equipped with fast acting roller shutters. These will remain closed unless a vehicle requires entry/exit from the hall and when the door is open, the entrance will be shielded by an air curtain to maintain a barrier to fugitive emissions, particularly of odour. By undertaking all tipping operations within the building, minimising the time doors are open and protecting open doors with air curtain technology, the incidence of airborne dust and litter migrating out of the reception hall is also negated.
- 4.28 The control of dust, odour and bioaerosol levels within the reception hall will be maintained by the constant change of air provided by the process air treatment system.
- 4.29 Two shredders will be employed at the front end of the mechanical treatment process to reduce the size of the waste material to less than 250mm. The shredded material will be transferred by belt conveyor to a series of mechanical plant.
- 4.30 The Mechanical Treatment process will segregate ferrous and non-ferrous metals, plastic, glass and aggregate from the residual waste, generate a component of the final output SRF and leave an organic rich fraction which will pass to the biodrying (biological treatment) process. By separating metals and high calorific waste, a substantial amount of the residual waste will be used for material recovery and energy production.
- 4.31 The objectives of the Mechanical Treatment phase are:
- Reduction of waste size by shredding;
 - Size fractionation of the shredded waste to facilitate separation of component fractions;
 - Separation of ferrous and non-ferrous (mainly aluminium) metals for further recycling;
 - Removal of contraries;
 - Separation of a component fraction of the SRF to be dispatched off site for energy recovery; and
 - Production of an organic fraction to be dried in the biodrying process.

4.32 The mechanical element of the process will take place using a combination of enclosed and sealed sorting equipment and enclosed conveyors with air extraction to reduce the levels of dust and bioaerosols in the working environment to the lowest practicable level.

4.33 The mechanical processing plant will comprise the following:

Trommel Screens	These will separate the shredded waste into separate size fractions
Windsifters	These remove the least dense materials from the waste stream. Low density materials will be collected as a constituent part of the SRF.
Overband Magnetic Separators	These remove ferrous metals from the waste stream for recycling
Eddy Current Separators	These remove non-ferrous metals from the waste stream for recycling
Near Infrared Optical Separators	These separate out mixed plastics for recycling.

4.34 At the end of the mechanical treatment process, the wet organic fines fraction will be transferred via conveyors, to concrete 'biodrying' tunnels in the adjacent biodrying hall.

4.35 During the aerobic biodrying phase, the organic materials from the mechanical treatment phase will be automatically loaded into one of thirteen biodrying tunnels enclosed within the biodrying hall. Each tunnel is filled on a batch basis, to a depth of around 2.4m. During the biodrying process air is introduced, via pipework, through the base of the waste. The waste is kept in each tunnel for drying for 8 days. The temperature of the tunnels will be maintained at 35°C automatically. A Process Logic Control Unit will increase or decrease the flow of air depending on the temperature.

4.36 The biodrying tunnels will reduce the moisture content of the organic materials to approximately 15%, typically removing around 30% of the mass of the input material in moisture.

4.37 The bio-drying process is managed in closed aerobic treatment units with exhaust air collected in the closed exhaust air system direct from the tunnels, ensuring no odours are released. The extracted air from the tunnels and process areas will pass through dust filters and a biofilter, in order to minimise any odours, prior to being vented to atmosphere via a 27m high stack.

4.38 On completion of the biodrying phase, the material is unloaded from the tunnel and passes to the refining hall where further recyclate recovery takes place and

the remaining material passes to the outloading area to be added as a component of the solid recovered fuel (SRF).

- 4.39 In summary, the waste treatment process follows the stages set out below:
- Waste reception
 - Mechanical process – outputs comprise SRF feedstock, aggregates, metals and untreatable material to landfill
 - Biodrying – water loss and SRF feedstock
 - Refining – bio-dried material refined to remove aggregate
 - Combining of SRF feedstocks to produce an SRF suitable for treatment at the power station.
- 4.40 The biofilters are located to the south of the main building, and will measure approximately 8.6m high. The stack will be circa 27m high. The air discharged from the stack will meet the requirements of the Environmental Permit issued by the Environment Agency.

The HWRC Waste Treatment Facility

- 4.41 The HWRC Waste Treatment Facility will receive residual waste from HWRCs in Cheshire, with the waste either being direct delivered by the HWRC Contractor or delivered from Waste Transfer Stations by Viridor haulage vehicles.
- 4.42 HWRC collected residual municipal waste has very different characteristics to kerbside residual waste. The waste stream has much greater variability and contains fewer organic materials. As such there is significantly less benefit in biodrying this waste stream. Instead a solution of mechanical treatment only will be provided.
- 4.43 The treatment facility for the HWRC residual waste will accept the waste, will carry out some separation of bulky recyclable materials and unsuitable materials and will then shred the waste. Further metal removal will then be undertaken and the composition of the remaining waste is such that it can then go to form a component part of the solid recovered fuel (SRF) to be dispatched from the site for energy recovery. Materials which cannot be recycled or form part of the SRF stream will be dispatched from the site to landfill.
- 4.44 The doors of the HWRC Waste Treatment Facility will be of a fast acting design and will remain closed other than to allow delivery vehicles to enter or exit the hall. They will be fitted with air curtains, to maintain a barrier to fugitive emissions. An air extraction system, connected to the main plant biofilter will be installed within the facility.

Site Office, Education Centre and Welfare Facilities

- 4.45 The administration office, welfare and education facility will be located in the east of the site, near the site entrance, as shown on Drawing Number LE10104/EIA 003B. It has been designed with dedicated car parking arrangements, with provision for disabled users, motorcycles and cycle storage.
- 4.46 The building will comprise two floors. The ground floor will accommodate a main reception and waiting area together with offices and welfare facilities for Viridor's operational and contract management staff. The facilities will include site administration facilities, lockers and shower rooms, toilets (including disabled facilities), catering and canteen facilities offices and a conference room.
- 4.47 An Education Centre housing the seminar and education facilities will be provided at first floor level and will be designed to serve as a local centre for resource education and the promotion of waste minimisation, recycling, composting and re-use. The education centre/office floor plans are shown on Drawing Number LE10104/EIA 011. Elevations are shown on Drawing Number 1239 002 031 Rev A.
- 4.48 The Education Centre will provide: welfare facilities, a home composting display, a meeting room and conference facilities, a sustainable living exhibition to include green purchasing, re-use and minimisation, and an interactive educational display/exhibition to enhance waste and resource awareness.
- 4.49 The centre has been designed to ensure full access and benefit to all user-groups and community sectors. To this end, the centre has been designed in consultation with the Authority officers and others with expertise in access issues. Positive measures have been taken to make certain that key issues such as access for the less-abled, where appropriate, have been incorporated in accordance with the relevant provisions of AD part M, BS 8300, and all DDA relevant access legislation and recommendations.
- 4.50 As part of the educational visit experience, specific viewing platforms in the main processing hall are to be provided.
- 4.51 The designs ensure that upon arrival at the Education Centre the visiting group will be able to park vehicles, or to exit coaches or mini buses in dedicated areas, reasonably close to the entrance, such as to avoid any potential danger from site vehicles.
- 4.52 Wheelchair access will be incorporated into the design of the Education Centre.
- 4.53 There is provision for 43 car parking spaces for staff and visitors, two of which are for disabled users.

Weighbridge and Weighbridge Office

- 4.54 A double weighbridge facility will be constructed at the entrance to the site at the location shown on Drawing Number LE10104/EIA 003B. Each weighbridge shall be constructed so that the surface of the weighbridge is flush with the road surface. The weighbridges have been designed to accommodate the largest vehicle using the site.
- 4.55 A weighbridge control office will be located between the two weighbridges so that incoming and outgoing vehicles can be processed efficiently. The weighbridge office will house computerised weighbridge terminals which will allow the operation of both weighbridges simultaneously.
- 4.56 The weighbridge office has been designed to allow full disabled access.
- 4.57 Traffic lights will be installed to control and monitor all vehicles entering and leaving the site.
- 4.58 A weighbridge office/gatehouse will be located between the two proposed weighbridges located in the east, near the site entrance. It will have a building footprint of approximately 9.4m by 3.8m and will be circa 3.7m high. Drawing Number LE10104/EIA 014 shows the proposed layout, elevations and dimensions of the weighbridge office.

Landscaping

- 4.59 Areas of the site which are not hard paved will be landscaped with a combination of grass and low maintenance ground cover planting as appropriate.

5 LAYOUT, DESIGN PRINCIPLES AND CONCEPT

Proposed Layout

- 5.1 The layout of the proposed development is shown on Drawing Number LE10104/EIA 003B. Drawing Number LE10104/EIA 002A shows the site setting. The site will be accessed from Griffiths Road to the south, via a private access road that also serves the adjacent chemical works.
- 5.2 The main site office (including welfare facilities) and education centre will be located near the site entrance in the east of the site, as shown on Drawing Number LE10104/EIA 003B. A parking area for site staff and visitors will be provided, located adjacent to the site office. There will be 43 car parking spaces, 2 of which are for disabled drivers. Parking will be provided for one coach.
- 5.3 The design and construction of all elements of the works will be carried out in accordance with (but not be limited to) the requirements of (or subsequent amendments to) the following:
- The Management of Health & Safety at Work Regulations 1999;
 - The Provision and Use of Work Equipment Regulations 1998;
 - The Construction (Design and Management) Regulations 2007;
 - The Health & Safety at Work Act 1974;
 - The Control of Substances Hazardous to Health (COSHH) Regulations 2002;
 - The Construction (Health, Safety and Welfare) Regulations 1996;
 - The Control of Noise at Work Regulations 2005
 - The Factories Act 1961;
 - The latest British and European Standards and EC Directives; and
 - Environment Agency Pollution Prevention Guidelines.
- 5.4 The facility will be designed to be suitable for the processes which will be carried out. A design life of at least 30 years will be provided subject to periodic maintenance (e.g. roadways and heavily used operational areas). The design proposals for the facility are detailed below.
- 5.5 The site will accept both bulk vehicles operated by Viridor and Waste Collection Authority waste collection vehicles. The site will also be capable of accepting Third Party commercial vehicles.
- 5.6 The site will be designed to accommodate the largest vehicles operating at the site and will comply with the recommendations set out in the Freight Association's design guide, 'Designing for Deliveries'.

- 5.7 All access roads, parking areas, circulation, loading and unloading areas will allow full turning and manoeuvring of the largest vehicle permitted to use the area concerned. The design of the layout will be verified using the Autotrack software package to simulate the vehicle swept paths for cars, ambulances, fire engines, service vehicles, refuse collection vehicles and heavy goods delivery vehicles to ensure that they can use the paved areas effectively.
- 5.8 The layout will make proper allowance for the safe passage of pedestrians around the site, including the provision of pedestrian footways, pedestrian lanes, pedestrian crossings, white lining, lighting and signage as appropriate.
- 5.9 Two main waste streams will be accepted and treated under the Contract. These are kerbside collected residual municipal waste and HWRC collected residual municipal waste. Each stream is transported to separate tipping areas and processing plants at the WTP.
- 5.10 Duty of Care documentation carried by incoming vehicles will enable site staff to direct each load to the correct plant when it arrives on site.

Buildings Design

MBT and HWRC Waste Treatment Buildings

- 5.11 The main MBT building will comprise a framed building and has been designed to accommodate the relevant MBT process equipment and the materials handling and storage requirements of the MBT process.
- 5.12 The HWRC Waste Treatment Building will comprise a separate steel framed building and has been designed to receive HWRC residual waste for processing/treatment as required.
- 5.13 The cladding walls will comprise Kingspan KS9000 MR and Kingspan KS 1000 CW panels with Kingspan Wall Lite Panels and Thespa-Meteor panels. The roof construction will comprise a steel composite panel system clad with Kingspan Kingzip insulated standing seam aluminium built up system with mill finish. Roof lights will cover 10% of the ground floor area. The roof structure will include means for the collection and disposal of surface water.
- 5.14 The reinforced concrete floor slab has been designed for a floor loading of 33kN/m² and to carry vehicle wheel loads of 100kN.
- 5.15 Fire escape doors and access doors for the facility's operators (non-vehicular doors) shall comply with the current Fire Regulations.

- 5.16 The main WTP building will be provided with a minimum of six operational vehicle access doors, and the HWRC Waste Treatment Building will be provided with a minimum of four operational vehicle access doors.
- 5.17 The external electrically operated roller shutter vehicular doors will have a minimum opening width of 5.0m and a clear opening height of 8.0m to allow the safe entry and egress of all vehicles entering the premises. Operation of these shutter doors will be via ground loop or overhead detection. The shutter curtains will incorporate transparent sections to allow natural light into the building, and have been designed with appropriate seals etc. to suit the negative pressure requirement within the buildings.
- 5.18 Personnel security doors will be fitted with panic release emergency escape mechanisms, and have been positioned in accordance with operational and emergency escape requirements. Doors and frames will be polyester powder coated steel doorsets. Ironmongery to suit BS8300 and Building Regulations approved document M.
- 5.19 Protection measures will be installed at each side of all operational vehicle access doors. The protection measures will protect door frames from damage in the event of collision with an operational vehicle. The protection measures will be highly visible to all operators of plant and equipment and heavy goods vehicles.
- 5.20 Push walls will be provided to enable waste to be picked up in the bucket of a loading shovel. The height of the push walls will be determined by the maximum volume of waste to be stored and the need to accommodate the static loads imposed by the waste mass and the dynamic loading applied by the operational plant and equipment.
- 5.21 The buildings have been designed to operate under induced negative air pressure conditions to prevent the release of fugitive emissions, particularly odours.
- 5.22 Welfare facilities will be provided at a central location within the main WTP building. The facilities will comprise two separate toilets and two wash hand basins. In addition, two separate standalone hand washing stations will be provided within the WTP building.

Biofilters

- 5.23 Adjacent to the southern façade of the MBT building, biofilters and a 27m high vent stack are proposed. The biofilters are enclosed structures, measuring approximately 8.6m high, located as shown on Drawing Number LE10104/EIA003B.

Administration Office and Education Facility

- 5.24 The two storey building will be constructed from a steel portal frame and clad with Kingspan composite flat profile PVF coated cladding (KS 600 MR, KS 1000 CW) with a stack bonded masonry finish.
- 5.25 A pitched roof based on the built up standing seam system manufactured by Kalzip with a milled aluminium finish will be provided.
- 5.26 A fire detector and alarm system will be provided.

Weighbridge Office

- 5.27 The weighbridge office building will be of block and render construction and the external finish will be selected to match that of the WTP processing buildings and the Education Centre. The internal layout of the weighbridge office is shown on Drawing Number LE10104/EIA 014. The facilities within the office will include welfare facilities, locker room, kitchen/canteen, unisex toilet and reception office and storeroom for the weighbridge operators.
- 5.28 A fire detector and alarm system will be provided.

Infrastructure Design

Access Roads, Aprons and Circulatory Areas, Footpaths & Car Parks

- 5.29 Access roads, footpaths and car parks will be constructed using flexible black top materials with a granular subbase over capping where required. Aprons and circulatory areas around the buildings will be of PAV2 reinforced concrete construction to BS EN206-1/BS8500 with a brushed surface finish, trowelled margins and expansion, contraction, longitudinal and isolation joints as required.
- 5.30 Kerbs, footway edgings and concrete channels will be provided adjacent to all paved surfaces to form the margin to the paved areas. All precast concrete units will conform to BS EN 1340-2003 and will be bedded on a concrete foundation and secured with a continuous concrete backing. The concrete for the foundations and backing will not be less than Designated Mix GEN0 or Standard Mix STI to BS 8500. Where stone, brick or other materials are specified, they will be bedded in accordance with the manufacturer's requirements.
- 5.31 Radius kerbs, edgings and channels will be used for all curves of a radius less than 12m. Angle kerbs will be used for internal and external 90° corners. Kerbs will be laid to the correct line and level within the following permitted deviations:
- Level: +/-6 mm;
 - Horizontal and vertical alignment: 3 mm in 3 m.

5.32 Roads will be laid to the correct line and level within the permitted deviations given in Table 5.1.

Layer	Roads, Aprons and Parking areas	Footways
Formation	+/-25 mm	+/-20 mm
Sub-base	+/-20 mm	+/-12 mm
Finished pavement generally	+/- 6 mm	+/- 6 mm
Finished pavement adjacent to gullies and manholes	+ 6 mm/- 0mm	+ 3 mm/- 0mm

5.33 White lines, road markings and signs on all access roads, parking, loading and unloading areas will be provided with appropriate signage to guide and inform drivers and pedestrians. Such road marking and signage will comply with the requirements of The Traffic Signs Regulations and General Directions, 1994 and the relevant chapters of The Traffic Signs Manual.

5.34 Road markings will be formed with thermoplastic material complying with BS EN 1871 and BS 3262. Reflectorisation will be uniformly applied using solid glass beads to BS 6088 Class B on wet paint film at a rate of 400 – 500 g/sq m.

Surface Water Drainage

5.35 The surface water drainage system has been designed and will be constructed in accordance with BS EN 752 and will comply with the Building Regulations.

5.36 Separate surface water systems will be provided to collect water from roofs and paved areas. All water from paved areas will pass through a suitable petrol interceptor prior to discharge to Wade Brook.

5.37 The surface water sewers have been designed so that there is no surcharge within the sewers for a 1 in 2 year storm event and no flooding in a 1 in 30 year storm event Any flood water occurring from storms in excess of the 1 in 30 year rainfall event will be retained on site until such time as it can safely return to the surface water sewers and be routed away from building such that it will not flood any building.

5.38 Surface water attenuation has been designed to cater for all storms up to the 1 in 100 year rainfall event plus 20 per cent for climate change.

- 5.39 Surface water design and flow modelling has been based on the Wallingford Procedure. A minimum self cleansing design velocity of 1 metre per second has been used for pipes flowing full.
- 5.40 The surface water drainage systems will be gravity systems.
- 5.41 All materials and components, including bedding materials, pipework, chambers, backfilling, and other ancillaries, will conform to relevant British Standards.
- 5.42 The surface water drainage systems will be coordinated with all other underground services, underground geotechnical works and the building substructure.
- 5.43 Manhole covers and other surface features will be incorporated into landscape areas where possible.
- 5.44 The surface water systems have been designed to enable testing, cleaning and maintenance procedures to take place whilst the plant is fully operational. The systems will be constructed in compliance with the Building Regulations. Full operational and maintenance manuals will be provided for the complete surface water drainage systems.

Foul Drainage

- 5.45 A separate foul water drainage system will be provided. The foul drainage systems have been designed and will be constructed to comply with BS EN 752 and with the Building Regulations.
- 5.46 To provide a self-cleansing velocity within foul gravity drains, the minimum flow velocity will be 0.75 m/sec at one-third design flow.
- 5.47 All materials and components, including bedding materials, pipework, chambers, backfilling, and other ancillaries, will comply with British Standards.
- 5.48 Manhole covers and other surface features will be incorporated into landscape areas where possible.
- 5.49 The foul water systems have been designed to enable testing, cleaning and maintenance procedures to take place whilst the plant is fully operational. The systems will be constructed in compliance with the Building Regulations. Full operational and maintenance manuals will be provided for the complete surface water drainage systems.

Fencing and Security

- 5.50 The site boundary will be secured by a 2.4m high galvanised steel Palisade fence, as shown on Drawing Number LE10104/EIA 003B. Drawing Number LE10104/EIA 009 shows the fencing detail.
- 5.51 A 24 hour CCTV system with Automatic Vehicle Number Plate Recognition will be installed at the site.
- 5.52 The CCTV system will:
- Monitor and record traffic/personnel movement on site;
 - Enhance personal safety on site;
 - Act as a deterrent to break-ins; and
 - Provide digital site usage data.

Weighbridges

- 5.53 Twin module weighbridges incorporating an Operatives office will be provided. Each weighbridge will be flush mounted and measure approximately 15m by 3m and will be suitable for weighing vehicles of up to 40 tonnes.
- 5.54 The weighbridge building will measure 9.4m by 3.8m approximately and will include the weighbridge operator's office, reception area, kitchen, unisex toilet facilities and a raised external access walkway.

Rail Head

Rail Sidings and Operations

- 5.55 The rail head has been designed to allow a train to be reversed into the sidings and shunted to distribute the wagons across the proposed three sections of the sidings. The empty containers will be removed from the train by gantry crane and replaced with full ones which will have been stacked at the sidings by a forklift. Drawing Number LE10104/EIA 003B shows the layout of the new rail head.
- 5.56 The rail head will comprise of a 3 turnout ladders, connecting to the existing track at the site boundary. This will lead into 3 tracks underneath an overhead gantry crane which will load and unload the rail freight containers.
- 5.57 The existing sidings, running to the north of the site will be retained and will reconnect to the new sidings by the construction of one turnout and approximately 170m of track.

- 5.58 The containers to be loaded or unloaded on to the rail wagons are typically 6 metre ISO sized containers of 33.2 m³ capacity.

Rail- Gantry Crane

- 5.59 A rail mounted goliath gantry crane will be provided with a lifting capacity of 20 tonnes. It will be capable of lifting standard ISO sized containers and be capable of stacking them up to three high by two wide along the sidings.
- 5.60 The gantry crane will span the entire width of the rail head and will have an approximate 8m cantilever on to the sidings to enable containers to be loaded or unloaded directly from the sidings on to the rail wagons and vice versa.
- 5.61 The gantry crane will be capable of travelling of up to 150m along the rail siding.

Lighting

- 5.62 Strategically placed lighting columns with low energy lanterns have been designed to provide lighting to a safe operational level with a minimum illuminance level of 50 lux throughout the operational area.

6 SCALE OF THE DEVELOPMENT

- 6.1 The site setting in relation to its surroundings is shown on Drawing Number LE10104/EIA 002A.
- 6.2 The WTP facility site will occupy an area of approximately 3.66ha, with the main process building having a footprint of approximately 159m x 131m, and a maximum height of approximately 18.6m. The main process building will be split into three main operational areas:
- Eastern area – reception of incoming residual waste;
 - Northern area – mechanical separation and processing of residual waste; and
 - Southern area – biodrying of the residual waste to produce a component of the Solid Recovered Fuel.
- 6.3 Drawing Number LE10104/EIA 010 shows the ground floor plan of the process building.
- 6.4 The stack associated with exhausting treated air emissions from the waste treatment buildings will be 27m high and will be located to the south of the MBT building.
- 6.5 The site office and education centre building will have a building footprint of approximately 39.4m x 26m, and will be circa 9.9m in height.
- 6.6 The weighbridge office/gatehouse, shown on Drawing Number LE10104/EIA 014, will have a building footprint of approximately 9.4m x 3.8m and will be circa 3.7m high.
- 6.7 The overall development, including hardstandings, will occupy the majority of the site area, with soft landscaping proposed around the office area. (Please refer to Drawing Number LE10104/EIA 003B).
- 6.8 It is considered that the scale of the development is appropriate and in-keeping with the adjacent industrial setting of the site.

7 SITE APPEARANCE AND LANDSCAPING

Site Appearance

- 7.1 The facilities will be designed to be in-keeping with other industrial buildings in the vicinity of the site. The visual impacts of the development have been assessed as slight beneficial as derelict buildings and structures associated with the former chlorine works will be replaced by modern, well designed buildings, in keeping with the industrial setting.
- 7.2 The ventilation stack, at 27m tall, is the tallest element of the proposals, and therefore the most visible. However the stack will not be as high as some of the existing structures on site and there are several higher buildings adjacent to the east of the site.
- 7.3 The finish of the MBT building will be as shown on the Drawing Number LE10104/EIA 029A – Visualisation.
- 7.4 Site lighting will be positioned where it will not be intrusive to the surrounding area and will be designed in accordance with current British Standards and ILE Guidance Notes for Reduction of Light Pollution.
- 7.5 The WTP buildings will be designed to require minimal maintenance and provide durability for a minimum period of 25 years. They will be suitably designed for their purpose as a waste facility, to withstand deterioration over time and remain functional and well presented for the design life.

Landscaping

- 7.6 Landscaping at the site has been designed for practical site use and to minimise the impact of the site on the surrounding area. The operational area will be hard landscaped, with concrete surfacing as appropriate.
- 7.7 The site currently consists of mainly concrete hardstanding between the disused buildings, with a few patches of vegetation. The proposals include the removal of any invasive weeds if found to be present on site.
- 7.8 In non-operational areas, soft landscaping in the form of low-maintenance turf and native shrub species, will be selected.
- 7.9 Low-maintenance landscaping will be selected to ease the upkeep of the site. Design of soft landscaping will be restricted to areas within the application boundary.

8 ACCESS

- 8.1 The site has good access to the primary road network with the A530 Griffiths Road leading to the A556 to the south. Access for Heavy Goods Vehicles (HGVs) from the north along Griffiths Road is prevented by low bridges. The site is accessed via a private estate road, shared with other users of the Lostock Works site. The private access road comprises two traffic lanes and has an adequate visibility splay, suitable for heavy goods vehicles at the junction with Griffiths Road.
- 8.2 There is a 60 metre diverging taper from Griffiths Road into the access to allow for deceleration of HGVs. The turning radii at the junction are sufficient to accommodate the large articulated HGVs that currently access the units adjacent to the site. It is considered these are suitable for the proposed use.
- 8.3 A rail link to the rail network will allow for the Solid Recovered Fuel (SRF) produced at the facility, to be transported from the site by rail, reducing the need for road transport.
- 8.4 The site will be simply laid out with careful consideration given to car parking and operational areas. It is proposed that a total of 43 parking spaces will be provided, of which two spaces will be dedicated to disabled drivers, allowing for visiting staff and as well as regular employees. Twenty three of the spaces will be located adjacent to the site office, with the rest located in an overspill car park in the south of the site, adjacent to the HWRC process building. One coach parking space will also be provided for use of visiting groups to the education centre.
- 8.5 There are public bus services that operate along Middlewich Road to the south of the site, and along Manchester Road to the north of the site, therefore making it possible for employees at the facility to use public transport to get to and from work. Further detailed information on transport to and from the facility can be found within the Transport Assessment and the Framework Travel Plan, attached as Appendices 11.1 and 11.2 to Volume 2 – Environmental Statement, respectively.

9 CONCLUSIONS

- 9.1 This Design and Access Statement supports Viridor's planning application for a Waste Treatment Plant near Lostock Gralam, Cheshire.
- 9.2 The key objective for the development is to meet targets for recycling and diversion of material from landfill as set out under the Cheshire Waste Disposal PFI Contract and the Cheshire Consolidated Joint Municipal Waste Management Strategy. This site has been identified as a key strategic site for the treatment of residual waste to serve the Cheshire West and Chester, and Cheshire East areas.
- 9.3 The site is located in an industrial area adjacent to preferred sites under the existing Cheshire Waste Local Plan and is therefore considered suitable for the proposed waste treatment use.
- 9.4 The site's strategic location central to the waste collection areas in Cheshire West and Chester, and Cheshire East, and its connection to the national rail network enabling transport of SRF by rail, make it an ideal location in reducing the number of road miles travelled.
- 9.5 The design of the proposed development aims to create an efficient and aesthetically suitable solution for the treatment of residual waste in Cheshire West and Chester, and Cheshire East.



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