DESIGN AND ACCESS STATEMENT

Introduction

1.1 This Design and Access Statement has been prepared to describe Viridor's architectural vision for the project.

1.2 The document justifies and explains the design rationale of the proposed development. It considers the context behind the proposal and provides a description of the site and its constraints and opportunities. The statement then focuses on the design principles that have been followed. The proposal is then described, with the text providing an overview of the amount and use of development being provided, an indication of how it is to be arranged on site and a summary of the scale and appearance. The statement then focuses on landscape, access, drainage and sustainability matters and gives an indication of how the development is to be brought forward and its quality controlled.

1.3 This design statement has been prepared in accordance with current government guidance and in parallel with the Commission for Architecture and the Built Environment's (CABE) document *"Design and Access statements: How to write, read and use them"*

1.4 This document supports the planning application to develop the Ardley EfW Facility for Viridor Waste Management (VWM) on land at Ardley Landfill. The full description of development is set out below for clarity.

"The construction and operation of an Energy from Waste (EfW) and combined heat and power Facility and associated office, visitor centre and bottom ash recycling facilities with new access road and weighbridge facilities and the continuation of landfill operations and landfill gas utilisation with consequent amendments to the phasing and final restoration landform of the landfill, surface water attenuation features and improvements to the existing household waste recycling facility"

1.5 This Design and Access Statement should be read in conjunction with the following supporting information:

- **Planning Supporting Statement (Volume 1)**
- **Drawings (Volume 2)**,
- **Environmental Statement Chapters (Volume 3)**
- **Associated Technical Appendices (Volume 4)**
- Planning Application Forms;
- Sustainability Statement;
- Statement of Community Involvement; and

- Non Technical Summary.

1.6 This Statement is a tool to explain and justify the design and access principles and concepts on which the development proposals are based and on how these are reflected in individual aspects of the scheme.

Energy from Waste Facility

1.7 The proposed development would consist of the following:

1.8 The proposed development is intended to provide an Energy from Waste (EfW) facility capable of dealing with 300,000 tonnes per annum (tpa) of municipal, commercial and industrial waste. It is designed to handle Oxfordshire's residual municipal waste arisings which have not been recycled or composted (for the purposes of the assessment it has been assumed that the proposed EfW will receive 180,000 tpa of municipal waste and 120,000 tpa of industrial and commercial waste). The landfill would continue to operate alongside the EfW facility and so would the HWRC.

1.9 The main elements of the EfW are set out below;

- waste reception hall with storage bunker, shredder[1] and a waste feed system;
- boiler hall with a grate, combustion chamber and a heat recovery boiler;
- turbine Hall with Steam Turbine for generating electricity;
- flue gas treatment hall with equipment to clean combustion gases;
- facility for discharging and loading APC residue silos and other ancillary equipment;
- twin chimney stacks to discharge the treated flue gasses into the atmosphere;
- an air-cooled condenser (ACC) for cooling and recycling steam from the generating process; and
- ancillary areas, control room, Central Processing Unit (CPU) room, bulky and light storage areas and electrical room, workshops etc.

1.10 In addition to the above volumes and components provision is to be made for the following;

- Visitor Centre to enable community participation and the encouragement of recycling and waste reduction in the county;

[1] This would be used to break down any bulky waste received from Refuse Transfer Stations which would otherwise clog or cause damage to the EfW system.

- Offices for the staff of the EfW;
- ancillary accommodation for staff welfare, changing, showers etc;
- a staff and visitor's car park, a coach and mini-bus standing. Cycle spaces to encourage a reduction in car use;
- weighbridges and gatehouse available at the secured entrance to the facility that would be staffed when necessary;
- storage for the collection, recycling and rain water run off attenuation measures;
- site access roads with lighting, footpaths and vehicle manoeuvring areas;
- site excavation, filling and profiling;
- landscape and security fencing; and
- additional ecological habitats.

Bottom Ash Facility

1.11 The EfW will also have an on site bottom ash recycling facility which will provide processing and storage capacity to enable the recycling of up to 75,000 tpa of bottom ash as recycled aggregate.

Re-modelling of existing landfill restoration scheme

1.12 In order to accommodate the proposed EfW at the Ardley site the proposed development also provides for the re-modelling of the existing landfill restoration scheme and proposes a new southern access to serve the EfW and landfill. Further details of this can be found within the Planning Supporting Statement (Volume 1), Drawings (Volume 2), Environmental Chapters (Volume 3) and Associated Technical Appendices (Volume 4).

Household Waste Recycling Centre (HWRC)

1.13 The Household Waste Recycling Centre will continue to be served by the existing northern access and will be upgraded as part of the proposed development. The main components of the HWRC would include:

- construction of new reinforced concrete retaining walls to tie into existing;
- relocation of site offices;
- removal of the site weighbridges and foundations;

- construction of new concrete hardstanding;
- additional site drainage, fencing and bollards; and
- new site signage and road markings.

OPPORTUNITIES AND CONSTRAINTS

1.14 The opportunities and potential constraints of the development were studied prior to embarking on the concept design to establish the character of the area and the visual envelope of the development. This section identifies the main landscape and visual characteristics of the existing site and adjacent Oxfordshire landscape. It has been used to inform and help formulate the development proposals, and minimise the potential effect of the development within its local rural landscape context.

The site context, its landscape and visual characteristics

Site Context

1.15 The application site is not within a designated landscape area however interestingly prehistoric dinosaur footprints have been found within the basal limestone deposit. Further exploration of the site is on-going and an explanation of palaeontology at Ardley is set out within Chapter 11 of the Environmental Statement.

1.16 The site is within the 'Woodland Estatelands' landscape area of the Oxfordshire Wildlife and Landscape Study (OWLS). The study identifies the local landscape as having the following 'key characteristics' .

- rolling topography with localised steep slopes;
- large blocks of ancient woodland and mixed plantations of variable size;
- large parklands and mansion houses;
- a regular shaped field pattern dominated by arable fields; and
- small villages with strong vernacular character.

Landscape Features

1.17 A variety of landscape features were identified prior to commencing the design of the EfW and associated works.

1.18 The landscape varies in topography from around 90m AOD to the southeast of the application site, to over 130m AOD around the area of Heyford airfield

to the northwest. To the west the landscape descends into the Cherwell Valley (around 70m AOD).

1.19 The local landscape generally has gradients of around 1:50, with steeper gradients of up to 1:30 along some of the local streams and on the edges of the Cherwell Valley.

1.20 Middleton Park is located 1.4km to the south of the application site, but is generally screened by woodland and intact hedgerow vegetation.

1.21 The village of Middleton Stoney is located around 1.7km to the south and is generally screened by vegetation around the northern edge of the village.

1.22 The village of Bucknell is located 1.2km to the east, with the M40 and local railway line lying between.

1.23 The village of Ardley is located some 850m to the north, with the bulk of the landfill site between the village and the proposed EfW development in the SE corner of the application site.

1.24 The village of Upper Heyford is located over 2km to the west adjacent to the airfield with the B430 and open fields located in between.

1.25 The site is bordered by the local railway line to the north, B430 to the west, Gagle Brook to the east with the M40 motorway around 350m beyond the Brook. To the south there are agricultural fields that have existing permission for mineral extraction – this area of land is known as Smith's quarry.

1.26 There is an existing permission for landfill restoration. This scheme incorporates a small hill approximately 1200m north to south and 750m east to west, and rising to a height of 128m AOD in comparison with an average level of around 109m AOD around the edges of the application site. The average gradients for the restoration would be approximately 1:25, with the steepest gradients around 1:15. The approved restoration scheme includes the planting of a large block of woodland slightly south of the highspot on the landfill landform, with a rectilinear field pattern.

Visual baseline

1.27 Please refer to Visual Landscape drawings:

- Viewpoint A Public Right of Way near Upland Cottage;
- Viewpoint B Ardley Rd, M40 Bridge;
- Viewpoint C Right of Way off Middleton Road;
- Viewpoint D Middleton Road, M40 Road Bridge;
- Viewpoint E Public Right of Way near Gaggle Brook;
- Viewpoint F B4030, M40 Road Bridge;
- Viewpoint G Public Right of Way near Trowpool Spinney;
- Viewpoint H Middleton Road, Bucknell Lodge;
- Viewpoint I B4030, Middleton Stoney;
- Viewpoint J Public Right of Way, Dewas Farm;
- Viewpoint K Ardley Road B430;

- Viewpoint L B4030 near Middleton Park;
- Viewpoint M Ardley Road, B430;
- Viewpoint N Chilgrove Drive, Upper Heywood;
- Viewpoint O Camp Road, near Public Right of Way;
- Viewpoint P Public Road off Sommerton Road.

1.28 The generally open, undulating, agricultural landscape allows views across the adjacent landscape towards the applications site. These views are however interrupted by hedgerows and woodland, which limits the scope of the view.

1.29 Views from the north are restricted by the trees and vegetation of Ardley Wood, the local railway line, and a number of substantial hedgerows. No clear views have been identified from the village of Ardley. Viewpoint A illustrates the type of views possible nearer to the site, where less intervening vegetation exists. Viewpoint B illustrates the potential for views from elevated positions such as the bridge of the M40 at this location. Views from this direction include the restored sections of the landfill landform within the northern part of the application site.

1.30 Views from the east look across the M40, which forms a distractive element within the existing view (see Viewpoint C). Beyond the M40 the vegetation along Gaggle Brook forms a broken screen to the landfill operations. The landfill landform forms part of the skyline for views from this direction, and the active tipping area of the landfill operations is currently visible.

1.31 Views from the south are similar to views from the north with closer viewpoints such as Viewpoint G having views of the landfill development above intervening hedgerows, but with more distant views such as Viewpoints H, I (Middleton Stoney), and J, having higher amounts of screening due to greater levels of intervening vegetation.

1.32 Views from the west occur along the B430 (Viewpoint K) due to short clipped hedgerows to the south of the application site, but are screened by vegetation along the western site boundary adjacent to the site (Viewpoint M). Views from Middleton Park are generally screened by woodland and hedgerow vegetation, although Viewpoint L shows a view from the B4030 at one of the few breaks in the adjacent hedgerow vegetation. A slight rise in the landform directly west of the application site reduces visibility and emphasises vegetation screening for views from the areas of Viewpoints O and N.

Visual assessment

1.33 The permitted landfill restoration has been considered and its character has been used as the basis for the revised landfill restoration. Important aspects of this are the woodland planting, rectilinear field pattern and undulating landform and gradients.

1.34 Vegetation is an important aspect in the screening of the existing landfill and operations. However, the adjacent open agricultural landscape results in the

final landfill landform having the potential to produce significant screening to the proposed EfW with its associated emissions stack.

1.35 The landfill landform will therefore reduce the visual effect of the proposed development from the northwest, north and northeast. However, the proposed position within the southeast corner of the application site will result in greater visibility from the south and southeast.

Design principles

1.36 In taking these opportunities and constraints together with the clients brief, the following broad design principles were set so that the EfW design would be:

- Aspirational: establishing itself as an excellent facility and a building that is a positive influence on its locality
- Sustainable: minimising its effect on the environment and on climate change, for the benefit of future generations.
- Secure: providing a safe environment for staff and visitors.
- Sympathetic: responding to and complementing its setting.
- Welcoming: providing the opportunity to visit.
- Good design: be distinctive, performing its required functions fitting into its setting and surroundings in an appropriate manner.

Design strategy

1.37 In addition to these broad points of principle the design team has developed a detailed strategy for the site. An outline scheme for the most efficient and economical arrangement of the key elements of the EfW was designed and studies were undertaken to establish its optimum location within the site taking account of the following;

- retaining and optimising the land fill capacity and operational arrangements during the construction and operation of the EfW;
- minimising the land take, excavation and fill requirements of the base level of the EfW facility together with its peripheral access roads;
- keeping the building form simple to respond to the scale and form of the surroundings and distant views of the site;
- allowing for the movement requirements of large 16.5m long articulated lorries including analysis of gradients and turning circles and the provision of a peripheral emergency route;
- potential cycle access and cycle parking facilities;

- providing staff, visitor parking and disabled parking close to the entry point and gatehouse in the interest of safety;
- responding to the topography of the site and the potential for visual impact;
- reviewing the site ecology, aiming to achieve the preservation of species and the potential for improvement;
- the need for rainwater collection, re-cycling for use in process plant and water run off attenuation measures to control release to local watercourses;
- the need for sustainable construction and use of materials;
- the need for a gatehouse and weighbridge and queuing availability off the public highway;
- the need for a safe and secure site;
- the visual impact of a large scale facility on local people living in the villages around the site, the height of the EfW, in particular the prominence of the boiler hall and the chimney within the visual envelope; and
- the visual impact from the M40 an important national road route to the east of the site;

The Design Response

1.38 The facility is focused on the integrated construction of two main operational functions;

- the EfW itself comprising Waste Reception, Combustion, Flue Gas Cleaning, Turbine Hall, Chimneystack, Air-cooled Condensers, Administration and Visitor's Centre; and the Bottom Ash Treatment and Storage Facility (BAF)
- the amendments to the landfill restoration landform to accommodate the EfW.

1.39 The proposal also includes ancillary buildings and structures, such as the gatehouse, access and operational roads and their new junction with the public highway.

1.40 Running in parallel to the proposals of the EfW facility the HWRC located in the northern section would also benefit from improvements

Location within the site of EfW/BAF

1.41 The EfW facility is located towards the south of the site on a north west south east axis as shown on the architect's drawing EfW–PO-09 (Volume 2

Planning Drawings). The IBA function is aligned on an east to west axis to the south of the EfW. The National Grid co-ordinates of the centre of the stack are 454185.336 easting and 225421.548 northing.

1.42 The building is set on a platform circumscribed by the road access system. The floor level of the proposed EfW has been located close to the base of the mineral workings on the application site at 100m AOD to maximise the benefit of screening provided by the existing mineral void.

1.43 The base level of the waste bunker is set at -12.5m below base at 87.5m AOD.

1.44 These decisions on location, orientation and base level:

- enable queuing facilities both in and out of the facility and avoids queuing on the public access roads to the site (see DWG 3/15 Planning Drawings Volume 2)
- minimise the land take and reducing loss of void space to the landfill operation;
- create a close link between the building and the new, landscaped, water attenuation management scheme in the natural and optimum south east corner of the site which will harvest rain water for recycling and control the water runoff to local streams;
- enable the new contouring of the landfill reclamation scheme to wrap around the building form to help its integration into its local setting;
- reduce the visual impact of the building to local people in the surrounding villages and to traveller's on the M40 motorway.

Alternative options for the Bottom Ash Facility

1.45 The EfW building is aligned to enable the process equipment to flow naturally in a linear form. The IBA pre-storage and treatment hall continues this linear arrangement with the longer term open storage areas constructed as wings at right angles to the main axis of the plant. This arrangement allows a phased development if required.

1.46 The proposed concept design envisages the IBA facility providing a covered pre-storage and treatment hall with open wings either side providing a long term storage facility prior to the material being transported off site for reuse in the construction industry.

Size and Scale

1.47 The overall size of the EfW facility is 229m long, varying from 70m to 38m wide and from 7m to 29m in height to the apex of the main roof and 36m to the apex of the fin from a base platform level set at 100m AOD. The stack is 82m above base level, 182m AOD.

1.48 The Bottom ash facility is 176m long and 60m wide and the total area available within the encompassing walls is 12,600m2.

1.49 The modifications to approved landfill levels have been proposed to maximise screening and minimise landfill void lost to the location of the EfW facility. The proposed new contours include a 5m high increase to the southern landfill from 122m AOD to 127m AOD. The northern section of the landfill is permitted to a post settlement height of 128m AOD so there would not be an increase in the height of the landfill overall.

1.50 The minor extension of the HWRC utilises previously developed land released by the relocation of the landfill offices and weighbridge.

Appearance

1.51 The EfW Facility requires a distinctive, high quality and attractive appearance and a considerable amount of effort has gone into how it will look. In considering this the design team has recognised the challenges and opportunities that a proposal of this size and scale brings. The design team has also considered the buildings appearance in relation to its site and surroundings and the views of it from local areas.

1.52 There will be interrupted views, through existing trees and vegetation, of the EfW from long distance, as well as medium and short distances. The latter include glimpse views from local villages and a clear view from the M40 Motorway. It is, therefore, Viridor's intention to deliver an elegant building form with an interesting, well detailed, high quality external skin.

1.53 The design strives to synthesize the functional requirements of the process technology and the need to enclose, drape and screen this with the need to consider the visual impact on the local communities by providing an attractive, sustainable, environmentally friendly, exemplar waste management facility that fits well into its rural setting, enhancing the image of its location and having features that contribute to its sense of place.

1.54 In striving to design a building harmonious with its site and surroundings, the EfW building has been conceived as a bold organic shape sweeping out of, yet being an integral part of the undulating local landscape.

1.55 Given the size of the proposals, the aim is not to camouflage, but integrate with the surrounding landscape setting and at the same time celebrate the EfW's function. The architecture is therefore light, bright, accessible and sustainable.

1.56 The shape emerges from the creation of a synergy between:

- a technical study of the options for the size of the technology available to process the throughput capacity of the plant;
- the operational management requirements of the various activities and their location possibilities;

- careful analysis for the shaping options for the “wrapping” of the technology.

1.57 The shape naturally emerges from the plan form that encloses the process, generating the curved facades and with the flowing roof curvatures; a simple organic form is created. The enclosure of all the waste processes minimises dust pollution and provides residual noise attenuation.

1.58 The main roof of the EfW, a long slow double curve, sweeps down and links with the new land form to the north, sweeping down again as the main roof over the tipping hall and reversing up over the IBA hall to the south (see DWG EFW-PO 13 -20 Series VOLUME 2)

1.59 The main roof has been lowered on either side of the boiler hall and a “lantern” is created to float over the main boilers maintaining the enclosure of the building envelope.

1.60 The shape recognises the importance of views into the site. The layering of the facades reduces the apparent visual impact of the EfW when seen from the variety of views around the area. It is designed to integrate the three dimensional form of the EfW into the enveloping shapes of the proposed landfill reclamation scheme and to reflect the contextual long views of the rolling Oxfordshire countryside, with its blocks of ancient woodland set on top of the promontories. The organic form and orientation of the axis of the facility will help its integration into the context of its wider visual envelope. The translucent panels introduced into the main façades bring light to the interior and help reduce the apparent height of the facility.

The Offices and Visitor Centre

1.61 The Offices and Visitor Centre are linked with the workshops, storage and control room of the EfW located on the south side of the building. This location was considered to be the most appropriate for the following reasons;

- to give staff the best working environment over the lifetime of the facility. The offices are provided with a canteen, changing and showering facilities for staff and operatives;

- to have good natural lighting and ventilation and to produce an energy efficient environment for the workers and visitors;

- to ensure the efficient operation of the process and staff use of resources by linking the offices with the workshops, storage and control room volumes of the EfW;

- the integration of the EfW offices and the Visitor Centre provide an economic space management solution giving flexibility of use between the functions initially and for the future running of the EfW facility over time;

- the integration of the EfW offices and the Visitor’s Centre to produce an economic space management solution giving flexibility of use

between the functions initially and for the future running of the EfW Facility over time; and

- to create a significant counterpoint to the main façade of the EfW. The curved projecting form brings the main EfW building down to a human scale at the point of entry to the facility itself.

1.62 The offices are arranged on three floors to accommodate (see DWG EFW-POR-14 Architecture and Planning Solutions VOLUME 2)

- on the ground floor will be EfW Facility welfare provision and ancillary accommodation (Gross Area 450m2);
- on the first floor will be the EfW Facility offices providing reception area, general office space and individual office space for managerial personnel (Gross Area 450m2); and
- on the second a visitors centre comprising a reception and exhibition space, viewing gallery with refreshment facilities, a seminar room for 40 people, two meeting rooms and toilets (Gross Area 450m2);

1.63 The offices are provided with a canteen for operatives and the Visitor Centre will have dual use meeting rooms and an audio-visual seminar room on the second floor with views over the boiler hall and over the Oxfordshire countryside.

1.64 The offices are designed to have good natural lighting and ventilation which will produce an energy efficient environment for the workers and visitors.

1.65 The integration of the EfW offices and the Visitor's Centre produces an economic space management solution and gives flexibility of use for the future running of the EfW Facility over time.

1.66 The site will not be available to visitors on a continuous open "turn up" basis. Visitors will be welcomed by arrangement to the Visitor Centre to view the exhibition material, view the plant from the boiler hall and following an introductory seminar, visitors will take guided tours along safe routes throughout the facility. The interior of the plant and its activities cannot be seen from any one location being approximately 229m long, up to 70m wide and planned with the three large main halls of tipping bunker, boiler and flue gas treatment. There is safe access to the control room at high level; from here the activities in the tipping hall and the bunker can be seen along with the technology controlling the plant. There is further safe access to the boiler hall and the flue gas treatment areas including an awesome view into the furnace at high level.

1.67 Visitors will be provided with a full experience of the overall scale of the operation.

The Air-Cooled Condenser (ACC)

1.68 The ACC, which can be a major visual intrusion if left in its raw state, has been set at right angles to the EfW in its most efficient configuration.

Designed as a large freestanding piece of sculpture it is located at the north eastern end of the EfW, and draped with a “champagne” coloured perforated screen.

Chimney stack

1.69 The chimney stack is separated from the building form. It can be seen from many vantage points around the area and has been specifically designed to be an attractive local feature, more columnar or tower rather than industrial chimney. It will become a landmark around the area.

1.70 The height of the chimney stack would be 82m.

Subsidiary buildings

1.71 Being ancillary structures with a support function, it is considered that the gatehouse (DWG EFW-POR-21 VOLUME 2 Architecture and Planning Solutions) and the weighbridge should be of simple, low-key design, compliant in design to the main building.

Materials

1.72 The acceptability over time of the appearance of the complex will depend on the ability of the materials of the building envelope to maintain their “as built” appearance over time.

1.73 The building materials selected above have been chosen to provide the following characteristics:

- maximum reliability and stringent weather tight performance at height;
- long life;
- economic and with the capacity to be used innovatively;
- light weight and easily mechanically fixed to enable the frames to be clad rapidly following erection to permit undercover working and protection to the internal plant and machinery at the earliest opportunity;
- self-cleaning surfaces to reduce the frequency of maintenance;
- a high quality design appearance produced by the precision of their form and finish as indicated in the concept drawings (SEE VOLUME 2 Drawings);
- glare free, diffused natural lighting to provide a good working environment for staff;
- ability to complement the strong concept when viewed from a distance and due to their modular nature, effective detailing and textures even more interest at medium and short range;

- design and construction systems able to ensure the air tightness of the external envelope; and

- safety systems for construction and maintenance (especially for working at height on the roof areas).

1.74 The scale of the building means that care will need to be taken to reduce risks to the construction and maintenance workforce both during the design, construction and maintenance of the building over its life cycle.

1.75 These characteristics of materials will be incorporated into the employer's requirements and the design risk assessment of the CDM documentation.

Roof

1.76 A Kalzip aluminium standing seam roof will be used with translucent panels located to provide additional natural light in key areas

Translucent Façades and Natural Light

1.77 A key design principle is the provision of natural lighting for the operation of the plant and for the benefit of the workforce.

1.78 Translucent polycarbonate walls together with the translucent roof panels provide daylight to locations where vehicle movements are taking place within the building envelope. The translucent areas of the façade are designed to give an attractive finely graded appearance; the hue of the panels will vary along the length of the façade through delicate greens. The walls will change appearance in fluctuating light conditions through out the day and night. At night the panels limit light transmission and minimize light spillage to the outside of the building. The material whilst translucent limits the direct type of light spillage that is always associated with glass curtain walling (DWG EFW-POR Series VOLUME 2 show the Translucent facades on the EfW)

1.79 The material used for all translucent panels will be Danaplon polycarbonate in pale sea green colour (16mm 1040 reverse fixed).

1.80 Although this material is not well known this country in the form used here it has established itself through the manufacturers named above on innovative and award winning projects in this country and abroad:

- Zenith de Limoges France by Bernard Tschumi Urbaniste;
- Laban Centre England by Herzog & De Muerren;
- Portsmouth EfW England by Space-Architect.

Opaque facades

1.81 The opaque wall above the base of the facility will be Corus Prisma steel sinusoidal sheeting coloured metallic silver to match the roof. The cladding will be laid vertically to complement the flowing general form of the building

and enable these elements of the façade to gently vary their colour in the light.

1.82 The opaque areas of the façade are as follows:

- The base of the facility is a continuous reinforced insitu concrete wall with smooth formwork surface with exposed panel joints. The enclosing walls of the bottom ash facility continue this base layer. This wall will be established with vertical climbing plant material to introducing organic matter into the architectural language of the proposal.

- This base band provides a “language” for the introduction of ventilation louvres and openings at points where they will be required by the detailed design.

- The “band” of the facade above the vertical garden will be clad Corus Prisma steel sinusoidal sheeting coloured metallic silver to match the roof. The cladding will be laid vertically to complement the flowing general form of the building. The intention is that the combination of the positively angled wall panels and the aluminium finish for the roof will give the impression of a carved organically shaped solid block floating above the natural “living” base.

- The lantern to the roof is formed out of natural aluminium louvres and translucent green panels. It will float over the roof much as the blocks of ancient woodland sit on top of the rolling topography of the ‘Wooded Estatelands’ landscape area. The louvres will be of a colour match to the translucent panels. (elevations EfW-POR-17, EfW-POR-18, EfW-POR-19 & EfW-POR-20).

Offices and Visitor Centre

1.83 The materials proposed for the offices and Visitor Centre will bring interesting shapes, textures and colours to the medium and short distance views of the building at the entrance to the facility. Their smaller geometric form will provide a smaller scale and detailed interest to the near views that contrasts with the large form and scale of the main façades.

1.84 Straw coloured Kingspan KS 1000MR micro rib is intended to be used for the walls with a Kalzip standing seam aluminium finish roof. The fenestration being a Seufert-Niklaos GMBH glazed curtain wall with laminated wood structural members and fronted with a Levolox brise soleil (See DWG EFW-POR-14 VOLUME 2)

Air cooled condenser

1.85 The ACC will be draped with a “champagne” coloured screen constructed of perforated Kalzip with an integral wind wall in Corus prisma steel sinusoidal sheeting.

Parking and Pathways

1.86 The parking areas and pathways to the offices and Visitor Centre are formed using concrete paving blocks in attractive grid patterns with contrasting colours and textures from the parking and pathways to the offices is considered appropriate. Provision has been made for disabled parking at the EfW facility.

Gatehouse and weighbridge

1.87 The materials chosen for the gatehouse and the weighbridge reflect those chosen for the main building. It will have a one-metre base of modular metal panels a continuous laminated timber and glass façade to light the interior topped by a deep horizontal fascia again in metal panels that incorporate a continuous brise soleil to reduce heat transmission.

Proposed Landscape Strategy

1.88 The floor level of the proposed EfW has been located close to the base of the mineral workings on the application site at 100m AOD to maximise the benefit of screening provided by the existing mineral void.

Landfill Restoration

1.89 The proposed modifications to the final landfill landform have been designed not only to make space for the building footprint, but also to envelope the building and provide additional screening to ground level operations and lower building levels from the south and southeast.

1.90 Woodland planting will be located along the crest of the final form of the landfill reclamation to maximise screening of the building from the northwest and north. This woodland planting would be extended down the landfill landform as it envelopes the EfW location to maximise screening for views from the east, south and southwest.

1.91 A rectilinear field pattern would be established for the majority of the restored landfill site.

The EfW site in general

1.92 The landform around the EfW will form a natural bowl shape. Woodland planting will follow the bowl shape of the landform rather than enforcing unsympathetic and contrary rectilinear patterns. Blocks of planting, trees and hedges are included around the bank of limestone grassland. These would create a diverse range of habitats to boost the ecological value of the proposals and mirror the complexity of the EfW, helping to integrate it into the scene.

1.93 The bowl shaped area will therefore be restored and managed to create a limestone grassland habitat within enveloping woodland planting, as a backdrop to the proposed EfW.

1.94 The design will also create a metaphoric link with the dinosaur footprints that are recorded in the basal limestone. Sections of rock face along the southern edge of the existing mineral extraction would also be retained to provide a similar link to the geological parent material.

1.95 The attenuation lagoons will be designed to include footprint type structures, whether as permanent ponds, ground water infiltration areas or dished ephemeral water bodies.

Landscape adjacent to the EfW Facility

1.96 A high quality landscape treatment has been provided to the frontage of the EfW. This will alleviate the effect of the urbanising influence of the car park within the wider setting. The car park and frontage to the building are designed as an integral part of the landscape treatment and ensure pedestrian movement is not determined and restricted by vehicular movement requirements. Further development of the prehistoric theme is proposed including the use of bold planting using species with prehistoric appearance. Tree planting and shrub planting will provide strong definition and legibility enabling integration of the car park into the wider setting.

1.97 Trees align the road and car park spaces comprising indigenous species and include fastigate cultivars such as Betula pendula and Prunus spinosa together with a number of exotic species of prehistoric character. The trees and shrubs are chosen for their aesthetic quality, the locality, soil type and are native to the local landscape.

1.98 The open limestone grasslands surrounding the plant are to be seeded with a low maintenance grass mix, with occasional benches that will be used for visitors and workers.

1.99 The EfW/BAF would thus represent modern technology within an ancient prehistoric environment.

Sustainability

1.100 Viridor is committed to sustainable buildings and will ensure that the facility meets high standards. In addition to the EfW the new improved HWRC will also encapsulate modern layout and design standards.

1.101 Planning Policy Statement 1 (PPS1) - Planning and Climate Change, was published in December 2007, it is centred around the objective of reducing carbon emissions from all new development as well as ensuring that new developments are tolerant of predicted climate change.

1.102 A primary objective of the development team has been to address sustainable building principles from the earliest concept stage. Viridor will ensure that this objective is carried through to the detailed design and construction stages as a fundamental design requirement.

1.103 Key issues including those discussed previously in this Statement are summarised as follows:

- The use of residual waste following re-cycling to generate steam and power;
- the use of ground granulated blast furnace slag as a replacement for Portland cement in the concrete mixes for the works;
- the collection of water in tanks and the water attenuation ponds and its re-use within the process equipment, the offices and ancillary accommodation;
- the principles of low energy design for the design of the offices and visitor centre; and
- the use of natural light and ventilation in the EfW.

1.104 Neither the main EfW nor the bottom ash building will be provided with space heating or cooling systems since this is not a requirement of their function.

Principles of low energy design

1.105 Established principles of low energy design have been used in the design of the offices and Visitor's Centre including the following:

- The depth of the building is 12m to maximise the potential for natural lighting and ventilation;
- The curved, insulated, laminated timber framed, glazed curtain wall of the west and south façade works as a passive solar collector in colder months. A curved timber brise soleil to this facade reduces the cooling requirements in hotter months by protecting the glazed curtain wall from excessive solar gain;
- Walkways are incorporated into the brise soleil at floor levels to enable safe and easy cleaning of the façade
- To reduce cooling requirements the structure will be of reinforced concrete with exposed concrete soffits to the floor slabs. These soffits will form the ceilings;
- The curved east wall of the offices and the east wall will be constructed in Kingspan KS 1000MR and insulated;
- The energy requirement of the offices is generated on site by the EfW;
- The construction methods and systems will reduce air leakage to a minimum. The building envelope will be to or in excess of the new airtight standards required by the building regulations; and
- Façade greening will be incorporated on the brise-soleil. This planting will contribute to reduced heat loss and heat gain by the structure.

1.106 The Employers Requirements of the Engineering Procurement Contract will require the detailed design to achieve a good BREEAM[2] rating.

Water harvesting and management

1.107 The EfW building is designed with a sustainable drainage management scheme. It re- uses rainwater following collection in tanks within the building envelope for use in the process plant. Water will also be collected in a small pond adjacent to the boiler hall for use in the event of fire on site. In addition water attenuation lagoons and small ponds are located to the south east of the EfW. They are designed as an area for water attenuation to protect the EfW facility from 1/100-year storm, to allow controlled release into the substrate by infiltration and into the local watercourses.

Sustainable Materials

1.108 Materials selection for all buildings has also been informed by sustainability principles, in terms of the long-term performance of the materials and the integrated lifecycle management programmes of the manufacturers. Concrete, steel, aluminium and polycarbonate, are the principle materials used and can all be recycled. Selection will avoid the use of construction materials which contain Chlorofluorocarbons (CFC) or which use CFCs in their manufacture.

1.109 Recycled aggregates or masonry will be used for structure and slabs where practicable including base material for the construction of the site access roads.

1.110 Ground Granulated Blast Furnace Slag (GGBS) will be considered for all concrete works during the detailed design stages as a replacement for Portland cement in concrete mixes to reduce carbon emissions. The decision on its use will be geared to the acceptability of the suppression of “strength gain” and programmatic issues such as whether the major concrete elements are to be constructed in summer or winter.

1.111 The Kalzip standing seam roof and steel wall cladding is produced in a sustainable closed loop process. Research shows that aluminium can be recycled infinitely with no loss in performance. The benefits of recycling aluminium lie with its high scrap value and low energy requirements in the recycling process, only 5% of the energy required in the original primary process is required for repeated recycling. The material has a long life, the Kalzip system is demountable and at the end of the buildings life it can be unzipped and recycled with no loss in volume or quality.

1.112 The main buildings have steel frames and cladding. Steel is produced in a “sustainable loop”. It can be recycled again and again without degradation

[2] Building Research Establishment Assessment Method

and it is probably the most widely recycled material in the world with over 354MT recycled annually through a well-established infrastructure.

1.113 The translucent polycarbonate panels have low maintenance characteristics and are virtually self-cleaning. The manufacturing companies have well founded recycling policies with both closed and open loop outcomes. The material provides the advantages of high quality diffused natural lighting for the benefit of the workforce.

1.114 The main façades can be dismantled, reused or recycled if required at the end of the useful life of the building.

Noise Attenuation

1.115 Operational noise has been an important consideration during the design process both to protect local people from intrusive noise and for staff to enjoy a good working environment at both the EfW and HWRC.

1.116 The principle adopted has been that the best way to minimise noise levels is at source by selection and design. The Control of Noise at Work Regulations 2005 requires that operational staff should not be exposed to noise levels above a specified level without adequate hearing protection.

1.117 All processes with the exception of the Air Cooling Condensers (ACC) and bottom ash curing and long-term storage have been located within the building envelope. The noisiest sources for example, the steam turbine, will be further enclosed to contain radiated noise levels down to the required level.

1.118 Materials chosen for the building envelope will contribute to the attenuation of the remaining on going noise sources. The polycarbonate walls can be formed with twin panels where necessary, other enclosing walls have double skin composite metal panels with insulation.

1.119 Dominant sources at night will be dealt with as follows:

- the Induced Draft fan will be suitably silenced and has been incorporated in the building envelope to aid noise attenuation. The stack exhaust will be attenuated in the discharge duct from the ID fan;

- the large fans of the air-cooled condenser will be intrinsically low noise and selected to meet the strict noise limits as set out in Chapter 8 of the Environmental Statement;

1.120 Detailed analysis is set out in Volume 3, Chapter 8 Noise and Vibration, in the Environmental Statement.

Implementation, procurement and design control

1.121 The EfW will be procured through an Engineering Procurement Contract (EPC). The lead Contractor CNIM will be a one-stop shop for the delivery of the detailed design, procurement, construction and commissioning of the facility.

1.122 CNIM/Clugstons will appoint all the consultants, engineers and architects and sub-contractors necessary to develop the detailed design and delivery of the project.

1.123 Control of the quality of the detail design remains with the employer, Viridor, their architectural advisor and project team. Standards will be set in the Employers Requirement Contract Documents together with the approved Planning Drawings and Illustrative Material. These written documents and visual images set the design standards for the EPC contractor's detailed design of the process plant and the building and set out all the information necessary for the successful implementation of the planning approval and the client's requirements.

1.124 The offices have been conceived, for example, using sound principles of low energy design. This will enable the EPC contractor to achieve a high standard energy efficient solution at the detailed design stage. For this discrete element of the facility the Employers Requirements will require the contractor to achieve a good BREEAM rating for energy efficiency and the conservation of fuel and power.

1.125 Control and co-ordination of subcontractor design will be undertaken by Clugstons appointed architects and other consultants and agreed with Viridor's professional team.

1.126 CNIM is a contractor with extensive experience in the construction of EfW projects. They will deliver the contract in a manner that will minimise the impact on the environment and the local community. The EPC contractor will be required to join any Considerate Contractor scheme Oxfordshire County Council may have in place during the construction period.

Involvement

1.127 The concept design for the Ardley Quarry EfW and Bottom Ash Facility was subject to a full public consultation process for the previous application and further consultation through the planning application process. No additional consultation has been undertaken for this second application.

ACCESS

Inclusive access and design

1.128 Inclusive design aims to remove barriers that create undue separation between those with differing abilities. It enables everyone to participate

equally, confidently and independently in everyday activities. Viridor requires that this is integral to the proposals.

1.129 This access statement will assist in ensuring that the "evolving duty" placed on service providers, employers and educators in the Disability Discrimination Act 1995 (DDA) can be better addressed. The document will pass to Viridor as the long-term managers of the facility and be incorporated in their structured programme of review.

1.130 Accordingly, the design of the facility has developed in accordance with the requirements of The Building Regulations (2000) Part M, Access to and Use of Buildings (2004 Edition), and the Approved Document to Part M (2004)

1.131 The following documents have been taken into account.

- designing for Accessibility (2004) Centre for Accessible Environments;
- colour contrast and perception (2004) University of Reading;
- BS5588: Part 8:1988, Fire precautions in the design construction and use of buildings;
- building Sight (RNIB);
- the Sign Design Guide (The Sign Design Society) and

Principles

1.132 The site layout and the general arrangement of the EfW facility has, as far as is possible at this stage, considered the removal of unnecessary physical barriers to the movement of people with and without disabilities around the plant and offices.

1.133 The principles used to create an inclusive design are to:

- provide equitable access;
- allocate appropriate space for people;
- ensure ease of use and understanding;
- design for minimum stress, physical strength and effort;
- design a safe, comfortable healthy environment; and

Vehicle Access to the EfW Facility and Landfill

1.134 Vehicle access to the site will be from the public road, the B430 to the west via a new junction and access road. This access road will be provided with a new gatehouse and weighbridges that will control all access to and from the site.

Vehicle Access to the HWRC

1.135 Vehicle access to the HWRC when the EfW is up and running would see all HGV's diverted to the new junction and access road. This would consequently have a positive effect on the general public using the HWRC.

Public transport

1.136 A Travel Plan will be developed by Viridor to encourage the use of public transport and cycling and discourage car use for the construction period and later during normal operation of the facilities.

Vehicle Circulation within the site

1.137 Vehicles leaving the public highway, to access the EfW facility and landfill will proceed to the gatehouse and weighbridge located adjacent to the southern boundary of the site via a redesigned junction and newly formed access road. From the gatehouse entry vehicles will proceed to the roundabout. A separate spur road will be provided before the roundabout for vehicles to access the landfill.

1.138 Vehicles for the EfW facility will proceed from the roundabout along a two-way road along the southern boundary of the incinerator bottom ash facility and then around the eastern end of the facility to enter the tipping hall at its southeast entrance and continue through the hall before returning to the weighbridge via the roundabout prior to leaving the site. This movement arrangement allows the natural safe reversing of right hand drive vehicles depositing waste into the bunker.

1.139 Vehicles for the loading and transporting of incinerator bottom ash off site will proceed again from the roundabout around the southern and eastern end of the facility to enter the IBA facility at its east entrance and continue through the plant before returning to the weighbridge via the roundabout prior to leaving the site.

1.140 Vehicles for the residue Silo's, the flue gas treatment area and plant maintenance will proceed from the roundabout along the two-way road around the southern and eastern side of the facility, continue around a single lane road to the east of the air-cooled condensers, turn south around the northern tip of the EfW to enter the building at the north west entry.

1.141 Loading and unloading will take place inside the building. The vehicles will then leave the facility and proceed south picking up the two lane road to the south of the air cooling condensers and proceeding around the southern boundary of the IBA facility to the roundabout and then to the weighbridge

Vehicle parking

1.142 A safe parking area will be provided for staff and visitors in front of the offices. Parking provision at the site has been devised in line with car parking

standards and guidelines operating in the Oxfordshire area. This parking is accessed by the two-way road off the roundabout to the west of the EfW.

1.143 The parking area for the EfW has discrete circulation away from the lorry circulating routes. There will be 52 car parking spaces at the site, 4 of which will be larger spaces specifically designated for blue badge holders. A lay-by is to be provided for a visitor's coach or minibus standing. Additional parking for the landfill operatives will be provided adjacent to their offices.

1.144 The HWRC would benefit from a small increase (6) in additional parking spaces.

Cycle parking

1.145 In order to encourage staff to cycle to work in line with the Travel Plan initiatives, covered cycle storage for 15 bicycles will be provided for cyclists adjacent to the administrative building.

Pedestrian access to the EfW

1.146 Access to the entrance of the main facility, the Visitor Centre and the EfW offices has a gentle ramped footpath, designed to wheelchair standards of gradient with non-slip surfaces. It also has contrasting coloured bands and textures to aid perception for people who have visual impairments. The spaces specifically designated for blue badge holders are located nearest to the entrances to the offices and main facility.

Routes

1.147 Routes to the entrances will be signposted with signs meeting the recommendations of the Sign Design Guide. The main entrances to the plant and the offices will be highlighted using colour and luminance contrast and an appropriate level of lighting.

The main entrance to the offices and Visitor's Centre

1.148 The entrance lobby will be provided with automatic slide opening doors activated by proximity controls located at the entrance to the large access lobby. The second door, a security door, will be a sliding door opened by the receptionist following communication by answer phone. Inspection and testing of the fail-safe mechanisms will be cited in the facility's planned maintenance programme. The entrances will be level, have flooring of non slip resistant materials and be kept free from hazards at all times.

The reception areas, Visitor's Centre and seminar rooms

1.149 The areas will be designed to maximise inclusion, both actual and perceived. Reception desks will be procured during the fit out stage and will be designed to the latest design guidance available. Part of the desk will be reduced in height to provide a receiving point for wheelchair users. The reception desk

will provide a contrast in colour to the background walls to enable people with a visual impairment to define the boundaries of the space. An induction loop will be provided to assist staff and visitors who are hearing aid wearers.

Internal circulation

1.150 The exact location of horizontal and vertical circulation and selection of materials for internal finishes within the EfW facility will be finalised during the detailed design phase. In many cases due to the nature of the plant detailed design decisions will be equal to but may exceed the latest best practice guidance in terms of width of corridors, doors and manoeuvring spaces. Surface finishes to walls, floors and ceilings, colour and luminance contrast, lighting and the usability features, for example, control panels and switches will be addressed in accordance with best advice.

Corridors

1.151 Corridors will in general have a minimum width of 1.5m with passing places available at regular intervals. Finishes will minimise reverberation time and lighting levels will be uniform. Care will be taken that the need for concrete soffits to the ceilings does not conflict with this requirement. Where the unobstructed width of any corridor is less than 1.8m wide passing places of at least 1.8m long will be provided at reasonable intervals.

1.152 Corridors between lift lobbies and adjacent sanitary accommodation will have a minimum width of 1.5m.

Lifts

1.153 Lifts will be selected which maximise the opportunity for independent use by those with disabilities and will be large enough to accommodate most self propelled and electrically powered wheelchairs. In the offices, the lift, whilst sufficiently large for wheelchairs will not be designed to accommodate Class 2 and Class 3 electrically powered scooters. The lifts in the plant will be large scale and adequate for all users.

1.154 Fire fighting lifts are designed for use as passenger lifts on a day-to-day basis. Disabled refuges will be provided within the fire fighting lift lobbies. The exact numbers and positions of lift cores will be finalised at detailed design stage when the plant and equipment choices are completed.

Single Doors leaves

1.155 Will provide an effective clear width of 800mm with a 300mm clear space adjacent to the opening edge to allow wheelchair users and people with limited mobility to approach and open the door.

1.156 Closers will only be fitted where required for fire control and where ever possible will operate with a maximum force of 20 Newtons applied to the leading edge when opening the door leaf. Vision will be provided where possible.

1.157 Ironmongery will be provided with good colour and tonal contrast to the background and can easily be grasped and operated e.g. use of lever handles in lieu of knobs and use of large thumb turns.

Toilet Features

1.158 Wheel chair accessible lavatories are provided on all floors. Both male and female toilets will be suitable for wheelchair users and will be fitted with a different choice of left hand or right hand transfer at each alternate floor level meeting the recommendations of BS8300: 2001 and the guidance identified in the Approved Document to Part M (2004). All doors to wheelchair accessible lavatories will open outwards.

1.159 In addition to toilets, changing and shower rooms will be provided in the EfW plant area. These will be provided and available for all personnel based at the EfW Facility and not just the operatives of the EfW waste reception area. Thus amenities will be available for those who choose to cycle to work.

Other access features

1.160 Hearing enhancement systems will be fitted at the reception areas, in the seminar rooms in the ground floor Visitors' Centre and control room.

1.161 Viridor Waste Management will continue their "meet and greet" policy at the HWRC to help the elderly and disabled users of the HWRC.

Means of escape and emergency evacuation

1.162 All features and materials will comply with Part B of the Building Regulations. Drawings and specifications will be kept under review during the detailed design process.

1.163 Fire fighting lifts may be used for the evacuation of disabled people prior to the arrival of the Fire Brigade. On their arrival the Fire Brigade will assume responsibility for the lift and the evacuation of any remaining persons. Disabled persons alarms will be provided in the refuges to the cores.

1.164 It will be the responsibility of the building management and occupants to ensure that people with disabilities are evacuated from the facility when the fire alarms are activated.

1.165 Notification of people with a hearing impairment of the need to evacuate the building, particularly where the person may be alone, e.g. in a lavatory or cellular office, will be provided by flashing lights.

Staff Training

1.166 Staff training needs will be cited and planned for in the management policies of Viridor.

1.167 Disability awareness training, the testing and use of specialised equipment such as induction loops, personalised lighting and communication equipment will be an integral part of Viridor's on going staff development programme.

Review

1.168 Viridor is committed to undertaking a structured programme of regular reviews of new technologies, constructional developments and training to ensure that the on going and evolving obligations imposed by the DDA are met.

1.169 This design and access statement will form part of a suite of documents which Viridor Management will keep under regular review throughout the procurement process and the on going operation of the plant.

DRAWINGS (SEE VOLUME 2 – DRAWINGS) TO BE READ IN CONJUNCTION WITH THIS STATEMENT;

Drawing Number	Drawing Title
DWG EFW-PO-09	Site Plan – General Arrangement Plan
DWG EFW-PO-10	Site Plan – Roof Plan
DWG EFW-PO-11	Ground Floor Plan
DWG EFW-PO-12	Upper Floor Plan
DWG EFW-PO-13	Roof Plan
DWG EFW-PO-14	Offices & Visitor's Centre Floor Plans
DWG EFW-PO-15	Longitudinal Section
DWG EFW-PO-16	Cross Section
DWG EFW-PO-17	West Elevation
DWG EFW-PO-18	East Elevation
DWG EFW-PO-19	South Elevation
DWG EFW-PO-20	North Elevation
DWG EFW-PO-21	Gatehouse Detail
LANDSCAPE AND VISUAL DRAWINGS	
Drawing Number	**Drawing Title**
DWG 6_1	Landscape Receptors
DWG 6_2	Regional and District Landscape Character Assessment
DWG 6_3	County Landscape Character Assessment
DWG 6_4	Viewpoint Selection
DWG 6_5	Topography
DWG 6_6	Slope Analysis including permitted Landfill
DWG 6_7	Zone of Theoretical Visibility Chimney Stack
DWG 6_8	Zone of Theoretical Visibility proposed buildings without Stack
DWG 6_9	Positions of Viewpoints and ZTV of EfW building
DWG 6_10	Viewpoint A Public Right of Way, near Upland Cottage
DWG 6_11	Viewpoint B Ardley Road, M40 Road Bridge
DWG 6_12	Viewpoint C Right of Way off Middleton Road
DWG 6_13	Viewpoint D Middleton Road, M40 Road Bridge
DWG 6_14	Viewpoint E Public Right of WAY NER Gaggle Brook
DWG 6_15	Viewpoint F B4030, M40 Road Bridge
DWG 6_16	Viewpoint G Public Right of Way near Trowpool Spinery
DWG 6_17	Viewpoint H Middleton Road, Bucknell Lodge
DWG 6_18	Viewpoint I B4030, Middleton Stoney
DWG 6_19	Viewpoint J Public Right of Way
DWG 6_20	Viewpoint K Ardley Road B430
DWG 6_21	Viewpoint L B4030 near Middleton Park
DWG 6_22	Viewpoint M Ardley Road, B430
DWG 6_23	Viewpoint N Chilgrove Drive, Upper Heywood
DWG 6_24	Viewpoint O Camp Road, near Public Right of Way
DWG 6_25	Viewpoint P Public Rod off Sommerton Road
DWG 6_26	Slope Analysis (including proposed landfill)
DWG 6_26	Viewpoint A Visualisation
DWG 6_28	Viewpoint C Visualisation
DWG 6_29	Viewpoint D Visualisation
DWG 6_30	Viewpoint G Visualisation
DWG 6_31	Viewpoint J Visualisation
DWG 6_32	Viewpoint L Visualisation
DWG 6_33	Viewpoint N Visualisation
DWG 6_34	Viewpoints Visual Effect Summary
DWG 6_35	Proposed restoration sightline sections
DWG 6_36	Zone of Theoretical Visibility including existing vegetation EfW Building only

DWG 6_37	Zone of Theoretical Visibility existing vegetation and planting EfW building only
DWG SS/1	Proposed Restoration Sightline Sections

ARCHITECTURE AND PLANNING SOLUTIONS DRAWINGS

POR SERIES

Drawing Number	Drawing Title
DWG EFW-POR-09	Site Plan – General Arrangement Plan
DWG EFW-POR-10	Site Plan – Roof Plan
DWG EFW-POR-11	Ground Floor Plan
DWG EFW-POR-12	Upper Floor Plan
DWG EFW-POR-13	Roof Plan
DWG EFW-POR-14	Offices & Visitor's Centre Floor Plans
DWG EFW-POR-15	Longitudinal Section
DWG EFW-POR-16	Cross Section
DWG EFW-POR-17	West Elevation
DWG EFW-POR-18	East Elevation
DWG EFW-POR-19	South Elevation
DWG EFW-POR-20	North Elevation
DWG EFW-POR-21	Gatehouse Detail

ARDLEY MONTAGES

Drawing Number	Drawing Title
AM01	Viewpoint A
AM02	Viewpoint B
AM03	Viewpoint C
AM04	Viewpoint D
AM05	Viewpoint E
AM06	Viewpoint F
AM07	Viewpoint G
AM08	Viewpoint H
AM09	Viewpoint I
AM10	Viewpoint J
AM11	Viewpoint K
AM12	Viewpoint L
AM13	Viewpoint M
AM14	Viewpoint N
AM15	Viewpoint O
AM16	Viewpoint P
AM17	Computer Generated Image

COMPUTER GENERATED IMAGES

Drawing Number	Drawing Title
DWG EfW P0I 30	Computer Generated Images Perspectives 1
DWG EfW P0I 31	Computer Generated Perspectives 2
DWG EfW POI 32	Computer Generated Images Perspectives 3

Glossary

ACC	Air Cooled Condenser
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
BREEAM	Building Research Establishment Environmental Assessment Method
Brise Soleil	These are horizontal fixed louvers supported off the external face of the office building used to exclude the sun whilst letting in daylight and giving views through the windows.
CABE	Commission for Architecture and the Built Environment
CDM	Construction Design and Management
CFC	Chlorofluorocarbons
CPU	Central Processing Unit
DDA	Disability Discrimination Act
EfW	Energy from Waste
EPC	Engineering Procurement Contract
IBA	Incinerator Bottom Ash
PC	Polycarbonate
PVF	Polyvinyl Fluoride
RNIB	Royal National Institute for the Blind
SNCI	Site of Nature Conservation Importance

SLR / DAVID BUTTERWORTH DETAILS
OXFORDSHIRE ARDLEY EFW FACILITY

RESPONSE TO CABE LETTER (24 February 2009)

Please note that Architecture & Planning Solutions has recently merged with SLR Consulting Ltd, a major multidisciplinary consultancy in the waste and energy field, to expand under their umbrella. The work of my firm has now been taken over by SLR Consulting and I am now writing as their Director of Architecture.

We have reviewed the points raised by CABE and have revisited the decisions made by the design team and our clients. This submission raises issues we have with the fundamental basis of the CABE review, summarises the CABE recommendations and gives our response to these.

BASIS Of THE CABE REVIEW

CABE state that the their review was undertaken by a panel led by the chair of design review Piers Gough following a site visit, discussions with the design team, local authority officers and consideration of the information provided (planning application material).

1. To clarify this basis of the review.

    * Discussion with the design team did not take place.

    * Discussion with the authority did not take place before the review. An Enquiry made to John Duncalfe has established that your officers were not consulted.

    * A visit to the specific site did not taken place. We have examined the visitor records of the Ardley site that as you know is strictly controlled, there is no record of a visit by any one from CABE to the site.

2. The basis of the CABE review was the information provided (planning application material).

    CABE felt that more information was needed to fully assess the visual impact of the building. They considered the information provided was insufficient and without more images and illustrations found it difficult to comment on how the scheme will be perceived in its context.

RESPONSE

We are surprised by the reference to lack of information, the planning application included:

The landscape and visual assessment, an eighty page document with five main subsections including.

* an introduction with outline methodology and identification of the potential landscape and visual receptors.

* a baseline assessment of the existing landscape and visual amenity.

* a review of the potential landscape and visual effect sources within the development proposals.

* an examination of the likely residual impacts for both landscape and visual amenity.

* a conclusion on the likely landscape and visual impact of the proposed development.

  Full details of the methodology were included in Appendix 1.

* 37 drawings, photographs and visualizations including 16 views, seven visualizations in a comparative before and after format

* A detailed landscape proposal and landfill restoration scheme designed to produce a final and interim landform that maintains and enhances the landscape character and ecological value of the site whilst mitigating the EfW building.

A design and access statement prepared to describe Viridor's architectural vision for the project. This document justifies and explains the design rationale of the proposed development. It considers the context behind the proposal and provides a description of the site and its constraints and opportunities. The statement then focuses on the design principles that have been followed. The proposal is then described, with the text providing an overview of the amount and use of development being provided, an indication of how it is to be arranged on site and a summary of the scale and appearance. The statement then focuses on landscape, access, drainage and sustainability matters and gives an indication of how the development is to be brought forward and its quality controlled.

In addition to the design and access statement and architectural drawings 17 justified photomontages illustrating the building in its setting were included. The photomontages show how the building will look from the long, medium and shorter distances and includes views from the motorway.

It appears the CABE did not receive the full application however they are major national body and must be aware that the information they required would be available for the application to pass the counties registration procedure prior to them being consulted.

We do not understand therefore why they did not contact the council to ask for additional information.

Viridor and its design team consider the context of the site to be most important and fundamental driver of the design concept of the building. The information

required by CABE was available in the planning application documents but not considered. The conclusions drawn are therefore invalid.

We submit that on this basis alone the review was fundamentally flawed and should be discounted.

CABE RECOMMENDATIONS
ARCHITECTURE

CABE question whether an industrial building needs such a complex envelope, they suggest that

* the proposed scheme is too varied.

* the range of shapes and materials distract from the simple strength such a purpose built structure should have.

* the curved form is likely to generate disadvantageous spaces.

* the design of the landscaping should be of high quality which has not been achieved.

* the combination of numerous materials and the way that they meet could cause difficulties in their detailing.

* they welcome the amount of thinking that went into the proposed materials but question the choice.

They believe

* that this building type is mainly located in rural areas and should be assessed by the criteria of PPS7.

* that the general approach to designing energy from waste plants across the UK should be reconsidered in order to achieve a convincing balance between “industrial aesthetics and the attempts to make these buildings appear less prominent.

They recommend

* a good starting point for identifying aspirations for the standard of development at Ardley would be by reference to well designed infrastructure buildings in the East London Olympic Park.

* the building should be simplified.

* due to the numerous materials and the way they meet the county council should condition the details to safeguard the quality of design throughout the entire planning process.

* the use of more sustainable materials such as timber.

RESPONSE

We believe that a well designed energy recovery facility develops out of the combination of efficient, functional planning based on our clients operational and management needs, the functional requirements of the process technology married to good looking sustainable architecture that reflects the space needs of the process technology'

We believe strongly that the facility should be well designed and inclusive, with an architectural form in keeping with its location. It must be sensitive to the distinctive local character of the countryside.

CABE believe that this building type is mainly located in rural areas, this is not the case. Energy from Waste Facilities have been designed and built in many locations and a variety of settings for example:

* SELCHP in the London Borough of Lewisham in 1993 is located on an industrial estate in the middle of Deptford surrounded by the railway industrial sheds and the domestic tower blocks of inner London.

* Kirklees EfW in Huddersfield is again in an industrial setting located between the local canal and the railway.

These plants exhibit an industrial aesthetic in keeping with their context, they celebrate their height and scale however other buildings are designed to relate to their, rural or waterside context. They are successful designs yet not particularly industrial in their aesthetic for example:

* Marchwood in Hampshire by Space Architectes is set in an industrial area and is designed as an attractive Dome by the side of Southampton Water. The plant was selected as an exemplary design in the "Design of Waste Facilities: a key guide to modern design in waste" produced by DEFRA in partnership with CABE.

* Our Trident Park EfW in Cardiff is in the visual envelope of the Millennium Stadium, the Welsh Assemby and the Millennium Centre and there are views of it across Cardiff Bay to the Caerphilly hills beyond. It is designed as a sweeping wave form with a layered wave fenestration to the facades to reflect its context of the hills in the background to the north, Cardiff Bay and the Severn bore in the estuary to the south. Our design approach here was endorsed by both the Cardiff County Council Strategic Planner (Design) and the Design Commission for Wales to whom it was presented for Design Review.

* Other examples of EfWs in rural or semi-rural settings include the Isle of Man EfW and Lakeside EfW, the joint venture between Viridor and Grundons currently being developed at Colnbrook, near Slough.

The buildings CABE recommends as exemplars are simple, strong, sophisticated industrial boxes. They are carefully detailed straight forward examples of rectilinear architecture that we feel are appropriate to London but do not form a suitable basis for a

for a rural Oxfordshire landscape setting. We submit that it would be wrong thinking, the result would be totally out of context and possibly seen by local people as a piece of "architects architecture" of the worst kind. We cannot see how it would meet the criteria of PPS7 as CABE suggests this facility should.

Our proposed building in Oxfordshire at Ardley cannot be hidden, and our approach remains consistent with our contextual design philosophy and the celebration of these large buildings.

Its building form defines a significant, beautiful, flowing envelope that will contribute significantly to a sense of local identity by reflecting the nature of the Oxfordshire landscape with its undulating land forms topped in places by tree belts. We feel that it is important that the character of our design creates a sense of place and local identity adding to regional diversity of the area. It has been specifically designed on brown-field land as a complementary form and an integral part of the surrounding landfill restoration scheme. The shaping of these two major elements is designed to develop a synergy with the landscape character of this area and to enhance it.

CABE ask why an industrial building needs such a complex shape and whether it would be more appropriate to concentrate on carefully considered forms and details, they suggest the building should be simplified.

We would submit that our proposed design is a quite simple organic shape for a facility of this size containing a number of complex processes.

The design of EfW's is governed to some extent by the preferred procurement process We have worked closely with CNIM and Clugstons the engineering procurement and civil engineering contractors to create a functional, bespoke, economical building with a simple flowing building envelope by:

* Selecting process equipment with the lowest possible heights.

* Arranging the equipment in linear form.

* Ensuring ample space for effective operation and management.

* Defining the pinch points between the building envelope and the technology.

* Draping this matrix with the smallest envelope to mitigate its visual impact

We consider the form of the proposal is simple and all enveloping. Its form emerges quite naturally out of this design process.

The curved organic shape follows the volumetric requirements of the plant and equipment cutting out waste volume and enabling the building to be less bulky than it would otherwise be.

The joy is that whilst the form appears to be organic and curving the scale of the building means that in essence it is able to be constructed economically using straight components, the detailing is relatively straight forward.

There is no generation of disadvantageous spaces. The underside of the roof is at the required height over the internal road access through the Bottom Ash Plant, a larger volume would in fact be unnecessary and inappropriate.

MATERIALS

A rapid glance at the materials key would suggest many materials are to be used however closer inspection would reveal a limited palate of only three materials to be used extensively on the large facades of the main halls.

* Silver metallic sinusoidal sheeting to the walls with a silver roof in Kalzip.

* Translucent fenestration in a light sea green to walls and roof to give good lighting to the interior where necessary.

* The base of the building is of vertical climbing planting on stainless wire Jacob trellis over the buildings base push wall formed of In-situ concrete with smooth formwork facing incorporating exposed panel joints panel joints. This will ultimately form a green base to the building.

The remaining materials are employed to a much more limited extent and do not affect the appearance of the building when seen in its context. They are used:

* For protection purposes i.e. the chimney safety features and the steel channels around the doors to protect them from damage by articulated lorries.

* To highlight an area of the façade or screen ugly plant for example, to highlight the entrance of the facility with the offices and visitor centre and to screen the air cooled condensers.

* To allow ventilation into and out of the boiler hall by louvers. They are currently a colour match to the roof but could equally be a match to the translucent panel in the lantern.

The total development has been designed on sustainable principles and a BREEAM pre-assessment has been undertaken that will advise the developer on the potential environmental impacts of the development, and the mitigation measures that can be employed to reduce them. The developers have expressed their intention to achieve a very good BREEAM rating.

Materials selection for all buildings has also been informed by sustainability principles, in terms of the performance of the materials over time and the integrated lifecycle management programmes of the manufacturers. Concrete, steel, aluminium, polycarbonate are the principle materials used and can all be recycled. Selection will avoid the use of construction materials which contain Chlorofluorocarbons (CFC) or which use CFCs in their manufacture.

Recycled aggregates or masonry will be used for structure and slabs where practicable including base material for the construction of the site access roads.

Ground Granulated Blast Furnace Slag (GGBS) will be considered for all concrete works during the detailed design stages as a replacement for Portland cement in concrete mixes to reduce carbon emissions. The decision on its use will be geared to the acceptability of the suppression of "strength gain" and programmatic issues such as whether the major concrete elements are to be constructed in summer or winter.

The Kalzip Aluminium standing seam roof is produced in a sustainable closed loop process. Research shows that aluminium can be recycled infinitely with no loss in performance. The benefits of recycling aluminium lie with its high scrap value and low energy requirements in the recycling process, only 5% of the energy required in the original primary process is required for repeated recycling. The material has a long life, the Kalzip system is demountable and at the end of the buildings life it can be unzipped and recycled with no loss in volume or quality.

The main buildings have steel frames clad in sinusoidal sheeting. Steel is produced in a "sustainable loop". It can be recycled again and again without degradation and it is probably the most widely recycled material in the world with over 354MT recycled annually through a well-established infrastructure.

The translucent polycarbonate panels have low maintenance characteristics and are virtually self-cleaning. The manufacturing companies have well founded recycling policies with both closed and open loop outcomes. The material provides the advantages of high quality diffused natural lighting for the benefit of the workforce.

The main façades can be dismantled, reused or recycled if required at the end of the useful life of the building.

The use of timber cladding as recommended by CABE was considered as an option at an early stage in the design process. Its use was rejected on the grounds of higher initial capital cost and a lengthening in the time taken to clad the external envelope over other "industrial shed" specifications.

PLANNING

PPS7 encourages planning authorities to make a positive response to innovative, high quality contemporary designs that are sensitive to their immediate setting and help to make better places for people to live and work. It encourages developers to use previously developed land, for well designed, inclusive buildings with a building form in keeping with and in scale with their location and sensitive to the character of the countryside and its local distinctive qualities.

Having revisited the proposals we believe the Ardley facility meets these criteria the facility is architecturally well mannered and will be attractive for residents and visitors to the area. It's organic curving form ensures its integration into its wider surroundings and it sits well with its immediate context. Its form respects the amenity of the local community living within its visual envelope and it creates a good working environment for the local workforce. We feel these qualities can be seen in the seventeen photomontages submitted with the planning application.

The scale of EfW facilities is perhaps deceptive to a panel not familiar with the building type and having a limited knowledge of the full planning application documentation. We

feel that if CABE had involved the design team and County Planning officers in discussions and had studied the full documentation including the Landscape Visual Impact Assessment and the site photography set alongside the photomontages of the building in its setting they would have developed a better understanding of the project and may possibly have come to a different view.

It is deeply disturbing for all concerned with this application that in the absence of the vital contextual evidence CABE should have felt competent to continue with its review, give advice and pass judgement on the architectural design of the facility. We submit that on this reasoning alone the review was fundamentally flawed and should be discounted.

The client and design team feel confident with the efficacy of this proposal. We hope that you will agree and feel able to support the design.

David Butterworth B.Arch (L'pool) RIBA RSA
Director of Architecture SLR Consulting
8th March 2009

DAVID BUTTERWORTH RESPONSE TO CABE LETTER (24 June 2009)

Dear John,

We were a little surprised to be copied into a formal response from CABE to the additional information submitted in March 2009 in support of the planning application and Environmental Statement for the Ardley EfW and Landfill Facility that is why I called you the other day.

As you know Viridor have not submitted any additional information in respect of the architectural content of the proposal.

The CABE letter once again refers to a design review undertaken following discussions with the design team and the local authority.

We have not had discussions with CABE since their first letter to you of the 24 February 2009 although we did try, unsuccessfully, to engage them in a meeting to discuss the contents of that letter. In addition I understand from our conversation that the authority has also not had any further discussions relating to the architectural design with CABE.

In February following receipt of the first letter I had a brief conversation with Thomas Bender that was mainly restricted to;

* pointing out that their previous letter to you of the 24 February, which was about to be pasted to their web site, was inaccurate as before the first review;

* discussion with the design team had not taken place

* you had confirmed that discussion with the authority about the architecture content had not taken place

* a visit to the specific site had not taken place

* establishing that the full contextual information was not available to the panel. I was able to briefly explain the simplicity of the shape of the building and its relationship with the surrounding countryside and the limited range of materials we had drawn on for the main plant and that on buildings of the size the difficult junctions they referred to were more or less straight for detailing purposes.

Thomas suggested that even if contextual information were to be made available their advice on the architecture would not change and a further review with input from the design team to inform the discussion would not be possible.

It was following this conversation that we wrote to you with a full response to their letter of the 24 February 2009.

More recently Neil Penhall the Managing Director of SLR and myself have in fact met and had wide ranging discussions with Diana Haigh the Director of Design Review at

CABE, Kirsten Mackay the Head of Design Review and Thomas Bender a Design Review Advisor.

The discussions ranged from defining SLR's position in the waste industry, CABE's capacity and availability for design review for future EfW's and helping CABE to develop an understanding of the building type of which they apparently have virtually no experience.

During the course of the meeting I was invited to describe my design approach to Energy from Waste buildings.

In sketching out our contextual approach I briefly drew attention to the concept behind our projects in the industrial docklands of Cardiff and Huddersfield, the rural areas of Surrey and the Home Counties and raised the issue of rectilinear industrial architecture in the rural countryside suggested in their first letter to you.

Diane Haigh later concluded that on reflection;

* the contextual design approach that I had outlined was a valid way forward and the more singular approach to the development of a new architectural language for the building type suitable for all locations was not necessarily the best approach.

* and that the "Olympic" buildings referred to in the CABE Ardley formal review were small scale when compared to the EfW facilities that we are involved in and were not necessarily exemplars.

We find it very odd that knowing they were currently preparing their second Ardley review that they did not consider it important to introduce their concerns into the agenda of the meeting and seek to discuss them. This was an opportunity for face to face discussion with the designers a week before the letter was sent out to you.

This second review was therefore undertaken by the chair of the previous panel with CABE design review staff (without the original panel present) and again without the benefit of discussion with the design team and yourself in the local authority. CABE do not seem to have an understanding of the size and scale of Ardley, the simplicity of its form in comparison to its size and the restricted number of materials used in the design of the main plant. It may be of significance that CABE have apparently not yet visited a completed EfW facility.

We believe that the Ardley design is architecturally well mannered and will be an attractive and successful building for residents and visitors to the area. Its simple organic curving form ensures its integration into its wider surroundings of rural Oxfordshire. The extensive landscape strategy proposed helps the integration of the building into its immediate setting. The proposal respects the amenity of the local community living within its visual envelope and it creates a good working environment for the local workforce. These qualities can be seen in the photomontages submitted with the planning application.

Viridor hold firm to the views expressed in our earlier response to you and as you are aware do not wish to amend the architectural design.

Viridor intend that the building will be well detailed and firmly constructed for a long, useful and attractive life. We would therefore welcome the planning conditions CABE suggest being applied to both the landscape proposals and to the details of the way the materials meet.

Our clients and design team feel confident with the efficacy of our current proposal. We hope that you will agree with our views about the architecture and feel able to support the design.

David Butterworth B.Arch (L'pool) RIBA RSA
Director of Architecture SLR Consulting
2nd July 2009