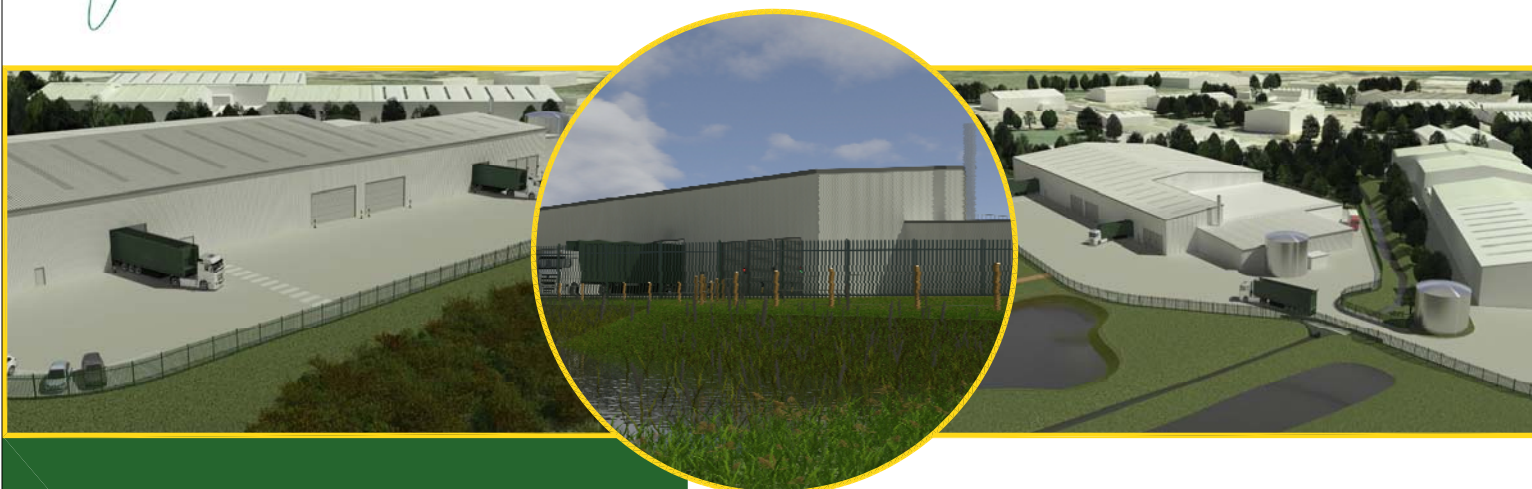




PROPOSED MECHANICAL BIOLOGICAL TREATMENT FACILITY

WREXHAM RECYCLING RECOVERY PARK
BRYN LANE, WREXHAM INDUSTRIAL ESTATE, WREXHAM



PLANNING STATEMENT

REFERENCE: WR7042

OCTOBER 2011

Report No.WR7042/3/PS

Date: October 2011

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BRYN LANE, WREXHAM INDUSTRIAL ESTATE, WREXHAM**

**PLANNING STATEMENT
Incorporating the Design and Access Statement
and the Application Form**

Prepared for

WASTE RECYCLING GROUP



Prepared by



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Project Quality Assurance Information Sheet



Mechanical Biological Treatment Facility, WRRP, Bryn Lane, Wrexham
– Planning Statement

Report Number: WR7042/3/PS

Report Status: Final

Report Date: October 2011

Prepared for: Waste Recycling Group

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- 2. Planning Statement**
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**PROPOSED MECHANICAL BIOLOGICAL TREATMENT FACILITY
WREXHAM RECYCLING RECOVERY PARK**

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1.0 THE PROPOSALS

1.1 Introduction

1.1.1 The development of a Mechanical Biological Treatment (MBT) Facility on the Phase 2 area of the Wrexham Recycling Park is a sustainable waste management facility which increases local recycling rates, increases the amount of waste diverted from landfill, produces a low carbon renewable energy fuel and will create up to 8 new permanent jobs.

1.1.2 The MBT Facility is located directly south east of the current Wrexham Recycling Park (Phase 1 area) Bryn Lane, Wrexham Industrial Estate with access being gained off the common entrance point with Phase 1. The Wrexham Recycling Park sits within the wider Wrexham Industrial Estate which accommodates a number of commercial/industrial developments including manufacturing, storage and distribution, haulage and waste management operations. Drawings WR7042/19/01 and WR7042/19/02 shows the location of the site in terms of its immediate surroundings and wider context. The Phase 1 part of the development located immediately to the north was consented by Wrexham County Borough Council in September 2007.

1.1.3 The MBT Facility will accept a total of 70,000 tonnes of household, commercial and industrial waste per annum.

1.1.4 The proposed facility will generate low carbon renewable energy fuel and recycle materials that would otherwise have been disposed of at landfill sites.

1.1.5 The addition of an MBT Facility to the Wrexham Recycling Park has been designed to comply with the Waste Hierarchy which is a framework designed to encourage sustainable waste management.

1.1.6 The proposal will involve the design and build of a purpose built building to house the recycling and recovery process, bringing up to 8 permanent jobs initially and over £200,000 of wages into the local economy.

1.1.7 As well as being able to satisfy an identified need for additional sustainable waste management capacity the MBT Facility will provide a low carbon renewable energy fuel to existing and consented commercial operations. The key benefits of the development are summarised below:

- **Capacity to process 70,000 tonnes of waste per annum;**
- **Local solution in meeting Welsh Government Targets of 70% recycling and 5 % to landfill of MSW by 2025.**
- **Materials recovery from 70,000 tonnes of residual waste;**
- **Low carbon energy product (SRF) sufficient to displace fossil fuels;**

- 95% diversion of waste from landfill;
- Reduced Carbon footprint from Existing Transport Situation;
- Significant inward investment;
- Potential to create up to 8 permanent full time jobs.

1.1.8 This document supports the planning application which has been submitted to Wrexham County Borough Council for consideration. Accompanying the planning application is an Environmental Statement which reports on the Environmental Impact Assessment undertaken in respect of the proposal.

Further details regarding the development can be found at:

<http://planning.wrexham.gov.uk/Planning/Ig/GFPlanningWelcome.page>

1.1.9 A dedicated website has been designed specifically to provide information on the proposal, and seek comment and involvement from the local community. Further information can also be found at:

<http://www.wrgwrexham.co.uk>

1.2 The Applicant

1.2.1 The Facility is being proposed and developed by Waste Recycling Group which is part of FCC, the international environmental services, infrastructure and energy group. Waste Recycling Group currently operate the Phase 1 part of the development and are Wrexham Council's waste management contractors under the 25 year PFI agreement that commenced in 2007. The proposed Phase 2 element will further facilitate the recovery of recyclate from the municipal residual 'black bag' waste, and that of a similar composition from commercial and industrial sources.

1.2.2 Waste Recycling Group has a proven track record of developing and operating sustainable, environmental projects. The applicant believes that sustainable waste management does not have to create negative impacts on communities. By ensuring no processing or treatment of odorous waste occurs outside of the buildings, by developing the facilities sympathetically to the locality and by targeting sustainable local employment, a resource recovery facility such as that proposed within this application can create a positive impact.

1.2.3 A fundamental principle of any development such as the Wrexham Recycling Park is to integrate the development into the community it is located within. This focus on community scale and sympathetic setting brings the following benefits to the development;

- Development centred on the current Wrexham Recycling Park with the proposals for Phase 2 symbiotic to adjacent operations within Phase 1 and sympathetic to its overall industrial setting;
- The proposed Phase 2 facility will provide a more sustainable solution to dealing with residual wastes generated in the local area from which further recyclates will be extracted, and the development is supported by the generation and supply of green energy to the plant through the construction of an associated 50kW solar array;
- The remaining residual material converted into a product from which the inherent energy will be recovered at other suitable equipped facilities for the production of low carbon renewable energy; and
- All management infrastructure, administration, employment and investment decisions will be made locally wherever possible, thus maximizing economic benefit with the community;

1.2.5 The cornerstone of the development will be landfill avoidance, recycling, sustainable operations and the creation of a low carbon energy product utilising residual wastes generated in the area that are currently sent to landfill. The Mechanical Biological (MBT) Facility will produce a low carbon energy product in the form of Solid Recovered Fuel (SRF) which will be supplied to industrial production and/or energy recovery facilities.

1.3 The Site and Surrounding Land Uses

1.3.1 The site is located in a predominantly commercial/industrial area, characterized by the substantial Wrexham Industrial Estate. The development site is generally irregular in shape and is formerly developed land which has since been substantially regenerated by vegetation. It is not currently used for any purpose.

1.3.2 The northern boundary is demarcated by a drainage ditch which flows south west to north east, and separates the site from the operational area of Wrexham Recycling Park (Phase 1). The northern half of the eastern boundary is demarcated by a chain link fence beyond which is Bryn Lane. The southern half of the eastern boundary is bounded by CPL Petroleum's commercial refueling site. Re-vegetated land lies to the immediate south and to the west of the site there are further commercial and industrial premises associated with the wider industrial estate. The land is currently generally flat, with a slight fall towards the northern boundary ditch, with existing levels ranging from c. 28.5 to 29.5mAOD for the rough grassland towards the centre and east of the site, to 32.75mAOD for the overgrown spoil heap situated in the south west corner of the development site.

1.3.3 Beyond the development site area, the land is, again, generally level at around 29–30mAOD. The nearest settlement is Isycoed, 1.5km to the northeast. The

closest residential properties to the application site are Bryn Lane Cottages (circa 6 properties) located approximately 100 metres from the site boundary to the south east, directly south of the CPL Petroleum site.

- 1.3.4 The land on which the industrial estate is located is relatively flat, along with the surrounding agricultural areas. The immediate landscape is dominated by large industrial premises including distribution warehouses and manufacturing sites like the Kelloggs cereal production plant to the north of the Phase 1 operational area, approximately 300m away from the Phase 2 boundary.

1.4 Site History

- 1.4.1 Historical maps suggested the site has changed over the last 130 years, from a pre-war agricultural dominated use, to a post war developed land use. Table 1.1 below presents a summary of the site history from 1873 to 2011.

Table 1.1 – Site History

Map Dates	On-Site Features	Off-Site Features (only features within 500m that may affect the site are listed)
1873- 1899	A series of grassed fields and hedgerows.	Track/Road directly to the east of the site along the line of the current Bryn Lane road. A few properties present under the local name 'Bryn', and further towards the south a collection of properties at a place named 'Little Bryn' which bears close resemblance to the current Bryn Lane Cottages layout, which are the nearest residential properties to the development site.
1899 – 1954	No significant changes shown on plans from the period.	1899, a label on a property 'Bryn Cottage' appears to the south of Little Bryn. Road network connecting rural properties across the area bare resemblance to some existing features. No changes are shown during the War years and thereafter (1938 to 1954), although well documented that the origins of the industrial estate was from the manufacture of munitions during the Second World War. The reason that this Royal Ordinance complex is not shown on plans/maps from the period is therefore understandable.
1954 – 1964	Field structure no longer remains at the site which is crossed by a network of drains. An area of raised ground (possibly a spoil heap) is shown in the south western corner and overhead	Bryn Lane (labeled Bryn Road) and associated properties (Upper Bryn Farm, Little Bryn and Bryn Cottages) discussed above are well defined. Remnants of the former munitions storage are present to the east, over Bryn Road. To the west and

Map Dates	On-Site Features	Off-Site Features (only features within 500m that may affect the site are listed)
	cables run across the site from west to east.	south west the site is bounded by a railway line, and numerous buildings and structures, now labeled Wrexham Industrial Estate. The site is open to the north with fields being cut by a network of drains.
1972 – 1974	No significant changes	Change in off-site structures as the development of Wrexham Industrial Estate consolidates. Large warehouse type structure appears to the south east over Bryn Road and electricity sub-stations are present just beyond the western boundary.
1976 – 1983	No significant changes apart from a number of tree symbols appearing on the map illustrating vegetation growth.	Further development and consolidation of the industrial estate with the full extent of the large structure to the south east, and further large building structures (labeled factories) to the east over Bryn Road and to the north which seems to occupy the current Kelloggs operation footprint. The fuel depot has appeared directly adjacent to the eastern boundary along with associated tank structures.
1979 – 1993	No significant changes on site apart from the northern boundary drain and spoil area being better defined.	No major changes in off site features.
1993 – Present Day	No Significant Changes	Phase 1 Wrexham Recycling Park major building structures appear directly to the north of the proposed Phase 2 development area.

1.4.2 As can be seen from the above, there has been a long history of industrial activities in and around the proposed development site, in particular manufacturing and distribution operations. This development was facilitated by the development of a munitions complex during World War II. The facility, operated by Royal Ordnance, ceased production in 1945, and after the war years, a number of small to medium scale enterprises set up business utilising the pre-existing infrastructure. During the 1950's through to the present day, the industrial estate has attracted large multinationals who have constructed purpose built operations and those include British Celanese (latterly Courtalds), Firestone, Kelloggs, JCB, Owens Corning and BICC Cables.

1.4.3 Today, there are still a number of major companies operating out of the estate, including JCB and Kelloggs, with a large amount of regional small to medium scale enterprises. The wider industrial site also includes pre-existing waste management activities such as Alan's Skips Hire (ASH) Limited, who operate a

transfer and recycling operation to the south of the development site, and SITA UK Limited who operate a clinical waste incinerator to the west of the development site.

- 1.4.4 More recently in September 2007, permission was granted for the development of the Wrexham Recycling Park which is situated directly north of the proposed development site. The Wrexham Recycling Park was a PFI funded project to manage the municipal waste arisings for Wrexham County Borough. This site has been operated by Wrexham's municipal waste management contractor, Waste Recycling Group. The development consists of over 9,000m² of industrial and office floor space and consists of two large building structures. The In-Vessel Composting and Waste Transfer Station Building is approximately 150 metres long by 40 metres wide. The Materials Recycling Building (with front end offices) measures 85 metres by 50 metres at its widest points. The Waste Recycling Park also consists of substantial concrete manoeuvring areas, access road, barrier and weighbridge infrastructure, a Household Waste Recycling Centre, and surface water management lagoon.

2.0 APPLICATION PROCESS

2.1 Introduction

2.1.1 This planning statement accompanies the planning application in support of the development of the Mechanical Biological Treatment (MBT) Facility at Wrexham Recycling Park, which is submitted to Wrexham County Borough Council under the *Town and Country Planning Act 1990*. Drawing WR7042/19/03 shows the area covered by the planning application boundary and the extent of the existing site.

2.1.2 The planning application for the MBT Facility consists of the following:

- Application Forms and Certificates;
- Drawings;
- Planning Statement (incorporating a Design and Access Statement);
- Environmental Statement, Drawings and Technical Appendices; and
- Non-Technical Summary.

2.2 Planning Statement

2.2.1 This planning statement has been prepared to accompany the planning application which provides background information about the proposal. The remainder of the document provides information in the following sections:

- Proposal Details (Section 3);
- Environmental Considerations (Section 4);
- Policy for the Development (Section 5);
- Need for the Development and Alternatives (Section 6);
- Design and Access Statement (Section 7); and
- Summary and Conclusions (Section 8).

2.3 Design and Access Statement

2.3.1 The Design and Access Statement forms part of this statement, the purpose of which is to provide an outline of the following:

- Proposed development;
- Site context;
- Design principles of the building and site; and
- Relationship of the proposal to the existing site, and wider landscape and environment.

2.4 Environmental Statement

2.4.1 The Environmental Statement (ES) presents the findings of the Environmental Impact Assessment (EIA) which has been undertaken for the development. This has been carried out in accordance with the *Town and Country (Environmental Impact Assessment) (England & Wales) Regulations 1999 (as amended)* and is presented as a stand alone document.

2.4.2 Part II of Schedule 4 of the *EIA 1999 Regulations* specifies the following information that must be provided.

1. A description of the development comprising information on the site, design and size of the development;
2. A description of the measures envisaged in order to avoid, reduce, and if possible, mitigate significant adverse effects;
3. The data required to identify and assess the main effects which the development is likely to have on the environment;
4. An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for his choice taking into account the environmental effects; and
5. A non-technical summary of the information provided.

2.4.3 The information as required above and further technical details of the proposal are presented in the ES, which should be read as a supporting document to the planning application. By its nature, the ES is a technical document and the EIA Regulations 1999 recognised the need to produce a Non-Technical Summary.

2.5 Non-Technical Summary

2.5.1 The Non-Technical Summary (NTS) is a stand alone document which is a summarised version of the ES, written in a non-technical language with the intention that all readers can understand the issues. It provides an easy to read summary of the proposals and findings of the Environmental Impact Assessment.

2.6 Environmental Permitting (England & Wales) Regulations 2010

2.6.1 In addition to requiring a planning permission, the facility will also require an Environmental Permit to operate. The Environmental Permit is issued by the Environment Agency (EA) under the Environmental Permitting (England & Wales) Regulations 2010, following a detailed application which considers further the management procedures and potential impacts of the facility during its operations.

2.7 Information Availability

- 2.7.1 Electronic copies of all the documents submitted to Wrexham County Borough Council in respect of the planning application for the development of the Bryn Lane Mechanical Biological Treatment Facility are available at the following web sites:

<http://planning.wrexham.gov.uk/Planning/Ig/GFPlanningWelcome.page>

<http://www.wrgwrexham.co.uk>

- 2.7.2 Paper format copies of the planning application, environmental statement and supporting information are available on request at the following prices:

- Full Hard Copy – £120
- CD Copy – £20

- 2.7.3 All requests for hard copy information should be addressed as follows:

**Waste Recycling Group
Wrexham Recycling Park Phase 2
c/o Stratus Environmental Ltd
4245 Park Approach
Thorpe Park
Leeds
LS15 8GB**

3.0 THE DEVELOPMENT

3.1 Introduction

3.1.1 The proposed facility will be designed to manage Municipal Solid Waste (MSW) and Commercial / Industrial waste. The MSW will be received from WRG's contract with Wrexham County Borough Council, and other similar Commercial / Industrial (C&I) wastes from the County Borough and surrounding region. The development will only accept non-hazardous waste for processing. The process will separate out further recyclates contained within the waste streams which will then be sent for off-site reprocessing, with the remaining waste processed to form two types of Solid Recovered Fuel (SRF) products. As shown on drawing WR7042/19/06, operations will broadly comprise the following elements:

- Mechanical Treatment (MT) Facility
- Biological Treatment (BT) Facility
- Road Sweeping Waste Processing Facility
- Office and welfare facilities.

3.1.2 The facility will have a capacity to treat and process approximately 70,000 tonnes of waste per annum. Waste received at the facility will be MSW, including 'black bag' residual household waste, and C&I waste. The recyclable materials separated by the MBT process will be bulked up and baled where appropriate for onward transportation to specialist material re-processors. The remaining waste will then be processed into SRF using the biodrying where appropriate. The SRF will be supplied to commercial operations such as cement works and Energy from Waste (EfW) facilities where the inherent energy contained within the material can be recovered. Drawing WR7042/19/15 shows the proposed management of waste diagrammatically.

3.2 The Mechanical Treatment (MT) Operation

3.2.1 Both the Mechanical and Biological Treatment processes will be undertaken within one large building, which will be subdivided into different areas, or halls. The waste treatment operations will take place in designated areas of the proposed facility as shown on drawing WR7042/19/06. The building will be constructed upon a durable surface of reinforced concrete hard standing to enable environmentally safe and efficient handling of the waste materials.

3.2.2 It is intended that the MT process will handle up to 70,000 tonnes per annum which will be sourced from MSW and C&I sources and will be transported to the site in a variety of Refuse Collection Vehicles (RCVs), Heavy Goods Vehicles (HGVs) and other skip vehicles. It is broadly anticipated that the following recyclable materials will be recovered from the MSW and C&I waste inputs:

- Ferrous and Non Ferrous Metals;
- Plastics;
- Paper & Cardboard;
- Glass
- Wood; and
- Inert materials (soil, brick/rubble, concrete).

- 3.2.3 The applicant will be required to apply for an Environmental Permit (EP) issued by the Environment Agency (EA). The EP will specify the waste types and quantities to be accepted at the site. In accordance with Duty of Care requirements, all waste materials will be visually inspected upon arrival and during delivery and processing. In the event that deposited wastes are found to contain waste not approved in the Environmental Permit, these will be quarantined for subsequent removal to a suitably authorised waste management facility.
- 3.2.4 On entering the site off Bryn Lane, vehicles will proceed to the existing Phase 1 weighbridge to confirm the weight, the nature, and origin of the waste; and for completion of the relevant documentation in accordance with the Duty of Care Regulations.
- 3.2.5 From the weighbridge, vehicles will be directed to the MBT area (Phase 2) of the wider Recycling Park, where they will enter the main building through a door in the eastern elevation and deposit waste materials into the appropriate storage bay in the reception. The reception area will be divided in storage bays using concrete 'push walls' where necessary. Storage bays will allow different waste materials to be kept separate. Where required, manual sorting will take place to remove any bulky items or non conforming wastes, such as large timbers, furniture, steel poles etc, from the MSW and C&I waste streams. This material will be physically broken down where feasible and fed through the MT process accordingly.
- 3.2.6 The waste will be loaded into a bag shredder by a wheeled loading shovel. The material will be conveyed into the Mechanical Treatment Hall, where a variety of recyclables e.g. glass, cardboard, paper, plastics and metals will be separated out and conveyed into separate storage bays. Separation of recyclable materials will be achieved via automated methods which include magnetic, eddy current, infra red and ballistic separators as required. The remaining waste material including the sub 80mm organic fraction will be dropped into dedicated waste bays in readiness for bio-drying where required and processing into SRF. Due to the nature of C&I waste and in order to retain flexibility some recyclables will be removed via the inclusion of a manual picking line. Residual black bag waste will be sorted via a fully automated process.

- 3.2.7 The separated recyclable materials will be then be bulked up prior to onward transportation to suitable re-processors. This will take place within the recycle processing hall. Recyclable material such as metal cans, plastic bottles and paper and film will be baled to ensure efficient transport of the materials to the reprocessors. Other materials will be loaded loose into specialist bulk vehicles. Prior to leaving the site the HGV bulkers will be weighed on the exit weighbridge and all vehicles will be appropriately covered to prevent materials being deposited on the highway.
- 3.2.8 Organic fractions removed via the MT process will be passed through the bio drying process to remove excess moisture before being incorporated into the SRF product. The biodrying processes will collect air from within the building and thereby create a negative pressure which will ensure that any odours arising from the handling of organic waste will be kept within the building. This air will be processed through the bio-filter system as outlined within section 3.3. All doors to the building will be kept closed whenever possible.
- 3.2.9 A schematic cross section of the Mechanical Treatment (MT) is shown on drawing WR7042/19/15
- 3.2.10 While at this stage it is expected that approximately 25,000 tonnes per annum of sorted bulked recyclable materials will be transported off site per annum and approximately 40,000 tonnes per annum of SRF. Details of the frequency of the transportation of exported materials can be found in Chapter 12 Traffic and Transport.

3.3 The Biological Treatment (BT) Operation

- 3.3.1 An integral part of the proposal is for the development of the Biological Treatment element of the process. The Biological Treatment infrastructure will be sized in order to process up to 30,000 tonnes per annum of post MT organic waste.
- 3.3.2 The BT process involves the biodrying of mainly one waste stream. This waste stream comprises of the sub 80mm 'undersize' fraction of household 'blackbag' waste which has been separated out via a trommel screen within the MT process. This material will have its own dedicated bay within the waste reception hall and from here, it will be loaded into a biodrying tunnel, located on the opposite side of the reception hall, of which there are five in total.
- 3.3.3 The organic fraction will be loaded into the biodrying tunnels by a wheeled loading shovel. The tunnels are then sealed and the material subjected to positive supply aeration which in combination with the properties of the material causes the material to heat up via the natural aerobic composting process. As a result the inherent moisture within the waste material is driven

off. Fresh ambient air is drawn from within the building via specific ductwork located in the roof and is forced up through the floor of the tunnel via a series of air nozzles (spigots) and into the organic waste material. The design shall allow for easy cleaning and maintenance to ensure optimum performance is maintained. Any effluent draining from the organic material will drain from the base of the tunnel into a specific containment tank. Effluent will then either be drained direct to sewer or tankered off to an appropriate treatment facility. The conditions within each tunnel will be constantly monitored with parameters such as oxygen levels, humidity and temperature being controlled to optimise the biodrying process. The 'exhaust' air will be extracted from the tunnels and treated through a particle scrubber and biofilter, prior to discharge to atmosphere.

- 3.3.4 All waste air from the tunnels will be processed through a particle scrubber which will remove small particles and ammonia contamination. The air will then be passed through a biofilter prior to discharge to atmosphere via an exhaust stack. The top of the stack will be 2m higher the ridge line of the main building. The biofilter media will consist of shredded woodchip from sources such as pine tree roots, or other similar material that has the required purification properties. The biofilter media will be contained within a building to a depth of circa 2.5m. The exhaust air will then be pumped under the material and allowed to slowly filter through it. As it does contaminants will be absorbed by the filter media and consumed by the micro-organisms which colonise the media and thereby deodourise the exhaust air. The biofilter will be compartmentalised in order that continued operation can be undertaken during the replacement of filter media. The biofilter will ensure that emissions released are well with acceptable limits. These emissions will be regulated by the Environment Agency via the Environmental Permit.
- 3.3.5 Once the drying process is completed (up to a two weeks), the waste material will be removed and then blended with other post MT waste as required in order to create two grades of SRF product which will then be stored in separate bays in readiness for collection and transfer. One SRF product will be high grade for use in the cement industry as a replacement for traditional fossil fuels and the other, a low grade SRF for use in energy generation via an Energy from Waste (EfW) facility.
- 3.3.6 The BT biodrying tunnels will be located in a designated part of the proposed MBT building as shown in drawing WR7042/19/06. The exhaust stack of the biofilter will be circa 14m above ground level and 2m above the main building ridge line. Details of the Landscape and Visual Impact of the proposals can be found in Chapter 6 of this ES.

3.4 Road Sweeping Waste Processing Hall

- 3.4.1 The north eastern corner of the building will be dedicated to processing and recycling of municipal road sweeping and gulley sucker waste as shown within drawing WR7042/19/06.
- 3.4.2 Road sweeper and gulley sucker waste is already processed within the Phase 1 facility where excess water is removed to sewer. The remaining solid material will then be processed through the proposed facility. The solid waste will be transported from Phase 1 via a suitable vehicle and discharged into the reception area. A loading shovel will then feed the processing equipment via feed hopper. The waste will be processed through wet screen equipment effectively washing out aggregate and grit fractions from the waste stream. The aggregate and grit can then be reused as a building product. The remaining organic and solids content will then be disposed of to landfill or further recycled off-site. Dirty water used in the process will be discharged to sewer. The separated fractions will be deposited into separate skip containers ready for export from site.
- 3.4.3 Skips and/or containers will be removed from one of the three smaller roller shutter doors dedicated for materials collection.

3.5 Process Flow

- 3.5.1 Waste material will be brought into the site via the existing Phase 1 access road and weighbridge where the different waste streams can weighed and recorded. The waste reception hall will include separate bays (as shown on drawing WR7042/19/15) to allow various waste types to be kept segregated. The material will be fed into the Mechanical Treatment (MT) process via wheel loading shovel. MT plant operating hours are likely to be 07.30 to 18.00hrs Monday to Saturday and 10.00 to 16.00hrs on Sundays and Bank Holidays. The BT aeration process will automatically operate 24 hours per day.
- 3.5.2 The MT plant will be capable of processing up to 70,000tpa of waste (drawing WR7042/19/06). The process line will consist of various conveyors which will deliver material through a range of separation equipment. Indicative separation equipment includes;
- Feed Hopper (incorporating a bag shredder);
 - 80mm Trommel Screen;
 - Ballistic Separator;
 - 3 x FE Separators;
 - 2 x Eddy Current Separators;

- 3 x NIR (Near Infra Red) Separators; and
- Material Shredders.
- Picking line for C&I waste
- Other sorting equipment as required

3.5.3 The materials produced from the MT process includes separated recyclates and post MT residuals. The recyclates are subjected to further processing in the recyclates output hall, where materials are bulked up and baled to improve handling characteristics in readiness for off-site transfer to specialist materials reprocessors. The remaining post MT fractions are then stocked in designated bays in readiness for either transfer into to the biodrying tunnels or blending into SRF as required. The biodrying process will be able to reduce the moisture content of the sub 80mm product from 35–45% down to less than 20%. The biodrying aeration process will operate 24 hours per day, 7 days per week.

3.5.4 The final products removed from the biodrying tunnels will be subjected to processing and blending into the SRF products. The use of SRF will displace the need for the use of fossil fuels and are a low carbon energy source.

3.5.5 The MBT process significantly reduces the volume of municipal residual waste and allows some of the residues to be recycled and recovered, meaning that compliance with the waste hierarchy is achieved and landfilling of waste therefore reduced to a long term minimum of less than 5%, in line with waste policy in Wales.

3.6 Process Residues

3.6.1 The residues sent to landfill for disposal will be minimal as a consequence of developing the proposed facility.

3.6.2 Other process residues include effluents (leachate) from the biodrying process, which will be discharge to sewer or tankered to an appropriate treatment facility. Effluents from amenity block will be discharged to foul sewer.

3.7 Office/Welfare Accommodation

3.7.1 As shown on drawing WR7042/19/06, WR7042/19/16a and WR7042/19/16b a two-storey amenity block will be provided within the main MBT building footprint. The office will primarily serve the MBT management, operational staff, amenity/welfare needs and stores of the MBT process. There is parking for 12 cars on the MBT development footprint. Motorcycle and cycle storage facilities will also be provided by the current Phase 1 arrangements.

3.8 Operating Hours

3.8.1 The MBT will normally operate between;

- 07.30 and 18.00 Monday to Saturday; and
- 10.00 and 16.00 Sundays and Bank Holidays.

These hours will be associated with the delivery, receipt, mechanical treatment and materials collection elements of the operation. The biological treatment operation will be undertaken on a 24 hours, 7 days a week basis throughout the year. The delivery of waste and the export of processed materials would only occur during the normal operating hours.

3.8.2 No delivery, despatch or on-site external movement of waste would therefore take place outside the above hours, except in the case of emergencies.

3.8.3 Routine and non-routine maintenance operations to mobile or static plant within the building will take place as and when required. Routine maintenance operations outside the building will be scheduled to take place during the daytime (normal) hours and will only extend into the night time and/or out of hours should this prove necessary to maintain the continuity of the process. Any non-routine maintenance and repair operations will be undertaken as and when they arise.

3.9 Employment Generation

3.9.1 The development of the facility will initially provide 8 permanent shift based jobs, and will require the following:

Table 3.1 – Employment Positions

Job Description	No. per Shift	No. of Shifts	Total
MBT Shift Team Leader	1	1	1
Wheeled Loader Operative	1	1	1
Petal Grab Operator	1	1	1
Generic Operative/Baler	1	1	1
Electrical Maintenance	1	1	1
Mechanical Maintenance	1	1	1
Administrative Clerk	1	1	1
Kay Polley [k.polley@hotmail.com]	1	1	1
General Operative/Street Sweeping Recycling	1	1	1
Total			8

3.9.2 Up to 8 employees will be initially required to operate and provide management and maintenance support for the MBT facility on site. There will also be a number of temporary employment opportunities generated and safeguarding of existing jobs (indirectly) during the construction phase. Indirect employment

would also arise from the development, particularly in respect of plant maintenance and the provision and use of services from local suppliers.

- 3.9.3 It is proposed that subject to grant of planning permission and implementation of necessary development controls, the development implementation phase of the facility would be completed within an estimated 30 month period.

3.10 Lighting

- 3.10.1 All processing activities will be undertaken internally. Due to the enclosed nature of the operations within the building there will be only limited external lighting to enable safe personnel access to ancillary equipment and traffic movements into and out of the facility. Hours of working mean the site lighting will be required after dusk, during the winter months (within the permitted hours) to ensure safe working. Some background security lighting will also be incorporated into the facility. An assessment will be made of the lighting requirements prior to implementation.

3.11 Traffic Generation

- 3.11.1 The operation of the facility will give rise to approximately 75 commercial vehicles arriving and departing in each working day (150 vehicle movements). The routes that the vehicles would take to access the facility will be dependent on the source of waste materials.
- 3.11.2 Further to the daily 150 commercial vehicle movements there will also be an additional 16 vehicle movements. These movements will be from the staff and site operative's private vehicles. In reality however, some car trips are likely to be shared and some employees may arrive by non-car modes.
- 3.11.3 Due to the delivery patterns of the commercial vehicles, these movements will be staggered over a 10 hour period and not concentrated at peak-times. Chapter 12 of this ES discusses in more detail traffic and transport.

3.12 Access

- 3.12.1 Access to the proposed facility will be from the existing private road that connects the Wrexham Recycling Park (WRP) to Bryn Lane. This access route, which is secured at the weighbridge facility by means of access barriers, is a double carriageway concrete construction. An established steel palisade fence runs the length of the private road to the northern and southern edge of the carriageway. The junction of the private road with Bryn Lane takes the form of a simple T-junction. Access is also provided near to the point of entry off Bryn Lane to the Household Waste Recycling Centre (HWRC) on the southern side of

the private road carriageway. Traffic is controlled on the private access route into the facility via a series of signs and road markings (white lining).

- 3.12.2 Access to the proposed MBT development will be provided via the Phase 1 hardstanding area, to the eastern side of the Phase 1 Waste Transfer / IVC building.

3.13 On-Site Traffic

- 3.13.1 Vehicles delivering waste material to the site will be weighed before be directed to deposit their load at the MBT. Adjacent to the entry weighbridge is a second weighbridge for vehicles leaving the site. The two weighbridges are used in order that a tare weight is obtained where necessary. As shown on drawing WR7042/19/06, commercial vehicles will enter the MBT building through roller shutter doors located in the south eastern elevation. After depositing the waste material commercial vehicles will exit the building and leave via the exit weighbridge. Vehicles will leave the facility the way they entered the site.
- 3.13.2 Vehicles collecting recyclates and SRF materials would also use the weighbridges to establish accurate payloads.
- 3.13.3 Access to the biofilter housing and external ancillary equipment would be via a perimeter service road.
- 3.13.4 Visitor car parking is located in the current Phase 1 area with some additional parking located externally to the MBT along the building's eastern elevation for staff directly employed in the operation of the proposed MBT facility. Private vehicles must also obey the traffic routing system across the site at all times.

3.14 Landscaping

- 3.14.1 A scheme of landscaping is presented in drawing WR7042/19/12. The scheme will comprise hard and soft elements such as low level screening mounds and appropriate seeding mixes for grassed areas. A tree planting regime is also proposed to supplement native species that will be retained along the eastern half of the site as part of the ecological mitigation and enhancement proposals. Chapter 6 of this ES provides more detail on the proposed scheme of landscaping, whilst Chapter 10 of this ES provides more detail on the proposed scheme of ecological mitigation and enhancement.

3.15 Ancillary Development

- 3.15.1 As part of the MBT process, external structure requirements will include:
- Biofilter Housing;

- Biofilter Flue Stack;
- Solar Panel Array and distribution cabling;
- Transformer unit;
- Circuit breaker unit;
- Switchgear housing; and
- Firewater tank and associated pump room.

3.15.2 The biofilter housing is approximately 35 metres long by 20 metres wide by 6 metres high (at its highest point). The biofilter will be compartmentalised to allow for continual operation during change over of biofilter media. It will also contain a 14m high discharge stack to allow for effective dispersal of treated process air.

3.15.3 As part of a measure in offsetting the energy consumption of the MBT plant and/or the existing Phase 1 facility, it is proposed to construct a small scale solar panel array which will be 'ground frame' mounted along a pre-existing, south facing batter of the Household Waste Recycling Centre (HWRC) on the Phase 1 part of the development. The area available, circa 300m², will afford the location of 2 rows of ground mounted panels which will give an array capable of generating up to 50kW. The energy generated by this array will feed into the site's distribution network for use as parasitic load, or for export to the grid as appropriate. The solar panel layout and mounting details can be seen on drawing reference WR7042/19/17 and WR7042/19/18.

3.15.4 The firewater tank is sized to hold water for use in the event of a fire within the MBT process.

3.15.5 The remaining ancillary structures are limited to the electrical transformer, circuit breaker and switchgear units. These are located on the north west elevation of the main MBT building.

3.15.6 Entrance control barriers and two weighbridge units will be located at the Phase 1 entrance area to the north east of the MBT building. They will serve to accurately record and check incoming waste streams, direct them to the appropriate part of the process building.

3.16 Building Design

3.16.1 The proposed facility is located within a well established industrial estate setting. There are two recently constructed larger scale industrial buildings that form part of the Phase 1 development associated with the wider Wrexham Recycling Park (WRP). These are located to the north and east of the proposed development area.

- 3.15.7 The design principles of the facility reflect the functional nature of the operations contained within the building. The facility will be accommodated in a modern, bespoke purpose built building similar to other industrial and commercial style buildings. The building has been designed to house the plant and machinery required to operate efficiently and safely whilst being sympathetic to the surrounding environment. The surface finish of the external materials will be the same as that employed on the Phase 1 process buildings, namely Mercury Silver (RAL 9006), with galvanised roller shutter doors.
- 3.15.8 The steel portal frame building with profile metal cladding will measure approximately ~132m by ~58m by ~12m high (ridgeline) giving a footprint of 7,656m². Major louvers will not be incorporated in the building, as this needs to be as airtight as possible where fans will draw off sufficient air to establish the required air changes and take the potentially malodorous air out through the bio-filter. The building will be fully enclosed on all four sides.
- 3.15.9 The elevations as shown in drawing WR7042/19/07 shows 7 roller shutter doors in the eastern elevation and No. 4 personnel doors. Staff and visitor access to the building is on this elevation. Other roller shutter and personnel doors are also sited on the north, south and western elevations to allow for maintenance access. The building will be constructed upon a durable surface of reinforced concrete hard standing to enable efficient handling of the waste. Visualisations of the facility are shown in drawings WR7042/19/16a and WR7042/19/16b.

3.17 Surface Water Management

- 3.17.1 The facility will incorporate a bespoke surface water drainage strategy for the site. To reflect the principles of Sustainable Urban Drainage Systems (SUDS) the proposed strategy shall provide for the attenuation of surface waters on site and will also include Environment Agency approved interceptors and gullies to prevent the release of any suspended solids or potential contamination from the site.
- 3.17.2 The drainage philosophy for the facility has been designed to capture, harvest and utilise surface water run-off, and retain on site for use within the office/welfare building. The facility will consist of a number of different surface areas which will either be permeable or impermeable.
- 3.17.3 Permeable areas will form those parts of the facility which are non-operational e.g. landscaping areas. These areas will consist of a permeable material where surface water will drain natural to the ground.
- 3.17.4 Impermeable areas will consist of those parts of the site where HGV's will access the facility and where there is loading/unloading of materials required for

operational purposes or where external plant maintenance maybe required. Surface water run-off from these areas will drain to the surface water lagoon via an interceptor. Chapter 8 provides more detail on the drainage strategy for the facility.

- 3.17.5 Rainwater falling on the roof of the proposed building will be collected, harvested and used for 'grey water uses' in the office accommodation and biofilter process. Water collected from the roof of the building will be stored in tanks and any surplus water not required will drain to the surface water lagoon.

3.18 Regulation of the Facility

- 3.18.1 In addition to planning permission, other consents will be required to enable the proposed development to operate. In particular, an Environmental Permit will be required from the Environment Agency that will control the operation of the facility. The basic purpose of the environmental permitting regime is to introduce a more integrated approach to controlling pollution from industrial sources. It aims to achieve a high level of protection of the environment taken as a whole by, preventing or, where that is not practicable, reducing emissions to air, water and land. The main way of achieving this aim is by determining and enforcing permit conditions based on the best available means. The Environmental Permit will detail controls and limits for all aspects of the waste treatment process.

Environmental Management System

- 3.18.2 An Environmental Management System for the facility will be developed and implemented to ensure the facility maintains and continually improves its environmental performance.

3.19 Construction Programme and Phasing

- 3.19.1 Subject to the grant of planning permission and issue of the Environmental Permit, it is anticipated that the construction of the facility would commence at the beginning of 2013. This would follow on from 12 months worth of ecological mitigation works during 2012. The construction activity will last for approximately 12 months, after which there would be a 6 month commissioning period scheduled for completion in June 2014.
- 3.19.2 The provisional programme for the construction works includes:
- site establishment, enabling and site clearance;
 - lagoon construction;
 - site preparation including drainage and services infrastructure piling (if required) and excavation works;

- construction of building foundations and structures;
- erection of the building superstructures;
- external cladding and roof;
- external works to buildings;
- internal fit-out, including delivery of main plant components; and
- completion of external areas ecological mitigation and landscaping.

3.20 Construction Working Hours

3.20.1 Construction is expected to take place during the hours of 0600 to 1800 (Monday to Saturday) No construction operations would take place on Sundays or Bank holidays.

3.20.2 Deliveries associated with the construction phase would be limited to the above hours.

3.21 Employment During Construction

3.21.1 Levels of employment will vary throughout the construction period however it is likely that employees will range between 35 and 55 per day during the first 52 weeks of construction and 25–35 employees per day during the remaining 26 weeks. Peak levels of employment are likely to be associated with concrete works, building of the superstructure and internal works. The principal contractor will be encouraged to source sub-contractors, construction materials and plant and equipment locally.

3.22 Construction Method

Site establishment and enabling works

3.22.1 At the outset, the construction area will be secured by the existing fencing and supplemented with temporary fencing where necessary, the proposed access implemented and the principal contractor will set up the initial site accommodation and welfare facilities, including temporary services on the site. Facilities include temporary modular accommodation for the site management and contractors together with welfare facilities. Contractors will use the new site access as approved.

3.22.2 To ensure site security there will be a single point of entry to the site for all construction personnel.

Re-Profiling Works

3.22.3 Following the site establishment phase, the next operation will be the cut and fill exercise to create the development platform. These re-profiling works will

take into account that a Welsh Water foul sewer that runs roughly north to south across the development site, almost dividing the site in half. Drawing WR7042/19/10 identifies the location of the foul sewer. At the closest point the proposed excavation works will be at least 5m from the identified sewer.

- 3.22.4 The re-profiling work has been designed to achieve a minimum of removal of materials off site to achieve the required design levels. Chapter 9 of this ES suggests that much of this excavated material will be reworked clays and made ground, beneath which is superficial deposits of Glacial Till and Alluvium in certain areas, and at a greater depth are the Upper Coal Measures rock head.
- 3.22.5 The main feature that requires consideration as part of the site redevelopment is the presence of the spoil heap in the south west corner of the development site, which sits within the proposed building footprint. This material will need to be managed sensitively due to the presence of contaminants. It is proposed that these contaminants are screened out and taken off site for appropriate disposal.
- 3.22.6 Top and sub soil stripped from the development plot would be appropriately stored and reused in the proposed scheme of landscaping where feasible.
- 3.22.7 A large area of the site will be set aside for nature conservation and mitigation as a result of the presence of the development footprint. Towards the eastern half of the site, this part of the development will be further enhanced to support native species and will connect with a currently designated Local Nature Reserve site present within the north east corner. This area will also need to incorporate a surface water attenuation lagoon which can also be used as an ecological habitat.
- 3.22.8 Due to the underlying geology of the site, piling may only be required at particular locations to deal with loading requirements and may therefore be completed within a relatively short period of time. The lateral extent and piling density will form part of the detailed design stage, at which time consideration will also be given to appropriate piling techniques, e.g. in-situ poured piles and pre-cast driven piles.
- 3.22.9 Control of dust from this activity is discussed further in Chapter 11 of this ES.

Substructure

- 3.22.10 Once the re-profiling works have been completed, the building foundations will be installed. The substructure works, such as pile caps and ground beams will commence after piling, together with installation of the drainage network and the impermeable concrete floor.

Superstructure

- 3.22.11 This is the erection of the superstructure for the building and fixing of the external weatherproofing. The superstructure would be erected with a series of cranes. It is anticipated that the walls and roof materials will be delivered in sections, assembled on the building floor and lifted into position in stages. The roof steelwork will incorporate safety and maintenance walkways, lighting bars, service supports and roof cladding rails. Erection of the biofilter, exhaust stack, and firewater tank will also take place during this stage.

Internal fit-out

- 3.22.12 Once the buildings are weather tight, work will commence on internal plant installation and finishes, etc. Installation of the main pre-fabricated components, e.g. mechanical treatment plant etc. will require cranes on-site to lift them into place. This work is largely contained within the building shell as is the installation of lighting, heating and cooling systems. Connections to water, drainage, electricity and communications will be external activities.

Access and Traffic

- 3.22.13 Access to the site during the construction phase will be from the existing Phase 1 area, i.e. along the private road and into the Phase 2 area at a point along the northern boundary as detailed in drawing WR7042/19/03. Throughout the construction phase the works will generate traffic as a result of the movement of materials and labour into and out of the site. Construction traffic is expected to peak during Summer 2013, however, a Traffic Management Plan will be prepared in advance of the construction works. Traffic generation is assessed further in Chapter 12 of this ES.

3.23 Construction Traffic

- 3.23.1 It is expected that traffic generation throughout the construction phase will be largely created by two types of vehicles, heavy and light goods vehicles. HGVs would deliver materials and consumables to site where LGVs would largely act as a means of transport to the site for the workforce. The extent of HGV movements will vary at different stages of the construction works in response to the activities taking place at any given time. Similarly, LGV movements will vary accordingly with the number of staff on site. Section 3.21 above provides anticipated workforce numbers during the construction phase
- 3.23.2 Averaged over the estimated 12 month construction phase it is anticipated that HGV construction traffic will be lower than the expected levels associated with the operational phase, and will operate at or below 30 HGVs a day (60 vehicle movements).

- 3.23.3 Included within these traffic movements there will be several 'one-off' HGV movements associated with the import of excavation-related plant, piling machines, tower and mobile cranes, and abnormal loads associated with the internal plant and ancillary equipment.

3.24 Construction Waste Management and Disposal

- 3.24.1 Waste will be generated during all stages of the construction works. The principal works contract, which will detail proposals for the disposal and management of solid waste created during the construction works, will be developed by means of a Site Waste Management Plan (SWMP). All relevant contractors will be required to investigate opportunities to minimise waste arising at source and, where such waste generation is unavoidable, they will be required to maximise the recycling and reuse potential of construction materials. Wherever feasible, such arisings will be dealt with in a manner that reduces environmental effects and maximises potential reuse of materials. Recycling of materials will primarily take place on site where noise and dust risks will be considered and closely managed to ensure minimal impact on the occupants of surrounding properties.

3.25 Management of Spillages and Site Run-off During Construction Phase

- 3.25.1 Most spills can be prevented with careful handling, storage and use of potential pollutants. In addition to the preparation and implementation of Construction Environmental Management Plan (CEMP) good practice measures that will be undertaken include:

- all oils and chemicals will be stored in secure, appropriate containers, with labels clearly identifying the product;
- all products will be kept in secure storage with integral drip trays (e.g. COSHH cages);
- containers with more than 200 litres of oil-based products will be provided with secondary containment (e.g. interceptor drip trays) capable of holding 110% of the volume of the container, or 25% of combined volume of the containers, whichever is greatest. They should also be located away from any surface water drains;
- mobile fuel bowzers will be kept locked when not in use, and any hoses stored within the secondary containment; and
- all hoses associated with delivery of oil or fuel will have automatic cut off devices, and will be kept within the secondary containment.

- 3.25.1 In the event that a spillage occurs, the effect will be minimised by prompt and effective action. Spill kits including granules, absorbent pads, absorbent booms and hazardous waste bags shall be provided along with training of staff in their use. All used spill kit material will be disposed of as hazardous waste.

Measures for dealing with emergency spillages will need to be included in a CEMP.

3.25.2 The operation and refuelling of plant can cause contamination of ground, ground water and surface waters from leaks, drips or spills. Drip trays (interceptor drip trays) will be used under generators, pumps and other plant equipment as determined necessary to protect the ground from oil/fuel contamination. Smaller, more mobile drip trays will be used when refuelling or carrying out maintenance of larger plant. Maintenance and refuelling of plant will be undertaken in designated areas, within which contingency plans will be implemented to ensure that the risk of spillage is minimised.

3.25.3 Interceptor drip trays will be located on flat surfaces and primed with two to four inches of clean water and drip trays will be emptied before they are moved.

3.26 Site Drainage During Construction Phase

3.26.1 The control of surface water run-off during the construction phase will be based on best practice guidance provided by the Environment Agency and CIRIA (Construction Industry Research and Information Association) with systems put in place to ensure suitable treatment and discharge of surface waters.

3.26.2 In order to comply with the conditions of any discharge licence, good practice measures to be adopted include:

- the surface water lagoon will be constructed as one of the first tasks and used as a control for surface water discharge from site
- suspended solids will be removed within the lagoon prior to discharge to surface water in consultation with the EA;
- keeping all sources of potential pollutants (e.g. flues, chemicals) away from drains on drip trays;
- regular checks of water quality for dewatering will be undertaken prior to its discharge into the drainage system;
- undertaking of concrete washout in areas with controlled drainage only (i.e. not to surface water drains);
- concrete washout areas will have separate drainage systems and water will be appropriately treated before discharge; and
- road sweeping to control mud on roads, as required.

3.26.3 Compliance with the measures referred to above will ensure impacts on surface waters will be adequately controlled.

3.27 Environmental Management

Environmental control measures

- 3.27.1 The measures described below will be imposed to minimise adverse environmental effects during construction (in addition to those already described above). The assessments presented in this ES have been undertaken on the basis that these measures will be implemented. A CEMP, detailing those environmental control measures will be prepared and adopted and *inter alia* will include sections on noise; vibration; air quality; water quality; surface quality (prevention of contamination of ground surface); site transportation and traffic management; visual intrusion and waste management. It is currently known that the following will be included in the CEMP:

Plant and equipment

- 3.27.2 A regularly serviced lorry fleet will be used for the collection of excavated material (if necessary) and transportation of plant and equipment.

Minimising dust

- 3.27.3 The tipper lorries and skips will be fully sheeted over and pass through wheel washing installations prior to departure, if necessary.

Minimising noise and vibration

- 3.27.4 All construction activities, which have the potential to generate significant amounts of noise and/or vibration, will be undertaken during normal working hours.
- 3.27.5 Consideration will be given to the appropriate piling technique, e.g. in-situ poured piles.
- 3.27.6 Effective silencers will be fitted to the exhaust system of all plant and equipment.
- 3.27.7 Engines will be switched off on-site when not in use and quieter regularly maintained, serviced plant will be used where appropriate. Furthermore, when particularly noisy activities are planned contact will be made with the local community to inform them of such activities.

Air Quality Management

- 3.27.8 The utilisation of modern fuel-efficient plant will reduce the emission of exhaust gases into the atmosphere.

- 3.27.9 All exhaust systems will be fitted with catalytic converters where feasible and plant and equipment will be regularly serviced with air filters which will be regularly replaced or washed.
- 3.27.10 The Control of Substances Hazardous to Health (COSHH) survey and report will identify any substances likely to cause offensive odours. A risk assessment will be produced and effective control measures employed to prevent the release of odours accordingly.
- 3.27.11 Temporary on-site wheel washing facilities will be provided if required although this is only likely to be during the main earthworks stage.

Surface ground controls

- 3.27.12 If necessary, the private road and Bryn Lane will be subject to sweeping and washing using a combination of manual and mechanical means, as required.
- 3.27.13 Additional care will be taken where there is the potential for surface contamination, such as the refuelling of plant and equipment with diesel and the maintenance of plant and equipment involving the use of engine and hydraulic oils. This would be permitted only within designated areas, away from drainage points and traffic and plant routes.
- 3.27.14 All diesel fuel will be stored in double skinned over-capacity bowsters that will be refuelled at designated times by bulk delivery tankers, reducing the total number of traffic movements.
- 3.27.15 There will be effective usage of absorbent granules on the ground in key locations. All engine and hydraulic oils will be provided within reusable plastic containers.

Land quality

- 3.27.16 It is anticipated there will be areas of the site that will require treatment in the form of remediation prior to the commencement of the construction phase. This requirement is relatively well defined, however, and is restricted to the spoil heap material located in the south west corner of the site. Section 9 of this ES provides further details on the nature of the ground conditions at the site, and the remediation requirements prior to the commencement of major construction works.
- 3.27.17 Whilst the contaminative nature of the material is fairly well defined, the contractor will still need to develop an Emergency Response Plan, detailing measures to be taken in the event of certain foreseeable occurrences, including:

- spillage of potentially contaminated soils on the public highway; and
- occurrence of elevated dust levels, within the site and off-site.

3.27.18 In the event of a discovery of unusual or unknown potentially hazardous materials or unexpected material the Contractor will be required to:

- take immediate measures to ensure the safety of all persons likely to be affected in the surrounding area;
- stop work in the immediate vicinity of the unusual or unexpected materials; and
- report, as soon as practicable, to the Client/Engineer.

3.27.19 Before removal of materials off-site for disposal, the Contractor will be required to establish with the Environment Agency Wales the classification of the material and ascertain their requirements for its safe disposal at a suitably permitted facility.

3.27.20 The Contractor will be required to ensure that exposure standards set out in the latest edition of the Health and Safety Executive Guidance Notes EH-40: 'Occupational Exposure Limits' are complied with and shall refer to Appendix 1/29 in respect of any minimum requirements for occupational health monitoring of dust, soil gases and/or organic vapours.

Security

3.27.21 At the perimeter of the site, the existing 2m high chain link security mesh fencing will be maintained to provide site security during the construction phase, and supplemented where necessary.

Considerate Construction

3.27.22 As part of the development of the facility, Waste Recycling Group and its eventual chosen Principal Contractor will sign up to the Considerate Constructors Scheme. The Considerate Constructors Scheme is the national initiative, set up by the construction industry, to improve its image. Once sites and companies register they are monitored against a Code of Considerate Practice which has been designed to encourage best practice over and above statutory requirements. There are three main categories which fall under scrutiny, these are: the environment, the workforce and the general public.

4.0 ENVIRONMENTAL CONSIDERATIONS

4.1 Introduction

4.1.1 Environmental Impact Assessment is legislated under the provisions of the *Town and Country (Environmental Impact Assessment) (England & Wales) Regulations 1999 (as amended)*, which implements the European Environmental Impact Assessment Directive (85/337/EEC, as amended by 97/11/EC). Given the nature of the processes involved, following on from consultation with the Local Planning Authority, the proposed development of the Mechanical Biological Treatment Facility does not fall into any of the relevant categories to Schedule 1 of the EIA Regulations, for which an EIA is mandatory.

4.1.2 The above conclusion was reached following on from the request for a Screening Opinion to Wrexham County Borough Council's Planning Department to which they responded on 4th July 2011. It was their opinion that, whilst the proposals did not constitute Schedule 1 development, the conclusion reached was that it falls within Schedule 2 as follows;

- *Schedule 2 11bii (Other Projects) Applicable Thresholds and Criteria – Installations for disposal of waste where the area exceeds 0.5 hectares.*
- *Schedule 2 11bii (Other Projects) Indicative Thresholds and Criteria – EIA is more likely where new capacity is created to hold more than 50,000 tonnes per year.*

4.1.3 Given the concern over the above, allied with the potential cumulative impacts from the existing permitted Phase 1 area (80,000tpa), it was deemed that EIA was required in relation to consideration of 'Size' and Cumulative Effect' as advised in the EIA Welsh Office circular 02/99.

4.1.4 EIA is a process, which identifies the potential environmental impacts of a development and then seeks to avoid, reduce or offset any adverse effects through mitigation measures

4.1.5 The objective of the EIA is to identify, examine and assess the likely impacts of the MBT Facility on the environment. An ES which reports the findings of the EIA has been prepared to accompany this planning application. The EIA has addressed the following environmental considerations:

- Hydrology & Hydrogeology (including Flood Risk)
- Ecology and Nature Conservation
- Traffic and Transport
- Contamination, Soils & Geology
- Noise and Vibration
- Air Quality & Health Impacts

- Landscape and Visual
- Socio Economic Issues
- Land Use
- Archaeology and Cultural Heritage

4.1.6 Details of the full assessments carried out in respect of the above environmental considerations can be found in the accompanying Environmental Statement. It is not proposed to replicate the findings in this document. However, the findings of the EIA for the MBT Facility concluded that, with the exception of some minor landscape character and visual impacts on certain localised receptors, the overall effects of the development are not considered to be significant either by way of the design and location of the MBT Facility or by virtue of the proposed operation. The potential impacts have been fully assessed and where appropriate mitigated as a result of an iterative design process for the development, and through careful consideration of emissions control, abatement techniques, and high quality process, architectural and landscape design.

4.1.7 The cumulative impacts resulting from the proposed development have also been considered and with the exception of some minor visual impact and landscape character for certain local receptors, all other adverse impacts were assessed to be negligible or minor, it is therefore considered that a combination of these impacts would not have a cumulative effect.

4.2 Summary of Impacts

4.2.1 Chapters 6 to 15 of the ES have considered the proposed development relative to the current baseline conditions, which exist at the application site and surroundings. Where appropriate, mitigation measures have been proposed, and the residual effects of the development have been assessed.

4.2.2 Table 4.1 below presents a concise summary of the predicted residual environmental effects of the proposed development.

Table 4.1 – Summary of Predicted Environmental Effects

	Development Phase	Summary of predicted effects
Hydrology & Hydrogeology	Construction	Surface Water Runoff/Flooding – Following implementation of proposed control measures identified in a Construction Environmental Management Plan, the potential for impact is considered to be negligible. Surface Water Quality – Temporary holding lagoons and cut-off trenches during the groundworks stages will capture the surface water run-off across the site and allow silt to settle before discharging to the watercourse – Impacts considered to be negligible. Groundwater Quality – Construction and associated minor earthworks will be undertaken in accordance with the recommendations of the Geoenvironmental Appraisal/- Impacts considered to be negligible.
	Operational	Surface Water Runoff – A formal surface water drainage strategy will be implemented for the site which will improve the management of and attenuate surface water runoff reducing the potential for flooding downstream, it is considered the proposed development will have a negligible impact. Surface Water Quality – Through the adoption of good working practises and the use of interceptors as part of the surface water drainage strategy the proposed development will have a negligible impact. Groundwater Quality – After the construction of the impermeable operational area, and the control of water infiltration, it is considered that impact to groundwater quality will be negligible impact.
Ecology & Nature Conservation	Construction	The development of the site will result in a significant loss of mature scrub primarily for nesting bird assemblages and high quality terrestrial habitats for Great Crested newts (and other amphibians). Following the implementation of suitable mitigation methods the loss of such habitats will result in short-term impacts.
	Operational	The long-term management of a Wildlife site is considered to result in a moderate beneficial impact in relation to habitat creation for European and locally protected species, as well as unprotected species. Following the incorporation of suitable mitigation measures the residual impacts are considered to be minor adverse to negligible.

	Development Phase	Summary of predicted effects
Highways & Transport	Construction	Highways Capacity – Bryn Lane is currently operating at less than 25% of its design capacity. Impact is considered negligible Highways Safety – The design of the highway network of Bryn Lane and junction from the key existing arterial networks servicing Bryn Lane suitable to minimize safety issues. The construction phase will be supported by a traffic management plan. Impact is considered negligible
	Operational	Highways Capacity – the development is anticipated to lead to increased traffic volumes on Bryn Lane of between 5 and 10%. Given that the highway is currently operating at only 25% of its design capacity the impact is considered slightly adverse. Highways Safety – With the low levels of generated traffic and low levels of existing safety risk on Bryn Lane, there would therefore be no effect in terms of safety on the existing highway network.
Contamination, Soils & Geology	Construction	Construction and associated earthworks will be undertaken in a phased manner in accordance with recommendations of geo-environmental appraisal to minimise potential impacts of low contamination onsite. Impacts considered moderate to very low .
	Operational	The structural design of the operational areas will provide adequate mitigation against residual contamination and ground gases on the site. Impacts are considered low to very low
Noise & Vibration	Construction	Noise – Worst case noise predictions are for the construction phase will be dependent on the type and duration of each individual construction activity. A Construction Environmental Management Plan will be implemented to consider impacts throughout the construction phase. Impacts are considered to be minor adverse to negligible. Vibration – Impacts considered negligible.
	Operational	Noise – Building material and supplementary acoustic attenuation equipment minimum specifications have been specified to reduce potential noise levels at sensitive receptors to below nuisance threshold levels, as set out in BS4142. Impacts are considered negligible .

	Development Phase	Summary of predicted effects
		Vibration – Impacts considered negligible .
Air Quality	Construction	Particulates – WRG and its civil contractors will apply the principles of the “Considerate Constructors Scheme” and Construction Environmental Management Plan during the construction phase, to ensure that the potential for fugitive dust emissions is minimised, and is not a cause for nuisance complaints from sensitive receptors or neighbouring properties. Impacts considered negligible. Vehicle emissions – Given the distance to sensitive receptors it is therefore considered that there will be a negligible residual impact on air quality attributable to vehicle movements associated with the proposed development
	Operational	Waste handling, storage and treatment – All waste handling, storage and treatment operations will be undertaken inside the main building. A closed door working policy, biofilter and negative pressure will prevent migration of odours from the building. The impacts are therefore considered negligible. Biofilter emission stack – The impacts of odour and dust releases from the biofilter stack at maximum performance guarantee limits are considered to be minor adverse to negligible. Vehicle Emissions – It is considered that there will be a negligible residual impact on air quality attributable to vehicle movements associated with the proposed development. Global Warming – reduction of methane and CO₂ emissions through landfill diversion and offsetting power generation from fossil fuels, impact considered minor beneficial.
Visual Landscape	Construction	Landscape Character – the construction phases are considered to have a minor adverse impact on landscape character. Visual Impact – the majority of visual receptors are anticipated to result in a minor adverse impact during construction. The impacts to receptors along Bryn lane are slightly increased to moderate adverse.
	Operational	Landscape Character – the sensitivity of the landscape character is considered low. The impact of the development within the estate and adjacent to existing waste management facilities is considered to have a minor adverse to negligible impact

	Development Phase	Summary of predicted effects
		Visual Impact – the impacts on potential visual receptors to the development are considered to be minor adverse to negligible .
Socio-Economic	Construction	Employment – the direct and indirect employment opportunities are considered a moderate beneficial impact. Population – impacts are considered negligible. Local Economy – the direct and indirect investment in the area is considered to be a moderate beneficial impact.
	Operational	Employment – the direct and indirect employment opportunities is considered a minor beneficial impact. Population – impacts considered negligible. Sustainability – The increase in the amount of residual waste that will be recovered, the reduced dependency on landfill, the provision of a renewable low carbon energy fuel source and the reduction in CO₂ emissions are considered to have a moderate beneficial impact. Local Economy – The direct and indirect employment opportunities are a moderate beneficial impact.
Land Use	Construction	Temporary disturbance to landuse, no effect from construction operations on adjacent landuses impacts considered to be negligible .
	Operational	The redevelopment of brownfield land adjacent to existing waste management facilities within a large industrial estate is unlikely to affect adjacent land uses – impacts are considered negligible .
Archaeology & Historical Environment	Construction	No recorded features within the site, unlikely to affect offsite features, impacts are considered negligible .
	Operational	No recorded features within the site, unlikely to affect offsite features, impacts are considered negligible .

Approach to Environmental Management and Monitoring

4.2.3 Many of the potential and residual environmental impacts identified above require formal management controls to ensure that the predicted effects are achieved. Formal management control will be ensured by the following regimes:

- Environmental Permit to be issued and regulated by the Environment Agency;
- Planning conditions within the Planning Permission to be regulated by the Planning Authority;
- A Quality Environmental Management System, (QEMS) which will be implemented by Waste Recycling Group, and as a contractual requirement of the construction contractor(s); and
- Health and Safety Regulations.

Environmental Permit

4.2.4 An Environmental Permit will only be issued by the Environment Agency once it is satisfied that the proposed MBT Facility poses no risk to the environment. The Environmental Permit application therefore requires submission of a further detailed assessment of the key potential environmental issues such as impact on air quality, human health, noise, surface water and groundwater. The information obtained from detailed modeling studies and risk assessments will be used to inform the design, operational methods and abatement controls to be used on the site, and will be encapsulated in the permit conditions issued by the Environment Agency.

4.2.5 The permit conditions will not only regulate the day to day management of the site, but will also regulate the operational effect on the wider receiving environment. Monitoring of the site and its immediate surroundings during the operational phase is paramount to providing the information required for proper management. Monitoring schemes in respect of the potential environmental issues are therefore a key component of the Environmental Permit.

Planning Permission

4.2.6 Planning permission is complementary to the Environmental Permitting process and takes a broader view of the proposed development in relation to the existing site and surrounding land uses. It considers aspects of the development proposals, which go beyond environmental risk, such as the aesthetic quality of the landscape.

- 4.2.7 Similarly, the planning permission regulates construction and operation, which are likely to have an affect both on the surrounding environment and land uses. It will also seek to monitor, review and enforce the activities, to ensure that the long-term land use management objectives of the site will be achieved.

Quality Environmental Management System

- 4.2.8 It is the applicant's intention, as operators of the proposed development, to implement an established externally accredited Quality Management System (QMS). The QMS will involve regular monitoring and review of all systems operated by the company, with the aim of achieving both high standards of performance and continuous improvement. Adoption of the QMS will help to ensure that the recommendations and requirements contained in the Environmental Statement are implemented effectively.

5.0 PLANNING POLICY FRAMEWORK

5.1 Introduction

5.1.1 This section provides detailed analysis of the planning policies relevant to the development of the proposed Mechanical Biological Treatment Facility (MBT) which forms phase 2 of the Wrexham Recycling Park. The relevant policies are identified under the following headings:

- European Policy;
- UK and National (Welsh) Policy;
- Regional and Sub-Regional Policy, and
- Local Policy.

5.2 European Policy

5.2.1 The following section identifies the key EU Directives relevant to the proposal and waste management facilities in general. In particular:

- The Framework Directive on Waste (75/442/EEC as amended by 91/156/EEC and 91/962/EEC;
- The Landfill Directive (1999/31/EC);
- Revised Waste Framework Directive (2008/98/EC) and
- EU Directive on waste (2006/12/EC).

Framework Directive

5.2.2 In 1974 the Framework Directive on Waste was prepared together with subsequent amendments (91/156/EEC and 91/962/EEC) these directives set out the principles for:

- The use of cleaner technologies in both product manufacture and final disposal;
- The application of the waste hierarchy in order to drive the management of waste away from landfill;
- The application of the proximity principle to waste disposal in relation to the self sufficiency of individual member states; and
- The use of waste as a source of energy.

5.2.3 The 1974 Directive has been implemented in the UK through the Environmental Protection Act 1990 and the Waste Management Licensing Regulations 1994 (and subsequent amendments).

5.2.4 The Framework Directive requires European member states to establish an integrated and adequate network of waste facilities, including provision for

waste transfer, storage, treatment and disposal to deal as far as practicable with the full range and amount of waste arisings.

- 5.2.5 The Framework Directive states that the best disposal or treatment options should be located as close as possible to the origin of the generated waste. This is known as the "Proximity Principle". The provision of an adequate network of waste facilities will depend upon the types of waste generated in a particular area. The planning system must enable and facilitate the establishment of the network through both the development plans and the development control process to cater for this demand and avoid movement of wastes over long distances.

Landfill Directive

- 5.2.6 The main objective of the Landfill Directive, which was adopted in July 1999 and transposed into UK Law by the Landfill Regulations 2002, is to prevent or reduce, as far as possible, the negative effects of landfilling waste on the environment and human health. The Directive requires wastes destined for landfill to be subjected to pre-treatment by *"physical, thermal, chemical or biological process, including sorting that changes the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery"*.
- 5.2.7 The Landfill Directive is the most significant influence on the manner in which waste is treated in the United Kingdom. It includes the following key requirements:
- A phased and substantial reduction (65% by 2020) in the amount of biodegradable municipal waste being landfilled;
 - The treatment of all wastes prior to landfill; and
 - The implementation of the waste hierarchy of reduction, re-use, recycling, energy generation, landfill.
- 5.2.8 The achievement of these objectives will have a significant effect on the waste management regime in Wales.

Revised Waste Framework Directive

- 5.2.9 The aim of the revised Waste Framework Directive is to promote waste prevention, increase recycling, and ensure better use of resources, while protecting human health and the environment. It re-enacts much of the existing WFD, and leaves the legal definition of waste unchanged.
- 5.2.10 The rWFD requires the following key actions:

- Separate collections of waste for at least paper, metal, plastic, and glass by 2015 where technically, environmentally and economically practicable. This applies to both household and business waste;
- To recycle 50% of waste from households by 2020;
- To recover 70% of construction and demolition waste by 2020; and
- To apply the waste hierarchy as a priority order. The priority order is: waste prevention; preparing for re-use; recycling; other recovery (e.g. energy recovery); and finally disposal. The revised WFD allows for departure from the hierarchy where that would deliver a better overall environmental outcome.

5.2.11 WRG's proposal for Bryn Lane Phase 2 MBT will be part of an integrated system that will increase the amount of waste recycled and produce a solid recovered fuel for use in the generation of renewable energy.

5.3 UK and Welsh Planning Policy

5.3.1 The fundamental shift over the last 5–10 years has been towards sustainable waste management. This process commenced with the publication of '*Making Waste Work*', the UK Government's sustainable waste strategy. It set targets for the recycling, recovery and composting of municipal waste, the achievement of which is the responsibility of the Waste Disposal Authority.

5.3.2 Making Waste Work was updated by the Government's draft waste strategy '*A Way with Waste*' in June 1999, which then led to the final version '*Waste Strategy 2000*' (the Government's strategy for sustainable waste management in England and Wales) being published in May 2000.

5.3.3 In 2002 the Welsh Assembly Government produced a comprehensive waste strategy entitled '*Wise about Waste*'. This document replaced Waste Strategy 2000 (England and Wales) as the National Waste Strategy for Wales. This document has now been further replaced by a new document entitled '*Towards Zero Waste*' which has been formally adopted by the Welsh Government as the long term framework for resource efficiency and waste management between now and 2050.

5.3.4 '*Towards Zero Waste*' is a National Waste Strategy which represents some of the most ambitious waste management targets in Europe. Wales has set itself the following targets to help achieve the goal of a zero waste society:

- Minimum MSW Recycling:
 - o 58% by 2016
 - o 64% by 2020
 - o 70% by 2025

- Maximum MSW to Landfill:
 - o 10% by 2020
 - o 5% by 2025
- Minimum Industrial/Commercial Waste Recycling
 - o 67% by 2020
 - o 70% by 2025

5.3.5 To achieve the targets for 2025 the Strategy identifies a number of key steps, these include:

- To develop a strong economy in resource management, such as;
 - o High levels of clean, high quality, source-separated recyclates to drive the market;
 - o Food waste collected separately and managed in anaerobic digestion facilities to generate valuable renewable energy and fertiliser
 - o Strong markets for recyclates and the fertiliser produced from the anaerobic digestion of food waste.
- Minimising residual waste by residual waste will be phased out of landfill sites and sent instead to high efficiency 'energy from waste' plants in accordance with the waste hierarchy; and
- Targeting legacy wastes, wastes that are problematic to recycle and/or dispose of.

5.3.6 Wrexham County Borough Council, through initiatives such as 'Recycle with Michael', has sought, successfully, to address the deficiencies in respect of the levels of recycling and composting within the County Borough. Phase 1 of the Wrexham Recycling Park provides a recycling bulking, bailing, transfer and composting facility and has been successfully operational for 2 years. The proposed development is Phase 2 of the Wrexham Recycling Park which will deal with wastes generated in the area and will enable the recovery of further recyclates currently sent to landfill as well as enabling the production of Solid Recovered Fuel (SRF), a value added product.

5.3.7 The proposed development would accord with the principles set out within 'Towards Zero Waste' by providing a facility that would minimise the residual waste and will ensure that Wrexham has facilities available to meet the statutory targets set by the Welsh Government.

Planning Policy Wales (2011)

5.3.8 In February 2011 the Welsh Government (WG) published an update to national planning policy in the form of the 4th edition of Planning Policy Wales (PPW). PPW sets out the land use planning policies of the WG.

- 5.3.9 PPW identifies a number of key policy objectives that relate specifically to management of waste and renewable energy generation. These state that proposals should:
- Support the need to tackle the causes of climate change by moving towards a low carbon economy. This includes facilitating development that reduces emissions of greenhouse gases in a sustainable manner, provides for renewable and low carbon energy sources at all scales and facilitates low and zero carbon developments;
 - Encourage opportunities to reduce waste and all forms of pollution and promote good environmental management and best environmental practice; and
 - Play an appropriate role in securing the provision of infrastructure to form the physical basis for sustainable communities (including waste management facilities and energy supplies).
- 5.3.10 The PPW identifies that a sustainable approach to waste management will require greater emphasis on reduction, re-use and recovery and less reliance on disposal without recovery and that waste should be managed as close to the point of its generation as possible, in line with the proximity principle.
- 5.3.11 The Welsh Government is committed to playing its part by delivering an energy programme which contributes to reducing carbon emissions and to reduce energy consumption and improve energy efficiency first and maximise renewable and low carbon energy generation at every scale across Wales.
- 5.3.12 The latest edition of PPW now makes reference to the Climate Change Strategy for Wales, which ensures that land use and spatial planning promote sustainable development and enable a move towards a low carbon economy which takes account of future climate impacts.
- 5.3.13 Planning Policy Wales is supplemented by a series of Technical Advice Notes (TANs). PPW and the TANs, together comprise National Planning Policy which should be taken into account by local planning authorities in Wales in the preparation of Unitary Development Plans (subsequently Local Development Plans), and are material to decisions on individual planning applications.
- 5.3.14 Section 12.5 – 12.7 of PPW specifically relates to waste management. It refers to a sustainable approach to waste management requiring greater emphasis on reduction, re-use and recovery and less reliance on disposal without recovery. PPW stresses that waste should be managed (or disposed of) as close to the point of its generation as possible, in line with the proximity principle, to ensure that waste is not exported to other regions.

- 5.3.15 The proposed MBT Facility will meet the requirements of PPW by providing a facility for treating waste for Wrexham County Borough. The process will recover recyclable materials from residual waste thereby maximizing recycling and also producing a Solid Recovered Fuel thereby contributing to the Climate Change Strategy by producing a fuel for use in the generation of low carbon energy.

Technical Advice Notes (TANs)

- 5.3.16 Technical Advice Notes provides advice on a variety of topics to supplement the policy set out in Planning Policy Wales. The following TANs are considered to be of particular importance to the proposal:

- Technical Advice Note (Wales) 5 (TAN5) – Nature Conservation and Planning;
- Technical Advice Note (Wales) 8 (TAN 8) – Renewable Energy
- Technical Advice Note (Wales) 11 (TAN11) – Noise
- Technical Advice Note (Wales) 12 (TAN12) – Design
- Technical Advice Note (Wales) 15 (TAN15) – Development and Flood Risk
- Technical Advice Note (Wales) 18 (TAN18) – Transport
- Technical Advice Note (Wales) 21 (TAN21) – Waste
- Technical Advice Note (Wales) 22 (TAN22) – Sustainable Buildings

Technical Advice Note (TAN) 21: Waste (2001)

- 5.3.16 In November 2001 the Welsh Assembly Government published Planning Policy Wales, Technical Advice Note (Wales) 21: Waste (TAN21). TAN21 provides advice about how the land use planning system should contribute to sustainable waste resource management. TAN21 identifies guiding principles on which any framework for sustainable waste management should be founded. These principles have been incorporated into Unitary Development Plans and Local Development Plans.
- 5.3.17 This Welsh Planning Policy document provides advice regarding how the land use planning system should contribute to sustainable waste resource management and is intended to facilitate the introduction of a comprehensive integrated and sustainable land use planning framework for waste management in Wales. Proximity and self sufficiency form the principle basis of the TAN.
- 5.3.18 The proximity principle promotes the treatment and disposal of waste as near to the source of origin as possible. This principle should be taken into account when considering the requirements for, and location of, waste management facilities. The Self Sufficiency Principle also sets out that as far as practically

possible; waste should be treated or disposed of within a sensibly defined region where it is produced.

- 5.3.19 One of the overriding principles of sustainable waste management (central to both national, regional and local policy and strategy) is adherence to the waste hierarchy. The waste hierarchy seeks to extract the maximum practical benefits from products and to generate the minimum amount of waste.
- 5.3.20 The preference expressed in TAN 21 is to manage waste further up the hierarchy, maximise waste prevention, recycling and composting; and to minimise incineration and disposal of waste to landfill. The proposal to develop an MBT facility as part of Bryn Lane Phase 2 conforms to the waste hierarchy in terms of recovery of raw materials and recovery of energy as the development seeks to recover materials for recycling and the production of Solid Recovered Fuel. The location of the facility as part of an existing waste treatment centre on Wrexham Industrial Estate conforms with the proximity principle and self sufficiency in respect of Wrexham County Borough Council. The proposed development will also contribute towards the generation of renewable energy as discussed within TAN 8. Both the production of fuel from waste, i.e. Refuse Derived Fuel (RDF) and/or Solid Recovered Fuel (SRF) for use in Energy from Waste / Combined Heat and Power Schemes and the use of Solar Photo-Voltaic Arrays are recognised methods of renewable energy generation and are actively encouraged within TAN 8, subject to all the required planning considerations in relation to suitability for any such scheme proposed.

Waste (Wales) Measure 2010

- 5.3.21 The Waste (Wales) Measure 2010 legislation was approved in December 2010. The legislation sets statutory targets for local authorities for the percentage of municipal waste to be recycled, prepared for re-use and composted as well as making local authorities liable to pay penalties in the event that they fail to meet those targets.
- 5.3.22 The following targets for recycling, preparation of re-use and composting (including other forms of treatment by biological processes) are therefore mandatory to avoid penalties:
- 52% by 2012/13
 - 58% by 2015/16
 - 64% by 2019/20
 - 70% by 2024/2025
- 5.3.23 Wrexham County Borough Council, as a local authority, is currently recycling or composting 47% (year 2010/11) of the municipal waste through kerb-side collection schemes and use of Household Waste Recycling Centres (HWRC), the

remainder is being disposed of to landfill. The proposed MBT facility at Bryn Lane will ensure that the statutory targets are met, and penalties avoided, by increasing the percentage of waste recycled and reducing the amount of waste disposed of to landfill.

5.4 Regional and Sub-Regional Policy

- 5.4.1 TAN21 identifies that Welsh local authorities, in conjunction with the Welsh Assembly Government are expected to establish voluntary joint arrangements to prepare waste plans for the individual regions within Wales. The purpose of the plans is to help implement the Wales Waste Strategy and help meet the obligations in EU Waste Directives. The Regional Waste Plans seek to ensure that local authorities are able to take a strategic overview of, and respond to, the issues of sustainable waste management and provide a context for proper consideration of land use issues relating to waste.

The North Wales Regional Waste Plan 1st Review (2009) (RWP)

- 5.4.2 The RWP 1st review has re-evaluated the generation and assessment of the alternative strategic waste management technology options including the different combinations of waste management technologies that would enable the region to meet or exceed legislative targets. Four main options covering the main treatment technologies for residual waste were considered; each option was divided into sub-options to create 19 sub-options overall.
- 5.4.3 These 19 sub-options were subject to varying assessments, including Best Practicable Environmental Option (BPEO). There were 7 top performing options which were considered to be the most sustainable, feasible and suitable. Consultation on these top options did not identify a preferred option and it was agreed that a degree of flexibility needed to be maintained within the region. These top performing options therefore from the framework for waste planning in North Wales and are summarised as:
- High levels of thermal treatment using pyrolysis. All remaining residual waste would then be sent to landfill.
 - High levels of thermal treatment using incineration with energy recovery. All remaining residual waste would then be sent to landfill.
 - MBT/BMT with the output recovered using pyrolysis. Any remaining residual waste would then be sent to landfill.
 - MBT/BMT with the output recovered using gasification. All remaining residual waste would then be sent to landfill
 - MBT/BMT with the output recovered using incineration with energy recovery. Any remaining residual waste would then be sent to landfill.
 - MBT/BMT with the output recovered using fuel to off-site energy use. Any remaining residual waste would then be sent to landfill.

- Autoclave with the output recovered using fuel to off-site energy use. Any remaining residential waste would then be sent to landfill.

5.4.4 Paragraph 8.2.6 of the RWP 1st Review refers to TAN21 requiring applicants to consider a number of techniques. However, as this has been undertaken at a regional level, the RWP states that '*where a proposed development forms part of the identified strategy, no further BPEO/SWMO assessment will be required*'. The proposed facility is in accordance with the RWP as it is an MBT with the output recovered being used as fuel for off-site energy use and therefore is considered to accord with regional policy and comply with the BPEO/SWMO assessment undertaken at the regional level.

Regional Planning Guidance for North Wales (2002)

5.4.5 In October 2002 the North Wales Regional Planning Group formally adopted the Regional Planning Guidance for North Wales (RPG). The RPG provides strategic planning objectives and policies for the North Wales Region. The RPG seeks to ensure that Development Plans make provision for the establishment of an adequate network of waste management and disposal facilities to ensure that the North Wales region is capable of dealing with all waste arising within the region. Furthermore it confirms that Development Plans should generally presume in favour of facilities for the reduction, reuse and recovery of waste produced within the region, so long as the quality of the environment for adjacent land and land users is not significantly harmed. The proposed development would increase the recycling and recovery of residual wastes within Wrexham, which are currently being deposited to landfill, and the effect on the quality of the environment for adjacent land and land users is not considered to be significant.

The West Cheshire/North East Wales Sub Regional Spatial Strategy (2006)

5.4.6 The Sub Regional Spatial Strategy marks the first major contribution towards implementing the Wales Spatial Plan and North West Plan by providing a non-statutory framework for cross-border co-operation and development between North East Wales and West Cheshire over a 15 year period. The strategy follows a six year partnership of organisations and local authorities within the sub-region encompassing the area of Chester, Ellesmere Port and Neston, Flintshire and Wrexham. Whilst the plan does not contain policies specific to waste management, the supporting text to Policy ENV5 (Design and Construction) does confirm the strategies support for minimising waste and encouraging recycling and re-use.

5.5 Local Planning Policy

Wrexham Municipal Waste Strategy

- 5.5.1 The Wrexham Municipal Waste Strategy 2004 embraces the principles set out within the national and regional documents above, by seeking to examine the best way forward for Wrexham to achieve the targets set by national and regional policies and strategies, and ensures that municipal waste is managed in the most sustainable manner. The strategy builds on the policies set out at national and regional level (i.e. BPEO, Regional Self Sufficiency, Waste Hierarchy etc) as well as responses from Waste Strategy Questionnaires, to develop a number of options to achieve its targets.
- 5.5.2 The Waste Strategy confirms that to achieve the objectives of reducing waste, increasing recycling and composting, reducing waste to landfill and maximising value from residual waste, a range of strategies need to be implemented within the County Borough. Paramount to these schemes is to increase the ability and opportunity to recycle and compost waste which would previously have been sent direct to landfill, but the Waste Strategy also recognises that treating the residual waste is also important and necessary to meet national targets. The strategy presents various options for treating residual waste; mechanical biological treatment and refuse derived fuel are some of the options presented and discussed within strategy in further detail.
- 5.5.3 Phase 1 of the Wrexham Recycling Park has been operational for 2 years and successfully provides recycling and composting facilities for kerb-side collected municipal solid waste. This proposed Phase 2 development will provide a facility to recycle and recover a large proportion of the residual waste which is currently being sent direct to landfill.
- 5.5.4 Substantial progress has been made during the last few years with regards to the management of municipal wastes within the County Borough which has been achieved due to a number of factors. A major facilitation of meeting the required change has been the signing of a 25 year PFI Contract with Waste Recycling Group which resulted in the development of Phase 1 of the Bryn Lane Recycling Park. Current statistics indicate that 37.4% of municipal waste was recycled or composted in 2008/09 with this increasing to 47% for 2010/11. It has been calculated that a treatment capacity of circa 30,000 tonnes per annum is required to deal with the current residual municipal waste arisings. This represents around 53% of total municipal waste arisings within the County Borough for 2010/11. The development of the Phase 2 facility will help in achieving the aim of meeting the required statutory targets.

The Development Plan Framework

- 5.5.5 There is a requirement following the publication of the Planning and Compulsory Purchase Act (2004) for Welsh Planning Authorities to produce Local Development Plans. Wrexham Council is currently progressing through the various stages towards adopting their Local Development Plan.

5.5.6 The Deposit Local Development Plan was published in June 2010, this has been subject to consultation and the Council is now due to submit their Local Development Plan to the Welsh Assembly Government for independent examination.

5.5.7 Whilst the Local Development Plan is not yet the statutory development plan for the area, given that it is well progressed in its production, and evidence base documents have been produced, the policies and strategies within should be accorded appropriate weight as a material consideration. Paragraph 5.62 recognises that many waste management facilities are visually and operationally no different from other industrial buildings and therefore the most appropriate locations for sorting, transferring and processing waste are on industrial estates suitable for general employment uses. The application site is located within an industrial estate i.e. the Wrexham Industrial Estate and the site is specifically allocated for employment in the Local Development Plan Proposal Map. The main policy relevant to waste is **Policy SP13: Waste Disposal** which states *'Facilities for sorting, transferring and processing waste are permitted within sites on general industrial estates. The following strategic sites are identified to provide for a range of waste management options, including recycling and composting:*

- a) Wrexham Industrial Estate;*
- b) Llay Industrial Estate; and*
- c) Other B2 employment sites as appropriate'*

The proposal therefore accords with the emerging policies of the Local Development Plan.

Wrexham Unitary Development Plan (UDP)

5.5.8 The Wrexham Unitary Development Plan (UDP) was formally adopted by Wrexham County Borough Council in February 2005. The Plan comprises a strategy which sets out the Council's broad intentions for development and other uses of land over a period of up to 10 years. The UDP is the statutory development plan until the Local Development Plan is formally adopted.

5.5.9 The proposed development is a waste management facility, and accordingly the most directly relevant policy in respect to the proposed development is **Policy MW12** which states that *'Waste Management facilities will be located having regard to:*

- a) the best practicable environmental option (BPEO);*
- b) the waste hierarchy;*
- c) the proximity principle;*

d) regional self-sufficiency.

With the exception of landfilling, windrow composting or small scale collection and recycling points, facilities for sorting, transferring and processing of waste will be permitted within sites on general industrial estates’.

5.5.10 The proposed development has been assessed against the principles identified within Policy MW12. A BPEO Assessment has not been undertaken to accompany the application as one was undertaken for the North Wales Regional Waste Plan 1st Review, which was published after the adoption of the UDP. As the proposed development is in line with the regional strategy, the Regional Waste Plan states it is not necessary to undertake another BPEO assessment. The proposed MBT is Phase 2 of the Wrexham Recycling Park and will supplement the existing Phase 1 recycling and composting facility. The MBT will process and treat residual waste which is currently being disposed to landfill and therefore is in accordance with the waste hierarchy. The facility is part of a Private Finance Initiative with Wrexham County Borough Council and therefore will primarily be accepting municipal solid waste generated by householders of Wrexham County Borough area and there may be potential to accept limited third party wastes from Wrexham’s trade and industry. Given that the facility will accept waste from the Borough it is in accordance with the proximity principle and seeks to achieve regional self-sufficiency.

5.5.11 The supporting text to MW12 confirms locations appropriate for waste management facilities. It states that:

‘The new waste management facilities needed to comply with Regional Waste Plan targets will largely be provided by the private sector. In the absence of detailed site requirements, no specific allocations have therefore been made in the Unitary Development Plan. However, the scale, complexity, and operational characteristics of modern waste management facilities are substantially the same as that of manufacturing industry. Accordingly, the most appropriate location for sorting, transferring and processing wastes, including in-vessel composting, are on those industrial estates which are suitable for general employment development’.

5.5.12 The site is located within a general industrial estate (within the Wrexham Industrial Estate settlement limit identified within the UDP), on land suitable for general employment development and would accord entirely with the objectives of Policy MW12.

5.5.13 The site is allocated for employment use under Policy E1, which seeks to ensure that sufficient land is allocated for future employment uses within Wrexham. It states that *‘Sufficient land will be allocated for employment development between 2001 and 2011 at: Wrexham Industrial Estate.... 7. Bryn Road...*

5.5.14 The supporting text to Policy E1 at Paragraph 7.5 states that '*the plan identifies sufficient fully serviced and easily accessible employment land to cater for the sustained and economic development of the County Borough. All new employment development will be directed to the above locations [identified in Policy E1] and to sites with planning permission for employment use*'.

5.5.15 The site chosen for the proposed development is adjacent to the existing Phase 1 of the Wrexham Recycling Park and is within site 7 identified within Policy E1; as such, the development accords with the allocation planning policies set out within the Wrexham UDP. Although allocated within the UDP for employment, assessments have identified that part of the site has ecological importance and therefore the development is located within the useable area with ecological enhancements proposed on the remainder of the site.

5.5.16 The following Strategic and General Policies are considered relevant in assessing the proposed development against the policies of the Wrexham UDP:

Policy PS2: Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment

5.5.17 As discussed, the proposed development would be located within an active and well developed Industrial Estate. Nevertheless the design and management of the site, in addition to the development of ecological enhancements on a large proportion of the site, would ensure that the development would not conflict with Policy PS2.

Policy PS3 – Development should use previously developed brownfield land comprising vacant, derelict or underused land in preference to the use of Greenfield land, wherever possible, particularly so where Greenfield land is of ecological, landscape or amenity value, or comprises agricultural land of grades 1, 2 or 3a quality.

5.5.18 The proposed development would be located on previously developed vacant brownfield land. Although the site is brownfield land, part of the site has been identified as being of ecological importance and therefore it is proposed to set a large proportion of the site aside for nature conservation and create ecological enhancements in this area. The proposal is therefore considered to accord with Policy PS3.

5.5.19 ***Policy PS4 – Development should maintain the existing settlement pattern and character and be integrated with the existing transport network to help reduce the overall need to travel and encourage the use of alternatives to the car.***

The proposal would maintain the existing built development pattern by ensuring the design, scale and massing of the built development mirrors and complements the existing Phase 1 development. The setting of the site and its surroundings are set out in detail at Section 2.0 of this submission and the potential impacts upon the highway network are considered in Section 12.0. Locating all the waste recycling and treatment facilities within one location and close to the Council's depot on the Industrial Estate would reduce the need to travel. A covered bike shed would be provided to encourage personnel and visitors to travel by bike. The proposal is therefore considered to accord with Policy PS4.

- 5.5.20 ***Policy PS10*** – *Priority in waste management will be given to minimising the volume of waste generated, followed by maximising the re-use and recycling as much waste as possible. Energy recovery from waste will be favoured where re-use and recycling is not feasible, and waste will be managed at, or as near as practicable, to the location where it is initially produced.*

The proposal would be located proximate to the main source of waste arising (Wrexham) within Wrexham County Borough (Wrexham) and reasonably centrally located within the County Borough Administrative area. The proposed development provides a facility to deal with the residual waste once maximum re-use and recyclable materials have been extracted. The main output from the MBT will be SRF which is a fuel for energy recovery. There will be a small fraction of waste that does not have the potential to become SRF, in this instances this waste will be transferred to landfill. The proposed development is therefore considered to accords with Policy PS10.

- 5.5.21 ***Policy PS11*** – *Encouragement will be given to proposals which improve the biodiversity value of sites and to the establishment of local nature reserves where nature conservation and landscape interest of the land will be protected and enhanced.*

Whilst the site is located within an existing Industrial Estate and allocated for industrial development, the historically unmanaged nature of the site means that part of the site has been identified as having significant biodiversity value. It is therefore proposed to set aside a significant proportion of the site for ecological enhancements (see section 10 and drawing WR7042/19/12). The proposed development is therefore considered to accord with Policy PS11.

- 5.5.22 ***Policy GDP1*** – *All new development should:*

- a) *Ensure that built development in its scale, design and layout, and in its use of materials and landscaping, accords with the character of the site and makes a positive contribution to the appearance of the nearby locality.*

- b) Take account of personal and community safety and security in the design and layout of development and public/private spaces.*
- c) Make the best use of design techniques, siting and orientation in Q order to conserve energy and water resources.*
- d) Ensure safe and convenient pedestrian and vehicular access to and from development sites, both on site and in the nearby locality.*
- e) Ensure that built development is located where it has convenient access to public transport facilities, and is well related to pedestrian and cycle routes wherever possible.*
- f) Ensure the safety and amenity of the public and safeguard the environment from adverse effects of pollution of water, land or air, hazards from industry and quarrying, and associated noise, odour or vibration arising from development.*
- g) Secure public services (gas, water, electricity) to development at minimum public cost.*
- h) Safeguard sites and areas of nature conservation and wildlife interest, and to provide new habitats where there is an unavoidable loss of existing habitats and areas of wildlife interest.*
- i) Ensure that development does not result in, or is subject to, flooding, soil erosion, landslides or contamination either on or off site.*
- j) Have regard to the need to safeguard those areas that possess a strong Welsh culture and/or linguistic identity from development that could harm this identity.*
- k) Secure the development of sustainable communities, through the promotion of the economic, social and environmental well-being of the area."*

The proposed development has been designed mindful of the objectives of Wrexham County Borough Council to ensure that new development is sensitive to its setting and surroundings, has been developed using best techniques and accords with the development principles identified within Policy GDP1. The proposed development is considered to accord with Policy GDP1.

5.5.23 *Policy EC4 – Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted.*

Where possible existing trees and hedgerows will be retained and protected from damage. Whilst a number of trees on the site would be lost as a result of the development, mitigation is proposed on the eastern and northern part of the site as compensation. The proposal also incorporates, where appropriate, new planting to both supplement existing and replace any lost as a result of the

development. The proposal includes a detailed landscape appraisal and provides soft landscaping to mitigate the built form. (See drawing WR7042/19/12). The proposed development is therefore considered to accord with the aims and objectives of Policy EC4.

- 5.5.24 ***Policy EC6 – Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported.***

The supporting text to Policy EC6 (Para 5.8) identifies what sites Policy EC6 relates. It states that *‘this policy applies to, in order of importance: nature conservation sites of international importance comprising Special Protection Areas, Special Areas of Conservation, and Ramsar Sites; nationally important Sites of Special Scientific Interest; regionally important Geological Sites; locally important Wildlife Sites; and other protected species and their habitats’*.

- 5.5.25 Whilst the site is not located within or in close proximity to a designated site, the site is known to support habitats for various protected species, further detail is provided within section 10 of this submission. The development has therefore been restricted to the western part of the site to minimise disturbance and to enable a large proportion of the site to be set aside for nature conservation with some ecological enhancements incorporated into the design. The proposed development is therefore considered to accord with Policy EC6.

- 5.5.26 ***Policy T8 – Development granted planning permission will be required to provide vehicle parking spaces either on site or nearby, in accordance with the Council’s current parking standards. Special regard will be paid to the following factors, as appropriate:***

- a) the availability of public transport nearby,*
- b) proximity to public car parking,*
- c) proximity to local services and facilities,*
- d) road safety hazards and amenity considerations arising from on-street parking in the vicinity of the site.*

Where implementation difficulties arise in making parking provision on-site or nearby, the Council will require a developer to make financial contributions for measures to assist public transport, or walking and cycling as appropriate.

Wrexham County Borough Council has produced a number of Local Planning Guidance Notes. Note 16: Parking Standards forms a material consideration in the determination of planning applications. Note 16 identifies maximum parking standards for a range of land use categories. The proposed development could be considered similar to 'B2 – General Industry' which sets a maximum of 1 car parking space per 50m² gross floor space. The built development equates to 6,576m² floor space. Based on the size of the proposed development, Note 16 sets a maximum of 132 car parking spaces. The proposed development has been designed for 12 car parking spaces, as the site only employs 8 staff and public transport is available within Wrexham Industrial Estate. A covered bike store is also available for staff to use within the Phase 1 development. The proposed development is therefore considered to accord with Policy T8.

5.6 Material Policy Considerations

- 5.6.1 Wrexham County Borough Council have produced a number of Supplementary Planning Guidance Notes (SPGs) and Local Planning Guidance Notes (LPGs) which set out the way in which Policies will be applied, and provide advice to developers, communities and other third parties on good design practice and sustainable development. SPGs and LPGs are prepared in consultation with interested parties and are regularly reviewed to ensure consistency with local planning policy and alignment with community aspirations. Whilst not forming part of the Development Plan, SPGs and LPGs do form material considerations in the determination of planning applications which could affect the form, appearance and setting of the built and natural landscape and its features.
- 5.6.2 Wrexham LANDMAP SPG sets out the key elements and features which make up the landscape of Wrexham Borough. It identifies 27 different Landscape Character Areas and provides guidance in respect of the key considerations in development design to ensure that proposals do not appear incongruous within the landscape. The proposed development lies within the Urban Character Area and identifies Wrexham Industrial Estate as '*a very large employment area of national importance, set within the open countryside*'. The SPG states that the estate contains many habitats and species of high biodiversity value. The proposed development has been designed mindful of the potential biodiversity value of the site and is assessed further within Section 5 of this submission.
- 5.6.3 The Derelict and Industrial Land Habitat Action Plan identifies key species associated with derelict land and sets objectives and targets to manage, protect and enhance the biodiversity value of derelict land. The proposed development would enhance the biodiversity of the site through appropriate ecological mitigation and compensation measures.

5.6.4 LPG Note 26: Landscape and Industrial Development is one of a series of local planning guidance notes providing advice in respect to design standards. The guidance note identifies measures to ensure that new development would enhance and not conflict with the existing landscape. This is achieved using a number of techniques including, appropriate material, colours, designs etc, and by providing advice in respect to landscaping, landform etc. The LPG has been used to inform the design of the development and the location and type of infrastructure, surface materials and colours, as well as ensuring that appropriate landscaping is proposed to mitigate the development.

5.6.5 LPG 29: Wrexham Industrial Estate Employment Development and Nature Conservation provides advice to developers and landowners on the key ecological issues that they need to address before carrying out any development. The guidance requires planning applications to be accompanied by an ecology survey and states that the council applies a sequential approach to protecting and enhancing ecology on the estate:

- *On site protection of existing habitats/development areas*
- *On-site mitigation/compensation where damage to a habitat is unavoidable*
- *Off-site compensation as a last resort where on-site compensation is not appropriate.*

5.6.6 Appropriate ecology surveys have been commissioned as part of this development and the results are included as part of this submission. The proposal has been designed to provide both on-site protection of habitats and on-site mitigation for the area of land which will be lost to the development.

5.6.7 LPG Note 32: Biodiversity & Development reiterates similar principles as LPG Note 29, however, it provides more detail in terms of the design of mitigation and compensation. This has been considered when designing appropriate mitigation for the site.

5.7 Summary and Conclusion

5.7.1 The proposed development is consistent with the objectives of the National Waste Strategy for Wales 2002, Technical Advice Note (Wales) 21 (TAN21), Planning Policy Wales 2011, Regional Planning Guidance for North Wales, the North Wales Regional Waste Plan 1st Review, the Wales Spatial Plan 2004, the Sub-Regional Spatial Strategy for West Cheshire/North East Wales, the Wrexham Unitary Development Plan 2005 and the emerging replacement Wrexham Local Development Plan. The planning appraisal clearly demonstrates that the proposed development conforms to the relevant national, regional and sub-regional waste management policies, and with the planning policies identified within the statutory development plan (Wrexham UDP).

6.0 NEED AND ALTERNATIVES

6.1 Introduction

6.1.1 This chapter outlines the need for residual waste treatment for Wrexham County Borough Council and discusses the alternative technologies and locations considered in determining the suitability of the proposed site at Bryn Lane for the development of a Mechanical Biological Treatment Facility.

6.1.2 In preparing this chapter of the ES the following reports and documents have been reviewed and consulted:

- Towards Zero Waste 2010;
- Environment Agency Waste Data Sets;
- North Wales Regional Waste Plan (1st Review) 2009;
- Waste Strategy Progress Report 2002–2008;
- Wrexham Local Development Plan Preferred Strategy (Draft for Public Consultation) 2007;
- Wrexham Unitary Development Plan 2005;
- Wrexham County Borough Municipal Waste Management Strategy 2004;
- Technical Advice Note (TAN) 21 – Waste; and
- Wise About Waste 2002 (where not superseded by the 2010 Waste Strategy).

6.1.3 In June 2010 the Welsh Government launched “Towards Zero Waste, One Wales : One Planet”, which is considered the overarching waste strategy document for Wales and sets out the Governments objectives for policies and drivers for change which will allow Wales to achieve a target of 70% recycling and reducing the proportion of waste sent to landfill to 5% by 2025. The strategy is set out to see Wales become a high recycling nation by the aforementioned date, and a zero waste nation by 2050. The Zero Waste Plan will, in turn, also help Wales achieve the target of becoming a more sustainable country where the impact of waste in Wales is reduced to within environmental limits by 2050. This means that waste production and management will only be at ‘One Planet’ levels. By adopting a more sustainable approach to waste management, this will also assist in the requirement to tackle climate change by reducing greenhouse gas emissions associated with landfill disposal facilities.

6.1.4 Set against the backdrop of the Zero Waste Plans ambitious but realistic and sustainable objectives, the documents listed in paragraph 5.1.2 above represents the most up to date assessment of waste arisings, predicted trends, current and future capacity and the need for increased recycling, a more sustainable network of waste management facilities and the requirement for landfill diversion.

6.1.5 The following sections derive much of its content from the above documents, the methodology adopted in this section considers the following factors which will dictate the likely requirement for waste facilities in the Wrexham County Borough Council Area;

- The total amount of waste arisings and future trends;
- The amount of waste that must be diverted from landfill in line with Government and European Targets; and
- Trends in the development of new waste management methods that will reduce the need for other forms of management, in particular landfill.

6.1.6 The proposed facility at Bryn Lane will principally handle residual waste arising from the Wrexham municipal waste contract, although the plant will also will be capable of handling residual commercial and industrial solid wastes. This chapter therefore considers the need primarily from the perspective of the municipal and commercial waste market.

6.2 Municipal Waste

Introduction

6.2.1 Municipal Waste is waste which is within the control of local authorities such as collected household waste, waste from civic amenity sites and recycling centres and waste collected by local authorities from institutions and commercial premises.

6.2.2 Wales Produces some 1.70 million tonnes of municipal waste per annum, of which some 1.07 million tonnes (63%) is landfilled (2008). This section provides an estimate of the additional quantity of municipal waste which will require non-landfill management in the period to 2025.

Current Arisings

6.2.3 The North Wales Regional Waste Plan 1st Review 2009 indicates a total municipal waste arising within the North Wales Region to be 504,937 tonnes (2004/05). Of which circa 277,715 tonnes (55%) was landfilled. The balance of the waste arisings was composted or recycled with no energy recovery taking place from residual waste.

6.2.4 Within the Wrexham County Borough some 83,205 tonnes of Municipal Solid Waste (MSW) arisings were produced in 2002/03 as detailed within the Municipal Waste Strategy document. It is stated in said document that 90% of these waste arisings were landfill during this period, some 74,885 tonnes, with the balance (10%) recycled or composted. Substantial progress has been made during the last few years with regards to the management of municipal wastes within the

County Borough which has been achieved due to a number of factors. A major facilitation of meeting the required change has been the signing of a 25 year PFI Contract with Waste Recycling Group which resulted in the development of Phase 1 of the Bryn Lane Recycling Park. Current statistics indicate that 37.4% of municipal waste was recycled or composted for 2008/09 with this increasing to 47% for 2010/11. It has been calculated that a treatment capacity of circa 30,000 tonnes per annum is required to deal with the current residual municipal waste arisings. This represents around 54% of total municipal waste arisings within the County Borough for 2010/11.

Future Arisings

- 6.2.5 The Municipal Waste Management Report for Wales (2008–09 Revised) indicates that the total amount of municipal waste produced in Wales has continued to fall over the previous 4 years, with just over 1.7 million tonnes produced in 2008–09. The percentage of municipal waste reused, recycled or composted in Wales has been continually increasing since 2000–01. Furthermore, the 2008–09 rate of 37% was more than five times higher than the 2000–01 figure of 7%. Whilst landfill disposal is still the main form of management of municipal waste, the use of landfill sites has been steadily decreasing over the last 7 years. The total amount of municipal waste produced in Wales peaked at just over 1.9 million tonnes in 2004–05, and has since decreased over the last few years to a level similar to that in 2001–02. These figures suggest that the Welsh Governments target for 70% recycling and 5% to landfill by 2025 is an achievable aim.
- 6.2.6 It should be noted that the above figures for municipal waste excludes abandoned vehicles.
- 6.2.7 For the purposes of this assessment it has been assumed that there will be zero waste growth beyond 2008/09.

Changes in Waste Management Methods

- 6.2.8 'Towards Zero Waste, One Wales: One Planet' June 2010 is the overarching waste strategic document for Wales and sets out the high level strategic direction for waste management in Wales over the next 15 years, with a view to the longer term milestone of 2050. Central to the plan is the principle of the Welsh Government's Sustainable Development Scheme which requires all policies and programmes help the country achieve a vision of a sustainable society, with the following key principals underpinning this approach;
- Long Term; ensuring that all decisions promote the long term, sustainable well being of communities, and do not promote short term

fixes that will continue to lock Wales into unsustainable patterns and lifestyles;

- Integration; ensuring that all decisions take full account of, and where possible fully integrate, the various social, economic and environmental outcomes that are being sought;
- Involvement; engaging with, and involving, the people and communities that will be affected by decisions, so that working in partnership for sustainable development becomes part and parcel of the way we work.

The revised EU Waste Framework Directive requires that EU Member States must by December 2012 bring into force laws, regulations and administrative provisions to comply with the Directive. One of the key principles of the Directive is the waste hierarchy. The hierarchy identifies the prevention of waste as the highest priority, followed by reuse, recycling, recovery of other value (eg energy), with disposal as the least desirable option. The Towards Zero Waste document states that whilst recycling performance has met a number of the targets set in the earlier strategy 'Wise About Waste' 2002 early, there is a recognition and commitment to continue to pursue other treatment approaches to recover greater value from the resources we use.

6.2.9 Key Actions set out in 'Towards Zero Waste One Wales:One Planet' include:

- A sustainable environment, where the impact of waste in Wales is reduced to within our environmental limits by 2050.
- Introduction of an interim target of 70% MSW recycling and composting for all waste arising in Wales by 2025.
- The introduction of landfill bans with an overall target of 5% (maximum) landfill for the total Wales MSW arisings by 2025.
- By 2050, as a minimum, reduce the impact of waste in Wales to within its environmental limits (which is defined as one Wales:one planet levels of waste, approximately 65% less waste than produced in 2010).
- By 2050, the aim to phase out residual waste through enhanced actions on waste prevention and sustainable consumption and production and ensuring that all waste that is produced is either reused or recycled.
- By adoption of more sustainable practices, this will assist in the reduction of greenhouse gas emissions produced through improved waste management practices as is required by the UK Climate Change Act.
- The separate collection and treatment of a range of resources in order to maximise their reuse and recycling value.
- Ensuring energy from waste treatment is only used to recover value from resources that cannot offer greater environmental and economic benefits through reuse or recycling.
- The achievement of a country that has a prosperous society with a sustainable resource efficient economy. A fair and just Wales where citizens

can achieve their full human potential and contribute to the wellbeing of the country through actions on waste prevention, reuse and recycling.

6.2.10 In addition to the overarching waste strategy targets discussed above, the management of MSW is also subject to the targets set by the European Directive on the Landfilling of waste. The EU Directive requires a phased reduction in the amount of Biodegradable Municipal Waste sent to landfill with reference to the baseline year of 1995. The phased targets are as follows;

- 2010 – 75% of the 1995 baseline figure
- 2013 – 50% of the 1995 baseline figure
- 2020 – 35% of the 1995 baseline figure

6.2.11 The effect of these targets when applied to Wrexham is illustrated in Table 6.1 below.

Table 6.1 – Landfill Targets for Wrexham

Year	Assumed Waste Arisings	Maximum Landfill %	Maximum Landfill	2008/09 Waste to Landfill	Additional Treatment Capacity Required
2008/09	82,211				
2010	82,211	75% of 1995	54,000 *	51,501	0
2013	82,211	50% of 1995	36,000 *	51,501	15,501
2020	82,211	35% of 1995	25,200 *	51,501	26,301
2025	82,211	5% of arisings	3,600 **	51,501	47,901

* Based on an assumed biodegradable content of 61% as stated in Landfill Allowance Scheme (Wales) Regulations 2004 – Welsh Government study 2003. Baseline taken as 72,000 tonnes – WCBC Municipal Waste Management Strategy

** Based on 5% limit on landfilling for all wastes as stated in Towards Zero Waste One Wales: One Planet June 2010

6.2.12 It should be noted that figures in Table 5.1 do not reflect the change in definition of Municipal Waste as agreed between the European Commission and the UK Government which will result in an upward revision to the maximum allowance for landfilling of waste from 2010 to 2020.

6.2.13 Notwithstanding the above it can be seen that there is an increasing demand over time for further treatment, recycling and composting capacity in order to meet the landfill diversion targets. If we accept the general principle that there should be no maximum level for the diversion of waste from landfilling, then it would be reasonable to consider that the amount of waste which would be better managed by treatment from 2010 onward will be in the order of 47,901 tonnes.

6.2.14 In addition to the landfill diversion targets stated above, local authorities in Wales have phased recycling, preparation for re-use and composting targets as

a result of the Waste (Wales) Measure 2010 which was introduced in February of that year. These phased targets are illustrated in Table 6.2 below.

Table 6.2 – Waste (Wales) Measure Recycling Targets for Wrexham

Year	Assumed Waste Arisings	Recycling Target (%)	Recycling Target (tonnes)	Tonnes Recycled	Additional Recycling Capacity Required	Residual Waste Assuming Recycling Targets Met
2008	82,211	30%*	24,663	30,710	0	57,548
2012/13	82,211	52%	42,750		12,040	39,461
2015/16	82,211	58%	47,682		16,972	34,529
2019/20	82,211	64%	52,615		21,905	29,596
2024/25	82,211	70%	57,548		26,838	24,663

* Based on an intervening figure of 30% in line with Wise About Waste Strategy Targets 2002 of 25% combined recycling/composting 2006/07 and 40% in 2009/10.

6.2.15 Within the recently published Municipal Waste Sector Plan which is a supporting document to the arching waste strategy discussed above, the Welsh Government have set a limit on the proportion of MSW which can be treated using Energy from Waste. The limit increases over the plan period as follows;

- 2015/16 – 42%
- 2019/20 – 36%
- 2024/25 – 30%

The Towards Zero Waste strategy targets for 2025 (70% recycling and composting, with a maximum of 5% of waste to landfill) will effectively result in the remaining proportion of waste after the 70% target for recycling has been met, being available for Energy from Waste (EfW) treatment, i.e. the remaining 30% with the hope that waste from highly efficient EfW processes can be recycled further minimising the amount that goes for final disposal, e.g. bottom ash use in concrete block manufacture.

6.2.16 This thermal treatment limit of 30% equates to 24,663 tonnes when applied to the 2008/09 MSW arising in Wrexham County Borough. Table 5.2 illustrates that amount remaining as residual in 2025 due to the application of the recycling targets.

6.3 Commercial & Industrial Waste

Introduction

- 6.3.1 Commercial & Industrial Waste is that produced by all businesses including public sector organisations, commercial premises, including shops, warehouses, offices, schools, hotels, restaurants, utilities and transport businesses (Commercial Waste), plus factories and industrial plants (Industrial Wastes). Commercial and industrial waste generally includes a proportion of hazardous wastes and some inert or semi-inert material.
- 6.3.2 This section provides an estimate for the additional quantity of business waste that will require non-landfill management in the period to 2025.
- 6.3.3 The latest data available via the Environment Agency was reviewed and analysed.

Current Arisings

- 6.3.4 Wales produced some 3.6 million tonnes of Commercial and Industrial (I&C) waste in the calendar year 2007, 43% of which was commercial waste and 53% of which was industrial waste. In addition, 1.8 Million tonnes of 'Non Waste' were produced, specifically blast furnace slag and timber.
- 6.3.5 The most significant C&I waste was mixed wastes, 31.3%, followed by non-metals 24.2%, mineral wastes 16.6%, and animal and vegetable wastes 11.2%.
- 6.3.6 Of the C&I waste arisings, excluding the 'Non waste' category, 1.4 Million tonnes or 38% was recycled, 348,000 tonnes or 9.7% was re-used, 51,000 tonnes or 1.4% was composted, 50,000 tonnes or 1.4% was sent for thermal treatment and 1.4 Million tonnes or 39.1% was sent for final disposal at landfill.
- 6.3.7 A significantly lower proportion of industrial waste (excluding non-wastes) was sent to landfill, 29.0 per cent, compared to commercial waste 50.5 per cent. Also, more industrial waste was recycled, re-used, composted and land recovered 63.2 compared to only 37.5 per cent for commercial waste.
- 6.3.8 The statistics available via the Environment Agency provide C&I waste arisings for the North Wales region broken down into sector groups as can be seen in Table 6.3.

Table 6.3 – Commercial and Industrial waste (Including ‘Non Wastes’) produced in the North Wales Region in 2007 by Sector (Tonnes)

Sector	Type	Tonnage	% of Wales Regions total*
Manufacture of food, beverages and tobacco products	I	196,640	41%
Manufacture of textiles, wearing apparel, leather and related products	I	2,910	29.5%
Manufacture of wood and products of wood and cork	I	100,590	37.8%
Manufacture of paper and paper products	I	34,110	38.8%
Manufacture of coke and refined petroleum products	I	50	0.4%
Manufacture of chemicals and chemical products	I	35,750	31%
Manufacture of other non metallic mineral products	I	26,190	33%
Manufacture of basic metals and fabricated metal products (except machinery and equipment)	I	43,780	2.2%
Sector	Type	Tonnage	% of Wales Regions total*
Manufacture of computer, electronic and optical products, machinery and equipment, motor vehicles and other transport equipment	I	59,430	33%
Manufacture of furniture, other manufacturing, repair and installation of machinery and equipment	I	14,430	25%
Electricity, gas, steam and air conditioning supply	I	22,090	5.6%
Water collection, treatment and supply	I	7,990	54%
Industrial sub-total		543,960	14%
Wholesale and retail trade; repair of motor vehicles	C	166,850	25.7%
Transportation and storage	C	30,570	29%
Accommodation and food service activities	C	92,250	29%
Information and communication	C	3,950	17%
Financial and insurance activities	C	1,490	12.2%
Real estate activities	C	1,260	23%
Professional, scientific and technical activities	C	26,370	24%
Administrative and support service activities	C	14,620	24%
Public administration and defence, compulsory social security	C	29,490	28%
Education	C	30,760	22%
Human health and social work activities	C	10,500	22%
Arts, entertainment and recreation	C	17,730	25%
Other services	C	6,380	22%
Commercial sub-total		432,220	26%
TOTAL		976,180	18.2%

* –Percentage of total based on three waste strategy regions, namely South West Wales, South East Wales and North Wales.

6.3.9 The North Wales Regional Waste Plan Area comprises the following local authorities:

- Conwy County Borough Council
- Denbighshire County Council
- Flintshire County Council
- Gwynedd County Council
- Anglesey County Council
- Snowdonia National Park Authority
- Powys County Council
- Wrexham County Borough Council

6.3.10 Based on figures published in the Environment Agency survey in 2007, as included in Table 5.3 above, the North Wales region accounts for 26% of the Commercial waste arisings and 14% of the Industrial waste arisings when compared with the other 2 strategy areas within Wales. That equates to 432,220 tonnes and 543,960 tonnes of Commercial and Industrial waste respectively as having arisen in 2007 within the region. It is acknowledged that due to C&I waste stream being skewed by wastes arising from the manufacture of metal products (Corus Port Talbot) and timber (North and South East Wales effected by a reduction), when these waste streams are taken out of the figures it produces the following statistics;

- North Wales Industrial Waste Sub-total – $480,010 / 189,617 \times 100 = 25\%$
- Commercial waste streams remain unaffected.

6.3.11 It can be seen therefore with the adjustment in the figures for removing 'Non Wastes' the Industrial waste sub-total for North Wales increases from 14 to 25%. Following review of all available information, up to date Commercial and Industrial waste data is not readily available for the County Borough and has so far been considered on a regional basis. From examination of municipal data for both the County Borough and North Wales Regional Waste Plan areas gives a figure of approximately 17% of the total waste arisings for North Wales being generated in the County Borough (from 2007 data). If we apply this rationale to the C&I sector, this represents the following;

- Wrexham County Borough (Commercial Waste Estimate) – $432,220 \times 0.17 = 73,477$ tonnes
- Wrexham County Borough (Industrial Waste Estimate) – $543,960 \times 0.17 = 92,473$ tonnes

Due to the concentration of Commercial and Industrial operations within North East Wales (Wrexham CB and Flintshire CC), the availability of Commercial and

Industrial waste streams is likely to be higher than the figures highlighted above.

- 6.3.12 From the above analysis, this would suggest that approximately 165,950 tonnes of Commercial and Industrial waste is generated each year from within Wrexham County Borough.

Future Arisings

- 6.3.13 From review of the North Wales Regional Waste Plan (1st Review) documents, it suggests that the industrial waste stream for the region has reduced from 2003 to 2010 at a rate of 4% per annum. From 2010 to 2014 there is predicted to be a linear change of around -1% per annum. This is based on past reducing in arisings, likely future economic growth and waste growth due to regulatory and economic measures and cultural factors and the decline and likely further decline in the industrial/manufacturing sectors. For commercial waste, for the period 2003 to 2010, this was expected to rise at a rate of 2% per annum. From 2010 to 2014, there is a prediction of a linear change of 0% per annum, therefore remaining static. This forecast is based on the growth, and likely further growth in the service sector, the DEFRA waste forecast for England, and the future economic growth and waste growth due to regulatory and economic measures and cultural factors.

Changes in Waste Management Methods

- 6.3.14 The Towards Zero Waste strategy recognises that the data currently available in respect of Commercial and Industrial wastes is not sufficiently developed, and therefore the Welsh Government propose that measures should be introduced as part of the development of sector plans which sit below the overarching waste strategy document to target specific areas, drawn up on a priority basis, to provide the required principals and policies to achieve the aims set out within the Towards Zero Waste document. Currently, it is, therefore, difficult to draw any conclusions regarding the current fate of Commercial and Industrial wastes in Wrexham CB. However a national overview of performance since the publication of the 2002 Wise About Waste strategy document has concluded that for C&I waste;
- Being on course to meet the 2010 target to achieve a reduction in C&I waste produced equivalent to at least 10% of the 1998 arisings figure (the 2007 figure is 13% less than the figure for 1998/99);
 - Being on course to meet and exceed the 2010 target to reduce the amount of C&I waste sent to landfill to less than 80% of that landfill in 1998/99 (the 2007 figure for the amount of C&I waste landfill is 57% of the 1998/99 landfill figure); and

- Being on course to meet and exceed the 2010 target to reduce the amount of biodegradable C&I waste going to landfill to 80% of that landfilled in 1998 (the 2007 figure for the amount of biodegradable C&I waste landfilled is 44% of the 1998/99 landfill figure).

6.3.15 In an attempt to provide a conservative estimate of the potential fate of Commercial and Industrial waste arisings in Wrexham, the figures for the year during which latest figures are available (2007) have been adopted and applied to the estimated C&I waste arisings in the County Borough.

Table 6.4 – Estimated C&I tonnage waste managed by fate and shortfall from Wales Waste Strategy targets in Wrexham CB

Indicator	2007 Percentage Achieved	Tonnage	Waste Strategy Target % of total waste arising	Waste Strategy Target (tonnes)	Shortfall from target
Reduction on Biodegradable to Landfill	44%	73,018	80%	58,415	14,603
Reduction to Landfill Total	57%	94,592	80%	132,760	38,168

6.3.16 The above table indicates that in order to meet the requirements of the Wales waste strategy targets for C&I, Wrexham will need to reduce the amount of C&I waste it sends to landfill by 38,168 tonnes, which according to the North Wales Regional Waste Plan, this 2010 target is being met.

Waste Imports/Exports

6.3.17 As discussed within the North Wales Regional Waste Strategy (1st Review), in 2003, a waste imports / exports study for Wales was undertaken. The study highlighted that the North Wales region was a net importer of waste, importing some 195,683 tonnes compared with an export of 43,437 tonnes. The largest net importers of waste were, unsurprisingly, Flintshire and Wrexham, due to their proximity to England. As legislation changes take effect, e.g. the proximity principle, this pattern should change in order the reduction of waste imports and exports and the management of the authorities waste predominately, within its own administrative boundaries.

Waste Management Facilities in Wrexham and North Wales

6.3.18 The North Wales Regional Waste Plan (1st Review) 2009 concluded that whilst there was a variety of waste management facilities within the region, but landfill was still the predominant method of managing waste within the region to date. The determination of how waste is managed is very difficult to ascertain as

waste is restricted between administrative boundaries and waste can be dealt with at a number of installations prior to being disposed of.

- 6.3.19 It is also recognised within the wider region, as discussed in the North Wales Regional Waste Plan (1st Review), that whilst there is a large capacity availability in 'Non-landfill' facilities, the availability of residual waste treatment facilities as proposed within the preferred options is severely limited.
- 6.3.20 The North Wales Regional Waste Plan (1st Review) 2009 analysed the availability of waste infrastructure within the region identifying the number and type of facility within each local authority boundary. This information indicates that within Wrexham County Borough there exist the following numbers of waste management facilities:
- Landfill Sites – 2
 - Transfer Stations – 6
 - Physical Treatment – 3
 - Material Recycling Facilities – 1
 - Civic Amenity Sites/Recycling Centres – 5
 - End of Life Vehicle/Scrap Metal – 9
- 6.3.21 The above numbers of facility represent the position in 2005 and therefore the range of infrastructure in place and delivering the 2005/06 rates of recycling, composting and landfilling. The current Phase 1 MRF / IVC development is not included in the above as operations did not commence until 2007.
- 6.3.22 In terms of the above figures from a non-landfill treatment capacity perspective, this translates into the following figures;
- Transfer Stations – 111,996
 - Physical Treatment – 155,998
 - Materials Recycling Facility – 49,999
 - Civic Amenity Site – 45,000
 - End of Life Vehicle/Scrap Metal – 81,593
- 6.3.23 It is noted within the regional waste plan, that the above figures represent permitted capacities as opposed to actual throughput, therefore the totals will be an overestimation of waste materials handled.
- 6.3.24 Of the tonnages discussed in paragraph 5.3.22, only the Civic Amenity Site can be considered to deal with Municipal waste, with the other facilities dealing with predominantly Commercial and Industrial Waste. What also has to be considered in the above figures is that Construction and Demolition (C&D) Wastes for the region have not yet so far being considered, and it is likely that capacity in

relation to Physical Treatment and Transfer relate to the 1,460,000 tonnes of C&D waste arisings for North Wales as estimated in 2005.

- 6.3.25 Another factor that needs to be considered is the geographical location of Wrexham County Borough as discussed in paragraph 5.3.17. Due to its proximity to the North West of England (Merseyside, West Cheshire and Shropshire), that waste imports make it extremely difficult to ascertain facility capacity in order to meet the recycling targets set out within the latest legislation and strategy documents.
- 6.3.26 The facilities considered within paragraph 5.3.22 are likely to be regional sized C&I and C&D waste management company operations, and/or specialist waste re-processors such as the ELV facilities. There are no other known strategic residual recovery facilities in Wrexham County Borough, and indeed in the wider North Wales region as identified and recognised by the Regional Waste Plan.

6.4 Conclusions

- 6.4.1 Whilst the available data is deficient in some important respects it is adequate for the purpose of drawing some indicative conclusions to inform the need for additional residual waste recycling and treatment capacity in Wrexham County Borough and indeed the wider North Wales region as identified by the Regional Waste Plan.
- 6.4.2 The above assessment indicates that in order to meet the targets set out in the Towards Zero Waste One Wales : One Planet overarching waste strategy, an additional circa 48,000 tonnes of residual waste treatment capacity will be required for MSW by the intermediate target date of 2025.
- 6.4.3 In addition, to the above, an additional circa 38,000 tonnes of residual treatment capacity will be required for Commercial and Industrial (C&I) wastes in order to meet the targets set by the original Waste Strategy for Wales, based upon the progress towards the targets in 2007 as set out in the Towards Zero Waste strategy document.

6.5 Need for Treatment Technologies

- 6.5.1 The current shortfall in specific residual waste treatment capacity in Wrexham County Borough is likely to meet the large proportion of the above 86,000 tonnes combined MSW and C&I as the figures given paragraph 5.3.22 are treatment capacities to specific waste streams, e.g. Household Waste Civic Amenity Facilities, Transfer Station capacity for bulking and onward transportation and Physical Treatment relating to C&D waste or specialised waste streams such as Clinical. The likely treatment capacity for residual waste within the County Borough summarised in Table 6.5 below.

Table 6.5 – Summary of residual waste treatment capacity requirements in Wrexham CB

	MSW	Business Waste	Total Capacity Shortfall
Residual treatment/ recovery capacity required	48,000	38,000	86,000

6.5.2 The above table identifies that Wrexham County Borough is likely to require an additional resource management facility/s for the treatment of residual wastes in order to meet the targets as set out within the Welsh waste strategy documents.

6.5.3 The conclusion is therefore that the proposed MBT facility situated at Phase 2 of the Wrexham Recycling Park will meet the residual waste treatment capacity for Municipal waste arisings, with additional capacity to assist with the required recovery of the Commercial and Industrial waste streams.

6.6 Alternatives

Introduction

6.6.1 This section of the chapter provides a critical summary of the different technologies which could be employed for the management of MSW and C&I wastes and the rationale for technology selected for the proposed Phase 2 development at Bryn Lane.

6.7 Alternative Technologies

6.7.1 The proposed Mechanical Biological Treatment (MBT) Facility seeks to recover as much recycle from the residual waste stream as possible and produce an end product where the energy in the remaining organic and post-treatment fraction can be recovered, i.e. the production of SRF. Whilst there is one main treatment option being proposed under the description of MBT, it can be considered to consist of two main elements for processing MSW and C&I wastes, namely Mechanical Treatment and Biological Treatment.

6.7.2 Prior to concluding that the above technology would be the most appropriate to manage the anticipated waste streams on the Phase 2 development of Wrexham Recycling Park, a number of alternatives were considered. These alternatives for residual treatment, recycling and final disposal, including the chosen option, are discussed below.

6.8 Waste Treatment and Recycling Alternatives

6.8.1 The following technologies for waste treatment and recycling were considered:

- Autoclave
- Anaerobic Digestion (AD)
- Materials Recycling Facility (MRF)
- Mechanical Biological Treatment (MBT)

6.8.2 For each of the above technologies, the principal options, together with their main advantages and disadvantages were discussed and considered as follows:

Autoclave

6.8.3 Autoclaving is a batch process in which shredded MSW is 'cooked' in a pressurised sealed drum under the action of steam. After around an hour of processing, the waste is reduced to 'floc'-like material, with metals, plastic and glass partially cleaned so that recyclables can be extracted. The autoclave process is designed to ensure complete pathogen and virus removal. The processed waste is then treated by a series of screens and recovery systems (e.g. debris roll screen, over-band magnet, eddy current separator and air classifier) to achieve secondary recycling. The process deforms plastics, making them either more or less difficult to recycle, depending on the process and the polymer type. The remaining material may be sorted and the high calorific fraction used as a Refuse Derived or Solid Recovered Fuel (RDF/SRF). There will typically be a residue for disposal from mixed MSW processing.

6.8.4 The products include:

- Autoclave 'floc' (cellulose fibre);
- Clean, dry recyclables – depending on feedstock
- Effluent stream or condensate; and
- Low calorific residues to landfill.

6.8.5 Autoclaving only sterilises the wastes and allows separation of the waste stream into fractions and only reduces its volume by a limited extent. However, autoclaving is beneficial as it greatly improves recycling opportunities compared to other technologies.

Summary of Autoclaving

- **Advantages:** potentially high rate of recovery of recyclables, stabilises organic component and maximises recycling opportunities; reduced air emissions.

- **Disadvantages:** high energy demands, low volume reduction, high cost, requires pre-treatment of wastes, unproven on business (commercial and industrial) waste streams.

Anaerobic Digestion (AD)

- 6.8.6 Anaerobic digestion (AD) is the biological treatment of biodegradable organic waste in the absence of oxygen, utilising microbial activity to break down the waste in a controlled environment. Anaerobic digestion results in the generation of:
- Biogas, which is rich in methane and can be used to generate heat and/or electricity;
 - Fibre (or digestate), which is nutrient rich and can potentially be used as a soil conditioner; and
 - Liquor, which can potentially be used as a liquid fertiliser.
- 6.8.7 During the AD process, between 30% and 60% of the feedstock is converted into biogas. This gas can be used to generate heat and power. As more feedstock is introduced to the system, the digestate is pumped into a storage tank. This residual digestate can then be separated to produce a fibre and liquor.
- 6.8.8 A benefit of AD is that it contributes to a mass reduction of MSW. AD produces a biogas fuel which can be used in place of fossil fuels and hence can contribute to the reduction of greenhouse gases.
- 6.8.9 The digestate can decrease synthetic fuel usage in fertiliser manufacturing (which is an energy intensive process) and it can convert residues into potentially saleable materials: biogas, soil conditioner and liquid fertiliser, although finding markets for this fertiliser has been difficult with some projects previously.
- 6.8.10 The quality of outputs from AD is dependant on the quality of the input waste. Like MBT, the end product from AD does not reduce significantly in volume, in comparison to other treatment methods. AD is well established for the treatment of sewage sludge and farm slurries, but is still in the early stages of full-scale implementation for municipal and industrial wastes.
- 6.8.11 AD is more suited to waste streams high in organic content, and as this MSW fraction is already being treated via an In Vessel Composting process on Phase 1 of the Wrexham Recycling Park, it is not considered suitable for the treatment of the remaining residual wastes.

Summary of Anaerobic Digestion

- **Advantages:** some volume reduction, stabilises organic component and maximises recycling opportunities, recovers energy from biogas.
- **Disadvantages:** does not significantly reduce waste volume, not really suitable for mixed/industrial/commercial wastes due to low organic content and bulky nature.

Materials Recycling Facility (MRF)

- 6.8.12 MRF systems involve a combination of manual and mechanical sorting of waste streams which may be either mixed or segregated prior to arriving at the facility. Mechanical sorting can take the form of magnetic separation, eddy current separation, screening or trommels. Manual sorting generally takes the form of picking either from a stockpile of material or from a conveyor belt with segregated materials being placed into separate containers for onward transport to re-processing facilities or final disposal facilities for the residues incapable of being recycled.
- 6.8.13 Systems can be configured in many different ways to deal with various waste streams. Recyclate or residues to be transported from the MRF to final disposal or re-processors are sometimes baled in order to improve ease of handling and payloads of transport vehicles.
- 6.8.14 The systems are normally modular in design with separate units for picking conveyors, separation and baling and therefore MRFs offer a high degree of flexibility in the types of waste stream that they can manage, be they mixed or pre-sorted.
- 6.8.15 Depending on the waste streams handled and the level of segregation at source, MRF plants can offer a high level of recycling and recovery of materials such as glass, metals, cardboard and paper, plastics and wood.
- 6.8.16 As mentioned in paragraph 5.8.15 above, on certain waste streams (co-mingled recyclate), these plants can achieve very high levels of recycling and recovery, however, this particular waste stream is dealt with by the kerbside sort and MRF elements of Phase 1 of the Wrexham Recycling Park and is not as applicable for the treatment of residual waste in this instance.

Summary of MRF

- **Advantages:** process a variety of materials, flexible and easily modified for changing waste streams, low energy usage due to reliance on manual as well as mechanical separation, high rates of good quality recyclate.

- **Disadvantages:** not well suited to organic wastes, labour intensive. Lower recovery rates for residual wastes ('Dirty MRF's')

Mechanical Biological Treatment (MBT)

- 6.8.17 MBT systems involve a combination of the mechanical sorting of materials for recycling and the biological treatment of biodegradable material in residual waste. The mechanical element of MBT refers to various sorting, separation, size reduction and sieving technologies (including trommels and wet, air or ballistic separation). The biological element of an MBT process may either take place prior to or after mechanical sorting of the waste and refers to composting, anaerobic digestion or bio-drying. The aim of MBT is to maximise the diversion of recyclable materials and to stabilise compostable materials or to create a refuse derived or solid recovered fuel (RDF/SRF).
- 6.8.18 Systems can be configured in different ways to deliver different outcomes. The majority of material entering an MBT facility will leave either as a 'stabilised' residue that requires landfill, or as an RDF/SRF that will require combustion in a power station, cement kiln, energy from waste plant or other suitable facility in order to recover energy.
- 6.8.19 The combination of possible process elements varies widely and each has a complex mix of advantages and disadvantages. No one approach is a 'best solution' but some types of system will be unsuitable for a particular project, while others could be very appropriate, such in this instance.
- 6.8.20 The aim of MBT as a waste management tool is to minimise the environmental impact associated with the end disposal of biodegradable wastes and to obtain additional value from the input waste by the recovery of recyclable materials, such as metals, glass, 'compost' and in some cases, biogas and/or a waste derived solid fuel fraction (RDF/SRF).
- 6.8.21 The ability of MBT to meet a high level of landfill diversion will therefore depend upon the availability of markets for, and the quality of, the process outputs. Both the output materials in this instance will have a high element of quality control and markets have been identified for the materials.
- 6.8.22 Germany, Austria and Italy are still leading in MBT technical developments, but the technology is relatively new, but becoming more established in the UK.

Summary of MBT

- **Advantages:** processes a variety of mixed materials, suitable for untreated or residual Municipal Solid Waste (MSW), diverts a significant amount of Biological Municipal Waste (BMW) from landfill, and offers the

opportunity to recover additional recyclable materials such as ferrous and non-ferrous metals, glass and aggregates.

- **Disadvantages:** quality of recyclate and compost can be poor due to the quality of the waste input, relatively high energy requirement, does not significantly reduce the waste input. Unsuitable for some business waste types due to limited mixing and low organic content.

6.9 Final Disposal Alternatives

6.9.1 The following technologies for final disposal were considered:

- Mass Burn Incineration
- Landfill
- Advanced Thermal Treatment (Pyrolysis)
- Advanced Thermal Treatment (Gasification)
- Solid Recovered Fuel (SRF) Production for offsite utilisation

6.9.2 For each of the above technologies, the principal options, together with their main advantages and disadvantages were discussed and considered as follows:

Mass Burn Incineration

6.9.3 Incineration or Energy from Waste (EfW) plants are designed to burn waste and recover energy as efficiently as possible. Waste is burned under controlled conditions and at high temperatures. Heat released from the combustion of the waste is recovered and used to generate electricity and/or to provide steam or hot water.

6.9.4 The majority of plants use an inclined moving grate design. Mixed waste is delivered into a reception hall or tipping bunker, then fed into a furnace feed hopper, usually by a mechanical grab system, which keeps it travelling down a slope through the furnace as it burns.

6.9.5 All combustible material is burnt and the unburned residue – bottom ash – is deposited into a quench tank. The hot gases from the combustion chamber are directed to a boiler, where heat is recovered as superheated steam through a series of heat exchangers.

6.9.6 The combustion gases from the incineration of waste are treated by a number of various air pollution control devices to remove contaminants such as particulates and heavy metals. The fly ash is the residue taken out of the air emissions by air pollution control devices. Due to its high alkalinity, the fly ash needs disposal at an appropriately engineered hazardous waste landfill.

- 6.9.7 The resultant output of an incineration plant is bottom ash, which is far more stable than the municipal solid waste (MSW) input, mainly due to the oxidation of the organic component of the waste stream. The volume of waste needing disposal following combustion is reduced by approximately 90%, minimising the need for landfill. The bottom ash can be processed and recycled, by being used in the construction industry. Bottom ash is typically re-used as an aggregate for road base.

Summary of Mass Burn Incineration

- **Advantages:** proven, significant volume reduction and relatively low cost, energy recovery.
- **Disadvantages:** large sites required for scale of operation to be economic, large, tall buildings and stack height, higher levels of emissions when compared to Pyrolysis or Gasification.

Landfill

- 6.9.8 Landfills are engineered clay or synthetic containment cells for the disposal of waste materials and are normally located in former mineral workings or as land raise sites.
- 6.9.9 In any waste management system, a portion of residual waste still remains after treatment. For this reason, landfills are still critical and will be needed in the foreseeable future. Although there is still a need for landfills, with the availability of the technologies mentioned above, the use of landfills will be significantly reduced.

Summary of Landfill

- **Advantages:** technology is low cost in comparison to alternatives, useful for residual waste, although this is offset by high landfill taxes.
- **Disadvantages:** lowest option on waste hierarchy, potential environmental emissions including air, surface and water and groundwater releases, contaminated site legacy after use, large land take required.

Advanced Thermal Treatment

- 6.9.10 Gasification and Pyrolysis are two techniques in the group of processes collectively known as Advanced Thermal Treatment. Advanced Thermal Treatment involves heating the waste to high temperatures to initiate chemical reactions within the waste. In the case of pyrolysis there is an absence of oxygen, whilst gasification involves the combustion of waste with some oxygen but not sufficient to enable complete oxidation

- 6.9.11 The main product of pyrolysis and gasification is a syngas, which contains carbon monoxide, hydrogen and methane. The other main product produced is a solid residue of non-combustible materials (ash) which contains a relatively low level of carbon.
- 6.9.12 Energy is recovered in one of two ways:
- The syngas is combusted and the hot gases are fed through a heat exchanger where steam is produced. This is used to generate energy in a steam turbine; or
 - The syngas is refined to produce a high quality fuel which is typically used in a gas engine to produce electricity.
- 6.9.13 The advantage of Advanced Thermal Treatment is the syngas product can be used for a variety of purposes. This offers more flexibility in recovering value from waste than EfW. Another advantage is the production of hydrogen. The incoming material and the chemical reaction within the unit can be manipulated to increase hydrogen output.

Summary of Advanced Thermal Treatment

- **Advantages:** significant volume reduction, less air emissions than EfW; produces syngas which has high flexibility for recovering value, smaller scale buildings and flue height.
- **Disadvantages:** smaller capacity than Mass Burn Incineration, relatively high capital and operating costs compared with EfW.

Solid Recovered Fuel (SRF) Production

- 6.9.14 The production of Refuse Derived Fuel or Solid Recovered Fuel (RDF/SRF) is closely linked with treatment technologies that are becoming more and more established as the need for diversion from landfill and managing waste materials in a more sustainable manner is required. Both Autoclave and Mechanical Biological Treatment produce a high calorific end product that can be specified to meet any required QA standard for fuel from waste production.
- 6.9.15 Both, with a specified level of treatment, can be used as a fossil fuel alternative to power industrial combustion processes such as cement kilns and as a fuel supplement to coal fired power stations.

Summary of Solid Recovered Fuel (SRF) Production

- **Advantages:** Relatively straight forward process that is flexible to incoming waste stream and is repeatable to a specification once process established.

High rate of overall diversion from landfill disposal and strong option when considered against the waste hierarchy.

- **Disadvantages:** no major volume reduction, can be an energy intensive process, QC procedures required for SRF produced to a specified standard, end market required to be established for security of supply.

6.9.16 In considering the selection of technology for the proposed Phase 2 development of the Wrexham Recycling Park, it was considered that MBT with the production of SRF was the most appropriate treatment and recycling option. This was mainly due to the types of waste likely to arise from the MSW contract with WCBC, and the require for more treatment capacity of residual Commercial and Industrial waste sources i.e. waste which may have undergone a degree of source segregation and recycling with the harder to extract residual remaining. In addition, the flexibility and further recycling option of an MBT facility were considered attractive due to the potential future changes in waste streams and the supply of a secondary product that can off set the use of fossil fuels.

6.9.17 Landfill was discounted as a final disposal option on the basis that it represented a “do nothing” scenario. Furthermore, it is contrary to the requirements of the Towards Zero Waste Plan, and the Local Development Documents and Municipal Waste Strategy in so far as it represents a form of waste management which is at the bottom of the Waste Hierarchy.

6.9.18 Mass Burn Incineration compared less favourably to Advanced Thermal Treatment due to the scale of facility required, its comparative emissions performance and height of flue stack.

6.9.19 However, in the final decision regarding the type of final disposal option, SRF production was selected due to its synergetic relationship with MBT and how this process can be geared towards the production of an alternative fuel to fossil sources. The available development footprint also dictated, to a certain degree, that an offsite final disposal option for the treated residual was required.

6.9.20 It was therefore concluded that a combination of MBT with the production of a Solid Recovered Fuel (SRF) was the most appropriate combination of waste technologies for dealing with the mix of residual MSW and Commercial & Industrial waste streams in this region.

6.10 Alternatives – Site Selection

6.10.1 The proposed development to the south of the current Phase 1 operations of the Wrexham Recycling Park is consistent with the current land use, located as it is on Wrexham Industrial Estate. The current waste management site is surrounded by a range of Commercial and Industrial premises including a

number of existing waste management operations. Current waste management operations local to the proposed development site includes;

- Wrexham Recycling Park including a Waste Transfer Station, Materials Recycling Facility, In Vessel Composting Facility and Household Waste Recycling Centre (Phase1) operated by WRG;
- Clinical Waste Incinerator operated by SITA UK Limited; and
- A Waste Transfer Station, MRF and skip storage and haulage site operated by Alan Skip Hire (ASH) Limited.

6.10.2 The above concentrations of commercial and industrial (waste management highlighted), provides a unique combination of activities in single location, especially when considered in the context of the Phase 1 operations. This combined with the good access to the primary road network and the sites central location within Wrexham County Borough forms the basis as to why the site at Bryn Lane was selected for the development of the proposed Phase 2 MBT Facility which is essentially co-located at an established waste and resource management site.

6.10.3 The relevant development plan documents for Wrexham County Borough is the Unitary Development Plan 2005 (covering the plan period 1996 to 2011) and the Local Development Plan 2007 Draft for Public Consultation (covering the plan period 2006 to 2021). Both documents both recognise and identified specifically the chosen development site.

6.10.4 The Unitary Development Plan which was adopted in February 2005 recognises both the need on a European and National basis for more sustainable waste management practices and the movement of said practices up the waste hierarchy. It also sees the proximity principle and regional self-sufficiency as underpinning the move towards sustainable practices. This ethos also accords with the North Wales Regional Waste Plan. The implementation of policy MW12 accords and will follow Planning Policy Wales Technical Advice Note (TAN) 21 : Waste.

6.10.5 It is noted within the relevant sections of the UDP that the new waste management facilities will largely be provided by the private sector in compliance with the Regional Waste Plan. In the absence of detailed site requirements, no specific allocations have been made within the UDP documents. However, it is recognised that the scale, complexity, and operational characteristics of modern waste management facilities are substantially the same as the manufacturing industry. It concludes, therefore, that the most appropriate locations for sorting, transferring and processing wastes are on those industrial estates which are suitable for general employment development. These locations include the sites allocated for

employment purposes under Policy E1, but exclude those safeguarded for certain high quality employment under Policy E2.

- 6.10.6 Policy E1 of the UDP identifies land on industrial estates in the County Borough safeguarded for employment during the period 2001 to 2011. The largest allocation of land is on Wrexham Industrial Estate, some 65.4ha on this one site location alone. Within allocation, both the currently operational Phase 1 and the proposed development site of Phase 2 are identified as;

- Site Ref 7 – Bryn Road – 9.5ha (2005)
- Site Ref 18 – Redwither (iii) – 2.1 ha (2005)

Site Reference 7, Bryn Road is today occupied by the Phase 1 access infrastructure and Household Waste Recycling Centre, and Site Reference 18, Redwither (iii) is occupied by the rest of the Phase 1 operations. The proposed site is therefore recognised by the UDP document, and indeed, the precedent has already been established in terms of site suitability via the development of Phase 1 of the Wrexham Recycling Park.

- 6.10.7 The Local Development Plan, which is in the process of being drafted, is currently at the public consultation stage. The LDP is currently published as a draft for public consultation. Within this document, the preferred LDP strategy is outlined, which includes the need (at Section 5.3) for Sustainable Development. It states the intention that sustainable development will be delivered by the Plan through '*an efficient use of land and resources within the context of the preferred spatial strategy*'. Applicable in the context of site selection the following key statements are made;

- Maximising the use of brownfield land (i.e. previously developed, under used or vacant land) in preference to Greenfield land;
- Ensuring that waste treatment and disposal facilities are located as close as possible to the waste source (proximity principle) in order to limit transport requirements; and
- Treating waste as a resource by encouraging reduction, re-use, recovery, recycling and composting of waste and reducing the amount of waste that is disposed of through landfill.

- 6.10.8 The Spatial Strategy within the draft consultation LDP recognises the availability of employment land within the borough and includes Wrexham Industrial Estate as the largest single area for employment land availability. Both the sites that were identified within the UDP document are listed and the land availability is updated and at 2006 is as follows for the sites under consideration;

- Bryn Road – 6.0ha (2006)
- Redwither (iii) – 2.1 ha (2006)

The reduction associated with the Bryn Road site reflects the construction and land take of the initial stage of the Wrexham Recycling Park development, namely the HWRC site and access infrastructure. Whilst Redwither (iii) is shown as being available, this has since being taken up with the development of the main waste treatment operations on Phase 1 of Wrexham Recycling Park. The Bryn Road allocation is the identified site that is proposed for the development of Phase 2.

6.10.9 The LDP document sets out strategic policies in relation to the efficient use of land and resources within the context of the preferred spatial strategy. Specific to Waste Management is Section 6.4 and states that the Plan will aim to achieve compatibility with the North Wales Regional Waste Plan which seeks to improve waste management techniques through the progression of methods up the waste hierarchy, and adoption of the proximity principle.

6.10.10 It specifically mentions the proposals for a waste recycling centre on the Wrexham Industrial Estate as being, at the time of writing, well advanced. It also recognises the need to reduce the amount of waste sent to landfill within the County Borough, which was, at that time (2007) running at 69%. The Plan stated its commitment to support the appropriate hierarchy of waste management facilities and waste management measures in appropriate locations to meet the Landfill Directive targets, amongst other legislation. It committed that sustainable waste management will be facilitated by;

- Supporting initiatives for waste reduction and promoting more use of existing facilities for re-use and materials recovery;
- The provision of new facilities for re-use, recycling and composting;
- The development of new technology initiatives;
- Ensuring that treatment/disposal facilities are located as close as possible to the waste source (the proximity principle) in order to limit transport requirements.

6.10.11 To meet the capacity requirements identified within the North Wales Regional Waste Plan, the following strategic sites were identified to provide for a range of waste management options, including recycling and composting;

- Wrexham Industrial Estate;
- Llay Industrial Estate; and
- Other B2 employment sites as appropriate.

6.10.12 With regards to the North Wales Regional Waste Plan (1st Review) Technical Companion 2009, both the Bryn Road and Redwither iii sites as identified as available industrial land suitable for waste management 'In Building Facilities'.

6.10.13 As a requirement of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (as amended), alternative sites need to be considered as part of the Environmental Assessment Process. Of the strategic sites put forward, there is a clear advantage of the proposed development site chosen for the following reasons;

- Co-location adjacent to the already established Wrexham Recycling Park;
- Land Identified as a strategic site for waste management development both within the UDP and LDP;
- Land identified as suitable for the development of 'In Building Facilities' within the North Wales Regional Waste Plan;
- Situated close to the source of waste arisings in accordance with the proximity principle;
- Good access routes already established to and from site;
- Utilisation of already constructed and in use infrastructure such as the weighbridge and access control, main offices, education centre;
- Synergetic to the current Phase 1 recycling and recovery operations; and
- Appropriate site size in terms of the required development footprint.

6.10.14 The other sites listed as strategic sites for waste development include the following and reasons are put forward for their suitability when considered against the proposed development site at Bryn Road are included in Table 6.6 below.

Table 6.6 – Analysis of other Potential Sites for a MBT Facility for Wrexham CB

Site	Analysis when Compared Against Proposed Development Site
Llay Industrial Estate (A)	No Synergetic Co-located facility. Distance from Waste Arisings slightly greater.
Llay Industrial Estate (B)	No Synergetic Co-located facility. Distance from Waste Arisings slightly greater.
Llay Industrial Estate (C)	No Synergetic Co-located facility. Distance from Waste Arisings slightly greater.
Llay Industrial Estate (E)	Site area too small. No Synergetic Co-located facility. Distance from Waste Arisings slightly greater.
Llay Industrial Estate (F)	Site area too small. No Synergetic Co-located facility. Distance from Waste Arisings slightly greater.
Llay Industrial Estate (G)	Site area too small. No Synergetic Co-located facility. Distance from Waste Arisings slightly greater.
Llay Industrial Estate (H)	Site area too small. No Synergetic Co-located facility. Distance from Waste Arisings slightly greater.
Other B2 Employment Sites as appropriate	Of land not located on Wrexham Industrial Estate, suitable industrial land for consideration is either too small or does not benefit from the co-location with an existing modern Recycling and Recovery Facility

- 6.10.15 It is considered therefore, when assessed against the other strategic sites put forward within the local development plan documents, that the proposed Phase 2 development (Bryn Road) at Wrexham Recycling Park represents the most suitable land available for the development of a residual waste treatment facility.

7.0 DESIGN AND ACCESS STATEMENT

7.1 Introduction

Purpose of this Statement

- 7.1.1 This Design and Access Statement (DAS) is prepared in support of the Planning Application to develop a Mechanical Biological Treatment (MBT) Facility on an area of land known as Phase 2, Wrexham Recycling and Recovery Park, Bryn Lane, Wrexham. It has been written in accordance with the requirements of national policy as set out in Chapter 4 Section 4.10 '*Promoting sustainability through good design – Planning Policy Wales Edition 4, February 2011*'. It also takes into account guidance published by The Design Commission for Wales document '*Design and Access Statements in Wales: Why, What and How, January 2011*'.

Methodology

- 7.1.2 The DAS highlights the principles and details of the proposed design and how the development can integrate into the surrounding landscape whilst fulfilling adequate access arrangements.
- 7.1.3 The preparation of this DAS has been undertaken with reference to the following documents, publication and policies:
- Planning Policy Wales Edition 4, February 2011 – Chapter 4;
 - Design Commission for Wales – Design and Access Statements in Wales, January 2011;
 - Technical Advice Note (TAN) 12: Design, 2009; and
 - Wrexham CBC Planning Information Sheet Series: Design and Access Statements.

Design and Access Statement Guidance

- 7.1.4 Local guidance on the preparation of Design and Access Statements is available, as discussed above, from Wrexham CBC's planning department. This guidance is based upon that issued by the Welsh Government and The Design Commission for Wales, as referenced in paragraph 1.2.2.
- 7.1.5 The Design and Access Statement is submitted to illustrate how the five objectives of good design have been applied to a particular development as appropriate. The five objectives are;
1. Accessibility
 2. Environment Sustainability

3. Character
4. Community Safety
5. Movement to, from and within the development

7.1.6 Each key objective is considered below, thereafter the proposed scheme is described in more detail to illustrate further how these key objectives are met as appropriate.

Accessibility

7.1.7 In terms of adopted planning policies regarding access, the proposal accords with both the General Development Principals (Policy GDP1) of the current UDP and the Strategic Policies (SP8, SP9 and P28) of the Deposit LDP for the County Borough.

7.1.8 Ease of access will be provided to the development site for appropriate personal, i.e. site staff and site users. This will include for links to proposed welfare facilities and car parking areas for both staff, site users and visitors.

7.1.9 It is proposed that the site will share the current access arrangements in place for Phase 1 with appropriate vehicle routing to the Phase 2 area.

Environmental Sustainability

7.1.10 Proposals for reduction in the demand for energy and the limiting in carbon emissions include the construction of a Photo Voltaic (PV) solar array for the generation of energy to offset the requirements of the demand for power from the proposed development. This will also have the effect of indirectly reducing carbon emissions from energy supply that would have otherwise been generated by an off site power station.

7.1.11 The building proposed will be of the same character as the pre-existing structures of those associated with Phase 1 and will be in overall keeping with the general industrial estate setting.

7.1.12 The scheme has been designed to reduce the overall demand for water and will limit the amount of trade effluent generated in order that environmental impacts are minimised. It is proposed to connect into the existing sewer system for foul drainage, and surface water run off will be treated and regulated via a series of 'in-built' control measures and Sustainable Urban Drainage Systems with the use of a surface water balancing lagoon which will be design and incorporated with proposed ecological and landscaping mitigation.

- 7.1.13 Materials for use in the construction of the main built structures will be sourced locally wherever this is feasible. On site materials will be remediated (where required) and utilised in proposed landscaping structures in order to keep existing materials on site wherever possible.
- 7.1.14 The proposed Phase 2 development will only occupy approximately one third of the overall planning application boundary, with the rest of the areas being utilised for soft landscaping proposals, sustainable surface water control and ecological enhancement as part of an extension to locally designated wildlife sites.
- 7.1.15 Provision of options for sustainable transport will be designed and built where appropriate, e.g. cycle facilities, and connections, where feasible, to the wider public transport system.
- 7.1.16 The proposal promotes the efficient use of land via the utilisation of a previously developed 'brownfield' site.
- 7.1.17 All materials derived from the proposed construction earthworks will be reused on site to achieve a balance and to ensure no off site exportation is required. The adoption of site waste management plans will be adhered to during the construction phase of the development.
- 7.1.18 The development has been designed to take into account the future changes in climate, for example, surface water run off rates and attenuation for the design of the drainage system.

Character

- 7.1.19 Both the hard and soft landscaping developments will be in keeping with the general character of the site setting. Generally, this is in terms of the buildings and hardstanding features closely matching those already in existence at Phase 1, and the soft landscaping proposals to enhance current areas of rough grassland and scrub.
- 7.1.20 The scale of the proposed building is in keeping with both the pre-existing Phase 1 development directly adjacent to the north, and the wider industrial estate setting.
- 7.1.21 The use of the Phase 2 area of land promotes its efficient use and includes proposals to enhance the amenity of the area and maximises protection afforded to the nearest sensitive receptors in terms of residential properties.
- 7.1.22 Due to its close connection with the Phase 1 part of the WRP and the integration of access routes and infrastructure, all internal routes, buildings and open spaces are designed to maximise efficiencies.

- 7.1.23 The use of the same construction materials that were used in the Phase 1 area will ensure that the appearance of the development will reflect the character of the local area.

Community Safety

- 7.1.24 The proposed Phase 2 development will be secured from the general public by means of perimeter fencing and barriers on access routes to ensure no unauthorised entry occurs. The development will ensure that individual safety is promoted by reducing conflicts between the various land uses.

Movement to, from and within the development

- 7.1.25 The development site will promote sustainable transport wherever feasible and the use of local services and facilities where these are suitably located.
- 7.1.26 The proposed development will utilise available car parking facilities associated with the Phase 1 area of the development to which are currently managed effectively.
- 7.1.27 The circulation of vehicles associated with the operation of the development (e.g. delivery and collection LGV/HGV's) will be fully assessed as part of the design process to ensure appropriate turning and manoeuvring areas are achieved.
- 7.1.28 Integration with the current associated built development within Phase 1 will be achieved through effective design. The proposed Phase 2 area shares a common access/egress point and associated infrastructure (entry/exit barriers and weighbridge facility), thereafter the routing will be clearly defined for existing traffic and proposed traffic to ensure safe and clear movements of vehicles using both facilities.

Development Details

- 7.1.29 The detail of the proposed development is described in the following section.

Existing Site Analysis

The application site is located on Wrexham Industrial Estate directly adjacent (south of) the existing Phase 1 Waste Recycling Park (WRP). The land is generally flat with existing levels ranging from c. 28.5 to 29.5mAOD for the rough grassland towards the centre and east of the site, to 32.75mAOD for the overgrown spoil heap situated in the south west corner of the development site. To the north west is the existing operational Phase 1 area (see Figure 7.1), whilst to the south and east are other premises associated with the industrial

estate (including a commercial refuelling facility, an electricity sub-station and an adult training centre). Directly to the eastern boundary is the main access road, Bryn Lane, which acts effectively as the 'outer ring road' to the wider Wrexham Industrial Estate.

Figure 7.1: Photograph of the Existing Phase I Site



7.1.30 The development site is slightly irregular in shape and the whole area consists of overgrown rough grassland and areas of varying density scrub and small trees. The majority of the site towards the centre and north east is relatively level 'made' ground. Towards the south west corner, however, a spoil heap of uncontaminated clays, ash and construction waste exists which has also now become substantially overgrown by natural vegetative regeneration. The other main features/structures present on the site include;

- An open surface water ditch running south west to north east (acts broadly as the demarcation boundary between Phase 1 and Phase 2;
- Welsh Water Sewer running north to south which roughly bisects the site in two; and
- Numerous buried cable markers that run west to east along the southern boundary (the status of which is being investigated). See Drawing No. WR7042/19/10

7.1.31 Currently, land within the application site is not used and has remained dormant for a many number of years. (See figure 7.2)

Figure 7.2: Photograph of Phase 2 Site



7.1.32 The site is bound on all sides by a chain link fence and as discussed above areas of naturally regenerated substantial vegetation to the north, south, east and west, with some gaps to the northern and eastern boundaries.

7.1.33 There are no man made above ground structures currently situated on site, save for one elevated manhole chamber associated with the Welsh Water sewer.

7.2 Design

Use

7.2.1 The proposed facility has been designed primarily for the receipt, temporary storage, processing (treatment) and onward transportation of circa 70,000 tonnes of Municipal Solid Wastes (MSW), Commercial and Industrial Wastes (C&I) per annum. The facility will accept mixed wastes from the above sources, mainly 'black bag' type waste from MSW, and mixed residual waste from C&I sources. The process will separate out any remaining recyclate and will produce a Solid Recovered Fuel (SRF). This SRF will be delivered to suitable end users such as Cement Works and Energy Recovery Facilities.

7.2.2 Given the current and historical uses of the areas directly adjacent to the application site, it is considered to be well suited for the proposed development. The development footprint will be restricted to the western half of the site, with the eastern half given over to confer ecological benefit.

- 7.2.3 The proposed Mechanical Biological Treatment (MBT) facility will be accommodated within a purpose built building. This building will be based upon the same design as those constructed for the Phase 1 part of the operations. Figure 7.3 provides a visualisation of the proposed facility. The design of the building is outlined in chapter 3 of the Supporting Statement.

Figure 7.3: Visualisation of the Proposed Facility Looking North West



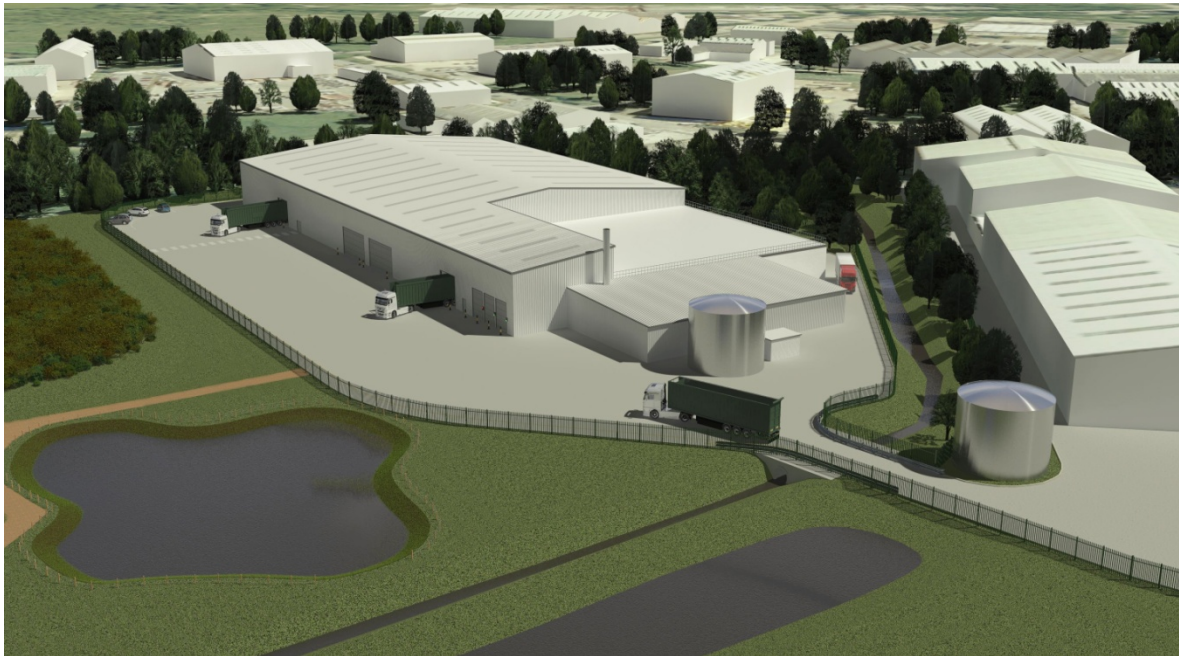
Scale

- 7.2.4 The proposed construction of the MBT Facility will provide a development platform of 14,690m². This includes the total area occupied by buildings and operational hardstanding areas. The largest proposed building on site would be the MBT Building having an approximate footprint of 6,576m² and will measure ~113m by ~58m by ~9m high to the eaves (ridgeline is circa 12m). The remaining hardstanding area of 8,114m² is provided for vehicle manoeuvring, ancillary structures and regulating drainage. The major ancillary structure external to the main building is the biofilter unit which is sited adjacent to the northern elevation of the main building. This unit measures ~35m by ~20m by ~6m.
- 7.2.5 The scale of the proposed MBT is dependent on a number of factors including the potential volumes of residual waste to be managed by the facility; other proposals on site; and localised site constraints such as existing services, surface water features and a designated ecological site. Following an appraisal of such matters (as detailed in the Supporting Statement) and the need to respect sensitive nature of the surrounding area it was considered that the site and, in particular, the proposed building would be of a suitable scale to

house the associated plant and temporary storage capacity required to manage the proposed 70,000 tonnes annual throughput.

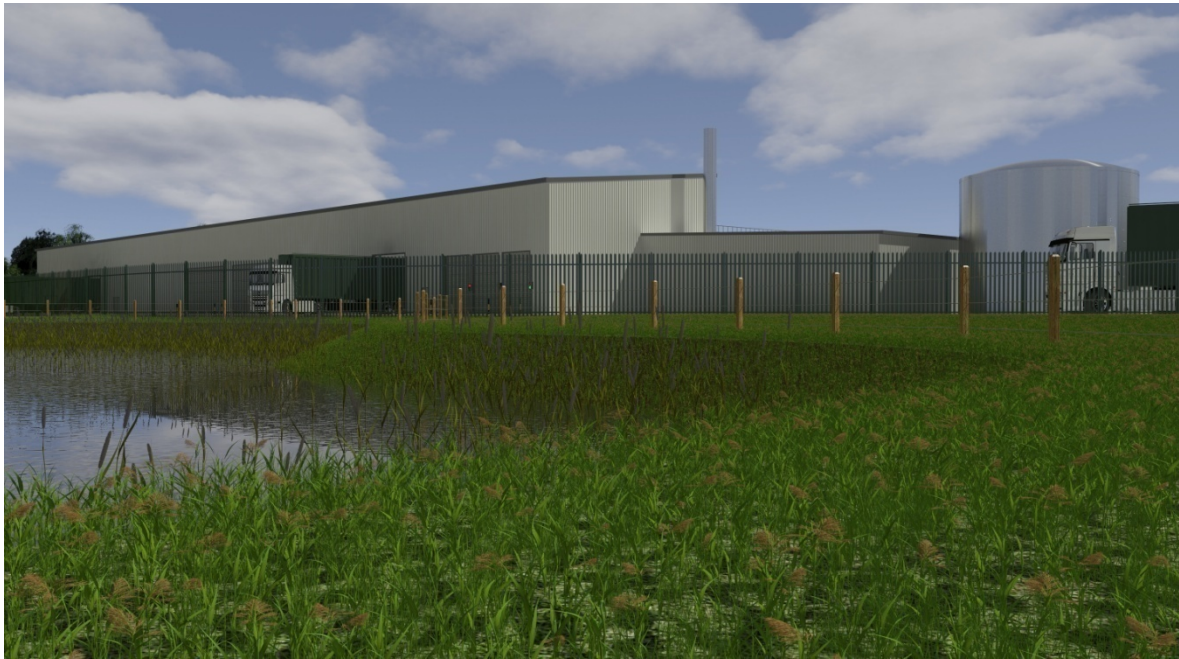
- 7.2.6 The proposed MBT building is of a simple design that reflects the utilitarian nature of the processes contained within. Figure 7.4 provides a visualisation of the MBT building. The design will match those already in existence on Phase 1, namely the Waste Transfer Station and In-Vessel Composting building, and the Materials Recycling Facility. The construction elements proposed will be similar to the aforementioned operational buildings and will be based on its functional use, such as the use of steel portal frames with metal cladding. Cladding treatment will be the same as the buildings constructed on Phase 1.

Figure 7.4: Visualisation of the Mechanical Biological Treatment Building



- 7.2.7 The proposed biofilter is to ensure that air within the building is treated prior to discharge to atmosphere. This unit sits adjacent to the northern elevation of the main MBT building. Figure 7.5 provides a visualisation of the biofilter.

Figure 7.5: Visualisation of the Biofilter



- 7.2.8 The tallest proposed structure on site will be the Biofilter Flue Stack. This will be at a height of 14m. The main building ridgeline will be at a height of 12m.

Taking into consideration the proposed development site location, there are other pre-existing buildings associated with the Phase 1 development to the north. The proposed building will be of same appearance, and slightly reduced in scale compared with the existing Phase 1 Waste Transfer Station and In-Vessel Composting building. The proposed site sits towards the centre of the Wrexham Industrial Estate and is therefore surrounded by buildings associated with current commercial and industrial uses.

Layout

- 7.2.9 Figure 7.6 identifies the layout of the proposed development. The layout is, to an extent, determined by the developable area of the plot and the location of the nearest identified sensitive receptors. It is considered however that the safe and efficient operation of the facility will not be constrained by the site and in fact mitigation features to reduce any negative impacts can be incorporated into the layout of the site. For example, the building will aid noise attenuation, minimise the release of any potential odours and improve local visual amenity by its proposed location, and that of the associated biofilter. Its layout will also lend itself to further ecological enhancement of the eastern half of the site.

Figure 7.6: Proposed Layout of the Facility



7.2.10 Chapter 12 of the Supporting Statement and Figure 7.5 demonstrates that the proposed layout of the facility can accommodate the anticipated number of vehicles that will visit the site during operational phases of the development. Staff and visitor car parking is provided via on site (Phase 2) car parking and the adjacent Phase 1 development to the north of the development site back towards the site entrance. Both commercial and private vehicles shall access the site using the current Phase 1 infrastructure and onto Phase 2 via a single access/egress point.

7.2.11 In addition to the development of the Mechanical Biological Treatment building there is a requirement for external ancillary equipment to be installed as part of the facility. These include:

- Concrete access roads and associated hardstanding manoeuvring aprons;
- Biolfilter Housing;
- Firewater Tank;
- Electrical supply and distribution, switchgear housing; and
- Surface water drainage system, including attenuation lagoon.

7.2.12 There are two existing weighbridge units and associated barrier control located at the Phase 1 main access/egress point off Bryn Lane, to the north west of the

Phase 2 development site. This existing infrastructure will serve to accurately record and check incoming waste streams, direct them to the appropriate area and check the laden and un-laden weights as vehicles enter and exit the site.

- 7.2.13 Welfare facilities for the site operatives are located within the Mechanical Biological Treatment building. The facilities will include offices, changing rooms, lockers, showers and WCs.
- 7.2.14 The Biofilter Unit is a steel structure with approximate dimensions of ~35m by ~20m by ~6m high (Highest point). The biofilter will be compartmentalised to allow for continual operation during change over of biofilter media. It will also contain a 14m high discharge stack to allow for effective dispersal of treated process air. The location of the unit is sympathetic to the nearest identified noise sensitive location which is Bryn Lane Cottages to the south east of the development site.
- 7.2.15 As with most modern waste management facilities, the waste processing operations are contained within a building thus offering greater controls over any potential negative impacts. Each part of the proposed building accommodates a different process/operation and the internal arrangement reflects the operational requirements such as process inputs and outputs, vehicle circulation and regulatory controls. By housing the mechanical and biological treatment operations within the one building, this will help to reduce the perception of scale and mass of the proposed development.

Design Principles

- 7.2.16 The proposed Mechanical Biological Treatment facility is located on a well established industrial site. The principal objective of the facility's design is to balance operational requirements whilst respecting the surrounding landscape and statutory designations. Some of the site's logistical development difficulties such as the existing services layout and easement requirements and proximity to ecological sites of interest (to the northeast of the development footprint) have contributed to a more sympathetic design of the facility.
- 7.2.17 A cut and fill exercise to provide a level development area for the MBT building, Biofilter structure and associated external ancillary features will be undertaken with on site remediation being carried out where required. The material will then be re-incorporated into the landscaping scheme proposed for the wider area of the site to the east as far as is possible in order to minimise the amount of materials that requires removal from site. This scheme will also include for the construction of a screening bund as appropriate which will provide benefits such as the attenuation of potential noise emissions from the MBT and Biofilter Housing, and visual screening of the main structures.

- 7.2.18 As mentioned above, an acoustic barrier in the form of a screening bund shall be erected along the south eastern boundary of the site to ensure that excessive noise is not experienced at the nearest noise sensitive locations (Bryn Lane Cottages). The acoustic barrier shall take the form of a 2.5 m high landscaped earth bund.
- 7.2.19 Along the eastern half of the development site and beyond the northeastern boundary is an existing scrub and rough grassland area, of which part is a locally designated wildlife corridor. It is proposed to incorporate the surface water management system into the eastern half of the site to include an attenuation lagoon which can be also be utilised for habitat creation purposes. In reinforcing the landscaping and planting along the eastern half of the site and imposing an 'ecological buffer zone' the proposal will maintain and enhance the wildlife corridor, contribute further to noise attenuation at identified sensitive locations and help the proposed facility respect the existing features of the surrounding landscape.
- 7.2.20 The ethos of the MBT building is to demonstrate that waste management operations no longer need to be perceived as 'bad neighbours' through creating adverse effects on local amenity. By accommodating the principal treatment operations within an environmentally efficient building (aiming to achieve a BREEAM rating of 'very good') it is considered that this approach to building design is the converse of most traditional waste management facilities.
- 7.2.21 Given the simplistic nature of the buildings associated with the MBT operations, the fact that the operations will not be easily visible when viewed from outside the site and the significant amount of hard and soft landscaping proposed it is intended that the uncomplicated design of the facility will be sympathetic to the pre existing structures and associated land use and the surrounding character of the area.
- 7.2.22 The redevelopment of the site will provide improvements to local visual amenity, largely through the additional landscaping and ecological enhancements proposed for the eastern half of the site which will assist in screening the main building. The proposed building is smaller in than those currently constructed on the Phase 1 part of the development (Waste Transfer Station/In-Vessel Composting facility) and is to be located directly in front of the existing Phase 1 building's south eastern elevation. It is considered that the redevelopment will assist in contributing positively to the ecological diversity of the immediate area within the site's wider industrial estate location.
- 7.2.23 Where feasible, the sustainable use of resources (e.g. water and energy) shall be incorporated into the process.

Landscaping

- 7.2.24 The scheme (shown in Figure 7.7) will comprise hard and soft elements such as the creation of ecological habitats, such as the surface water attenuation lagoon which will have a dual function, low level screening mounds, embankments and appropriate planting mixes. The landscaping will also contribute towards the screening of the building when viewed from particular vistas thus harmonising the proposal with the surrounding landscape.

Figure 7.7: Scheme of Landscaping



Visual Appearance

- 7.2.25 To reflect the commercial/industrial nature of the proposed Mechanical Biological Treatment operation, the building's functionality will be maintained throughout. Whilst the buildings are of simple design, the scale and layout reflect the existing setting of the site. The MBT building has been designed to minimise its footprint and height without compromising operational efficiency or safety. Accommodating the proposed operations in single building sited to the south east of the current Phase 1 building elevations allied with effective screening proposals will contribute to reducing the overall appearance of building mass on the site.

- 7.2.26 Cladding of the MBT Building will be coloured Mercury Silver. Furthermore, the trapezoidal profile of the cladding will add depth contributing to the recessive finish. Figure 7.8 shows a visualisation of the proposed Phase 2 site entrance.

Figure 7.8: Visualisation of the Proposed Phase 2 Site Entrance



- 7.2.27 The pitched roof of the Mechanical Biological Treatment building will also help to reduce the appearance of scale by breaking up the building elevation. Furthermore, the construction of the main building directly adjacent to the south eastern elevation of the current Phase 1 Waste Transfer Station/IVC building will reduce the sense of scale when viewed from certain locations.

7.3 Access

Vehicular Access

- 7.3.1 Access to the development site is from Bryn Lane. Bryn Lane acts effectively as part of an 'outer' ring road to the large area of pre-existing developed land known as Wrexham Industrial Estate. Bryn Lane eventually links to the A534 to the north, heading toward Wrexham and the main A483 dual carriageway, and to the A525 to the south via a number of unclassified and B roads. From Bryn Lane, vehicle access to the site is taken via a substantial dedicated private road with associated entrance barriers.
- 7.3.2 It is proposed that current access road and associated entrance infrastructure to the Phase 1 area of the site will also be used as the control and access point to the Phase 2 part of the development.

Traffic Generation

- 7.3.3 The operation of the facility will give rise to approximately the equivalent of 75 deliveries of waste each operational day (125 vehicle movements). In addition to this there will be 22 transfers of waste and sorted material for recycling (44 vehicle movements) from the facility.
- 7.3.4 Further to the daily 169 commercial vehicle movements there will also be, as worst case scenario, an additional 34 vehicle movements. These movements will be from the staff and site operative's private vehicles. In reality however, some car trips are likely to be shared and some employees may arrive by non-car modes.

Vehicle Circulation

- 7.3.5 Figure 7.9 shows that private and commercial vehicles will use the same site access and egress as is currently in use for Phase 1. Commercial vehicles will then be directed to the Phase 2 area of the development as appropriate. A clear traffic management system will be in force across the site via signage and lining. Private vehicles (staff and visitors) will be directed towards the existing Phase 1 car park facilities by following the appropriate route into the Phase 1 area after going via the entrance check barrier. A bypass lane to the side of the outgoing weighbridge is currently provided for private vehicles accessing and egressing the site.

Figure 7.9: Vehicle Circulation



- 7.3.6 At the existing site entrance, commercial vehicles will stop at the gatehouse and be weighed on the weighbridge before being directed to the Phase 2 part of the facility. All commercial vehicles will keep left once onto the site proper (Phase 1 area) and drive to the Phase 2 area. Commercial vehicle access to the MBT building will be exclusively through the eastern elevation. At the northern end will be access to the road sweepings processing area, towards the centre of the elevation will be access for waste deliveries and Solid Recovered Fuel (SRF) collection and at the southern end the collection area for the separated recyclates. At the shared access/egress point with Phase 1, adjacent to the entry weighbridge is a second weighbridge for vehicles leaving the site, in order that the tare weight is obtained where necessary.
- 7.3.7 Car parking provision for the development has been determined using maximum demand for staff. This assessment has considered the existing car parking available within the Phase 1 area of the development. Space for a 52-seater coach, a cycle shelter and parking for motorbikes are also currently provided. It has been assessed that a further twelve car parking spaces will be required for the proposed operation and will be sited on the Phase 2 development hardstanding.
- 7.3.8 All roadways, hardstanding vehicle manoeuvring areas, pavements and car parking areas will be surfaced with appropriate materials.

Other Access Considerations

- 7.3.9 Directly off Bryn Lane, access to the adjacent Household Waste Recovery Centre (HWRC) will be maintained as per the current arrangements. The positioning of the access/egress point for the HWRC along with the availability of internal roadway to the HWRC ensures no conflicts exist between this and the main facility traffic on the shared access route off Bryn Lane. This is due to the composition of the traffic accessing the Waste Transfer Station which will be predominantly HGVs. The size and frequency of these vehicles visiting the site and in particular leaving the site is such that any queuing within the site as a result of traffic entering or exiting the HWRC site would significantly impact on its internal operation.
- 7.3.10 The likely gaps in traffic exiting and entering the main facility will provide sufficient opportunity for vehicles exiting the HWRC and as such it is unlikely that the proposed priority arrangements will significantly impact on the operation of the HWRC.
- 7.3.11 The proposed development will be a specialised facility and will have restricted public access. In designing the proposed development emphasis has been placed on security. The design ensures the site is secure and not readily

accessible to the public through the installation of appropriate security fencing, barriers and CCTV.

7.3.12 Access to the wider Phase 1 area is and will continue to be through invitation only. Pedestrian access to the Phase 2 operations will be designed to reflect current building regulations for disabled access.

7.3.13 The Applicant will seek to promote sustainable travel modes amongst the staff and with the development itself.

7.4 Conclusion

7.4.1 The proposed facility provides a redevelopment of an existing brownfield site. It is considered that the redevelopment 'platform' will only occupy one third of the entire planning application boundary, with the remaining two thirds utilised to complement and enhance existing ecological features through habitat creation and sympathetic landscaping. This will also lead to an improvement in terms of visual amenity. The facility has been designed to be sympathetic to the surrounding sensitive land-use designations and also provide an operationally efficient and safe waste management facility.

8.0 SUMMARY AND CONCLUSIONS

8.1 Introduction

8.1.1 This statement describes a proposal by Waste Recycling Group, to develop a Mechanical Biological Treatment (MBT) Facility which extracts additional recyclate from waste and produces a low carbon Solid Recovered Fuel (SRF), reduces dependence on landfill as a disposal option and creates up to 8 initial new jobs.

8.1.2 An Environmental Statement has been prepared to accompany the planning application and it reports on the findings of an Environmental Impact Assessment which has been carried out for the proposed development. The Environmental Statement describes the current site conditions, details of the proposed development, and the way in which the operations will be managed. It also considers the potential environmental effects that are likely to be associated with the development and the mitigation measures which will be applied.

8.2 Environmental Effects

8.2.1 The findings of the Environmental Impact Assessment for the proposed development conclude that the effects of the development are not considered to be significant. The potential impacts have been fully assessed and where appropriate mitigated as a result of the iterative design process and through careful consideration of environmental control and abatement techniques, and high quality process, architectural and landscape design.

8.3 Planning Policy – Sustainable Waste Management

8.3.1 The proposals have been considered in the context of international, European, national, regional and local policies for waste management and planning. The development will assist in meeting targets for waste management, renewable energy and climate change specifically within Wales and Wrexham County Borough, and promotes a more sustainable and decentralised approach to waste and resource management and production of low carbon non fossil sourced fuel.

8.3.2 The MBT will provide the following key benefits:

- Capacity to process 70,000 tonnes of waste per annum;
- Local solution in meeting Welsh Government Targets of 70% recycling and 5 % to landfill of MSW by 2025.
- Materials recovery from 70,000 tonnes of residual waste;
- Low carbon energy product (SRF) sufficient to displace fossil fuels;

- 95% diversion of waste from landfill;
- Reduced Carbon footprint from Existing Transport Situation;
- Significant inward investment;
- Initial creation of 8 full time jobs with possibly more in time as the facility develops.

8.3.3 The MBT will extract further recycle from the waste stream and produce a low carbon SRF which will displace the need for the use of fossil fuels at cement kilns, other industrial processes, or be used as a low carbon fuel within Energy Recovery Facilities. These proposals have been the subject of an appraisal for the need of the development and its potential impact on the environment.

8.3.4 To accommodate the operations a modern, bespoke building is proposed. The building has been designed and finished to the same standard as the Phase 1 structures on the operational Wrexham Recycling Park, and to be sympathetic to the surrounding industrial/commercial area and will achieve a high design quality for developments of this nature.

8.3.5 Although other sites are mentioned as potentially suitable within the draft LDP, including the development site proposed, the assessments detailed in the ES demonstrates that this location is the most suitable of those listed as strategic sites for waste management development. The proposals accords with the Development Plans for the area, Towards Zero Waste 2010 and the North Wales Regional Waste Strategy.

8.3.6 Subject to the granting of planning permission, the proposals would provide suitable and sustainable residual waste management and low carbon fuel production infrastructure for Wrexham County Borough.

APPLICATION FORM

APPENDICES