POWERFUEL

Portland energy recovery facility

Framework site waste management plan

September 2020

Powerfuel Portland Limited

Portland ERF

Framework Site Waste Management Plan

267701/SWMP

Final | 1 September 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 267701-35

Ove Arup & Partners Ltd
Admiral House Rose Wharf
78 East Street
Leeds LS9 8EE
United Kingdom
www.arup.com

ARUP

Contents

			Page
1	**Introduction**		**1**
	1.1	Overview	1
	1.2	The Site	1
	1.3	The Proposed Scheme	2
	1.4	Site Waste Management Plan	3
	1.5	SWMP Format	4
2	**Construction, Demolition and Excavation (CD&E) Waste Forecast**		**4**
	2.1	Demolition Waste	4
	2.2	Excavation Waste	5
	2.3	Construction Waste	5
3	**Waste Management Options**		**5**
	3.1	Designing Out Waste	5
	3.2	Demolition Phase	5
	3.3	Excavation Phase	6
	3.4	Construction Phase	6
	3.5	Other recovery options	10
	3.6	Hazardous Waste	10
	3.7	Landfill	10
4	**On-site Practice**		**10**
	4.1	Waste Champions	11
	4.2	Site Induction and Toolbox Talks	11
	4.3	Environmental Training for Key Staff	11
	4.4	Sub-Contractors	11
	4.5	Waste Management Facilities	11
	4.6	Waste Management Contractors	11
5	**Monitoring**		**11**
6	**Review**		**12**
	6.1	Update prior to hand back	12
7	**The Site Waste Management Plan Template**		**12**

Appendices

Appendix A

Demolition Waste Estimations

Appendix B

Construction Waste Estimations

Appendix C

Completing the SWMP Template

Appendix D

SWMP Template

1 Introduction

1.1 Overview

This Framework Site Waste Management Plan (SWMP) guidance document and accompanying SWMP template has been prepared by Ove Arup and Partners Ltd (Arup) for and on behalf of Powerfuel Portland Limited (Powerfuel) for the Portland Energy Recovery Facility (ERF) (the proposed ERF) in Portland.

In line with the environmental aspirations of the proposed ERF, this SWMP and accompanying template constitutes the design stage SWMP for the proposed ERF. The SWMP will be refined as future design details enable waste streams to be quantified more accurately.

This Framework SWMP will be submitted to Dorset Council with the planning application to demonstrate how resources and waste have been considered during the design stage of the proposed ERF and how effective and sustainable waste management will be delivered during the project. Implementation of the SWMP will ensure that significant adverse effects do not arise as a result of the demolition, earthworks and construction phases.

1.2 The Site

The 6.29 ha site lies on the north eastern coast of the Isle of Portland, within Portland Port. The nearest settlement are the villages of Fortuneswell and Castletown, which lie approximately 600 m west of the proposed site.

The 6.29 ha site comprises two distinct areas:

- The 2.14 ha site for the ERF building. The main part of the site is roughly triangular in shape and is largely covered with hardstanding. It has been vacant for several years, although there is a weighbridge towards the western point and vehicles are sometimes parked on parts of the land. It is relatively flat and approximately 5 m above Ordnance datum (AOD). As the site lies within the port, it is not currently publicly accessible. Vehicular access is from the west, through the main Portland harbour complex, via Castletown, Castle Road, Lerret Road and the A354.
- The 4.15 ha of cable routes to the electricity substation off Lerret Road and to the berths at Queens Pier and Coaling Pier.

The site has a strong naval background having been used as a naval base, for weapons research and for the repair of military vehicles during the 1900s. The naval base and weapons research facilities were closed in 1995/96 and Portland Port Ltd began to transform the harbour into a commercial port.

After privatisation, the buildings on site were progressively demolished to create cargo storage space when they were not used by tenants. The last vacated buildings, used by UMC, Portland Shellfish and Permavent, were demolished in 2014 and 2017. In 2016/17, the main road leading to Incline Hill was realigned

along the base of the hill/ scree, creating the open development area on site. The last of the demolition rubble was cleared from the site in 2018.

1.3 The Proposed Scheme

The proposed scheme comprises an ERF with a throughput of approximately up to 183,000 tonnes of waste in the form of RDF per year, with a 10% tolerance to treat up to 202,000 tonnes should this be necessary. The proposed ERF will have the capacity to export 15.2 MW of electricity to the grid. The plant consists of the following elements:

- a waste reception area, for the delivery of baled and loose RDF;
- a fuel delivery area;
- a boiler, consisting of a grate, furnace, auxiliary burners and a high temperature secondary combustion zone;
- flue gas treatment;
- a flue stack, approximately 80 m in height, with an external access ladder and platforms for sampling points for manual measurement and connections for continuous emissions monitoring equipment;
- residue handling systems;
- a steam turbine that generates approximately 18.1 MW of electricity, of which 15.2 MW will be available for export;
- heat take-off for district heating;
- a primary substation;
- ancillary equipment;
- a two-storey office building comprising of a reception area, general office space, management offices, meeting rooms, plant room, stores and welfare facilities;
- vehicular access and traffic management measures;
- 28 car parking spaces in the north east and north west of the site for use by employees and maintenance contractors. Ten percent of these will be fitted with electric charging points. An additional eight spaces located adjacent to the existing weighbridge will provide occasional parking for contractors or shift changeovers. Storage for eight bicycles will be provided in the northern wing of the proposed office building;
- infrastructure for surface water runoff collection and drainage;
- a foul water drainage network;
- security measures, including boundary fencing, electrically operated vehicle and pedestrian access and egress points and CCTV;
- appropriate lighting provision; and
- small areas of landscaping.

Further details can be found in Chapter 2: Site description and development proposals of the ES.

1.4 Site Waste Management Plan

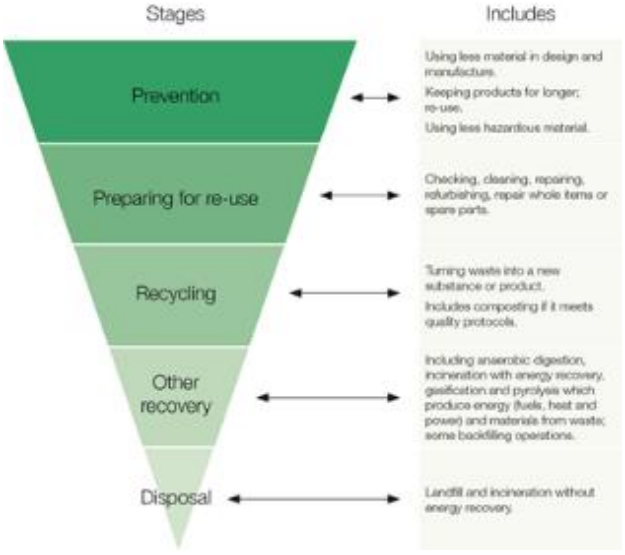
The SWMP is an important tool to improve the environmental performance of a project. It will be used throughout the design process, to promote 'designing out waste' and the development of a waste strategy through the demolition, excavation and construction phases. It will also be used to monitor waste arisings and optimise the strategy going forward.

The principal objective of sustainable resource and waste management is to use material resources more efficiently and to reduce the amount of waste requiring final disposal by landfill. Where waste is generated it should be managed in accordance to the waste hierarchy as displayed in Figure 1. The waste hierarchy advocates, the following order of preference:

- prevention;
- preparing for re-use;
- recycling;
- other recovery; and
- disposal as a last resort.

Resource and waste management should actively contribute to the economic, social and environmental goals of sustainable development.

Figure 1: The Waste Hierarchy (Source: Defra[1])



[1] Department for the Environment Food and Rural Affairs (Defra) (2011) *Government Review of Waste Policy in England 2011*

1.5 SWMP Format

This document together with the SWMP template constitutes the design stage SWMP for the project. It identifies the key wastes that are likely to be produced from the project and appropriate waste management and minimisation options, with an aim to encourage resource efficiency and sustainable waste management.

The SWMP has been developed in draft format, based on the information available at the time of writing it, making it easy to update and finalise as further data becomes available.

The SWMP will be refined as future design details enable waste streams to be quantified more accurately.

The SWMP template is a spreadsheet based on a standard template developed by the Waste and Resources Action Programme (WRAP). It is designed to be used to ensure waste is considered during the design stage of the project, provide information to determine waste management and recovery options and record actual waste related actions and movements during the demolition and excavation phases of project. This will ensure good practice sustainable resource and waste management is implemented during the construction phase.

2 Construction, Demolition and Excavation (CD&E) Waste Forecast

The forecast of the total quantity of CD&E waste likely to be generated by the proposed ERF has been estimated and is displayed in Table 1 below.

Table 1: Construction, Demolition and Excavation (CD&E) Waste Forecast

Demolition Waste (tonnes)	Demolition Waste (m^3)	Excavation Waste (tonnes)	Excavation Waste (m^3)	Construction Waste (tonnes)	Construction Waste (m^3)	Sub-total CD&E Waste (tonnes)	Sub-total CD&E Waste (m^3)
5,087	2,120	TBC	TBC	1,072	1,106	6,158	3,225

2.1 Demolition Waste

No buildings present on site require demolition. Demolition waste would be generated by the clearance of the existing floor slabs from former buildings and other substructures will need to be removed.

The volume of the of the existing ground slabs has been provided by an Arup Engineer[2].

Appendix A contains the assumptions and estimations used to estimate the demolition waste arising from the proposed ERF.

[2] Arup (2020) Portland ERF Demolition Waste

2.2 Excavation Waste

The whole site is considered a brownfield site. There has been Ground Investigation (GI) to be undertaken on-site to determine the extent of any contamination. Initial investigations were carried out by RPS in 2009 and further ground investigation is required. The Preferred Principal Contractor (PPC) will estimate the excavation waste following the completion of the Ground Investigation (GI) and any remediation strategy.

2.3 Construction Waste

The mass of waste likely to be generated from constructing the proposed ERF has been estimated using Building Research Establishment (BRE) SMARTWaste data[3].

Floor areas of the Portland ERF have been provided by the project team.

The assumptions used to estimate the construction waste are presented in Appendix B.

3 Waste Management Options

The information below details the actions that will be undertaken by the project team to prevent, re-use, recycle, recover and dispose of CD&E waste.

3.1 Designing Out Waste

Designers can play a key role in reducing the amount of waste generated in a construction project. By considering materials and waste in the design process there are likely to be more significant opportunities for resource efficiency. The most significant opportunities for designing out waste are in the early stages of the design process. The actions undertaken throughout the evolution of design will determine the levels of materials consumed and waste generated during the construction as well as maintenance and the end of life phase of a project.

Waste is being considered by the design team of the development to ensure that the minimum amount of material is wasted. The design team are also investigating opportunities to avoid, reduce and re-use excavated materials on-site.

3.2 Demolition Phase

The proposed ERF will integrate existing materials on-site into the future works programme or at least be made available to be recycled in for use in other building projects.

The design team for the proposed ERF will aim to follow the principles of the ICE Demolition Protocol, a resource efficiency model that shows how the production

[3] Buildings Research Establishment on behalf of WRAP (BRE) (2013) *SMARTWaste Data Report*.

of demolition material can be linked to its specification as a high value material in new buildings. The principles of the Demolition Protocol include:

- Investigating the opportunities to re-use existing structures, hardstanding, walls, etc;
- Where this is not appropriate the PPC will consider crushing demolition materials for recycling as aggregates or fill on-site; and
- If on-site recycling is not feasible, the PPC will identify opportunities for recycling the demolition materials through a recycling contractor or in other external projects.

Demolition waste would be generated by the proposed ERF through the clearance of the existing ground floor slabs from former buildings and other substructures will need to be removed.

There is potential that some of the building slabs and other substructures could contain asbestos. Any contaminated materials will need to be segregated separately from 'clean' demolition materials to avoid cross contamination before they are sent for appropriate and permitted treatment/recovery/disposal.

3.3 Excavation Phase

Any contamination is likely to be localised hotspots within made ground soils which may include hydrocarbons and asbestos.

The physical treatment of contaminated materials is not anticipated, but this will be confirmed following further GI, risk assessments and the development of a remediation strategy.

It is assumed that the majority of made ground will be suitable to remain on-site beneath buildings and / or hardstanding areas. Where there is an opportunity to re-use site won materials within the site a Materials Management Plan (MMP), in line with the CL:AIRE Definition of Waste Code of Practice, will be prepared. Soils to be re-used on-site will require chemical validation testing.

Surplus materials that cannot be re-used within the scheme will be recycled / treated / disposed off-site in accordance with waste regulatory requirements. It is likely that there will be a proportion of this material to be classified as hazardous waste. The preferred approach will be identified through consultation with the regulatory authorities.

3.4 Construction Phase

Efficient use of materials would make a major contribution to reducing the environmental effects of construction including reducing demand for landfill and the depletion of finite, natural resources through:

- Minimising the overall creation of waste resulting from, for example, over ordering or inefficient design;

- Reducing the quantity of material sent to landfill during the construction process through effective waste management;
- Recycling materials already on the construction-site into the new construction project; and
- Using more recycled materials and mainstream products with higher recycled content.

3.4.1 Waste Minimisation

The project team will strive to minimise construction waste. Table 2 below demonstrates good practice which will be considered to further minimise waste arisings during the construction process.

Table 2: Good Practice Waste Minimisation for the Construction Phase

Good Practice	Description
Sustainable procurement	Materials selected will be durable to ensure long life and reduced need for replacement. Over-ordering of materials will be avoided and suppliers that minimise packaging will be used. Where feasible any packaging will be returned to the supplier for recycling. Construction material specifications will prioritise the procurement and use of recycled/secondary aggregates and other recycled materials e.g. wood for formwork.
Supply chain partners	All members of the supply chain will be aware of the SWMP. The Project Manager will ensure that someone is responsible for the implementation of the SWMP. Workshops will be held throughout the construction period to help reinforce the SWMP and ensure that all partners are kept up to date with developments. Targets will be established for the minimisation of waste and the recycling of materials. These targets would then be communicated to the workforce and performance against them would be measured and used to promote positive PR.
Avoid wasteful working practices	Staff will be given appropriate training both as part of site induction and at intervals throughout the life of the project such as Toolbox Talks.
Materials management	Materials will be appropriately handled and stored throughout their lifecycle from delivery to inclusion, e.g. return surplus materials to storage. Materials will be delivered to the site 'just-on-time', this would limit the need for excess on-site storage and would limit the chance of wastage through damage of the stored materials. There will be a designated area for the storage of materials.
Modern Methods of Construction	The introduction of Modern Methods of Construction (MMC) will be investigated during the construction phase of the proposed ERF. MMC entails improvements in the products or processes employed in construction, ranging from innovative components to be used on-site through to whole building systems manufactured off-site will be investigated. Opportunities to introduce MMC on the project will be investigated.

3.4.2 Re-use of materials

The PPC will maximise the re-use of any existing materials and construction elements wherever possible. The PPC will establish a waste storage and recycling area for the safe storage and processing of recovered materials to ensure that opportunities for re-use are maximised.

Table 3 demonstrates good practices which will be investigated to re-use materials during the construction phase.

Table 3: Re-use Good Practice for the Construction Phase

Good Practice	Description
Timber	Wood is a very durable material and can be re-used many times on-site before it needs to be replaced. Timber can also be re-used as formwork and hoarding. Store off cuts for use. Pallets can also be re-used for the storage of on-site unpalletised materials. Uncontaminated wood can be chipped and re-used in landscaping.
Inert	Unused bricks and blocks can be reclaimed and re-used in other buildings or could be stored for use in any paving required for public realm.
Ceramic	High value ceramic materials can be recovered for re-use. Any spare tiles can be re-used on another project or in landscaping.
Insulation	Insulation offcuts can be re-used for other applications across the site.

3.4.3 Recycling of Materials

While reduction of waste will remain the highest priority, waste produced will be segregated for recovery. This will allow materials to be recycled and ultimately reduce the amount of waste that has to be finally disposed of.

Table 4 below demonstrates construction site waste management good practices which will be investigated to optimise the amount of materials recovered during the construction process.

Table 4: Recycling Good Practice for the Construction Phase

Good Practice	Description
Timber	Unusable timber waste can be separated in a container so that off-site recycling can occur. The PPC will also consider returning storage pallets where possible.
Concrete	A cost benefit analysis should be undertaken to identify if any concrete waste could be segregated from the general construction waste and be suitably stored for crushing concrete on-site for use as aggregate where it is not possible to use it in their current form.
Inert	A cost benefit analysis should be undertaken to identify if any inert waste from construction works can be stored on-site for crushing on-site for use as aggregate for highways and landscaping where it is not possible to use it in their current form.
Ceramic	Ceramics can be segregated and investigations should be made to identify a recycler.
Insulation	Any insulation can be segregated and investigations should be made to identify a recycler or a take back scheme with a local supplier.

Good Practice	Description
Plastic	Plastics can be segregated and investigations will be made to identify a plastics recycler. It may be possible to recycle a range of plastics including High Density Polyethylene (HDPE), Low Density Polyethylene (LDPE), Polypropylene (PP), Polyvinyl chloride (PVC) and Polystyrene.
Packaging	The PPC will encourage its suppliers to reduce packaging materials and deliver products in returnable transport packaging where possible.
Metals	Metal wastes will be segregated and sent for off-site recycling. It is recommended that high value metals, such as steel, aluminium and copper are stored separately and sold on to merchants and/or material suppliers.
Plasterboard and cement	Uncontaminated plasterboard can be crushed and recycled in landscaping (this would need to be approved by the projects architects and designers). There may also be options for recycling plasterboard off site or establish a take-back scheme with the supplier.
Miscellaneous	Textiles disposed by labourers can be recycled as rags and protecting materials. Glass can be collected, segregated and sent for recycling.
Hazardous Waste	Hazardous waste such as oils and solvents will be recycled where possible.

3.4.4 Recovery Targets

Powerfuel and the PPC will set targets for waste recovery (both on-site and off-site). The PPC will aim for Best Practice Recovery rates and will be expected to demonstrate why it is not technically or financially feasible to achieve these rates.

Table 5 displays the construction waste recovery targets identified for the proposed ERF. The PPC will aim for Good Practice Recovery rates and will be expected to demonstrate why it is not technically or financially feasible to achieve these rates. Rates shown below in Table 5 are from a WRAP report entitled Achieving Good Practice Waste Minimisation and Management.

Table 5: Construction Waste Tonnage based Recovery Targets

Material	Standard recovery (%)	Good practice quick win (%)	Best practice recovery (%)
Wood	57	90	95
Metals (ferrous and non-ferrous)	95	100	100
Plasterboard	30	90	95
Packaging	60	85	95
Ceramics	75	85	100
Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	75
Electrical Equipment	Limited information	70	95

Material	Standard recovery (%)	Good practice quick win (%)	Best practice recovery (%)
Furniture	0-15	25	50
Insulation	12	50	75
Cement	Limited information	75	95
Liquids and oils	100	100	100
Hazardous	50	Limited information[4]	Limited information

3.4.5 Take-back schemes with suppliers

Wherever possible the PPC will establish take-back schemes with suppliers to accept surplus material not incorporated in the works.

3.5 Other recovery options

The PPC will identify potential off-site recovery options for all remaining residual waste. Many waste management companies can recover residual waste through technologies such as materials recovery facilities (MRFs) which could help further segregate and divert waste from disposal.

3.6 Hazardous Waste

Hazardous waste will be correctly labelled, will not be mixed with non-hazardous waste, securely contained and disposed of by a certified waste carrier for hazardous waste. The Duty of Care (DoC) applies to hazardous wastes.

3.7 Landfill

Where no other waste management option is found to be feasible, wastes will be sent to an appropriately licensed landfill site.

4 On-site Practice

The PPC will introduce good on-site practice to ensure waste is managed effectively. While reduction of waste will remain the highest priority, waste produced will be segregated. This will allow materials to be re-used / recycled and ultimately reduce the amount of waste that has to be finally disposed of. The waste stream colour-coding developed by the Institute of Civil Engineers[5] to raise waste awareness will be considered.

[4] This cannot be 100% as much hazardous waste (e.g. asbestos) must be landfilled.
[5] Further information is available on the Institute of Civil Engineers website – www.ice.org.uk

4.1 Waste Champions

The PPC will nominate a designated Waste Champion at all stages of the development including design. The Waste Champion will have sufficient authority and clear responsibilities.

4.2 Site Induction and Toolbox Talks

The PPC will provide general information on waste and specific information relating to the SWMP in site inductions and toolbox talks. This training will include information on the segregation strategy and recovery targets in place at the site.

Any changes to the SWMP will be communicated at toolbox talks.

4.3 Environmental Training for Key Staff

The PPC will implement a programme of environmental training for key staff at the site. This will enable them to train other operatives through toolbox talks and gather feedback from site personnel.

4.4 Sub-Contractors

The PPC will establish agreements with sub-contractors for the management of waste.

4.5 Waste Management Facilities

The PPC will identify waste management facilities for the management of all waste streams arising from the site. The waste management facilities, where feasible, will be as close to the site as possible, in line with the proximity principle for waste treatment.

4.6 Waste Management Contractors

The PPC will engage with waste management contractors early in the design process to identify opportunities for recycling materials generated by the development.

5 Monitoring

Monitoring and measurement of waste will be undertaken on a regular basis by the PPC, with regular interpretations to identify trends and rectify wasteful practices. The results of monitoring will be included in regular site meetings.

6 Review

As often as necessary to ensure that the plan accurately reflects the progress of the project, the PPC will:

a) review the plan;

b) record the types and quantities of waste produced;

c) record the types and quantities of waste that have been:

i) re-used (and whether this was on or off site);

ii) recycled (and whether this was on or off site);

iii) sent for another form of recovery (and whether this was on or off site);

iv) sent to landfill; or

v) otherwise disposed of; and

vi) update the plan to reflect the progress of the project.

Best practice would be considered to be update the SWMP monthly.

6.1 Update prior to hand back

Within three months of the work being completed the PPC will add to the plan:

a) confirmation that the SWMP has been monitored on a regular basis to ensure that work is progressing according to the plan and that the plan was updated;

b) a comparison of the estimated quantities of each waste type against the actual quantities of each waste type;

c) an explanation of any deviation from the plan; and

d) an estimate of the cost savings that have been achieved by completing and implementing the plan.

7 The Site Waste Management Plan Template

The SWMP template in Appendix D is based on a template devised by WRAP. The SWMP template identifies eight steps, as displayed in Table 6 below as well as the designated responsible owner for each of these steps.

Table 6: Steps and responsibilities SWMP Template

Step	Title	Example responsible owner
Step 1	Project Homepage	Powerfuel Portland Ltd
Step 2	Basic Details	Powerfuel Portland Ltd
Step 3	Waste Actions	Powerfuel Portland Ltd, the Project Designer, Preferred

Step	Title	Example responsible owner
		Demolition Contractor, Preferred Principal Contractor
Step 4	Forecast Waste	Preferred Demolition Contractor, Preferred Principal Contractor
Step 5a	Specify Waste Carriers	Preferred Principal Contractor
Step 5b	Plan Waste Destinations	Preferred Principal Contractor
Step 6	Actual Waste Movements	Preferred Demolition Contractor, Preferred Principal Contractor
Step 7	KPIS	Preferred Demolition Contractor, Preferred Principal Contractor
Step 8	Declaration	Powerfuel Portland Ltd, Preferred Principal Contractor
Step 9	Reporting	Preferred Demolition Contractor, Preferred Principal Contractor

Arup has completed the template using the data provided by Powerfuel and information on good practice produced by WRAP. Completing the following steps will encourage improved waste minimisation and waste management performance.

The accompanying SWMP template (Appendix D) will be completed by Powerfuel and the designer through to Step 2 of the WRAP template as the design details progress, prior to work starting on-site. When the works commence on-site the remaining Steps will be completed by the PPC and Powerfuel. More details on how to complete this document are included in Appendix C.

Appendix A

Demolition Waste Estimations

Appendix A contains the assumptions and estimations used to estimate the demolition waste arising from the proposed ERF. Table A1 below displays the estimated demolition waste generated from the proposed ERF.

The volume of the of the existing floor slabs has been provided by an Arup Engineer[6].

A WRAP[7] conversion factor for concrete of 2.4 tonnes per cubic meter has been applied the to the floor slab.

Table A1 below displays the estimated demolition waste associated with the proposed ERF.

Table A1: Estimated demolition waste for the proposed ERF

Name	**Material**	**Volume (m^3)**	**Conversion Factor (tonnes per m^3)**	**Mass (tonnes)**
Floor Slab	Concrete	2,120	2.4	5,087

[6] Arup (2020) Portland ERF Demolition Waste
[7] WRAP (2008) Net Waste Tool Guide to Reference Data

Appendix B

Construction Waste Estimations

Appendix B contains the assumptions and estimations used to calculate the construction waste.

Floor areas have been provided by the project team.

The mass of waste likely to be generated from constructing the proposed ERF has been estimated using Building Research Establishment (BRE) SMARTWaste data[8]. Table B1 displays the estimate construction forecast for the proposed ERF.

Table B1: Estimated Construction Waste Generated from the Proposed ERF

Building	**Gross Internal Floor Area (m^2)**	**BRE Project Type**	**Average Tonnes / 100m^2**	**Mass (tonnes)**
Energy Recovery Facility	8,504	Industrial	12.6	1,072
Total				**1,072**

[8] Buildings Research Establishment on behalf of WRAP (BRE) (2013) *SMARTWaste Data Report*.

Appendix C

Completing the SWMP Template

Appendix C identifies contains the instructions how to complete the Site Waste Management Plan (SWMP) template.

The SWMP template identifies eight steps, as displayed in Table C1. Table C1 also displays examples of who may be identified as the designated responsible owner for each of these steps.

Table C1: Steps and responsibilities

Step	Title	Example responsible owner
Step 1	Project Homepage	Powerfuel Portland Ltd
Step 2	Basic Details	Powerfuel Portland Ltd
Step 3	Waste Actions	Powerfuel Portland Ltd, the Project Designer, Preferred Demolition Contractor, Preferred Principal Contractor
Step 4	Forecast Waste	Preferred Demolition Contractor, Preferred Principal Contractor
Step 5a	Specify Waste Carriers	Preferred Principal Contractor
Step 5b	Plan Waste Destinations	Preferred Principal Contractor
Step 6	Actual Waste Movements	Preferred Demolition Contractor, Preferred Principal Contractor
Step 7	KPIS	Preferred Demolition Contractor, Preferred Principal Contractor
Step 8	Declaration	Powerfuel Portland Ltd, Preferred Principal Contractor
Step 9	Reporting	Preferred Demolition Contractor, Preferred Principal Contractor

Arup has completed the template using the data provided by Powerfuel Portland Ltd and information on good practice produced by WRAP. Completing the following steps will encourage improved waste minimisation and waste management performance.

The accompanying SWMP template will be completed by Powerfuel and the designer through to Step 2 of the WRAP template as the design details progress, prior to work starting on-site. When the works commence on-site the remaining Steps will be completed by the Preferred Demolition Contractor and Preferred Principal Contractor and Powerfuel.

Step 1: Project Homepage

The Project Homepage worksheet of the SWMP template links to guidance in other areas of the Plan.

Step 2: Basic Details

Key project data must be entered by Powerfuel into the worksheet entitled '2 Basic Details' in the SWMP template. When the PPC is appointed their name needs to be added to the Basic Details Box. This is displayed in Figure C1 below.

Client name	Powerfuel Portland Ltd
Principal contractor	Project not yet awarded
Owner of document	Powerfuel Portland Ltd
Project title	Portland ERF
Project Reference	
Project location	Portland
Project postcode	
Construction value	
Type of construction	Energy Recovery Facility
Activity	New construction

Figure C1: Basic Details

Metrics

Metrics can also be added for the project. These metrics can be used in the KPI sheet to track project progress in relation to waste produced during demolition and construction. For this project, it is likely to be most appropriate to use the footprint (m^2) of the scheme. However the PDC and PPC will agree with Powerfuel the most appropriate metrics for the project. A list of metrics is provided in the SWMP template.

Project Targets

Targets are used to maintain project progress through the scheme. They enable the effectiveness of waste management measures both during the project and at the completion of the project to be appraised.

No targets have been established yet. The appropriate targets will be identified by Powerfuel, the PDC and the PPC prior to work starting on-site.

Schedule of work

The finalised dates for the schedule of work will be added to the SWMP template by Powerfuel.

Key personnel

Key Project Staff are identified in the Plan. The information displayed in Figure C2 will be completed by Powerfuel Portland Ltd.

Position	Name	Contact Details
Client	Powerfuel Portland Ltd	TBC
Principal Contractor	Project not awarded	TBC
SWMP Drafter	Arup	Bob Hudson 0113 242 8498
Others (not legally required)		
Client Waste Management Representative (if applicable)	TBC	TBC
Project Manager	TBC	TBC
Waste Management Coordinator/Champion	TBC	TBC
Design Coordinator	TBC	TBC
Document Controller / Secretary	TBC	TBC

Figure C2: Key Personnel

Step 3 Designing Out Waste

Any measures taken through the design stages of a project to minimise the waste produced should be incorporated into the design and the SWMP.

Powerfuel and the Project Designer need to complete any actions that have reduced waste during the design stage of the project in the worksheet entitled '3 Actions' in the SWMP template.

Step 4 Forecast Waste

An estimate of waste generation for some aspects of the project has been calculated and included in the worksheet entitled '4 Forecast Waste' in the SWMP template.

Step 5a Specify Waste Carriers

Step 5a featured in the worksheet entitled '5a Specify Waste Carriers' in the SWMP template enables the user to identify the waste carriers removing materials.

There are four questions which the PPC must answer. The questions link to the Compliance worksheet and assess the Plan's performance against various waste legislation.

Duty of Care

All those who produce or handle wastes from demolition, earthworks and construction activities have a duty of care for its safe keeping, transport and subsequent recovery. Since October 2007, all producers of waste have been required to pre-treat waste prior to disposal to landfill. The PPC must demonstrate how they will comply with all regulation and good practice guidance.

Step 5b Plan Waste Destinations

Step 5b featured in the worksheet entitled '5b Plan Waste Destinations' in the SWMP template enables the user to identify the destinations for waste. Waste streams which inputted in worksheet Step 4 are displayed alongside the waste management facilities inputted in Step 5b. The worksheet sorts the waste streams forecasted by the user into Construction, Demolition and Excavation.

There are three questions at the top of the worksheet which the PPC must answer.

Step 6 Actual Waste Movements

When any waste is removed from the site the PPC must record these movements in the SWMP.

Step 6 featured in the worksheet entitled '6 Actual Waste Movements' enables the user to input the actual waste activities once work has commenced on-site.

The PPC must input each waste movement and allocate by type of activity using the three options from the drop down menu; Construction; Demolition or Excavation.

Step 7 KPIs

Step 7 featured in the worksheet entitled '7 KPIS' in the SWMP template enables the project team to review the performance of the project.

Step 8 Declaration

A representative of Powerfuel should sign and date the declaration at the bottom of the worksheet entitled '2 Basic Details' in the SWMP template.

Step 9 Reporting

Step 9 featured in the worksheet entitled '9 Reporting' enables the project team to monitor the forecasted waste against the actual waste arising and present the performance of the project to stakeholders. The Reporting worksheet displays the total waste generated by the project.

Appendix D

SWMP Template

Site Waste Management Plan

Version 2.3

Project Stage		SWMP Section		Guidance	Compliance
Policy and setup					
Preparation and concept design	1	Enter Basic Details		Section 1.0	**Pre- Construction** Status: ***Not compliant*** Non Compliances: **7 / 11** Review >
	2	Record Waste Prevention Actions		Section 2.0	
Detailed design	3	Forecast Waste		Section 3.0	
		Record Waste Reduction Actions			
Pre-construction	4	Specify Waste Carriers		Section 4.0	
		Plan Waste Destinations			
		Record Waste Management and Recovery Actions			
Construction	5	Enter Actual Waste Movements		Section 5.0	**Construction** Status: ***Not compliant*** Non Compliances: **16 / 16** Review >
Post completion and use	6	KPI's		Section 6.0	**Post Completion** Status: ***Not compliant*** Non Compliances: **2 / 2** Review >
		Reporting			
		Sign Declaration			

Standard, Good and Best Practice Levels

Standard, Good and Best Practice Levels

Section 1.0 : Policy

Section 2.0 : Preparation & Concept Design

Section 3.0 : Detailed Design

Section 4.0 : Pre-construction

Section 5.0 : Construction

Section 6.0 : Post Completion & Use

Material change for a better environment

?

Tell me about this sheet

Basic Details

Client name :	Powerfuel Portland Ltd
Principal contractor :	TBC
Owner of document :	Powerfuel Portland Ltd
Project title :	Portland Energy Recovery Facility (ERF)
Project Reference :	
Project location :	Portland
Project postcode :	
Construction value :	
Type of construction :	Industrial buildings
Activity :	New construction

Metrics

Please select metrics applicable to your project. These metrics are then used in the KPI sheet to track your progress.

Metric	Amount	Unit

Project targets

Please select project targets applicable to your project

KPI	Phase	Target	Unit

Schedule

Start date :		dd/mm/yy
Completion date :		dd/mm/yy

Persons legally required to be identified (SWMP Regulations 2008 Section 6 (1))		
Position	**Name**	**Contact Details**
Client	Powerfuel Portland Ltd	
Principal Contractor	TBC	
Site Waste Management Plan Drafter	Powerfuel Portland Ltd	
Others (not legally required)		
Client WM Representative (if applicable)		
Project Manager		
Waste Management Coordinator/Champion		
Design Coordinator		

Document Controller / Secretary		

Confirmation that the plan has been monitored on a regular basis to ensure that work is progressing according to the plan and that the plan was updated in accordance with the SWMP Regulations (2008). Required for all projects	
Signed by:	
Organisation:	
Position:	
Date:	
Signed by:	
Organisation:	
Position:	
Date:	

	Explanation of any deviation from the plan (Required for projects over £500,000)
1	
2	
3	
4	
5	
6	
7	

	Where relevant, drawing on any lessons learnt, an action plan to address these for the next project (Required for projects over £500,000)
1	
2	
3	
4	
5	
6	
7	