Hartpury University

Project: New Graze
Site Waste Management Plan

HARTPURY

Date: 18/06/2021

Doc Ref: P19308/SWMP

VITRUVIUS

Project and Construction Management Consultants

Contents

1. Introduction

This Site Waste Management Plan has been prepared on 18/06/2021. It aims to improve the management of waste throughout the life cycle of the project, by addressing the waste hierarchy, waste types and quantities, waste legislation, waste storage and handling, waste awareness and waste monitoring and measurement. A comprehensive review of this document will take place on project completion and lessons learnt communicated to project team and taken forward to improve the waste management on future projects.

Revisions to this document will be recorded in the table on page 3. Hard copies will be replaced and reissued by the nominated Team Member authorised to control the document.

This plan covers:

Construction Resource Efficiency

The setting of target benchmarks for resource efficiency, i.e. m^3 of waste per $100m^2$ or tonnes of waste per $100m^2$ of non-hazardous waste materials (from on-site construction and dedicated off-site manufacture or fabrication, including demolition and excavation waste.

Diversion of Resources from Landfill

The setting of target benchmarks for the diversion from landfill benchmarks for non-hazardous construction waste and demolition and excavation waste generated are set.

2. Project Information

Project Information	
Project Name	New Graze
Project Location	Hartpury University
Site Location Description	Adjacent to Hartpury teaching & accommodation facilities, area is an existing car park
Project Cost (Estimated)*	£5m
Floor Area (M2)	***2347m2***
Project Start Date	16/07/2021
Project End Date	29/07/2021
Client	Hartpury University

* The cost should be the price of the accepted tender, if there is no tender then it should be the estimated cost of labour, plant, materials, overhead and profit but exclude VAT.

Responsibilities

	Name	Contact Details
Who is responsible for drafting the SWMP	Construction Contractor (TBC)	
Who is responsible for implementing the SWMP	***Construction Contractor (TBC)***	
Who is the person in charge of the project	Construction Contractor (TBC)	
Where will this SWMP be kept (a copy should be kept on site)	On Site	

3. Declaration Statement

The 'Main Contractor' will take reasonable steps to ensure waste duty of care is complied with, materials are handled efficiently, and waste is managed appropriately.

The appointed Construction Contractor will be responsible for the commissioning of this Site Waste Management Plan (SWMP). We will take all reasonable steps to ensure that all waste from the project is dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) Regulations 1991 and those materials will be handled efficiently, and waste managed appropriately.

The nominated Site Team member will be responsible for the contents of this plan and for the implementing the actions detailed within it. This will involve:

- Communication with the project team, the Client and nominated waste management contractors;
- Instructing workers and operatives; and
- Commissioning training and monitoring.

Overseeing all elements of the plan and documenting the development, progress and final results of the SWMP. With a copy being passed to the EHS Manager and Client on the completion of the project.

Subcontractors are expected to ensure full legal compliance, to adhere to the principles and site practices as described in this SWMP, to attend training (toolbox talks), and to contribute to the achievement of the SWMP targets.

Waste Management contractors are responsible for providing suitable waste containers and equipment as necessary to meet the requirements set out in this SWMP.

4. Waste Minimisation

4.1 Forecast

The table below highlights the types and volumes of waste expected to be generated throughout this project. Wastes arising from pre-construction, construction, fit-out and site clearance are included. (To be completed by the Construction Contractor).

FORECAST WASTE COMPOSITION				
Waste Type	**Estimates (Volume m^3)**	**Project Phase**	**Expected Dates**	**Proposed Waste Management Actions**
Aerosols		N/A	When Required	Closed Skip – Hazard Waste
Aluminium		Construction	When Required	Segregated Skip / Recycled / Reused on/off Site
Cardboard		Construction	When Required	Segregated Skip / Recycled / Reused on/off Site
Canteen / Food waste		Construction	When Required	Closed Skip, Recycled where possible
Concrete		Construction	When Required	Segregated Skip / Recycled / Reused on/off Site
Fluorescent tubes		N/A	When Required	Closed Skip – Hazard Waste
Insulation		Construction	When Required	Segregated Skip / Recycled / Reused on/off Site
MDF / Chipboard		Construction	When Required	Segregated Skip / Recycled / Reused on/off Site
Office Waste		All Phases	When Required	Segregated Skip / recycled
Oil contaminated waste		Construction	When Required	Closed Skip – Hazard Waste
Plasterboard		Construction	When Required	Segregated Skip / Recycled / Reused on/off Site
Plastics incl. Polystyrene		Construction	When Required	Segregated Skip / Recycled
Sewage		All Phases	When Required	Closed Skip, Recycled where possible
Solvent/paint containers		N/A	When Required	Closed Skip – Hazard Waste
Steel		All Phases	When Required	Segregated Skip / Recycled / Reused on/off Site
Soil and stone		All Phases	When Required	Segregated Skip / Recycled / Reused on/off Site
Timber Contaminated		N/A	When Required	Closed Skip – Hazard Waste
Timber non-contaminated		All Phases	When Required	Segregated Skip / Recycled / Reused on/off Site
Topsoil		All Phases	When Required	Segregated Skip / Recycled / Reused on/off Site
Vegetation		N/A	When Required	N/A
Wash down water		N/A	When Required	N/A
Waste oils & lubricants		All Phases	When Required	Closed Skip, Recycled where possible
WEEE		N/A	When Required	N/A

4.2 Waste Reduction: Planning, Design and Procurement

The following tables show the waste issues considered by Vitruvius Management Services and Client at the planning, design and procurement stages of the project. The actions are identified below and highlight the ways in which this project has addressed the waste reduction element of the waste hierarchy.

PLANNING & DESIGN		
ISSUE	**ACTIONS**	**Responsibility**
Ground / Enabling Works	The project requires Ground Works to be carried out ahead of the construction phase and is unavoidable.	**Main Contractor**
Number of materials	Reducing the number of different materials used (this will reduce the different waste types).	**Roberts Limbrick/Main Contractor**
Recyclability of materials	Selecting materials that can be segregated for reuse / recycling if / when they become waste.	**Roberts Limbrick/Main Contractor**
Durability of materials	Designing with materials which are durable and able to withstand storage, handling and installation.	**Roberts Limbrick/Main Contractor**
Dimensions	Repetition of design and element dimensions, designing to meet standard manufactured material dimensions, to reduce variables and off-cuts.	**Roberts Limbrick/Main Contractor**
Prefabrication / offsite construction	All superstructure steelworks shall arrive on site having been prefabricated.	**Main Contractor**
Incorporating materials – reuse	NA	**Main Contractor**

PROCUREMENT		
ISSUE	**ACTIONS**	**Responsibility**
Ordering Policy	Production of accurate estimates of materials. Reduce the percentage of extra material ordered from e.g. 10% to 7%	**Main Contractor**

Recycled content	Where possible recycled materials will be used	**Main Contractor**
Material durability	The materials used should be suitable for the life span of the building	**Roberts Limbrick**

5. SWMP Targets

5.1 Construction Resource Efficiency (BREEAM)

Requirement	Compliant? Y/N
Up to 3 credits (for construction resource efficiency) Meet or improve upon the following benchmarks for non-hazardous construction waste, excluding demolition and excavation waste:	
For ONE credit: 13.3m^3 (11.1 tonnes) per 100m^2 of gross internal floor area	
For TWO credits: 7.5 m^3 (6.5 tonnes) per 100m^2 of gross internal floor area	
For THREE credits: 3.4 m^3 (3.2 tonnes) per 100m^2 of gross internal floor area	

Diversion of Resources from Landfill

Requirement			Compliant? Y/N
Sort waste materials into separate key waste groups as the table below, either on-site or through a licensed contractor for recovery.			
Meet or improve upon the following benchmarks for non-hazardous construction waste, excluding demolition and excavation waste:			
Type of waste	**Diversion from landfill benchmark (%)**		
	Volume	**Tonnage**	
Non-Demolition	70%	80%	
Demolition	80%	90%	

European Waste Catalogue	Key Group	Examples
170102	Bricks	Bricks
170101	Concrete	Pipes, kerb stones, paving slabs, concrete rubble, precast and in situ
170604	Insulation	Glass fibre, mineral wool, foamed plastic
1501	Packaging	Paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets
170201	Timber	Softwood, hardwood, board products such as plywood, chipboard, medium density fibreboard (MDF)
1602	Electrical & Electronic	Electrical and electronic TVs, fridges, air-conditioning units, lamps equipment
1301	Oils	Hydraulic oil, engine oil, lubricating oil
1703	Asphalt and tar	Bitumen, coal tars, asphalt
170103	Tiles and ceramics	Ceramic tiles, clay roof tiles, ceramic, sanitary ware
1701	Inert	Mixed rubble or excavation material, glass
1704	Metals	Radiators, cables, wires, bars, sheet
170802	Gypsum	Plasterboard, plaster, fibre cement sheets
170101	Binders	Render, cement, mortar
170203	Plastics	Pipes, cladding, frames, non-packaging sheet
1705	Soils	Soils, clays, sand, gravel, natural stone
Most relevant EWC	Liquids	Non-hazardous paints, thinners, timber treatments
Most relevant EWC	Hazardous	Defined in the Hazardous Waste List (HWL) of the European Waste Catalogue (EWC)
Most relevant EWC	Floor coverings (soft)	Carpets, vinyl flooring
Most relevant EWC	Architectural features	Roof tiles, reclaimed bricks, fireplaces
170904 (Mixed)	Mixed or other	Efforts should be made to categorise waste into the above categories wherever possible.

Measures taken to ensure the waste hierarchy is implemented are detailed in sections 4 and 5. The aspiration to achieve all if the measures present SWMP targets. The SWMP targets for waste disposal are therefore as follows;

6. Waste Management Contractors and Legal Compliance

6.1 Waste Management Contractors

Details of **ALL** waste contractors who are responsible for collecting waste from the project are detailed below (Waste contractors details and Duty of Care compliance sheet). The following issues were considered when selecting waste contractors: legal compliance, waste recovery performance, service delivery, provision of suitable equipment and advise, flexibility, reliability and cost effectiveness.

It is the responsibility of the Waste Management Contractors to provide suitable waste containers, equipment and personnel as necessary to meet the requirements of the SWMP. The quantity and type of waste produced by each trade contractor shall be recorded by the Waste Management Contractor and provided to the nominated responsible person from the Main Contractor on the project, on a monthly basis.

Waste Contractor Details and Duty of Care Compliance Sheet								
Waste Details			**Waste Carrier / Contractor**			**Disposal Site / Recycling Site**		
Waste Stream	**European Waste Catalogue (EWC) code**	**Source**	**Name of Carrier**	**Waste Carriers License Number**	**Expiry Date**	**Name of Site**	**Waste Management License Details**	**Conditions of License checked? (E.g. covers the type and quantity of waste involved etc.)**
Aerosols	16 05 04	Site						
Aluminium	15 01 01	Site/Office						
Cardboard	17 01 01	Site						
Canteen / Food waste	20 01 08	Canteen						
Concrete	17 06 04	Site						
Fluorescent tubes	17 08 02	Site						
Insulation	17 02 01	Office						
MDF / Chipboard	19 09 04	Site						
Office Waste	17 08 02	Site						
Oil contaminated waste	17 02 03	Site						
Plasterboard	16 05 04	Site						
Plastics incl. Polystyrene	17 04 07	Site						
Sewage	17 05 04	Site						
Solvent/paint containers	17 03 02	Site						
Steel	17 02 01	Site						

Waste Contractor Details and Duty of Care Compliance Sheet								
Waste Details			**Waste Carrier / Contractor**			**Disposal Site / Recycling Site**		
Waste Stream	**European Waste Catalogue (EWC) code**	**Source**	**Name of Carrier**	**Waste Carriers License Number**	**Expiry Date**	**Name of Site**	**Waste Management License Details**	**Conditions of License checked? (E.g. covers the type and quantity of waste involved etc.)**
Soil and stone	17 01 01	Site						
Timber Contaminated	17 01 02	Site						
Timber non-contaminated	17 01 02							
Topsoil	17 05 04							
Vegetation	20 02 01							
Wash down water	02 02 01							
Waste oils & lubricants	16 07 08							
WEEE	20 03 01							

7. Training and Communication

In order to ensure that everyone working for or on behalf of the Main Contractor is aware of SWMP and aware of their roles and responsibilities in relation to waste management, a number of communication methods will be used. These methods are described below:

- **Meetings**: Pre-start meetings with sub-contractors will include discussions of the SWMP and will encourage key project representatives to contribute to waste predications.
- **Site Briefings:** Once the project is 'LIVE', weekly meetings with key personnel will be held to discuss problems and opportunities relating to waste on site.
- **Awareness raising:** SWMP information will be included in the induction process.
- **Notice Boards:** Posters explaining and encouraging waste minimization, waste segregation and legal compliance will be displayed around site on notice boards in the site accommodation. Updates arising from monitoring progress towards the SWMP targets and the effectiveness of waste management on site will be displayed on notice boards.
- **Training**: Training sessions will be provided for all employees involved with the project. Training content, structure and duration will vary depending on job role and level of competence / knowledge required.

7.1 Materials Handling and Storage

The following table details the considerations given to good housekeeping, materials, handling, storage and implementing waste hierarchy.

Planning for Effective Materials Handling and Storage	
Issue	**Actions**
Delivery schedules	Details of arrangements made with subcontractors / suppliers to ensure phased deliveries (enabling deliveries to be efficient and ensuring materials are handled and located in correct storage areas to minimize damage).
Site plan	Include reference to site layout – described considerations given to designate waste material storage areas.
Assign responsibility	Site Management Team.

Planning for Effective Materials Handling and Storage	
Issue	**Actions**
Hazardous Waste measures	N/A - Sub-contractor responsibility
Waste containers	General waste skips/ bins will be located in the areas as designated by the Site plan. Timber and Metal by collection.
Colour coding and labelling	Skips will have signs on them.
Plan disposal	Documentation in waste file.
Discharge consent to surface water	N/A
Discharge to sewer	N/A

8. Measurement

Measurements of the actual types and quantities of waste generated, the actual amounts of waste being reused and recycled and; the actual progress towards targets will be compared with predicted waste data (detailed in section 2.1). Measurements will be collated on a monthly basis and table 7.1 below will be completed with actions identified of issues to be addressed. This will be completed by the main contractor when the information on measurements becomes available.

Measuring Waste			
Waste Type	**Estimated amount (ton/m3)**	**Actual amount (ton/m3)**	**Reason for deviation and action for improvement**
Aerosols			
Aluminium			
Cardboard			
Canteen / Food waste			
Concrete			
Fluorescent tubes			
Insulation			
MDF / Chipboard			
Office Waste			
Oil contaminated waste			
Plasterboard			
Plastics incl. Polystyrene			
Sewage			
Solvent/paint containers			
Steel			

Measuring Waste			
Waste Type	**Estimated amount (ton/m3)**	**Actual amount (ton/m3)**	**Reason for deviation and action for improvement**
Soil and stone			
Timber Contaminated			
Timber non-contaminated			
Topsoil			
Vegetation			
Wash down water			
Waste oils & lubricants			
WEEE			

SWMP Actual Volumes		
Waste	**Actual**	**BREEAM Credit Achieved**
Waste sent to landfill (General)	Calculated upon project completion.	Calculated upon project completion.
Total waste created during build phase	TBC	TBC
Total waste exc. Demolition and Excavation	TBC	TBC
Total (excluding demolition and excavation) per 100m2 gross floor area	TBC	TBC

9. Monitoring

The monitoring results will be:

(a) Included in site meeting reports; and

(b) Displayed on the notice board of the site / static premises

In order to ensure the ongoing success of the SWMP, the following issues will be monitored:

- Legal compliance;
- Materials handling and storage;
- Effective segregation of wastes – visual inspection;
- Progress against targets – refer to measurements table (7.1) and ensure the targets in the plan are realistic and achievable;
- Success of training – checking that employees and subcontractors are adhering to work instructions;
- Cost of waste disposal / skip hire;
- Level of damaged materials; and
- Costs and cost savings monitoring methods to include;

Monitoring Method	Person Responsible	Frequency of Monitoring
Visual inspection – housekeeping checks		**Daily**
Site Inspections		**Weekly**
Document review – to include reviews of: • **The SWMP** • **Waste transfer notes and consignment notes** • **Waste Carrier licenses and exemptions** • **Training** • **Actual vs. Predicted waste data**	Main contractor	As required

10. Review

10.1 Ongoing Review of implementation

The SWMP should be checked regularly - use the table below to keep a log of when the plan was monitored and the outcomes. The plan must be reviewed at least every month.

Date	Name	Summary/ Action carried out

This section should be completed during the construction project. This is the responsibility of the Main Contractor

11. Completion Review

This section must be filled in within 3 months of the work being completed on this project (i.e. project finish)

We confirm that the plan has been monitored on a regular basis to ensure that work was progressing to the plan and the plan was updated

Signature	
Print name	
Date	

This stage is designed to evaluate the success of the RMP, and to identify key 'lessons learnt' to use on future projects, striving for continual improvement.

Explain any deviation from the original plan:

Review how successful the implementation of the RMP has been:

Estimate of cost savings achieved: £

Actions planned for next project:

This section must be completed within 1 month of the project finishing, this is the responsibility of the Main Contractor

A copy of this plan must be kept at the Main Contractor's place of business for 2 years, with the original submitted to the client on completion