Gravity

Smart Campus

Gravity LDO Environmental Statement

Volume 2 – Appendices

Appendix 3.3 Framework Site Waste Management Plan

Gravity Local Development Order

Framework Site Waste Management Plan

CONSULTATION DRAFT

DRAFT

On behalf of **This is Gravity** and **Sedgemoor District Council**

Project Ref: 332310102 | Rev: DRAFT | Date: October 2021

Registered Office: Buckingham Court Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU
Office Address: 10 Queen Square, Bristol, BS1 4NT
T: +44 (0)117 332 7840 E: bristolqueensquare@stantec.com

Document Control Sheet

Project Name: **Gravity Local Development Order**

Project Ref: **332310102**

Report Title: **Framework Site Waste Management Plan**

Doc Ref: **V2**

Date: **October 2021**

	Name	Position	Signature	Date
Prepared by:	Josie Edwards	Graduate Environmental Consultant	JE	15.10.2021
Reviewed by:	Michael Robinson-Moltke	Senior Waste Consultant	MRM	15.10.2021
Approved by:	Natalie Maletras	Director – Waste and Resources	NJM	15.10.2021
For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
V1	27.09.2021	Draft for client comment	JE	MRM	NJM
V2	15.10.2021	Final for submission	JE	MRM	NJM

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e., parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

DRAFT

Contents

1 Introduction 1
1.1 Background 1
1.2 Purpose of the Site Waste Management Plan 1
2 Site Waste Management Plan Process 3
2.1 Site Waste Management Plan Stages 3
3 Demolition and Construction Waste 4
3.1 Introduction 4
4 Roles and Responsibility 8
4.1 Introduction 8
4.2 Roles and Responsibilities 8
5 Monitoring and Reviewing 10
5.1 Monitoring 10
5.2 Reviewing 10

Figures

Figure 3-1: The Waste Hierarchy, Defra 2011 4

Tables

Table 3-1: Land Use EIA Assumptions 5

Appendices

Appendix A Example Monitoring Templates

DRAFT

DRAFT

This page is intentionally blank

1 Introduction

1.1 Background

1.1.1 Sedgemoor District Council (SDC) intends to make a Local Development Order (LDO) for a Site known as Gravity, to the east of Junction 23 of the M5, in Sedgemoor, Somerset (referred to hereafter as 'the Site') to grant a simplified, flexible planning permission capable of meeting market requirements for the Gravity Smart Campus and Community ("Proposed Development").

1.1.2 Stantec UK Limited (Stantec) has been appointed by This is Gravity (Gravity) to produce a Framework Site Waste Management Plan (SWMP) to support the LDO.

1.1.3 This SWMP is submitted alongside the Operational Waste Strategy (September 2021) for the Proposed Development.

1.1.4 The legal requirement to prepare a SWMP was removed in 2013. However, preparation of a SWMP is still considered best practice and ensures building materials are managed efficiently; waste is disposed of legally, fly tipping is reduced, and materials reuse, recovery and recycling is maximised.

1.1.5 This Framework SWMP provides guidance for any appointed Principal Contractor on what should be included within the SWMP. The developer, design team and Principal Contractor will take responsibility for taking this Framework SWMP and moving it into a 'live document'. They will make sure it is updated and monitored as required throughout the construction of the Proposed Development.

1.1.6 The SWMP will help resource efficiency principles to be incorporated where consideration is given to designing out waste, reduce waste generated on-site as well as reuse, recycling, and recovery of construction and demolition waste.

1.1.7 Further detail outlining the steps and measures taken in regard to the management of materials and waste is provided within the Framework Demolition and Construction Environmental Management Plan (FDCEMP) submitted with the LDO.

1.2 Purpose of the Site Waste Management Plan

1.2.1 The purpose of this Framework SWMP is to assist in ensuring that:

- The Proposed Development is compliant with all planning and waste management policy requirements relating to waste.
- Opportunities for designing out waste are considered.
- Construction materials are managed efficiently.
- Waste generated is disposed of legally and fly tipping is reduced.
- Materials reduction, reuse, recycling and recovery is maximised.
- Developers' objectives relating to waste are met.

1.2.2 Matters relating to operational waste and waste servicing are not considered within the scope of this document.

DRAFT

1.2.3 This Framework SWMP sets out the relevant policy expectations, the process going forward for the construction waste management process, the roles and responsibilities within this process, and how this would be monitored and reviewed going forward.

DRAFT

2 Site Waste Management Plan Process

2.1 Site Waste Management Plan Stages

2.1.1 The construction waste management process can be spilt into three management stages as follows:

- Stage One: Pre-Construction;
- Stage Two: Construction Phase; and
- Stage Three: Post Construction Review.

2.1.2 Stage One ensures that early consideration is given to the waste management implications and requirements of a development. It may also assist in identifying opportunities to further reduce waste through project design ahead of the construction phase. This document provides the Stage One, pre-construction SWMP for the Proposed Development.

2.1.3 During Stage Two, a construction phase SWMP can be further developed as specific details become available such as any requirements from the contractor in relation to waste, identification of specific building materials to be used and establishment of the construction programme. The principles set out in this pre-construction SWMP will be useful for informing the construction phase SWMP which will be managed and updated as necessary throughout the construction process.

2.1.4 The Stage Two construction phase SWMP will be developed in consultation with SDC and will be submitted for consideration and comment prior to the commencement of the demolition and construction works for the Proposed Development.

2.1.5 Post-construction, at Stage Three, there will be a review exercise to acknowledge adherence, or otherwise, to the principles and strategy as set out in the SWMP.

2.1.6 The process detailed herein follows the requirements as were set out in the now revoked regulations; this is however still recommended as best practice to developing a SWMP and therefore will be used for the management of waste associated with the construction of the Proposed Development.

DRAFT

3 Demolition and Construction Waste

3.1 Introduction

3.1.1 During demolition and construction, materials recovered from on-site works may be suitable for reuse on site, reducing the costs of transportation and procurement of virgin materials. This, combined with considerate design practice, will help to minimise construction waste in line with the Waste Hierarchy.

3.2 Waste Management Principles – Demolition and Construction Phase

3.2.1 This section introduces the principles of 'best practice' waste management. These should be applied to the Proposed Scheme.

3.2.2 It is the Client's corporate goal to achieve 95%+ diversion from landfill of any recorded construction waste.

3.2.3 Construction waste can account for up to 5% of a project's value. It is therefore financially prudent to reduce the volume of waste being generated on development projects.

3.2.4 Overall, the hierarchy of waste management (shown below in **Figure 3.1**) will be adopted, in accordance with national and local policy requirements. The waste management methods in order of preference are as follows:

- **Waste Prevention –** Through good design and procurement mechanisms.
- **Preparation for Reuse** – To provide design features to the Proposed Scheme to use materials in their current state and form, this can occur either on or off site.
- **Material Recovery** – By using waste materials found on site and recycling / recovering them into an alternative form that can be used for construction purposes.
- **Other Recovery** – Energy recovery from biodegradable or combustible materials.
- **Disposal** – The least preferred option where the waste stream would be subject to a final disposal route, such as landfill.

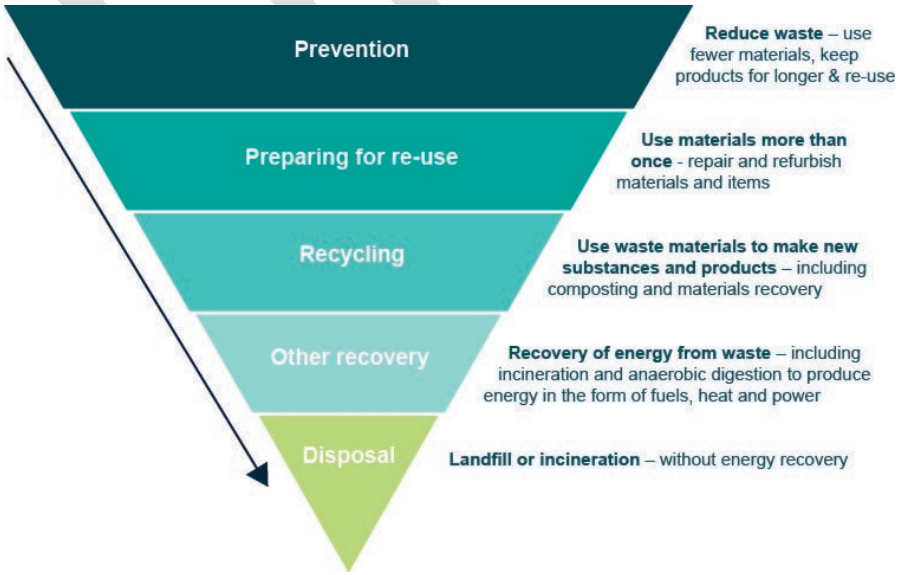

Figure 3-1: The Waste Hierarchy, Defra 2011

3.3 Waste Arisings & Management

Demolition

3.3.1 Any waste generated during the demolition phase, will be managed in line with the principles of the waste hierarchy and through the DCEMP.

3.3.2 The quantities of waste expected to be generated during demolition are not known at this time, however full demolition audits will be undertaken with outcomes incorporated into the SWMP when available.

3.3.3 The material generated through the demolition phase is expected to be reused on site where possible in a number of ways, some of which are as follows:

- Concrete – crushed on site and reused for fill, road base and construction as appropriate;
- Bricks – saved and reused in construction or recycled;
- Steel – separated and prepared on site to be sent for recycling;
- Timber and other suitable waste streams sent for energy recovery; and
- Soils – separated and stored for use as fill or in landscaping features.

Construction

3.3.4 Consideration should be given throughout the design process to the specification of suitable materials, including their sustainability and environmental implications, to support an environmentally sensitive and high-quality development.

3.3.5 By quantifying the waste predicted to be generated, it is possible to assess quantities of waste that can be reused and recycled, and benchmarks set to reduce or eliminate volumes of waste entering landfill. **Table 3.1** below presents the EIA assumed land use that may come forward as part of the LDO.

Land Use Class	Total Area (m^2)
Advanced manufacturing uses	1,000,000
35,000 sqm E(g) [formerly B1b] uses (assumed R&D) 15,000 sqm B8 (AdvMan complementary goods in / despatch space) 7,500 sqm E(g) [formerly B1c] uses (assumed industrial processes) 7,500 sqm E(g) [formerly B1a] uses (assumed incubator space) 35,000 sqm of other supporting and ancillary land uses	100,000
Residential	Up to 750 units

Table 3-1: Land Use EIA Assumptions

3.3.6 At this stage it is only possible to provide high-level estimates of the expected volumes of construction waste arising through the construction process.

3.3.7 The estimated waste arising from the construction of residential buildings at Proposed Scheme has been calculated using established national SmartWaste benchmarks based on the Building Research Establishment's (BRE) Smart Waste Benchmark Data (BRE, 2017)[1].

3.3.8 Waste from the construction of the Proposed Scheme is estimated to be a total of approximately 142,900 tonnes. However, this quantity will be confirmed within the SWMP, once a Principal Contractor has been appointed and detailed designs have been finalised.

3.3.9 The construction programme is not available at this time. It is anticipated that construction will commence in 2022 and be complete by 2032. Therefore, construction is anticipated to last for up to around 10 years, resulting in per annum construction waste of approximately 14,292 tonnes.

3.3.10 The possible composition of construction waste types is listed below:

- Bricks
- Tiles and Ceramics
- Concrete
- Insulation Materials
- Metals
- Packaging Materials
- Plasterboard / Gypsum
- Binders
- Plastic (excluding packaging waste)
- Timber
- Floorcoverings (soft)
- Electrical and Electronic Equipment
- Furniture
- Canteen / Office / Adhoc Waste
- Liquids
- Oils
- Bituminous Mixtures
- Hazardous Waste
- Other Waste
- Mixed Construction and / or Demolition Waste

[1] SMARTWaste BRE Benchmark Data – Issued October 2017

3.3.11 The waste estimations presented in this section do not account for measures that should be incorporated to reduce waste produced during construction, for example through design and procurement.

3.3.12 Detailed assessments of waste arisings for the construction stage will be undertaken within a separate detailed SWMP, when more details are known on the construction process for each phase prior to works commencing on site.

3.3.13 The SWMP should include a plan of the Site under construction, detailing all material storage areas and related infrastructure. This will identify any stockpiled materials put aside, therefore maximising reuse where possible. The waste collection facilities and location should also be identified where possible.

3.3.14 With the implementation of segregation at source it will enable the Proposed Development to reuse both within, and if appropriate outside of, the LDO boundary if there is the need to transfer waste off the Site.

3.3.15 All waste will be managed by authorised waste contractors and in line with the Waste Hierarchy and Development targets.

DRAFT

4 Roles and Responsibility

4.1 Introduction

4.1.1 This section sets out the roles and responsibilities of project team members in relation to waste management. The purpose of setting out responsibilities within this SWMP is to identify individuals to deliver certain aspects of the SWMP.

4.1.2 Any changes in role and responsibilities will be communicated through the Phase Two construction SWMP.

4.2 Roles and Responsibilities

The Developer

4.2.1 This is Gravity, Sedgemoor District Council and local waste management partners are responsible for developing the overarching construction site waste management strategy for Gravity and for preparing this Framework SWMP, to accompany the LDO.

4.2.2 The Developer will prepare further detail to this framework to give clarity to all contractors engaged in the project about how they should reduce the quantity of waste likely to arise from the Proposed Development, and to ensure any waste that does arise is managed in the appropriate manner.

4.2.3 The Developer is responsible for providing reasonable direction to any contractors and, in collaboration with the Principal Contractor, for the review and revision of the SWMP as necessary.

Design Team

4.2.4 The design team will be responsible for reducing the quantity of waste likely to arise from the Proposed Development through the design process. The design team will consider the Waste Hierarchy, to optimise reuse, recycling and recovery opportunities for the purpose of minimising waste as far as possible.

Principal Contractor

4.2.5 The Principal Contractor (once appointed), will be responsible for the following:

a. Identifying specific individual(s) (by name or job title) responsible for implementing the SWMP.

b. Implementing the SWMP during the construction phase of the Proposed Development. This includes responsibility for co-ordinating the management of all onsite waste streams, and the overall segregation, storage and collection of waste.

c. Ensuring that waste produced during construction is reused, recycled and recovered, as far as reasonably practicable.

d. Keeping all waste management duty of care documentation and, in collaboration with the developer, for making any necessary updates to the SWMP and associated records.

e. Fulfilling waste management duty of care requirements and ensuring the lawful disposal of ‘Directive Waste’ (along with the appointed waste transfer company(ies) and the receiving waste site).

DRAFT

f. Ensuring that any sub-contractors are aware of and follow the procedures necessary to be compliant with the SWMP.

g. Ensuring that all onsite employees, including those of sub-contractors, are provided with appropriate training to understand the requirements of the SWMP.

h. Appointing a person(s) responsible for regularly checking compliance with the SWMP – this may be The Waste Champion or an Environmental Clerks of Works.

i. Ensuring soil resources will be used and disposed of sustainably, in accordance with DEFRA's Construction Code of Practice for the Sustainable Use of Soil on Development Sites.

Procurement

4.2.6 The person(s) responsible for the procurement of materials (who may be an employee of the Principal Contractor) will be responsible for, where possible, procuring materials that contain recycled content, have low or no packaging, and are purchased from suppliers that have a "buy-back" strategy for unused material.

4.2.7 All material suppliers should, where possible, have certified environmental standards.

4.2.8 The person(s) responsible for the procurement of services (who may be an employee of the Principal Contractor) will be responsible for appointing waste management contractors that are suitably licenced and are compliant with duty of care obligations.

Sub-contractors

4.2.9 Any sub-contractors will be responsible for compliance with the SWMP in use by the Principal Contractor and may be required to produce their own waste management documentation as necessary.

DRAFT

5 Monitoring and Reviewing

5.1 Monitoring

5.1.1 The waste generated during the project should be recorded and monitored by the Principal Contractor. The example template provided in **Appendix A** can be used, although alternative compliant formats are acceptable.

5.1.2 The volume/tonnage of waste generated (or sent off site), as well as the percentage or volume/tonnage reused, recycled or disposed will be recorded throughout the construction phase.

5.1.3 Duty of Care documents will be retained and kept with the SWMP documentation on site by the Principal Contractor.

5.1.4 Where waste data is obtained from licensed external waste contractors, the data needs to be reliable and verifiable.

5.2 Reviewing

5.2.1 Both the Developer and the Principal Contractor are responsible for ensuring that the SWMP is reviewed and updated accordingly at regular intervals, and as necessary throughout the construction phase. The Principal Contractor will provide a monthly report to the Developer on the progress of the SWMP.

DRAFT

Appendix A Example Monitoring Templates

DRAFT

Duty of Care Documentation

Waste Type in Skip	EWC Code	Inert/Non-Hazardous/Hazardous	Waste Carrier Name (and/or broker name)	Waste Carrier License Number	License Expiry Date	Name of End Destination	Landfill License or Waste Transfer Station Registration Details	Volume Sent	Confirmation that Registered Landfill received Waste and Date

Waste Activity License/Exemption	Details of License/Exemption (including expiry date and limitations to license)	Comments

DRAFT

Waste Collation Data Information

Material Use On-Site	Quantity Ordered (if known)	Estimated Waste (5% of materials ordered for example)	Quantity Wasted (m^3)	Volume Reused on-site (m^3)	Volume Reused off-site (m^3)	Volume Recycled on-site (m^3)	Volume Recycled off-site (m^3)	Volume Landfill (m^3)	Final % of materials ordered disposed to landfill

DRAFT

Useful Waste Catalogue Codes

Waste Material	EWC
Bricks	17-01-02
Concrete	07-01-01
Contaminated rags/cloths/wipes	15-02-02*
Contaminated spill materials	15-02-02*
Fluorescent Tubes (FT)	20-01-21*
Mixed Municipal Waste	20-03-01
Glass	17-02-02
Mixed Metals	17-04-07
Paper and Cardboard	20-01-01
Plasterboard	17-08-02
Plastics	17-02-03
Soil & Sands not containing dangerous substances	17-05-04
Wood	17-02-01

DRAFT