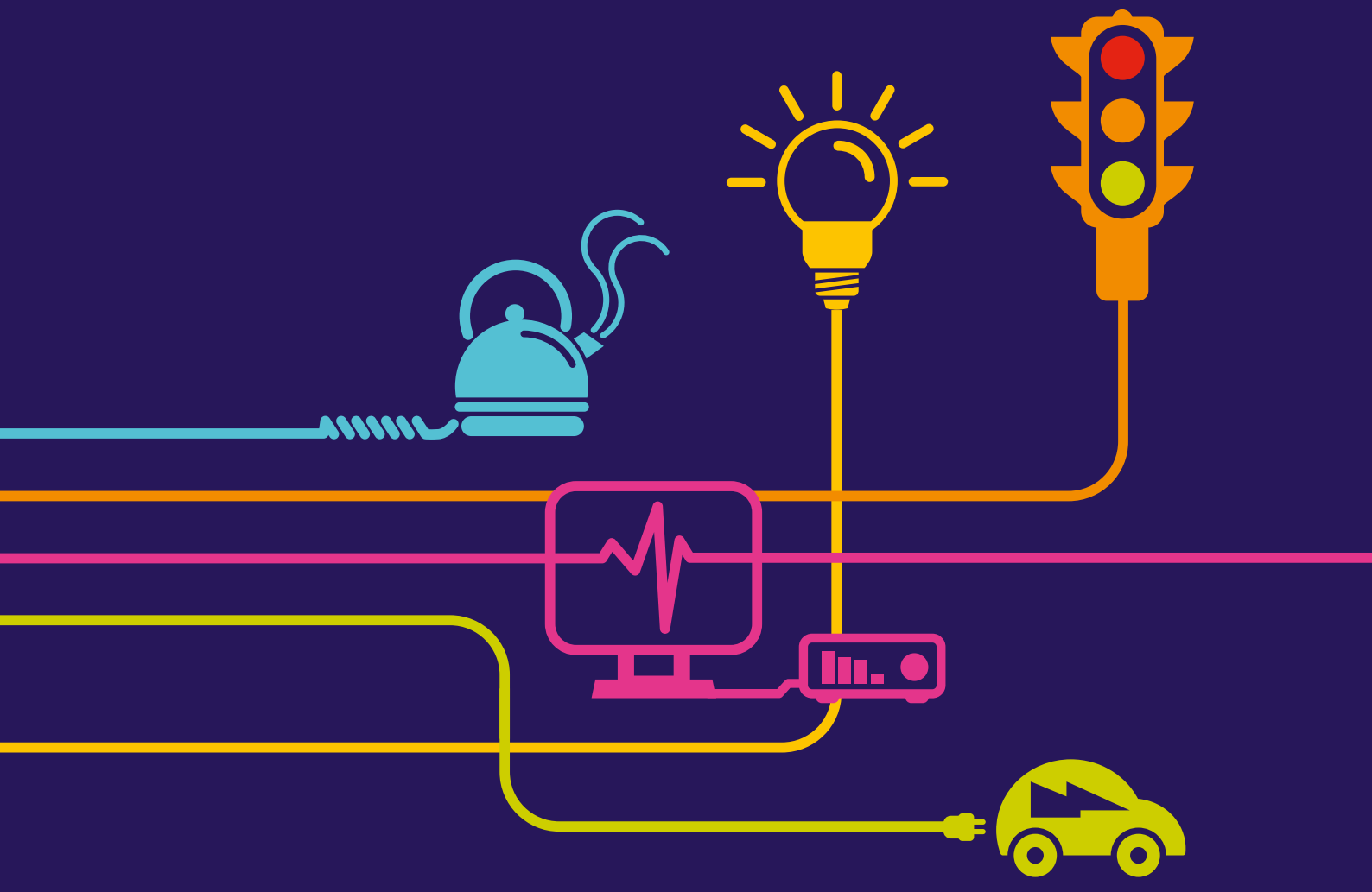
DOCUMENT 5.4.3D(A)

nationalgrid

Outline Waste Management Plan

National Grid (Richborough Connection Project) Order

Regulation (5)(2)(a) of the
Infrastructure Planning (Applications: Prescribed Forms and Procedure)
Regulations 2009 and
TEN-E Regulation EU347/2013



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Richborough Connection Project

Volume 5

5.4 Environmental Statement Appendices

5.4.3D(A) Outline Waste Management Plan

National Grid
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

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Author		J Faber	
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LIST OF ACRONYMS AND ABBREVIATIONS

ACM	Asbestos Containing Material
CEMP	Construction Environmental Management Plan Document 5.4.3C(D)
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EMS	Environmental Management System
EWC	European Waste Catalogue
GB	Great Britain
HE	Highways England
KCC	Kent County Council
kV	Kilo Volts
LoW	List of Waste
MMP	Materials Management Plan
SIC	Standard Industry Code
OWMP	Outline Waste Management Plan
SWMP	Site Waste Management Plan
TRO	Traffic Regulation Order
TTM	Temporary Traffic Management
UK	United Kingdom
WFD	Waste Framework Directive
WMP	Waste Management Plan
WMPE	Waste Management Plan for England
WRAP	Waste and Recycling Action Plan

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1. EXECUTIVE SUMMARY

1.1 Outline Waste Management Plan

1.1.1 This Outline Waste Management Plan (OWMP) is included as part of the Construction Environmental Management Plan (CEMP) (**Document 5.4.3C(D),** and forms an appendix to the ES (**Volume 5, Documents 5.1 – 5.4**) and as such forms part of the delivery of National Grid's commitment to best practice.

1.1.2 This OWMP has been prepared by National Grid and will apply to any works National Grid and its appointed contractors undertake for the construction of the proposed development. It will also apply for any works undertaken on the assets of United Kingdom (UK) Power Networks for the proposed development. Along with the rest of the CEMP, it will be included in the contractual documents for the construction of the proposed development. Compliance with the CEMP (and therefore this OWMP) is set out in **Requirement 5** of the Development Consent Order (DCO). The contractor will therefore be contractually obliged to comply with the requirements set out in the CEMP and the OWMP.

Purpose and Content of the OWMP

1.1.3 The objectives of the OWMP (in order of preference, in accordance with the waste hierarchy) are:

- minimise raw materials consumed and the volume of waste produced;
- re-use any waste produced, where practicable;
- recycle waste, where reuse is not practicable;
- recover waste, where feasible; and
- dispose of any remaining waste streams in accordance with legislative requirements.

1.1.4 The purpose of this OWMP is to set out the principles and procedures for the management of waste during the construction of the proposed development. Actions include, for example, the requirement for the main contractor to produce a Site Waste Management Plan (SWMP).

General Measures

1.1.5 General measures that will be employed by the contractors to limit effects on the environment are detailed in **Section 6** of this document and include:

- the consumption of raw materials and waste shall be minimised, through sound design and good practice in procurement;
- if generated, opportunities for reusing or recycling the waste will be actively sought with disposal via landfill used as a last resort;

- waste materials shall be stored securely on site in order to prevent their escape and protect them against vandalism, vermin or outside interference;
- hazardous waste (e.g. paints, oils, fuel oils) will be segregated on-site to avoid contaminating other material and waste streams;
- storage of waste on site shall either be:
  - within the scope of, and comply with, the requirements of one or more of the activities specified as exempt form Waste Management Licensing; or
  - carried out under an environmental permit issued by the Environment Agency (EA).
- waste management activities on sites operating under an environmental permit will be managed by a nominated Technically Competent Manager;
- all waste disposal contractors carrying waste shall be authorised to do so and all sites that receive the waste shall be authorised to do so;
- disposal of all waste will be accompanied by the relevant statutory transfer documentation that adequately describes the waste;
- quantities of waste generated will be recorded and monitored. Records will be kept for a minimum of three years;
- all employees and contractors will have a Duty of Care when controlling the carriage and disposal of waste to ensure it is handled in a responsible manner; and
- all staff and contractors working on the proposed development shall understand which waste should be deposited where.

Site Waste Management Plan

1.1.6 In addition to the general measures outlined in **Section 2.3** and **Section 6**, the main contractor will prepare a SWMP which will include:

- a detailed action plan for the management of waste, including roles and responsibilities, methods of data collection and reporting procedures;
- an initial estimate and type of likely waste arisings, based upon the final design of the proposed development;
- proposals for managing the waste following the Waste Hierarchy to ensure that waste arisings are minimised, including ‘designing out waste’ and waste prevention measures;
- an analysis of waste management facilities, in accordance with Overarching National Policy Statement (NPS) EN-1; and
- details of any site waste storage facilities including the requirements of environmental permits and pollution control measures.

2. INTRODUCTION

2.1 General introduction

2.1.1 This Outline Waste Management Plan (OWMP) is included as part of the Construction Environmental Management Plan (CEMP) (**Volume 5, Document 5.4.3C(D)**) and forms an Appendix to the Environmental Statement (**Volume 5, Documents 5.1 – 5.4**) which supports the application by National Grid Electricity Transmission plc (National Grid) to seek powers to construct, operate and maintain a new 400,000 volt (400kV) connection between Canterbury North 400kV substation, east of Canterbury city centre, and the proposed Richborough 400kV substation, together with various associated development and other works ("the proposed development"). The proposed development is in the administrative boundaries of Kent County, Canterbury City, Thanet District and Dover District Councils in the south east of England.

2.1.2 This OWMP has been prepared by National Grid and presents the approach to and application of sustainable waste management procedures for construction of the proposed development.

2.1.3 This document will be finalised during the examination of the application and implementation by National Grid will be secured via **Requirement 5** of the DCO, as an appendix to the ES. National Grid will require their contractors to adopt and implement the principles and procedures of this OWMP during the construction of the proposed development. This will be secured through contractual agreements.

2.2 Background to the Proposed Development

2.2.1 The proposed development comprises the proposed 400,000 volt (400kV) overhead line connection route (the proposed route), the connections into the existing Canterbury North 400kV substation and the proposed Richborough 400kV substation. It also includes the removal of an existing UK Power Networks 132kV overhead line known as the PX route once the new 400kV overhead line is operational.

2.2.2 Due to the need to cross the existing 132kV PX route at Broad Oak, Sarre and Monkton, temporary works are needed which involve temporarily diverting the PX route onto wooden poles to allow the proposed 400kV route to be built overhead and to allow the PX route to remain operational (prior to its removal). In addition, the proposed route needs to permanently cross another existing UK Power Networks 132kV overhead line known as the PY route at Monkton. This will require works to provide a temporary diversion then a permanent diversion on to lower height pylons to allow the proposed 400kV route to be built across the 132kV routes.

2.3 The Outline Waste Management Plan

2.3.1 In accordance with their published approaches to sustainable design and construction National Grid will seek to maximise resource efficiency, reducing the amount of waste generated, minimising water consumption and making the most efficient use of energy.

2.3.2 The objectives of the OWMP are (in order of preference, in accordance with the waste hierarchy):

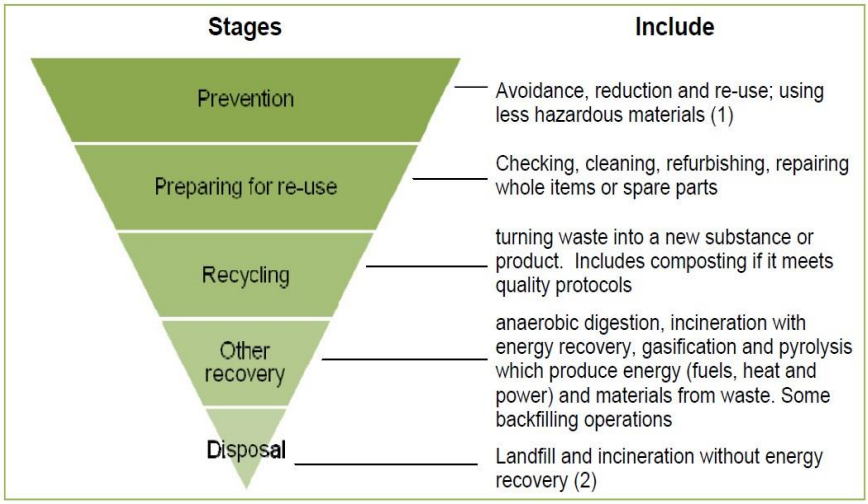

Figure 3D.2.1 - Waste Hierarchy Summary (Defra, 2011) (REF 1)

2.3.3 The purpose of this OWMP is to set out the principles and procedures for the management of waste during the construction of the proposed development. It includes a series of general measures for waste management, in addition to a commitment to the production of Site Waste Management Plans (SWMP) for each element of the proposed development, including their associated works.

2.3.4 Site waste management plans help to manage and reduce the amount of waste produced by construction projects through a simple process of identification, input to design, continued measurement and management with a view of 'pushing up' waste through the waste hierarchy.

2.3.5 This OWMP includes:

- a review and analysis of national and local planning policy and legislation related to waste (**Section 3**);
- a description of National Grid policy and procedures in relation to waste management (**Section 4**);
- a description of the general types and an indication of likely quantities of waste likely to be generated by the proposed development (**Section 5**);
- Waste Management Principles (**Section 6**); and
- an Example Site Waste Management Plan (**Section 7**).

2.4 Involvement of Local Authorities and other Statutory Bodies

2.4.1 National Grid is committed to engaging with stakeholders including local authorities and other statutory and non-statutory bodies.

2.4.2 During the examination of the application, the local authorities and other statutory bodies will have the opportunity to comment on the adequacy of the measures in this OWMP. This includes the adequacy of the process and controls to be implemented. Any advice expressed by the bodies during the examination process will be considered and an updated version of this OWMP will be submitted to the Examining Authority.

2.4.3 Where required, permits from Local Authorities or the Environmental Agency (EA), will be sought prior to commencement of the relevant works. Consultation will be undertaken by the contractors with the appropriate bodies.

2.5 Roles and Responsibilities

2.5.1 Indicative roles and responsibilities for Construction and Environmental Management are described at **Inset 3C.2.1** of the CEMP **Document 5.4.3C(D)** and include a senior project manager, project engineer, various clerks of works, contractor project manager and contractor environmental manager.

2.5.2 These personnel will be responsible for ensuring the implementation and monitoring of the CEMP and the Management Plans, including the OWMP.

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3. POLICY AND LEGISLATION

3.1 National Planning Policy

3.1.1 An analysis of the requirements for waste management in Overarching National Policy Statement (NPS) EN-1 (**REF 2**) has been carried out; details are provided in **Table 3D.3.1**.

Table 3D.3.1 - NPS EN-1 Compliance

Para	Requirement	Application Reference	Compliance
5.14.6	The applicant should set out the arrangements that are proposed for managing any waste produced and prepare a Site Waste Management Plan.	Arrangements for this are set out in **Section 5** of this document; an example layout provided at **Section 7** of this document.	The OWMP describes principles and procedures for managing waste from the proposed development and identifies the requirement for the production and contents of the SWMP, to be prepared during the detailed design phase, prior to commencement of construction. The SWMP will set out in detail the arrangements for managing any waste produced during the construction phase of the proposed development.
5.14.6	The arrangements described in the Site Waste Management Plan should include information on the proposed waste recovery and disposal system for all waste generated by the development, and an assessment of the impact of the waste arising from development on the capacity of waste management facilities to deal with other waste arising in the area for at least five years of operation.	This will be addressed in the SWMP.	Details on proposed recovery and disposal systems will be developed in the SWMP by the contractor.
5.14.6	The applicant should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome.	This commitment is addressed in this document: **Section 2** (objectives of the OWMP), **Section 4** (waste management	Sustainable waste management through the implementation of the waste hierarchy principles is described throughout the OWMP, with a commitment to move up the hierarchy, beginning with a reduction in the resources used and subsequent reduction in the waste produced; followed by reuse, recycling and only when all other options have been

Para	Requirement	Application Reference	Compliance
		policy), and **Section 6** (waste management principles).	discounted, disposal to a licensed waste facility.
5.14.7	The IPC should consider the extent to which the applicant has proposed an effective system for managing hazardous and non-hazardous waste arising from the construction, operation and decommissioning of the proposed development. It should be satisfied that: • any such waste will be properly managed, both on-site and off- site; the waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, or is likely to be, available. • such waste arisings should not have an adverse effect on the capacity of existing waste management facilities to deal with other waste arisings in the area; and adequate steps have been taken to minimise the volume of waste arisings, and of the volume of waste arisings sent to disposal, except where that is the best overall environmental outcome.	This is described in **Section 4** of this document.	The OWMP describes procedures for managing hazardous and non-hazardous waste on a construction site which include National Grid corporate procedures for waste management. The SWMP prepared by the main contractor will ensure that waste arisings are minimised and do not have an adverse impact on the capacity of existing waste management facilities to deal with other waste arisings in the area.

NOTE: IPC has been replaced by PINS

3.2 Waste Management Plan for England

3.2.1 The Waste Management Plan for England (WMPE) (**REF 3**) provides an overview of waste management in England and fulfils the mandatory requirement in **Article 28** of the revised Waste Framework Directive for Member States to adopt waste management plans and waste prevention programmes. It includes other required

content as set out in **Schedule 1** to the Waste (England and Wales) Regulations 2011.

3.2.2 Of particular relevance to the proposed development is a draft objective in the WMPE:

- measures to be taken to ensure that by 2020:
  - at least 70% by weight of construction and demolition waste is subjected to material recovery.

3.2.3 This objective has been taken into account in the principles outlined for the management of waste arisings during the construction phase of the proposed development and will be an important objective of the Site Waste Management Plans.

3.2.4 The Waste Review 2011 (**REF 4**) details the main policies which fall under the WMPE umbrella. This is supplemented by other information and policies contained within further documents – in particular, the 'National Planning Policy for Waste' (**REF 5**) which superseded Planning Policy Statement (PPS) 10: Planning for Sustainable Waste Management' on the 16th of October 2014.

3.2.5 A principal commitment in the Waste Review 2011 is to:

"Prioritise efforts to manage waste in line with the waste hierarchy and reduce the carbon impact of waste."

As set out at **Article 4** of the revised Waste Framework Directive (Directive 2008/98/EC)).

3.2.6 This commitment has been taken into account in the principles outlined for the management of waste arisings during the construction phase of the proposed development and will be incorporated into the Site Waste Management Plans.

3.3 Regional and Local Planning Policy

3.3.1 The current regional policy consists of the policies saved after the 27 of September 2007 from the Kent Waste Local Plan (adopted in 1998). Kent County Council's (KCC) Minerals and Waste Local Plan, 2013-2030 has been submitted to the Secretary of State for review and is awaiting approval.

3.3.2 The Local Plans primarily focus upon providing the planning platform to manage the provision of waste facilities in this geographical area. As such, they are not directly relevant to this OWMP.

3.4 Legislation

Revised EU Waste Framework Directive (2008/98/EC)

3.4.1 The revised Waste Framework Directive (2008/98/EC) (WFD) (**REF 6**) provides the overarching legislative framework for the collection, transport, recovery and disposal of waste, and includes a common definition of waste. The aim of the revised WFD is to promote waste prevention, increase recycling and ensure better use of resources, whilst protecting human health and the environment. It

encourages the prevention and reduction of harmful waste by requiring Member States to take appropriate measures to encourage:

- the prevention or reduction of waste production and its harmfulness; and
- the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials, or the use of waste as a source of energy.

3.4.2 The WFD's requirements are supplemented by other directives for specific waste streams.

3.4.3 The WFD considers some wastes to be hazardous waste. A hazardous waste is defined as a waste that has one or more of the fifteen specified hazardous properties listed in Annex III to the WFD.

3.4.4 Waste classification is based on:

- the European List of Waste (LoW) (Commission Decision 2000/532/EC); and
- Annex III to Directive 2008/98/EC.

3.4.5 The LoW serves as a common encoding of waste characteristics in a broad variety of purposes like classification of hazardous wastes. Assignment of waste codes has a major impact on the transport of waste, installation permits (which are usually granted for the processing of specific waste codes), decisions about recyclability of the waste or as a basis for waste statistics.

3.4.6 The LoW will be used to determine the types of waste likely to be produced in the construction (indicative types and quantities are provided at **Section 5** of this OWMP) and the methods of treatment suitable, for example which wastes can be recycled.

Waste (England and Wales) Regulations 2011

3.4.7 The 2011 Waste Regulations (**REF 7**) transpose the WFD into law and resulted in a number of changes to the management of waste. These changes are listed in Environment Agency guidance on the Waste Regulations (**REF 8**) and include:

- Placing greater emphasis on the waste hierarchy to encourage more waste prevention, re-use and recycling. The hierarchy will have to be applied by businesses transferring waste and by environmental permit holders whose operations generate waste. The waste producer has the most important role in this hierarchy.
- Some amendment to obligations under duty of care to take account of the waste hierarchy, such as a declaration on transfer notes and hazardous waste consignment notes.
- Introducing a two-tier carrier and broker registration system, including an obligation on waste producers carrying their own (non-construction/demolition) waste to register by end of 2013, and a new concept of 'dealer'.
- Minor amendments to the assessment of hazardous waste and to the consignment note procedures and record keeping requirements.

- Bringing certain categories of radioactive waste under waste control.

3.4.8 The Waste (England and Wales) (Amendments) Regulations 2012 (**REF 9**) came into force on 1 October 2012. The amended Regulations relate to the separate collection of waste and amend the Waste (England and Wales) Regulations 2011 by replacing regulation 13 (Duties in relation to collection of waste).

3.4.9 The Site Waste Management Regulations 2008 required any project on a construction site with an estimated cost greater than £300,000 to prepare and update a SWMP. These regulations were revoked on 1 December 2013 when the Environmental Noise, Site Waste Management Plans and Spreadable Fats etc. (Revocations and Amendments) Regulations 2013, came into force.

3.4.10 National Grid are committed to still work in the spirit of the requirements of the repealed regulations and will continue to produce SWMPs during the design phase for projects above the previous threshold or where it believes that a SWMP will be of benefit to a project.

Environmental Protection Act (EPA) 1990 (Duty of Care)

3.4.11 **Section 34** of the EPA 1990 (as amended) (**REF 10**) sets out the extent of the 'Duty of Care' owed by any person who imports, produces, carries, keeps, treats or disposes of controlled waste.

3.4.12 As described in the Code of Practice for the Duty of Care for Waste Management, published by the Department for Environment, Food and Rural Affairs (Defra), those subject to duty of care must try to achieve the following:

- to prevent any other person committing the offences of depositing, disposing of or recovering controlled waste without a waste management licence, contrary to the conditions of a licence or in a manner likely to cause environmental pollution or harm to health;
- to prevent the escape of waste, that is, to contain it;
- to ensure that, if the waste is transferred, it goes only to an "authorised person" or to a person for "authorised transport purposes"; and
- when waste is transferred, to make sure that there is also transferred a written description of the waste, a description good enough to enable each person receiving it to avoid committing any of the offences under (a) above and to comply with the duty at (b) above to prevent the escape of waste.

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4. WASTE MANAGEMENT POLICY

4.1 Introduction

4.1.1 National Grid maintains an Environmental Management System (EMS) to provide a framework within which to manage their effects on the environment and support the delivery of best practice. The EMS is certified to the International Standard ISO 14001:2004. Appointed contractors for the proposed development will be contractually obliged to work in accordance with National Grid's EMS, as outlined in **Document 5.4.3(D)** (CEMP).

4.1.2 National Grid recognises that investing in, constructing and operating a safe and reliable electricity infrastructure uses energy and raw materials and produces waste. As a minimum, National Grid will comply with regulations and are committed to reducing the environmental effects of their operations and to seek out opportunities to improve the environment and integrate sustainability into their decision making.

4.1.3 As part of its Environment Policy (**REF 11**), National Grid seeks ways to use resources more efficiently through good design, use of sustainable materials, responsibly refurbishing existing assets, and reducing and recycling waste. National Grid's policy has been prepared in accordance with the waste hierarchy.

4.2 National Grid Waste Management Procedures

Background

4.2.1 National Grid has developed Corporate Procedures for Waste Management as part of their accredited EMS. These documents include mandatory requirements for staff and suppliers.

4.2.2 This OWMP includes requirements from these procedures that are of relevance to the proposed development.

Standards

4.2.3 A set of standard measures will be employed to limit effects on the environment from waste include:

- the consumption of raw materials and waste shall be minimised, through sound design and good practice in procurement ;
- if generated, opportunities for reusing or recycling the waste will be considered prior to disposal via landfill;
- waste materials shall be stored securely on site in order to prevent their escape and protect them against vandalism, vermin or outside interference;
- hazardous waste (e.g. paints, oils, fuel oils) will be segregated on-site to avoid contaminating other material and waste streams;
- storage of waste on site shall either be:

  - within the scope of, and comply with, the requirements of one or more of the activities specified as exempt form Waste Management Licensing; or
  - carried out under an environmental Permit issue by the Environment Agency (EA).

- waste management activities on sites operating under an Environmental Permit will be managed by a nominated technically competent manager;
- all waste disposal contractors carrying waste shall be authorised to do so and all sites that receive the waste shall be authorised to do so;
- a sample of waste disposal routes will be subject to a regular audit to confirm that waste is being disposed of correctly;
- disposal of all waste will be accompanied by the relevant statutory transfer documentation that adequately describes the waste and the documentation will be retained and be readily accessible;
- quantities of waste generated will be recorded and monitored. Records will be kept for a minimum of three years;
- an authorised waste management contractor will deal with the disposal of any fly-tipped materials discovered. Any fly-tipping will be reported as an environmental incident and notified to the local authority and/or EA to enable them to investigate the incident;
- all employees and contractors involved with the handling and managing of waste will have the relevant training and be assessed as competent and training records retained;
- all employees and contractors will have a Duty of Care when controlling the carriage and disposal of waste to ensure it is handled in a responsible manner;
- all waste containers shall be labelled to indicate the types of waste that may be deposited in them;
- all staff and contractors working on the project shall understand which waste should be deposited where, and that they are not allowed to use the facilities for the disposal of domestic waste. This will be delivered by toolbox talks; and
- as best practice National Grid requires that a Site Waste Management Plan shall be produced by main contractor for all projects costing over specified thresholds.

Duty of Care

4.2.4 All wastes produced by National Grid and their contractors are governed by waste management legislation. The producer of the waste is the holder of the waste generated by an activity.

4.2.5 As outlined in **Section 3** of this document, Duty of Care is a legal process designed to control the carriage and disposal of waste to ensure it is handled in a responsible manner from “cradle to grave”.

4.2.6 In line with the Duty of Care requirements, waste produced will be:

- transferred only to an Authorised Person accompanied by a Waste Transfer Note or Hazardous Waste/Special Waste Consignment Note; and
- not able to escape from anyone's control on site or in transit.

4.2.7 An Authorised Person is a Registered Waste Carrier, broker and/or the manager of a legitimate waste management facility, e.g. a waste disposal site.

4.2.8 If a third party employed by National Grid or one of their contractors, arranges waste disposal, and is not the waste producer, the Registered Waste Carrier or the manager of a waste disposal site, then that third party shall be a Registered Waste Broker.

4.2.9 Waste shall not be allowed to leave site unless Duty of Care checks are successfully completed.

4.2.10 Where a contractor is employed to undertake work that produces waste, it is the contractor's responsibility as producer of the waste to carry out the Duty of Care checks outlined above (including Registered Waste Carriers, Registered Waste Brokers, and Environmental Permits/Waste Management Licences for waste disposal sites or proof of exemptions from licensing).

4.2.11 However, National Grid retain a Duty to ensure that waste is managed in a responsible manner; the member of staff employing the contractor shall ensure the contractor has a system of works to ensure that adequate Duty of Care checks are being undertaken and shall carry out periodic checks to ensure the contractor is using only Authorised Persons.

4.2.12 The contractor shall provide evidence of Duty of Care checks that have been undertaken on request.

Non-Hazardous Waste

4.2.13 All non-hazardous waste arising from the work carried out by staff will be accompanied with a Waste Transfer Note when passed to a Registered Waste Carrier for removal from a site.

4.2.14 All Waste Transfer Notes will be signed by a trained site representative. Prior to signing, the trained site representative must check the Waste Transfer Note includes:

- the date(s) to which the Waste Transfer Note applies, this could be up to one year;
- name and address of the waste producer and the site of waste production;
- the type of waste produced including the quantity and how it is packaged;
- the appropriate European Waste Catalogue (EWC) code for the waste;
- the Standard Industry Code (SIC) of the business;
- the name and address of the person who is receiving the waste and details of the permit or exemption of the person receiving the waste;

- registered Waste Carriers shall be checked using the information held on the EA's website;
- a final disposal site that is authorised to accept the waste; and
- a declaration that the waste producer has taken all reasonable measures to apply the waste hierarchy when the waste is transferred.

4.2.15 The site representative signing the Waste Transfer Note will ensure all Waste Transfer Notes are placed in the Site Waste Management File and kept for a minimum period of three years.

Hazardous Waste

4.2.16 As outlined in **Section 3**, the LoW identifies types of hazardous waste. If the waste is not listed, it shall be analysed for hazardous properties prior to disposal to ensure the appropriate method of disposal is arranged.

4.2.17 If a site produces more than 500kg of hazardous waste in a year, the Site Manager shall ensure the site is registered with the Environment Agency.

4.2.18 Hazardous waste will be correctly labelled, shall not be mixed with non-hazardous waste and securely contained preferably on hard standing.

4.2.19 A Hazardous Waste/Special Waste Consignment Note shall be completed for every movement of hazardous waste. Hazardous Waste/Special Waste Consignment Notes will be signed on behalf of National Grid by a trained site representative.

4.2.20 If hazardous waste is being returned to a depot for assessment it will be handled and transported appropriately. A waste carrier's license will also be obtained.

4.2.21 Hazardous Waste Consignment Notes will be placed in the Site Waste Management File and kept for a minimum period of three years.

4.2.22 All waste containers will be clearly labelled.

4.2.23 Materials potentially generating small volumes of hazardous waste such as oily rags, aerosols and dry cell batteries from mobile operations shall be returned to the nearest waste storage site for assessment to determine if the material is waste. Waste materials shall be assessed for their hazardous nature, potential for re-use, recycling or some other form of recovery prior to disposal.

Storage of Waste

4.2.24 Waste may be stored at construction compounds for a limited amount of time to help to limit the number of vehicle movements to and from site as far as possible to minimise effects on the local roads.

- waste will be stored in secure designated areas, in enclosures or containers to prevent material being dispersed by the wind;
- designated areas will be sited at least 8m away from drains and watercourses, or 15m away from navigable watercourses to limit risk of escape and contamination of water courses;

- waste containers will be covered to prevent dust emissions and potential nuisances;
- the burning of any waste is prohibited;
- liquid wastes will be stored in containers within bunded zones with secondary containment of at least 110% capacity of the largest container or at least 25% of the total tank capacity inside the bunded zone (whichever is the greatest); and
- incompatible or hazardous wastes will be stored and handled in accordance with the Hazardous Wastes Regulations.

Site Waste Management Plan

4.2.25 National Grid requires a SWMP to be prepared for construction projects exceeding specified thresholds (e.g. over £300,000 construction costs). As this project exceeds this threshold then a SWMP will be produced by the main contractor.

4.2.26 The SWMP shall record the following information:

- a description of the construction works (for the project component);
- details of any decisions taken before the SWMP was drafted to minimise the quantity of waste produced on site;
- a description of each type of waste expected to be produced in the course of the project;
- an estimate of the quantity of each waste type that will be produced;
- identification of the waste management action proposed for each waste type, including reusing, recycling, recovery and disposal;
- a detailed action plan for the management of the waste, including roles and responsibilities, data collection and reporting procedures;
- details of any site waste storage facilities including the requirements of environmental permits and pollution control measures; and
- a declaration that material will be handled efficiently and waste managed appropriately.

4.2.27 Following the estimate of quantities and identification of waste management methods, an analysis of waste management facilities will be carried out, in accordance with NPS EN-1.

4.2.28 The SWMP will be updated as necessary, (if possible, every month; as a minimum every six months) to give a current picture of how the work is progressing against the waste estimates contained in the plan, this includes recording details of:

- types and quantities of waste produced and a comparison of the estimated quantities of each waste type against the actual quantities of each waste type;
- an explanation of any deviation from the OWMP;

- an estimation of the cost savings that have been achieved by completing and implementing the SWMP;
- the identity of the person removing the waste (including waste carriers registration number);
- all disposal documentation e.g. transfer and consignment notes, marked with the time and date of collection;
- details of the final destination of waste, a description of the waste type and the European Waste Classification (EWC) if appropriate;
- quantitative and qualitative estimate of site waste produced during construction; and
- requirements for reporting under the Hazardous Waste Regulations.

4.2.29 An example SWMP is provided in **Section 7** of this document.

5. WASTE TYPES AND VOLUMES

5.1 Introduction

5.1.1 As outlined in **Section 4**, detailed information will be recorded on types and volumes of wastes produced and removed; methods of treatment, recovery or disposal and associated costs.

5.1.2 This section of the OWMP provides an initial estimate of the likely types and volumes of waste arising as a result of the construction of the proposed development. These will be fully determined during the detailed design stage.

5.2 Waste Types

5.2.1 Broad descriptions of sources and types of waste arisings include:

- construction waste, including materials arising from the construction of the new 400kV overhead line;
- construction waste, including materials arising from the diversion and removal of the UK Power Networks 132kV PY and PX route overhead lines; and
- 'municipal' waste arising from construction worker office and welfare facilities.

5.2.2 Typically waste falls into two main classifications as defined by the Landfill Directive (**REF 12**) and European Council Decision (2003/33/EC) for the purposes of management and disposal (**REF 13**).

- "hazardous waste" means any waste which is covered by Article 1(4) of Council Directive 91/689/EEC of 12 December 1991 on hazardous waste; and
- "non-hazardous waste" means waste which is not covered by 'hazardous waste'.

5.2.3 Non-hazardous waste is further defined as:

- "municipal waste" means waste from households, as well as other waste which, because of its nature or composition, is similar to waste from household; and
- "inert waste" means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.

5.2.4 Only preliminary estimates of potential waste arisings can be provided prior to commencement of the works. More accurate estimates and conclusive figures will be calculated by the contractor(s) before, during, and after construction, and will be presented within the SWMP.

5.2.5 Where possible, waste volumes have been estimated using information from National Grid (pylon design specifications detailing pylon weights to estimate the volume of steel for individual pylon types (PL16, PL1a and PL1b), and conductor type and weight) and by undertaking outline calculations using representative masses for specific materials such as:

- wooden, wire, and steel fencing and gates for working areas and site compounds;
- foundation concrete to be removed from the existing pylon foundations; and
- topsoil, subsoil, and substrate material to be excavated for the new pylon foundations and access roads.

5.2.6 These estimates are summarised in **Table 3D.5.1** below:

Table 3D.5.1: Forecast of Likely Waste Types and Arisings

Proposed Development Component	Waste Type	Estimated Volume (Tonnes)		
Site fencing for construction site compounds	Steel fencing	2.33		
	Wooden post and wire fencing	1.42		
	Wooden fencing	1.26		
	Wooden gates	0.10		
	Steel gates	1.05		
New 400kV pylon foundation construction	Spoil to be removed for new pylon foundations	2606.34		
Access road construction	Spoil to be removed for installation of access roads	33111.34		
Existing Pylon removal	Steel to be removed from existing pylons	416.40		
	Existing pylon foundation concrete to be removed	4256.51		
	Temporary diversion wooden poles	Volume of pole × density = 0.628m^3 × 0.51 tonnes/m^3 = 0.32 tonnes per pole	number of poles = 32	10.24 (0.32 × 32)

Proposed Development Component	Waste Type	Estimated Volume (Tonnes)		
PX Route Conductors (20.6km long)	(Aluminium Conductor Steel Reinforced (ACSR))	144.2 (km of conductor: 7 per span including earthwire (20.6km × 7)	1.04 (Conductor weight in tonnes per km)	149.97 (144.2 × 1.04)
PY Route Conductors (0.8km long)	(Aluminium Conductor Steel Reinforced (ACSR))	5.6 (km of conductor: 7 per span including earthwire (0.8km × 7)	1.04 (Conductor weight in tonnes per km)	5.82 (5.6 × 1.04)
Total:				40562.78

5.2.7 Precise volumes for other waste types arising from development components such as vehicle operation, site offices and welfare facilities, will be calculated by the contractor(s) and presented within the SWMP. An indicative, but not exhaustive list of waste types is provided below:

- excess concrete;
- excess cement;
- paper and cardboard packaging;
- plastic;
- timber;
- glass;
- mixed metals;
- mixed packaging;
- paints;
- oils, fuel oils and lubricants (for vehicle operation and maintenance);
- absorbents and filter materials (spill kits);
- biodegradable waste;
- portable toilet waste; and
- road sweeper waste.

5.3 Sources of Waste

Earthworks

5.3.1 As is shown in **Table 3D.5.1**, approximately 40,007.85 tonnes of material will be produced from soil and other excavated materials including removal of the foundations surrounding the existing pylons. Material from these excavations would include:

- surface vegetation;
- topsoil, subsoil and substrate materials such as sand (depending on local geology) and stones;
- concrete; and
- made ground.

5.3.2 Ground investigation will be undertaken in advance of construction to characterise the chemical (and physical) properties of materials that will be excavated. This will be supported by confirmatory post-excavation testing if necessary. It is anticipated that this process will identify that the majority of excavated material is suitable for retention on-site for re-use as backfill of the access roads, the 132kV removed foundations and landscaping during the construction and operational phases. A Materials Management Plan (MMP) will be prepared by the contractor prior to earthworks commencing to demonstrate that the materials are physically and chemically suitable for re-use, that there is certainty of re-use, and that materials are being re-used in necessary quantities.

5.3.3 Where any of this material is to be 'discarded' as surplus to the materials balance for the proposed development, and therefore come under the definition of waste, it would largely be expected to classify as non-hazardous, inert waste.

5.3.4 Should any soil arisings display contaminant concentrations that make them unsuitable for re-use as excavation backfill or soft landscaping, these would be managed according to the standards outlined in **Section 4.2** of this OWMP and **Section 4.4** of the CEMP, **Document 5.4.3C(D)**. This may include remediation to make soils suitable for re-use within the proposed development (e.g. *in situ* bioremediation of soils containing hydrocarbon contamination) or off-site disposal as waste.

5.3.5 Should any asbestos containing material (ACM) be identified by the pre-construction ground investigation or encountered during construction works, then this will be managed and disposed of in accordance with The Control of Asbestos Regulations, 2012.

Removal of Temporary Access Roads

5.3.6 The temporary granular stone construction access roads will be removed using excavators and taken to agreed storage areas. Care will be taken to remove and store the sub base and capping layers of stone separately. Once stockpiled, a method of disposal or re-use of the materials will be decided upon, following the principles of sustainable waste management and waste minimisation outlined in **Section 6** and in compliance with the appropriate legislation.

5.3.7 All geotextile separator membrane and Tensar Trax Geogrid (or similar) will be disposed of into suitable skips on site.

Removal of Overhead Lines

5.3.8 Another significant proportion of the waste arisings would be as a result of the removal of the UK Power Networks existing 132kV PX route overhead line.

5.3.9 Altogether, 79 132kV steel lattice pylons, of the type PL16, PL1a and PL1b would be removed. Constructed from steel, the pylons are typically 24.2m high and their cross arms are 9.5m across, at the widest point.

5.3.10 Between each of the pylons are conductors and an earthwire made of aluminium and steel. The pylons have three cross arms; single rows of conductors extend from the ends of each cross arm with a single earthwire at the top of the tower to protect the conductors from lightning strikes. This means that each span (distance between pylons) consists of six conductors and one earthwire. The approximate length of the Routes to be removed is 20.6km. The total length of conductor to be removed will be seven times this distance.

5.3.11 Steelwork, including any reinforcing bar (rebar) present in the foundations of the existing pylons, would be cut-up or dismantled on site and then removed to a facility for recycling.

5.3.12 Wooden poles for temporary diversion would be removed on site and then re-utilised by UKPN.

General Waste

5.3.13 Waste produced by welfare facilities associated with the construction of the proposed development would be classified as municipal waste.

5.3.14 The management of other general wastes likely to be produced during the construction phase is described in **Section 7** of this document.

5.4 Construction Programme

5.4.1 For the purposes of this document, it is assumed that construction would commence in Q3 of 2017. The contractors programme will be incorporated in the SWMP and will be used in the analysis of waste management facilities for the construction period.

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6. SUSTAINABLE WASTE MANAGEMENT PRINCIPLES

6.1 Introduction

6.1.1 As described in **Section 3**, the Waste Regulations 2011 impose a duty on all persons who produce, keep or manage waste, to apply the waste hierarchy. Principles and examples of how the principles will be employed are described in the following paragraphs. These principles, with the procedures above, will form the basis of the SWMP.

6.2 Prevent

6.2.1 By reducing resources used, or increasing the efficiency in the use of resources, the amount of waste produced can be reduced. Excessive resources can be used in construction projects as a result of over-ordering, poor on-site waste segregation, a requirement for a high standard of finishing and a lack of space for storage of unused and waste materials.

6.2.2 The SWMP will consider the application of Waste and Recycling Action Plans (WRAP) Technical Solutions for Designing out Waste for Civil Engineering Projects (**REF 14**), to reduce materials use as well as and waste arisings. Both will be monitored as part of the SWMP review process.

6.3 Reuse

6.3.1 One of the principal waste materials generated by the proposed development would be excavated soils and substrate, including from the installation of pylon foundations. Where possible such materials will be re-used on site, for example in the backfilling of the 132kV pylon foundations when they are removed, or to rectify existing depressions in the fields. It is anticipated that soil arisings will generally be suitable for these purposes. Suitability will be confirmed by ground investigation (as described in the CEMP, **Document 5.4.3C(D)**, and documented via a Materials Management Plan (MMP).

6.3.2 During the construction phase, working areas would be set out and temporary access roads constructed. This would involve stripping vegetation and topsoil for some of these areas. surface vegetation, topsoil and subsoils will be stored separately for re-use and handled in accordance with the Defra guidance ‘Construction Code of Practice for the Sustainable Use of Soils on Construction Sites’. A Method Statement for topsoil stripping will be prepared by the Contractor to describe the method for removing and reinstating topsoil for works such as the access roads and pylon foundations of the proposed development.

6.3.3 Soil management (including topsoil) will be carried out in accordance with the Soil and Aftercare Management Plan.

6.3.4 In the event that soils are encountered during excavation that display contaminant levels that prevent their direct re-use, these will be segregated on site either for on-site treatment (and subsequent re-use) or for disposal off site to an appropriate treatment facility or authorised landfill.

6.4 Recycle

6.4.1 The treatment of recyclable waste materials from the proposed development will be undertaken off-site at an appropriate facility. Waste materials would be recovered and sorted on site for transportation and taken from site to the recycling facility. Material will be stored for short periods on site in secure designated places in the identified construction working areas until taken away for recycling.

6.4.2 The principal recyclable waste produced by the proposed development would be steel and aluminium from the removal of existing overhead lines. Steel and aluminium are recyclable with a high degree of efficiency.

6.4.3 The granular stone access road, which will be constructed using virgin aggregates, will be taken to an appropriate facility for recycling, for onward use, for example as secondary aggregate in the construction industry.

6.4.4 Other recyclable general construction waste may be produced, such as wood, plastics and cardboard packaging. These will be segregated and stored for short periods on site in secure designated areas prior to removal from site to a recycling facility.

6.5 Recover

6.5.1 Stripped vegetation (except where this is identified for retention and re-use for reasons such as special botanical interest) and general food waste will be taken to a composting or anaerobic digestion plant.

6.6 Disposal

6.6.1 The disposal of waste from the proposed development to landfill will be regarded as a last resort. All other options, a described above, will be considered prior to considering disposing of waste to landfill. If required, disposal will be undertaken in a safe and responsible manner ensuring that all waste carriers and management facilities are appropriately licensed, in accordance with the procedures outlined in **Section 4** of this document and National Grid's EMS, outlined in **Volume 5, Document 5.4.3C(D)**.

7. EXAMPLE SITE WASTE MANAGEMENT PLAN

7.1.1 Responsibility

Name of Client	
Name of Principle Contractor	
Name of Person Who Drafted Plan	
Notes / Amendments	

7.1.2 Construction Project

Location (Address, postcode if appropriate)	
Estimated Project Cost	
Notes / Amendments	

7.1.3 Materials Resource Efficiency

Describe here any methods adopted during the conception, design and specification phase to reduce the amount of waste arising.

Method	Resource Saving (quantify if possible)

7.1.4 Waste Management

Declaration

The client and principal contractor will take all reasonable steps to ensure that-
(a) All waste from the site 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
(b) Materials will be handled efficiently and waste managed appropriately.

Signatures

Representing Client	**Representing Principal Contractor**

7.1.5 Waste Data

Waste Type	Quantity (Tonnes)							
	Re-use on site	Re-use off site	Recycling on site	Recycling off site	Other form of recovery on site	Other form of recovery off site	Sent to landfill	Other disposal
Estimates								
Inert								
Non-hazardous								
Hazardous								
Totals								
Actual								

Waste Type	Quantity (Tonnes)							
	Re-use on site	Re-use off site	Recycling on site	Recycling off site	Other form of recovery on site	Other form of recovery off site	Sent to landfill	Other disposal
Inert								
Non-hazardous								
Hazardous								
Totals								
Difference Between Estimates and Actual								

Figure in RED indicates actual waste disposed was higher than estimate
Figure in BLUE indicates actual waste disposed was lower than estimate

8. REFERENCES

REF 1 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69404/pb1352 9-waste-hierarchy-summary.pdf
REF 2 DECC, Overarching National Policy Statement for Energy (EN-1), 2011
REF 3 DEFRA, The Waste Management Plan for England, 2013
REF 4 https://www.gov.uk/government/publications/government-review-of-waste-policy-in- england-2011
REF 5 https://www.gov.uk/government/publications/national-planning-policy-for-waste
REF 6 Directive 2008/98/EC on waste 'The Waste Framework Directive'
REF 7 The Waste (England and Wales) Regulations 2011
REF 8 The Waste Regulations (web page: https://www.gov.uk/managing-your-waste-an-overview)
REF 9 The Waste Regulations (England and Wales) (Amendments) 2012
REF 10 Environmental Protection Act 1990
REF 11 National Grid, Environmental Policy
REF 12 Council Directive 1999/31/EC of 26 April 1999 on the Landfill of waste – 'The Landfill Directive'
REF 13 Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC (2003/33/EC)
REF 14 WRAP, Designing Out Waste: A Design Team Guide for Civil engineering, Part 2: Technical Solutions