

WASTE RECOVERY PLAN - AYLESBURY EMBANKMENT

Application for a Deposit for Recovery Permit

JER9490

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Prepared by:

RPS

Kingston, Alex
Consultant

20 Farringdon Street
London EC4A 4AB

T +44 (0)20 3691 0500
E alex.kingston@tetrattech.com

Prepared for:

EKFB Joint Venture

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1 INTRODUCTION

- 1.1.1 This document constitutes the Waste Recovery Plan (WRP) in support of an application for an environmental permit for a waste recovery activity allowing the permanent deposit of waste on land.
- 1.1.2 The WRP covers the deposit of waste in constructing a landscape and visual bund (landscape bund) at Aylesbury Embankment to mitigate impacts associated with the HS2 rail line development. The landscape bund at Aylesbury Embankment provides for noise and visual mitigation from the operational railway line, which at this point requires an acoustic barrier 5 m in height (from the top of rail), as set out in the Acoustic Mitigation Design Report and the Landscape and Visual Impact Assessment, Appendix G.
- 1.1.3 The site setting encompasses the landscape character areas of Stoke Mandeville Vale, Haddenham Vale and Hartwell House and Golf Course. To the south, the chalk escarpment of the Chilterns AONB is present in the backdrop of views and contributes to the wider landscape setting. The landscape is largely pastoral with a general high level of tranquillity.
- 1.1.4 The landscape value is in part attributable to a public rights of way network which includes the Aylesbury Ring, the Round Aylesbury Walk, and the Midshires Way in the vicinity of the Aylesbury Embankment.
- 1.1.5 The landscape bund has been sized to achieve acceptable impacts at the affected receptors.
- 1.1.6 Without mitigation, the proposed scheme will have a long-term effect on landscape condition and visual receptors. The proposed landscape bund and subsequent planting will help to integrate the scheme into the landscape and views.

1.2 Background

- 1.2.1 Phase One of HS2 is Britain's new high speed rail line being built from London to Birmingham.
- 1.2.2 The route of the rail line will intercept some historic landfill sites, including the historic Hartwell Brickworks Landfill, which will require partial or complete excavation and removal of the deposited waste. As part of the required mitigation for the scheme a number of landscape bunds need to be formed, including the landscape bund at the Aylesbury Embankment section of the development. It is proposed that suitable waste excavated from the Hartwell landfill site will be used to form part of the landscape bund. An application for a bespoke deposit for recovery permit is being made for this activity.
- 1.2.3 The landscape bund at Aylesbury Embankment is required to mitigate against landscape and visual impacts generated by HS2 during operation and to also assist with noise screening. This is further discussed in section 3.6.

1.3 The Applicant

- 1.3.1 The applicant and operator is the joint venture between Eiffage, Kier, Ferrovial and BAM (EKFB JV).

1.4 Pre-application Discussions

- 1.4.1 Initially the intent was to reuse the suitable wastes under a Material Management Plan (MMP) following treatment via a Mobile Plant Licence and approved Deployment Form. However, the Environment Agency (EA) has confirmed that they are no-longer accepting

the reuse of such treated wastes originating from certain former historic landfill sites under an MMP.

- 1.4.2 Basic pre-application advice was sought, and a conservation screening report received relating to the proposed area of waste use (reference EPR/LB3502LZ).
- 1.4.3 Further discussions then took place with the EA with regard to permitting the waste recovery activity and the obligation in this Waste Recovery Plan.
- 1.4.4 During the course of these pre application discussions with the EA it was agreed that the waste code that reflected the waste type is European Waste Code (EWC) designation of 19 12 12. The presence of fines within the waste material meant that a Standard Rules 2015 No39 permit was not applicable. Furthermore, the use of waste with the EWC designation 19 12 12 within the SR permit is restricted to crushed bricks, tiles, concrete and ceramics only. This Waste Recovery Plan will, therefore, support the application for a bespoke environmental permit.

1.5 Structure of the Waste Recovery Plan

- 1.5.1 This section provides an overview of the proposals. This is supplemented by further details in Sections 2 – 5 as follows:
 - Section 2 gives a description of the site,
 - Section 3 demonstrates why this is a recovery activity,
 - Section 4 details the suitability of the waste to be used for the recovery activity,
 - Section 5 summarises the conclusions of the waste recovery plan.

2 SITE DESCRIPTION

2.1 Site Location

- 2.1.1 The deposition of waste within the landscape bund subject to this WRP is located at the Aylesbury Embankment site, Land to the south of A418 Oxford Road, Aylesbury, HP21 9NS, between chainage 61+000 and 62+000 and is centred at National Grid Reference SP 80544 12017. Site plans can be found in Appendix A.
- 2.1.2 The conservation screening report obtained from the EA indicates that there is a protected species 'Code 2' which refers to [REDACTED] as confirmed by the Biodiversity Technical Specialist in the Environment Agency Thames Area team.
- 2.1.3 The conservation screening report obtained from the EA indicates that there is a deciduous woodland protected habitat within the screening distance of 500m of the site. The closest human receptors are properties off Ellen Road, Aylesbury, approximately 450m northeast of the site.
- 2.1.4 Relevant viewpoints described in the Landscape and Visual Assessment (Appendix G) are:
- 116.3.001: View south-west from the Round Aylesbury Walk PRow (Footpath SMA/16), Southcourt,
 - 118.3.002: View west from the Round Aylesbury Walk PRow (Footpath SBH/27), Southcourt,
 - 119.2.001: View east from dwellings on Mayflower Close, Hartwell,
- 2.1.5 The British Geological Society Geology Viewer¹ describes the geology at the site as follows:
- The bedrock geology at the site is formed of Portland Sand Formation - Mudstone and Limestone, Interbedded.
 - No superficial geology is reported at the site.
- 2.1.6 The Aylesbury Embankment landscape bund is not within a Groundwater Source Protection Zone.
- 2.1.7 The bedrock underlying the site is classified as a secondary bedrock aquifer of high vulnerability.
- 2.1.8 There is no active groundwater or surface water abstraction within 2km of the site.
- 2.1.9 The nearest watercourse is an unnamed stream or dyke, approximately 93m east of the boundary of the site. Stoke Brook, 445m East of the site is a Water Framework Directive surface water body.
- 2.1.10 The EA flood risk maps² have been consulted and it is shown that the areas of the site to be used for the waste recovery activity are located in flood zone 1. This means it has a low probability of flooding from rivers and the sea.

¹ [BGS Geology Viewer \(BETA\)](#)

² [Flood map for planning - GOV.UK \(flood-map-for-planning.service.gov.uk\)](#)

2.2 Site History

- 2.2.1 Historical maps indicate that no development of the land has taken place since the earliest available map, dated 1877. The site appears to have been in agricultural use since that time.
- 2.2.2 The closest historical land use identified is the former brickworks, 236m north of the site, from the site of which, the material to be deposited is to be excavated.

2.3 Proposed Development

- 2.3.1 The Aylesbury Embankment site is being developed as part of the HS2 rail scheme.
- 2.3.2 The landscape bund at the Aylesbury Embankment site is required to mitigate landscape and visual impacts generated by HS2 and to provide noise mitigation measures. The landscape bund will be developed in accordance with the approved plans and will be constructed in accordance with the Environmental Memorandum, Environmental Minimum Requirements (Appendix B) and Code of Construction Practice Environmental Minimum Requirements (Appendix C) (see section 3 below). EKFB is required to comply with these Environmental Minimum Requirements set out within High-Speed Rail (London-West Midlands) Environmental Minimum Requirements Annex 1: Code of Construction Practice.
- 2.3.3 An example of a typical section of the railway with a landscape bund is shown in Appendix A. Please note this is not necessarily representative of the railway or the landscape bund at Aylesbury Embankment but can be used to understand how they interact.

2.4 Planning Permission

- 2.4.1 The High-Speed Rail (London - West Midlands) Act 2017 [the Act]³ provides the powers to construct, operate and maintain Phase One of HS2 and make necessary changes to existing legislation to facilitate the project.
- 2.4.2 The Aylesbury Embankment and its associated mitigation including the landscape bund is an integral design feature linked to the HS2 rail development.

2.5 Site Remediation

- 2.5.1 There is no requirement for any site remediation prior to the construction of Aylesbury Embankment landscape bund.

³ [High Speed Rail \(London - West Midlands\) Act 2017 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2017/12/section/1)

3 DEMONSTRATION OF RECOVERY

3.1 Overview

- 3.1.1 This section details the evidence to demonstrate that the waste deposit is a recovery activity. It further demonstrates that the works could and would otherwise be carried out using non-waste material and that the principles detailed in the EA guidance for waste recovery⁴ will be followed.
- 3.1.2 The waste to be used is from a single source. It will be excavated from the Hartwell Brickworks landfill site and physically screened prior to its proposed use in the area of the deposit for recovery activity. The physical treatment will be undertaken under a separate mobile plant treatment permit. The treatment of the waste takes place off site at the Hartwell Brickworks landfill site prior to being delivered to the site. The remaining treated waste will be sampled and analysed to demonstrate that it meets set chemical and geotechnical parameters.
- 3.1.3 Unsuitable wastes will be segregated from the material to be used under the WRP at source. Should any non-conforming waste be delivered to the Aylesbury Embankment site it will be quarantined until it can be taken off site either for further treatment or disposal at an appropriately authorised site.

3.2 Purpose of the Work

- 3.2.1 The site is being developed for the HS2 scheme which will link London to Birmingham. To develop the scheme a number of railway embankments alongside the HS2 line are required to be constructed, the waste will be used in the landscape bund at Aylesbury Embankment.
- 3.2.2 The purpose of the landscape bund at Aylesbury Embankment is part of the mitigation strategy associated with the HS2 project.
- 3.2.3 It is relevant to note that as part of the scheme crosses the Hartwell Brickworks landfill site there is a need to excavate material from a specified area of the former landfill site. It is proposed to use processed suitable wastes from the Hartwell Brickworks landfill site as part of the material to construct the landscape bund.
- 3.2.4 The landscape bund will be constructed of circa 1% of the suitably treated waste and circa 99% of non-waste material, i.e., 5,000m³ recovered waste out of a total of c526,500m³ material to be used in the embankment.

3.3 Type and Volumes of Waste

- 3.3.1 The total volume of waste to be deposited in the formation of the landscape bund is 5,000m³.
- 3.3.2 The waste to be recovered at Hartwell within the landscape bund has been excavated from the Hartwell Brickworks landfill site and will be physically screened/ treated at the excavation site prior to transport to the proposed use in forming a landscape bund. The waste types to be accepted and recovered in constructing the landscape bund will be limited to treated non-hazardous wastes from this single source.

⁴ <https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-recovery-plans-and-deposit-for-recovery-permits>

- 3.3.3 The Waste Classification Report (Appendix D) produced prior to excavation and treatment identified that some wastes from Hartwell Brickworks landfill to be used at the site are hazardous by virtue of containing zinc compounds.
- 3.3.4 The waste will undergo mechanical treatment at Hartwell Brickworks landfill and will be subject to post-treatment waste classification testing to ensure only non-hazardous material is exported to the Aylesbury Embankment site. The waste will be categorised as a Chapter 19 code.
- 3.3.5 The waste type to be used according to its European Waste Catalogue (EWC) code is detailed in Table 3.1 below:

Table 3.1: Waste Types

Waste Code	Description of the Waste
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11

3.4 Evidence the Waste is Serving a Useful Purpose.

- 3.4.1 The waste recovery plan guidance requires that consideration must be given to whether a waste is suitable in principle for the proposed use. Within the EA Guidance, 'Check if your waste is suitable for deposit for recovery' (Updated 31 October 2022), waste code 17 05 04 has an acceptable use for landscaping associated within construction work and general fill material which meets the use of this operation. The waste as dug prior to processing is classified as 17 05 04, however, after processing it is classified as 19 12 12. Although the waste code accepted at the site is 19 12 12 the properties are similar to that of 17 05 04 and therefore it is considered suitable for use for the same purpose. 19 12 12 is deemed as similar as only simple screening has resulted in the waste being classified as chapter 19 and not 17.
- 3.4.2 The HS2 Specification for Engineering Works (SCEW) Series 0600: Earthworks, Document Number: HS2-HS2-CV-SPE-000-010600 presents, in clause 619, part of the Specification for Civil Engineering Works (Appendix E).
- 3.4.3 As described in the SCEW the treated waste from Hartwell Brickworks landfill is anticipated to be a combination of Class 2 and Class 4 materials, specifically falling under the following fill classes: 2A, 2B, 2C, 2D and 4.
- 3.4.4 Class 2 materials can be used for general cohesive fill. Class 4 materials can be used for landscape fill. The waste being excavated from Hartwell Brickworks landfill will be subject to testing prior to use which will determine if it will be Class 2 or Class 4. Class 2 and Class 4 materials will have slightly different uses and therefore will be used in different locations within the bund.
- 3.4.5 After testing, the classes of waste material will be determined and the waste will be placed appropriately, according to the use for which it is approved.

3.5 Design and Construction

- 3.5.1 The waste material, making up approximately 1% of the landscape bund, will be placed in layers of 100mm – 200mm thick and rolled in position.
- 3.5.2 Non-waste will be used in the construction of the remainder of the landscape bund under an MMP.

3.6 Obligations to Complete the Scheme

- 3.6.1 The justification to support the recovery of waste is being made on the basis of an obligation to carry out the scheme. Evidence to support this obligation is set out below.

High Speed Rail (London – West Midlands) Act 2017

- 3.6.2 As stated in section 2.4, the High Speed Rail (London - West Midlands) Act 2017 provides the powers to construct, operate and maintain Phase One of HS2.
- 3.6.3 The High-Speed Rail Act grants deemed planning permission for HS2 Phase One of the route.
- 3.6.4 The plans associated with the construction of the landscape bund are included in Appendix A.
- 3.6.5 The above plans show the extent of the Aylesbury Embankment landscape bund and therefore establishes a requirement for material to form the landscape bund. The plans also show the embankment at Aylesbury upon which the railway track is being built, thus creating the need to screen the railway visually as well as acoustically at Aylesbury Embankment.
- 3.6.6 This WRP relies on the obligation to carry out the specified works and the deemed planning permission granted under the High-Speed Rail (London - West Midlands) Act 2017.

High Speed Rail (London-West Midland) – Environmental Minimum Requirements – General Principles

- 3.6.7 The High Speed Two (HS2) Phase One Environmental Statement (ES) was published in November 2013. A number of additional volumes have supplemented the ES as additional information has become available and due to proposed changes. The ES defines and explains the relevant minimum requirements, which are referred to as the 'Environmental Minimum Requirements' (EMR). The EMRs and the HS2 Act and the Undertakings given by the Secretary of State, will ensure that impacts assessed in the ES will not be exceeded. Hence those requirements that relate to Aylesbury Embankment are specific obligations that must be complied with.
- 3.6.8 Section 1.1.1 states "It is the intention of the Secretary of State to carry out the project so that its impact is as assessed in the ES. The Secretary of State will require the nominated undertaker to adhere to the arrangements provided for in the Environmental Minimum Requirements (EMRs) in designing and constructing the Phase One of High Speed Two Works."
- 3.6.9 Section 1.1.4 of the EMR goes on to state, "*Any nominated undertaker will be contractually bound to comply with the controls set out in the EMRs and as may be developed during the passage of the Act through Parliament.*"
- 3.6.10 The EMR specifically mentions "*obligations*" with regard to the proposed construction in Section 1.1.5 in that "*The nominated undertaker will in any event, and apart from the controls and obligations referred to in paragraph 1.1.3, use reasonable endeavours to adopt mitigation measures that will further reduce any adverse environmental impacts caused by Phase One of HS2, insofar as these mitigation measures do not add unreasonable costs to the project or unreasonable delays to the construction programme.*" This specifically applies to the landscape bund at Aylesbury Embankment.
- 3.6.11 The High-Speed Rail (London-West Midlands) EMR Annex 4 identify principles by which future environmental decisions on Phase One of HS2 will be taken. This includes requirements for re-use of excavated materials and waste management.

Re-use of Excavated Materials

- 3.6.12 Section 4.12 of Annex 4 of the EMR states that the “*The nominated undertaker will utilise excavated materials in the construction of Phase One of HS2 [which includes the Aylesbury Embankment and its associated mitigation such as landscaping bunds] where feasible and reasonably practicable, in accordance with the Contaminated Land: Applications in Real Environments (CL: AIRE) 1 Definition of Waste: Development Industry Code of Practice*”.
- 3.6.13 In this instance, because the recovered waste is from a former historic landfill, the waste cannot be reused under CL: AIRE because of the EA’s changed position (unpublished). However, this WRP seeks to alternatively meet the intent of this requirement via re-use under a deposit for recovery permit. At the time of the passage of the Bill and subsequent Act through the Houses of Parliament the draftspersons were of the view that the DoWCoP would apply to the reuse of such treated wastes.
- 3.6.14 The EMR also discourages the deposit of this material in landfill through stating that “*Where it is not feasible or reasonably practicable to use excavated materials in the construction the nominated undertaker will minimise the quantity of excavated materials that are disposed of to landfill. This may include providing surplus materials for use in other construction projects including environmental improvement projects.*” (Section 4.12.2).
- 3.6.15 This section also states that “*Where the off-site transport of surplus excavated material would result in significant environmental effects sustainable placement may be used. Where sustainable placement is to be undertaken this will be permitted in line with the Environmental Permitting Regulations (England and Wales) 2016 and approval may be required in accordance with Schedule 17 Planning Conditions Schedule of the HS2 High Speed Rail (London - West Midlands) Act 2017*”.
- 3.6.16 This section of Annex 4 clearly identifies that there is an obligation for EKFB to utilise excavated materials as well as minimising the quantity of excavated materials deposited at landfill. The approved plans for the landscape bund at Aylesbury Embankment set out where materials are required during construction providing a mechanism for delivery of this obligation i.e., the approved plans listed above and the need for the landscaping bund.

Waste Management

- 3.6.17 Furthermore, section 4.13 of Annex 4 of the EMR states that “*All waste generated from the design, construction and operation of Phase One of HS2 will be managed in accordance with the waste hierarchy as described in the Government Review of Waste Policy in England 2011*”.
- 3.6.18 The waste hierarchy sets out the preferred approach to the management of waste from waste prevention, to reuse, recycling, energy recovery and landfill. It supports the need to achieve efficient use of material resources, minimise the amount of waste produced (or otherwise increase its value as a resource) and reduce, as far as possible, the amount of waste that is disposed to landfill, in keeping with the HS2 Sustainability Policy. More information is available in Information Paper E3: Excavated material and waste management (Appendix F).
- 3.6.19 This paper outlines the approach for managing excavated material and waste that will arise from the construction of the Proposed Scheme. This is addressed under the Waste and Material Resources topic of the ES written in support of the hybrid Bill.

HS2 Phase One Environmental Statement, published 25 November 2013

- 3.6.20 The ES accompanies the Hybrid Bill for Phase One of the HS2. The ES sets out the proposed scheme and its likely significant environmental effects. The ES is produced in accordance with the Environmental Impact Assessment (EIA) Directive (92/2011/EU).
- 3.6.21 Operational noise effects from the Aylesbury Embankment section, were considered within the London-West Midlands Environmental Statement. Volume 2, Community Area Forum Report, CFA11 – Stoke Mandeville and Aylesbury (Appendix G) sets out the existing and future noise baseline.
- 3.6.22 This report identified that the existing baseline sound environment for this area is varied, reflecting the mixture of small towns, villages, hamlets, and isolated properties in a largely rural setting.
- 3.6.23 Measures that have been incorporated into the design of the Proposed Scheme to attenuate noise from the railway include embankment and cuttings.
- 3.6.24 The operational assessment, in Volume 2, Table 15 of the ES, forecasts the following significant effects of noise from the Aylesbury Embankment:
- “Approximately 130 dwellings on the southwestern edge of Aylesbury in the vicinity of Isis Close, Deverill Road, Oat Close and the corner of Anton Way including shared open areas behind Isis and Oat Close. Forecast increases in sound from the railway are likely to cause a moderate adverse effect on the acoustic character of the area around the closest properties, reducing with distance away from the Proposed Scheme. The effect on the acoustic character of residential areas on the corner of Anton Way that are located further from the railway would be a minor effect.”
 - “Approximately 10 dwellings in the vicinity of Sedrup Lane. Forecast increases in sound from the railway are likely to cause a moderate adverse effect on the acoustic character of the area around the closest properties, reducing with distance away from the Proposed Scheme.”
- 3.6.25 Therefore, to reduce significant noise effects from the HS2 scheme, 5m high noise barriers are to be installed at Aylesbury Embankment to protect the amenity of residents affected by increased noise from the railway.
- 3.6.26 The landscape and visual assessment (section 9.5.2 of the CFA 11 report) states that *“where it is considered that a noise fence barrier will create a visual impact on neighbouring residential properties a landscape bund will be provided where reasonably practicable”*. The landscape bund will be provided to visually screen the noise barrier.
- 3.6.27 The EKFB design team have confirmed that planting will take place on top of the landscape bund. The planting supports keeping the size of the landscape bund and, therefore, the amount of waste in the landscape bund, to a minimum (notwithstanding the volume of waste only represents 1% of the total volume required for the bund construction).
- 3.6.28 Furthermore, the HS2 Context Report, prepared for Aylesbury Vale District Council states that “screen planting will be incorporated into the design along new embankments or cuttings in order to provide a combination of landscape integration, visual screening, and or ecological habitat connectivity”.
- 3.6.29 The London to West Midland Environmental Statement Volume 2, CFA11, outlines in paragraphs 2.6.62 to 2.6.66, the alternative options considered to cross the floodplain between Aylesbury and Sedrup. Two options were considered:
- Option A: a low viaduct to cross the floodplain.

- Option B: embankments with culverts to allow gravitational flow of watercourses across the proposed scheme.
- 3.6.30 Of the two options, option B, the proposed option, has the least visual impact. This further strengthens the case for an embankment and the recovery of waste to minimise the use of virgin material in its construction.
- 3.6.31 The Acoustic Mitigation Design Report, Wendover Green Tunnel N Portal to Aylesbury North Cutting, (1MC06-CEK-EV-REP-CS03-000002), included within Appendix G, recommends an acoustic mitigation solution based on an evaluation of the whole-life costs and benefits of five noise barrier options. The recommended design is option 5 – an absorptive acoustic fence 5m above top of rail.

Code of Construction Practice

- 3.6.32 A Code of Construction Practice (CoCP) is in place for HS2 works (Appendix C). The CoCP contains control measures and the standards to be implemented throughout Phase One of HS2. The CoCP forms a component of the HS2 Environmental Minimum Requirements (EMRs). As stated above, this is an obligation flowing from the Secretary of State / Government.
- 3.6.33 Section 3.1.9 states *“the nominated undertaker shall adopt and implement the CoCP, which is set out in Annex 1 and shall develop and implement the Local Environmental Management Plans”*.
- 3.6.34 The CoCP will be implemented during the planning and undertaking of construction works. The provisions of the CoCP will be imposed by the nominated undertaker on the lead contractors by means of the works contracts.
- 3.6.35 Section 15 (Waste and Materials) of the CoCP states that *“The principal objectives of sustainable resource and waste management are to use material resources more efficiently, reduce waste at source and reduce the quantity of waste that requires final disposal to landfill in accordance with the waste hierarchy.”*
- 3.6.36 The measures to reduce potential impacts from waste are as follows:
- “All waste will be managed in accordance with the waste hierarchy (i.e., prevention, preparing for re-use, recycling, other recovery and disposal as set out in the Waste (England and Wales) Regulations 2011) and in such a way as to prevent harm to human health, amenity and the environment. Waste management measures will be prepared that facilitate the re-use and recovery of excavated material and diversion of waste from landfill in line with the waste hierarchy.*
- Excavated material that is uncontaminated (or can be remediated to a suitable standard and can be used for site engineering and restoration purposes) will be managed in accordance with the controls specified by the CL:AIRE Definition of Waste: Development Industry Code of Practice or in accordance with an appropriate environmental permit or exemption from permitting.”*
- 3.6.37 The proposed development is required to achieve the following requirements relevant to this operation, as set out in Section 12, landscape and visual, of Annex 1: Code of Construction Practice of the Environmental Minimum Requirements, to protect the landscape and visual amenity:
- Re-usable excavated material will be handled in an appropriate manner to ensure it is of sufficient quality to be used for either structural embankments, environmental mitigation earthworks or agreed third-party use.
- 3.6.38 Furthermore, section 4.6.2 of the Environment Minimum Requirements Annex 4: Environmental Memorandum states that the nominated undertaker “will design the

landscape and external spaces in line with the principles and promoter's requirements as set out in HS2 Information Paper D1: Design Policy. In particular, DfT⁵ and the nominated undertaker will seek to ensure that:

- the design of all landscape and external spaces will be safe, efficient, and meet the requirements of whole-life operation and maintenance alongside initial buildability,
- the design of all landscape and external spaces will contribute to the government's pursuit of sustainable development, as set out in the National Planning Policy Framework, which involves seeking positive improvements in the quality of the built, natural, and historic environment, as well as in people's quality of life,
- the design of all landscape and external spaces will limit adverse environmental and visual impacts during design construction and operation.

3.7 Conclusions

- 3.7.1 The landscape bund at Aylesbury Embankment is to be constructed to mitigate against the landscape and visual impacts generated by the railway and the noise barriers.
- 3.7.2 There is an obligation to undertake the scheme as detailed in the High-Speed Rail (London - West Midlands) Act and this is detailed as a key national infrastructure by the UK government.
- 3.7.3 The HS2 Act provides the powers to construct Phase One of HS2 and grant development consent. The Act requires further approval for elements of the detailed design and construction which are subject to approval in accordance with Schedule 17 of the Act by the Local Planning Authority.
- 3.7.4 There is a requirement for material to be used in the construction of the landscape bund at Aylesbury Embankment. The waste forms a small part of the overall construction of the landscape bund (waste deposited within the bund represents less than 1% of the total volume of material required).
- 3.7.5 Minimum quantities of waste are being used for the scheme and only waste generated at Hartwell Brickworks Landfill, from the scheme itself, is to be used. No waste will be imported other than that which is generated by the HS2 construction scheme. The vast majority of the material used to form Aylesbury Embankment is non-waste.
- 3.7.6 The HS2 Phase One ES defines EMRs for the works associated with HS2. There are two sections of the ES which are related to this Waste Recovery Plan. As previously stated, section 4.12 of Annex 4 of the ES requires that excavated materials are utilised and that the deposit of material in landfill are discouraged. This section of Annex 4 clearly identifies that there is an obligation for EKFB to preferentially utilise excavated materials as well as minimising the quantity of excavated materials deposited at landfill.
- 3.7.7 It is also worth reiterating the statement within the EMR that *"It is the intention of the Secretary of State to carry out the project so that its impact is as assessed in the ES. The Secretary of State will require the nominated undertaker to adhere to the arrangements provided for in the Environmental Minimum Requirements (EMRs) in designing and constructing the Phase One of High Speed Two Works."* Hence the EMR are an obligation from the Secretary of State. Section 3.1.9 states *"The nominated undertaker shall adopt and implement the CoCP, which is set out in Annex 1 and shall develop and implement the Local Environmental Management Plans."* Therefore, compliance with the CoCP, as it applies to the Aylesbury Embankment, is mandatory.

⁵ The Department for Transport

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- 3.7.8 Section 4.13 of the ES requires that all waste generated from the construction of HS2 is managed in accordance with the waste hierarchy. The recovery of waste is higher up the waste hierarchy than disposal at landfill, which supports the deposition for recovery of waste within the scheme.
- 3.7.9 The above demonstrates that there is both a requirement for material to reach the approved levels in the plans and an obligation to recover waste material within the works.
- 3.7.10 As the scheme will generate waste as part of the construction, it is sensible to utilise this waste material, where appropriate, in the scheme under a waste recovery permit.
- 3.7.11 There is a requirement for the landscape bund at Aylesbury Embankment. It will be constructed if wastes are not utilised.

4 EVIDENCE OF SUITABILITY OF THE WASTE

4.1 Overview

- 4.1.1 All the material to be used in preparing the landscape bund will be generated from construction of the HS2 scheme itself. Only waste materials which are suitable for the intended purpose will be used in the construction of the landscape bund.
- 4.1.2 The waste materials to be used in the development of the site are shown in Table 3.1 above.
- 4.1.3 No additional waste materials from off-site are proposed, therefore, the risk of contaminated materials being incorporated in the development are low, as all materials used have undergone screening and assessment.
- 4.1.4 The waste has been through testing to demonstrate suitability, further details are provided in sections 4.2 and 4.3 below.

4.2 Physical Properties

- 4.2.1 The physical properties of wastes to be recovered in the landscape bund is detailed within the Specification for Civil Engineering Works (SCEW) Series 600 in Appendix E. Two classes of materials have been identified and based on their gradings and other properties, classify as follows:
 - Class 2 – General cohesive fill
 - Class 4 – Landscape fill
- 4.2.2 Testing will be undertaken prior to material being removed from the Hartwell Brickworks Landfill site. Only materials that meet the specification post testing will be used. The tests to take place are detailed within the Specification for Civil Engineering Works (SCEW) report included in Appendix E.
- 4.2.3 The remediated material from Hartwell Brickworks Landfill will be used as a portion of the fill within the landscape bund.
- 4.2.4 The actual fill class is determined by:
 - the zone of the bund that the fill is used, which requires different geotechnical properties.
 - Zone 1 - slopes facing the high-speed railway – 2A3, 2B3, 2C3, 2D3.
 - Zone 2 – landscape core fill – 2A4, 2B4, 2C4, 2D4
 - Class 4 – slopes facing away from high-speed railway – 4A1, 4A2.
- 4.2.5 Zone 1 has the most onerous geotechnical requirements with Class 4 having the least onerous. The difference in fill classes is based on moisture content, grading and effective stress parameters, which govern compaction characteristics and slope stability. See the Typical Cross Section diagram provided in Appendix A.

4.3 Chemical Properties

- 4.3.1 The classification report in Appendix D demonstrates that materials excavated from Hartwell Brickworks Landfill have been fully characterised using the HazWasteOnline software. Some hazardous material was identified in the landfill in the form of zinc compounds. This will be screened out and the material to be used in the formation of the landscape bund will be tested to ensure that the material to be deposited is classified as non-hazardous waste (19 12 12 in the List of Waste).

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- 4.3.2 Samples were taken from 19 locations on Hartwell Brickworks Landfill and were characterised by their chemical composition using the HazWasteOnline software. Of the 19 samples taken, four were classified as hazardous waste due to the presence of zinc compounds, although the precise form of zinc was not established and therefore it was assumed to be in its most hazardous form, zinc sulphate. See the Waste Classification Report in Appendix D. All waste to be used in the construction of Aylesbury Embankment will be tested before leaving Hartwell Brickworks Landfill. Any waste that tests positive for hazardous properties will be segregated for further testing. No hazardous waste will leave Hartwell Brickworks Landfill and all waste to be used in the deposition for recovery activity will have tested as non-hazardous.
- 4.3.3 Sorting of the waste materials will be undertaken to ensure that the materials comply with both the chemical and geotechnical re-use criteria, to produce an engineering fill, compliant with one of the fill classes stated above.
- 4.3.4 Prior to the waste materials being removed from Hartwell Brickworks Landfill, a hand-over report will be provided to EKFB to demonstrate that the material is non-hazardous and appropriate for deposition in the landscape bund.

5 CONCLUSIONS

- 5.1.1 This waste recovery plan assesses the activity following the EA guidance on waste recovery plans and permits⁶⁷.
- 5.1.2 The Waste Framework Directive (WFD)⁸ states that the recovery of waste and the use of recovered materials as raw materials should be encouraged in order to conserve natural resources. This proposed reuse of waste within the Aylesbury landscape bund meets these fundamental requirements.
- 5.1.3 The proposed scheme will allow waste to move up the waste hierarchy by enabling recovery and reuse instead of disposal. The use of waste as a replacement for non-waste materials will conserve natural resources in line with Article 1 of the Waste Framework Directive.
- 5.1.4 The proposed use of the waste meets all the requirements to be deemed a waste recovery activity rather than waste disposal.
- 5.1.5 The approved plans provide for an obligation to carry out the works flowing from the Act. The embankment and its associated landscape bund are an integral part of the construction of the railway line and is required to mitigate against the landscape and visual impacts of the railway and the barriers required to mitigate noise. The obligation is strengthened by the guidance issued by the Secretary of State that obliges the construction works to comply with that guidance in its design and use of wastes and materials.
- 5.1.6 It is important to note that the landscape bund at Aylesbury Embankment will be constructed to the permitted design without wastes if the WRP is not accepted.

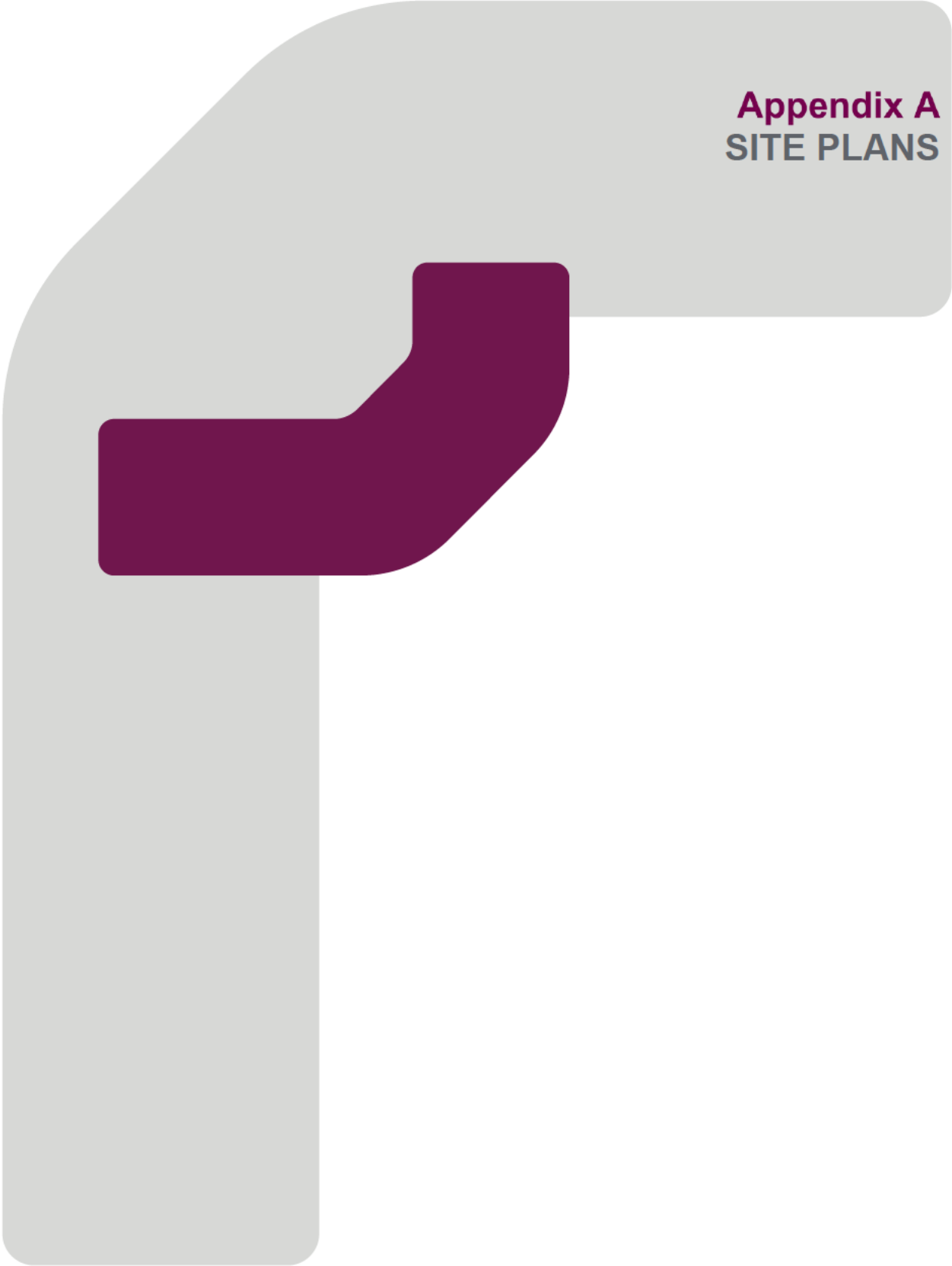
⁶ <https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-recovery-plans-and-deposit-for-recovery-permits>

⁷ <https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/check-if-your-waste-is-suitable-for-deposit-for-recovery>

⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098>

REFERENCES

1. Geology of Britain Viewer' - [BGS Geology Viewer \(BETA\)](#)
2. Flood Maps - [Map – Flood map for planning – GOV.UK](#)
3. [High Speed Rail \(London - West Midlands\) Act 2017 \(legislation.gov.uk\)](#)
4. Waste Recovery Plans Guidance - <https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-recovery-plans-and-deposit-for-recovery-permits>
5. Check if your waste is suitable for deposit for recovery Guidance - <https://www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/check-if-your-waste-is-suitable-for-deposit-for-recovery>
6. The Waste Framework Directive - <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098>



Appendix A **SITE PLANS**



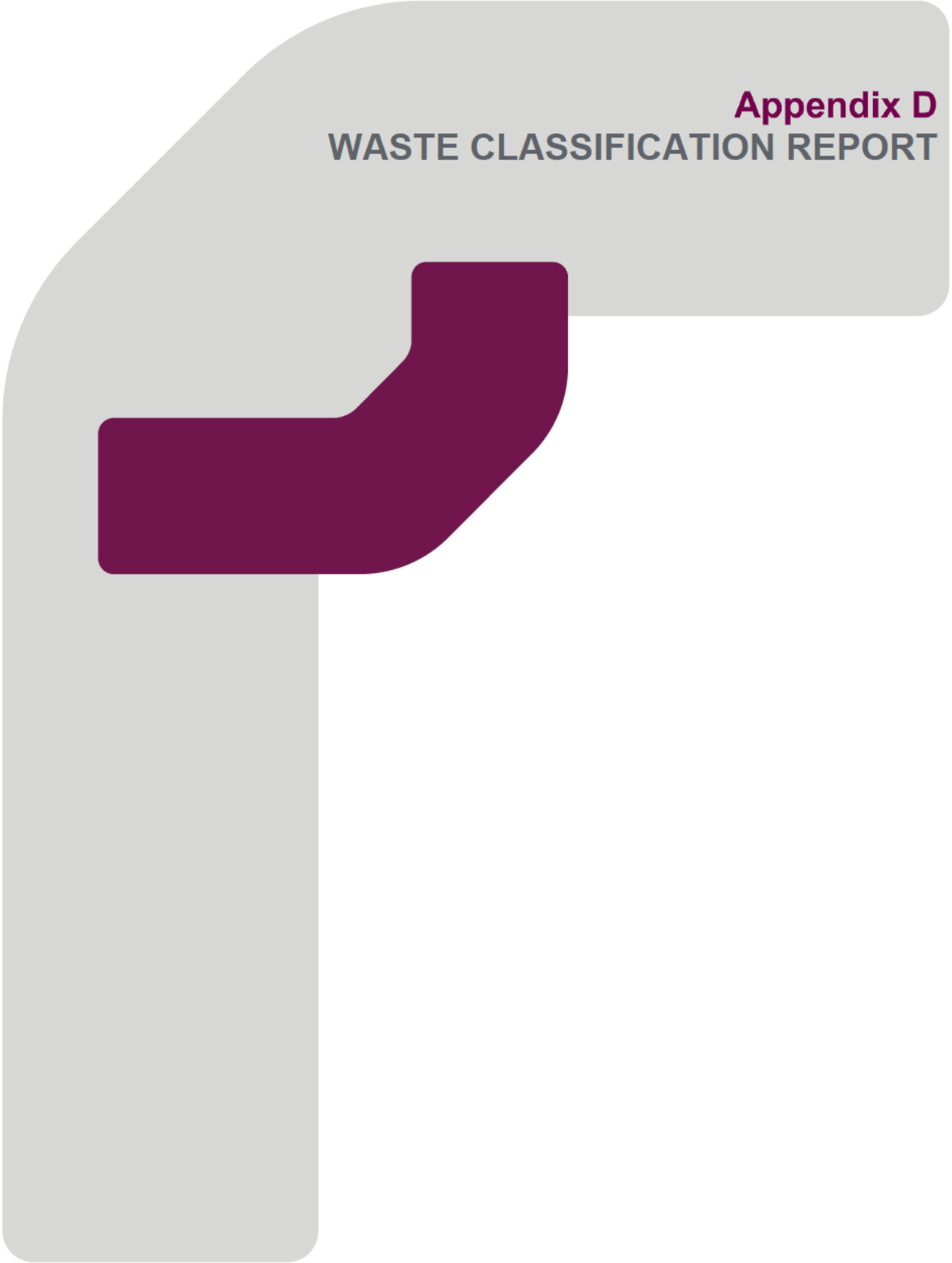
Appendix B

ENVIRONMENTAL MINIMUM REQUIREMENTS



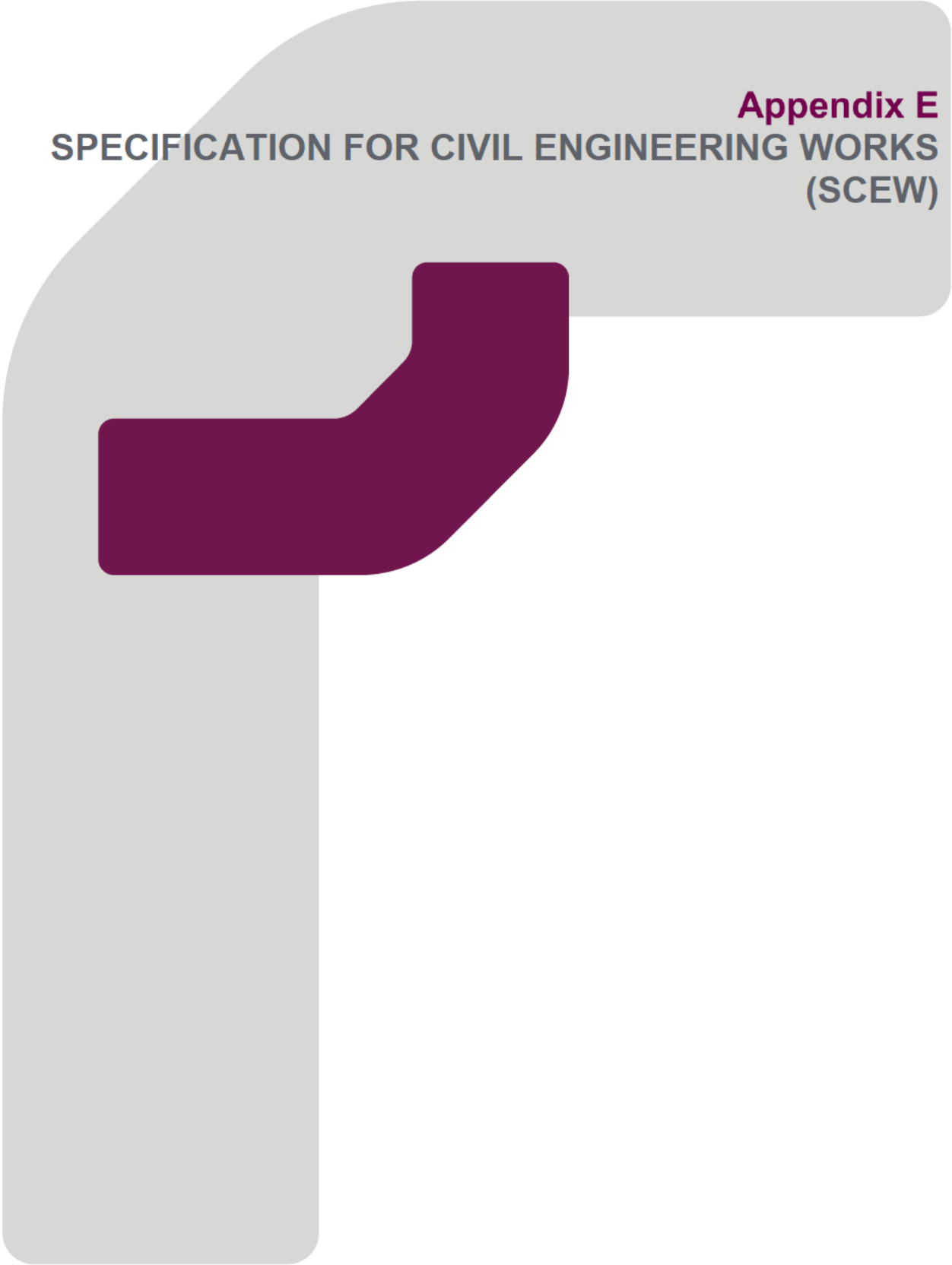
Appendix C

CODE OF CONSTRUCTION PRACTICE



Appendix D

WASTE CLASSIFICATION REPORT



Appendix E

SPECIFICATION FOR CIVIL ENGINEERING WORKS (SCEW)



Appendix F

INFORMATION PAPER E3 EXCAVATED MATERIAL AND WASTE MANAGEMENT



Appendix G ENVIRONMENTAL STATEMENT DOCUMENTS

WASTE RECOVERY PLAN - AYLESBURY EMBANKMENT

Application for a Deposit for Recovery Permit

2026-01-13

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