



UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks
and adjoining land, Bedford

DETAILS OF MASS GRADING

CONDITION 13 – MASS GRADING

Revision Number: 01
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1.0 INTRODUCTION

- 1.1 This Mass Grading report has been prepared, seeking the Secretary of State's endorsement of the submission documents under Article 6 of the Special Development Order (hereafter referred to as the SDO) in relation to Condition 13.
- 1.2 Mass Grading is defined as the process of reshaping land to achieve a desired elevation and slope, for the purposes of ensuring a stable and level foundation for other construction work.
- 1.3 The proposals for Condition 13: Mass Grading are consistent with and in compliance with the assessment of likely significant effects contained in the Environmental Statement. No new likely significant effects are expected.
- 1.4 Mass grading proposals for other parts of the Order land, including areas associated with Wixams will be submitted separately under Condition 13: Mass Grading of the Order.
- 1.5 The Mass Grading plans include the following:
- a) an OS plan showing the location where the mass grading is proposed to take place (see 260602-IN-MG.1-UDX-C13- Extents Plan- Rev 01);
 - b) details of the proposed mass grading (see 260602-IN-MG.1-UDX-C13-Details of Mass Grading - Revision 01);
 - c) a topographic map showing—
 - i. the existing elevation and gradient for the part of the Order land where the mass grading is to be carried out and the proposed modifications to the topography of the land and the intended elevation of the land after grading (see 260602-IN-MG.1-UDX-C13-Existing Contour Plan- Rev 01 and 260602-IN-MG.1-UDX-C13- Proposed Contour Plan Overview- Rev 01);
 - ii. a plan of the areas from which earth will be excavated and to which it will be added to achieve the desired elevations (see 260602-IN-MG.1-UDX-C13- Cut and Fill Plan- Rev 01).
- 1.6 Table 1.1 provides a schedule of the plans included in this submission.

Table 1-1 Plans submitted as part of Condition 13

REFERENCE	REVISION
260602-IN-MG.1-UDX-C13-Extents Plan- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Proposed Contour Plan Overview- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Cut and Fill Plan- Rev 01	Rev 01

260602-IN-MG.1-UDX-C13-Overview Conditions Plan- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Proposed Contour Plan Sheet 1 of 6- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Proposed Contour Plan Sheet 2 of 6- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Proposed Contour Plan Sheet 3 of 6- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Proposed Contour Plan Sheet 4 of 6- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Proposed Contour Plan Sheet 5 of 6- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Proposed Contour Plan Sheet 6 of 6- Rev 01	Rev 01
260602-IN-MG.1-UDX-C13-Existing Contour Plan- Rev 01	Rev 01

2.0 SCOPE EXTENTS

This submission seeks endorsement of the mass grading plan for those parts of the Order land shaded in yellow on the ordnance survey plan ref 260602-IN-MG.1-UDX-C13-Extents Plan- Rev 01 titled Planning Condition 13 Mass Grading UDX Property Extents Plan included with this submission.

2.1 The objectives of mass grading are to:

- Achieve a balanced cut and fill strategy across the Order land to minimise the need for material import and export;
- Limit the export of surplus material to less than 1,000,000m³, and the import of engineering fill material to less than 1,000,000m³;
- Confirm the primary material exported will be excess topsoil, with all suitable subsoils retained and re-used within the Order land;
- Demonstrate the proposed cut/fill balance and associated material movements fall materially within the worst-case assumptions assessed within the Environmental Statement and do not give rise or new materially different likely significant effects;
- Establish coherent formation levels across each Zone ahead of authorised Construction Works;
- Create a stable landform that interfaces appropriately with future roads, development parcels, landscape areas and sustainable drainage system features; and
- Ensure surface water runoff is directed towards approved drainage and flood resilience features.

2.2 The grading associated with Class 6 Roads & Associated Infrastructure will be brought forward for endorsement under a future Condition 28 submission.

2.3 Furthermore, any change in elevation of Class 6 Roads where the road is on a structure, or to be retained by a structure of some form, to achieve the elevation is not mass grading.

2.4 Grading for the creation of Specified Habitats and associated landscaping are also excluded from endorsement under Condition 13 as the details are to be endorsed under other SDO Conditions as referenced in Sec 4 Para 4.1.

2.5 The Environmental Statement assessed the likely significant effects associated with earthworks on a worst-case basis, including the import and export of materials across the Order land. To demonstrate that the proposed mass grading remains consistent with the assessment, Table 2.1 below provides a comparison between the worst case assumptions for import and export of materials reported in Section 7 of Reference Document 13 (Appendix 11.4: Contaminated Land Preliminary Risk Assessment (Volume 3) of the Environmental Statement) and the import and

export volumes of material currently identified as required to deliver the proposed mass grading through the design processes undertaken to date.

- 2.6 As demonstrated in Table 2.2, the proposed mass grading volumes remain within the assessed Environmental Statement parameters. There is no anticipated increase in the magnitude of effects previously reported and no new likely significant effects are predicted to arise as a result of the proposed works.

Table 2-2– Summary of Earthworks Volumes

Assessment	Import	Export
Section 7 of Appendix 11.4: Contaminated Land Preliminary Risk Assessment (Volume 3) of the Environmental Statement	1,500,000m ³	1,500,000m ³
Mass Grading Design for Order Land	Less than 1,000,000m ³	Less than 1,000,000m ³

- 2.7 Based on the preliminary intrusive surveys undertaken in the West Gateway Zone, Lake Zone (North) and Core Zone, the materials are considered chemically suitable for re-deposit subject to confirmatory testing in accordance with the applicable material reuse criteria and verification requirements. Where construction work is identified as giving rise to a relevant contamination risk, any required remediation measures and associated testing/verification will be progressed and implemented in accordance with the detailed remediation scheme required under Condition 14, prior to works (other than preliminary work) proceeding in the affected area.
- 2.8 The suitably qualified contaminated land practitioner, Dr. Robert Hares BSc (Hons) PhD, MRSC CChem CSci - Technical Director – WSP UK Ltd, has concluded that mass grading proposed to be carried out in, on, under or over the West Gateway Zone, Lake Zone (North) and Core Zone will not give rise to significant harm or significant pollution or a significant possibility of significant harm or significant pollution; and, where Condition 14 applies to construction work, this conclusion is capable of being confirmed by notice under Condition 14(6).
- 2.9 Based on the intrusive surveys undertaken in the Lake Zone (South) within the footprint of the historical landfill, the materials may be chemically and geotechnically suitable for re-deposit subject to confirmatory testing, classification and compliance with the applicable material reuse criteria and duty of care requirements. Where the works in this area are identified as giving rise to a relevant contamination risk, the relevant remediation measures (including any additional testing/verification and material management requirements) will be implemented in accordance

with the detailed remediation scheme required under Condition 14 before construction work (other than preliminary work) proceeds in that area.

- 2.10 The Environment Agency has also confirmed, based on evidence provided, that the Order Land was not utilised as a commercial landfill and the use of DoWCoP is acceptable in principle across the site. A deposit for recovery permit is therefore not required in this specific case.

3.0 LEVELS, SLOPES AND DESIGN PARAMETERS

- 3.1 Site won clay material has been classified as Class 2A (wet and cohesive) and Class 7 (fine-grained or cohesive materials requiring specific moisture control) in accordance with the Department for Transport Specification for Highways Work (SHW), Series 600- Earthworks. All handling, placement and compaction of such materials will be undertaken in line with the relevant SHW requirements and good earthworks practice.
- 3.2 The existing in situ soils have been assessed in terms of soil stability and a determination on maximum gradients, 1 in 3, has been made to ensure any slopes/embankments/bunds formed from the site won materials are self-supporting, stable and do not present an issue of safety to the members of the public.
- 3.3 The Geotechnical design for the proposed Mass Grading has been checked and authorised by the suitably qualified Geotechnical Engineer, Andy Indoe, Associate Director of WSP (UK) Ltd, to support the discharge of Planning Condition 13(6) of The Town and Country Planning (Entertainment Resort Complex, Bedford) Special Development (No. 2) Order 2025 for specific areas of the Site only.
- 3.4 Formation levels and slopes have been designed to appropriate earthworks tolerances suitable for large-scale grading. These tolerances allow for construction practicality while ensuring that the overall landform, drainage performance and future development interfaces are maintained.
- 3.5 Elements of earthworks associated with the formation of road structure or road infrastructure where material is retained by, or constructed against, permanent highway structures (including retaining walls, abutments, culverts and similar features) are excluded from the definition of mass grading for the purpose of this submission. The raising of existing ground levels in these locations is considered to constitute construction works (e.g. backfill or infill to above ground structures) rather than mass grading and will be addressed within a relevant detailed design submission under Condition 28.
- 3.6 A vertical limit of deviation (+/-500mm) and horizontal limit of deviation (+/-1500mm) is proposed in respect of the submitted formation levels. The limits of deviation provide construction tolerance and do not permit any change to the overall design envelope assessed within the Environmental Statement.
- 3.7 The limits of deviation are constrained such that:

- The maximum side slopes and embankment gradients assessed in the Environmental Statement (not exceeding 1 in 3) cannot be exceeded;
- No inversion of net cut/fill is permitted – an area shown as a net increase in topography (net fill) cannot become a net decrease (net cut) (and vice-versa) through the application of limits of deviation.
- The limits of deviation cannot give rise to additional exportation of material from the Order land beyond the assumptions assessed in the Environmental Statement/materials balance, nor create a reliance on unassessed import/export; and
- Any use of limits of deviation must not alter drainage flow directions or worsen flood risk outcomes compared with those to be endorsed under Condition 57: Flood Resilience Scheme (including the design flow routes/paths for design events). All permissible adjustments will remain within the drainage and flood risk parameters assessed in the Environmental Statement.

3.8 Noting that no horizontal limit of deviation can project beyond the limits of the Order land, the relationship between the horizontal and vertical limits of deviation ensures that, at their maximum, the maximum gradients of any side slopes or embankments (1 in 3) submitted for endorsement under Condition 13 can be preserved.

3.9 Any use of the permitted limits of deviation will remain within the design and assessment envelope considered within the Environmental Statement. Adjustments to formation levels within the approved vertical and horizontal limits of deviation will not increase the overall volume of cut or fill beyond that assessed, nor will they result in additional or different material import or export. On this basis, it can be demonstrated that the application of limits of deviation does not give rise to environmental likely significant effects exceeding those reported in the Environmental Statement.

4.0 PRE- CONDITION AND INTERFACE CONSTRAINTS

4.1 The mass grading proposals have been developed having regard to a number of pre-conditions and interface constraints arising from other elements of the Authorised Development on the Order land. In certain conditions, the timing or extent of mass grading is reliant upon specific mitigation, investigation or protection measures being in place in advance, as summarised in Annex 1. This includes the following:

- Potential land remediation areas (Condition 14);
- Veteran tree exclusion zone (Condition 45);
- Archaeological mitigation areas (Condition 15); and
- Dark corridors (Conditions 10 and 8(7)).

4.2 The mass grading set out in these plans has been developed having full regard to, and is interlinked with, the flood risk and drainage strategies to be endorsed under Condition 57. Condition 57 applies across all parts of the Order Land to which Condition 13 (Mass Grading), and the details for proposed mass grading, have been submitted for endorsement.

5.0 IMPLEMENTATION AND CONTROL

- 5.1 Mass grading will be implemented by the contractor in full accordance with the endorsed drawings and parameters set out within this submission.
- 5.2 The Detailed Construction Environmental Management Plans for this mass grading will govern Construction Phase environmental mitigation, including any relevant soil stockpiling, stripping methods and stockpiling arrangements, which will be covered within the Soil Management Plan included within the relevant Detailed Construction Environmental Management Plans. The Detailed Construction Environmental Management Plans will be submitted under Condition 12: Construction Environmental Management Plan.
- 5.3 Compliance with this condition will be ensured through the following measures:
- Ongoing monitoring of earthworks to confirm adherence to proposed levels and gradients; and
 - Appropriate site supervision and record keeping.