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1.1 This document summarises the Environmental Statement (ES) which accompanies the outline planning application by Harrow Estates (the ‘Applicant’) to South Cambridgeshire District Council for remediation and up to 32 new homes at the Waste Water Treatment Works (WWTW) in Hauxton (the Application Site). The application is in outline form, with all matters reserved, with the exception of access which is included for determination.

1.2 Environmental Impact Assessment “EIA” is a formal process by which the environmental impacts of a development project are assessed; and where there is potential for a significant impact that cannot be avoided, works are identified to lessen the impact.

1.3 The ES reports on the findings of the EIA and sets out those areas where potentially significant environmental effects have been identified and the mitigation proposed to remedy predicted effects. It forms an important part of the planning application decision making process.

1.4 The EIA has been undertaken voluntarily by the Applicant as they consider that given the size, scale and nature of the Proposed Development it is considered to fall under schedule 2 (section 10b – urban development projects) of the EIA Regulations (The Town and Country Planning (Environmental Impact Assessment) Regulations 2011) as amended.

1.5 Therefore an EIA has been undertaken and the results are presented in two volumes:

- Volume 1 – Main Text
- Volume 2 - Technical Appendices

1.6 This Non-Technical Summary (NTS) summarises the findings of the ES and describes the potential likely significant environment effects (beneficial and adverse) that may arise from the Proposed Development. The NTS also provides details of the measures undertaken to reduce the likelihood of potential environmental effects occurring and how environmental effects will be reduced.

The Planning Application

1.7 The ‘Proposed Development’ comprises:

“the demolition of structures, remediation, and redevelopment for up to 32 dwellings with new areas of open space, associated infrastructure and other associated works. (The ‘Proposed Development’)”

1.8 The Assessment Site is bound by the A10 to the East, and open agricultural land to the north, west and south. The site location and application site boundary is illustrated at Figure 1.
Figure 1: Site Location Plan
The ES has been prepared pursuant to The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended).

2.1 The ES has had regard to all aspects of the environment likely to be affected by the Proposed Development and includes an assessment of the likely extent and significance of the potential environmental effects.

2.2 The topics to be included within the ES were determined by the applicant with informal agreement with the Planning Authority, although no formal Scoping Opinion (where the topics are formally agreed through consultation) was adopted.

2.3 It was agreed to assess the impact on the following topics:

- Economy, Population and Society (Socioeconomics)
- Transport
- Ground Conditions
- Odour
- Air Quality
- Noise
- Landscape and Visual Impact
- Archaeology
- Ecology
- Water resources

2.4 In order to carry out an assessment of the likely environmental effects of the Proposed Development, the existing or ‘baseline’ conditions must first be defined. The likely extent of the environmental effects and their significance can then be assessed. As a starting point, the ES adopts the baseline potion as being the existing site conditions. The environmental effects to be assessed are therefore the difference in effects between the existing conditions and the Proposed Development.

2.5 The likely significant environmental effects are considered against significance criteria, which is used throughout the ES, and adapted as necessary for each topic area. This is outlined below. Within each assessment, a judgement is applied to confirm at what level an effect is considered to be ‘significant’. In the majority this relates to moderate effects and above.

2.6 The assessment is undertaken for all phases of the development – demolition/remediation, construction and operation (albeit some topics combine the early phases as appropriate for that assessment).
2.7 Where the assessment procedure indicates that the Proposed Development is likely to have significant adverse effect, the ES identifies appropriate mitigation measures to prevent, reduce, or offset these effects and/or take advantage of opportunities for environmental enhancements. Such mitigation can either be incorporated into the proposed design and operation of the Proposed Development, or through the introduction of particular safeguards or additional measures.

2.8 A cumulative assessment is also undertaken to consider effect interactions and in-combination effects. Effect interactions are the combined or synergistic effects caused by the combination of a number of effects on a particular receptor which may collectively cause a more significant effect than individually. In-combination effects are the effects of the Proposed Development together with other committed developments.

### Table 1: Significance Criteria

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>Major adverse</td>
<td>The Proposed Development (either on its own or with other proposals) could have a major adverse effect on the character and integrity of the sites and/or their surrounding area.</td>
</tr>
<tr>
<td>Moderate adverse</td>
<td>The Proposed Development (either on its own or with other proposals) could have a moderate adverse effect on the character and integrity of the sites and/or their surrounding area.</td>
</tr>
<tr>
<td>Minor adverse</td>
<td>The Proposed Development (either on its own or with other proposals) could have a minor adverse effect on the character and integrity of the sites and/or their surrounding area.</td>
</tr>
<tr>
<td>Negligible</td>
<td>No observable effect.</td>
</tr>
<tr>
<td>Minor beneficial</td>
<td>The Proposed Development (either on its own or with other proposals) could have a minor beneficial effect on the character and integrity of the sites and/or their surrounding area.</td>
</tr>
<tr>
<td>Moderate beneficial</td>
<td>The Proposed Development (either on its own or with other proposals) could have a moderate beneficial effect on the character and integrity of the sites and/or their surrounding area.</td>
</tr>
<tr>
<td>Major beneficial</td>
<td>The Proposed Development (either on its own or with other proposals) could have a major beneficial effect on the character and integrity of the sites and/or their surrounding area.</td>
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Site Description

3.1 The Application Site covers an area of approximately 16.43 hectares of land and is defined by the location plan at Figure 1. The site is designated as Green Belt in the Development Plan.

3.2 The site is located to the north-west of the village of Hauxton, and comprises a former Waste Water Treatment Works (WWTW or Waste Water Treatment Plant (WWTP)) which was historically used to pump and treat water from the former chemical production facilities which were located immediately opposite the site.

3.3 The Application Site consists of a central area of brownfield land formerly used for the WWTW which contains a number of buildings and structures such as silos, domed tanks and effluent disposal plant located within an earth bund and tree belt. The height of some of these structures extends to 10.4m. In addition there is a disused bowling green, bounded on all sides by dense conifers.

3.4 This facility is now redundant following the completion of the remediation of the main site. The site is classified as a Part IIa site under the Environmental Protection Act on the basis of pollution of groundwater and surface water by pesticides and solvents.
The Surrounding Area

3.5 The site is bound to the north, west and south by agricultural land, while to the east Cambridge Road (the A10) separates the site from an area of land for which permission for residential development has been granted (known as the ‘Main Site’ or the ‘Bayer site’). The River Cam flows adjacent to part of the northern boundary of the site.

3.6 The ground levels across the site fall to the north-west towards a small brook which follows the western boundary line. The River Cam follows the northern edge of the Application Site for roughly half of its length before turning north. Ground levels are consistently lower in the north of the Application Site than the south as the land falls towards the River Cam. Ground level changes across the site are relatively minor, generally increasing steadily from north to south, with a maximum change of between 7 and 8 metres from the northern boundary to the most southerly tip.

3.7 To the east of the bunded land is a large sports area including a sports field and tennis courts. A pavilion which served this sports ground has recently been demolished.

3.8 The land to the north and west is a small scale agricultural field pattern. To the east the landscape comprises a more manicured character.

3.9 The site is located between the two tributaries of the River Cam; the River Cam or Rhee (Cam/Rhee) to the west and the River Cam/Granta to the north and east. Immediately to the north of the Main Site, the River Cam/Granta is separated into three channels: the River Cam/Granta, the Riddy Brook and a short weir stream (Hauxton Mill Race). The three watercourses meet at the mill and flow west in the River Cam/Rhee approximately 1km north-west of the site.

3.10 Within the wider site context ground levels are influenced by the relatively flat and wide river corridor. The most significant level changes lie approximately 3.4 km to the south west of the site at Money Hill, with ground levels rising to over 65 metres above sea level, creating potential for view of the site from the top. Other smaller hills are located to the south/south west at Rowley’s Hill, St Margaret’s Mount and Clunch Pit Hill. Stone Hill and White Hill lie to the east/north-east.

3.11 There are a number of trees, hedgerow trees and small tree clusters/copse of trees within the site which have an important visual screening function. Hedgerows form typical local field boundaries, and are present around the periphery of the site. The hedgerows have an important visual screening function. The hedgerow along the eastern site boundary along the A10 was previously maintained to allow views into the recreation ground. The hedgerow is currently lacking management and has grown significantly, visually screening any views into the site from the A10.

3.12 There are no public footpaths within the site boundary. However, a public footpath lies to the south of the site boundary and runs on an approximately east/west axis, connecting the A10 and Hauxton to the east with Haslingfield to the west.

3.13 The A10 is a designated off road cycle route, and provides direct cycle linkages from Harston to the south into Cambridge City Centre, and the wider comprehensive cycle network.

Planning History

3.14 A planning application was submitted on 9th March 2015 (re S/0536/15/O) for largely the same description of development as is currently proposed. However, that application did not include full details of the proposed Remediation Strategy.

3.15 That application was refused on 26th May 2015, due to the perceived impact on the green belt and a series of technical issues, this is notwithstanding Officer support for the removal of the industrial structures and improvement to the appearance of the Green Belt.
Need for the Proposed Development

4.1 The need for the proposal can be considered as follows;

• Remediation of the site - without the application proposals the remediation would not be carried out to the same level, nor within the same timescale. Sufficient viability derived from an application proposal is required to deliver the significant remediation benefits.

• The need to deliver new homes and meet housing needs

• The need for on site open space

• Fulfilment of Policy Context – the Local Plan includes an aspiration for the redevelopment of the site as “it would be highly desirable to secure the removal of the incongruous industrial structures on the western part of the site. Particular consideration should be given to proposals that remove these structures and improve the visual appearance of the Green Belt.” The application site has therefore been identified by the Council as a potentially suitable location for development in terms of the desirability of removing incongruous industrial structures from the Green Belt. Thus the Proposed Development represents a fulfilment of Planning Policy (notwithstanding the Green Belt allocation).

Alternatives

4.2 In accordance with the EIA Regulations 2011, this section of the ES outlines the main alternatives studied by the applicant and an indication of the main reasons for the proposed development. Alternatives considered as part of the EIA process comprise:

• “Do nothing” scenario;

• Alternative sites for the Proposed Development; or

• Alternative schemes for the site.

“Do Nothing” Scenario

4.3 The “do nothing” scenario would result in no physical or environmental change to the WWTW site.

4.4 The need for the Proposed Development has been clearly set out above and the opportunity for redevelopment of this visually intrusive, and highly contaminated site would not be realised. The opportunity to deliver housing to meet local needs and to contribute to the strategic housing requirement would be lost in this scenario. Equally the beneficial public open space and environmental benefits arising from the Proposed Development would not be delivered.

Alternative Sites

4.5 In light of the policy context and the benefits arising from the development, no alternative site have been considered. The need to remove the unsightly structures would not arise on other alternative sites.

Alternative Schemes

4.6 The proposals for the Proposed Development have been developed and refined through an extensive design process with the Local Planning Authority.

4.7 The overall design philosophy and objectives have changed little over the design evolution however, changes have been bought into effect in the illustrative masterplan as a result of the engagement of the Design Review Panel. These related to, inter alia:

• Ensuring the majority of dwellings are outward facing

• Cul-de-sacs have been removed

• Revision to include a perimeter road

• Addition of a focal point gateway space

4.8 Whilst these had the benefit of improved design and layout, they also provide environmental improvements in terms of landscape and visual impact.
The Illustrative Masterplan
Description of Development

5.1 Outline planning permission with all matters reserved, with the exception of access, is being sought for the following:

“Demolition of structures, remediation, and redevelopment for up to 32 dwellings with new areas of open space, associated infrastructure and other associated works.”

Development Parameters

5.2 It is normal practice within outline planning applications where all matters other than access are reserved for subsequent approval to establish a set of development parameters to both guide the development and to aid the assessment of impacts.

5.3 The Development Parameters are defined on the Parameter Plan and in this case are defined as:

- Distribution of Land Uses
- Building Heights
- Development Parameter Statement defining unit sizes, maximum unit numbers and maximum amount of footprint.
- Retention of key landscaping elements

5.4 An illustrative masterplan is also included (Appendix 1) to demonstrate one way in which the maximum number of units could be accommodated on the site. However, the illustrative plan is entirely illustrative, and no assessments have been based on this masterplan.

5.5 A set of Design Codes is submitted with the application which will guide the design of the future reserved matters. However, as this document is expected to evolve post determination (as it is proposed to be conditioned), it does not limit nor restrict the assessment of effects within this ES.

Distribution of Land Uses

5.6 The distribution of uses is considered on the Parameter Plan. This confirms the extent of the area for housing, the area for open space and the route of the proposed access from the A10 to the housing area.

5.7 The housing area comprises 3.08ha. The total area of open space (incorporating landscaping and pedestrian routes) surrounds the housing area on three sides and is 12.68ha.

Building Height

5.8 The Parameter Plan confirms the building heights by reference to storey height and meters above proposed ground level (or FFL).

5.9 At this stage, a worst case assumption of an increase of 1m above existing ground level is made as a result of the remediation strategy (and to incorporate flood protection measures) to determine proposed ground level.

5.10 This equates to maximum ridge height of 9.3m above finished floor level, and a maximum of 2.5 stories. The height is considered to be maximum, it is likely that completed storey heights would be below this level, with variation across the site. However, for the purposes of a robust assessment, a maximum height is given across the whole housing area.
Development Parameter Statements

5.11 The Parameter Plan also includes a Parameter statement, as follows:

- A maximum of 32 units
- The mix of units to be 4 and/or 5 bed housing
- A maximum of 5120 sqm footprint within the area identified for residential development
- Parameter Landscaping to be provided and existing tree groups to be retained where condition allows, landscape buffers with visual permeability and buffers providing screening.
- Adherence with parking standards

5.12 These parameters are also included on the illustrative masterplan, which demonstrates one way in which the development can be achieved. However, no assessments have been based on this plan.
Means of Access

5.13 Full details on the means of access are to be determined as part of this application.

5.14 A single point of access is proposed for pedestrian and vehicular access, from the Cambridge Road (A10) via the western arm of the new access junction being created as part of the former Bayer Crop Science Ltd site development. It is proposed to modify the existing left-in, left-out arrangement to create an all movements signal controlled junction. A Road Safety Audit has been carried out which confirms this junction arrangement is appropriate.

5.15 Pedestrian and cycle routes are proposed within the site, together with connections to the wider network. The proposed new junction will include pedestrian crossing facilities. It is also proposed to provide advanced cycle stop lines at each arm of the proposed signalised junction and a dedicated cycle lane on the northern arm of the junction (A10) in the southbound direction.
Remediation

5.16 The scheme provides for the remediation of the site, to agreed standards with the EA. In summary terms the remediation is described as follows:

Pre-treatment

The pre-treatment phase will include in-situ (ie below ground) Soil Vapour Extraction to reduce potential release of vapour/ Volatile Organic Compounds during ex-situ works. The pre-treatment will comprise a vapour extraction system as follows:

- Shallow vertical or horizontal wells will be installed on an irregular grid in areas of high odour potential that require remediation
- A vacuum will then be applied to extract vapours from the unsaturated zone; and
- In some circumstances the Soil Vapour Extraction will be undertaken concurrently with the dewatering of the areas using similar techniques to ensure effective vapour recovery. Lowering of groundwater will increase the thickness of the unsaturated zone and potentially increase the transfer of contaminants from soil to vapour.

Soil treatment

5.17 A variety of soil treatment measures are proposed including biological treatment and vacuum assisted bio-treatment. In respect of the biological treatment, the soils will be constructed into treatment windows or beds. These beds will be covered as appropriate and will be mechanically turned to facilitate aeration and thus biological degradation. In some locations to aid in the recovery of any vapours and to increase the rate of degradation these beds will be force ventilated. In addition vapour recovered from the beds will be treated via granular activated carbon or air bio-filters.

Groundwater treatment

5.18 The main methodology for groundwater treatment will be recovery from source zones and excavation via pumping for above ground treatment combined with re-infiltration or discharge under consent. Treatment will comprise a combination of chemical oxidation, forced air stripping, bioaerobic treatment and Granulated Activated Carbon adsorption.

5.19 Further there is potential for supplemental in-situ groundwater treatment for wider plume treatment through oxidation of contamination either in-situ or ex-situ with subsequent re-injection.
Off Site disposal

5.20 Removal and or disposal or recycling of unusable or unsuitable materials or untreatable material, both on and off site.

Reinstatement

5.21 Reinstatement shall be completed in a phased manner as works progress, with validation prior to reinstatement. Where available, site produced recycled aggregate will be placed over remediated soils to create the development platform of approximately 1m and hard to dig layer. It is not proposed to import any sub-soil or topsoil as part of these works to form any cover system, although this will be reviewed as part of the detailed proposals.

Phasing

5.22 The viability assessment has dictated a programme for build and remediation commencing in 2016 for a period of approximately 3 years (with remediation itself taking 12 months and a further 24 months for monitoring and sign off) residential construction commencing in 2019 and completing in 2021 (2 years). Thus the base year is 2016 and the design year is 2021.

5.23 A phasing plan has been prepared to confirm the demolition and remediation occurs in Phase 1, with construction in Phase 2.
This chapter of the NTS outlines the detailed assessment that was undertaken of the likely significant effects the Proposed Development would have on the environment together with outlining proposed mitigation measures where adverse effects were identified.

**Economy, Population and Society**

6.1 Chapter 7 of the ES provides an assessment of the socioeconomic effects of the Proposed Development on the immediate locality and surrounding area. Specifically, the chapter considers the economic impact of the proposed development, as well as the impacts with regards to homes, education, health, open spaces and wider community facilities. A full baseline position is outlined, before an assessment of predicted effects.

6.2 Overall, the proposed development will have a beneficial effect on local economic conditions as well as on the local population. This includes job creation and additional economic productivity in the local economy during demolition, remediation, construction and operational phases as well as contributing to the provision of much needed homes in the area. The local community will also benefit from the uplift in provision of public open space which will help address the deficit in some forms of provision currently apparent in the area and generate indirect health benefits as a result.

6.3 Specifically, we estimate that the proposed development will have the following effects during the demolition, remediation, construction and operational phases:

**Demolition and Remediation Phase**

- Supporting 30 Full Time Equivalent (FTE) positions directly and a total of 43 FTEs across the wider impact area when leakage and indirect/induced effects are considered.
- Generating £500,000 in productivity (Gross Value Added or GVA). This increases to £2.1 million when assessed across the East of England.

**Construction Phase**

- Directly supporting 25 FTE gross construction jobs on site per annum over the construction period (1.5 years). When jobs held by residents elsewhere are discounted this gives a total of 24 FTE direct annual jobs, and a further 12 FTE jobs per annum through supply chain and expenditure impacts, held by residents of the East of England during construction (36 in total).
- Generate an additional £1.8 million in GVA for the regional economy for each year of construction (£2.7 million in total over the 1.5 years).
Operational Phase

- Provision of 32 homes of 4 and 5 bedrooms, equating to 3.2% of the annual delivery target of 950 homes in the District. This is in the context of a housing shortage and forecast population growth.
- The development will house an estimated 78 residents, of which 41 will be in employment.
- Supporting the growth of Hauxton aligns with the Hauxton Village Plan which indicates that the village has the potential to grow to a size where it can sustain more local facilities including a shop, pub and post office.
- A total of £1.0 million per annum in gross earnings of the new residents. This in turn could generate £430,000 in convenience and comparison retail expenditure a year and a further £270,000 on leisure. This will provide a valuable source of trade for local businesses and will help to sustain employment in the local retail and leisure industries.
- Generating £80,000 in Council Tax payments per annum and £350,000 in New Homes Bonus over a six year period.
- Creating demand for up to 8 nursery places, 11 primary places and 8 secondary school places. Nursery demand will be met within existing provision. While there are primary school places within the local impact area, the three closest primary schools do not have spare capacity and so the additional pupils will add to primary school pressures. The additional secondary school pupils can be accommodated within significant spare capacity.
- The provision of open space within the scheme will increase provision locally, benefiting both the existing and new residents through opportunities for recreation, supporting health and wellbeing. This is in the context of a lack of provision of formal and informal children’s play space presently.
- There will be a small level of additional demand for health services (including 0.07 GPs). There is sufficient provision to absorb this additional demand in GPs, dentists, opticians and acute care.
- There will be a limited increase in demand for wider community facilities from 32 new homes.

6.4 A number of mitigation measures will be used to address adverse impacts as follows:

- Developer contributions for primary education
- The provision of open space and a new sports pavilion
- Funding for libraries and lifelong learning as well as a new village hall

6.5 Following mitigation the scheme will have a major beneficial effect in respect of employment and productivity at remediation and construction stage. During operation, impacts range from negligible to minor beneficial (at neighbourhood/local level, direct (and some indirect), permanent and long term). Specifically, minor beneficial effects are predicted for housing; household expenditure; New Homes Bonus; open space; health; wider community facilities with negligible impacts on population; labour force; Council Tax; pre-school; primary; secondary; sixth form. However, as significant impacts are considered to be those assessed as moderate and above, there are no significant operational impacts.

6.6 Consideration has been given to the potential for cumulative social and economic impacts associated with the Proposed Development together with other surrounding committed schemes. A review concluded that the potential cumulative impacts are of negligible significance.
Chapter 8 of the ES provides an assessment of the likely significant effects of the Proposed Development on transport. It provides a full assessment of the baseline position, followed by an assessment of effects in terms of pedestrian, cycling and public transport environment, traffic impact, severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation, hazardous loads, parking, accidents and safety, in line with the published methodology for this discipline. Mitigation measures are then proposed and residual effects predicted.

During demolition and remediation and construction phases of the Proposed Development, the following potential direct impacts are likely:

- During remediation and construction, HGV vehicle trips to deliver and remove materials;
- Temporary closure of pedestrian footpaths;
- Dirt and mud on road services; and
- Construction workers accessing the Site.

However, all effects are predicted to be negligible during this phase.

In terms of operation, the proposed development includes amendments to the Site Access Junction, from a priority left-in / left-out arrangement to and from the site to a signal-controlled all movements junction. A signal controlled pedestrian crossing will be introduced on the Site Access arm (the western arm). The amendments to the Site Access Junction will enhance safety for all users, improve pedestrian connectivity, and make access to and from the site simpler and easier. The highway network will continue to operate efficiently with the changes to the junction in place.

In terms of traffic impact, the proposed development will result in 20 additional two-way vehicle movements in the AM peak and 17 additional two-way vehicle movements in the PM peak. This will have a negligible effect on the overall operation of the highway network.

Mitigation is identified in respect of the CEMP to control dust and dirt and in respect of the travel plan to seek to encourage sustainable transport choices. These measures will be controlled by planning condition.

After imposition of these mitigation measures, the residual impacts are predicted, with impacts from negligible to minor beneficial. These fall below the threshold for significance, and there are therefore no ‘significant’ transport impacts. Cumulative effects have been considered and no significant effects are predicted as the traffic flows from committed developments were included within the baseline assessment.
Ground conditions

6.14 Chapter 9 of the ES provides an assessment of the likely significant effects on ground conditions, particularly contamination during construction and operation.

6.15 The Site has until recently been maintained for the sole purpose to treat waste water from the Main Site; which remained operational until regulatory sign off was obtained for the remediated Main Site. The Site is understood to be no longer operational. The baseline assessment confirms the presence of Total Petroleum Hydrocarbons (TPH), polyaromatic hydrocarbons (PAHs) and dichlorodiphenyltrichloroethane (DDT) (pesticide) and chlorinated solvents. This includes some Volatile Organic Compounds (known as VOCs). This is reflective of the designation of the Site as Contaminated Land under Part 2A of EPA 1990 in 2003 and subsequently designated as a Special Site on the basis of pollution of groundwater and surface water by pesticides and solvents.

6.16 Preliminary remedial targets have been defined within the remedial strategy prepared for the Site. These have been developed to be protective of human health and controlled water receptors and will have been agreed with the Environment Agency and Local Authority prior to redevelopment. A Validation Report will be prepared to demonstrate that the remedial targets have been met or, where they have not been met, a risk assessment will conclude on the consequences of the residual contamination and will demonstrate that the land no longer meets the statutory definition of Contaminated Land. Development of the remediated Site will not commence until satisfactory remediation has been demonstrated to the satisfaction of the Regulatory Authorities.

6.17 It is anticipated there will be an overall neutral to major beneficial effects following implementation of the remediation strategy (with effects above moderate being considered as ‘significant’). Major beneficial effects are predicted in respect of groundwater and surface water, following remediation as the site will no longer be classified at Part 2A. Cumulative effects have been considered and no significant effects are anticipated.

Odour

6.18 Chapter 10 of the ES provides an assessment of odour resulting from the Proposed Development, specifically the potential effects due to odour associated with the proposed remediation. Consideration is also given to the potential exposure of the public to volatile organic compounds (VOCs) that may be emitted during the proposed remediation activities.

6.19 A number of mitigation measures have been developed based on the remediation contractor’s experience of the odour and VOC emissions which occurred during the remediation works undertaken at the “main site”, in order to lessen VOC and odour emissions during the proposed remediation activities at the “WWTP site”.

6.20 The proposed remediation works, following mitigation, have the potential to result in slight adverse odour effects at high sensitivity receptors (e.g. residential properties) to the east and southeast of the WWTP site and at the Hauxton Sports Ground (a medium sensitivity receptor). Negligible effects may be expected to occur at the remaining sensitive receptors considered and in the wider study area. According to guidance published by the Institute of Air Quality Management, these effects can be described as “not significant”. Furthermore, it should be remembered that if odour is discernible at such locations, it will be infrequent and of short duration. Wherever possible the proposed works will be undertaken when sensitive receptors are not downwind, further limiting the potential for effects to occur.

6.21 Given the distance and direction of sensitive receptors from the “WWTP site” and the range of mitigation measures proposed, the effect of VOC emissions on human health at off-site receptors is considered likely to be negligible. The effect of VOC emissions is considered on this basis to be “not significant”.

6.22 Once the proposed remediation works are completed, it is assumed this will minimise any potential sources of odour and VOC emissions from the development site to an acceptable level. The effect of odour and VOC emissions in the long term is thus considered to be “not significant”.

Proposed summer view: public footpath
Air quality

6.23 Chapter 11 assesses the impact of the development on air quality, specifically, the impacts of road traffic emissions of nitrogen dioxide and fine particulate matter albeit consideration has also been given to dust impacts during the construction phase (the air quality impacts of the remediation phase, in respect of Volatile Organic Compounds and odour, are considered in the Odour chapter).

6.24 A baseline assessment has been undertaken to inform the assessment. The construction works will have the potential to create dust, with the site having been identified as a medium risk site in terms of dust impacts. During construction it will therefore be necessary to apply a package of mitigation measures in terms of a Dust Management Plan (which can be incorporated into a Construction Environmental Management Plan to minimise dust emission). With these measures in place, it is expected that any residual effects will be ‘not significant’.

6.25 The operational air quality impacts have been judged to be not significant. This judgement has been made based on the assessment that:

- Air quality in the study area is good, with pollutant concentrations well below the UK air quality objectives at all relevant locations;
- The proposed development will not lead to any new objective exceedences (areas of poor air quality);
- The impacts on existing properties will be negligible; and
- The Proposed Development will not introduce any new receptors into areas of unacceptable air quality.

6.26 As such, no significant air quality impacts are predicted.

6.27 Cumulative effects have also been considered and no significant effects are predicted as the traffic flows from committed developments were included within the baseline assessment.

Noise

6.28 Chapter 12 of the ES assessed the noise impact of the Proposed Development, in accordance with the most relevant national guidelines and requirements, by providing an overview of the baseline position and then an assessment of the predicted significant effects. Mitigation measures are then presented as necessary, followed by a residual assessment.

6.29 A baseline assessment has been undertaken to confirm the noise environment. This feeds into the assessment which recognises that remediation and construction noise has the potential to effect residential properties. To assess the potential impact of construction noise, the worst case noise levels for construction plant were used. The calculations demonstrate noise levels at the nearest residential properties which are compliant with the most relevant guidance and therefore no significant effects are predicted during remediation or construction. Notwithstanding this predicted, noise will be further controlled by the implementation of a CEMP.

6.30 The noise effect of the operational stage as a result of the traffic noise has also been calculated. The increase in noise level is projected to be negligible, correlating with “No observed effect” as the level of traffic is low and not considered significant.

6.31 On this basis, no significant noise effects are predicted.

6.32 Cumulative effects have been considered and no significant effects are predicted as the traffic flows from committed developments were included within the baseline assessment.
Landscape and Visual

6.33 ES Chapter 13 assesses the effects of the Proposed Development on landscape and visual amenity.

6.34 A full baseline landscape has been undertaken, based on published guidance and assessment, a townscape character assessment has also been provided, and key views of the site identified. A total of 14 viewpoints have been identified.

6.35 During demolition, remediation and construction, a number of potential impacts are considered, including:

- The visual impact of HGV movement & general construction works
- The visual impact of site lighting around construction areas
- The visual and landscape impacts of remodelling ground levels/cut and fill operations
- The landscape impacts of incorporating services and utilities.
- The visual impacts of temporary screening measure and protective fencing.
- The landscape and visual impacts of temporary parking, on-site accommodation and work areas.
- The landscape and visual impact of material stockpiles.

6.36 Only the visual impact of HGV movement & general construction works would constitute a significant effect, at a moderate adverse level.

6.37 During operation, impacts have been assessed in respect of landscape character, townscape character, landform, tree cover, public rights of way, and key views. No significant effects are predicted, including from any of the viewpoints identified. There remains one slight adverse effect on viewpoint 7 (from the footpath) but half the viewpoints (7 in total) will result in ‘no change’ due to the well-screened nature of the site. For a further 3 viewpoints the magnitude of change will be ‘negligible’. A total of 3 viewpoints will result in 4 ‘slight beneficial’ effect (views 1, 11 (winter), 13 and 14). This is due to the potential for sensitive, high quality development to enhance existing glimpsed views of industrial development. However, all effects have been assessed as ‘not significant’.

6.38 Mitigation is proposed by way of the CEMP for construction stage, and imposition of the Landscape and Environmental Management Plan (as set out in respect of ecology below).

6.39 On this basis, only four significant effect remains - the visual impact of HGV movements, fencing and parking during construction works, at a minor- moderate adverse level. With this exception, there are no significant adverse landscape or visual effects during remediation, demolition and construction, or during operation. Overall it is considered that the proposed development, by responding to the local landscape character and consideration of mitigation to protect vegetation and representative views, can be successfully accommodated within the local landscape.
Chapter 14 assesses the impact on heritage and archaeology, and provides a summary of the baseline conditions based on an archaeological desk-based assessment which established the potential for archaeological remains within the area of the Proposed Development.

The site is considered to have a moderate to high theoretical potential for evidence of late prehistoric, Iron Age settlement and activity and a moderate theoretical potential for evidence of Roman, Saxon and Medieval activity. If present, any archaeological remains are likely to be of local significance. However, whilst a potential is identified for archaeological remains within the application site, it is considered that within the area proposed for remediation and construction, any archaeological remains will have been removed by the excavation of lagoons and trenches associated with the WWTW. Accordingly, the Archaeological Officer has advised that archaeological mitigation measures are not required during demolition/remediation or the construction of the built development.

No designated archaeological assets will be impacted by the proposed development.
Ecology

6.46 Chapter 15 of the ES addresses the potential effects of the proposed development on ecology. A full set of baseline surveys have been undertaken.

6.47 The results of these surveys identified absence of reptiles, Great Crested newts, Otter (although records from the background data search suggest it is present on the River Cam near to the site) and Water Vole (although records from the background data search suggest it is present on the River Cam near to the site).

6.48 There are no statutory designated sites and six non-statutory designated sites located within 2km of the site boundary;

6.49 In terms of habitats on site, these include amenity grassland, semi-improved neutral grassland, secondary woodland, dense and scattered scrub, hedgerows and ditches. The habitats are all considered to be of site to local importance with the exception of the River Cam, which although not located directly on the site, is considered to be of County value.

6.50 In terms of the surveys undertaken, these identified Badgers, Bats, and birds.

- Significant field signs of Badgers such as latrines and mammal paths throughout the site. A disused main sett, and outlier setts were identified during the 2013 and in 2015 a new main sett was identified on the perimeter of the site.

- Bat droppings were found in the squash court and laboratory buildings. Emergence surveys of the squash court did not reveal any emerging bats and the distribution of droppings suggests that the buildings are used as feeding roosts for low numbers of Brown Long Eared bats. The activity surveys showed use by only 4 species of bat and a concentration of activity near to the River Cam.

- A total of 17 species of bird were recorded during the surveys of which three are on the BBsCC red list and five on the amber list.

6.51 In terms of impacts on designated sites and habitats, there will be no impacts on statutory designated sites and possible indirect effects on the River Cam through the construction and operational phase through, dust and sedimentation, disturbance and lighting. The demolition, remediation and construction phases will have temporary impacts on a various habitats including semi-improved grassland and woodland. The operational phase will have limited impacts on the same habitat types but limited to a very small area within the WWTP.

6.52 In respect of impacts on species, the demolition, remediation and construction phase will have adverse impacts on Badgers as the main sett is located within the possible area required for remediation. The remediation and construction phase have the potential to cause disturbance to bats foraging on the site and will result in the loss of two feeding roosts. The operational phase has the potential to cause indirect impacts through lighting and disturbance. Construction and remediation phases of the development have the potential to cause direct loss of habitat and impacts on birds whilst nesting. The operational phase has the potential to impact on birds through disturbance and predation by domestic animals. All phases of the development have the potential to cause disturbance to birds using the site to forage. The remediation, construction and operational phases have the potential to impact on water vole and Otter through indirect pollution and disturbance to the River Cam, adjacent to the site.

6.53 As a result a Construction Environmental Management Plan will be provided that will set out how the impacts of construction can be mitigated. Further, a Landscape and Ecology Management Plan is provided which will set out long term plans for the enhancement of the wider site to benefit biodiversity. This will include:

- Protection of the River Cam through hedgerow strengthening
- Management of the grassland to conserve and enhance its diversity
- Management of the woodland to increase its ecological value
- Creation of biologically rich swales
- A pollarding strategy
- Bird and bat boxes
- Enhancement for Otters on the River Cam
- Lighting strategy to avoid sensitive areas

6.54 Overall, after mitigation, all impacts are considered to be either beneficial or not significant except for a minor adverse impact on Badgers, significant at a site level, due to the potential removal of Badger setts during the remediation and construction phases. Cumulative effects have been considered and are not considered to be significant.
Chapter 16 of the ES provides an assessment of the likely significant effects of the Proposed Development on flood risk and drainage. A full baseline position is outlined, before an assessment of significant effects. Mitigation measures are proposed as necessary where adverse effects are identified.

In terms of the baseline, the River Cam flows along the northern boundary of the Application Site. There are two small brooks running along the eastern and western edges of the Application Site which drain towards the River Cam. The Environment Agency Indicative Flood Zone mapping shows the Application Site to be situated across Flood Zones 1, 2 and 3, although the developable area lies solely in Zone 1. The site overlays the West Melbury Marly Chalk Formation which is designated by the Environment Agency as a Principal aquifer.

There are likely significant effects to the water environment and flood risk associated with both the remediation and construction and operational phases. Generally risks caused by the remediation and construction phases are considered short term whilst those associated with the operational phase are longer term.

During construction a Construction Environment Management Plan (CEMP) is proposed to set out detailed methodologies and monitoring requirements of the measures below to prevent adverse effects on the water environment.

During operation, runoff from highway and car parking areas will require treatment before its discharge to the local watercourses. This will be provided in the form of source control techniques and the implementation of swales and permeable paving (known as SUDS – sustainable urban drainage systems) the detail of which will be contained within a drainage strategy to be conditioned.

A reduction in infiltration, and the associated increase in surface water runoff rates and volumes will be mitigated through a detailed surface water drainage strategy. Therefore there will be no increase in surface water runoff rates from the Site. Overall, mitigation measures will be included within the proposed development to reduce adverse effects and in some cases, provide betterment to the long-term situation when compared to the existing baseline situation.

On this basis, negligible effects are predicted during remediation and construction, with a minor beneficial effect at operation on flood risk as suitable surface water drainage systems will be utilised. However, as these effects fall below the threshold for this topic, no significant effects are predicted. Cumulative effects have been considered and no significant effects are predicted.
The preparation of the ES has been undertaken in parallel with the design process.
7.1 The preparation of the ES has been undertaken in parallel with the design process. As a consequence, many measures to mitigate likely significant adverse environmental effects have been incorporated into the Proposed Development design in order to avoid, reduce or offset such effects. As such, many mitigation measures have been ‘designed in’ and these have been set out in Chapter 6, and addressed throughout the ES.

7.2 In this case ‘designed in’ mitigation includes adherence with the Parameter Plans and Parameter Statements and adherence with the Remediation Strategy.

7.3 However, additional mitigation measures have been proposed in relation to both construction and operation and these have been set out in each of the preceding technical chapters. These have been defined and clear and binding methods set out to ensure they are secured. A summary of these measures are set out below.

7.4 The ES has predicted beneficial effects in the main with adverse effects only in respect of the minor - moderate adverse effect for short term construction stage visual effects and in respect of the minor adverse effect predicted for loss or disturbance of badgers. All other significant effects are beneficial.

7.5 An assessment has been undertaken to consider the effect of the Proposed Development in combination with other committed developments in terms of the potential to give rise to cumulative effects. This concludes that there are no significant cumulative effects predicted.

### Table 7.1: Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Topic Area</th>
<th>Measure</th>
<th>How secured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socioeconomic</td>
<td>Contributions to infrastructure</td>
<td>S106 Agreement</td>
</tr>
<tr>
<td>Transport, Water, Ecology, Noise, Air Quality</td>
<td>Construction Environmental Management Plan (CEMP) for remediation and construction stage</td>
<td>Planning condition</td>
</tr>
<tr>
<td>Odour</td>
<td>Odour Management Plan for construction (which may be included within the CEMP)</td>
<td>Planning condition</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Dust Management Plan for construction (which may be included within the CEMP)</td>
<td>Planning condition</td>
</tr>
<tr>
<td>Transport</td>
<td>Travel Plan</td>
<td>Planning condition</td>
</tr>
<tr>
<td>Water</td>
<td>Detailed Drainage Strategy</td>
<td>Planning condition</td>
</tr>
<tr>
<td>Ecology</td>
<td>Landscape and Environmental Management Plan</td>
<td>Planning condition</td>
</tr>
</tbody>
</table>
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