



# LAND TO THE WEST OF HATFIELD

Environmental Statement – Chapter 17: Conclusions

Arlington Business Parks GP Ltd

## CONTENTS

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17	Conclusions .....	1
17.1	Introduction .....	1
17.2	Air Quality .....	1
17.2.1	Residual Effects .....	1
17.2.2	Construction Phase .....	1
17.2.3	Operational Phase.....	1
17.2.4	Summary of Effects .....	1
17.2.5	Technical Conclusion.....	2
17.3	Ground Conditions and Contamination .....	3
17.3.1	Residual Effects .....	3
17.3.2	Summary of effects .....	3
17.3.3	Technical Conclusion.....	4
17.4	Noise and Vibration .....	6
17.4.1	Residual Effects .....	6
17.4.2	Summary of Effects .....	6
17.4.3	Technical Conclusion.....	6
17.5	Socio-economics .....	7
17.5.1	Residual Effects .....	7
17.5.2	Summary of Effects .....	7
17.5.3	Technical Conclusion.....	8
17.6	Landscape and Visual Impact.....	8
17.6.1	Residual Effects .....	8
17.6.2	Summary of Effects .....	8
17.6.3	Technical Conclusion.....	9
17.7	Transport.....	10
17.7.1	Residual Effects .....	10
17.7.2	Summary of Effects .....	10
17.7.3	Technical Conclusion.....	11
17.8	Water Resources, Flood Risk and Drainage .....	11
17.8.1	Residual Effects .....	11
17.8.2	Technical Conclusion.....	12

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17.9	Ecology .....	12
17.9.1	Residual Effects .....	12
17.9.2	Summary of Effects .....	17-16
17.9.3	Technical Conclusion.....	17-16
17.10	Conclusion.....	17-17

## 17 CONCLUSIONS

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### 17.1 INTRODUCTION

On behalf of Arlington Business Parks GP Limited, this Environmental Statement sets out the results of an Environmental Impact Assessment for the proposed development at Land to the West of Hatfield. The outline planning application submitted to Welwyn Hatfield Borough Council seeks consent for:

*'Large-scale mixed-use development for 1,100 new homes and supporting infrastructure including a primary school, local centre and open space.'*

The proposals include designed-in mitigation from an ecological and landscape perspective.

The ES provides a detailed and objective analysis of the potential environmental effects which will be associated with the development, the likely cumulative impacts associated with the development being brought forward in combination with other committed developments, the measures available to mitigate those effects where appropriate, and the likely effectiveness of those mitigation measures in the form of 'residual effects'.

The ES has been prepared in order to assist the Council, statutory consultees and other interested parties to reach a decision on the merits of the development. The scope of assessment for each technical assessment has been clearly defined and systematic, evidence-based assessments of the potential environmental effects of the proposed development have been clearly detailed herein. Where necessary, the technical assessments have detailed any omissions and/or areas which will require additional assessment prior to commencement of development.

The sections below detail the likely residual effects, summary of effects and conclusions of each technical assessment undertaken to complete the ES.

### 17.2 AIR QUALITY

#### 17.2.1 Residual Effects

#### 17.2.2 Construction Phase

On the basis that the mitigation measures outlined in Section **Error! Reference source not found.** are implemented, the residual effects from all construction phase activities are predicted to be not significant.

#### 17.2.3 Operational Phase

##### 17.2.3.1 Traffic Emissions Assessment

The predicted residual effects of traffic emissions arising from the scheme on existing sensitive receptors are predicted to be not significant without the inclusion of mitigation measures.

#### 17.2.4 Summary of Effects

Assuming the implementation of relevant mitigation measures, the overall effect of the development in terms of existing sensitive receptors surrounding the Application Site is predicted to be not significant.

### 17.2.5 Technical Conclusion

A qualitative assessment of the potential dust impacts during the construction of the development has been undertaken. Through good practice and implementation of appropriate mitigation measures, it is expected that the release of dust would be effectively controlled and mitigated, with resulting impacts considered to be 'not significant'. All dust impacts are considered to be temporary and short-term in nature.

Due to the low additional number of HDV trips anticipated during the construction phase of the development, there is predicted to be a neutral impact / insignificant effect on air quality from road vehicle emissions. Furthermore, emissions from plant / NRMM on-site is predicted to result in a 'not significant' impact on air quality.

Potential operational phase dust mineral dust impacts from the adjacent proposed Hatfield Quarry site are predicted to result in a 'negligible' risk of impact and 'not significant' effect on disamenity in accordance with the IAQM minerals guidance.

Potential operational phase dust mineral dust impacts from the adjacent proposed Furze Field Hatfield Quarry extension site are predicted to result in a 'slight adverse' impact and 'not significant' effect on disamenity for receptor locations of the Application Site located within 250m of the boundary of the proposed Furze Field Hatfield Quarry extension site. Beyond 250m, potential operational phase dust mineral dust impacts from the adjacent proposed Furze Field Hatfield Quarry extension site are predicted to result in a 'negligible' risk of impact and 'not significant' effect on disamenity in accordance with the IAQM minerals guidance.

Additional development trips arising during the operational phase of the scheme are predicted to result in a negligible impact on annual mean NO<sub>2</sub> and PM<sub>10</sub> concentrations at all human receptor locations. There is no new predicted risk of exceedence of the 1-hour mean NO<sub>2</sub> or 24-hour mean PM<sub>10</sub> AQOs as a result of the development proposals. As such, the overall effect is considered to be 'not significant'.

As such, it is not considered that air quality represents a material constraint to the development proposals, which conform to the principles of National Planning Policy Framework and accompany Planning Practice Guidance, the Hertfordshire Health and Wellbeing Planning Guidance and saved policies of the Welwyn Hatfield District Plan.

On the basis that the mitigation measures outlined within the Air Quality chapter are implemented, the residual effects from all construction phase activities are predicted to be not significant.

On the basis that the mitigation measures outlined within the Air Quality chapter are implemented, the residual effects on future inhabitants of the proposed development are predicted to be not significant.

The predicted residual effects of traffic emissions arising from the scheme on existing sensitive receptors are predicted to be not significant without the inclusion of mitigation measures.

The assessment has concluded that a 'very high' level of odour control is required for the proposed kitchen units. On the basis that such mitigation measures are implemented, the residual effects of odour from the proposed kitchen units is predicted to be not significant.

## 17.3 GROUND CONDITIONS AND CONTAMINATION

### 17.3.1 Residual Effects

It is considered that, following the implementation of the construction phase mitigation measures outlined above, the residual effects associated with the post-construction phase of the proposed site will be reduced to negligible and not significant.

It is usually the case that no investigation can cover the whole of a site, therefore the possibility remains that contaminants maybe present in previously unexplored areas. The likelihood of encountering unidentified contamination is significantly reduced upon completion of this assessment of risks arising from contamination and remediation requirements when considering the basis of both the current use and circumstances and its proposed use. The potential residual effect presented to future end users of the site is considered to be negligible significance. If contaminated material is encountered in previously unexplored areas of the site remedial measures would be required, appropriate to the source-pathway-receptor pollutant linkage determined.

### 17.3.2 Summary of effects

#### 17.3.2.1 *Impacts of the Development upon the Land*

An assessment of the potential impacts of the development upon the land judged that the excavation and haulage aspect of the development has the potential to bring about nuisance-type impacts (e.g. dust, mud, etc.) at both the development site and the site(s) receiving the made ground and Natural Strata. That assessment also predicted slight or moderately significant adverse impacts upon the quality of the Made Ground and Clay being handled during the construction stage of the development if mitigation measures were not employed.

Impacts of the land upon the development in the construction and operational stages are likely to be fully resolved by the formation and implementation of:

- a Construction Management Plan (CMP) with the core objective of minimising environmental impacts from the development works; and
- a Site Waste Management Plan (SWMP) which will include a Materials Management Plan (MMP).

#### 17.3.2.2 *Impacts of the Land on the Development*

An assessment of the impacts of the land upon the development in the construction and operational stages will assist in the identification of a number of potential pollutant linkages:

##### 17.3.2.2.1 Construction Stage

- Potential Harm to Health of Construction Workers and Neighbours during Construction from Exposure to Potential PCB in Made Ground (on site but in vicinity of off-site transformer);
- Potential Harm to Health of Construction Workers and Neighbours during Construction from Exposure to Airborne Contaminants in Dust;
- Potential Harm to Health of Construction Workers and Neighbours during Construction from Exposure to Airborne Asbestos in Dust;
- Potential Harm to Health of Construction Workers within Deep Excavation from Exposure to Gases especially Carbon Dioxide;
- PPL 4 (d): Potential Harm to Health of Construction Workers and Neighbours from Potential Contaminants in Imported Landscaping Soils;
- Potential Risks to Health or the Environment from Unidentified Sources Discovered during Construction; PPL UXO

#### 17.3.2.2.2 Operational Stage

- Potential Harm to Health of Future Residents, Workers and Visitors from Exposure to (off site) Contaminants Entering Water Supply Pipework;
- Potential Damage to Future Buildings from Exposure to Aggressive Acids/Sulphates in Made Ground (off-site) and London Clay;
- Potential for Harm to Health of Future Residents, Workers and Visitors and Building Damage from Hazardous Gases (from off-site);
- Potential Harm to Human Health in future from Potential Contaminants in Imported Landscaping Soils.

The harm which could arise should these potential linkage form in the construction and operational stages can be avoided or at least minimized by the formation and implementation of:

- a Health & Safety Plan including an assessment of the potential risk to construction workers from asbestos and ground gases entering excavations, plus plans with respect to UXO based on a Site Specific Unexploded Ordnance Risk Assessment;
- Materials Management Plan including details of any supplementary testing and a section setting out procedures should the contractor unexpectedly encounter potentially hazardous materials (which would trigger production of a Land Quality Validation Report setting out any additional remedial measures volunteered to deal with unexpectedly contamination);
- Construction Management Plan;
- Site Assessment Report leading to the specification of suitably protective water pipe material;
- a Designer's Risk Assessment concerning the potential damage to future buildings from exposure to aggressive ground leading to the specification of suitably resistant concrete structures; and
- new buildings which will be inherently gas-resistant and afford all users fresh air without special precaution regarding ground gas.

Health and Safety Plans are not a matter for the planning authority but are produced in response to legislation.

Overall, following completion of the Unexploded Ordnance Risk Assessment, Site Assessment Report and Designer's Risk Assessment and via adoption of the various Plans recommended herein, it is anticipated that the developer will be able to:

- minimise construction-stage nuisance;
- maintain the quality of materials being taken off-site for reuse; and
- implement measures designed to avoid the formation of pollutant linkages thereby:
  - protecting the health of construction workers and neighbours during construction;
  - safeguarding the local environment and that of the site(s) receiving the Made Ground and clay;
  - protecting the health of future residents, workers and visitors during the life of the development; and
  - ensuring that future buildings are not damaged by ground conditions.

#### 17.3.3 Technical Conclusion

An assessment of the potential impacts of the development upon the land judged that the development has the potential to bring about nuisance-type impacts at both the development site and the site(s) receiving excavated materials, and adversely impact the quality of the Made Ground and underlying strata if they are mishandled.

An assessment of the impacts of the land upon the development identified a number of potential pollutant linkages which could result in harm to health in the construction period and harm health and damage property during the lifespan of the development.

A small number of further risk assessment are recommended:

- Unexploded Ordnance Risk Assessment;
- Site Assessment Report regarding water pipes; and
- Designer's Risk Assessment regarding buried concrete.

All of these supplementary assessments are likely to bring about recommendations to control risk, none of the options are likely to be unusual or overly costly to implement considering the overall construction costs.

A number of plans are recommended:

- Health & Safety Plan;
- Construction Management Plan;
- Site Waste Management Plan including Materials Management Plan.

The Materials Management Plan will include details of any supplementary testing required and a section setting out procedures should the contractor unexpectedly encounter potentially hazardous materials.

If remedial measures are volunteered to deal with unexpected contamination the developer will undertake to produce a Land Quality Validation Report.

By acting upon the recommendations of specialists with regard to UXO and the specification of water pipes and concrete, and via adoption of the various Plans recommended the developer will:

- minimize construction-stage nuisance;
- maintain the quality of materials being taken off-site for re-use; and
- implement measures designed to avoid the formation of harmful or damaging pollutant linkages - locally and at the site(s) receiving the Made Ground and clay.

The development should also:

- enhance the natural and local environment by preventing the new development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil pollution; and
- ensure that the site is suitable for its new mixed commercial and residential use taking account of ground conditions and pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation.

In addition, the development should bring about conditions meeting Category 3 or 4 making the site incapable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990.

It has been found through this assessment that, with the mitigation measures described above, anticipated effect of ground conditions would be negligible. This has been assessed both during and post-construction.



## 17.4 NOISE AND VIBRATION

### 17.4.1 Residual Effects

#### 17.4.1.1 Residual Construction Effects

The good practice mitigation measures are likely to provide a small reduction in the overall level of construction noise. It is considered that a medium magnitude of impact will remain after mitigation, resulting in a minor residual effect. This is considered to be not significant.

#### 17.4.1.2 Residual Operational Effect

No operational mitigation is necessary, so the Proposed Development would result in a negligible residual effect, which is not significant.

#### 17.4.1.3 Residual Effect of Site Suitability

Will appropriate screening, glazing and ventilation discussed above, the noise levels within dwellings across the Site would be reasonable and therefore, considered to be appropriate for the intended use.

### 17.4.2 Summary of Effects

A summary of effects is presented in Table Table 17.1.

Table 17.1 – Summary of Effects

Stage	Pre-mitigation			Mitigation description	Residual	
	Magnitude	Sensitivity	Effect		Magnitude	Effect
Construction activity	Medium	High	Minor	Good practice	Medium	Minor
Construction traffic	Low	High	Negligible	n/a	Low	Negligible
Operational plant	Low	High	Negligible	n/a	Low	Negligible
Operational traffic	Low	High	Negligible	n/a	Low	Negligible

### 17.4.3 Technical Conclusion

The potential noise impacts from the Proposed Development upon existing sensitive receptors have been assessed using criteria derived from national policy and guidance documents. In addition, the existing noise climate across the development site has been assessed for the suitability of the proposed residential use against Effect Levels set out in policy.

Assessment of noise from construction of the Proposed Development shows that, although there is potential for short-term high levels of noise when activity is taking place close to receiver locations, these events will be infrequency and temporary. Overall, the construction noise levels have a medium magnitude of impact upon high sensitive receptors results in a minor significant effect, which is considered not significant in EIA terms.

Potential operational noise impacts from the Proposed Development is limited to noise from any plant and increased levels of traffic producing increased levels of traffic noise. The Proposed represents a low magnitude of impact. This magnitude of impact on high sensitive receptors corresponds to a negligible significant effect, which is not significant in EIA terms.

When assessing the suitability of the site considering road traffic noise, the assessments have concluded that for all but the few elevations overlooking Coopers Green Lane to the north of the site

noise levels are below the LOAEL during both the day and night. No further consideration is required in these areas for this type of noise. For more exposed elevations overlooking Coopers Green Lane mitigation has been discussed for achieving suitable internal noise levels in line with current British Standard guidance.

In the assessments considering site suitability due to operational noise associated with the mineral extraction facilities and proposed extensions to these, the assessments have concluded that noise is predicted to be within all criteria at all times during the proposed operating hours and are not expected to have a significant adverse impact nor give rise to significant noise intrusion. No further consideration to this noise is required on this basis.

For the commercial operations associated with the units to the east of the Proposed Development, the assessments have concluded that with the embedded mitigation of the proposed acoustic screening along the boundary commercial noise is predicted to be below the LOAEL threshold during both the day and night throughout the site. No further consideration to this noise is required on this basis.

For all but the few elevations overlooking Coopers Green Lane to the north of the site, total combined noise levels have been calculated to be below the LOAEL threshold for each period. No further consideration is required in these areas of the Proposed Development. For the few elevations overlooking Coopers Green Lane subject to elevated levels the predictions are below the SOAEL threshold during both the day and night. This is generally due to road traffic. Mitigation options are discussed for achieving suitable internal conditions within these dwellings in line with current British Standard guidance.

## 17.5 SOCIO-ECONOMICS

### 17.5.1 Residual Effects

As there are no expected adverse residual effects there is no requirement for additional mitigation.

### 17.5.2 Summary of Effects

During the construction phase, the proposed development would be expected to create 1,440 net additional person-years of local construction phase employment and £42.4 million of GVA in the local economy (i.e. at the spatial level of Welwyn Hatfield) over a 7-year construction period.

This effect is assessed to be Significant (and positive).

During the operational phase, the proposed development would be expected to create 136 gross FTE permanent jobs at the spatial level of Borough of Welwyn Hatfield.

This effect is assessed to be Insignificant (but positive).

In addition, during the operational phase, the expected aggregate level of increased annual household expenditure arising from the 1,100 new homes proposed by the development is expected to be sufficient to support 234 gross jobs in total, of which 82 would be expected to accrue to residents of the Borough of Welwyn Hatfield. However, it is inadvisable to add these numbers to the employment assessment, as the commercial floorspace may be supported by resident household expenditure; and some of the jobs in the commercial floorspace jobs may be filled by residents of the scheme.

This effect is assessed to be Insignificant (but positive).

Furthermore, during the operational phase the proposed development would be expected to contribute an additional 1,480 economically active adult residents to the local supply of labour.

This effect is assessed to be Significant (and positive).

### 17.5.3 Technical Conclusion

The proposed development would lead to beneficial effects on employment and the generation of additional economic output for the local economy of the Borough of Welwyn Hatfield. Moreover, the scale of two types of positive effects are assessed to be Significant:

- The demand for workers and stimulus to the local construction sector during the construction phase is assessed to be Significant (and positive); and
- The contribution of the scheme to the future supply of labour for the economy of Welwyn Hatfield is also assessed to be Significant (and positive).

There are not expected to be any significant adverse socio-economic effects from the proposed scheme.

## 17.6 LANDSCAPE AND VISUAL IMPACT

### 17.6.1 Residual Effects

The mitigation measures required to reduce the effect of the proposed development on landscape character and views has been incorporated into the design of the project and the assessment of effects assumes that this mitigation is delivered.

No further primary mitigation measures are proposed, and as such, the residual effects will be the same as those described in relation to the Permanent effects of the proposed development.

### 17.6.2 Summary of Effects

Effects on the receptors assessed in Section 11.4 are summarised in the following table:

**Table 17.2: Summary of Effects.**

Receptor	Comments	Distance / Direction	Sensitivity	Magnitude	Significance	Positive / Neutral / Adverse
Landscape Character						
LCA31: de Havilland Plain	Effects on Ellenbrook Fields	/	Local District	Medium	Major - Moderate	Adverse
	Effects on landscape immediately surrounding the Site			Low	Slight	
	Effect on the wider character area			Negligible	Negligible	

Receptor	Comments	Distance / Direction	Sensitivity	Magnitude	Significance	Positive / Neutral / Adverse
<b>Visual Receptor Groups</b>						
Ellenbrook Fields and the Eastern Edge of Hatfield	Within Ellenbrook Fields	0m east	High - Medium	High	Major - Moderate	Adverse
	Area within approximately 100m of Ellenbrook Fields	100m east		Medium-low	Moderate	
	Elsewhere within receptor group	>100m east		Negligible	Minimal	
Astwick Manor, Cooper's Green, Beeches Farm and Cooper's Green Lane	Overall visual effect on receptor group	0m west	High - Medium	Low	Slight	Adverse
Popefield Farm and Footpath Colney Heath 14 / 15	Overall visual effect on receptor group	200m southwest	High - Medium	Negligible	Minimal	Adverse

### 17.6.3 Technical Conclusion

This assessment considers the effects of the Proposed Development on the existing landscape and visual baseline environments. The LVIA has also been an important component of the masterplanning process, ensuring landscape and visual considerations have informed the design of the Proposed Development from the outset.

In relation to landscape character, it is predicated that there will be major-moderate adverse effects on the Ellenbrook Fields itself, due to its change from an undeveloped site to built development. However, this is in part mitigated by the design of the Proposed Development, which will create a series of three well defined neighbourhoods that sit within a strong Green Infrastructure framework. Beyond Ellenbrook Fields, the effects rapidly reduce to slight-negligible, and there are unlikely to be any discernible effects on the wider character of the de Havilland Plain.

The Proposed Development also relates well to the existing settlement form and context. It is considered that the Proposed Development would represent a logical extension to Hatfield, relating well to the existing Salisbury Village to the east and being well contained to the west by existing / enhanced boundary vegetation and woodland. Importantly, the Proposed Development creates an opportunity to enhance the existing urban edge, which is currently defined by a combination of industrial units and residential properties, some of which back on to or are fenced off from the Ellenbrook Fields.

In relation to views, it is predicated that there will be major-moderate adverse effects on recreation users of Ellenbrook Fields itself, due to its change from undeveloped site to built development.

However, this is in part mitigated by the design of the Proposed Development, with the proposed tree and woodland planting helping to assimilate the development into the landscape and softening views of the built form. The proposed Green Infrastructure will also provide a range of different types of publicly accessible open space. The effects reduce to moderate for the limited number of recreational and residential receptors along the immediate eastern Site boundary, who will have relatively open views of the Proposed Development. Beyond this, effects are considered to be slight-minimal and there are unlikely to be any discernible effects on views towards the Site from with Hatfield or the surrounding countryside.

Overall it is concluded that the effects of the Proposed Development are well contained and limited to a small number of receptors within and immediately adjacent to the Site. There will be a large degree of change to character and views as a result of the changing land-use within the Site, but the Proposed Development has been sensitively designed to respond to local context.

## 17.7 TRANSPORT

### 17.7.1 Residual Effects

#### 17.7.1.1 During Construction

The residual effects of the Proposed Development during the construction phase, following mitigation outlined previously, are unchanged from those presented in Table 12.21. It should be noted that these residual effects are Temporary. The residual effects are summarised below in Table 17.3.

**Table 17.3: Summary of Residual Effects during Construction**

Description of Effect	Significance of Effect
Severance	Minor Adverse (Temporary) (not significant)
Pedestrian Delay	Negligible (Temporary) (not significant)
Pedestrian Amenity	Negligible (Temporary) (not significant)
Driver Delay	Negligible (Temporary) (not significant)
Accidents & Safety	Negligible (Temporary) (not significant)
Public Transport	Negligible (Temporary) (not significant)

#### 17.7.1.2 During Operation

The residual effects of the Proposed Development during the construction phase, following mitigation outlined previously, are unchanged from those presented in Table 12.25. It should be noted that these residual effects are Temporary. The residual effects are summarised below in Table 17.4.

**Table 17.4: Summary of Residual Effects of the Completed Development**

Description of Effect	Significance of Effect
Severance	Minor Adverse (not significant)
Pedestrian Delay	Negligible (not significant)
Pedestrian Amenity	Minor Adverse (not significant)
Driver Delay	Negligible (not significant)
Accidents & Safety	Negligible (not significant)
Public Transport	Negligible (not significant)

### 17.7.2 Summary of Effects

The potential transport impacts have been assessed using established methodologies set out in the IEMA Guidelines.

A summary of the effects during the construction phase and during operation is presented in Table 17.5.

**Table 17.5: Summary of Effects**

Description of Effect	Effect	Mitigation	Residual Effect
During Construction (Temporary)			
Severance	Minor Adverse (not significant)	CTMP	Minor Adverse (not significant)
Pedestrian Delay	Negligible (not significant)		Negligible (not significant)
Pedestrian Amenity	Negligible (not significant)		Negligible (not significant)
Driver Delay	Negligible (not significant)		Negligible (not significant)
Accidents & Safety	Negligible (not significant)		Negligible (not significant)
Public Transport	Negligible (not significant)		Negligible (not significant)
During Operation (Permanent)			
Severance	Minor Adverse (not significant)	Cycle parking, diversion of bus services, pedestrian and cycle links, Travel Plans	Minor Adverse (not significant)
Pedestrian Delay	Negligible (not significant)		Negligible (not significant)
Pedestrian Amenity	Minor Adverse (not significant)		Minor Adverse (not significant)
Driver Delay	Negligible (not significant)		Negligible (not significant)
Accidents & Safety	Negligible (not significant)		Negligible (not significant)
Public Transport	Negligible (not significant)		Negligible (not significant)

### 17.7.3 Technical Conclusion

In conclusion, the assessment demonstrates that during the operation of the Development the residual impact will be negligible in relation to pedestrian delay, accidents and safety and public transport, and will be Minor Adverse in relation to severance and pedestrian amenity.

## 17.8 WATER RESOURCES, FLOOD RISK AND DRAINAGE

### 17.8.1 Residual Effects

With mitigation the new development site will be maintained at a low flood risk, providing a small beneficial change and a negligible environmental impact. The residual effects are insignificant.

The construction impact will be managed through a Construction Environmental Management Plan with method statements which will include a detailed monitoring programme, and will therefore be minimal. With this mitigation in place the magnitude of any water quality impacts will be negligible and the overall impact negligible.

The drainage system will provide treatment for the hard-standing area, which will remove solids and oil pollution. With this mitigation in place the magnitude of any post-construction water quality impacts will be negligible and the overall impact negligible.

#### 17.8.2 Technical Conclusion

It has been found through this assessment that, with the mitigation measures described above and within the FRA and drainage strategy, effect on the water environment would be negligible from this development proposal in terms of the risk and water resources. This has been assessed both during and post-construction.

### 17.9 ECOLOGY

#### 17.9.1 Residual Effects

Table 17.6 lists the residual effects following the implementation of the further mitigation measures outlined in Table 14.14 of Chapter 14 and identifies whether these are significant.

One significant residual effect remains, which is the loss of the majority of semi-improved grassland at the Application Site, which meets the criteria for a Hertfordshire Local Wildlife Site. It is not possible to mitigate this effect within the Proposed Development.

Five further adverse residual effects have been identified, all of which are local / minor effects and are not considered significant.

There are also four beneficial residual effects, all of which are local / minor and not significant.

Table 17.6: Residual effects. Neutral or negligible effects are indicated in white. Adverse effects are indicated in yellow (for local/minor effects that are not significant) or orange (for district/moderate effects that are significant). Beneficial effects are indicated in green.

Feature	Effects from construction and occupation phases				
	Residual Effects	Effect type	Geographic scale	Severity	Significance
<b>1. Symondshyde Great Wood LWS and Ancient Woodland</b>	None. There is no conflict with policy or legislation.	Neutral	N/A	N/A	Not significant
<b>2. Home Covert and Round Wood LWS</b>	After the mitigation measures described above, very limited additional recreational pressure is anticipated at the LWS. The residual adverse effect is therefore considered to be negligible, and hence there is no conflict with local policy <i>R15 Wildlife sites</i> , or other policy or legislation.	Adverse	Site	Negligible	Not significant
<b>3. Semi-improved neutral grassland</b>	Loss of two thirds of semi-improved neutral grassland is unavoidable in the Proposed Development, though a sufficient area will be retained to allow good conservation management, and habitat connectivity will be retained. Overall, there is a residual loss which, on reference to the NPPF and Welwyn Hatfield Local Plan Policy R11, results in a significant effect.	Adverse	District	Moderate	Significant
<b>4. Scrub</b>	The above mitigation, which will retain some scrub at the Site and will maximise its biodiversity value. This effect does not conflict with policy or legislation.	Adverse	Site	Negligible	Not significant
<b>5. Semi-natural broadleaved woodland</b>	With fencing protection, no effects during construction and negligible effects from recreational pressure during occupation are anticipated. There is no conflict with policy or legislation.	Neutral	N/A	N/A	Not significant
<b>6. Ellenbrook stream</b>	Potential damage during construction and hydrological and pollution effects of new surface water discharges. The adverse effects are partially compensated for by an increase in the amount of new stream habitat created via de-culverting, and mitigated for by additional protection measures during construction and by pollution control through treatment. A potential local effect remains due to flow variation and water quality impacts from surface water discharges. There is no conflict with policy or legislation.	Adverse	Local	Minor	Not significant



<b>7. Hedgerows</b>	With the above mitigation, overall effects on hedgerows will be neutral. There is no conflict with policy or legislation.	Neutral	N/A	N/A	Not significant
<b>8. Mature trees</b>	With the above mitigation, no effects on mature trees are anticipated. There is no conflict with policy or legislation.	Neutral	N/A	N/A	Not significant
<b>9. Ponds</b>	With the above mitigation, the overall effect on ponds is considered likely to be beneficial, due to the creation of four new ponds of good quality in place of the two poor-quality ponds that will be lost. There will also be beneficial management to increase the quality of retained ponds. This effect is in line with the NPPF and Welwyn Hatfield Local Plan Policy <i>R11 - Biodiversity and Development</i> .	Beneficial	Local	Minor	Not significant
<b>10. Badger</b>	With the above mitigation, there is no conflict with policy or legislation.	Neutral	N/A	N/A	Not significant
<b>11. Bats</b>	With the above mitigation, in particular the retention of dark habitat corridors at the east and west of the Application Site, and across the centre of the Application Site, the retention of dark grassland habitat at the South, an increase in the area of wetland habitats, and in increase in the number of roosting sites, a local benefit to bats is anticipated, and there is no conflict with policy or legislation, including Local Welwyn Hatfield Local Plan Policy <i>R20 - Light Pollution</i> .	Beneficial	Local	Minor	Not significant
<b>12. Brown hare</b>	Adverse effects on the small population of brown hare likely to be present at the Site is unavoidable. Given this species is relatively widespread in Hertfordshire, this will result in an adverse effect at the Local level. There is no conflict with policy or legislation. There is a duty on local authorities to have due regard to SPI species in carrying out their functions, and this assessment provides the information required for this.	Adverse	Local	Minor	Not significant
<b>13. Harvest mouse</b>	Given the loss of some suitable habitat for this species (primarily at the west of the Application Site), an adverse effect at the local level is unavoidable. There is no conflict with policy or legislation. There is a duty on local authorities to have due regard to SPI species in carrying out their functions, and this assessment provides the information required for this.	Adverse	Local	Minor	Not significant
<b>14. Hedgehog</b>	The area of suitable foraging habitat for this species is likely to decrease in the Proposed Development, and there is likely to be an increase in mortality from new roads and increased traffic flows locally. The	Adverse	Local	Minor	Not significant

	<p>hedgehog in the vicinity of the Application site is likely to be limited by the availability of cover and/or hibernation sites, rather than foraging habitat (because the areas is dominated by open grassland). Therefore, the mitigation included above (provision and maintenance of habitat piles) is likely to offset these adverse effects to some extent. However, overall, a minor adverse effect on this species is considered unavoidable. There is no conflict with policy or legislation. There is a duty on local authorities to have due regard to SPI species in carrying out their functions, and this assessment provides the information required for this.</p>				
<b>15. Breeding birds</b>	<p>With the above mitigation, no potential breach of wildlife legislation is anticipated. The residual effect will be the loss of two pairs of breeding lapwing (i.e. a complete loss of this species from the Application Site), and a reduction in the number of skylark at the Application Site. Both of these species are red-listed due to national declines in their populations and are SPIs, however they remain numerically abundant nationally and are both described as common in Hertfordshire in Birds of Hertfordshire (Smith et al. 2015). The overall effect on birds is therefore considered to be an adverse effect at the local level. There is no conflict with policy or legislation. There is a duty on local authorities to have due regard to SPI species in carrying out their functions, and this assessment provides the information required for this.</p>	Adverse	Local	Minor	Not significant
<b>16. Great crested newt</b>	<p>With the above mitigation, and considering the increase in breeding and hibernation habitat that will result from the Proposed Development, an overall beneficial effect at the local level is anticipated. This effect is in line with the NPPF and the Hertfordshire Biodiversity Action Plan.</p>	Beneficial	Local	Minor	Not significant
<b>17. Common toad</b>	<p>With the above mitigation, and considering the increase in breeding and hibernation habitat that will result from the Proposed Development, an overall positive effect at the local level is anticipated. There is no conflict with policy or legislation.</p>	Beneficial	Local	Minor	Not significant

### 17.9.2 Summary of Effects

Based on the nature and location of the Proposed Development, including designed-in mitigation described in the Ecology Strategy, no significant adverse effects on statutory designated sites are anticipated.

Without additional mitigation, and including cumulative effects with other planned or proposed developments, there will be significant adverse effects (at the district / moderate level) on the following features: (1) Home Covert and Round Wood LWS (due to the potential for accidental damage during construction and recreational pressure during occupation); (2) Semi-improved neutral grassland (because the majority of this habitat, which meets the Hertfordshire criteria for Local Wildlife Sites, will be lost from the Application Site); (3) Semi-natural broadleaved woodland within the west of the Application Site (because there is potential for accidental damage during construction and recreational pressure during occupation); (4) Bats (due primarily to the potential for light spillage from new street and external lighting to reduce the value of commuting and foraging habitat at and near the Application Site); and (5) Breeding birds (due to potential impacts during construction and the extent of the loss of open grassland habitat at the site, currently supporting breeding lapwing and skylark).

There will be ten non-significant effects (at the local /minor level), on scrub habitat, the Ellenbrook stream, hedgerows, mature trees, ponds, brown hare, harvest mouse, hedgehog, great crested newt and common toad.

Given the identified effects, additional mitigation and enhancement measures have been proposed in this assessment. These reduce the impact of the Proposed Development, such that one significant residual adverse effect remains: an adverse effect on semi-improved neutral grassland at the district/moderate level. There will also be non-significant residual adverse effects (at the local / minor level) on the Ellenbrook stream, brown hare, harvest mouse, hedgehog and breeding birds.

There will be non-significant residual minor beneficial effects on ponds, bats, great crested newt and common toad. All other effects are considered to be neutral or negligible.

### 17.9.3 Technical Conclusion

The Proposed Development will incorporate extensive ecological mitigation, and will retain much of the ecological value of the site, including for protected species such as great crested newts and bats, and habitats such as open grassland, woodland, the Ellenbrook stream and ponds.

The Proposed Development will have a moderate residual adverse effect on semi-improved neutral grassland at the Site, because approximately one third of this habitat will be retained and two thirds will be lost. In relation to the provisions set out within the NPPF and Welwyn Hatfield Local Plan Policy R11, the Proposed Development has sought to minimise impacts on habitats, although the residual effect on semi-improved neutral grassland is considered to be significant.

The Proposed Development will also have minor residual adverse effects (on the Ellenbrook stream, brown hare, harvest mouse, hedgehog and breeding birds) that are not considered to conflict within any legislation or policy and are not considered to be significant. There is, however, a duty on local authorities to have due regard to SPI species (e.g. brown hare, harvest mouse and hedgehog) in carrying out their functions, and this assessment provides the information required for them to discharge this duty.

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## 17.10 CONCLUSION

The general conclusion reached by the ES is that there are adequate mitigation measures available to ensure that the development described could proceed without giving rise to unacceptable environmental effects, even in combination with other committed developments in the immediate vicinity. The mitigation measures proposed would not have any adverse residual effect on the existing environment or local amenity.