

13. Summary

13.1. Introduction

- 13.1.1. This chapter forms the summary of the Environmental Statement ("ES") which addresses any likely significant environmental effects as a result of the Proposed Development on Land east of Knowsley Lane, Knowsley (the "Application Site" or "Site").
- 13.1.2. This ES has been prepared on behalf of Hallam Land Management Ltd (the "Applicant") in support of an outline application (including details of access to but not within the site) for the erection of up to 700 dwellings together with public open space, landscaping, new vehicular access junctions, active travel links, sustainable urban drainage systems and other associated infrastructure ('the Proposed Development').
- 13.1.3. The Application Site is situated within the administrative area of the Knowsley Metropolitan Borough Council (KMBC).
- 13.1.4. The ES has been coordinated and managed by Pegasus Group. Pegasus Group is one of the founding members of the Institute of Environmental Management and Assessment (IEMA) Quality Mark, which has recently been re-named as the Institute of Sustainability and Environmental Professionals (ISEP). This is a mark of excellence in EIA co-ordination and management. The consultants who have contributed to the preparation of this ES are referenced in the Competency Statement at the front of this document, along with information demonstrating their "expertise to ensure the completeness and quality of the ES", in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) (amended in 2018).

Availability and Comments

- 13.1.5. This ES can be viewed online on KMBC website and at their offices (please contact KMBC for details). Additional copies of the Non-Technical Summary ("NTS") (no charge), ES Volume 1 (£100 plus postage) and the Technical Appendices (£150 plus postage) are available from Pegasus Group, Central House, Queen Street, Lichfield, WS13 6QD. The complete ES can also be obtained in CD format for £10 from the same address. Comments on the planning application should be sent to KMBC Planning Department.

13.2. The Environmental Statement – Scope and Methodology

- 13.2.1. In order to determine the scope of the EIA, the EIA Regulations make provision for, but do not statutorily require, an applicant to request that the local planning authority (LPA) provide a written opinion as to the information to be provided within the ES. A request for a Scoping Opinion was submitted on behalf of the Applicant to KMBC on 26th March 2025 (**Appendix 2.1**). KMBC issued its Scoping Opinion on 21st May 2025; this is enclosed within **Appendix 2.2**.
- 13.2.2. KMBC broadly agreed with the approach, methodology and structure of the ES, including the topics proposed to be 'scoped in' and 'scoped out'. Accordingly, this ES has addressed those environmental issues agreed in the scoping process which are considered pertinent and that could potentially result in "likely significant effects" as required by the EIA Regulations.
- 13.2.3. Each technical chapter has identified 'likely significant effects' using a pre-determined assessment criteria which often, but not always, reflects the relationship between the

Summary

magnitude or severity of an effect; and the sensitivity, importance or value of the resource or receptor.

- 13.2.4. Where necessary, mitigation measures have been proposed to ameliorate effects specific to an environmental theme, many of which are purposely incorporated into the design of the proposals and are highlighted as 'mitigation by design'. 'Additional mitigation' measures may also be proposed, which may be subject to appropriate planning conditions or obligations.

13.3. The Application Site and Context

- 13.3.1. The Site covers approximately 33.75 hectares (ha) and comprises multiple parcels of arable agricultural land divided by hedgerows, with two wooded areas, Howards Pit and Knowles's Pit, (known as Spookies Woods), in the centre of the Site. While the Multi Agency Geographic Information for the Countryside (MAGIC) website did not identify any woodlands within or immediately adjacent to the Site as Ancient Woodland, ecological surveys identified ancient woodland indicator species. With ancient woodland in England being defined as an area that has been continuously wooded since at least 1600 AD, due to the proximity of the woodlands to an historic estate which dates to the late 15th century, and to take a robust approach, the recorded woodland has been assumed to be ancient for the purpose of assessment. There are ponds and drainage ditches located within these wooded areas. An overhead telecom line runs through the centre of the Site in a general north/south direction.
- 13.3.2. The Site is located adjacent to the southern edge of the settlement of Knowsley, approximately 680m north east of the settlement edge of Stockbridge Village and approximately 9km north east of the centre of the Liverpool city.
- 13.3.3. The Site is bordered by Knowsley Lane to the west and Home Farm Road to the north, the latter of which crosses the Site. The M57 is located to the west of the Site which provides connections into Aintree to the north and Whiston Cross to the south. The eastern boundary lies adjacent to a commercial area in the north east with the remainder of the boundary located adjacent to a woodland known as Ash Plantation (which forms part of Knowsley Park), beyond which lies Ornskirk Road and the grounds within Knowsley Park (designated as a Registered Park and Garden, Local Wildlife Site and Geological Site).
- 13.3.4. There are no Public Rights of Way (PRoW) located within the Site itself. Bridleway KN5/1 is located adjacent to Knowsley Lane on its western edge and travels in a westward direction on Fluker's Brook Lane and then northwards adjacent to the M57 motorway. National Cycle Network Route 862 follows a route approximately 360m west of the Site, adjacent to the western side of the M57.
- 13.3.5. The Site forms part of the only safeguarded land site identified under Policy SUE1 in the Knowsley Local Plan Core Strategy (adopted January 2016). The entire safeguarded site covers 58.9ha of land and the primary proposed uses are residential, with a notional capacity of 1,093 dwellings.
- 13.3.6. There are no statutory landscape designations within the Site itself or within proximity to the Site. Croxheath Country Park is located c. 1.3km west of the Site.
- 13.3.7. There are no statutory designated sites for nature conservation and ecology located within the Site itself. There are no European statutory designated sites within 10km of the Sites boundary, there are however a number of sites located close to the 10km buffer zone the closest of these being Mersey Estuary Ramsar and Special Protection Area (SPA) located c.

10.7km southwest. There are no nationally statutory designated sites within 5km of the Sites boundary.

- 13.3.8. There is one locally statutory designated site within 2km of the Sites boundary, Croxteth Local Nature Reserve (LNR) c. 1.2km west. There are six non-statutory locally designated Local Wildlife Sites (LWS) and a number of priority woodland habitat areas within 1km of the Site.
- 13.3.9. Knowsley Park is located adjacent to the southern and eastern boundaries and is designated as a Grade II Registered Park and Garden (ref 1000997). Croxheath Hall Park located c. 100m south of the Site is also designated as a Grade II Registered Park and Garden (ref 1001304). Knowsley Conservation Area is located c. 110m north west of the Site. There are no heritage assets located within the Site itself, nor are there any Scheduled Monuments located within 2km of the Sites boundary. Within 1km of the Sites boundary there are three Grade II listed buildings and two Grade II* listed buildings.
- 13.3.10. The Environment Agency (EA) Flood Map for Planning indicates the Site is located in Flood Zone 1 (defined as land having a “low probability” of flooding, i.e. a less than 0.1% annual probability). The Site is considered to be at a very low risk of flooding from small watercourses and is at a very low to medium risk of pluvial surface water flooding.
- 13.3.11. The Site is not located within an Air Quality Management Area (AQMA), the closest AQMA is Liverpool City AQMA located c. 850m west declared for levels of Nitrogen Dioxide.

13.4. The Proposed Development and Alternatives

- 13.4.1. The Applicant seeks outline planning permission for the following description of development:

“Outline application (including details of access to but not within the site) for the erection of up to 700 dwellings together with public open space, landscaping, new vehicular access junctions, active travel links, sustainable urban drainage systems and other associated infrastructure.”
- 13.4.2. ‘Development Parameters’ have been established and assessed within this ES. The Development Parameters detail all the limits necessary to define and fix those aspects of a development capable of having significant environmental effects. This will enable planning conditions to be drawn up and agreed to control the implementation of the Proposed Development.
- 13.4.3. Each principal land use for the purpose of assessment is summarised in the table below and is based on the Parameter Plan at **Figure 4.1**. Further detail on the Proposed Development is provided in Chapter 4, including discussion regarding the proposed vehicular and pedestrian access, indicative green infrastructure detail, sustainable drainage strategy and information regarding construction. Should Outline Planning Permission be achieved for the Proposed Development, it is reasonable to assume, for assessment purposes, that development could commence in 2028 and would last for approximately 11 years, with first dwelling occupations in 2028 (i.e. the opening year) and completion in 2039.

Summary

Table 13.1 Proposed Land Use

Parameter *	Land Use	Description
Built Form (approx. 20.6 ha) (including access and movement)	Residential Dwellings including internal road infrastructure	Up to 700 residential dwellings comprising a range of heights, with a maximum height of 12.5m above proposed ground levels across the majority of the Site, with a reduced maximum height of 9m along the eastern and southern edges. Areas includes roads, public realm, footpaths, private drives, gardens, incidental open space and other associated infrastructure
	Vehicular Access Points	Two vehicular points of access/egress to/from the Site are proposed via Knowsley Lane (B5202), which will be connected to one another by a primary vehicular corridor (alignment within built form parcel to be determined at detailed stages)
	Pedestrian/cycle and other access	Retained access/egress for cyclists and pedestrians to/from the Site. Additional indicative locations of potential pedestrian, cycle, active travel or emergency access points also proposed.
Green Infrastructure (approx. 10.2 ha) Retained Woodland (approx. 3 ha)		Including amenity green space, children's play provision, landscape planting, retained hedgerows/trees (where feasible), footpaths/cycleways, drainage/sustainable drainage systems (SuDS) and associated utilities and service infrastructure. Additional incidental areas of green infrastructure will be incorporated into the built form parcels and are not included in this quantum. Existing woodland onsite to be retained.

* Based on Figure 4.1 Parameter Plan

Consideration of Alternatives

- 13.4.4. Where alternatives have been considered, the EIA Regulations state that an ES should "include a description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects".
- 13.4.5. The Site forms part of the safeguarded land under Policy SUE1 within the Knowsley Local Plan Core Strategy (adopted January 2016) for the provision of a notional capacity of 1,093 dwellings. Therefore the suitability of the Site for a residential development is already established. Further, as the Applicant can deliver the Proposed Development on the Site, and the Site is well placed for the development proposed, in this context alternative locations or uses were not considered further.
- 13.4.6. The main alternatives to the Proposed Development which the Applicant has considered include:
- The 'No Development' Alternative; and
 - Alternative designs.

13.4.7. The 'No Development' alternative means leaving the Site in its current use as arable agricultural land. The beneficial and adverse effects outlined in this ES would not occur. There is no indication that in the absence of the Proposed Development, the use of the Site would alter and therefore the environmental conditions of the Site would remain at its baseline level.

13.4.8. As part of the iterative EIA and design process, the design of the Proposed Development has evolved to take account of various environmental constraints and opportunities. In this respect, environmental desktop reviews, interim assessments of the emerging Proposed Development and relevant knowledge gained from environmental baseline surveys and consultation with consultees, have influenced the evolution of the proposals at an early stage in the design process. In adopting this iterative design process has enabled the early identification of mitigation measures which have then become inherent in the design.

13.5. Socio-Economics and Health

13.5.1. This chapter has assessed the socio-economic and health impacts arising from the Proposed Development that will deliver up to 700 residential dwellings.

Baseline Conditions

13.5.2. A baseline review of Knowsley and the local area socio-economic context reveals the following:

- Between 2014 and 2024, Knowsley population has grown at a higher rate than regional and national comparators. The increase in population is largely due to growth in people aged 65+ and this trend is projected to continue between 2022 and 2042.
- Employment in Prescot North fell by 10.0%, whereas Knowsley saw a 4.5% increase, both of which were below regional and national employment growth levels.
- As of May 2025, unemployment in Knowsley (4.6%) is above regional and national comparators.
- Knowsley O05F, where the majority of the Site falls, ranks within the top 20% most deprived LSOAs in the country. The Site also falls within O05E, which is in the top 50% most deprived.
- Since 2013, construction GVA growth in Knowsley has remained in line with regional and national figures, however in 2023 construction GVA in Knowsley has fallen substantially compared to the growth rates in the North West and England.
- As of 2023, total GVA growth since 2013 in Knowsley is in line with the North West and England.
- Knowsley had a lower rate of total recorded offences (82.9 per 1,000 population) in the 12-months ending Q4 2024 when compared to the regional average of 93.2 per 1,000 population. The total recorded offences in Knowsley fell by 13.3% since Q4 2023, a larger decrease than the regional decrease of 5.9%.
- The local health profile of Knowsley shows worse health outcomes in most indicators when compared to regional and national figures.

Summary

- In terms of current education provision, Knowsley Village Primary Planning Area has a current surplus of 41 places and Central Secondary Planning Area has a current surplus of 544 places.
- In terms of healthcare provision, within the 11 surgeries in the catchment area of the Site, and less than 6.2 miles away, there are a total of 40,625 patients and 21 FTE GPs, giving a patient-to-GP ratio of 2,174.3.
- Within 2 miles of the Site there is a total of 467.6ha of open space across all open space typologies.
- Sensitive receptors identified include; Existing residents located in existing housing immediately to the north of the Site, pupils of Knowsley Village Primary School to the north of the Site, users of Bridleway KN5/1, located adjacent to the western boundary of the Site.

Likely Significant Effects

- 13.5.3. In respect of the construction phase, the assessment indicates that the Proposed Development will have the following temporary effects:
- During the construction phase, 224 temporary jobs could be supported per annum on-site and in the wider economy over the build period (estimated to be 11 years).
 - Around £16.6million of gross value added per annum is estimated to be generated over the 11-year build period.
- 13.5.4. In EIA terms, these impacts are considered to have a major beneficial effect which is significant.
- 13.5.5. There is potential for minor to moderate adverse effect in relation to neighbourhood amenity as a result of construction activities, but this will not be significant and only temporary in nature and minimised as far as possible through the implementation of best practice measures managed via a CEMP.
- 13.5.6. In respect of the operational phase, the assessment indicates that the Proposed Development will have the following permanent effects on the economy:
- An estimated 783 economically active and employed residents are estimated to live in the Proposed Development.
 - The Proposed Development could generate an additional household expenditure of £18.4million per annum once the scheme is complete and fully occupied.
 - The dwellings could generate an additional £1.7million per annum in Council Tax payments.
- 13.5.7. In EIA terms, these impacts are considered to have a significant beneficial effect.
- 13.5.8. There is potential for major beneficial effect in relation to housing given that the Proposed Development will deliver around 14.1% of the annual housing need in Knowsley. This will be a permanent significant beneficial effect.

- 13.5.9. In terms of education provision, the permanent effect of the Proposed Development is expected to have a negligible impact on primary and secondary schools, once the impact is mitigated against by financial contributions.
- 13.5.10. In terms of healthcare provision, given the additional 1,628 residents would increase the patient-to-GP ratio at the 11 surgeries to 2,012, which is an increase of 4.0%, the permanent effect of the Proposed Development is considered to have a minor to moderate adverse impact on healthcare provision, therefore is not significant in EIA terms.
- 13.5.11. The effect on open space is considered to be moderate beneficial, given that the Proposed Development plans to provide an estimated 4.52ha of public open space on-site.
- 13.5.12. There are considerable economic, environmental, and social benefits resulting from the scheme, which all combine to contribute to a positive change in health and wellbeing. The permanent effect is considered to be moderate beneficial which is significant in EIA terms.

Mitigation and Enhancement

- 13.5.13. Provision for open space will be made as part of the design of the Proposed Development. A financial contribution to primary and secondary school provision may be required.

Conclusion

- 13.5.14. Overall, the Proposed Development is considered to provide **significant beneficial effects** during the construction phase in relation to employment and its economic contribution. Once operational, **significant beneficial effects** are expected in relation to wider economic effects, housing, open space provision and health and wellbeing. All other effects are deemed 'not significant'.

13.6. Landscape and Visual

- 13.6.1. This chapter assesses the likely significant landscape and visual impacts of the Proposed Development during construction and operation.
- 13.6.2. It describes the methods used to assess these effects and determines the baseline conditions currently existing at the Site. Primary mitigation measures, such as considered design for both built form/infrastructure and green infrastructure to help minimise effects on landscape character and visual amenity, are incorporated into the design of the Proposed Development through an iterative design process. Secondary mitigation measures to prevent, reduce or offset any residual landscape and/or visual effects are not therefore considered practicable or necessary.
- 13.6.3. The methodology and assessment criteria adopted to inform the assessment of effects has been developed in accordance with the principles established in GLVIA3¹.
- 13.6.4. The Landscape and Visual Assessment (LVIA) considers:
- Effects on the landscape as a resource in its own right (the landscape effects); and

¹ Landscape Institute, 2013, Guidelines for Landscape and Visual Impact Assessment (GLVIA3).

Summary

- Effects on specific views and visual amenity more generally (the visual effects).

13.6.5. Effects have been assessed during the construction phase, and at Years 1 and 15 of the operational phase.

Baseline Conditions

13.6.6. The Site is not covered by any national or local landscape designations. The Site is identified in KMBC Local Plan Core Strategy (adopted January 2016) as Safeguarded Land (Policy SUE1), having been removed from the Green Belt which surrounds the Site to three sides.

13.6.7. The Site is relatively flat, with a gentle rise in elevation from approximately 26m AOD in the west to around 35m AOD in the east. There are several ponds, dry pits and ditches running through Spookies Wood in the centre of the site, with a historic infilled pond in the north west.

13.6.8. The Site is bounded along the majority of the northern boundary by an established hedgerow, immediately adjacent to Home Farm Road. The western boundary is defined by a hedgerow and Knowsley Lane. The eastern and southern boundaries face onto the well wooded edges of Knowsley Park Registered Park and Garden and is defined by a continuous sandstone wall.

13.6.9. The Site falls within National Character Area (NCA) 32, Lancashire and Amounderness Plain but close to the boundary with NCA 58: Merseyside Conurbation.

Likely Significant Effects

13.6.10. It is evident that visibility of the Proposed Development would be very limited in nature, with only those areas immediately surrounding the Site having any visibility, owing to a combination of woodland to the west, south and east and built form associated with Knowsley to the north. Potential views from further afield would likely be reduced by the intervening vegetation and buildings, with only select parts of the Proposed Development visible from the surrounding landscape.

13.6.11. The Site is deemed to already be influenced by the settlement edge of Knowsley to the north, by Stanley Grange Business Village to the north-east and by Knowsley Lane to the west. Due to surrounding built form and areas of established woodland, the influence of the Proposed Development would largely be limited to the Site itself.

13.6.12. Therefore, significant landscape and visual effects during the construction phase would be limited to those areas within the Site itself or directly adjacent to the Site and include the following:

- Land use within the Site;
- Landscape character of the Site and immediate surroundings;
- Visual amenity experienced by residential occupiers along Home Farm Road, Whitestone Close, Berry Hill Avenue, Ross Close, Sugar Lane and Parklands;
- Visual amenity experienced by workers from Stanley Grange Business Village;
- Visual amenity experienced by recreational users of PRoW / Bridleway KN/5/1 along Fluker's Brook Lane and users of Ross Close Playing Fields; and

- Visual amenity experienced by road users of Knowsley Lane (B5194).

13.6.13. Of the receptors which would undergo significant effects during the construction phase, these effects would generally remain significant during the operational phase at both Year 1. However, with the benefit of the embedded mitigation measures only the following significant landscape and visual effect would remain in Year 15:

- Landscape character of the Site and immediate surroundings;
- Visual amenity experienced by residential occupiers along Parklands; and
- Visual amenity experienced by recreational users of the informal open space between Home Farm Road and Ross Close.

Mitigation and Enhancement

13.6.14. Landscape and visual mitigation measures have been integrated into the design of the Proposed Development through an iterative design process. Potential landscape and visual effects were identified early on in the design process. This allowed landscape and visual mitigation measures to be embedded into the overall design for the Proposed Development.

13.6.15. Embedded mitigation measures comprise:

- Retention of the two central woodlands within the Site, including appropriate offsets guided by ecological and arboricultural constraints and provision of new scrub planting around the borders to deter access;
- Retention of the majority of existing field boundary vegetation within and on the periphery of the Site;
- Retention and enhancement of select areas of existing scrub around the periphery of the Site for wildlife benefits and to enhance visual enclosure;
- Creation of a green corridor to the south and east of the Site, to respect the setting of Knowsley Park boundary wall, provide additional visual enclosure, incorporate new tree and scrub planting for wildlife benefit and include informal routes and play opportunities;
- Creation of green corridors along Knowsley Lane and Home Farm Road, to enhance visual enclosure and assist with integration of the Proposed Development;
- Provision of a new central green space, including new tree, hedgerow and shrub planting, as well as formal play provision and creation of a community orchard;
- Street tree planting, including the creation of a tree-lined primary street through the Proposed Development;
- Creation of new areas of scrub in between existing woodlands, incorporating open glades and informal footpaths; and
- The long-term management of existing and proposed vegetation.

Summary

Conclusion

- 13.6.16. The Site comprises arable farmland which is not designated and which lies adjacent to the village of Knowsley and Stanley Grange Business Village.
- 13.6.17. Landscape and visual mitigation measures have been integrated into the design of the Proposed Development through an iterative design process. Potential landscape and visual effects were identified early on in the design process, allowing landscape and visual mitigation measures to be embedded into the overall design for the Proposed Development.
- 13.6.18. In conclusion, whilst the Proposed Development would result in some longer-term **significant adverse** landscape and visual effects, they would be limited to within the Site itself and its immediate environs. Such effects are not an indicator of poor design or an unsuitable site, but are an inevitable consequence of development on greenfield land.

13.7. Ecology and Biodiversity

- 13.7.1. FPCR have undertaken an Ecological Impact Assessment for the Proposed Development.
- 13.7.2. To inform this assessment, a suite of ecological surveys were carried out, including detailed habitat surveys as well as species-specific surveys for great crested newts, foraging/commuting bats, water vole breeding and wintering birds and red squirrel. Biodiversity Net Gain calculations were also undertaken, in order to assess changes in the biodiversity value of the Site as a result of proposals.

Baseline Conditions

- 13.7.3. The following Important Ecological Features (IEF) were identified as requiring detailed ecological assessment:
- Statutory Designated Sites: The Mersey Estuary Ramsar/ Special Protection Area (SPA), The Liverpool Bay SPA, The Mersey Narrows and North Wirral Foreshore Ramsar/SPA, The Ribble and Alt Estuaries Ramsar/SPA, The Dee Estuary Special Area of Conservation (SAC)/Ramsar/SPA, Sefton Coast SAC and Martin Mere Ramsar/SPA.
 - Non-statutory designated sites: Knowsley Park Local Wildlife Site (LWS), Akers Pits LWS, Little Wood LWS, The Roughs LWS, Meakin's Pits LWS and The River Alt LWS and the River Alt and M57 Corridor Nature Improvement Area.
 - Priority habitats – deciduous woodland and no main habitat (NMH) offsite and Lowland mixed deciduous woodland/potential ancient woodland onsite.
 - On Site habitats: non-priority other broadleaved woodland, non-priority ponds, individual trees, native hedges.
 - Fauna: breeding birds, Wintering birds, Foraging and commuting bats and Red squirrel.

Likely Significant Effects

- 13.7.4. With mitigation measures taken into account, which are described in the next section, the following residual effects are anticipated:

- Wintering birds are predicted to be Negative, not-Significant at a Local Scale due to unmitigated loss of Arable habitat.
- A Negative, not-Significant residual effect at a Metropolitan Scale is predicted on Knowsley Park LWS, Akers Pits LWS and The River Alt and M57 Corridor NIA due to increased cat predation and pollution/air quality impacts.
- A Negative, not-Significant residual effect at a Metropolitan Scale is predicted on onsite Lowland Deciduous and potential ancient woodland due to potential pollution/air quality impacts.
- A Negative, not-Significant residual effect at a Local Scale is predicted on The Sanctuary Priority woodland, due to potential pollution/air quality impacts.
- Residual effects on Red Squirrel will be confirmed on completion of additional surveys. However, effects are predicted to be Neutral

13.7.5. For all other IEF, potential impacts during operation have been appropriately mitigated by the measures and the residual effects on all IEF are predicted to be at least Neutral.

Mitigation and Enhancement

- 13.7.6. Mitigation through design has been utilised to avoid impacts on IEF wherever possible. Habitats of biodiversity value have been retained and buffered from impacts. The Proposed Design has sought to maintain connectivity for wildlife along the boundaries and also from the central woodlands towards offsite habitats to the east and south. Approximately 40% of the Proposed Development comprises greenspace, including a network of footpaths and a dedicated 4.1ha of public open space which will provide alternative recreation opportunities, to minimise the potential for significant adverse effects on locally designated sites and sensitive habitats.
- 13.7.7. Any habitat losses will be accounted for within the BNG strategy for the Site which will ensure that an overall 10% BNG is provided as part of the Biodiversity Net Gain Condition, likely to be combination of onsite and offsite provision. Additionally, features on Site will be enhanced and created that will benefit biodiversity, particular fauna species, although these are not necessarily represented with the net gain metric. The delivery, management and monitoring of habitats will be subject to the implementation of a detailed Biodiversity Management Plan, secured by condition.
- 13.7.8. Construction impacts will be minimised through careful control of operational activities through an industry best practice CEMP.
- 13.7.9. Provision of a detailed lighting design strategy will ensure there are no negative impacts to wildlife from lighting.
- 13.7.10. A Habitats Regulations Assessment (HRA) will be required to complete an assessment of impacts on Designated Sites. An interim Habitat Regulations Assessment (iHRA) has been completed to accompany this assessment.
- 13.7.11. In order to address the potential risk of increased recreational pressure on designated site information leaflets are recommended to be distributed to new residents information signage boards and dog waste bins should be provided in suitable locations on the edge of retained woodland onsite.

Summary

- 13.7.12. Alternative habitat for ground nesting bird species is recommended offsite.

Conclusion

- 13.7.13. With the inclusion of mitigation measures **no significant effects** are anticipated on ecology and biodiversity as a result of the proposals.

13.8. Cultural Heritage

- 13.8.1. This Chapter has considered potential effects upon the heritage significance of archaeology and cultural heritage receptors. Specifically, it considers the potential direct and indirect effects of the Proposed Development on the potential archaeological resource of the Site and relevant built heritage assets within its environments.

Baseline Conditions

- 13.8.2. The Site is deemed to have a low potential for significant archaeological remains from all periods.

- 13.8.3. The Site contains no designated heritage assets and is not located within a Conservation Area. Within a 1km study area of the Site, there are:

- 2 Grade II* Listed Buildings;
- 3 Grade II Listed Buildings;
- 2 Grade II Listed Registered Parks and Gardens; and
- 1 Conservation Area

- 13.8.4. The assets considered for assessment within this ES chapter comprised:

- Grade II* Listed Knowsley Hall – designated heritage asset of high value
- Grade II Listed Knowsley Park & Parkland Wall, curtilage Listed to Knowsley Hall – designated heritage assets of moderate value
- Ormskirk Lodge, curtilage Listed to Knowsley Hall – designated heritage asset of moderate value
- Croxteth Lodge, curtilage Listed to Knowsley Hall – designated heritage asset of moderate value
- Home Farm Lodge, curtilage Listed to Knowsley Hall – designated heritage asset of moderate value
- Home Farm, curtilage Listed to Knowsley Hall – designated heritage asset of moderate value
- Grade II Listed Croxteth Hall Park Registered Park and Garden, and Grade II Listed Little Wood Lodge – designated heritage assets of moderate value
- Knowsley Village Conservation Area – designated heritage asset of moderate value

- 13.8.5. The Site does not contribute to the setting or significance of any other heritage assets within the 1km study area or beyond.

Likely Significant Effects

- 13.8.6. No significant effects upon surrounding sensitive receptors are anticipated to arise during the construction or operational phases of the Proposed Development following mitigation, either in isolation or in combination with any of the identified cumulative developments. This includes direct effects as a result of truncation or destruction of unknown archaeological remains, and indirect effects as a result of changes to setting of the identified heritage assets.

Mitigation and Enhancement

- 13.8.7. The Proposed Development includes heritage-led embedded mitigation, which was implemented within the Proposed Development to reduce potential effects on several designated heritage assets. This includes to the Grade II Listed Knowsley Park Registered Park and Garden, as well as to the curtilage Listed Parkland Wall, Home Farm Lodge, and Home Farm. The embedded mitigation includes a landscape buffer, targeted woodland and tree plantations, and retention of post-medieval woodland parcels.
- 13.8.8. Enhancements to the Proposed Development would include interpretation boards positioned along the landscape buffer and footpath included within the embedded mitigation for the Grade II Listed Knowsley Park Registered Park and Garden, and the curtilage Listed Parkland Wall, Home Farm Lodge, and Home Farm. The interpretation boards would better reveal the significance of these heritage assets, illustrating their historic functional association with Knowsley Hall and its parkland.

Conclusion

- 13.8.9. This Chapter has identified **no significant effects** in EIA terms in respect of archaeology and cultural heritage receptors (above and below ground) that would arise from the Proposed Development.

13.9. Transport and Access

- 13.9.1. This Chapter assesses the environmental effects of the Proposed Development in terms of transport and access issues. It uses data found within the Transport Assessment (**Appendix 9.1**) for the basis of its consideration of environmental effects.

Baseline Conditions

- 13.9.2. A review of baseline conditions has been completed, considering access to the Site by active travel and public transport modes. A traffic assessment has also considered existing traffic conditions utilising a study network that has been discussed and agreed with National Highways and Knowsley Council as the Highway Authority. This traffic assessment has assumed an assessment year of 2028 and has considered scenarios with and without development as well as during the construction and operational phases.
- 13.9.3. The assessment follows IEMA guidance which provides two broad rules of thumb to be used to delimit the scale and extent of the assessment, which include:
- Rule 1 – Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and

Summary

- Rule 2 – Include any other specifically sensitive areas where traffic flows will increase by 10% or more.

Likely Significant Effects

- 13.9.4. The potential effects that may arise from additional traffic, which have been assessed include: severance of communities; road vehicle driver and passenger delay; non-motorised user delay; non-motorised amenity; fear and intimidation on and by road users; road user and pedestrian safety; and hazardous/large loads.
- 13.9.5. During construction the effect of increased traffic including HGV's on all assessment criteria is considered minor adverse and not significant.
- 13.9.6. Once operational the Proposed Development is anticipated to result in a minor adverse (not significant) effect on road vehicle driver and passenger delay and non-motorised user delay. All other effects are considered negligible and not significant.

Mitigation and Enhancement

- 13.9.7. During the construction phase, mitigation consists of a Construction Environment Management Plan.
- 13.9.8. During the operational phase, mitigation includes the creation of safe site access junctions, the provision of active travel infrastructure within the Site and linking with the local community, and a Travel Plan which will assist in reducing car travel.
- 13.9.9. Highway capacity improvements are proposed to the School Lane exit onto Knowsley Lane, in the form of a signalised junction, and the provision of a right turn lane from Knowsley Lane into Stockbridge Lane.

Conclusion

- 13.9.10. It can be concluded that, allowing for embedded mitigation, **no significant effects** have been identified as a result of the Proposed Development.

13.10. Air Quality

- 13.10.1. The assessment has considered the impacts of the Proposed Development on local air quality in terms of dust and particulate matter emissions during construction, and emissions from road traffic generated by the completed and occupied development. It has also identified the air quality conditions that future residents will experience. The assessment has been based on measurements made during 2023.

Baseline Conditions

- 13.10.2. Baseline conditions have been derived from national pollution maps provided by Defra and monitoring undertaken by the local authority. Current and future baseline pollutant concentrations at existing receptors have also been predicted using dispersion modelling. This has identified that air quality is good in the vicinity of the Proposed Development, with predicted concentrations well below the relevant objectives.

Likely Significant Effects

Construction

- 13.10.3. The construction phase operations have the potential to create dust. During construction it will therefore be necessary to apply a package of mitigation measures to minimise dust emissions. Appropriate measures have been recommended and, with these measures in place, it is expected that any residual effects will be 'not significant'.

Operational Impacts

- 13.10.4. The assessment has demonstrated that pollutant concentrations will be well below the objectives at all existing receptors in 2028, with or without the Proposed Development, and that the emissions from the additional traffic generated by the Proposed Development will have a negligible impact on air quality conditions at all existing receptors along the local road network. The effects are therefore considered to be 'not significant'.
- 13.10.5. The assessment has also demonstrated that proposed future residential properties within the Proposed Development will experience good air quality.

Mitigation and Enhancement

- 13.10.6. During the construction phase measures are proposed to mitigate dust emissions upon nearby sensitive receptors. These measures will be included within a Dust Management Plan (DMP) which will be included within the CEMP.
- 13.10.7. The assessment has concluded that the Proposed Development will be associated with non-significant air quality effects during operation. Additional mitigation is thus not required. Nevertheless, the Proposed Development seeks to include enhancements to pedestrian and cycle access to the Proposed Development, which will encourage sustainable travel and reduce road traffic pollution generated by the Proposed Development. The proposed diversion of existing bus routes to serve the Application Site will also help to support this sustainable shift in transportation. Overall, road traffic emissions do not provide any constraints to the Proposed Development.

Conclusion

- 13.10.8. The overall operational air quality effects of the Proposed Development are judged to be '**not significant**'.
- 13.10.9. Taking into account these conclusions, it is judged that the Proposed Development is consistent with Paragraph 198 of the NPPF, being appropriate for its location both in terms of its effects on the local air quality environment and the air quality conditions for future residents. It is also consistent with Paragraph 199, as it will not affect compliance with relevant limit values or national objectives. The Proposed Development is also consistent with Policies CS2 and CS7 of the Knowsley Local Plan Core Strategy (KMBC, 2016), as it has minimised negative impacts on air quality and has been designed to include measures which improve air quality, and Policy ENV1 of the Knowsley Replacement Unitary Development Plan (KMBC, 2006), as the Proposed Development will not significantly harm air quality.

Summary

13.11. Noise and Vibration

- 13.11.1. This chapter assesses the likely significant noise and vibration effects upon sensitive receptors from the Proposed Development, during its construction and operation. An acoustic survey has been carried out to quantify the existing baseline sound climate. Traffic data has been used to predict the change in noise levels from the existing road network on existing receptors.

Baseline Conditions

- 13.11.2. The baseline sound environment in the vicinity of the Proposed Development is dominated by road traffic from Knowsley Lane (B5202) and the M57 motorway, with traffic on these roads during the daytime and night-time periods. There was no other major contributing noise sources identified at the Site.
- 13.11.3. The noise levels were reasonably loud at the western Site boundaries, close to the major roads, with lower noise levels to the remainder of the Site.

Likely Significant Effects

- 13.11.4. The assessment shows that construction noise has the potential to result in a major adverse temporary effect at receptors R1 and R3, and moderate adverse temporary effect at receptors R2 and R6, which are significant. A detailed CEMP (secured through condition) is to be submitted to establish the best practical means of reducing the adverse effects, such as low noise equipment, limiting operating hours, erection of site hoarding and general good practice. With this mitigation in place, a worst-case moderate adverse temporary effect, which is significant, is anticipated at receptors R1, R2, and R3.
- 13.11.5. It should be noted that the above assessment is based on the assumption that all activity takes place in close proximity to the receptors. In reality, this will typically be at greater distances as construction moves around the Site. In addition, the loudest construction activities are only anticipated to occur for short periods of time. For other periods, whilst activity is further from each receptor, and whilst quieter construction activities are carried out, a lower impact would be expected.
- 13.11.6. Vibration from construction activities and road traffic associated with the construction are both predicted to lead to a negligible effect.
- 13.11.7. There are no significant effects predicted within the operation phase of the development.
- 13.11.8. Changes in road traffic associated with the operational phase of the Proposed Development are predicted to result in a minor adverse effect which is not significant.
- 13.11.9. Noise produced by building services equipment is to be controlled to achieve acceptable levels of environmental noise within the area surrounding the Proposed Site. The design is not sufficiently progressed to fully assess potential effects, but noise limits have been provided such that no higher than a minor adverse effect (not significant) would be expected.
- 13.11.10. For the proposed dwellings, the façade elements are to be selected to ensure that internal noise levels comply with the criteria within BS 8233 and WHO guidance. In addition, reliance on opening windows is to be limited to the less exposed areas of the development, with alternative means of ventilation and control of overheating required to the more exposed

elevations. This ensures that a not significant effect would be expected inside the future residential units.

- 13.11.11. The site layout is not sufficiently developed at this stage to fully assess the external noise levels within garden areas. Based on an initial assessment however, all back gardens are likely to meet the upper guideline value within BS 8233, with most, if not all, meeting the desirable criteria from the document without any specific mitigation. This ensures no higher than a minor adverse effect, which is not significant.

Mitigation and Enhancement

- 13.11.12. During construction phase noise can be suitably controlled and reduce the adverse effects as far as possible and is practical through best practice measures which will be detailed within a CEMP.
- 13.11.13. With regards the operational phase, plant equipment is to be designed such that the proposed plant noise limits are to be achieved which can be secured by condition.
- 13.11.14. For the proposed dwellings, façade sound insulation performances have been provided to comply with BS 8233 and WHO guidance internal noise level criteria. These are anticipated to be achievable with standard products such as standard thermal double-glazed windows. This is to be developed as the design progresses.
- 13.11.15. The strategy for ventilation and for the control of overheating are to ensure that the requirements of Approved Document O are met, and the guidance within the AVO Guide are followed. This requires an alternative means of cooling to be developed for the most exposed elevations, and reliance on open windows to only be considered for the most sheltered elevations.

Conclusion

- 13.11.16. The acoustic assessment shows that there are **no anticipated significant effects** associated with the operational phase of the development. Mitigation via the implementation of a CEMP is to reduce construction noise impacts as far as practicable. Plant noise levels are to be suitably conditioned to ensure no greater than a **minor adverse effect (not significant)** at the nearby sensitive receptors.

13.12. Flood Risk and Drainage

- 13.12.1. The Flood Risk and Drainage chapter provides an assessment of the potential significant environmental effects associated with the Proposed Development in relation to surface water, flood risk, land drainage and infrastructure (wastewater treatment and sewerage).

Baseline Conditions

- 13.12.2. An assessment of the baseline conditions at the existing Site and within the surrounding area has been undertaken, including a desktop study, a site specific Flood Risk and Drainage Assessment (including an outline surface water drainage strategy) and consultation with relevant bodies. Receptors of potential environmental effects from the Proposed Development have been identified, with the effects assessed, where required mitigation measures proposed and the residual effects have been identified and evaluated.

Summary

- 13.12.3. Croxteth Brook is located approximately 850 m to the west of the Site. The head of Fluker's Brook is located approximately 90 m to the south-west of the Site and a watercourse referred to as Ormskirk Road located approximately 190 m to the north of the Site, with both ultimately outfalling to Croxteth Brook.
- 13.12.4. Existing drainage ditches and ponds are present within the two wooded areas, known as Spookies Wood, in the centre of the Site. Ordnance Survey mapping also indicates the presence of a number of drainage ditches and ponds within the locality of the Site. White Man's Dam is located approximately 800 m to the east of the Site.
- 13.12.5. The Site is located within the catchment of the "Croxteth/Knowsley Brook" water body. The water body has been assessed under the Water Framework Directive. The current ecological status is 'Moderate', whilst the chemical status is 'Fail'.
- 13.12.6. The EA Flood Map for Planning (Flood Zones 2 and 3) indicates the Site to be located in Flood Zone 1 and the Flood Map for Planning – River and Sea without Defences indicates that the Site is not at risk of fluvial flooding when accounting for climate change.
- 13.12.7. The Long Term Flood Risk – Surface Water map indicates that the Site is not at risk of flooding from the drainage ditches and ponds within the locality. Ponding of surface water is indicated in several areas across the Site representing local depressions in the existing topography, and several overland flow routes develop in a Low and Medium risk event; however, the areas of identified risk are relatively confined.
- 13.12.8. The Long Term Flood Risk – Reservoirs map indicates that the Site is not at risk of flooding from such sources, except for a small area in the south-west, which appears to be associated with a failure of the southern tip of White Man's Dam.
- 13.12.9. There are no canals or other water impounding structures located within the immediate vicinity of the Site.
- 13.12.10. The JBA Groundwater Flood Risk Indicator map indicates that groundwater levels at the Site may be <0.025 m below ground level (defined as High risk) during a 1.0% AEP groundwater flood event. However, due to the topography of the Site and surrounding area, any groundwater emerging at the surface would be expected to be directed east, away from the areas of Proposed Development and the Site, towards Knowsley Lane, Fluker's Brook and Croxteth Brook. As such, this would not be expected to accumulate to any significant depth at the Site itself.
- 13.12.11. The Site currently comprises greenfield land. As such, no formal drainage is expected to be present. Soil conditions at the Site and within the surrounding area are described as slowly permeable seasonally wet loamy and clayey soils. Drainage rates were not sufficient to allow calculation of infiltration rates during soakaway testing undertaken by Lithos in April 2025. Given the topography and ground conditions at the Site, surface water runoff would currently be expected to slowly infiltrate where conditions allow and flow overland towards Knowsley Lane.
- 13.12.12. An extract of the public sewer records obtained from United Utilities (UU) indicate that a 225 mm diameter public foul sewer and 150 mm private surface water sewer cross the Site in the north-east, between Parklands and Berry Hill Avenue. A 225 mm diameter public foul sewer and 225 mm public surface water sewer are located to the north of the Site boundary in Home Farm Road.

Likely Significant Effects

13.12.13. The assessment has identified the following sensitive receptors:

- Surface water quality:
 - Croxteth Brook
 - Fluker's Brook
 - Ormskirk Road
 - Existing drainage ditches
 - Existing ponds
- Flood risk and land drainage:
 - Croxteth Brook
 - Fluker's Brook
 - Ormskirk Road
 - Existing drainage ditches
 - Existing ponds
 - White Man's Dam
 - Site workers and local residents (Construction phase)
 - New residents and existing local residents (Operational phase)
- Infrastructure:
 - Wastewater infrastructure

13.12.14. During construction and prior to mitigation a moderate adverse effect is anticipated on all receptors bar White Man's Dam which is anticipated to have a minor to moderate adverse effect.

13.12.15. During operation and prior to mitigation a moderate adverse effect is anticipated on all identified receptors.

Mitigation and Enhancement

13.12.16. Mitigation by design includes implementation of a surface water strategy (including the incorporation of sustainable drainage systems), raising finished floor levels to cater for event exceedance, reprofiling of the Site to remove existing depressions, thus eliminating any significant risk of surface water flooding and managing existing surface water overland flow paths originating off-site.

Summary

- 13.12.17. Potential effects on the water environment through the construction phase would be managed by a range of operational, control and monitoring measures that would act to mitigate the potential effects on surface water, flood risk, land drainage and infrastructure (wastewater treatment and sewerage), including the implementation of a CEMP.
- 13.12.18. UU has advised that there is existing capacity in the local foul sewerage network to receive and treat domestic foul water from the Proposed Development.
- 13.12.19. The residual effect on the water environment during the construction phase of the Proposed Development as a result of the measures implemented through the CEMP is considered to be negligible.
- 13.12.20. With the implementation of the flood risk mitigation measures and an appropriately designed surface water drainage scheme, including the storage and controlled release of surface water at a peak rate that is significantly less than existing will provide betterment in respect of flood risk. The Proposed Development therefore has the potential to have a Minor Beneficial effect on surface water quality and flood risk to the existing drainage ditch to which it is proposed to discharge surface water runoff, with a Negligible residual effect on the water environment.

Conclusion

- 13.12.21. The identified mitigation measures will result in a residual significance of environmental effects on the water environment which is assessed to be **negligible with a minor beneficial effect (not significant)** in respect of the quality of surface water and reduced flood risk in respect of the local area drainage ditches, with a **negligible residual effect (not significant)** on the wider water environment.

13.13. Cumulative and In-Combination Effects

- 13.13.1. The ES responds to the requirement in the EIA Regulations to assess the cumulative effects of the Proposed Development. Within EIA, cumulative effects are generally considered to arise from inter-project cumulative effects (the combined effects of development schemes which may, on an individual basis be insignificant, but cumulatively, have significant effects); and intra-project cumulative effects (the combined effect of individual effects on a single receptor where deemed potentially significant).
- 13.13.2. Each technical assessment considers inter-project cumulative effects (**Chapters 5-12**) for each of the identified cumulative schemes set out in **Chapter 2: Assessment Scope & Methodology**. In summary the other schemes considered within cumulative assessment are:
- 22/00348/FUL – Erection of 3 no. commercial units (use class B2 or B8) including mezzanine floor, ancillary office and welfare floorspace together with service yard, loading bays, car and cycle parking, electric vehicle charging points, drainage infrastructure and landscaping together with improvements to public rights of way linking Ormskirk Road and Knowsley Lane including the diversion of the public right of way and other pedestrian accessibility works. Located 1.5km north of the Site.
 - 18/00062/HYB – Detailed application for 4,180 sqm of employment floor space (use class B1), 3,275 sqm ancillary floor space (use classes A1/A4/C1/SUI generis), 154 residential dwellings, improvement to Lord Derby Playing Fields/Oak Plantation and associated landscaping and infrastructure including a dedicated 500kVA substation for the residential neighborhood and a 1000kVA substation for the eastern employment area and the demolition of Knowsley Lane Farm. Outline application for up

to 26,350 sqm of employment flood space (use classes B1) and associated landscaping and infrastructure. Located c.1.6km south of the Site.

- 19/00243/OUT RM application 21/00929/REM – Outline application for the erection of petrol filling station of up to 476 sqm, a drive thru unit of up to 225 sqm and erection of 3 No. industrial units up to 3,827 sqm. Located c. 2km northwest of the Site.

13.13.3. The industrial/commercial development at Land bounded by Villiers Road & Penrhyn Road (reference 22/00163/FUL) is built and operational and has therefore been considered as part of the baseline in assessments.

13.13.4. No significant adverse cumulative effects have been identified in any of the technical topic chapters with the identified cumulative schemes. Significant cumulative beneficial effects are identified during the construction phase for employment and economic contribution. Significant cumulative beneficial effects are also identified once operational for the impact on the economy, housing and health and wellbeing.

13.13.5. The second category, intra-project cumulative effects, is concerned with the combination of some or all of the effects predicted by the EIA affecting a particular receptor which may collectively cause a change of greater significance than individually. These are referred to as synergistic effects and have been assessed by professional opinion. An example of a synergistic effect could be construction related visual intrusion, dust, noise and vibration combining to generate a significant adverse effect affecting a sensitive receptor.

13.13.6. The EIA has taken into consideration synergistic effects on identified receptors as a consequence of collective actions (refer to **Chapters 5-12**). Constraints and identified sensitive receptors have been considered in detail throughout the Proposed Development's design evolution, including the consideration of proposed site preparation and construction techniques. The aim of this process has been to address the potential for significant adverse effects and ultimately to address significant residual effects in isolation or in-combination (i.e. synergistic effects). The measures identified to address the potential for significant effects have, for the most part, been designed-in to the Proposed Development and considered in the EIA as embedded or designed-in mitigation. The designed-in features are detailed on the Parameter Plan (**Figure 4.1**). Any measure that is not specifically designed-in feature of the Proposed Development is described as an additional mitigation measure in the relevant technical chapter and set out below in **Table 13.2**. These are also of relevance when considering synergistic effects. Key considerations in terms of the intra-project effects relating to these measures include:

- Effects on woodland within the Site and the incorporation of appropriate buffers to ensure heritage, ecological and landscape effects are minimized.
- Effects on Knowsley Hall and the Registered Park and Garden adjacent to the Sites boundary and the incorporation of a 20m buffer along the eastern and southern boundary of the Site to minimize effects on landscape, ecology and heritage.

13.14. On review of the identified receptors set out within each technical discipline, it is not considered there would be any additional level of effect than those effects set out individually.

Summary

13.15. Conclusions

- 13.15.1. This Environmental Statement (ES) has been submitted as part of a planning application seeking to obtain outline planning permission for the erection of up to 700 dwellings together with public open space, landscaping, new vehicular access junctions, active travel links, sustainable urban drainage systems and other associated infrastructure ('the Proposed Development').
- 13.15.2. The aim of the ES has been to assess the 'likely significant effects' of the Proposed Development in accordance with the Town and Country Planning Environmental Impact Assessment Regulations 2017². Detailed assessments with respect to pertinent environmental topics have therefore been undertaken in accordance with definitive standards and legislation where available. The ES forms part of the planning application documentation submitted to KMBC and will inform their decision making process.
- 13.15.3. As set out in this ES, the design process has been informed by the detailed environmental assessments so to ensure that key design measures are integral to the Proposed Development (and its construction), so to limit any significant adverse effects. As a result of this process, there is a relatively small number of potential residual adverse significant effects, particularly when considering the scale of the Proposed Development and its location. These are limited to the landscape character of the Site and visual effects from within or adjoining the Site, which is often the case with any development on greenfield land. These would be localised and principally focused within and adjoining the Site upon receptors of high sensitivity. A significant adverse construction phase noise effect is anticipated for those receptors in close proximity to the scheme, however this is temporary and short term and will be minimized as far as possible through best construction practice. It is also acknowledged that when activities occur at greater distances from the high sensitivity noise receptors, lower levels of effect would be anticipated.
- 13.15.4. Significant beneficial effects are identified for socio-economic effects in relation to construction phase employment and economic contribution. Once operational, significant beneficial effects are expected in relation to wider economic effects, housing, open space provision and health and wellbeing. All other effects with the inclusion of relevant mitigation identified within the ES are considered not significant as a result of the Proposed Development.
- 13.15.5. In conclusion, the ES demonstrates that the design of the Proposed Development and its construction has taken into account the potential environmental effects and where necessary mitigation measures form an integral part of the Proposed Development so to ensure that the environment is suitably protected and any impacts from the Proposed Development are minimized.

² The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 SI 571

13.16. Summary of Mitigation Measures

13.16.1. The below table outlines the mitigation and enhancement measures identified within each of the environmental disciplines included within this ES, many of which are an integral part of the design of the Proposed Development.

Table 13.2 Summary of mitigation and enhancement measures

Environmental discipline	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measures would be secured		
		By Design	By S.106	By Condition
Socio-Economics & Health	Financial contribution towards primary and secondary school provision		X	
Landscape and Visual	Retention of two central woodlands	X		
	Retention of the majority of existing field boundary hedgerows	X		
	Retention and enhancement of existing scrub	X		
	Creation of a green corridor to the south and east	X		
	Creation of green corridors along Knowsley Lane and Home Farm Road	X		
	Provision of a new central green space	X		
	Street tree planting	X		
	Creation of new areas of scrub in between existing woodlands	X		
	The long-term management of existing and proposed vegetation			X
	Provision of a Construction and Environmental Management Plan (CEMP).			X
	Provision of a Biodiversity Impact Assessment (BIA).			X

Summary

Ecology and Biodiversity	Provision of a Habitat Management and Monitoring Plan (HMMP).			X
	Provision of a detailed lighting strategy for the Site.			X
	Provision of a planting buffer for and connective habitat to priority woodlands adjacent and/or onsite.	X		
	Provision of a planting buffer for and connective habitat to nearby LWS' and NIA.	X		
	Provision of a minimum 10% Biodiversity Net gain.	X	X	X
	Provision of Information packs to new residents including information on nearby Statutory and non-Statutory sites and priority woodlands and codes of conduct.			X
	Provision of signage boards and dog waste bins.		X	X
	Provision of offsite breeding bird compensatory habitat for skylark and Lapwing.		X	
	Timing restrictions on vegetation clearance and/or pre-works check.			X
	Provision of habitat features for bats, breeding birds (and red squirrel, if required).			X
Cultural Heritage	Retention of two post-medieval woodland parcels	X		
	Retention of existing field boundaries and hedgerows	X		
	Instatement of 20m landscape buffer along the southern and eastern boundaries	X		
	Inclusion of a public footpath along the landscape buffer	X		
	Installation of a woodland plantation along the southern Site boundary	X		
	Installation of tree plantings along the north-eastern Site boundary at Home Farm	X		
	Retention of the former section of Home Farm Road	X		

Environmental Statement

Summary

	Installation of trees at the eastern end of the former section of Home Farm Road	X		
	Geophysical Survey			X
Transport and Access	Construction Environment Management Plan			X
	Active travel routes within the site and links to neighbouring streets			X
	Pedestrian crossing facilities across Knowsley Lane along the site frontage			X
	Providing missing dropped-kerbs and/or tactile paving at a number of junctions between Home Farn Road and Sugar Lane			X
	Signalisation of School Lane exit onto Knowsley Lane including pedestrian infrastructure			X
	Provision of right turn lane into Stockbridge Lane from Knowsley Lane and the provision of pedestrian infrastructure			X
Air Quality	Provision of pedestrian and cycle access to the new development	X		
	Use of all-electric heating to avoid the need for on-Site combustion		X	
	Diversion of bus route to serve the Proposed Development		X	
	Provision of electric vehicle charging points in accordance with relevant local policy	X		
	Travel Plan			X
	Dust measures within a Dust Management Plan (potentially part of CEMP)			X
Noise and Vibration	Construction noise: CEMP to be implemented			X
	Plant noise limits to be achieved.			X

Summary

Flood Risk and Drainage	Operational, control and monitoring measures including a CEMP.			X
	Finished floor levels raised at least 0.15 m above adjacent ground levels, with ground levels sloping down from dwellings	X		X
	Localised low spots within the Site topography where ponding of pluvial surface water is indicated to be retained within proposed landscaped areas. Where this is not feasible the Site reprofiled accordingly to remove such depressions.	X		X
	Existing surface water overland flow paths originating off-site managed through the design of the Site.	X		X
	Implementation of a surface water drainage strategy, including SuDS.	X		X
Enhancements				
Landscape and Visual	Enhancements include specific design elements in relation to the internal landscape scheme. These elements would enhance the experience of residents and visitors to the Site, which would include incidental tree, shrub and amenity planting and seeding within and between the development cells. There are also areas of landscape design such as informal footpaths, incidental play opportunities, seating areas, paved spaces or similar, which would be incorporated into the design. These elements are set out on the Illustrative Landscape Masterplan at Figure 6.7 .			
Ecology and Biodiversity	Soft landscaping using native and ecologically valuable species would enhance the Site, avoid using non-native species with overly complex flower structure or those of an invasive nature such as cotoneasters. Provision of native, flower and fruit bearing species of local origin will provide an optimal foraging resource for a range of species			
	A variety of bird boxes could be installed within and on new buildings and trees adjacent to retained and created open space to increase availability of roosting and nesting sites; Whilst not recorded onsite, the county is known to support red listed willow tit as such it is not recommended that small hole nest boxes (26mm and 32mm) are provided onsite, due to the chance of increased competition from species typically bolstered by the provision of these types of nest boxes (i.e. blue tits), should willow tit be present in the wider area			
	Integrated bat boxes should be installed in new buildings. Additionally, suitable long-lasting external bat boxes should be installed on trees within woodlands W1, W2 and W3. These should be installed at a minimum of 3m and maximum of 5m height and on the north, southeast and southwest aspects to maximise a variety of internal roost conditions			

	Deadwood piles could be created in areas of retained open space/ woodland to provide a habitat niche for amphibians and small mammals as well as deadwood for invertebrates such as saproxylic beetles
	Hedgerows are recommended as garden boundaries. Where fencing is used around gardens, hedgehog gaps should be included to provide a corridor through the built development
	The additional native broadleaved woodland, mixed scrub tree and hedgerow planting and management of retained and created habitats in accordance with guidance in the Biodiversity Net Gain Report submitted alongside this Ecology Chapter (Appendix 7.12) will provide an overall gain in the Biodiversity value of on Site habitats and will buffer priority habitats both on Site and adjacent and improve connectivity within and across the Site
Cultural Heritage	Interpretation boards positioned along the landscape buffer and footpath included within the embedded mitigation for the Grade II Listed Knowsley Park Registered Park and Garden, and the curtilage Listed Parkland Wall, Home Farm Lodge, and Home Farm. The interpretation boards would better reveal the significance of these heritage assets, illustrating their historic functional association with Knowsley Hall and its parkland.
Transport and Access	Creation of a network of additional active travel routes, running through the site, linking to neighbouring streets and providing key additional crossing points across Knowsley Lane.
Air Quality	A number of measures which will provide enhancements, either through minimising road traffic emissions or limiting exposure of new residential properties are included within the design of the Proposed Development. The effect of measures such as the Travel Plan, accessibility to public transport and electric vehicle charging, any benefits these provide in reducing vehicle movements, or encouraging the uptake of low emission vehicles will be an enhancement.