Environmental Statement
Non-technical Summary

December 2015

Dartmouth Park Estates Ltd
South Maldon Garden Suburb, Wycke Hill North Site

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Dartmouth Park Estates

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1.0 Introduction and Methodology

Purpose of Document

1.1 This document is a summary in non-technical language of an Environmental Statement prepared on behalf of Dartmouth Park Estates Ltd (‘DPE’). It accompanies an application seeking outline planning permission for:

“C3 residential development (up to 370 new homes) of mixed form, size and tenure, small scale B1 employment development (up to 2,000sqm), C2 / D1 community uses, a new relief road to the north of A414, strategic landscaping, pedestrian and cycle linkages, estate roads, open space, drainage and sewerage (including SuDS) and other associated development.”

1.2 The proposed development falls within part 10(b) (Infrastructure Projects) of Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended) (the ‘EIA Regulations’). Part 10(b) relates to ‘urban development projects’ where sites are over 5 hectares and/or where more than 150 dwellings are proposed. For such developments, EIA is required in situations where the development could give rise to significant environmental effects.

1.3 Following a comprehensive Screening and Scoping process, DPE have undertaken an EIA of the proposed development and the findings are presented in the Wycke Hill North Site Environmental Statement (the ‘WHN ES’).

1.4 The document includes the following information: -
- Section 1.0 – background to the assessment process and the scheme;
- Sections 2.0 to 3.0 – description of the Site and the application proposal;
- Section 4.0 – a topic by topic review of the findings of the EIA;
- Section 5.0 – a review of whether other effects may arise when the interrelationship between these topics are considered and when the development is considered alongside other schemes in the area; and
- Section 6.0 – details of how to obtain a copy of the ES.

The EIA Process

1.5 The ES sets out the findings of an EIA of the development.

1.6 The EIA process aims to ensure that any significant effects arising from a development are systematically identified, assessed and presented to help a determining authority, statutory consultees and other key stakeholders in their understanding of impacts arising from development. If measures are required to minimise or reduce effects then these should be clearly identified.

1.7 For this development, EIA has been carried out to consider the likely significant effects that may arise during its construction and operation. It has been
completed with regard to best practice and relevant legislation and has addressed the following matters agreed with Maldon District Council as being required to assess the impacts of the development:-

1. Air Quality  
2. Archaeology and Cultural Heritage  
3. Biodiversity and Ecology  
4. Climate Change and Energy  
5. Flood Risk and Drainage  
6. Ground Conditions and Contamination  
7. Landscape and Visual Impact  
8. Noise and Vibration  
9. Socio-economic  
10. Transport and Travel Planning

1.8 Likely effects are identified based on current knowledge of the Site and surroundings, desk top assessment, survey and fieldwork and information available to the EIA team. All those matters that could be reasonably required to assess the effects of the proposals are set out in the ES; this includes effects arising from the scheme itself as well as those temporary effects arising during the construction of the Proposed Development.

1.9 The EIA team has worked with the design team to ensure that the scheme for which planning permission is sought incorporates those revisions or modifications that are necessary or appropriate to avoid or reduce significant adverse effects on the environment.

1.10 Consultation has also informed the EIA process in relation to the methods by which the EIA has been carried out, as a means to seek environmental data, to review the effectiveness of any identified mitigation measures and as a means to keep interested bodies informed on the process of EIA undertaken.

**Background to the Scheme**

1.11 Maldon District Council (‘MDC’) has identified a need to plan for 4,650 new dwellings in the District in the period 2014-2029 (Policy S1 of the emerging Maldon Local Development Plan (‘MLDP’)). Informed by an objective assessment of housing need, the majority of this required growth will be delivered through sustainable extensions to Maldon, Heybridge and Burnham-on-Crouch in the form of Garden Suburbs and Strategic Allocations.

1.12 The South Maldon Garden Suburb (SMGS) is specifically identified for residential-led development and the application Site forms part of this larger allocation. The Proposed Development directly meets the need for such development identified in the MDLP, specifically Policies S2: Strategic Growth, S3: Place Shaping and S4: Maldon and Heybridge Strategic Growth, and SMGS Strategic Masterplan Framework (SMGS SMF).

1.13 The Site has therefore been identified by MDC as a development opportunity to accommodate a significant quantum of housing, thereby helping to reduce ‘ad-hoc’ development pressure on non-allocated Sites in a sustainable manner.

1.14 The Proposed Development responds to this identified planning need and the Council’s identified objectives for the SMGS.
Site & Surroundings

Site

2.1 The Site comprises 17.83 ha of undeveloped land adjoining Maldon’s existing urban area. It lies to the north of Spital Road (A414) and west of Wycke Hill (A414), with arable agricultural land lying to its north and west. The Site forms approximately 16% of the total SMGS boundary (circa 109 hectares) (Figure 2.1).

Figure 2.1 Site Location Plan

2.2 The Site itself comprises five grassed fields with hedgerows marking field boundaries. The fields are currently in pastoral agricultural use for the keeping and grazing of horses. The topography slopes gently from 25m AOD in the north east of the Site to 15m AOD in the south of the Site.

2.3 There are no statutory or non-statutory ecological designations on the Site but existing habitats exist on or adjacent to the Site.

Surroundings

2.4 The Site has frontage to Spital Road and Wycke Hill; along the A414 which provides the strategic route from Maldon to Chelmsford.
2.5 The Site adjoins three residential properties which also front Wycke Hill (Whincroft, Maldon Hall Cottage and Bray Cottage). A bridleway and public footpath abut the Site to the west and north.

2.6 To the south east, the Site adjoins Knowles Farm at which there is a mix of business and residential uses. Knowles Farm is separated from the Limebrook Way/Wycke Hill/Spital Road junction by a substantial area of planting and an access road to Knowles Farm, which also provides a footpath/cycle connection to Wycke Hill opposite the Site.

2.7 There are some heritage assets in the wider area including buildings at Maldon Hall Farm (five Grade II Listed buildings), Woodham Mortimer (seven Grade II listed buildings) and Brookhead Farm (one Grade II listed building).

2.8 Two watercourses, following the line of hedgerows, cross the Site to the north of Knowles Farm and to the south between the two most westerly fields. A 132KV power line crosses the Site in the south west.

2.9 The only vehicular access to the Site is via Knowles Farm. Gates within the hedgerows provide agricultural access between the fields and a bridleway and public footpath provides access through the Site north of Knowles Farm.

2.10 The Site benefits from accessibility to existing bus services that link to surrounding towns and villages. In addition, the bus services provide easy access to Maldon Town Centre and employment areas to the north of the River Chelmer. The Site currently provides residents with an alternative choice to the private car.

2.11 The Site also benefits from good connections with the town centre via an extensive network of footways which begin at the A414 / B1018 roundabout at the bottom of Wycke Hill. Lastly there is also an existing cycle route within close proximity to the Site which extends northward from Knowles Farm along Wycke Hill into the town centre and eastward through residential areas.
3.0 Description of Development

Description

3.1 The outline planning application seeks permission for the following development:

*C3 residential development (up to 370 new homes) of mixed form, size and tenure, small scale B1 employment development (up to 2,000sqm), C2 / D1 community uses, a new relief road to the north of A414, strategic landscaping, pedestrian and cycle linkages, estate roads, open space, drainage and sewerage (including SuDS) and other associated development.*

3.2 The Parameter Plans relied upon in the ES and for approval with the planning application are:

1. Parameter Plan 1: Extent of Development and Land Use (Reference PS07015-014.1-Rev B);
2. Parameter Plan 2: Access and Movement (Reference PS07015-014.2-Rev C);
3. Parameter Plan 3: Landscape (Reference PS07015-014.3-Rev B);
4. Parameter Plan 4: Building Storey Heights (Reference PS07015-014.4-Rev B); and
5. Parameter Plan 5: Residential Density (Reference PS07015-014.5-Rev B).

3.3 For the purposes of EIA, it is assumed that the B1 ‘business use’ comprises (B1a) offices. The C2/D1 ‘community uses’ are assumed to include a community hospital of 4,292sqm within the area of the Site to the north of the proposed South Maldon Relief Road (SMRR). This is considered to be the ‘worst case scenario’ in terms of the level of impacts from those elements of the Scheme.

Land Use, Layout and Form of Development

3.4 The proposed land uses, layout and form of the development proposals are based on those presented in the SMGS Masterplan (Fig 4.1) and the Knowles Farm Character Area (para 4.5.18).
The proposed development comprises:

1. Residential: up to 370 dwellings (including affordable homes), C3 use;
2. Employment: 0.2 hectares of land for small offices or other B1 uses;
3. Community: land for C2 / D1 community uses, e.g. a 4,292 sqm community hospital;
4. Open space: comprising accessible open space and play areas;
5. Highways: the SMRR, access junctions, estate roads, foot / cycle paths; and

The DPE Illustrative Masterplan for the WHN Site proposes a range of new homes within an attractive landscape, structured by a network of green spaces, walking and cycling routes. An employment area is proposed adjacent to Knowles Farm and community uses are proposed to the north of the SMRR at Wycke Hill. The illustrative masterplan layout has been influenced by the existing landscape features within the Site. The hedgerows aligned north-south through the Site are to be retained and form green corridors through the scheme. The primary and secondary street networks then form a boulevard loop through the scheme.

Informed by the SMGS SMF layout plan the densities proposed on the Site will have a medium to higher density reflecting the proximity to existing buildings.
and facilities on Wycke Hill. Generally there is a gradation of density away from
the existing urban edge of Maldon to the western edge of the Site providing a
transition to the countryside. The higher densities are along the eastern edge
of the Site adjacent to Knowles Farm and the employment area, and along the
southern part of the Site adjacent to Spital Road. Meanwhile the medium
densities are along the north-western edge of the Site adjacent to the proposed
SMRR.

3.8
There is a gradation of heights across the Site, with up to 11.5 metres height
from ground (equivalent 2.5 storeys residential dwelling) at the core of the Site,
adjacent to Spital Road. On rising land to the north-west of the Site heights of
up to 9 metres from ground (equivalent 2 storeys residential dwelling) are
proposed. The proposed heights on the Site respond to the surrounding
context, reflecting the scale of buildings on the existing edge of Maldon. Taller
buildings will be up to 13 metres ridge height from ground. Taller buildings are
expected within the lower lying land on the eastern part of the Site responding
to the scale of buildings within Wycke Hill Business Park. The community uses
and employment area fall within the up to 13 metres zone. Taller residential
buildings will act as landmark features at the gateway to the scheme.
Elsewhere, variation in eaves and ridge heights will add interest to the skyline
and street scene.

Access

3.9
The access principles proposed embody those within the SMGS SMF.

3.10
Initially, vehicular access to the Site will be provided from a spur off the
committed ‘Linden’ roundabout to be provided as part of the Wycke Hill South
development on Spital Road (A414) on the south east edge of the Site. This
will be supplemented by an additional roundabout access in the north east part
of the Site from the proposed new SMRR.

3.11
The SMRR itself will be accessed from a new roundabout on Spital Road to the
west and a new signal controlled junction to the east of Wycke Hill and runs
east/west through the north part of the Site.

3.12
The two principal access points lead to a hierarchy of estates roads within the
development providing access to dwellings and supporting facilities.

3.13
The proposal also includes pedestrian and cycle routes throughout.

Sustainability

3.14
A series of sustainable design principles have been developed and have been
tested in the EIA. These principles accord with sustainable development
objectives set out in the National Planning Policy Framework (NPPF) and local
planning policy, the latter including the ‘Site-wide sustainability’ measures in
the SMGS SMF (paras. 4.1.6-4.1.9).

3.15
Sustainability measure within the proposed development include:
1 A compact and well-designed layout providing recreation and exercise space for all residents of the proposed development within a five minute walk.

2 Increasing/maintaining the sustainability of the development area by meeting both housing and employment demands.

3 Designing the layout and orientation of buildings to account for solar benefit, maximising opportunities for passive measures of shading and cooling.

4 The use of Sustainable Drainage Systems.

5 Provision of multifunctional green spaces through a well-connected green network easily accessible to all.

6 Enhanced biodiversity, including retaining existing trees and vegetation on Site where possible.

7 Introducing measures to restrict water consumption to a maximum of 125 litres per day, such as delayed inlet valves and flow restrictors, and water efficient appliances, i.e. low flush WC’s.

8 Sustainable waste management system, including ample segregated waste storage space.

9 Reducing on Site carbon emissions through promoting low impact travel means, including the promotion of walking and cycling using new and existing foot and cycle links and encouraging more frequent use of public transport.

**Construction Methodology**

3.16 For the purposes of this EIA, construction of the development is anticipated to take approximately 7.5 years, producing a similar number of completions per annum over a 6 year period.

3.17 The period of phased construction would take place after an initial mobilisation period to provide Site management offices and contractor facilities.

3.18 Construction is currently proposed to be completed in four distinct phases as follows:

1 Phase 1: up to 145 new homes accessed from the new roundabout on Spital Road (A414) in the centre south of the Site;

2 Phase 2: up to 125 new homes on the west and centre north of the Site accessed from the new roundabout on Spital Road (A414) in the centre south of the Site together with the first part of the relief road from a new roundabout on Spital Road;

3 Phase 3: the remaining 100 new homes and small scale employment south of the new relief road alongside completion of the new relief road and its Wycke Hill junction; and
4 Phase 4: the non-residential uses (community uses) north of the new relief road on the north east part of the Site.

3.19 Strategic landscaping, pedestrian and cycle linkages, estate roads, open space, drainage and sewerage (including sustainable drainage) and other associated development will be provided within each phase.

Alternatives Considered

3.20 As part of the EIA, alternative forms of the development have been considered and also the relevance of reviewing alternative Sites. This helps in clarifying the main advantages for taking forward the current scheme, taking account of the environmental effects.

3.21 Consideration of a scenario where the development does not proceed and the Site remains in its current agricultural use has been undertaken. MDC is currently seeking significant additional delivery of new housing development, in order to satisfy its objectively assessed housing need and ensure an adequate housing land supply. Should the scheme, which is the subject of this ES not proceed, alternative housing Sites will be required, potentially putting increased pressure on Sites that have not been identified as the most suitable and sustainable for new housing through the fully accountable local plan process.

3.22 The allocation of the Site for residential led development within the MLDP followed comprehensive consideration and assessment of alternative locations to meet MDC’s identified housing need, of which environmental considerations were a key factor.

3.23 A ‘Sustainability Appraisal Report incorporating Strategic Environmental Assessment and Habitats Regulations Assessment ‘(SAR, January 2014) accompanied the Pre-submission version of the MLDP. The SAR includes an assessment of MLDP Policies against 17 sustainability objectives. Key to this was a consideration of alternative policies, and in particular, Policy S2: Strategic Growth Locations through which the SMGS was allocated. The SAR is a culmination of a thorough assessment of alternative Sites for identified housing need. Appendices C to F of the SAR provide the detailed sustainability assessment of the alternative Sites and provides a summary of this process in respect of Policy S2:

“Overall the policy has a positive impact and is broadly in line with the majority of the SA Objectives, which is appropriate as it is a strategic policy which supports the achievement of other policies within the Plan. This policy is likely to result in moderate negative impacts in the medium and long term in relation to water resources and greenhouse gases, and the use of natural resources which relate to the delivery of the development (Objectives 8, 11 and 13 respectively). However, the increase in housing is likely to result in a more positive impact on housing mix.”

3.24 There is no alternative location for the South Maldon Relief Road.
Consultation and Design Evolution

3.25 The development of the SMGS and associated community engagement has occurred through the preparation of the MLDP. The MLDP was first consulted on in 2007 (Issues and Options) and later in 2012 (Preferred Options) and 2013 (Draft version). The submission version of the MLDP was subsequently submitted to the Secretary of State on 25 April 2014 and an Examination-in-Public (EiP) on the housing and infrastructure based policies in the Plan took place from the 20 January to 4 February 2015. The Secretary of State (SoS) has subsequently called in the Plan and his decision is awaited.

3.26 DPE has promoted the contributions that the WHN Site could make throughout the progression of the MLDP and associated SMGS SMF.

3.27 In coordination with MDC and the other SMGS land promoters / developers, the DPE project team undertook numerous consultation events to involve the Council, various stakeholders and members of the public that may have an interest in the future of the application Site, to capture their views on the all proposals and understand key issues and any areas of concern in working up the proposals.
4.0 Environmental Effects

Air Quality

4.1 MDC does not operate any automatic air quality monitoring sites in the District. In the absence of local background monitoring data annual mean concentrations of nitrogen dioxide (NO2), and particulate matter (PM10 and PM2.5) have been obtained from the Defra UK-AIR background pollutant maps. The background maps and projection factors predict a year on year reduction in pollutant background concentrations, however there is insufficient data in the recent MDC Local Air Quality Management (LAQM) reports to determine whether there has been any decline in background concentrations in the area. Therefore as a cautious approach, background concentrations for 2015 have been used in the modelling assessment to predict pollutant concentrations at the development Site in future years.

4.2 The construction phase of the Proposed Development has the potential to create a dust risk during construction and is identified as ‘medium’ risk for human health and ‘high’ for dust soiling. A series of best practice measures to be implemented during construction are recommended to form part of an agreed Construction Environmental Management Plan. The significance of potential dust impacts once these best practice mitigation measures are put in place would subsequently be considered to be ‘negligible’ and are therefore satisfactory.

4.3 Once the development is completed, the potential impact on air quality is likely to stem from increased traffic movements associated with the Proposed Development. The Proposed Development is not anticipated to result in any new long-term exposure to poor air quality and the predicted concentrations of NO2 are well within national regulations. The Proposed Development does however incorporate measures to reduce the operational traffic associated with the development including comprehensive walking and cycling provision along with additional public transport provision as set out within the Travel Plan. The impact of traffic emissions is therefore predicted to be of negligible significance.

Archaeology and Cultural Heritage

4.4 The NPPF requires consideration to be given to the possibility for as yet undiscovered heritage assets to be found. The Geophysical Survey accompanying the ES identified little archaeology on Site but was limited in scope by geological constraints. If present, any archaeological remains are likely to be of local significance. The Archaeological Desk Based Assessment confirms that there are some heritage assets in the wider area including buildings at Maldon Hall Farm (five Grade II Listed buildings), Woodham Mortimer (seven Grade II listed buildings) and Brookhead Farm (one Grade II listed building).
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4.5 The construction of the development would be unlikely to have either a significant or widespread archaeological impact, although theoretically buried archaeological remains and finds of local importance could potentially be encountered. It is anticipated that the Essex Archaeological Officer will expect further mitigation measures in the form of trial trenching to test the results of the survey. If significant archaeological features are found within the site further archaeological mitigation measures may be required to fully understand the archaeological interest of the Site.

4.6 Once completed, the proposed development will entail a minor adverse impact on the setting and therefore the significance of the Grade II Listed Buildings of Maldon Hall. There are no mitigation measures proposed to reduce the visual impact of the development on Maldon Hall but the assessment concludes that the impact on the setting of heritage assets should not be a constraint to development proposals.

Biodiversity and Ecology

4.7 The baseline ecology of the Site and surrounding area has been assessed in accordance with published guidance. Between 2013 and 2015 a suite of surveys were undertaken. The Site comprises improved grass fields used mainly for horse grazing. Most fields have poor hedgerows on boundaries and some trees are present. There are few features of interest on Site but along part of the northern boundary is a bridleway with minor ditch and some trees; this functions to some extent as a green corridor. The Site had foraging and commuting bats or common species but no roosts; reptiles, visiting Badgers but no setts nearby, and low interest for breeding birds.

4.8 Mitigation for bats is proposed on operation by retention of the existing bridleway corridor and provision of new green routes around and across the Site. Boxes will provide potential roosting areas for them. Reptiles will be accommodated by provision of new and more diverse grassland areas as well as new habitat types around the attenuation basin area. Retention of some hedgerows and creation of new and more diverse woody planting will increase nesting and feeding opportunities for many bird species which currently use the Site, but no compensation for the very small number of ground nesting farmland birds currently using the Site, is proposed. These are likely to relocate to other farmland in the Maldon area.

4.9 In addition new habitats are proposed including a SuDS scheme with an attenuation basin and at least one pond designed for wildlife. This will provide a pond which holds water almost all year around, a feature which is currently lacking in the near area, with consequent benefits for biodiversity. Other new habitats include species-rich grassland and areas of scrub.

4.10 It is shown that protecting wildlife during construction is possible, and that the majority of wildlife interest would remain on Site after development, with the opportunity to expand populations into the new planting areas.
4.11 It is therefore concluded that if a development on this land were to proceed, its existing minor wildlife interest and potential impacts on them, are not significant on a site level, or in combination with other development sites in south-west Maldon.

Climate Change and Energy

4.12 The Site is currently used for horse grazing pasture. Therefore, the baseline and existing Site conditions for agricultural land would relate to the associated carbon footprint of cultivation, harvesting and processing of the land, produce and/or livestock. The majority of the Site is cropland and would be subject to seasonal storage of CO$_2$ through growth and then release of CO$_2$ through harvesting. It is assumed at present that the farm operates seasonal tillage and that some CO$_2$ is permanently stored within the soil. It is estimated, using CO$_2$Science.org that for every hectare of land required to grow a crop such as wheat for example 5.76 tonnes of CO$_2$ is produced. Ignoring crop rotation or break crops and based on the assumptions made above of the existing Site conditions, a conservative estimation can be made that the Site will generate approximately 111 tonnes of CO$_2$ from the cropland.

4.13 The impact during construction will be restricted to the CO$_2$ production from transient operations such as construction vehicles, migration of workers to Site, material sources and production. Production of CO$_2$ will be unavoidable during this stage of the works but will be time limited and would cease and not increase once construction on Site is complete. During construction it is feasible to reduce CO$_2$ generation through improvements in building fabric (such as cavity wall improvements, mechanical ventilation, better quality windows etc.), which in turn achieves better thermal performance. It is possible to implement fabric improvements alone, across much, if not all of the proposed development. Overall there will be a residual impact of an increase in CO$_2$ production levels across the Site during construction of the Proposed Development.

4.14 The impact during occupation will be CO$_2$ production on an ongoing basis with no defined timeline for cessation. While the production of CO$_2$ will be unavoidable during its continued operation/occupation in the medium term, this takes no account of future technologies either retrofitted to individual properties or through centralised energy production. A range of low carbon and renewable energy measures can be provided at the Proposed Development; however, these have only been provided as a potential range of options at this early stage of the design process. The Proposed Development will require an Energy Statement at Reserved Matters stage to explicitly demonstrate viable methods for energy generation and minimisation of energy use.

4.15 Overall, it can be concluded that there will be a residual impact of an increase in CO$_2$ production levels across the Site after completion of the Proposed Development.
Flood Risk and Drainage

4.16 The entire Site lies within Flood Zone 1, an area of Low Probability of flooding, outside both the 1 in 100 and 1 in 1,000 year flood events.

4.17 Lime Brook is considered to be impacted upon by a downstream tidal influence. However, the Site lies a significant distance from this section of the watercourse and as such there is no risk of tidal or coastal flooding at this location.

4.18 Overflow flow mechanisms result from the inability of unpaved ground to infiltrate rainfall or due to inadequacies of drainage systems in paved areas to accommodate flow directed to gullies, drainage downpipes or similar. The mapping provided by the EA identifies significant areas of surface water flooding within the Site boundary primarily along the routes of the Lime Brook with some as a result of runoff from the built development to the north of the Site.

4.19 Whilst no Site-specific investigations have been completed, information from the Level 1 SFRA has not identified any incidents of groundwater flooding within the Site boundary. Investigations with Anglian Water provide no evidence of present or historic sewer flooding at the Site.

4.20 During construction, activities such as topsoil stripping within the existing open space areas will result in soil compaction and ultimately more water run-off into any nearby watercourses. This may increase the volume and the rate of surface run-off, which may, in turn, result in temporary pooling of water. An increase in storm water run-off could also occur from the Site to any nearby watercourses. The sensitivity of the watercourses is considered to be high and the magnitude of change, prior to mitigation, is predicted to be high due to increased run-off which could affect the capacity of the watercourses. Therefore there is likely to be a direct, short term major adverse effect prior to the implementation of mitigation measures.

4.21 To mitigate any effects on flood risk and drainage during the construction phase, mobilisation of construction materials and spillages will be controlled by implementation of controlled drainage, good Site management and monitoring in the Construction Environment Management Plan. There is likely to be a negligible effect on the surface water following implementation of mitigation measures.

4.22 After completion, it is the intention to mimic the existing natural drainage regime within the Site. The built development catchments on Site will increase the volume and rates of run-off directly to the nearby watercourses. Prior to mitigation, the increase in surface water run-off could potentially cause both onsite ponding and downstream flooding. The sensitivity of the nearby watercourses is moderate and the magnitude of change prior to mitigation is considered to be high. Therefore, there is a likely to be a direct, permanent, long term major adverse effect prior to the implementation of mitigation measures.
To mitigate effects on flood risk and drainage once the development has been completed, full drainage systems will be installed to control surface water runoff as well as foul water collection and discharge. The development also makes provision for a storm water SuDS management system. There is likely to be a direct, permanent, long term minor beneficial effect on the site following implementation of mitigation measures.

The implementation of appropriate and sustainable development proposals coupled with appropriate mitigation will ensure the project does not result in a significant environmental effect during either the operational or construction phases.

**Ground Conditions and Contamination**

The application Site consists of a mix of Grade 2 and Grade 3 agricultural land. The Site is underlain by bedrock geology comprising of clay, silt and sand of the London Clay Formation and is shown to have no major faults within the Site. The Site and surrounding areas are not reported to be subject to any sensitive or protected land designations and the Site is shown to be situated within a low probability area affected by radon, where less than 1% of homes are estimated to be above the action level.

During construction the soil may be disturbed meaning there could be direct, long term, permanent effects of major adverse significance on humans via inhalation, ingestion and direct contact if control and mitigation measures are not employed. In terms of contamination to surface water, as there are no on-Site or immediate watercourses around the vicinity of the Site, the significance impact has been judged to be moderate adverse and the magnitude of change without mitigation is high. There is also a risk that the concentrations of contaminants in the groundwater in the minor aquifer below the Site could increase. Disturbing the soil and piling the Site could open pollutant pathways which could leave the aquifers at risk from contamination. This could result in permanent effects of moderate to major adverse significance without the implementation of mitigation measures.

In order to minimise the impacts in relation to ground conditions and contamination during development a Construction Environmental Management Plan will be implemented. This will ensure best working practices (such as prohibition of construction discharges, all fuels to be stored in bunded tanks, earthworks to be completed in a manner that protects the water environment etc.) are put in place. Furthermore all construction phase operations will be carried out in accordance with guidance contained within the Environment Agency Pollution Prevention Guidelines. Based on the mitigation measures proposed, the residual effects relating to ground conditions and contamination during construction will be negligible.

After completion of the Proposed Development, the buried concrete, plastic and possibly metals used in construction could result in ground contamination having significant impact on the structures, due to potential deterioration as a
result of continual direct contact with any contaminants. Also a quarter of the site will remain as green open space and soft landscaping meaning future end-users may have access to exposed contaminated soil. The sensitivity of end-users is high and the potential hazard without mitigation is high. Lastly, there is potential that a pathway allows hazardous ground gas could migrate and potentially build up underneath buildings. The sensitivity of the proposed development and end-users is high and the magnitude of change prior to mitigation is high.

4.29 To mitigate all of these risks, a cover system should be applied across the proposed areas of soft landscaping in accordance with the BRE document entitled Cover Systems for Land Regeneration, Thickness Design of Cover Systems for Contaminated Land (2004). A gas monitoring well should also be sunk across the Site to allow levels of ground gas to be monitored. Based on the mitigation measures, the residual effects relating to ground conditions and contamination after completion will be negligible.

Landscape and Visual Impact

4.30 The baseline studies undertaken have considered the landscape character of the Site and surrounding area, based on National, County and District Assessments and those elements within the Site that contribute to landscape character.

4.31 A Theoretical Zone of Visual Influence of the proposed development has been plotted using digital terrain mapping to identify locations where there may be potential intervisibilty. As this only shows the screening provided by topography and significant blocks of woodland, fieldwork has also been undertaken to determine where screening is provided by buildings, other vegetation and localised variations in the landform. This showed that the potential for views from the north and west towards the Site is limited by the landform. However there is the potential for views of the Proposed Development on the northern edges of the Site from areas to the south.

4.32 The baseline study also identified the potential visual receptors in the surrounding area. Those that may be susceptible to changes to their visual amenity included people living in surrounding residential properties, those using public rights of way in the surrounding area (including the bridleways to the north and west of the Site). Consideration has also been given to the effects on people travelling into Maldon on the A414, who are less sensitive to visual change but have been considered due to the number of people that would see these views.

4.33 The proposed development would result in localised permanent landscape effects due to the urbanisation of existing improved pasture. Some lengths of hedgerow would need to be removed and a ditch diverted to accommodate the proposed development. This would have a residual moderate adverse effect on the Site itself but would have a minor adverse effect on the Woodham Wooded Farmland Landscape Character area which would not be significant. No
significant effect on adjoining landscape character areas was identified. There would be an indirect minor adverse effect on the Mundon Drained Esturine Marsh character area and a negligible indirect effect on the Tillingham and Latchingdon Coastal Farmland character area. Again, these are not significant.

4.34 The visual effects of the proposed development would be localised (substantial to moderate adverse) visual effects during the construction stage on the occupiers of adjacent residential properties and users of public rights of way through the Site and close to the boundary of the Site. These effects would be temporary and would not extend beyond the construction period.

4.35 There would be localised (substantial to moderate adverse) visual effects arising from the operational phase on adjacent residents and users of public rights of way through and close to the Site in the first year following completion of the proposed development. After 15 years, once structural landscaping has begun to mature, the visual effects would be reduced with residual moderate adverse effects remaining in places. These effects are highly localised with no residual effects within the wider area.

Noise and Vibration

4.36 Baseline conditions have been derived by both ambient/background noise monitoring and by noise propagation modelling. Noise monitoring was undertaken at two locations on the proposed development Site. Background and residual noise levels quantified for the Site and surrounding receptors provide a suitable baseline for assessment.

4.37 During the construction phase of the development it is inevitable that there will be some disturbance caused to those nearby during the Site clearance and build phases. However only negligible adverse impacts are predicted to result at the closest receptors from the average case noise assessments. Significant vibration effects off Site are also unlikely as there are relatively few construction techniques proposed that can cause sufficient ground borne vibration to be detectable off Site given the separation distances. In the event that adverse noise impacts do occur from the construction phase it is anticipated that there are mitigation options available that could adequately mitigate all significant impacts other than those resulting from noisy works when they are located immediately adjacent to existing dwellings. The residual impacts recognised as potentially possible from the worst case scenario assessments will be of limited duration and their effects further reduced via effective liaison with the small number of residents.

4.38 Post completion a number of properties are predicted to experience positive impacts of moderate positive significance from road traffic noise. These result from a change in the road alignment corresponding to the new roundabout on Maldon Road which will form the southern access to the Site, and also from reduced flows on Maldon Road in 2026. The adverse impacts predicted from road traffic are of minor significance and no mitigation is considered to be necessary. Noise from the employment uses proposed at the west of the Site,
the community use and related uses proposed at the north of the Site should be assessed using the BS 4142:2014 methodology. It is not possible to assess the noise from these proposed uses at this outline stage but it is possible to consider noise as a potential design constraint.

4.39 Overall therefore there will be no significant noise impact generated from the development.

Socio-economic

4.40 The assessment of the effects on socio-economics has examined population, housing supply, education, health and other community facilities and also considers the impacts that the scheme will have upon employment and the local labour market.

4.41 This assessment shows that the proposals will deliver almost 8% of the District’s view of objectively assessed housing need. The proposals will also have effects on Maldon and its labour market through the creation of new jobs at both construction and operational stages, along with housing that will increase labour supply. Increases in resident expenditure and supply chain expenditure will also support additional employment.

4.42 The proposed development represents a significant new capital investment in the area and will raise the overall level of economic activity and expenditure in the local area.

4.43 The additional resident population generated will be significant in a local context but its net impacts on education, open space, sport and recreation provision and community facilities will be negligible given adequate levels of provision or the implementation of mitigation.

4.44 Overall, the proposed development represents a significant new capital investment in the Maldon area. It will improve the local housing stock and healthcare infrastructure, provide local employment opportunities, increase population and expenditure in the local area. It will also provide open space and play space.

Transport and Travel Planning

4.45 The assessment of effects on transport and travel planning has been informed by identifying the baseline situation and assessment the transportation effects of the proposal.

4.46 The Proposed Development has been tested for capacity for each phase with the results demonstrating that the proposals are unlikely to present an adverse effect on highways capacity or safety during each phase.

4.47 The proposed relief road presents a strategic element to the emerging Maldon Local Development Plan aspirations, enabling wider development in the area.
The site has good connections with local facilities including schools, employment areas and shops. A travel plan will be secured by planning condition which will seek to reduce car use and encourage alternative modes transport.
5.0 Cumulative Effects and Residual Effects

5.1 The table below reviews whether the inter-relationship between effects arising from the development may give rise to additional impacts not previously identified. It also considers whether effects may arise when the development is considered alongside other schemes or proposals in the surrounding area, the likelihood of the other developments proceeding and the ability or necessity of the applicant to mitigate any such effects for those other Sites.

<table>
<thead>
<tr>
<th>Environmental Topic</th>
<th>Effects during Construction</th>
<th>Effects during Operation</th>
<th>Cumulative Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality</td>
<td>Negligible</td>
<td>Negligible to minor adverse</td>
<td>None identified (within assessment)</td>
</tr>
<tr>
<td>Archaeology and Cultural Heritage</td>
<td>No effects</td>
<td>Minor adverse</td>
<td>Neutral for archaeology Limited indirect short term negligible effects or cultural heritage</td>
</tr>
<tr>
<td>Biodiversity and Ecology</td>
<td>Negligible to minor adverse</td>
<td>Minor adverse to substantial beneficial</td>
<td>Minimal</td>
</tr>
<tr>
<td>Climate Change and Energy</td>
<td>Temporary moderate adverse</td>
<td>Moderate beneficial</td>
<td>None identified</td>
</tr>
<tr>
<td>Flood Risk and Drainage</td>
<td>Negligible</td>
<td>Minor beneficial</td>
<td>None identified</td>
</tr>
<tr>
<td>Ground Conditions and Contamination</td>
<td>Negligible</td>
<td>Negligible</td>
<td>Negligible</td>
</tr>
<tr>
<td>Landscape and Visual Impact</td>
<td>Temporary moderate to substantial</td>
<td>Minor adverse to substantial adverse</td>
<td>Localised substantial adverse effect on landscape Negligible to minor adverse visual effects</td>
</tr>
<tr>
<td>Noise and Vibration</td>
<td>Negligible to moderate adverse</td>
<td>Minor adverse to moderate beneficial</td>
<td>None identified</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>Minor to moderate beneficial</td>
<td>Negligible to minor beneficial</td>
<td>Negligible</td>
</tr>
<tr>
<td>Transport and Travel Planning</td>
<td>No effects</td>
<td>Minor adverse</td>
<td>None identified (within assessment)</td>
</tr>
</tbody>
</table>

5.2 A range of mitigation measures have been identified throughout the ES which are capable of being enforced through planning conditions or financial contributions in relation to the development.

5.3 Some moderate and minor negative residual effects remain in relation to specific sensitive receptors in relation to landscape and visual impact, ecology and cultural heritage. However, these must be balanced against the significant beneficial environmental effects in relation to socio-economic.

5.4 There are no cumulative effects arising from the development when considered with other developments in the surrounding area and the overall conclusion is that the proposed development will not result in unacceptable adverse effects.
6.0 Availability of the Environmental Statement

6.1 If you would like to purchase a paper copy or CD Rom of the ES, please contact:

Nathaniel Lichfield & Partners, 14 Regent's Wharf, All Saints Street, London N1 9RL (Tel: +44 (0)20 7837 4477

6.2 Alternatively, information on the ES can also be viewed on the Maldon District Council website at http://www.maldon.gov.uk/Site/.