

## **Chapter 17: Likely Significant Effects and Conclusions**

INTRODUCTION

- 17.1
- This chapter of the Environmental Statement (‘ES’) presents a summary of the likely significant environmental and socio-economic effects arising as a result of the Proposed Development, during the demolition and construction works, and once the Proposed Development is completed and operational.
- 17.2
- The purpose of this ES chapter is not to re-present all of the residual effects associated with each of the technical topic assessments. All residual effects, including their associated nature and scale, are presented and summarised as relevant within each technical chapter of the ES, and reference should be made to **ES Volume 1, Chapters 6 to 15**, and **ES Volume 2**. Instead, this ES chapter focuses on summarising the *likely significant effects* that are expected to arise as a result of the Proposed Development, in line with the EIA Regulations.
- 17.3
- Each of the following technical assessments have been assessed throughout the ES, as discussed in **ES Volume 1, Chapter 2: EIA Methodology**:

The demolition and construction works associated with the Proposed Development - assessed as two scenarios (Phase 1 and Phase 2 demolition and construction respectively), where relevant, given the phased nature of the Proposed Development;

The completed and operational/occupied Proposed Development; and

A cumulative assessment - adopting a two-tiered approach to consider schemes with planning consent or resolution to grant and schemes awaiting determination (Tier 1 cumulative schemes) and the major planning applications and decisions which have not yet been submitted for approval and are at varying stages in the pre-application stage (Tier 2 cumulative schemes), as discussed in **ES Volume 1, Chapter 2: EIA Methodology**.
- 17.4
- For the majority of technical topics, residual effects that are identified as ‘moderate’ or ‘major’ in scale are considered to be ‘significant’, with effects that are ‘negligible’ or ‘minor’ in scale being ‘not significant’.
- 17.5
- For the Wind Microclimate assessment, as explained within **ES Volume 1, Chapter 11: Wind Microclimate**, wind conditions would represent a significant effect if they are unsuitable for their intended use and would require mitigation measures. For on-site wind conditions this would be all adverse (of any scale) effects. For off-site wind conditions, this would include effects which would be both windier than the baseline as well as being windier than required for the intended use (i.e. a major adverse effect). Wind conditions which are negligible or beneficial of any scale would not represent a significant effect, nor would off-site wind conditions which experienced a change but remain suitable for the intended use. In addition, any identified strong winds are classed as ‘significant’.
- 17.6
- Some technical topics, such as air quality (see **ES Volume 1, Chapter 8: Air Quality**) and daylight (see **ES Volume 1, Chapter 10: Daylight, Sunlight, Overshadowing, Solar Glare and Light Intrusion**), include an element of professional judgement when assigning significance to an effect, and as such there may be instances in these assessments where a moderate adverse effects may be identified, however the overall effect upon a given receptor is not considered as significant.
- 17.7
- The Health Impact Assessment (HIA) (as presented in **ES Volume 3, Appendix: Socio-Economics and Health – Annex 2**) follows the approach as set out within the NHS London Healthy Urban Development Unit (HUDU) Rapid HIA Toolkit. This approach identifies potential health effects on a scale of positive, negative and neutral associated with the Proposed Development construction and operational phases. As a result, the approach does not align with the EIA methodology of establishing likely significant effects, as set out within **ES Volume 1, Chapter 2: EIA Methodology**. Therefore, the conclusions of the HIA are not presented in **Table 17.1** and **Table 17.2**, but are summarised at the end of this ES chapter for completeness.
- 17.8
- Table 17.1** and **Table 17.2** of this ES chapter respectively outline the likely significant residual effects resulting from the demolition and construction works associated with the Proposed Development, and once the Proposed Development is complete and operational. In line with the technical assessments undertaken within

this ES, these tables outline the likely significant effects identified from each of the respective assessment scenarios, and therefore effects are not double-counted but presented for each scenario assessed for clarity.

- 17.9
- Within **Table 17.1** and **Table 17.2**, significant adverse effects are shaded in ‘orange’, significant beneficial effects are shaded in ‘green’ and significant neutral effects are shaded in ‘blue’<sup>1</sup> for ease of identification. Following which, the likely significant cumulative effects and effect interactions are summarised.

LIKELY SIGNIFICANT EFFECTS

Demolition and Construction

- 17.10
- No significant demolition and construction effects arising as a result of the Proposed Development have been identified in respect of all following environmental topic areas which have been the subject of this EIA:

Air Quality;

Archaeology (Buried Heritage);

Ecology and Biodiversity;

Wind Microclimate;

Built Heritage;

Water Resources, Flood Risk, Drainage and Ground Conditions<sup>2</sup>;

Townscape;

Visual;

Traffic and Transport; and

Daylight, Sunlight, Overshadowing, Solar Glare and Light Intrusion<sup>3</sup>.
- 17.11
- Significant effects have been identified as being likely as a result of the demolition and construction of the Proposed Development in respect of the following topic areas, and are therefore presented in **Table 17.1** and discussed further below:

Noise and Vibration; and

Socio-Economics.

Table 17.1 Likely Significant Effects – Demolition and Construction

| EIA Topic Area                                              | Receptor (s)                                             | Description of Residual Effect                                                            | Classification of Residual Effect    |        |        |                |
|-------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------|--------|--------|----------------|
|                                                             |                                                          |                                                                                           | Scale and Nature (Geographic Extent) | D<br>I | P<br>T | St<br>Mt<br>Lt |
| Assessment Scenario 1 (Phase 1 Demolition and Construction) |                                                          |                                                                                           |                                      |        |        |                |
| Socio-Economics                                             | Construction Employment (Businesses and their Employees) | Socio-Economics<br>Employment generation during the period of demolition and construction | Moderate Beneficial (Regional)       | D / I  | T      | Mt             |
| Vibration                                                   | Black Eagle Drive                                        | Vibration<br>Construction Vibration                                                       | Moderate Adverse (Local)             | D      | T      | Mt             |

<sup>3</sup> Owing to the constantly evolving and changing nature of demolition and construction works, the effects to daylight, sunlight, overshadowing, solar glare and light intrusion will change throughout construction through to completion of the Proposed Development. The ‘Completed and Operational Development’ section of this ES chapter therefore presents the worst-case assessment of the daylight, sunlight, overshadowing solar glare and light intrusion effects of the Proposed Development, as set out within **ES Volume 1, Chapter 10: Daylight, Sunlight, Overshadowing, Solar Glare and Light Intrusion**.

<sup>1</sup> As noted within **ES Volume 1, Chapter 2: EIA Methodology**, neutral effects are relevant for the Townscape and Visual Impact Assessment (**ES Volume 2**).

<sup>2</sup> Note, as set out within **ES Volume 1, Chapter 15: Water Resources, Flood Risk, Drainage and Ground Conditions**, if contamination is found on site following the intrusive site investigations and remediated to meet appropriate land use criteria, then this would give rise to a Minor Beneficial (Significant) effect when compared to the existing site use on soils, groundwater and surface water. This however isn’t reported in **Table 17.1** as it is dependant upon the findings of the site investigation and any potential remedial works.

| EIA Topic Area                                                                                                                                                                                                                                                                                                               | Receptor (s)                                                                                                                                                                                                                                                                                                                                       | Description of Residual Effect | Classification of Residual Effect    |        |        |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------|--------|--------|----------------|
|                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                    |                                | Scale and Nature (Geographic Extent) | D<br>I | P<br>T | St<br>Mt<br>Lt |
| Assessment Scenario 2 (Phase 2 Demolition and Construction)                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                    |                                |                                      |        |        |                |
| Noise                                                                                                                                                                                                                                                                                                                        | Plots 5, 8, 15 and 16                                                                                                                                                                                                                                                                                                                              | Noise<br>Construction Noise    | Moderate Adverse<br>(Local)          | D      | T      | Mt             |
| Socio-Economics                                                                                                                                                                                                                                                                                                              | The socio-economic assessment considered a single demolition and construction scenario, as set out in ES Volume 1, Chapter 16: Socio-Economics and Health. Therefore, all socio-economic effects for Assessment Scenario 2 are the same as those outlined in Assessment Scenario 1 above. No additional likely significant effects are identified. |                                |                                      |        |        |                |
| Notes:<br>Nature = Beneficial / Adverse / Neutral<br>Scale = Negligible / Minor / Moderate / Major<br>Geographic Extent = Site or Local / Borough / Sub-Regional or Regional / National / International<br>D = Direct / I = Indirect<br>P = Permanent / T = Temporary<br>St = Short Term / Mt = Medium Term / Lt = Long Term |                                                                                                                                                                                                                                                                                                                                                    |                                |                                      |        |        |                |

## Socio-Economics

- 17.12** It has been estimated that the Proposed Development will take approximately 7,299 person years of construction labour to complete, based on the estimated cost of construction and the relationship between jobs and turnover for the construction sector in the South East region<sup>4</sup>. This equates to an average of 914 direct Full Time Equivalent (FTE) construction workers being employed for the entire duration of the 8 year programme. An additional 738 Indirect Construction FTEs are expected to be employed within the construction supply chain, and a further 148 FTEs supported through Induced spending (all at the national level)<sup>5</sup>.
- 17.13** Construction businesses and workers tend to be mobile and, owing to the scale of the workforce and diverse specialisms required, employment effects arising from construction are considered in a regional (South East) context. Taking into account Leakage (construction jobs taken up by workers from outside the region – relatively high in the South East due to its proximity to London<sup>6</sup>) and displacement<sup>7</sup> (other projects not taking place or being delayed due to the workforce being engaged in the Proposed Development project), it is estimated that an average of 783 net construction jobs (FTE) will be required for the 8 year duration of the build.
- 17.14** The construction supply chain for the Proposed Development is likely to be extensive, creating opportunities for businesses across the region (South East) to supply materials, services and labour to the project – supporting further employment indirectly. Construction workers are also likely to spend the money they have earned working on the project (induced spending) both within the local area to site economy (for example on food and beverage before, during and after the working day, as well as on hotel/bed and breakfast (B&B) accommodation for non-local workers), which will further boost the economic benefit associated with the Proposed Development.
- 17.15** Significant beneficial effects (**Moderate Beneficial**) as a result of the creation of construction jobs at the regional level are anticipated during the demolition and construction works.
- 17.16** The permanent loss of existing businesses and the employment they sustain would result in a significant adverse effect without mitigation. Through the Compulsory Purchase Order (CPO) process, GBC as acquiring authority (and supported by the Applicant) are required to compensate to displaced businesses for their losses which may include the costs of securing alternative premises in other locations and other financial losses. It is anticipated that GBC's Economic Development officers will also assist displaced businesses by

helping to identify suitable alternative locations/properties within the Borough to allow them to remain in the local area. Further details of relocation assistance will be made available as the CPO process progresses.

## Noise and Vibration

- 17.17** With regards to the significant adverse effect (**Moderate Adverse**) identified at Black Eagle Drive in relation construction vibration associated with the Phase 1 demolition and construction works. Adverse effects are only likely to occur if piling activities are taking place in close proximity to the sensitive receptor (i.e. assuming the worst case, less than 20m distance). In reality, high vibration generating activities are unlikely to occur so close to sensitive receptors as detailed planning methodology (i.e. Piling Method Statement) and solutions will seek to further reduce the potential for adverse impacts, and if they do, the adverse impacts would be of short-term duration and appropriately monitored.
- 17.18** Given that there is potential for predicted impacts to be significant under the worst-case scenario, mitigation measures will be put in place to ensure that vibration effects are minimised as far as practicable through the use of an appropriate piling technique, design and methodology. To reduce potential vibration impacts due to piling, the contractor will use a piling technique that is least likely to cause adverse vibration impacts (e.g. auger piling), to ensure that the likely effect of vibration is reduced or avoided at nearby receptors.
- 17.19** A 'Piling Method Statement' (to be secured by way of planning condition) will also be provided and agreed prior to the commencement of these works. Vibration limits will be set in accordance with BS5228-2 to minimise the risk of complaints or building damage. These limits will be controlled through implementation of the Construction Environmental Management Plan (CEMP) and vibration monitoring. The statement will also include vibration and noise monitoring and action levels.
- 17.20** With the appropriate and successful implementation of the mitigation proposed, the likely adverse effects predicted would reduce (for example, this assumes that no piling will occur within 5m of a high sensitivity receptor, and that should the piling methodology be able to prevent piling occurring within a 10-15m radius of the receptor) and it is considered that the likely effects could be reduced further.
- 17.21** With regards to the significant adverse effect (**Moderate Adverse**) identified at introduced residential receptors Plots 5, 8, 15 and 16 in relation construction noise associated with the Phase 2 demolition and construction works. Such effects are not unusual for construction works and all reasonable steps will be taken to mitigate and minimise the effects through the adoption of Best Practicable Means (BPM). Noise mitigation measures and noise management plans covering BPM will be put into place to ensure that noise is minimised at all times. It should be noted that construction noise predictions are based on worst case months that are assumed to represent high periods of construction activity over the course of a working day, with all plant being operational at all areas of all worksites during each period assessed. In reality, it is likely that the worst-case noise levels would be for limited periods of time when plant are operational and are also likely to vary in the level of noise when in use. Furthermore, it is not uncommon for construction works to be undertaken near introduced sensitive uses on a phased, large-scale development of this nature, and the potential for temporary adverse effects on introduced receptors is expected and reasonably practicable mitigation anticipated.

## Completed and Operational Proposed Development

- 17.22** No significant effects have been identified as being likely as a result of the completed and operational Proposed Development in respect of the following environmental topic areas which have been the subject of this EIA:
- Air Quality;
  - Archaeology;
  - Ecology and Biodiversity;
  - Noise and Vibration;
  - Traffic and Transport;

<sup>4</sup> Source: ONS Business Population Estimates 2021: Detailed Tables

<sup>5</sup> Indirect and Composite multipliers calculated using the ONS UK Input-Output Analytical Tables – Industry by industry (April 2022) and GVA estimates by industry from the ONS Annual Business Survey 2018 revised results (published May 2020)

<sup>6</sup> Source: CITB

<sup>7</sup> Source: HCA Additivity Guide 4<sup>th</sup> Edition

- Built Heritage;
- Flood Risk, Drainage and Ground Conditions;
- Solar Glare;
- Light Intrusion;
- Sunlight; and
- Overshadowing.

**17.23** Significant effects have been identified as being likely as a result of the completed and operational Proposed Development in respect of the following topic areas, and are therefore presented in **Table 17.2** and discussed further below:

- Socio-Economics;
- Wind Microclimate;
- Water Resources;
- Daylight;
- Townscape; and
- Visual.

**Table 17.2 Likely Significant Effects – Completed and Operational**

| EIA Topic Area    | Receptor (s)                                  | Description of Residual Effect                                                     | Classification of Residual Effect                |     |     |          |
|-------------------|-----------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------|-----|-----|----------|
|                   |                                               |                                                                                    | Scale and Nature Geographic Extent               | D I | P T | St Mt Lt |
| Socio-Economics   | Housing Need / Availability in Gravesham      | <b>Socio-Economics</b><br>Provision of housing for the GBC Housing Supply Pipeline | <b>Major Beneficial</b><br>(Borough)             | D   | P   | Lt       |
|                   | GBC Council Tax and Non-Domestic Rates Income | <b>Socio-Economics</b><br>Generation of new Council Tax Receipts                   | <b>Major Beneficial</b><br>(Borough)             | D   | P   | Lt       |
|                   |                                               | <b>Socio-Economics</b><br>Generation of new Non-Domestic Rates Receipts            | <b>Moderate Beneficial</b><br>(Borough)          | D   | P   | Lt       |
|                   | The Gravesham Economy / Workforce             | <b>Socio-Economics</b><br>Creation of new Permanent Jobs                           | <b>Major Beneficial</b><br>(Local)               | D   | P   | Lt       |
|                   |                                               | <b>Socio-Economics</b><br>New Household Expenditure                                | <b>Moderate Beneficial</b><br>(Local)            | D   | P   | Lt       |
|                   | Social Infrastructure                         | <b>Socio-Economics</b><br>Primary Healthcare Availability                          | <b>Moderate Beneficial</b><br>(Local)            | D   | P   | Lt       |
| Water Resources   | Surface Waters                                | <b>Water Resources</b><br>Water quality treatment to the surface water runoff      | <b>Negligible to Minor Beneficial</b><br>(Local) | D   | P   | Lt       |
| Wind Microclimate | On-site Pedestrian Users and Occupants        | <b>Wind Microclimate</b><br>Wind conditions at ground level amenity spaces         | <b>Negligible – Minor Adverse</b><br>(Local)     | D   | P   | Lt       |
| Daylight          | Phoenix Court 104-151                         | <b>Daylight</b>                                                                    | <b>Minor Adverse – Moderate Adverse</b>          | D   | P   | Lt       |

| EIA Topic Area                                                                                                                                                                                                                                                                                                                      | Receptor (s)                                          | Description of Residual Effect                                                                         | Classification of Residual Effect        |     |     |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------|-----|-----|----------|
|                                                                                                                                                                                                                                                                                                                                     |                                                       |                                                                                                        | Scale and Nature Geographic Extent       | D I | P T | St Mt Lt |
|                                                                                                                                                                                                                                                                                                                                     |                                                       | Reduction to daylight to existing receptor                                                             | (Local)                                  |     |     |          |
| Townscape                                                                                                                                                                                                                                                                                                                           | TCA1: Mixed-use/commercial estate<br>TCA5: Industrial | <b>Townscape</b><br>Changes to the townscape characteristics due to the completed Proposed Development | <b>Moderate Beneficial</b><br>(Local)    | D   | P   | Lt       |
| Views                                                                                                                                                                                                                                                                                                                               | Views 14 and 15                                       | <b>Visual Impact Assessment</b><br>Effect of the completed Proposed Development on views               | <b>Moderate Beneficial</b><br>(Regional) | D   | P   | Lt       |
| <b>Notes:</b><br>Nature = Beneficial / Adverse / Neutral<br>Scale = Negligible / Minor / Moderate / Major<br>Geographic Extent = Site or Local / Borough / Sub-Regional or Regional / National / International<br>D = Direct / I = Indirect<br>P = Permanent / T = Temporary<br>St = Short Term / Mt = Medium Term / Lt = Long Term |                                                       |                                                                                                        |                                          |     |     |          |

### Socio-Economics

**17.24** The Proposed Development generates the following likely significant socio-economic effects once the Proposed Development is complete and operational:

- **Housing provision** – the Proposed Development will provide up to 3,500 new homes across a variety of tenures. Based upon the Illustrative Masterplan, this includes provision of 351 shared ownership homes, and 3,149 private units for sale and or rent. With housing delivery in GBC totaling 57% of its requirement over the most recent measurement period, the Proposed Development will help to address historic undersupply and to meet future targets. This will result in a permanent, beneficial effect at the borough level on Housing Need / Availability in Gravesham, providing housing supply equivalent to approximately 4.8 years of GBC's current housing requirement of 655 dwellings per annum, based on the minimum level of delivery assessed in **ES Volume 1, Chapter 6: Socio-Economics and Health**. This results in a **Major Beneficial** effect;
- **Generation of new council tax receipts** – the delivery of new housing will also expand the Borough's council tax base providing more funds to support local service provision. It is estimated that on completion, the assumed minimum 3,150 units, as assessed in **ES Volume 1, Chapter 6: Socio-Economics and Health**, would contribute at least £5.6m per annum in council tax (before discounts, net of the c. £6,400 per annum payable by the four existing units on site). This results in a **Major Beneficial** effect;
- **Generation of new non-domestic rates receipts** – the net increase in total commercial floorspace on-site, as well as the transition to more productive use classes (on a per square metre basis), is expected to lead to a net increase in business rates receipts achievable from the site. Current business rates receipts (before relief) are estimated at £1.6m per annum, and the Proposed Development is estimated to generate receipts of £2.8m per annum – a net increase of £1.2m per annum. This results in a **Moderate Beneficial** effect;
- **Creation of new permanent jobs** – the Proposed Development is expected to employ 1,508 Gravesham workers (FTE) through Direct, Indirect and Induced employment, taking into account leakage, displacement and multiplier effects. On a net basis (accounting for loss of existing direct, indirect and induced jobs), this equates to an additional 1,052 local (borough) FTE jobs. This results in a **Major Beneficial** effect;

- **New household expenditure** – Growth in the number of homes within the local area will provide a boost to local economy through household spending. On completion, it is estimated that future residents will spend £20.0m per annum across comparison goods, convenience goods, commercial leisure activities and food and beverage services. This results in a **Moderate Beneficial** effect; and
- **Primary healthcare availability** – the Proposed Development includes up to 1,500m<sup>2</sup> (GEA) of Use Class E(e) floorspace – with a minimum of 1,350m<sup>2</sup> (GEA) assumed the socio-economic assessment (see **ES Volume 1, Chapter 6: Socio-Economics and Health**). Across the UK, the median number of FTE GPs per Practice is 4.4<sup>8</sup>, meaning that just one average-sized surgery would need to materialise for additional demand generated by the Proposed Development to be met. On this basis, increased demand for GP Surgery capacity is likely to be met by on-site provision. Furthermore, it is likely that some additional capacity will be available to help address deficits in provision elsewhere within the local area. This results in a **Moderate Beneficial** effect.

**17.25** The potential effect on primary school place availability once the Proposed Development is complete and operational was assessed as significant adverse without mitigation required. The Applicant has engaged with GBC and has confirmed that a financial contribution to education will be appropriate mitigation in this location, owing to the complex range of developments ongoing within the local area and the need to expand provision on account of a number of local schemes. KCC will ultimately use these financial contributions to fund expansion of one or more primary schools within the local area to accommodate any additional demand generated by the Proposed Development.

## Wind Microclimate

**17.26** Taking into account the Final Illustrative Landscaping (as tested with the Proposed Development maximum parameter massing in 'Configuration 4' in **ES Volume 1, Chapter 11: Wind Microclimate**), there are residual **Minor Adverse** effects (significant) for proposed amenity spaces in Power Park and Riverwalk Gardens. These will require further consideration at the detailed design stage. Although not tested at this stage, there is substantial scope for further mitigation and it is considered straightforward to achieve suitable conditions. Possible solutions could include (noting the below is not an exhaustive list):

- Localised screening immediately adjacent to any seating areas;
- Adjustments to the detailed landscaping scheme to ensure more trees fall within the critical wind flow paths;
- The inclusion of more evergreen trees, or species with higher leaf densities, within the landscaping to provide greater resistance to the wind; and
- Appropriate zoning of the amenity spaces such that "dwell spaces" fall within regions which are suitable for sitting or standing, and any regions which are suitable for walking are specified as transitory zones.

**17.27** Mandatory controls have been written into the Design Code to ensure that these residual significant effects within the ground-level amenity are resolved at the detailed design stage. This includes the following measures:

- Any dwelling spaces (e.g. a standing or sitting space) which are located within regions which are suitable for leisure walking conditions (or windier) would not be suitable for use when considering the maximum parameters assessed. These regions should be designated within the design of the amenity spaces to be transitory spaces rather than dwell spaces, to ensure suitable conditions. However, if dwelling spaces within these regions are considered at the detailed design stage, further wind testing of the detailed designs will need to be undertaken, with the testing of appropriate mitigation measures (such as localised screening or planting) in order to ensure that the required wind conditions are achieved. As the amenity spaces in these locations may be unsuitable for use without the testing and implementation of further measures, the assessment of appropriate measures by an experienced wind engineer, if required, should be secured through an appropriately worded planning condition; and
- Any seating areas within amenity spaces which are located within regions which are suitable for standing conditions (or windier) would not be suitable for use when considering the maximum

parameters assessed. Seating areas should not be included in these areas without appropriate mitigation to ensure suitable conditions. If seating areas within these regions are considered at the detailed design stage, further wind testing of the detailed designs will need to be undertaken, with the testing of appropriate mitigation measures (such as localised screening or planting immediately adjacent to the proposed seating areas) in order to ensure that the required wind conditions are achieved. As the amenity spaces in these locations may be unsuitable for use without the testing and implementation of further measures, the assessment of appropriate measures by an experienced wind engineer, if required, should be secured through an appropriately worded planning condition.

**17.28** Further review and wind testing/assessment will be undertaken where necessary at reserved matters application (RMA) stage(s) in relation to the detailed scheme that will ultimately come forward, and as part of this, verification of the effectiveness of any wind mitigation measures required. The assessment of appropriate wind microclimate mitigation measures at the detailed design stage by an experienced wind engineer, if required, should be secured through an appropriately worded planning condition.

## Water Resources

**17.29** The surface water drainage strategy (see **ES Volume 3, Appendix: Water Resources, Flood Risk, Drainage and Ground Conditions - Annex 3**) proposes sub-catchments A and B will have a pumped discharge into Robin's Creek and sub-catchment C will drain via gravity into Robin's Creek via a swale. The proposed Sustainable Drainage System (SuDS) features will include rainwater harvesting, low-profile attenuation tanks, green roofs and profiled park areas.

**17.30** One of the guiding principles of SuDS is the appropriate management of water quality and the use of pollution prevention techniques to improve the quality of runoff from developed sites. The SuDS Manual recommends the use of a management train whereby a series of consecutive treatment stages are employed to remove pollutants from runoff.

**17.31** The recommended number of treatment stages is dependent on the type of development and sensitivity of the discharge receptor and the mitigation indices of proposed SuDS features. Surface water requiring treatment will come from the roofs, access road, driveways and parking areas. The permeable paving, tree pits and swales will meet the water quality requirements required for the Proposed Development.

**17.32** By providing water quality treatment to the surface water runoff, the magnitude of impact on hydrology (River Thames) is Negligible to Minor Beneficial and therefore the effect has been assessed as **Negligible to Minor Beneficial** (Not Significant to Significant) on surface waters when compared to the existing surface water treatment regime.

## Daylight

**17.33** A significant adverse (**Minor to Moderate Adverse**) effect has been identified at 104-151 Phoenix Court with regards to changes in daylight levels once the Proposed Development is complete and operational. The assessment, however, is based on the maximum massing parameters of the Proposed Development in order to represent a worst-case for assessment.

**17.34** Throughout the design process, maximising the availability of daylight to existing residential receptors has been taken into account where possible, as discussed in **ES Volume 1, Chapter 3: Alternatives and Design Evolution**. Owing to the low-rise nature of the existing site conditions, alterations to daylight levels of this magnitude with regards to the Proposed Development are to be expected. The availability of daylight to existing residential receptors will continue to be an important consideration at RMA stage.

## Townscape

**17.35** The completed Proposed Development will have a significant beneficial (**Moderate Beneficial**) effect on Townscape Character Area (TCA)1: Mixed-use/commercial estate and TCA5: Industrial.

**17.36** **ES Volume 1, Chapter 4: The Proposed Development** demonstrates how the Proposed Development is anticipated to create a varied townscape around the proposed stadium, providing a series of character areas that respond to the specific conditions and existing townscape around the site.

<sup>8</sup> Based on NHS Digital General Practice – June 2022 Practice Level Dataset

- 17.37** The wider area falls within the Northfleet Embankment and Swanscombe Peninsula East Opportunity Area (SPEOA), identified in the Core Strategy as one of four opportunity areas in Gravesham with significant development opportunities. The two railway stations and local bus routes give access to the Proposed Development and support high density living as set out and supported by the core strategy. Therefore, the cluster of taller buildings proposed as part of the Proposed Development are considered to be appropriate to the location, mindful of the limited townscape sensitivities in the surrounding area and the emerging townscape context anticipated.
- 17.38** Riverwalk Gardens and Power Park are the key spaces which would provide opportunities of animation and community interaction with landscaped elements. The proposed design of these space would create a verdant experience for the development and Northfleet as a whole. The landscape design offers the opportunity to integrate a heritage strategy that brings the industrial history of the area back to life.
- 17.39** The Proposed Development would be robustly articulated with a material palette and design features that would be sustainable and complementary to the surrounding townscape. The Proposed Development would be read as several distinct elements, each with their own individual expression, albeit having a consistent architectural language. These principles are set out in the Design Code which ensures that the Proposed Development would make a positive contribution to the existing community, enabling development in unison with the emerging schemes on the adjacent sites.
- 17.40** In conclusion, the Proposed Development would provide a demonstrable improvement to the character, appearance and function of the surrounding townscape of Character Areas 1 and 5.

## Visual Impact

- 17.41** The ES concludes that there will be a significant beneficial residual effects once the Proposed Development is completed at Viewpoints<sup>9</sup> 14 and 15 (**Moderate Beneficial**).
- 17.42** The proposed heights for the Proposed Development would complement existing buildings and those on the adjoining development sites. The proposed heights stem from an analysis of long, medium and immediate views which are drawn from the journey through the site, and along the surrounding roads (notably Stonebridge Road and Grove Road).
- 17.43** Any assessment of acceptability must be made on the basis of the effects of the development as a whole, and the way that tall building development interacts with the site and surrounding development. The Proposed Development has been rigorously tested within a virtual model, taking account of the principal ways in which the site would be experienced.
- 17.44** The modelled views illustrate that the tall buildings create a new waterfront for Northfleet at the end of the route across the site. Overall, the roofline appears continuous, embedding the site into the wider Kent landscape.

## HEALTH IMPACT ASSESSMENT

### Positive Health Impacts

- 17.45** The Proposed Development will provide much-needed new homes on-site across a range of sizes and tenures – helping to boost the local housing supply. The construction and operation of the Proposed Development will also contribute to local economic development objectives, creating a significant number of new temporary and permanent jobs which in turn will help to address employment-related deprivation – a key wider determinant of health outcomes.
- 17.46** Finally, the new open spaces and play spaces will create new opportunities to build community cohesion, providing meeting places for community groups and the opportunity to widen participation in exercise, which will provide a further boost to public health locally. The Proposed Development will also enhance biodiversity and provide high-quality public realm, enhancing the public space available to the residents and wider public.

### Negative Health Impacts

- 17.47** The Proposed Development will grow the local population, which in turn will place additional pressure on local healthcare services (which are already over-subscribed). In mitigation, new on-site healthcare facilities will be provided, ensuring the new residents are able to access healthcare locally. It is likely that new provision will exceed the level of demand from new residents, creating additional capacity to benefit existing communities in the local area.
- 17.48** The Proposed Development will also result in construction impacts related to noise and air quality (as noted in this ES chapter and in further detail in **ES Volume 1, Chapter 8: Air Quality** and **ES Volume 1, Chapter 9: Noise and Vibration**), but mitigation measures, as set out in the relevant technical ES chapters will mitigate the impact on surrounding residents to ensure as far as reasonably practicable that no likely significant effects are realised.

### Summary

- 17.49** The health impacts identified through the Rapid HIA are overwhelmingly positive, and the Proposed Development is expected to make a very significant positive impact on public health within the local area, primarily through the provision of new high quality housing and new public spaces (including enhanced public sports facilities, and play spaces for younger children), as well as the provision of new healthcare facilities on-site, and extensive active travel benefits with extensive pedestrian and cycling paths. This in turn will help to respond to local issues and inequalities by providing high quality and accessible new homes and parks which will be suited to people with a wide range of needs.

## LIKELY SIGNIFICANT CUMULATIVE EFFECTS

- 17.50** The EIA process has identified likely significant cumulative effects additional to the main assessment of the Proposed Development summarised in **Table 17.2** above, as well as changes to significant effects already identified, as a result of the Proposed Development coming forward in conjunction with other surrounding cumulative schemes once the Proposed Development is complete and operational.
- 17.51** No likely significant cumulative effects have been identified with regards to the demolition and construction of the Proposed Development.

### Completed Development

#### Ecology and Biodiversity

- 17.52** Potential cumulative adverse impacts resulting from the Proposed Development in combination with cumulative schemes include increased footfall, recreational pressures, pollution, and habitat degradation at the Swanscombe Peninsula Site of Special Scientific Interest (SSSI).
- 17.53** At this stage, prior to detailed design, the most likely issue is considered to be the potential for cumulative effects associated with the overall increase in the population and visitor numbers on Swanscombe Peninsula SSSI and the potential impact this may have upon habitats and species. The London Resort Tier 2 scheme would result in a significant increase in the number of people visiting this part of North Kent, in addition to an increased local population due to construction workers and operations staff.
- 17.54** At this stage, for caution, cumulative effects are considered to be **Moderate Adverse (Significant)**. This is considered a worst-case assessment on the basis that the London Resort Scheme has been withdrawn and mitigation measures for this scheme are not understood.
- 17.55** However, the London Resort Tier 2 cumulative scheme would be required to follow policy requirements relating to mitigation measures for pollution control, habitat degradation and recreational pressures. Kent Wildlife Trust and NE will be consulted to discuss any potential further mitigation measures (as required and relevant) to be incorporated into the detailed design of the Proposed Development to mitigate adverse impacts upon the SSSI arising from recreational pressures. This may form specific on-site detailed landscaping measures or off-site financial contributions to aid management/maintenance of the SSSI, however this will be

<sup>9</sup> A figure illustrating the location of the viewpoints can be found in **ES Volume 2, Figure 9.1**.

discussed and agreed. Therefore, if these measures are adhered to and approved, in coordination with the relevant statutory bodies (Kent County Council and Natural England), the cumulative effects could be reduced to Not Significant.

## Townscape

- 17.56** The townscape Tier 2 cumulative scenario considers the Proposed Development in combination with the London Resort scheme (see **ES Volume 1, Chapter 2: EIA Methodology** for further details).
- 17.57** The proposals for the London Resort scheme are not subject to a valid planning application and so the details are not fully understood at this time. The scheme withdrawn in March 2022 comprised:
- 'Global entertainment resort with a Leisure Core (comprising a range of events spaces, themed rides and attractions, entertainment venues split over two gates), public areas outside the two gates (offering a range of retail, commercial, dining and entertainment facilities), hotels, 'Conference' Centre, Coliseum, back of house areas, related housing, access road from the A2(T) (including junction works), people mover, river transport infrastructure at both Swanscombe Peninsula and Port of Tilbury, car parking, energy centre, waste water treatment works, land remediation and terrain modelling, flood defence and drainage works, habitat creation and all associated works.'*
- 17.58** When considering this cumulative scheme qualitatively in combination with the Proposed Development, there would be a higher magnitude of effect upon TCA1, resulting in an overall Major Beneficial (Significant) effect.
- 17.59** Furthermore, the London Resort scheme covers large swathes of TCA4: Green Space, which generally comprises green space. The quality of this space varies across the character area and has been significantly changed following the arrival of the Ebbsfleet International Station. The proposals for this scheme are not subject to a valid planning application and so the details are not yet fully understood, thus therefore it is not possible to provide a definitive assessment of the cumulative impact. However, subject to the retention of the protected nature reserves, the proposals have the potential to result in a cumulative Moderate Beneficial (Significant) effect upon TCA4.

## SIGNIFICANT EFFECT INTERACTIONS

- 17.60** Effect interactions arising between multiple individual effects associated with a single project on a receptor have been assessed and reported in **ES Volume 1, Chapter 16: Effects Interactions**.
- 17.61** There is likely to be a **significant** effect interaction at Black Eagle Drive during the demolition and construction activities associated with Phase 1 of the Proposed Development, from alterations to the existing levels of noise and construction vibration associated with construction works. The effect interactions are deemed significant as at least one of the effects (construction vibration) is significant in isolation. However, as noted at paragraph 17.17 – 17.20, adverse effects are only likely to occur if piling activities are taking place in close proximity to sensitive receptors. In reality, high vibration generating activities are unlikely to occur so close to sensitive receptors as detailed planning methodology (i.e. Piling Method Statement) and solutions will further reduce the potential for adverse impacts, and if they do, they would be of short-term duration and appropriately monitored. It is considered that, with the appropriate and successful implementation of the mitigation proposed, the likely adverse effects predicted would reduce.
- 17.62** There is also likely to be a **significant** effect interaction at introduced residential receptors Plots 5, 8, 15 and 16 during the demolition and construction activities associated with Phase 2 of the Proposed Development, from alterations to the existing levels of noise and construction vibration associated with construction works. The effect interactions are deemed significant as at least one of the effects (construction noise) is significant in isolation. Whilst the effects have the potential to interact, the interaction of these effects is not unusual for construction works. All reasonable steps will be taken to mitigate and minimise the effects through the adoption of BPM, as noted in paragraph 17.21 (see **ES Volume 1, Chapter 9: Noise and Vibration** and **ES Volume 1, Chapter 18: Environmental Mitigation and Monitoring Schedule**). Noise mitigation measures and noise management plans covering BPM will be put into place to ensure that noise is minimised at all times. It is not uncommon for construction works to be undertaken near introduced sensitive uses on a phased, large-scale development of this nature, and the potential for temporary short-term adverse effects on introduced receptors is expected and will be managed as far as reasonably possible.
- 17.63** There is likely to be a **significant** effect interaction at Phoenix Court 104-151 resulting light pollution and alterations to daylight levels once the Proposed Development is completed and operational. The effect

interactions are deemed significant as at least one of the effects (alterations in daylight) is significant in isolation.

- 17.64** With regards to the assessment of potential daylight effects, the assessment is based on the maximum massing parameters of the Proposed Development in order to represent a worst-case for assessment. Owing to the low-rise nature of the existing site conditions, alterations of this magnitude with regards to the Proposed Development are to be expected. The availability of daylight to existing residential receptors will continue to be an important consideration at RMA stage.
- 17.65** With regards to light intrusion, until further information on an emerging detailed scheme is available, the practicality of the measures is not yet known, and so residual light intrusion effects are based on a worst-case qualitative assessment. In order to minimise any potential light intrusion effects from the commercial office elements upon residential receptors, potential for light intrusion will be considered throughout the detailed design process and potential effects will be mitigated through the below measures to ensure that effects are reduced:
- Ensuring that any external lighting, such as the stadium, does not directly illuminate the sky;
  - Ensuring that any external lighting visible from any sensitive receptor is of low intensity;
  - Avoiding external lighting which directly illuminates the SSSI and the Riverfront docks in particular;
  - Provision of blinds for commercial offices;
  - Lighting strategies that reduce the output of luminaires closer to the façades; and
  - Light fittings controlled through the use of sensors which switch on and off the light according to office occupancy.
- 17.66** The details of any mitigation and its efficacy will be guided by ILP Guidance notes (2021) and presented and reported upon where relevant at reserved matters stage.