

Chapter 2: EIA Methodology

INTRODUCTION

- 2.1** This chapter of the ES sets out the overall approach to and methodology for undertaking the EIA. It details the process for identifying the environmental topics to be included in the EIA and the method of assessing the likely significant effects that have the potential to arise as a result of the Proposed Development, both during the demolition and construction works, and on completion and occupation of the Proposed Development.
- 2.2** Further detail on how the assessment methodology is applied to each topic is presented within the respective technical chapters of this **ES Volume 1: Chapter 6 - 10** and in **ES Volume 2: Townscape, Built Heritage and Visual Impact Assessment**.

EIA SCOPING AND CONSULTATION

Consultation

- 2.3** **ES Volume 1: Chapter 3 - Alternatives and Design Evolution** provides a review of the alternatives considered by the Applicant and the design evolution of the Proposed Development, specifically in relation to environmental considerations.
- 2.4** The Application is supported by a Planning Statement and a Statement of Community Involvement which together summarise the wider consultation that has been undertaken with various consultees throughout the pre-application consultation process.

EIA Scoping

- 2.5** Scoping forms one of the first stages of the EIA process and it is through EIA scoping that the Local Planning Authority (LPA) and other key statutory and non-statutory consultees are consulted. The process of consultation is a key requirement of the EIA process and the views of statutory consultees and other stakeholders help to identify specific issues, as well as identifying additional information in their possession, or of which they have knowledge, which may be of assistance in progressing the EIA.
- 2.6** Through the scoping process, a number of matters and issues are addressed, including:
- Identification of baseline data and appropriate surveys to be undertaken;
 - Outline of the scope and assessment methodology for environmental topics scoped into the EIA;
 - Consideration of the potential impacts and cumulative impacts; and
 - Identification of topics to be scoped out of the EIA, with justification.
- 2.7** An EIA Scoping Report was prepared and submitted to the RBC on the 25th September 2018 requesting a formal Scoping Opinion from the RBC and statutory consultees on the scope of the EIA. A copy of the EIA Scoping Report is provided in **ES Volume 3: Appendix EIA Scoping**.

Scoping Opinion

- 2.8** A Scoping Opinion has not been received at the time of preparing the chapters within this ES. The EIA has proceeded in the absence of a formal opinion received.

Topics Scoped Out of the EIA

- 2.9** The EIA Scoping process identified several environmental topic areas which are not likely to give rise to significant environmental effects and therefore would not need to be assessed further as part of the EIA. Full details of the justification for scoping these topics out can be found within **ES Volume 3: Appendix EIA Scoping**, and also presented within **Annex A** at the end of this ES Chapter.
- 2.10** In summary, the topics presented within the Scoping Report to be scoped out of the EIA include:

- Highways and Transport;
- Aviation;
- Water Resources;
- Ecology;
- Archaeology;
- Geoenvironmental (Land Contamination, Ground Conditions and Groundwater);
- Waste; and
- Electronic Interference.

Project Vulnerability

- 2.11** The EIA Regulations require consideration of ‘...the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant...’ (Regulation 4(4) and Schedule 4(8)).
- 2.12** In line with available guidance¹, with the exception of the reference to flood risk, the scoping process (refer **ES Volume 3: Appendix EIA Scoping**) determined that no further significant effects arising from the vulnerability of the Proposed Development to major accidents or disasters were considered relevant.
- 2.13** In terms of flood risk, the planning application will be accompanied by a Flood Risk Assessment (FRA). The FRA reviews the potential sources of flooding that could affect the site, and how the identified sources of flooding can be minimised, mitigated or eliminated to reduce project vulnerability. An assessment is made of the impact of climate change on the flood risk categorisation relating to the site and how the Proposed Development has built in climate change resilience and resistance with regard to future flood risk and so future potential vulnerability with regard to this aspect. It is expected that these mitigation measures will be detailed as conditions within the decision notice. And therefore, form an integral part of the condition.
- 2.14** Consideration was also given to the potential for fire risk and whether this could constitute a major accident or disaster that could be considered likely and relevant to the Proposed Development. It was concluded however, that fire risk is managed outside of the EIA process through a combination of legislative and industry guidance which mitigate the risk of fire causing a major accident or disaster to new developments within the urban environment.
- 2.15** The effective implementation of the legislative tools and guidance is considered to reduce the risk of fire to an acceptable level whereby the occurrence is unlikely, or in the event of a fire, appropriate design and management measures are incorporated into a development to avoid the occurrence of a major accident or disaster.
- 2.16** Given the above, the consideration of fire risk in terms of causing a major accident or disaster has not been addressed further by the EIA as the risk of occurrence will be managed during the post-consent technical design and construction phases, through a mix of legislative requirements and industry guidance which fall outside of the EIA process.

Land Take and Soils

- 2.17** Consideration has been given to the potential for any effects arising because of the Proposed Development on ‘Land Take’ and ‘Soils’.
- 2.18** With regard to ‘land’ (for example land take²), the Proposed Development involves redevelopment of the existing Broad Street Mall, the majority of which is to remain in place, with the partial demolition and new build. As a result, no likely significant adverse effects associated with ‘land take’ will arise because of the Proposed Development.

¹ IEMA Quality Mark Article ‘Assessing the Risks of Major Accident and Disasters in EIA’

² Land take is referred as being the loss of agricultural, forest and other semi-natural and natural land to urban and other artificial land development.

2.19 With regards to 'Soil', consideration of the geoenvironmental conditions associated with the site is discussed within **Annex A**. Similar to the above discussion relating to 'land take', the relative limited extent of the partial demolition associated with the proposed redevelopment of the existing Broad Street Mall presents a low risk in terms of contamination, and measures are proposed to avoid or remediate any potential geoenvironmental impact associated with proposed redevelopment.

EIA METHODOLOGY

2.20 The ES has been prepared in accordance with applicable legislation, guidance, and case law. Specifically, this ES has been undertaken in accordance with the Institute of Environmental Management and Assessment (IEMA) Quality Mark indicator checklist and with due consideration to the following:

- At a European level, reference has been made to the European Commission's (EC) various EIA guidance documents <http://ec.europa.eu/environment/eia/eia-support.htm>;
- At a domestic level, reference has been made to the Department for Communities and Local Government's (DCLG) overarching Planning Practice Guidance³;
- In addition, the Department for Transport 'Design Manual for Roads and Bridges Volume 11: Environmental Assessment'⁴ has been referred to as applicable;
- In relation to publications from professional bodies, reference has been made to IEMA publications as these include best practice/suggested improvements to the EIA process. This includes:
 - IEMA ES Review Criteria (COM3-6)⁵;
 - IEMA 'Guidelines for Environmental Impact Assessment' (2004)⁶;
 - IEMA 'Special Report into the State Environmental Impact Assessment Practice in the UK' (2011)⁷;
 - IEMA 'Shaping Quality Development' (2015)⁸; and
 - IEMA 'Delivering Quality Development' (2016)⁹;
 - IEMA 'Delivering Proportionate EIA' (2017)¹⁰.
- Whilst primarily written for major infrastructure projects, reference is also made to guidance/advice notes published by the National Infrastructure Planning¹¹ where appropriate, as these can include relevant/helpful information.

Planning Policy Context

2.21 The EIA will consider legislation and relevant national and local planning policy guidance as summarised below.

National Planning Policy Framework (2018)

2.22 The ES has had regard to the National Planning Policy Framework¹² (NPPF). The NPPF sets out the Government's economic, environmental and social planning policies for England. The policies contained within the NPPF articulate the Government's vision of sustainable development, which are intended to be interpreted at a local level, to meet the requirements of local aspirations.

2.23 The Ministry of Housing, Communities and Local Government has recently undertaken a revision of the NPPF, including consultation on the draft text in order to seek views on the update sought. The revised NPPF has been recently published (24th July 2018) and replaces the previous NPPF published in March 2012.

2.24 The ES has also had regard to the National Planning Practice Guidance¹³ (PPG), which is an online resource. The PPG aims to make planning guidance more accessible, and to ensure that the guidance is kept up to date. This has also been recently updated where relevant to reflect the revised NPPF.

Local Planning Policy

2.25 Key local planning policy documents making up the borough's Development Plan that will be considered throughout preparation of the ES are outlined below.

Current Local Plan

- Core Strategy (2008, 2015)¹⁴;
 - Sets out RBC's sets out the Council's adopted planning strategy for the Borough. It sets out how planning and development will achieve the Reading 2020 Vision for the town.
 - The Core Strategy was originally adopted on 29th January 2008. Following this, RBC carried out a review of its affordable housing policies, in conjunction with introducing the Community Infrastructure Levy. This meant alterations to policy CS16 of this document (as well as policy DM6 of the 'Sites and Detailed Policies Document'). The alterations were adopted on 27th January 2015.
- Reading Central Area Action Plan (RCAAP) (2009)¹⁵;
 - The RCAAP was originally adopted on January 2009. The role of the RCAAP is to establish the planning framework for a specific area. The plan includes a number of measures, such as general guidelines for the area or allocations of individual sites. The provisions of the plan are guided firstly by a vision, and by a set of key principles which should frame development in the centre over the plan period. An overall spatial and design strategy shows the main direction and types of development and how the centre will look and function.
 - The three key areas of opportunity in the centre: the Station/River area, the West Side and the East Side. There are also a number of more general policies which apply only within the central area. There are also specific site allocations within the centre. The site is identified as being located within the 'West Side Major Opportunity Area' within the RCAAP.
- Sites and Detailed Policies Document (SDPD) (2012, 2015)¹⁶
 - Contains detailed policies to help guide decisions on planning applications. It also identifies a number of sites and areas for different purposes, including for development (i.e. assist with regeneration) or for protection (i.e. prevent loss at the expense of irreplaceable open space, wildlife or landscape areas). It also includes sites for the application of specific policies are also included.
 - The SDPD was originally adopted on 23rd October 2012. Following this, RBC carried out a review of its affordable housing policies, in conjunction with introducing the Community Infrastructure

³ Website - <http://planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment>

⁴ Department for Transport, 2008. Design Manual for Roads and Bridges Volume 11: Environmental Assessment.

⁵ Institute of Environmental Management and Assessment, undated; EIA Quality Mark – ES Review Criteria COM 3-6.

⁶ Institute of Environmental Management and Assessment, 2004, Guidelines for Environmental Impact Assessment.

⁷ Institute of Environmental Management and Assessment, 2011. The State of Environmental Impact Assessment Practice in the UK.

⁸ Institute of Environmental Management and Assessment, November 2015. Shaping Quality Development.

⁹ Institute of Environmental Management and Assessment, 2016; Delivering Quality Development.

¹⁰ Institute of Environmental Management and Assessment, 2017; Delivering Proportionate EIA.

¹¹ Website - <https://infrastructure.planninginspectorate.gov.uk/>

¹² Website - <https://www.gov.uk/government/collections/revised-national-planning-policy-framework>

¹³ Website - <https://www.gov.uk/government/collections/planning-practice-guidance>

¹⁴ Reading Borough Council (2015). Reading Borough Local Development Framework – Core Strategy (adopted January 2008; with alteration adopted 27th January 2015)

¹⁵ Reading Borough Council (2009). Reading Borough Local Development Framework – Reading Central Area Action Plan (adopted January 2009)

¹⁶ Reading Borough Council (2015). Reading Borough Local Development Framework – Sites and Detailed Policies Document (adopted October 2012; with alteration adopted 27th January 2015)

Levy. This meant alterations to policy DM6 of this document, as well as policy CS16 of the Core Strategy. The alterations were adopted on 27th January 2015.

Draft Local Plan

- Submission Draft Local Plan (2018)¹⁷;
 - The Draft Local Plan is the document that contains the policies for how Reading will develop up to 2036. It identifies the amount of development that will take place, the areas and sites where development is expected to be accommodated, and where it will be restricted, and sets out policies for how planning applications will be decided.
 - The local plan will replace all existing development plans – including the Core Strategy (adopted 2008, amended 2015), Reading Central Area Action Plan (adopted 2009) and Sites and Detailed Policies Document (adopted 2012, amended 2015) will all cease to be used once this Local Plan is adopted. The RCAAP (2009) would remain in place and is being carried forward in the Draft Local Plan.
 - The Draft Local Plan was submitted to the Secretary of State for Communities and Local Government on 29th March 2018. The examination process has included a set of public hearings, which took place between 25th September and 5th October 2018. The Inspector requested additional information to be provided, which is currently in production but no further hearing sessions are anticipated and it is envisaged that the Local Plan would be adopted in 2019.
 - Given the current status of the emerging draft Local Plan (i.e. final consultation completed and submitted to the SoS for examination), it is considered to have sufficient weight in terms of its progress toward being adopted (and therefore its replacement of the existing Core Strategy, etc.). As such, the ES will have regard to the policies contained within the draft Local Plan as relevant.

Other Documents

- Hosier Street Area Development Framework (HSADF) (2018)¹⁸;
 - The Hosier Street area is the subject of a policy in the Submission Draft Local Plan. However, with the various sites, and other adjoining land being in different ownerships, and likely to come forward at different times, RBC have identified a need for a detailed framework to be prepared to guide and co-ordinate the various developments and to ensure the most appropriate form of development to serve the wider area.
 - The Hosier Street area is an area of significant change as a result of:
 - The demolition of the Council offices which leaves a large vacant site (area located adjacent, to the south of the site);
 - The Proposed Development; and
 - The review by Thames Valley Police of their existing headquarters buildings operations (located to the south of the site).
 - The framework for the Hosier Street area has therefore been prepared. This provides a comprehensive masterplan and urban design framework for the area with a particular emphasis on creating high quality public realm around which various mixed uses will be located.
 - The HSADF has been published for consultation, which closed at the end of September 2018. The results of the consultation will be considered and taken into account in redrafting the development framework. The HSADF was presented to the Council's Strategic Environment Planning and Transport Committee on 12th December 2018 where it was formally adopted.

- Further details of how the HSADF has been taken into consideration as part of the design evolution of the Proposed Development is contained within **ES Volume 1: Chapter 3 – Alternatives and Design Evolution**.
- Given the current status of the emerging HSADF (i.e. consultation completed, being presented to Committee), it is considered to have sufficient weight in terms of its progress toward being adopted. As such, the ES will have regard to the draft HSADF as a 'future development scenario' as part of the cumulative effects assessment (see section 'Cumulative Effects with Other Committed Developments').

Supplementary Planning Notes and Guidance:

- RBC has adopted and is preparing a number of Supplementary Planning Documents (SPDs) to provide further guidance on policies set out in Local Plan documents and a series of technical reports and background evidence.

2.26 Any additional regional planning policy and guidance documents considered relevant to the technical assessments which are covered by the EIA will also be considered within the respective technical ES Chapter.

2.27 In addition, where relevant to the assessment, the technical ES Chapters will also present a summary of any pertinent recognised industry guidance documents.

General Assessment Methodology

2.28 Detailed methodologies for the assessment of each of the environmental topic areas scoped into the EIA are provided within each technical ES Chapter (**ES Volume 1: Chapters 6 to 10**, and **ES Volume 2: TBHVIA**), however, in general terms, the assessments have been based upon:

- Understanding the baseline condition, either through:
 - Desk-top studies;
 - Site surveys;
- Understanding the policy context and the implications for assessment, including:
 - Consideration of relevant legislation;
 - Consideration of relevant planning policies (national, regional and local);
- Identify potentially sensitive receptors that could be impacted by the Proposed Development;
- Identification of potential environmental impacts, with an evaluation of their likely magnitude, and resultant effects in terms of their nature, scale, geographic extent, duration and whether they are direct or indirect or transboundary, involving either:
 - The use of technical guidance and best practice; and/or
 - Expert opinion;
- Consideration of the requirement for any specific mitigation; and
- Consultation with any interested and affected parties.

2.29 How the Proposed Development might affect the environment relies on predictions about what impact a certain action will have. Some predictions can be made using mathematical or simulation models (i.e. quantitative assessment). Other impacts are less easy to predict in quantitative terms, and in such cases, the EIA attempts to quantify the anticipated scale of impact using professional judgement (i.e. qualitative assessment).

2.30 Mitigation is the term used to refer to the process of avoiding where possible and, if not, minimising, controlling and/or off-setting potentially significant adverse effects of a development. Mitigation measures can relate to the

¹⁷ Website: <http://www.reading.gov.uk/newlocalplan>

¹⁸ Website: <https://consult.reading.gov.uk/dens/draft-hosier-street-area-development-framework/>

design stage; the construction stage; or the activities associated with the operation of the completed Proposed Development.

- 2.31** As part of the EIA, an iterative approach has been adopted where significant environmental effects have been identified and avoided where possible in the first instance through consideration of alternative design solutions and design refinements, as reported upon within **ES Volume 1: Chapter 3 - Alternatives and Design Evolution**. Where able, opportunities to reduce or control impacts and effects have been identified and incorporated into the Proposed Development (i.e. embedded mitigation). In addition, the design process seeks to promote opportunities to enhance the beneficial environmental effects of the Proposed Development.
- 2.32** Within each technical ES Chapters (**ES Volume 1: Chapters 6 to 10**), and **ES Volume 2: TBHVIA**), the assessment of the effects that are likely to arise because of a potential impact / change to receptors from the Proposed Development is presented. If any mitigation measures are required, further to the already integrated into the Proposed Development throughout its evolution, these are incorporated, and the Proposed Development is reassessed to ascertain the likely residual effects and any which are significant. This is reported on within each technical ES Chapter (**ES Volume 1** and **ES Volume 2**).

Baseline Conditions

- 2.33** The baseline will comprise existing information, information either collected through baseline surveys undertaken during the course of the EIA process. This information will be used in the ES to present (within each of the individual technical ES Chapters (**ES Volume 1: Chapters 6 to 10**, and **ES Volume 2: TBHVIA**)) an up to date description of the current baseline conditions of the site and surrounding area.
- 2.34** The purpose of the EIA is to predict how environmental conditions may change as a result of the Proposed Development. The assessment of the nature and scale of a predicted change is undertaken against a reference condition, known as the 'baseline'. In most cases, the baseline represents the environmental condition of the site being assessed and the surrounding area at the time of the assessment.
- 2.35** For most technical disciplines, the baseline has been taken as the existing conditions within the site. However, in some cases it may be necessary to apply a 'future' baseline (with reference to the construction programme, taken as the opening year of the development, i.e. when the development is complete and occupied).
- 2.36** Where this is required, the approach to defining the future baseline has been explained (with reference to the assessment scenarios) within the relevant technical ES Chapter (for example **ES Volume 1: Chapter 7 - Air Quality**; and **ES Volume 1: Chapter 8 - Noise and Vibration**).

Evolution of the Baseline

- 2.37** In accordance with the requirements of the EIA Regulations, consideration as to how the existing baseline condition may evolve in the future in the absence of the Proposed Development. The EIA Regulations state (Schedule 4(3)):
- "A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge."
- 2.38** This requirement will be presented in the ES (within each of the individual technical ES Chapters (**ES Volume 1: Chapters 6 to 10**, and **ES Volume 2: TBHVIA**)) under the heading '*Evolution of the Baseline Condition*'. The description of the evolved baseline will be characterised by interpreting an indeterminate point in the future, for a for a scenario which assumes that all the Committed Developments (see **Annex B**) are built¹⁹, in the absence of the Proposed Development being implemented. In effect, the description is synonymous with the cumulative effects assessment (that includes the Proposed Development) and will be presented in the technical ES Chapters alongside this assessment for ease of reference.

- 2.39** The likely evolution of the baseline conditions will be quantified where possible. Where not possible, a qualitative review will be presented. The approach taken to providing an outline of the evolution of the baseline will be described within each of the individual technical ES Chapters (**ES Volume 1: Chapters 6 to 10**, and **ES Volume 2: TBHVIA**).

Sensitive Receptors

- 2.40** When undertaking an EIA, it is important to identify key potential receptors from the surrounding baseline context which may be impacted by the Proposed Development and may need to be considered as part of the assessment.
- 2.41** Within each of the technical ES Chapters (**ES Volume 1: Chapters 6 to 10**, and **ES Volume 2: TBHVIA**), a list of sensitive receptors is presented which are considered to have the potential to be affected by the Proposed Development.
- 2.42** The sensitive receptors identified within the technical ES Chapters have been identified from a review of the available information collected as part of the description of the surrounding environmental and socio-economic context, as well as from historic and currently available information relating to the site itself (presented as part of the 'Baseline' description within the respective ES Chapter). Potential receptors have also been identified from a review of the description of the Proposed Development sought for approval (see **ES Volume 1: Chapter 4 - The Proposed Development**) and the potential impacts and resultant effects which may occur as a result of the redevelopment of the site.

Impact Assessment

- 2.43** Impact assessments are undertaken for the following stages of the Proposed Development:

- During the demolition and construction works; and
- Once the Proposed Development is complete and occupied.

Demolition and Construction

- 2.44** The **ES Volume 1: Chapter 5 – Demolition and Construction** provides an outline of the anticipated demolition and construction programme, as well as related activities and aspects (i.e. enabling works, substructure works, superstructure works etc., excavation volumes and construction material quantities, HGV movements and HGV routing).
- 2.45** The programme represented is based on reasonable assumptions in terms of the sequencing of the works and site logistics that will be implemented. The programme is considered achievable based on the current level of demolition and construction planning and anticipates the period of demolition and construction works are continuous. The programme presents an overlap of construction activities with other stages of work and therefore assumes multiple construction activities occurring across the site. It is also assumed that impacts of a higher magnitude over a shorter duration are considered to be potentially greater in terms of the likely effect on a receptor, than an impact of lower magnitude spread over a longer duration. The EIA, therefore assesses the worst case effects (in terms of magnitude of impact) as a result of multiple construction activities occurring on-site at any particular time.
- 2.46** The information presented will inform the demolition and construction impact assessments of each technical ES Chapters (**ES Volume 1: Chapters 6 to 10**, and **ES Volume 2: TBHVIA**).
- 2.47** In summary, the ES includes a quantitative assessment of the demolition and phased construction related effects for the following technical topics: socio-economics, air quality and noise and vibration. Demolition and phased construction effects associated with daylight, sunlight and overshadowing, wind microclimate, townscape, built heritage and visual impacts are qualitatively addressed within the ES, mainly in respect of temporary effects relating to the temporary loss of massing on site as a result of demolition and the progressive increase in massing as a result of construction of the Proposed Development and effects on daylight / sunlight

¹⁹ The approach adopts the rationale that if there are Committed Developments identified (i.e. existing and/or approved projects) to come forward in the future, this would account for a 'natural change' to the baseline scenario.

availability and microclimate to surrounding receptors and temporary effects to the setting of buildings with heritage value and local views.

- 2.48 Within the construction impact assessments, standard environmental controls required under legislation and best practice guidance will be considered (i.e. embedded mitigation) and will be clearly presented within the respective technical ES Chapter as to how they are accounted for within the corresponding assessment (i.e. pre and post mitigation).
- 2.49 The construction assessments will also identify (where required) the need for any additional or bespoke environmental management or mitigation measures in order avoid, prevent, reduce or off-set any significant adverse effects identified.
- 2.50 Where required, a description of any proposed monitoring arrangements will also be presented and would define (where appropriate) the procedures regarding the monitoring of the relevant significant adverse effects, the types of parameters to be monitored and the monitoring duration.
- 2.51 All the measures proposed within the technical ES Chapters will be compiled and presented in a mitigation and monitoring schedule within **ES Volume 1: Chapter 13 – Mitigation and Monitoring**.
- 2.52 It is anticipated that any required construction related environmental management / mitigation and monitoring measures identified within the ES would be secured and controlled through appropriate Construction Environmental Management Plan (CEMP) and Construction Logistics Plan (CLP) (further discussed within **ES Volume 1: Chapter 5 – Demolition and Construction** and it is proposed that the requirement for these documents be secured by means of suitably worded planning conditions to be attached to the permissions (if granted).

Timeslice Methodology

- 2.53 The timeslice methodology aims to account for multiple demolition and construction activities which may occur at any one time across the various phases associated with the Proposed Development. Where required, the technical ES Chapter will identify the selection of 'timeslices' for assessment, with each timeslice representing a point in time when multiple works are occurring across the development plots. The 'timeslices' identify peaks in demolition and construction activities and therefore peaks in the occurrence of potential impacts. The timeslices therefore represent worse-case points in time when there is the potential for 'nuisance' impacts to occur to sensitive receptors throughout the duration of the works.
- 2.54 The timescales for the works and assumptions made (i.e. about sequencing of works, plant and equipment) will be clearly defined as part of the respective assessment methodology.

Completed and Occupied Development

- 2.55 The ES presents a description of the Proposed Development in **ES Volume 1: Chapter 4 - Proposed Development** in order to provide suitable context to enable the assessment of potential and likely significant environmental effects. Enough information on the Proposed Development, in terms of the key aspects (as listed below), will be presented to allow an understanding of the development being proposed, in order to enable the assessment of potential impacts and likely significant environmental effects of the completed and occupied development. Any assumptions made will be clearly presented in the narrative.
- 2.56 Information on the details of the Proposed Development sought for approval are provided in **ES Volume 1: Chapter 4 - Proposed Development** and include but are not limited to:
 - Layout – building footprints;
 - Means of access and egress and circulations – vehicular and pedestrian and cyclist accessibility into, out of and around the site;
 - Scale – the massing, specifically heights of buildings;

- Amount of development – floors areas and uses classes, residential unit numbers and mix,
- Appearance – architectural detail and materiality of the new build;
- Landscaping – including planting strategy, species and habitats;
- Amenity space – amount of on-site provision;
- Ecological enhancements;
- Plant locations;
- Energy strategy overview;
- Deliveries and servicing strategy (including overview of estimates of the types and quantities of waste anticipated, and strategy for waste storage, handling and collection);
- Parking provision (including vehicles, motorcycle, and cycle);
- Climate change resilience and adaptation (as relevant)); and
- Utilities overview (including water supply and wastewater / surface water drainage volume estimates).

Amount of Development and Uses Proposed

- 2.57 The studies of the EIA that apply the amount of development (i.e. the proposed floor areas) for the purposes of the assessment of impacts and resultant effects are as follows:
 - Socio-Economics - in relation to matters such as residential provision and population estimates, retail provision, employment creation estimates and local spending.
- 2.58 The Proposed Development presents details associated with the amount of development (floorspace) and the use classes proposed.

Climate Change

- 2.59 The EIA Regulations also seek to account for climate by requiring a description of “*the impact of the project on climate*” and “*the vulnerability of the project to climate change*” (Schedule 4, paragraph 5(f)).
- 2.60 The approach to assessing the potential impact of the Proposed Development on climate has been undertaken in accordance with the IEMA guidance ‘*Assessing Greenhouse Gas Emissions and Evaluating Their Significance*’. This guidance sets out a ‘good practice’ approach to achieving a proportionate assessment of a development’s potential impact on climate and communicating the results in terms of notional percentage contribution relative to carbon budgets together with appropriate mitigation. The assessment of Greenhouse Gas (GHG) emissions (essentially a carbon footprint or ‘inventory’ of the Proposed Development) and an outline of the carbon mitigation measures proposed is presented in a technical report and included within **ES Volume 3: Appendix – Supporting Technical Information**. Relevant information out of this report (specifically relating to carbon mitigation measures) is presented within **ES Volume 1: Chapter 4 -The Proposed Development**.
- 2.61 The approach adopted to assessing the potential impact of climate change on the Proposed Development is set out within a technical note presented in **ES Volume 3: Appendix – Supporting Technical Information**. The approach has been undertaken in line with the IEMA guidance ‘*Climate Change Resilience and Adaption*’ (2015)²⁰, which presents a framework for the consideration of climate change resilience and adaption in the EIA process. Consistent with the guidance, the technical note presented describes a future climate scenario which has been developed through the use of the future climate projections published by the Met Office (through the UK Climate Projections (UKPC18) website²¹). The results include projections for variables including annual mean temperatures, and annual changes in summer and winter precipitation.

²⁰ IEMA, 2015. Climate Change Resilience and Adaption. IEMA

²¹ Source: <https://www.metoffice.gov.uk/research/collaboration/ukcp>

2.62 As relevant, the technical assessments within this ES have assessed the potential impacts and associated effects of climate change on the Proposed Development. This has been quantified where possible, and where not possible, a qualitative review is presented.

IDENTIFICATION OF IMPACTS, EFFECTS AND EFFECT SIGNIFICANCE

Terminology and Definitions

Reference to ‘Impact’ and ‘Effect’

2.63 The terms ‘impact’ and ‘effect’ are distinctly different. Having gained an understanding of the likely impact it is then important to know whether the change in environmental or socio-economic conditions results in a significant environmental effect. The impacts of the Proposed Development may or may not result in significant effects on the environment, depending on the sensitivity of the resource or receptor and potentially other factors (such as duration). The assessment of the likely significant effects of the development is a requirement identified by Schedule 4 of the EIA Regulations.

Receptor Sensitivity and Magnitude of Impact

2.64 To achieve a consistent approach across the different technical disciplines addressed within the ES, assessments broadly define the sensitivity of the receptors that could be affected by the Proposed Development and the magnitude of impact or change from the baseline conditions in order to derive the resultant effect.

2.65 Terminology available to describe the sensitivity of receptors and magnitude of impact or change from the baseline conditions is broadly as follows:

- High;
- Medium;
- Low;
- Negligible; and
- No Impact (in relation to magnitude of impact or change only).

2.66 Each of the technical assessment chapters of the ES (*ES Volume 1: Chapters 6 to 10*, and *ES Volume 2: TBHVIA*) provide further detail on the definition of each of the above terms specific to the topic in question and also provide the criteria, including sources and justifications, for quantifying the different levels of receptor sensitivity and ‘impact magnitude’. Where possible, this is based upon quantitative and accepted criteria (for example, national standards for air quality and noise), together with the use of value judgement and expert interpretation.

2.67 Alternatively, some technical assessment chapters differ in the terminology adopted to describe the magnitude of impact or change from the baseline conditions. Where this occurs, the alternative terminology adopted has been clearly set out within the individual ES chapter.

Identification of the Scale of Effect

2.68 The basis for determining the resultant scale of effect generally takes into account the sensitivity of the receptor and magnitude of impact or change from the baseline conditions, which when combining these two factors into a matrix, can help determine the resultant scale of effect (representative matrix as shown in Table 2.1).

Table 2.1 Scale of Effect Matrix

Receptor Sensitivity	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible

Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

2.69 Table 2.2 provides the broad definition of the ‘scale’ of the resultant effect i.e. definitions of Major, Moderate, Minor and Negligible effects. The definitions in Table 2.2 may be adjusted to suit the technical topic in question; where this is the case revised definitions of effect scale are presented in the technical assessment chapters (*ES Volume 1: Chapters 6 to 10*, and *ES Volume 2: TBHVIA*).

2.70 Where there is ‘No Effect’ this is stated.

Table 2.2 Broad Definitions of the Scale of the Effect

Scale of Effect	Description
Major	These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or could be important considerations at a regional or district scale. Major effects may also relate to resources or features which are unique to a receptor and which, if lost, cannot be replaced or relocated.
Moderate	These effects, if adverse, are likely to be important at a local scale and on their own could have a material influence on decision-making.
Minor	These effects may be raised as local issues and may be of relevance in the detailed design of the project but, are unlikely to be critical in the decision-making process.
Negligible	Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision-making, irrespective of other effects.

Effect Nature

2.71 Table 2.3 provides a definition of the ‘nature’ of the resultant effect.

Table 2.3 Definition of the Nature of the Effect

Nature of Effect	Description
Adverse	Detrimental or negative effects to an environmental / socio-economic resource or receptor. The quality of the environment is diminished or harmed.
Beneficial	Advantageous or positive effect to an environmental / socio-economic resource or receptor. The quality of the environment is enhanced.
Neutral	Where the quality of the environment is preserved or sustained or where there is an equal balance of benefit and harm.

Geographic Extent of Effect

2.72 The ES (Volume 1 and Volume 2) identifies the geographic extent of the identified effects. At a spatial level, ‘site’ or ‘local’ effects are those affecting the site and neighbouring receptors, while effects upon receptors in the wider area / borough, beyond the vicinity of the site and its neighbours, are at a ‘district / borough’ level. Effects affecting Berkshire are at a ‘regional’ level, whilst those which affect different parts of the country, or England, are considered being at a ‘national’ level.

Effect Duration

2.73 For the purposes of the ES, effects that are generated as a result of the construction works (i.e. those that last for this set period of time) will be classed as ‘temporary’; these maybe further classified as either ‘short term’ or ‘medium-term’ effects depending on the duration of the construction works that generate the effect in question. Effects that result from the completed and operational Proposed Development will be classed as ‘permanent’ or ‘long-term’ effects.

2.74 Effects classified as being irreversible are those which are permanent and cannot be revoked.

Direct and Indirect Effects

2.75 The ES identifies whether the effect is ‘direct’ (i.e. resulting without any intervening factors) or ‘indirect’ or ‘secondary’ (i.e. not directly caused or resulting from something else).

Residual Effects

- 2.76** Where mitigation measures are identified to either eliminate or reduce adverse effects, these will be incorporated into the ES, for example either through the design, or will be translated into construction commitments; or operational or managerial standards / procedures.
- 2.77** The ES will then highlight the 'residual' effects (those effects which remain following the implementation of suitable mitigation measures).

Effect Significance

- 2.78** Following identification of an effect, the effect scale, nature, geographic extent and duration and whether the effects are direct or indirect, using the above summarised terminology, a clear statement is then made within the ES (Volumes 1 and Volume 2) as to whether the effect is significant or not significant. As a general rule, the following applies:
- 'Moderate' or 'major' effects are deemed to be 'significant';
 - 'Minor' effects are 'not significant', although they may be a matter of local concern; and
 - 'Negligible' effects are 'not significant' and not a matter of local concern.

CUMULATIVE EFFECTS

Effect Interactions (Intra-project Effects)

- 2.79** Intra-project cumulative effects from the Proposed Development itself on surrounding sensitive receptors during the construction works and also once the Proposed Development is completed are considered within this ES (**ES Volume 1: Chapter 11 - Effects Interactions**). It is possible however, that depending on the predicted individual 'completed development' effects, only the demolition and construction work effects are actually considered as often they generate the greatest likelihood of interactions occurring and hence significant effect interactions. The demolition and construction effects are usually more adverse (albeit on a temporary basis) than effects as a result of a completed development.
- 2.80** Dependent on the relevant sensitive receptors, the assessment focuses either on key individual receptors or on groups considered to be most sensitive to potential interacting effects. The criteria for identifying those receptors which are considered to be potentially sensitive include existing land uses, proximity to the construction works and the site, and likely duration of exposure to impacts.
- 2.81** It should be noted that only residual effects that are minor, moderate or major in scale are considered within this assessment, as negligible effects are, by definition, imperceptible in their nature. The results are presented within **ES Volume 1: Chapter 11 - Effects Interactions**.
- 2.82** With regards to the potential for cumulative effects to occur, it is anticipated that standard mitigation measures as detailed in a site-specific Construction Environmental Management Plan (CEMP) (such as dust suppression measures, use of quiet plant, restrictions on working hours) (as referred to in **ES Volume 1: Chapter 5 – Demolition and Construction**) can be applied to prevent temporary unacceptable effects from the interaction of effects occurring on-site.

Cumulative Effects with Other Committed Developments (Inter-project Effects)

- 2.83** The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration should also be given to the likely significant effects arising from the "cumulation with other existing and/or approved projects" (Schedule 4, 5(e)).
- 2.84** Cumulative effects can occur as interactions between the effects associated with a number of projects in an area which may, on an individual basis be insignificant, but together (i.e. cumulatively), result in a significant effect. Cumulative effects arising from the Proposed Development in combination with 'other existing and / or approved projects' ('Committed Developments') will be considered throughout the ES. The potential for cumulative effects arising during the demolition and construction works, and once the Proposed Development is complete and operational, will be considered. Each individual technical chapter of the ES will present an

assessment of the cumulative effects of the Proposed Development coming forward alongside the Committed Developments.

- 2.85** The Committed Developments that will be considered within the ES will typically be located within a 1km radius from the Site, as this spatial extent is considered appropriate for determining cumulative effects in this locality.
- 2.86** It is acknowledged that for certain topics of the EIA (specifically townscape and visual), there may be a need to consider more distant schemes within the cumulative effects assessment. This is entirely appropriate, given for example, the view locations associated with the townscape and visual effects assessment.
- 2.87** With regards to traffic and transport considerations, major schemes beyond the 1km radius may also be accounted for to acknowledge the spatial connection with the Proposed Development via the local road network (refer to list of schemes presented within **Annex B** at the end of this ES Chapter). It should be noted that the approach to the assessment of cumulative effects is synonymous with the impact assessment methodology by virtue of the fact that deriving a future road traffic baseline would account for road traffic movements associated with the Committed Developments as background road traffic growth, many of which are likely to be more than 1km distant on the road network from the site. This approach is entirely appropriate, given the potential for wider reaching traffic and transport impacts through the highway network.
- 2.88** Generally, the schemes to be included within a cumulative effects assessment will either have:
- Full planning consent, or a resolution to grant consent; and
 - Produce an uplift of more than 10,000 m² (Gross External Area (GEA)) of mixed-use floorspace, or over 150 residential units.
- 2.89** These parameters have been set to allow for an initial screening exercise to determine the schemes that, based on the scale of redevelopment (amount and mix of uses), could potentially have a cumulative effect with the Proposed Development and should be considered further within the cumulative effects assessment of the EIA. By applying these parameters to all the schemes coming forward, the cumulative effects assessment of the EIA becomes more focused on the larger schemes (i.e. those with the potential to interact in a cumulative manner), rather than trying to assess all applications for planning permission, including proposals for smaller, domestic applications such as loft and garage conversions, or small scale changes of use. It is noted that several Committed Development schemes have been included, which would fall below the aforementioned selection parameters, but are being accounted for as they are notable schemes in the context of the Reading area.
- 2.90** The screening exercise for selecting schemes for the cumulative assessment has also been accounted for as part of the EIA Scoping process (refer '*EIA Scoping and Consultation*' section earlier), providing the RBC and consultees the ability to comment on the schemes presented, and also the opportunity to identify any additional developments that should be considered within the cumulative effects assessment of the EIA. This may include other development schemes (in addition to those identified) that are at the pre-application stage or have been recently submitted for planning but not yet determined by the RBC, and may be material enough to warrant consideration within the cumulative effects assessment.
- 2.91** Where Committed Developments are 'screened' (i.e. schemes selected for inclusion in the assessment), each technical ES Chapter will be clear on the Committed Developments that have been considered within the cumulative effects assessment.

Draft Hosier Street Area Development Framework

- 2.92** The draft HSADF has been prepared (see section '*Planning Policy Context – Local Planning Policy*') and provides a comprehensive masterplan and urban design framework for the area in and around Hosier Street, with a particular emphasis on creating high quality public realm around which various mixed uses will be located.
- 2.93** The Draft HSADF has been published for consultation, the draft HSADF was presented to the Council's Strategic Environment Planning and Transport Committee on 12th December 2018, when the development framework was formally adopted.

- 2.94** The draft HSADF presents the development principles for the regenerating the Hosier Street area, including an outline framework and development parameters to assist with potential schemes coming forward in the future. In recognition of the status of the draft HSADF and the principles and framework presented, the Cumulative Effects Assessment section (in each individual technical chapter of the ES) will present an additional sub-section which qualitatively presents as an outline description, in addition to the list of other Committed Developments, the development envisaged as part of the draft HSADF being built and completed.
- 2.95** In addition, RBC have adopted a detailed framework for the Hosier Street area (the 'Hosier Street Area Development Framework' (HSADF) (2018)) to guide and co-ordinate the future developments coming forward as part of a comprehensive masterplan and urban design framework, and to ensure that the most appropriate form of development serves the local and wider area through creating high quality public realm (further detail regarding presented in ES Volume 1: Chapter 2 – EIA Methodology). It has been subject of public consultation and has been adopted by the RBC. Given the status of the HSADF and its strategic framework for development coming forward, it is considered qualitatively as a separate cumulative assessment scenario.

ASSUMPTIONS AND LIMITATIONS

- 2.96** The principal assumptions that have been made, and any limitations that have been identified, in undertaking the EIA are set out below. Assumptions specifically relevant to each technical topic have been set out in each technical chapter of the ES:
- Baseline conditions have been established from a variety of sources, including historical data, but due to the dynamic nature of certain aspects of the environment, conditions at the site and surrounding land uses may change;
 - It is assumed that information received from third parties is accurate, complete and up to date;
 - The assessments contained within each of the technical assessment chapters of the ES (**ES Volume 1: Chapters 6 to 10**, and **ES Volume 2: TBHVIA**) are based on the assumption that mitigation measures are implemented – as set out in application drawings, through regulatory regimes or via the management controls, within **ES Volume 1: Chapter 4 - Proposed Development** and **ES Volume 1: Chapter 5 - Construction**, as well as the mitigation and monitoring measures outlined within **ES Volume 1: Chapter 13 – Mitigation and Monitoring**;
 - Demolition and construction works across the site would take place substantially in accordance with the programme of works described in **ES Volume 1: Chapter 5 – Demolition and Construction**;
 - The aim of the EIA is not to assess the Proposed Development's compliance / performance against planning policy, as this is considered within the Planning Statement that accompanies the planning application. Instead reference is made to relevant national, regional and local policy and guidance to inform the scope of the assessment, the assessment methodologies applied, and the existence of any sensitive receptors to be considered;
 - Where detailed information has not been available, reasonable assumptions have been made, and have been clearly set out, based on the professional experience of the author of the ES Chapter based on other developments of similar type and scale, to enable assessment of likely significant effects; and
 - Committed Developments identified are assumed to be implemented in accordance with the information that is publicly available and subject to the same regulatory regimes and good practice management controls as identified for the Proposed Development.

ANNEX A

Scoping Report – Topics Scoped Out of the EIA

2A.1 The following topic areas are not likely to have any significant effects as a result of the Proposed Development, and therefore will be scoped out of the EIA:

- Highways and Transport;
- Aviation;
- Water Resources;
- Ecology;
- Archaeology;
- Geoenvironmental (Land Contamination, Ground Conditions and Groundwater);
- Waste; and
- Electronic Interference.

Highways and Transport

2A.2 A full Transport Assessment (TA) will be undertaken, to determine the highways and transport effects of the Proposed Development. The TA will be submitted as a standalone document in support of the planning application.

2A.3 As well as policy and guidance, the following will be used to inform the TA baseline conditions on the highways and transport networks (the baseline data will reflect the existing 2018 environment):

- Site visits;
- Desktop research into relevant published information (e.g. timetables, planning application documents, public consultations);
- Discussion with the RBC; and
- Traffic survey and accident data.

2A.4 Highways and transport impacts and resultant effects can be considered under two scenarios:

- Construction – highways and transport related impacts and effects associated with the demolition of existing buildings / structures across the site and construction of the Proposed Development; and
- Operational / Completed Development – highways and transport related impacts and effects following the development and full occupation of the site.

2A.5 The proposal site is within easy walking distance of central Reading which has numerous bus stops and is served by approximately 34 routes which have frequencies in the range of 1 per hour to 8 per hour. The site is accessible by bus. The site is also within walking distance of Reading Station, which has direct connections by rail to major destinations in the UK including London, Gatwick Airport, Bristol and the South West, Birmingham, and Southampton. The site is accessible by rail.

2A.6 Access to the site is gained from the south via Hosier Street and from the west via A329. The RBC is the local planning and highway authority responsible for the local road network and Highways England (on behalf of the Department for Transport) responsible for the motorway and trunk road strategic network.

2A.7 A car park occupancy survey has been undertaken during July 2017 which recorded the number of cars parked in the multi-storey car park every 15 minutes for 24 hours per day, for Friday to Tuesday. The survey company recorded a total of 768 marked spaces, and a maximum parking demand of 409 vehicles which occurred on Saturday at 14:15 hrs. Based on this, the multi-storey car park has 359 unoccupied spaces.

2A.8 The operational / completed development assessment would account for any measures embedded into the Proposed Development as part of the design and operational strategy to reduce the impact of the Proposed Development on highways and transport networks and in response to climate change e.g. secure high quality cycle parking for residents and visitors to encourage modal shift to active travel choices.

Potential Effects**Construction**

2A.9 Severance - During construction, the Proposed Development is not expected to result in changes to the highway network which could affect severance and perceptions of severance. A Construction Logistics Plan (CLP) is expected to be secured through an appropriately worded planning condition to manage routing and arrival profile of construction related vehicles to minimise disruption to the surrounding area. Construction related vehicles are expected to arrive at the site directly from A329 or Castle Street which, based on its character and nature, is not particularly sensitive to construction road traffic related severance. No likely significant effects to severance or the perception of severance as a result of the construction works are therefore anticipated and as such, an assessment of severance during construction is scoped out of the EIA.

2A.10 Delay – No likely significant effects to driver/bus delay and pedestrian and cyclist delay are anticipated on the basis that the construction works are unlikely to result in changes to the highway network which could affect delay to these receptors. Assessment of driver / bus delay and pedestrian and cyclist delay is therefore scoped out of the EIA.

2A.11 As the volume of construction related staff travelling by bus and train is unlikely to significantly increase from the baseline demand across the existing services, no likely significant effects to bus or rail delay are anticipated. As such, an assessment of public transport delay during the construction works is scoped out of EIA.

2A.12 Amenity, Fear and Intimidation - No likely significant effects to amenity, fear and intimidation are anticipated on the basis that the construction works are unlikely to result in changes to the highway and transport networks which could affect perceptions of amenity, fear and intimidation.

2A.13 The change in HGV activity associated with the construction works relative to the baseline conditions is unlikely to be perceptible. The presence and movement of construction vehicles will also be managed and mitigated through the CLP to minimise the potential for effects on amenity, fear and intimidation. Assessment of amenity, fear and intimidation during the construction works is therefore not considered to be significant and so has been scoped out of the EIA.

2A.14 Accidents and Safety - Traffic changes arising as a result of the construction works associated with the Proposed Development will be low and unlikely to be perceptible relative to baseline condition. As such, no likely significant effects associated with accidents and safety are anticipated and so any further consideration of this has been scoped out of the EIA. Road safety would also be further managed and mitigated through the Construction Logistics and Cycle Safety (CLOCKS) scheme and use of contractors registered on the Considerate Constructors Scheme.

2A.15 Hazardous Loads - The Proposed Development is not expected to generate or attract hazardous loads during the construction works; on this basis, no likely significant effects are anticipated and so an assessment of hazardous loads is scoped out of the EIA.

2A.16 Hazardous loads include substances such as explosives, flammable, toxic, corrosive or radioactive materials. Abnormal loads such as movement of tower cranes is not considered a hazardous load. Abnormal loads would be managed via agreements and licenses as appropriate.

Operational / Completed Development

2A.17 Severance - The Proposed Development is not expected to result in changes which could detrimentally affect perceptions of severance during operation as no additional physical barriers are to be introduced.

2A.18 Car parking for residents is proposed, however the trip generation associated with this number of units is not anticipated to approach or exceed the 30% increase threshold on local network and the effect of the development is likely to be focussed around the access from the A329 with some vehicles potentially arriving at the development via Castle Street. No further assessment is proposed on the basis that likely significant effects are not anticipated for any surrounding road links.

2A.19 Delay – The Proposed Development is not expected to result in changes to the highway or transport networks which could affect perception of driver/bus delay, pedestrian and cyclist delay, and rail delay during its operation; no likely significant effects are anticipated to these receptors. Assessment of delay on these sensitive receptors is therefore scoped out of the EIA.

2A.20 Amenity, Fear and Intimidation - The Proposed Development is not expected to result in changes to the highway network which could affect amenity, fear and intimidation during its operation; no likely significant effects are anticipated to these receptors. Assessment of amenity, fear and intimidation on these sensitive receptors is therefore scoped out of the EIA.

2A.21 Accidents and Safety – The Proposed Development is not expected to result in changes to the highway network which could affect accidents and safety during its operation (any changes are likely to be negligible and therefore not significant). Assessment of accidents and safety during the operation of the Proposed Development has therefore been scoped out of the EIA.

2A.22 Hazardous Loads – The Proposed Development is not expected to generate or attract hazardous loads once complete and occupied; on this basis, no likely significant effects associated with hazardous loads are anticipated. Assessment of hazardous loads during the operation of the Proposed Development has therefore been scoped out of the EIA.

2A.23 In summary, as no significant effects are anticipated, highways and transport has been scoped out of the ES.

Aviation

2A.24 The site is located approximately 34 km west of London Heathrow as shown in Figure 2A.1. Additionally, no airfields are present within a 5 km radius of site.

2A.1 Location of the Proposed Development Site Relative to London Heathrow



2A.25 LHR is designated as an 'officially safeguarded aerodrome' in accordance with the Office of the Deputy Prime Minister (ODPM) Circular 1/2003: Safeguarding Aerodromes. Precise and integrated airspace management procedures are necessary to maintain safety and efficiency.

2A.26 The RBC's Tall Buildings Strategy states that 'Tall Buildings must comply, in terms of height, with the Civil Aviation Authority's Aerodrome Safeguarding Criteria'. For the city centre, this represents a maximum height of any structure, including antennae and aerial arrays of 242 m AOD.

2A.27 The height of the tallest element of the Proposed Development will not exceed approximately 117m AOD which lies below the 242 m AOD limit. On this basis, significant effects are not considered to be likely. It is noted that the Civil Aviation Authority (CAA) will be consulted on the request for an EIA Scoping Opinion, as well as the planning application, when submitted to confirm compliance.

2A.28 Further to the above, it can be concluded that there are no likely significant effects on operations at London Heathrow as a result of the Proposed Development, and therefore will not be assessed in the EIA.

2A.29 Any requirement for aeronautical warning lighting on construction cranes or in relation to the proposed residential towers will be discussed and agreed with the CAA as appropriate and formally agreed through appropriately worded planning conditions.

Water Resources

Flood Risk and Surface Water Drainage

2A.30 Flood risk is regulated through the NPPF which requires a site-specific FRA to be produced for developments:

- Within Flood Zone 2 and 3;
- Greater than one hectare in Flood Zone 1;
- Less than 1 ha in flood zone 1 that could be affected by sources of flooding other than rivers and the sea; or
- Within flood zone 1 which has critical drainage problems as notified by the Environment Agency.

2A.31 The Proposed Development is located within Flood Zone 1, located between the River Thames to the north and the River Kennet to the south and east. Flood Zone 1 is classified as an area where there is a low probability of fluvial and tidal flooding, having less than 1 in 1000 annual probability of flooding. The site is also at low risk from surface water flooding, this is defined as chance of 0.1% to 1% annually.

2A.32 Whilst within Flood Zone 1, the site is over 1 ha and therefore an FRA is required to be undertaken. The FRA will investigate the potential sources of flooding and demonstrate that any flood risk to the Proposed Development, or caused by the Proposed Development, is mitigated through the use of appropriate design solutions and management procedures.

2A.33 At this initial stage of the design process, it is expected that the management of the residual flood risk linked to a potential breach / overtopping of the tidal flood defences will be the main focus of the FRA, although all potential sources of flooding will be investigated.

2A.34 In line with local and national policy and best practice, the FRA will include an outline surface water drainage strategy. The outline surface water drainage strategy will demonstrate the optioneering work undertaken throughout the design evolution process for the sustainable management of surface water runoff through the use of sustainable drainage systems (SuDS) at the site.

2A.35 The surface water drainage strategy will maintain the existing surface water discharge rates.

2A.36 The FRA will be informed by consultation with key stakeholders including the Environment Agency (EA), the RBC (both as local planning authority and in their role of Lead Local Flood Authority (LLFA)) and Thames Water (TW).

2A.37 It will also use the background information contained within strategic documents, such as the RBC Strategic Flood Risk Assessment (SFRA), SFRA Level 2 and Surface Water Management Plan (SWMP), and the Local Flood Risk Management Strategy (LFRMS).

2A.38 In summary, the FRA will investigate:

- Sources of flooding (i.e. tidal, surface water, groundwater and artificial water sources (e.g. reservoirs)) which could affect the site;
- Structures influencing local hydraulics;
- Probability of flooding;
- Residual flood risk; and
- Appropriate strategies for surface water drainage.

2A.39 Through a well informed and considered design process, with regard to flood risk and surface water drainage considerations, coupled with appropriate measures to manage the residual flood risk at the site following development, no significant effects associated with flooding and surface water drainage are likely.

2A.40 A list of some of these measures are outlined within the Appendix F of this request for an EIA Scoping Opinion. It is envisaged that these measures would be included within the CEMP prepared for the site. The measures outlined within Appendix F, to be implemented during the period of construction works, will be presented within the introductory sections of the ES.

2A.41 In recognition that an FRA will be prepared and submitted in support of the planning application which will address in detail the issues identified above, a separate flood risk impact assessment (provided as part of a 'Water Resources, Drainage and Flood Risk' ES chapter) is not considered necessary and so will not be presented in the ES to avoid duplication.

2A.42 The results and conclusions of the FRA will however be presented in the introductory sections of the ES. Furthermore, the FRA will be appended to the ES (as a report within ES Volume 3).

Wastewater (Foul Drainage)

2A.43 Foul water discharge rates are expected to increase as a consequence of the Proposed Development and therefore consultation with TW will be undertaken to understand any existing capacity constraints on the foul water public drainage network.

2A.44 The Proposed Development will however include water efficiency measures to try and reduce the volume of foul water discharged to the network, and so in combination with the foul water drainage design, reduce the overall magnitude of the impact of the Proposed Development on the foul drainage / sewer network.

2A.45 An outline foul water drainage strategy will be produced a part of the FRA which will identify any existing capacity issues within the foul water drainage network and present strategic options for foul water management at the site.

2A.46 It is anticipated that any required upgrades to the foul water drainage network would be discussed with TW and ultimately undertaken by TW to increase the capacity of the sewer network and enable it to accommodate additional flows from brownfield redevelopment sites.

2A.47 In recognition that the FRA will include an outline foul water drainage strategy that will define the principles of the design of the foul drainage network within the site and the link up to the surrounding public sewer network and identify strategic options for foul water management at the site, no significant effects associated with waste water discharges are anticipated as a result of the Proposed Development. On this basis, no further assessment work with regards to foul water drainage will be presented within the ES.

2A.48 The design principles set by the outline foul water drainage strategy (including assumptions on expected population living within the Proposed Development and estimated wastewater volumes) and its conclusions will be presented in ES Volume 1: Chapter 3: The Proposed Development. As noted above, the FRA will be appended to the ES (as a report within ES Volume 3).

Water Demand

2A.49 There is a potential impact in the form of increased potable water demand resulting from the Proposed Development. The expected increase in water demand as a consequence of the Proposed Development will be discussed with TW and where required additional capacity will be requested to supply the Proposed Development.

2A.50 The inclusion of water efficiency measures to reduce water usage, in addition to the implementation by TW of the Thames Water Resource Management Plan (i.e. management and provision of water supply at a strategic level which has been made to accommodate future projected housing, commercial and population growth), it is considered that sufficient measures will be in place for water demand to be met and so no likely significant effects are anticipated.

2A.51 In recognition of the above, no further assessment work with regards to potable water demand and supply will be presented within the ES.

2A.52 The ES will however summarise any discussions had with TW on this aspect (including assumptions on expected population living within the Proposed Development and estimated water demand) within the introductory sections of the ES.

Ecology

2A.53 A Preliminary Ecological Appraisal (PEA) has been undertaken of the site. This comprised a Phase 1 habitat survey (undertaken in June 2018), protected species assessment and ecological evaluation. The PEA is appended to the EIA Scoping Report in Appendix D (presented in **ES Volume 3 – Appendix – EIA Scoping**).

2A.54 The appraisal was prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2013), and as detailed within British Standard 42020:2013.

2A.55 The findings of the PEA are summarised in this section of the request for an EIA Scoping Opinion.

2A.56 There are no statutory nature conservation designations present on site or within a 1km radius.

2A.57 The site is not subject to any non-statutory nature conservation designations. There are three non-statutory designated sites (Local Wildlife Sites) within a 1km radius:

- Holy Brook (LWS) located approximately 490m south of site;
- River Kennet / Kennet and Avon Canal (LWS) located approximately 780m south of site; and
- Cow Lane Depot (LWS) located approximately 880m northwest of site.

2A.58 There are no records of ancient woodland Habitats of Principal Importance within the study area (1km radius from the site). There are areas of lowland mixed deciduous woodland and wet woodland within a 1km radius (at Holy Brook (LWS) and Cow Lane Depot (LWS), detailed in bullet points above).

2A.59 The survey identified that the site predominantly comprises hard standing and an existing shopping mall and multi-storey car park. A basement is present under the current shopping centre. There is no soft landscaping or grassland on site.

2A.60 A total of 46 records of bat were returned in the desk study, comprising eight species. There is however negligible potential to support roosting bats and there are no trees on site - the buildings on site were constructed of concrete, with flat roofs, they were all in good condition with no gaps or cracks and no potential roosting features noted. The gap behind the timber fascia on one of the structures on the roof of the mall was considered to be too wide to support crevice dwelling species and no bat droppings were noted on the wall or floor beneath, indicating it had not been previously utilised by roosting bats. Additionally, the site has limited connectivity to areas of suitable foraging habitat, and the small areas of amenity and species-poor grassland

and semi-mature trees within the urban park to the south of the site would provide limited foraging habitats for bats within the local area.

2A.61 The site was observed to support breeding birds, and an active feral pigeon nest was noted on site during the PEA survey. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended). To comply with current legislation, and as the main concern is a nesting pigeon, a species that is known to breed throughout the year, it is recommended that a search is carried out prior to works starting at any time of year, although if works commence during the winter months it is probably less likely that there will be an active nest, but it cannot be ruled out unless a search has been made. Consequently, a search for nesting birds within the building up to 48 hours prior to any site works taking place must be undertaken by an experienced ecologist. If any nests are found, the nests are to be protected by an exclusion zone around the nest. Works may then proceed up to, but not within, this exclusion zone until such time as an ecologist confirms the young have fledged the nest. If nesting birds are found at any time during the works, work must stop immediately, and an ecologist must be consulted immediately. It should be noted that feral pigeon will breed throughout the year, and therefore a licence may be required to remove them legally unless they stop breeding.

2A.62 In conclusion, during the PEA no semi-natural habitats or notable features were recorded (with the exception of the active feral pigeon nests). There is considered to be no potential for protected species to utilise the site, with the exception of breeding birds. Potential impacts and legislation breaches relating to breeding birds will be mitigated by a check for nests by a suitably qualified ecologist immediately ahead of works commencing and protection of any active nests.

2A.63 Based on the results of the PEA, it is considered that the Proposed Development does not have the potential to generate any significant ecological effects. As such, it is proposed to scope any further work relating to ecology out of the EIA.

2A.64 Whilst significant effects are not considered to be likely, recommendations to enhance the biodiversity value of the site in accordance with national and local planning policies and the Reading Biodiversity Action Plan (BAP) comprise the inclusion of wildlife planting, flowering lawn, provision of bird nesting opportunities and biodiverse green roof / biosolar options. Measures proposed as part of the proposed landscaping design to enhance the ecological value of the site (and their associated biodiversity benefits) will be described in the introductory sections of the ES.

Archaeology

2A.65 An Archaeological Desk-Based Assessment (DBA) of the Proposed Development has been undertaken. The DBA is appended to the EIA Scoping Report in Appendix C (presented in **ES Volume 3 – Appendix – EIA Scoping**).

2A.66 The DBA is a desk-based study which assesses the impact on buried heritage assets (archaeological remains). The DBA comprises an examination of evidence on the Berkshire Archaeology Historic Environment Record and other sources, in particular the results of previous archaeological work from within the vicinity of the site. The DBA presents the archaeological potential of various part of the site, by drawing on the available archaeological, topographic and land-use information.

2A.67 The DBA identified that there are no World Heritage, Historic Battlefield or Historic Wreck study sites lie within, or within the study area (note, the study area was a 250 m radius around the site).

2A.68 The Reading AAP lies adjacent, to the south, east and north, of the site. This designation comprises areas indicated as having the potential for archaeological discoveries. The archaeological potential can be influenced by geological, land use and topographical factors.

2A.69 A possible residual Saxon knife was found at the Civic Centre 70m south of the site. According to the Historic Environment Record projection of the Saxon Reading settlement, the north-west corner of this extended into the eastern half of the site.

2A.70 Reading was subject to considerable urban development during the medieval period, which is reflected in the fact that archaeological investigations nearby have revealed evidence of occupation along Hosier Street, to the south of the site, as well as further structural and cut features in the wider study area.

2A.71 Cartographical evidence provides evidence that the site has been developed since at least the 17th century. In the 19th century the site was almost fully occupied by a combination of commercial, industrial and residential buildings. By 1912 a timber yard, associated with a saw mill, is noted on the west of the site. By 1931-1983 the site has been redeveloped as residential buildings. It is noted in mapping from 1962 the site comprises a garage and car park. Historical mapping from 1969-1970 shows the site to be undeveloped. With the current site development present on site from 1979-1983, with the multi-storey car park noted on historical mapping from 1980-1986.

2A.72 The site can be considered to have a low to moderate potential for post-medieval remains, low to moderate potential for Saxon remains and low to moderate potential for late medieval remains. Abraded human remains have been found at the Civic Centre 70m south of the site. These remains have not been dated and it is not known whether they represent an anomaly or are indicative of further interments in the area.

2A.73 The existing basement covers approximately 90% of the site and will have removed all archaeological remains within its footprint. The remaining 5% of the site is located at the northern edge of the footprint and is described on the topographic survey as a 'floated area'. It is assumed for the purposes of assessment that the depth of truncation is at least as deep as that of the existing basement levels.

2A.74 The remaining 5% of the site at the eastern edge of the footprint will also have been disturbed as part of the process of excavating the existing basement and the construction of the retaining walls. It is thus also very likely that this area has been heavily disturbed however this has not been confirmed.

2A.75 Although the precise details would need to be agreed with the RBC's archaeological advisor, it is suggested that the most appropriate investigation strategy is likely to entail geo-archaeological boreholes to determine the depth of the underlying deposits in the areas outside of the existing basement. The results would be used to target further archaeological evaluation if necessary to confirm the presence, nature and significance of archaeological remains. This would in turn enable an informed decision to be made in respect of an appropriate mitigation strategy for any significant archaeological assets, such as targeted excavation, and / or a watching brief during ground works for remains of lesser significance. This would ensure that significant archaeological assets are not removed without record.

2A.76 Any archaeological work would need to be undertaken in accordance with a Written Scheme of Investigation (WSI) and could be carried out under the terms of a standard archaeological planning condition set out with the granting of planning consent.

2A.77 On the basis that the DBA has defined the potential for remains of limited heritage significance only, the development of the site is unlikely to generate any significant archaeological (buried heritage assets) related effects. The likely effects can be adequately managed so as not to cause unacceptable harm to any surviving assets.

2A.78 As such, it is considered that the likely archaeological effects are sufficiently well understood and that based on the information currently available, it is likely that the residual archaeological effects would not be significant.

2A.79 Furthermore, planning conditions attached to the planning permission are envisaged to cater for any further required archaeological work and subsequent recording and reporting prior to the start of works on site.

2A.80 On this basis, an archaeological impact assessment has been scoped out of the EIA. The DBA will however be submitted in support of the planning application the ES (Volume I) will cite the above measures (specifically those that would be undertaken pursuant to planning conditions attached to the planning permission).

Geoenvironmental (Land Contamination, Ground Conditions and Groundwater)

2A.81 A Phase 1 Environmental Desktop Study for the site has been undertaken. The review was undertaken by desk based research. The study is appended to the EIA Scoping Report in Appendix E (presented in **ES Volume 3 – Appendix – EIA Scoping**).

2A.82 Historical maps indicate that from at least 1879, the site comprised numerous unlabelled assumed residential properties and commercial buildings. Furthermore, at this time, steam saw mills and a timber yard were labelled within the north-western area of the site and a brewery ('Lion Brewery') was labelled within the southern area of the site. By 1895, the brewery on-site had been re-labelled as a furniture depository and by 1899, a smithy was present within the north-western area of the site. Between 1931 and 1957 the timber yard and saw mills had been redeveloped into a car park and a garage was present within the centre of the site. By 1958 a 'sunk petrol tank' was labelled adjacent to the east of the garage on-site and a furniture warehouse was labelled within the eastern area of the site. Furthermore, by this time an electricity sub-station, a rifle range and two further small garages were labelled within the southern area of the site. By 1970 the majority of the site (apart from the furniture warehouse within the eastern area of the site) had been cleared. Between 1970 and 1973, the entire site had been redeveloped into a shopping centre ('The Butts Centre') forming much of the current site layout. Furthermore, at this time a public house was present within the southern area of the site. By 1988 the shopping centre had been re-labelled as 'The Broad Street Mall' and by 1990, the public house on-site was no longer labelled (assumed cleared).

2A.83 The site supports a shopping mall ('Broad Street Mall') arranged over basement level, ground floor and one upper floor. Furthermore, office accommodation ('Quadrant House') is located within the eastern area of the site and further office accommodation ('Fountain House') is located within the north-western corner of the site. A multi-storey car park is located within the south-western area of the site and numerous further car parking spaces are located on the roof of the shopping mall. The basement level extends underneath the development and includes numerous plant rooms, the main waste storage area and numerous storage rooms associated with the retail units on-site.

2A.84 The British Geological Survey (BGS) 1:50,000 Digital Geological Map of Great Britain shows the solid geology underlying the site to comprise the Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated), part of the White Chalk subgroup. The Chalk is underlain by the Upper Greensand and the Gault Formation at depth. Local publicly available BGS boreholes indicate this is overlain by the Taplow Gravel Member (Sand and Gravel).

2A.85 Alluvial deposits (associated with the nearby river and its tributaries) and River Terrace Deposits (sands and gravels) overlie the London Clay formation. The Taplow Gravel Member comprises a succession of sand and gravel, locally with lenses of silt, clay or peat.

2A.86 There is no available data for the made ground. However, it is known that the existing foundations bear onto natural strata at basement level and therefore any made ground which may have existed prior to construction of the mall will have been removed. The ground surrounding the site is retained by the basement structure which would have been backfilled against the retaining wall utilizing suitable excavated material.

2A.87 The BGS Database identifies the following geological risks within 100m around the site boundary and their associated risk rating:

- Potential for Collapsible Ground – Very Low;
- Potential for Compressible Ground Stability Hazards – Negligible;
- Potential for landslide ground instability – Very Low;
- Potential for Running Sand Ground – Very Low;
- Potential for shrinking or swelling Clay – Negligible; and

- Potential for soluble rocks – High.

2A.88 According to the Environment Agency groundwater vulnerability maps, the superficial Alluvium forms a Secondary A Aquifer. This aquifer comprises permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

2A.89 The underlying Seaford and Newhaven Chalk Formation is designated as a Principal Aquifer, geology comprising high intergranular and/or fracture permeability - meaning they provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

2A.90 A surface water feature (Holy Brook) is located approximately 180m south. Groundwater abstractions are present within a 1km radius of the site (for various retail, commercial / industrial / public services).

2A.91 The site is not located within a Source Protection Zone.

2A.92 A preliminary contamination risk assessment has been carried out using best practice methodology in the context of the site setting, assessing the potential pollutant linkages to site receptors. The conceptual site model (CSM) identifies the site as generally having a very low risk to current and future users, workers, neighbouring residents and construction workers

2A.93 The main findings of the study can be summarised as set out below.

2A.94 The site has been subjected to significant industrial use during its history, including on site uses of steam saw mill, smithy, brewery, car park and garage. This is likely to have resulted in the introduction of a variety of soil contaminants to the site. The risk of encountering or being exposed to such contaminants during construction works is very low and can be further controlled by adopting appropriate control / protective measures.

2A.95 The site is designated as having a low risk for Unexploded Ordnance (UXO). The risk associated with UXO is considered further minimised due to the previous development on site, including the basement, and the limited scope of intrusive works associated with the Proposed Development.

2A.96 A geotechnical ground investigation is recommended, to assess the risk of instability due to soluble rock, any ground strengthening works which may be required will be developed once the findings of the intrusive ground investigation are made available.

2A.97 Based on the findings of the study undertaken to date, and with the implementation of the proposed mitigation and management measures, it is considered that the Proposed Development is unlikely to give rise of significant geoenvironmental effects. On this basis, a ground conditions impact assessment is scoped out of the EIA.

2A.98 It is anticipated that the proposed mitigation / management and monitoring measures will be secured by the RBC through appropriately worded planning conditions, which will be attached to the planning permission and which will secure further detailed geoenvironmental analyses, including but not limited to: carrying out ground investigations to establish geotechnical parameters to inform design.

Waste

2A.99 Mitigation measures to avoid, remedy or mitigate adverse effects in terms of waste and recycling during the construction can include:

- Provision of a CEMP to include waste reduction and management objectives;
- The appropriate management of any potential contamination identified on-site; and
- The minimising of stockpiling of construction materials.

2A.100 The specific mitigation measures to be implemented throughout the construction works will be outlined within the introductory chapters of the ES. Through the implementation of mitigation measures, amount of waste generated will be minimised.

2A.101 An operational waste and recycling management strategy will be prepared and will calculate waste storage provisions based on unit mix and area schedule and will outline associated waste management measures. The Proposed Development will be designed to accommodate the required waste storage. In particular, the strategy will provide details on how each waste stream generated from each use class will be managed, and details on how waste will be reduced, minimised and recycled, where possible (in line with the Waste Hierarchy). Measures relating to the Proposed Development once complete and occupied, including a summary of the waste strategy, will be presented in the introductory chapters of the ES.

2A.102 With these measures in place, it is considered that the likely waste effects would not be significant. As such, no technical waste assessment is proposed to be undertaken, but as stipulated above, will be referenced as appropriate within the ES, and where appropriate, appended to the ES.

2A.103 Any impacts associated with the transportation of waste (particularly in construction) will be dealt with where applicable in the transport chapter, and dust within the air quality chapter.

2A.104 A waste and recycling assessment is therefore proposed to be scoped out of the EIA.

Electronic Interference

2A.105 Interference to certain telecommunications systems (e.g. television (TV), mobile phone and radio) can arise from buildings physically blocking and absorbing associated signals. Therefore, a loss or degradation of the reception of such systems can result from the introduction of new buildings and is often referred to as 'electronic interference', with the affected area referred to as the 'shadow area'.

2A.106 This section of the request for an EIA Scoping Opinion therefore considers electronic interference associated with telecommunications. For assessment purposes, domestic dwellings where TV is watched, or radio is listened to as an amenity, are identified as sensitive receptors. Places where the provision of TV or radio form part of a commercial premises (e.g. hotels, offices and shops), are not identified as sensitive receptors.

Radio Signals

2A.107 Due to radio signals being at lower frequencies, they can 'bend' to a greater extent around buildings (or other obstructions) when compared to TV signals. Radios are also able to make constructive use of reflected signals. As such, radio signals are able to operate successfully in dense urban settings (i.e. containing a large density of tall and large buildings) and therefore radio reception (both analogue and digital) is not considered to be at risk of degradation as a result of the Proposed Development. No likely significant effects to radio reception (both analogue and digital) are therefore anticipated as a result of the Proposed Development.

Cable TV Reception

2A.108 Cable TV (CATV) services are delivered via underground coaxial or fibre-optic cables to residential dwellings. As CATV services are not transmitted through the air, there is limited potential for interference to CATV, and therefore CATV is not considered to be at risk of degradation as a result of Proposed Development. No likely significant effects to CATV services are therefore anticipated as a result of the Proposed Development.

Mobile Phone Reception

2A.109 A review of Ofcom's mobile availability checker has identified that both 3G and 4G mobile services for four network providers (EE, O2, Vodafone and Three) are available within and in close proximity to the Station Road site. A search of the Mast Data database identified five existing mobile phone masts atop existing buildings/structures on-site. Communication with the Operations Manager at Broad Street Mall revealed that all existing masts were present on Fountain House, an area of site which has already been renovated and

won't be included in the Proposed Development, apart from one Vodafone mast which is present on Quadrant House, to be extended by two floors as part of the Proposed Development. The Vodafone mast will have to be removed prior to the period of construction works associated with the Proposed Development and be relocated by the network provider.

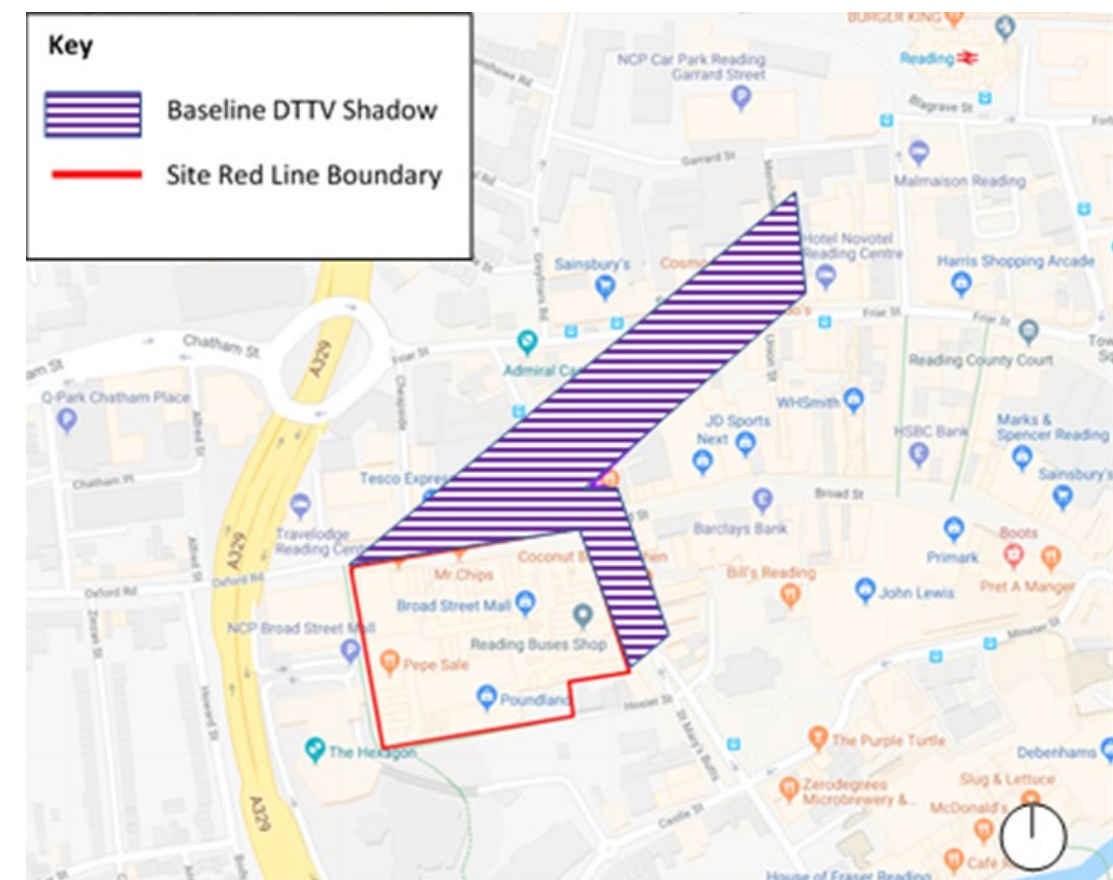
2A.110 It is therefore considered that there is no risk of degradation to mobile phone reception as a result of the Proposed Development. No likely significant effects to mobile phone reception are therefore anticipated as a result of the Proposed Development.

Terrestrial TV Reception

2A.111 Terrestrial (land based) TV signals are transmitted in digital format (Digital Terrestrial TV (DTTV) i.e. freeview). The site receives DTTV signals from the Hannington transmitter mast, which is located approximately 25km to the south-west of the site; therefore, any resultant DTTV shadow areas will be located to the north-east of the site.

2A.112 The existing Fountain House, located in the western portion of the site, generates an existing DTTV shadow which falls up to Hotel Novotel Reading Centre, where it ceases due to the height and massing of this building (as shown in Figure 2A.2). It is considered that DTTV reception to the north-east of the site is generally poorly received due to the height and massing of the existing buildings e.g. Hotel Novotel Reading Centre, multi storey Car Park, Thames Tower etc. This is highlighted by the 'raised aerials' that can be viewed on the properties falling within the compass bearing, in an attempt to better receive DTTV signal.

Figure 2A.1 Baseline DTTV Shadow (not to scale)



2A.113 The closest relay TV transmitter mast (the Hemdean relay transmitter) is located approximately 2.8km to the north of the site, any resultant DTTV shadow areas will be south of the site. From a review of Google Streetview, properties to the south of the site are receiving DTTV from the Hannington transmitter mast (observed from the

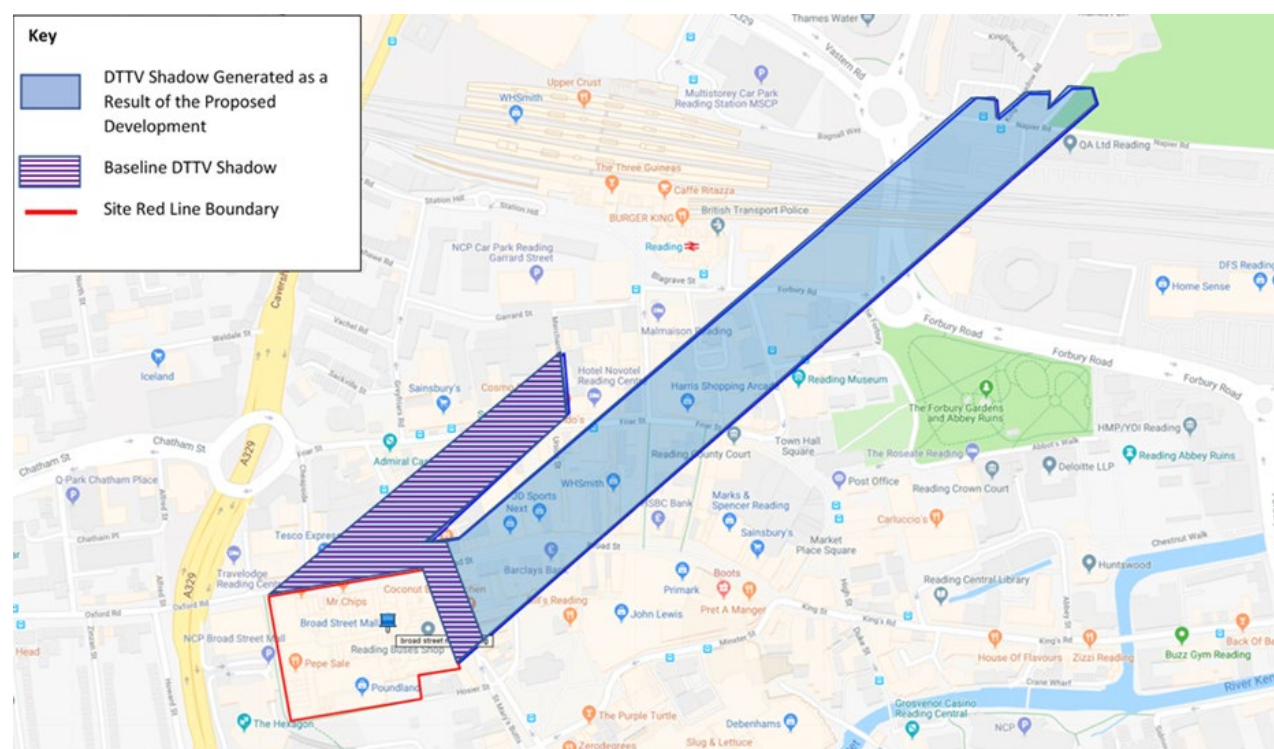
orientation of TV aerials atop roofs to the south of the site). As coverage from relay transmitter masts is not received at the site or in the area surrounding the site it is considered that the Proposed Development would not affect the reception of services transmitted by relay transmitter masts, and no likely significant effects to DTTV services transmitted by these masts are anticipated as a result of the Proposed Development.

2A.114 Design information relating to the Proposed Development has been reviewed (specifically information relating to building massing and heights. It has been identified that the Proposed Development will comprise three prominent tall towers located in the southern portion of the site, with the tallest reaching ground plus approximately 24 storeys in height.

2A.115 The DTTV shadow generated as a result of the Proposed Development, is anticipated to fall to the north-east of the site. The DTTV shadow will fall over several retail and office buildings, with potential residential dwellings located on the upper floors, and residential dwelling blocks. The DTTV shadow will continue north-east where it will cease prior to reaching King's Meadow (as shown Figure 2A.3). The predicted DTTV shadow, generated as a result of the Proposed Development, has the potential to result in a loss or degradation to DTTV reception received by sensitive receptors within the anticipated DTTV shadow area. It should be noted that some areas of anticipated DTTV shadow fall within existing DTTV shadow areas (predominantly generated as a result of the existing Fountain House (due to be refurbished as part of the design proposals)). The DTTV shadow generated as a result of the Proposed Development will not worsen any adverse effects to DTTV reception currently experienced by any residential dwellings falling within the area of existing DTTV shadow.

2A.116 The most noticeably adverse effects will be experienced by those residential dwellings located in closest proximity to the site, with the scale of the impact reducing with distance away from the site. This is due to 'knife-edge diffraction'. This diffraction mechanism is a process whereby signals appear to bend (or 'diffract') behind a structure and eventually meet, like that of a knife-edge as opposed to a straight block. Therefore, the residential dwellings likely to experience the most noticeably adverse effects are likely located along Broad Street, Friar Street, and West Street. With those located north-east of these being less noticeably affected.

Figure 2A.3 DTTV Shadow Generated as a Result of the Proposed Development (not to scale)



2A.117 For potentially affected residential dwellings located within the DTTV shadow area, standard measures are available to mitigate the potential adverse effect, these include:

- Upgrading the existing DTTV aerials by increasing their height and gain;
- The provision of a non-subscription satellite service which is available from the BBC and ITV ('Freesat') or Sky for a one-off cost; or
- Linking affected residential dwellings up to the existing available CATV network at a one-off cost.

2A.118 The residential dwellings could also receive TV reception from the Hemdean relay transmitter, although this service is a 'freeview light' service, and therefore does not contain all of the channels available to those receiving DTTV reception from the Hannington transmitter mast (which transmits the full freeview channel list). These standard measures are straight forward to implement and would remove the adverse effects to DTTV reception.

Satellite TV Reception

2A.119 Satellite TV services to the UK are provided by geo-stationary satellites, which are primarily located within the Astra 28.2o E satellite cluster. Due to the geostationary positioning of the satellites in relation to Reading, satellite TV shadow areas will fall to the northwest of the site.

2A.120 Due to the positioning of the tall towers in the south of the site, the anticipated satellite TV shadow generated as a result of the Proposed Development will fall to the northwest of the site up to, but not beyond, the buildings located on the northern side of Oxford Road. It is therefore considered that the Proposed Development would not affect the reception of satellite TV services, and no likely significant effects to satellite TV receptor are anticipated as a result of the Proposed Development.

Conclusion

2A.121 Based on the information available, it can be concluded that there is the potential for a loss or degradation to DTTV reception received by residential dwellings, as a result of the Proposed Development. Suitable measures have been identified and are available to all potentially affected residential dwellings.

2A.122 Whilst there is the potential for some impact to occur, taking into account the size and extent of potential impacts and the availability of standard measures to monitor and remedy potential impacts, the likely residual effects on DTTV reception to surrounding receptors are not considered to be significant. On this basis, no further consideration of electronic interference effects will be presented within the ES.

ANNEX B

Cumulative Assessment - Committed Developments

Note: List has been filtered to only include schemes with either the original consent for the Site, or subsequently superseded by either a S73 Amendment or a new planning permission. Any consents for non-material amendments (s96A) or reserved matters have not been presented.

Where there are multiple permissions associated with the scheme in question, the shaded rows indicates the relevant planning permission for consideration for the cumulative assessment.

Table 2B.1 List of Committed Developments Identified For The EIA

Ref	Name / Address Application Ref. (Dist from site (m))	Scheme Description	Status as of October 2018
1	Hotel Application Ref. 182054 (5)	Hotel Application	Submitted to RBC
2	52-55 Friar Street Reading and 12 GreyfriarRoad, RG1 1DX Ref. 162210 (240)	Demolition of existing building and structures (Class A1) and erection of 3 new buildings ranging between 6 - 12 (and basement) storeys in height to provide 135 (1xstudio, 54x1, 73x2 & 7x3-bed) residential units (Class C3), a flexible Class A1-A5 use at ground floor level fronting onto Friar St, a flexible Class A1-5, B1(a) or D2 (gym only) use at ground floor level fronting onto Greyfriars Rd, with associated access, parking, servicing, landscaping and engineering works (amended description).	Permitted (20/03/2018)
3	Plot E & Telecom House Land Friar Street/ Garrard Street Station Hill RG1 1DX Ref. 151426 (290)	Outline application with all matters reserved for mixed use redevelopment of Plot E of the Station Hill site and neighbouring Telecom House site (48 to 51 Friar Street & 4 to 20 Garrard Street) to comprise the demolition of existing buildings and erection of new buildings/ structures to provide residential units, a range of town centre uses including retail and related uses (Use Class A1 - A5), associated infrastructure, public realm works and ancillary development.	Permitted (26/07/2016)
4	Land between Weldale Street and Chatham Street Reading Ref. 170326 (300)	Demolition of all existing buildings (including 3 retail units) and structures, and erection of new buildings ranging between lower ground& 4 storeys to lower ground & 11 storeys in height, providing 427 (233x1, 182x2 & 12x3-bed) residential units (Class C3) and 1 flexible ground floor retail shop (Class A1) or restaurant and cafe (Class A3) unit, together with new public realm, landscaping, accesses, parking and associated works (amended description).	Permitted (15/03/2018)
5	Station Hill, Reading (A) Ref. 130436 (B) Ref. 151427 (350)	Ref. A Outline application for mixed use redevelopment of the site through the demolition and alteration of existing buildings and erection of new buildings & structures to provide Offices (Use Class B1), a range of town centre uses including retail and related uses (Use Class A1- A5) leisure (Use Class D2) and residential units, associated infrastructure, public realm works and ancillary development (all matters reserved).	Permitted (09/01/2015)
		Ref. B Section 73 application to vary conditions 2,5,6,54 and 57 of outline permission 130436 to remove reference to Plot E.	Permitted (26/07/2016)
6	Garrard House, 30 Garrard Street, Reading, RG1 1NR Ref. 160328 (390)	Extension to include part new fourth floor and new fifth and sixth floors to provide 18 residential units.	Permitted (21/06/2016)
7	29 Station Road, Reading, RG1 1LG Ref. 170772	Change of use of 1st to 5th floors from Class B1(a) (offices) to C3 (dwelling houses) to comprise 33 x 1-bed flats. Prior Notification under	Permitted (10/07/2017)

	(420)	Class O, Part 3 of Schedule 2 of the Town and Country Planning (General Permitted Development) Order 2015 (as amended).	
8	Bristol & West Arcade Market Place Reading RG1 1JL Ref. 180358 (470)	Demolition of vacant former Bristol & West Arcade (173 – 175 Friar Street) and erection of an eight storey mixed-use building (plus basement) to provide 35 residential units, 4,212 sqm of B1 office floorspace, and 5 retail units (A1/A2/A3), demolition of rear parts of 29 – 31 and 32 Market Place, the change of use of the retained units at 27 – 28, 29 - 31 Market Place at first, second and third floors to provide 8 residential units, change of use at ground and basement level of 32 Market Place from A2 to flexible retail use (A1/A2/A3), retention of 260.4 sqm of A4 use at ground and basement at 29-31 Market Place, change of use at ground and basement of 27 - 28 Market Place to flexible retail use (A1/A2/A3), and associated internal and external works to the Listed Buildings, landscaping, refuse, plant, cycle stores and substation at basement level.	Permitted (18/07/2018)
9	Former Sorting Office, Caversham Road / Vastern Road Ref. 110024 (630)	Outline planning application for business uses (Use Class B1), residential accommodation (Use Class C3), hotel (Use Class C1), retail floor space (Use Class A1), food and drink uses (Use Class A3, A4 and A5), leisure uses (Use Class D2), and associated car parking, open space and landscaping, highways, access and associated works.	Permitted (26/03/2012)
10	Former Cooper Reading Bmw Kings Meadow Road Reading RG1 8BN Ref A. 162166 Ref B. 171923 (870)	Ref. A Erection of a part 12 storey, part 23 storey building comprising 315 apartments in a mix of studio, one-bedroom, two-bedroom and 3-bedroom units; residents' lounges, tech-hub, dining room, and cinema room, various rooftop outdoor amenity spaces, concierge/reception with coffee meeting area, residents' storage facilities, postroom, ancillary back-of-house facilities, 315 secure cycle parking spaces, 49 car parking spaces, landscaping, and associated works. Demolition of existing multi-storey car park.	Permitted (23/11/2017)
		Ref. B Outline erection of 12 storey landmark office building with publically-accessible sky garden, car and cycle parking, and associated works (all matters for consideration other than landscaping).	Permitted (29/03/2018)
11	Kings Point, 120 Kings Road, Reading, RG1 3DA Ref. 162087 (1000)	Demolition of existing building and the erection of a part seven, part nine, part eleven, part twelve and part seventeen storey building comprising 103 residential units and 351.5 sqm GIA of commercial (A1/A3) floorspace at ground and mezzanine floor level together with parking and associated landscaping (without complying with conditions (2, 7, 8, 9, 18, 19, 28 of planning permission 150019) to allow the removal of sub-basement, enlargement of basement level and internal and external alterations at the basement, ground and mezzanine levels (amended description).	Permitted (09/02/2017)
12	Aspen House, 300 Kings Road, Reading, RG1 4HP Ref. 170512 (1500)	Change of use of office building from Class B1(a) (offices) to C3 (dwelling houses) to comprise 78 flats. Prior Notification under Class O, Part 3 of Schedule 2 of the Town and Country Planning (General Permitted Development) Order 2015	Prior Approval Notification – Approval (25/05/2017)
13	Alexander House 205-207 Kings Road Reading RG1 4LS Ref. 162057 (1880)	Erection of basement and 4 - 7 storey building comprising 56 (30x1, 18x2 & 8x3-bed) residential units (Class C3) with associated parking and landscaping, following demolition of existing basement and 2 storey office building (Class B1a)	Permitted (17/05/2017)

Figure 2B.1 Committed Developments Identified for Inclusion within the Cumulative Assessment

