

1 INTRODUCTION

Introduction

- 1.1 This Environmental Statement (ES) has been prepared for Aviva Life & Pensions UK Limited (hereafter referred to as 'the Applicant'), in accordance with the statutory procedures set out in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017¹ (hereafter referred to as 'the EIA Regulations').
- 1.2 The ES relates to the intended redevelopment (hereafter referred to as 'the proposed development') of the Reading Station Park, Reading, within the jurisdiction of Reading Borough Council (RBC) (hereafter referred to as 'the application site'). This ES accompanies an application by the Applicant for outline planning permission for the proposed development on the application site ('the application').
- 1.3 Outline planning permission is being sought, because the exact mix of uses (commercial and residential) and site layout and specifications is not known at the present time, and will be subject to market demand at the time of the scheme being delivered.
- 1.4 The Applicant recognises that the proposed development falls within Schedule 2, Category 10b of the EIA Regulations as an 'urban development project' which, owing to its nature, scale and location, has the potential to give rise to significant effects on the environment. The Applicant has therefore commissioned an environmental impact assessment (EIA) for the proposed development, the findings of which are presented within this ES.
- 1.5 The ES comprises the following:
 - Non-Technical Summary (NTS);
 - Volume 1: Environmental Statement Main Report (this document);
 - Volume 2: Townscape, Visual and Built Heritage Assessment;
 - Volume 3: Technical Appendices.
- 1.6 EIA is a formal process in which the likely significant effects of certain types of development projects on the environment are identified, assessed and reported upon. For certain types of development, the process must be followed in order for such effects to be taken into account before a decision is made on whether planning permission should be granted.
- 1.7 This ES presents the results of the EIA that has been undertaken of the proposed development. In accordance with the EIA Regulations, the ES reports on the potential environmental impacts and likely significant environmental effects of the proposed development during the demolition and construction stage, as well as during the subsequent completion and operational stage.
- 1.8 The EIA has taken into account the mitigation measures that are being proposed by the Applicant, including those measures that have been integrated into the planning and design of the proposed development to prevent and, where prevention is not possible, to reduce and/or mitigate likely significant adverse effects. It then evaluates the significance of the residual effects.
- 1.9 Further information on how the scope of the EIA was defined and on the structure of this ES, is provided in Chapter 2: EIA Process and Methodology.

- 1.10 The EIA has been carried out by Ramboll UK Limited ('Ramboll') and a number of technical specialists. The EIA specialists, in addition to the Applicant's wider design and planning team, are presented in Table 1.2, along with their respective disciplines.
- 1.11 RBC is the 'relevant planning authority' for the purposes of the EIA Regulations and will determine the application taking into account the likely significant environmental effects of the proposed development as determined through the EIA process.
- 1.12 This chapter provides a general description of the application site, the relevant planning context, planning application details, as well as the content and structure of the ES. More detailed information on the application site is provided in the technical assessments of this Volume, as well as ES Volume 2.
- 1.13 The proposed development that has been assessed within the EIA is as described in Chapter 4: Proposed Development Description and Chapter 5: Demolition and Construction Environmental Management of this Volume.

Development Context

Application Site Location and Context

- 1.14 The application site is located at national grid reference SU 71399 74085, within Reading city centre, as shown in Figure 1.1.
- 1.15 Geographically, the application site is located approximately:
 - 150 m south-west of the River Thames; and
 - 50 m north of Reading Railway Station.
- 1.16 The application site is located within the electoral ward of Abbey, which has a population of approximately 14,700 people. Abbey ward has a younger population profile than both the RBC area and England. The 2011 Census recorded approximately 65,551 households in the RBC area, 10% of which (6,783) are within Abbey ward.
- 1.17 Accommodation within the study area is mainly private rented (51 %), which is in contrast to the RBC area and England where the majority of accommodation is owner occupied (55 % and 63 % respectively). Only 28 % of accommodation in the study area is owner occupied.
- 1.18 According to the Indices of Deprivation 2019², the RBC area is ranked the 141st most deprived local authority in England (out of 326).
- 1.19 As shown in Figure 1.2, the wider context of the application site is characterised by urban development with a fragmented mixture of commercial, industrial and residential uses.

¹ Secretary of State, 2017. Town and Country Planning (Environmental Impact Assessment) Regulations 2017, London, HMSO.

² Ministry of Housing, Communities and Local Government, 2019. The English Indices of Deprivation 2019, London, MHCLGH.



Figure 1.1: Application Site Location Plan

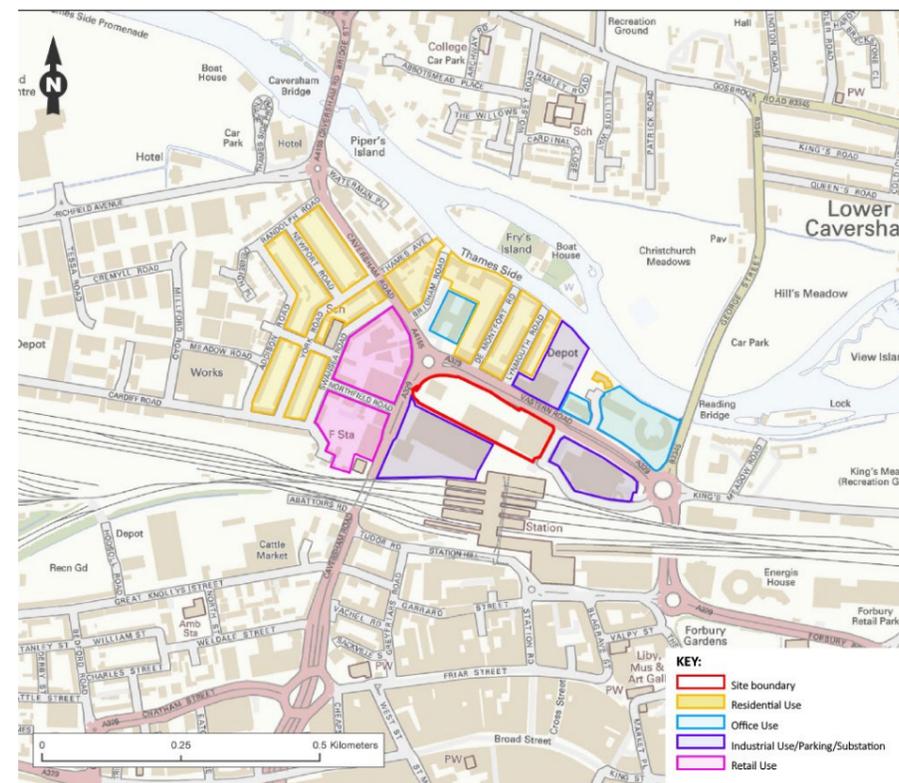


Figure 1.2: Existing Surrounding Land Uses

Application Site Description

1.20 The application site boundaries are defined by:

- Vastern Road (A329) to the north, beyond which are residential units and a Scottish and Southern Energy (SSE) office unit;
- Trooper Potts Way to the east, beyond which is Reading Railway Station car park;
- Network Rail Thames Valley Area site office to the south, beyond which is Reading Railway Station railway lines; and
- Caversham Road to the west, beyond which are a range of commercial, residential and industrial units.

1.21 The application site covers an area of approximately 1.77 hectares (ha). The application site lies at an elevation of between approximately 37.8 and 38.8 m Above Ordnance Datum (m AOD).

1.22 Representative photographs of the application site are shown in Figure 1.3.



South-east facing view of Aldi and the Range from Vastern Road



South-west facing view of TGI Fridays from Vastern Road



North-west facing view from behind commercial units in the south of the application site



South facing view of Reading Railway Station from Trooper Potts Way

Figure 1.3: Application Site Photographs

- 1.23 The application site is occupied by a commercial unit (including an Aldi, The Range, Mothercare and Majestic Wine) and a separate building in restaurant use (TGI Fridays), associated surface car parking, and delivery yard. The units are low rise, approximately 2-3 storeys high. There is currently provision for 280 surface car parking spaces.
- 1.24 There are no existing basements on the application site.
- 1.25 An electrical sub-station is located in the shared service yard within the southern extent of the application site adjacent to the site boundary, which is owned and operated by SSE Power Distribution. A second electrical sub-station is located off-site, immediately adjacent to the south-western application site boundary.
- 1.26 On-site habitats comprise buildings, hardstanding, amenity grassland, introduced shrub, scattered trees, and slate chippings.

Environmental Sensitivity

- 1.27 The application site is a site of a utilitarian character, comprising retail warehouse buildings; hard standing serving as frontage car parking and a service yard to the rear of the retail units; a restaurant, with associated hard landscape; and soft landscape forming the southern edge of Vastern Road and eastern edge of Caversham Road. This includes soft landscape including a number of canopy trees, in addition to grass and shrub planting.
- 1.28 The nearest surface water feature is the River Thames located 150 m north-east of the application site. There are three surface water abstractions within 2 km of the application site; however, none of the abstractions are for sensitive uses such as for public potable water supply.
- 1.29 The majority of the application site (approximately 95 %) is located in Flood Zone 2 (Medium Probability). Small areas (<5 %) in the west and centre of the application site are located in Flood Zone 1 (Low Probability), and a small portion (< 5 %) of the north-eastern site boundary is located in Flood Zone 3 (High Probability) where the annual probability of flooding from rivers is 1 in 100 (1%) or greater, and from the sea is 1 in 200 (0.5 %) or greater.
- 1.30 The application site is underlain by Clay and Silt (Unproductive Strata), which is further underlain by a Principal Aquifer. There are 10 groundwater abstractions recorded within 2 km, none of which are for public potable water supply. The abstractions are considered likely to be from the Chalk Principal Aquifer, which is separated from the Made Ground by the low permeability Langley Silt Member. The clay and silt deposits can be expected to provide some protection to downward migration of contamination (if present) within groundwater. The application site is not located within a groundwater Source Protection Zone.
- 1.31 No Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Site of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) or Local Nature Reserves (LNRs) are located within 1 km of the application site.
- 1.32 Three Local Wildlife Sites (LWS's) are located within 1 km of the application site. This includes Cow Lane Depot designated for habitats including mature trees, scrub, open water with swamp and tall herb grassland; The Warren Woodlands Complex designated as it is a woodland complex of six sites; and The Coal Kennetmouth and Kings Meadow East designated for habitats including mature trees, banks of Rivers with wetland species and areas of grassland.
- 1.33 The application site is not subject to any environmental designations such as listed buildings, scheduled monuments and it is not within an area of archaeological potential as designated by RBC.
- 1.34 There have been no archaeological investigations within the application site but 29 have been carried out within the study area (550 m radius of the application site). Of these there are four which are within 50

to 150 m of the application site; two are to the north on the northern side of Vastern Road (the A329), one on the eastern side of Vastern Road/Forbury Road (the A329) and one to the south side of the railway lines and west of Reading Railway Station. All these investigations recorded approximately 2 m of made ground directly over alluvium. Further, none of the investigations recorded buried heritage assets earlier than the late post medieval, i.e. 1800s and onwards.

- 1.35 The application site does not contain any nationally designated (protected) heritage assets, such as scheduled monuments or registered parks and gardens. There are also no statutory listed buildings on the application site, or in its immediate vicinity. The closest listed building is the Grade II listed Main Building of Reading Station approximately 130 m south of the application site. There are 25 Grade II listed buildings within 500 m of the application site including the Grade II* town council chamber and offices with clock tower (Listing Entry 1113400) and the Grade I Listed Greyfriars Church (Listing Entry 1321952).
- 1.36 The application site is not within or adjacent to a Conservation Area (CA). The closest CA is Market Place/London Street Conservation Area located approximately 390 m south-east of the application site. The Forbury Garden Registered Grade II is a registered park and garden located 430 m from the application site centre.
- 1.37 The application site and its immediate setting fall within Reading Tall Building Strategy (RTBS) (2018)³ Character Area 22: Vastern Road. The northern edge of the application site immediately abuts Character Area 12 - Caversham Road. Character Area 1 - Station Hill abuts the boundary of Character Area 22 to the south and Character Area 23 - King's Meadow abuts the northern and eastern boundaries of Character Area 22.
- 1.38 The application site is located within an urban area, comprising a mix of different uses including commercial and residential developments. The application site benefits from good transport infrastructure in close proximity which facilitates travel by non-car modes such as walking, cycling and public transport.
- 1.39 The application site is located approximately 50 m north of Reading Railway Station, which can be accessed by pedestrians via Caversham Road.
- 1.40 There are six bus stops accessible within 400 m of the application site on Trooper Potts Way to the east of the application site and on Caversham Road to the west and north-west. There are approximately 12 different bus services available from these stops combined.
- 1.41 There are good walking linkages in the local area, with extensive footway provision along Caversham Road, Vastern Road and Trooper Potts Way.
- 1.42 Due to the application site's urban location, the main existing noise sources comprise road traffic noise from the A329 and noise from passing trains from Reading Railway Station located approximately 50 m south of the application site. The application site is surrounded by residential dwellings to the north and west.
- 1.43 The application site is located within the Reading Air Quality Management Area (AQMA) which covers the town centre and areas along the major arterial roads leading into Reading. The AQMA was declared for exceedances of the annual mean NO₂ objective.
- 1.44 The Ockem Controls of Major Accidents Hazards (COMAH) Establishment is located approximately 1.65 km east of the application site. The application site does not lie within the consultation zones of the COMAH Establishment.
- 1.45 A selection of the key considerations is presented spatially in Figure 1.4.

³ Reading Borough Council, 2018. Reading Tall Buildings Strategy Update Note 2018. RBC.

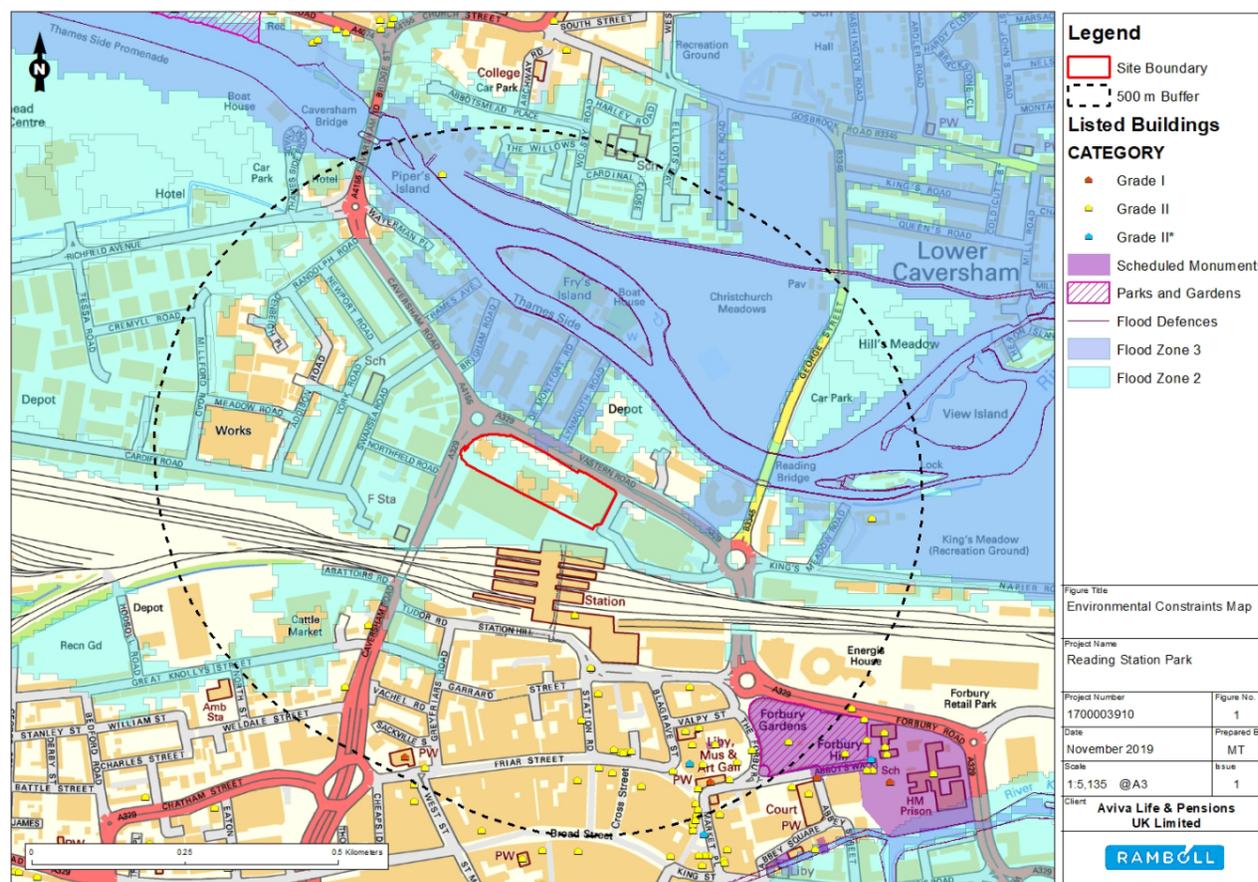


Figure 1.4: Surrounding Environmental Considerations

Planning Context

Planning Policy Context

- 1.46 It is necessary to consider the proposed development against relevant policies and guidance at national, regional and local levels. At the national level, planning policy is contained within the National Planning Policy Framework (NPPF)⁴.
- 1.47 The Ministry of Housing, Communities and Local Government published the revised NPPF on 24 July 2018, and was then updated on 19 February 2019. It sets out the Government's planning policies for England. It provides within a single document the greater part of national planning policy advice and articulates the Government's vision for delivering sustainable development. The NPPF is supported by the online National Planning Practice Guidance (PPG) and both are a material planning consideration.
- 1.48 The EIA has regard to the following local planning documents:
- Reading Borough Local Plan (2019)⁵; and
 - Reading Station Area Framework (2010)⁶.

1.49 The new Local Plan for Reading has been formally adopted following a committee meeting on 5 December 2019, superseding the Reading Borough Local Development Framework Core Strategy (2015)⁷. The Local Plan will decide how the town is developed over the next 17 years, dictating how residential dwellings can be built in the future and provide a blueprint for important developments.

Planning History

1.50 Table 1.1 summarises the key planning history of most relevance to the application site and provides background to the existing and consented land uses at the application site.

Application Number	Development	Decision	Date of Decision
87/TP/1105	Development of site to provide three retail warehouses, one restaurant, together with car parking, internal site roads, service area and landscaping on land at junction of Caversham Road and Vastern Road, Reading.	Approved	18/03/1988
070767	Minor external alterations to shopfront, erection of canopy to front of building, minor external alterations to south-east elevation and siting of secure compound in rear service yard.	Approved	30/10/2007
071279	Change of use of 2322 m ² of ground floor from retail (A1) to leisure (D2) or retail (A1).	Approved	11/04/2008

Application Details

1.51 The description of the proposed development as stated on the application form is:

"Outline planning permission with the details of access, appearance, landscaping, layout and scale reserved for later determination. Demolition and redevelopment to comprise: up to 115,000 sqm GEA in one or more land uses comprising: Residential (Class C3 and including PRS); Offices (Use Class B1(a); development in Use Classes A1, A2, A3 (retail), A4 (public house), A5 (take away), C1 (hotel), D1 and D2 (community and leisure); car parking; provision of new plant and renewable energy equipment; creation of servicing areas and provision of associated services, including waste, refuse, cycle storage, and lighting; and for the laying out of the buildings; routes and open spaces within the development; and all associated works and operations including but not limited to: demolition; earthworks; provision of attenuation infrastructure; engineering operations. All development, works and operations to be in accordance with the approved Development Parameters Schedule and Plans."

Applicant

1.52 The Application is submitted on behalf of Aviva Life & Pensions UK Limited. The application is by care of:

Barton Willmore Partnership
7 Soho Square
Soho
London
W1D 3QB

⁴ Department for Communities and Local Government, 2019. The National Planning Policy Framework. HMSO.

⁵ Reading Borough Council, 2019. Reading Borough Local Plan. RBC.

⁶ Reading Borough Council, 2010. Reading Station Area Framework. RBC.

⁷ Reading Borough Council, 2015. Reading Borough Local Development Framework. Core Strategy.

Project Team

1.53 The Applicant has appointed a design team to assist in the development of the application and has concurrently appointed an EIA team to undertake the EIA and prepare the ES in accordance with Regulation 18(5)(a) of the EIA Regulations. The team members and their respective roles are presented in Table 1.2.

Company	Role
WT Partnership	Project Managers
Barton Willmore	Planning Consultants
Collado Collins	Architect
Fabrik	Landscape Architect
Cole Easdon	Transport and Highways Consultant
Cast Consult	Cost Consultant
Mace	Construction Advisor
Watkins Payne Partnership	Site Wide Utilities Consultant and Sustainability Consultant
RPS Group	Waste Consultant
Simpson Associates Consulting Engineers LLP	Flood Risk and Drainage Consultant
Ramboll	ES Project Manager and Co-ordinator, Air Quality Assessment, Noise and Vibration Assessment, Ecological Impact Assessment, Ground Conditions Preliminary Risk Assessment
Barton Willmore	Socio-Economic Assessment
Barton Willmore	Townscape/Landscape and Visual Assessment
AVR London	Verified Visual Images
CHP Surveyors	Daylight, Sunlight, Overshadowing and Solar Glare Consultant
Museum of London Archaeology	Archaeology Consultant, Built Heritage Consultant
Xi Engineering	Wind Microclimate Consultants
Tim Moya Associates	Arboriculture Consultant

- Chapter 5: Demolition and Construction Environmental Management
- Chapter 6: Socio-Economics
- Chapter 7: Air Quality
- Chapter 8: Noise and Vibration
- Chapter 9: Wind Microclimate
- Chapter 10: Daylight, Sunlight, Overshadowing and Solar Glare
- Chapter 11: Cumulative Effects
- Chapter 12: Summary of Residual Effects
- Glossary of Terms and Abbreviations
- Volume 2: Townscape, Visual and Built Heritage Assessment
 - Chapter 1: Townscape and Visual Impact Assessment
 - Chapter 2: Built Heritage Assessment
- Volume 3: Technical Appendices
 - Technical Appendix 1.1: IEMA Quality Mark Checklist
 - Technical Appendix 1.2: Regulation 18(5)(b) Statement
 - Technical Appendix 2.1: EIA Scoping Report
 - Technical Appendix 2.2: Ground Conditions Preliminary Risk Assessment
 - Technical Appendix 2.3: Ecological Impact Assessment
 - Technical Appendix 2.4: Flood Risk Assessment
 - Technical Appendix 2.5: Historic Environment Assessment
 - Technical Appendix 2.6: Summary Planning Policies
 - Technical Appendix 7.1: Environmental Health Officer Consultation
 - Technical Appendix 7.2: Legislation, Dust Risk Methodology, Model Verification
 - Technical Appendix 8.1: Legislation and Guidance
 - Technical Appendix 8.2: Baseline Survey
 - Technical Appendix 8.3: Construction Plant Noise
 - Technical Appendix 8.4: Site Suitability
 - Technical Appendix 8.5: Daytime Ambient Noise Levels
 - Technical Appendix 9.1: Wind Microclimate Results
 - Technical Appendix 10.1: Drawings of the Baseline, the Proposed Development and the Cumulative Scenario
 - Technical Appendix 10.2: Daylight and Sunlight Results for Neighbouring Properties for both the Proposed Development and the Cumulative Scenario
 - Technical Appendix 10.3: Overshadowing Assessment
 - Technical Appendix 10.4: Solar Glare Assessment

Environmental Statement

Environmental Statement Structure

1.54 The ES comprises the following documents:

- Non-Technical Summary (NTS);
- Volume 1: Main Environmental Statement, comprising the following chapters:
 - Table of Contents, List of Figures, List of Tables
 - Chapter 1: Introduction
 - Chapter 2: EIA Process and Methodology
 - Chapter 3: Alternatives and Design Evolution
 - Chapter 4: Proposed Development Description

Environmental Statement Content

1.55 The required content of an ES is set out in Schedule 4 of the EIA Regulations. Table 1.3 presents these requirements and indicates where in this ES the requirements have been met.

Table 1.3: EIA Regulations Schedule 4 Requirements		
Required Information		Section of ES
Part I		
1	A description of the development, including in particular: <ul style="list-style-type: none"> a description of the location of the proposed development; a description of the physical characteristics of the proposed development, including, where relevant, requisite demolition works, and the land-use requirements during the operation stage; a description of the main characteristics of the operational phase of the proposed development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the operation stage. 	Volume 1: ES Chapter 1: Introduction, ES Chapter 4: Proposed Development Description, ES Chapter 5: Demolition and Construction Environmental Management. ES Chapters 6-12, Volume 1 ES Volumes 2 and 3
2	A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the Applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	ES Chapter 3: Alternatives and Design Evolution, Volume 1
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 proposed 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.	ES Chapter 3: Alternatives and Design Evolution, Volume 1
4	A description of the factors specified in Regulation 4(2) likely to be significantly affected by the proposed development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape, and the interaction between such factors.	ES Chapters 6-12, Volume 1, ES Volumes 2 and 3
5	A description of the likely significant effects of the proposed development on the environment resulting from, <i>inter alia</i> : <ol style="list-style-type: none"> the existence of the development; the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems 	ES Chapters 4-12, Volume 1, Volumes 2 and 3

Table 1.3: EIA Regulations Schedule 4 Requirements		
Required Information		Section of ES
Part I		
	relating to areas of particular environmental importance likely to be affected or the use of natural resources; <ol style="list-style-type: none"> the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; and the technologies and the substances used. <p>The description of the likely significant effects on the factors specified in Regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.</p> <p>The description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the proposed development, including in particular those established under Council Directive 92/43/EEC and Directive 2009/147/EC.</p>	
6	A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.	ES Chapters 6-12, Volume 1 ES Volumes 2 and 3
7	A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). The description should explain the extent to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover the operation stage.	ES Chapter 5: Demolition and Construction Environmental Management, Volume 1 Mitigation sections of ES Chapters 6-12, Volume 1 and ES Volumes 2 and 3
8	A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU(c) of the European Parliament and of the Council or Council Directive 2009/71/Euratom or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	ES Chapters 6-12, ES Volume 1 ES Volumes 2 and 3
9	A non-technical summary of the information provided under paragraphs 1 to 8.	Non-Technical Summary
10	A reference list detailing the sources used for the descriptions and assessments included in the ES.	ES Chapters 1-12, ES Volume 1 ES Volumes 2 and 3

Environmental Statement Good Practice

- 1.56 As with EIA, good practice in the preparation of the ES is defined in a number of sources, with more specific issues covered by ES review checklists. Many of these checklists are very detailed and go to some length. In terms of widely applicable and practical guidance, the Institute of Environmental Management and Assessment (IEMA) Quality Mark indicator check has been referenced in undertaking the EIA and in producing this ES as described in Technical Appendix 1.1, ES Volume 3.
- 1.57 Ramboll is a Registrant on the IEMA Quality Mark. Accordingly, as part of Ramboll's QA procedures and Quality Mark Commitments, the EIA has been undertaken to meet the Quality Mark Commitments as set out in Technical Appendix 1.1, ES Volume 3.
- 1.58 As required by Regulation 18(5)(b), Technical Appendix 1.2 presents a statement from the Applicant outlining the relevant expertise or qualifications of the competent experts that have undertaken the EIA and prepared this ES.

2 EIA PROCESS AND METHODOLOGY

Introduction

- 2.1 This chapter of the ES sets out the general approach to the process and to the methodology that is adopted when undertaking an EIA. It describes the legislative framework in which the EIA for the proposed development was undertaken and identifies the key guidance that was considered. The scoping and consultation process that was adopted to identify the key environmental topics for inclusion in the EIA is outlined, as well as the overall EIA methodology adopted.
- 2.2 Whilst the overall approach and methodology is described in this chapter, further detail on how the methodology was tailored to each environmental topic of the EIA is presented in the relevant technical assessment chapters of the ES.
- 2.3 This chapter is accompanied by the following technical appendices within ES Volume 3:
- Technical Appendix 2.1: EIA Scoping Report;
 - Technical Appendix 2.2: Preliminary Risk Assessment;
 - Technical Appendix 2.3: Ecological Impact Assessment;
 - Technical Appendix 2.4: Flood Risk Assessment;
 - Technical Appendix 2.5: Historic Environment Assessment; and
 - Technical Appendix 2.6: Summary Planning Policies.

Environmental Impact Assessment

- 2.4 Legislation on EIA was first implemented in the UK in 1988 following the adoption of the 1985 European Commission (EC) Directive (No. 85/337/EEC)¹ on the assessment of the effects of certain public and private projects on the environment. Legislation was subsequently introduced in 1999, following the adoption of the amended 1997 EC Directive (No. 97/11/EEC)². In England, the 1997 Directive was transposed into law through the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (SI 1999/293)³. These regulations were amended by the Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2006 (Statutory Instrument 2006/3295)⁴ and the Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008 (Statutory Instrument 2008/2093)⁵. These were then superseded by the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (Statutory Instrument 2011/1824)⁶, with The Town and Country Planning (EIA) (Amendment) Regulations, 2015⁷ coming into force on 6 April 2015.

- 2.5 More recently, the European Parliament adopted a fully updated version of the EIA Directive (2014/52/EU) in 2014. This Directive was transposed into law through the Town and Country Planning (Environmental Impact Assessment) Regulations, 2017⁸ on 16 May 2017, superseding all previous EIA Regulations. This ES has been prepared pursuant to the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, which are referred to throughout this ES as the 'EIA Regulations'.
- 2.6 The EIA Regulations set out the statutory process and minimum requirements for EIA and the contents of the ES. Specifically, they prohibit the granting of planning permission for developments likely to have significant effects on the environment, defined in the EIA Regulations as 'EIA development', unless information on those effects is considered by the competent authority in reaching its decision on a planning application. That information includes both the ES, which is the Applicant's own assessment, and any other information provided by consultees, the public, and any other persons about the proposal's environmental effects.
- 2.7 In addition to the EIA Regulations, there is also additional guidance available on EIA and the application of the EIA Regulations, which has been considered in undertaking this EIA, including:
- Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Impact Assessment⁹;
 - IEMA Special Report into the State Environmental Impact Assessment Practice in the UK¹⁰;
 - Department for Communities and Local Government (DCLG) (now Ministry of Housing, Communities and Local Government (MHCLG)) Amended Circular on Environmental Impact Assessment (consultation paper)¹¹;
 - DCLG (now MHCLG) Environmental Impact Assessment: A guide to good practice and procedures (consultation paper)¹²;
 - MHCLG National Planning Policy Framework¹³;
 - MHCLG Online Resource – Guidance for Environmental Impact Assessment¹⁴;
 - Department for Transport (DfT) Design Manual for Roads and Bridges Volume 11: Environmental Assessment¹⁵;
 - Institute of Environmental Assessment (IEA) (now IEMA) Guidelines for Environmental Assessment of Road Traffic¹⁶;
 - IEMA Shaping Quality Development¹⁷; and
 - EC EIA of Projects: Guidance on Scoping¹⁸.

¹ The Council of the European Union (CEU), 1985. Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. CEU.

² The Council of the European Union (CEU), 1997. Council Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. CEU.

³ Secretary of State, 1999. Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. London. HMSO.

⁴ Secretary of State, 2006. Town and Country Planning (Environmental Impact Assessment) (Amendment) (Wales) Regulations 2006. London. HMSO.

⁵ Secretary of State, 2008. Town and Country Planning (Environmental Impact Assessment) (Amendment) (England) Regulations 2008. London. HMSO.

⁶ Secretary of State, 2011. Town and Country Planning (Environmental Impact Assessment) Regulations 2011. London. HMSO.

⁷ Secretary of State, 2015. Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2015, London, HMSO.

⁸ Secretary of State, 2017. Town and Country Planning (Environmental Impact Assessment) Regulations 2017, London, HMSO.

⁹ Institute of Environmental Management and Assessment (IEMA), 2004. Guidelines for Environmental Impact Assessment. IEMA.

¹⁰ Institute of Environmental Management and Assessment (IEMA), 2011. Special Report into the State Environmental Impact Assessment Practice in the UK. IEMA.

¹¹ Department for Communities and Local Government (now Ministry of Housing, Communities and Local Government (MHCLG)), 2006. Amended Circular on Environmental Impact Assessment: A consultation paper. DCLG.

¹² Department for Communities and Local Government (now Ministry of Housing, Communities and Local Government), 2006. Environmental Impact Assessment: A guide to good practice and procedures – a consultation paper. DCLG.

¹³ Ministry of Housing, Communities and Local Government, 2019. National Planning Policy Framework. London. HMSO.

¹⁴ Ministry of Housing, Communities and Local Government, 2019. Guidance for Environmental Impact Assessment. MHCLG.

¹⁵ Department for Transport, 2008. Design Manual for Roads and Bridges Volume 11: Environmental Assessment. Department for Transport.

¹⁶ Institute for Environmental Assessment (IEA) (now the Institute of Environmental Management and Assessment (IEMA)), 1994. Guidelines for Environmental Assessment of Road Traffic. IEA.

¹⁷ Institute of Environmental Management and Assessment (IEMA), November 2015. Shaping Quality Development. IEMA.

¹⁸ European Commission, 2017. Environmental Impact Assessment of Projects Guidance on Scoping. Luxembourg.

- 2.8 In accordance with the EIA Regulations, this EIA has been undertaken based on the proposed development, as described in ES Chapter 4: Proposed Development Description and ES Chapter 5: Demolition and Construction Environmental Management, of this Volume.

EIA Process

- 2.9 EIA is a process that identifies the likely significant environmental effects (both beneficial and adverse¹⁹) of a proposed development. The process aims to prevent, reduce and mitigate any significant adverse environmental effects, where these are identified, and to enhance any beneficial effects. Proposed developments to which EIA is applied are those that are likely to have significant effects on the environment by virtue of factors such as their nature, size or location.
- 2.10 The process and outcomes of the EIA are presented in a single document known as an environmental statement (ES). The contents of an ES are prescribed by the EIA Regulations and should be a clear and concise summary of the proposed development and its likely environmental effects - including direct, indirect and cumulative effects - on the natural, built and human environments. The ES is submitted to a relevant competent authority (in the case of planning applications, to local planning authorities) to accompany an application for planning permission. In this way, the aim of EIA is to protect the environment by ensuring that a local planning authority, when deciding whether to grant planning permission for a project which is likely to have significant effects on the environment, does so in the full knowledge of the project's likely significant effects and takes this into account in the decision-making process. Alongside this, an EIA's objective is also to ensure that the public and statutory consultees are given early and effective opportunities to participate in decision making procedures.

Screening

- 2.11 Screening is the term in the EIA Regulations used to describe the process by which the need for EIA is considered in respect of a proposed development. Some developments are automatically subject to EIA due to their size, nature and effects. These projects, known as Schedule 1 developments, include mainline railways, airports, waste facilities and large power stations. The proposed development is not such a project.
- 2.12 The need for an EIA for all other projects is determined on the basis of the following set criteria:
- The development is within one of the classes of development stated in Schedule 2 of the EIA Regulations; AND
 - EITHER it meets or exceeds the size threshold for that class of development in Schedule 2; OR a part of the project is in a sensitive area; AND
 - It is likely to have significant effects on the environment by virtue of factors such as its nature, size, or location.
- 2.13 These are known as Schedule 2 developments. Given the scale of the proposed development and the location of the application site, it is accepted by the Applicant that the proposed development has the potential to have significant effects on the environment and that it falls within Schedule 2 paragraph 10(b) within the category of 'Urban Development Project'. The proposed development will exceed the applicable size threshold for Urban Development Projects because more than 150 dwellings are proposed and/or the non-dwelling house floor space area will exceed 10,000 m² gross external area (GEA). Given the size and nature of the proposed development, an EIA has been undertaken and the results are reported in this ES. Accordingly, a request for formal screening to RBC was not considered necessary.

¹⁹ The use of 'neutral' can also be applied to certain assessments when determining significance of effects (e.g. due to their guidance, a townscape and visual impact assessment can result in a 'moderate neutral' effect, which would be classed as 'significant'). In this instance neutral does not only cover

Scoping

- 2.14 Scoping is the term used in the EIA Regulations whereby an applicant can request a formal opinion from the local planning authority on the content of an ES and the extent of the information to be considered in the assessments. The purpose of scoping is to focus the EIA on the environmental issues and potential impacts which need the most thorough attention; to identify those which are unlikely to need detailed study; and to provide a means to discuss methods of impact assessment so as to reach agreement on the most appropriate.
- 2.15 The EIA Scoping Report was formally submitted to the RBC on 05 December 2019 and accompanied a request for a formal EIA Scoping Opinion pursuant to Regulation 15(1) of the EIA Regulations. The EIA Scoping Report is provided in Technical Appendix 2.1 of ES Volume 3, and sets out a description of the emerging proposed development; the potential key environmental impacts and likely effects to be considered as part of the EIA; as well as the proposed approach that would be adopted for the EIA including the proposed scopes and assessment methodologies to predict the scale of effects and to assess the significance in each case.
- 2.16 A formal EIA Scoping Opinion has not been received at the time of submitting this application. Therefore, the EIA has been undertaken in accordance with the proposed scope and methodologies as set out in the EIA Scoping Report.
- 2.17 As part of the EIA scoping process, technical consultations were undertaken with:
- officers at the RBC in respect of socio-economics, air quality, noise, ground contamination and townscape and visual; and
 - EA and Thames Water in respect of the FRA.

Scope of EIA

Non-Significant Issues

- 2.18 The aim of the EIA scoping process is to ensure that the EIA is proportionate and focussed only on the likely significant environmental effects of the proposed development.
- 2.19 Accordingly, the EIA scoping process identified that the proposed development is unlikely to give rise to significant environmental effects in respect of the following environmental topics and therefore would not need to be assessed as part of the EIA process:
- Archaeology;
 - Transport and Accessibility;
 - Ground Conditions and Contamination;
 - Water Resources and Flood Risk
 - Ecology;
 - Telecommunication Interference;
 - Climate Change;
 - Major Accidents and Disasters;
 - Population and Human Health; and
 - Waste.

no meaningful change but also situations in which the 'net equation' of positive and negative impacts considered together results in an overall effect which is neither positive or negative on balance.

- 2.20 Justification for scoping these topics areas out of the EIA is provided in Technical Appendix 2.1 and is therefore not repeated here.
- 2.21 Whilst significant environmental effects are not likely to arise in respect of archaeology, transport and accessibility, ground conditions,, water resources and flood risk; ecology; telecommunication interference; climate change; major accidents and disasters; population and human health; and waste and are therefore not required for inclusion within the EIA, the following environmental technical reports were prepared to inform the design process and are included within ES Volume 3: Technical Appendices for information:
- Ground Conditions Preliminary Risk Assessment (PRA) (Technical Appendix 2.2);
 - Ecological Impact Assessment (EcIA) (Technical Appendix 2.3);
 - Flood Risk Assessment (FRA) (Technical Appendix 2.4); and
 - Historic Environment Assessment (HEA) (Technical Appendix 2.5).
- 2.22 These reports confirm that significant effects are not likely to arise in respect of ground contamination, ecology, flood risk and archaeology. Standard good practice, mitigation and enhancement measures identified during the course of preparing these reports were integrated into the development proposals as described in ES Chapter 4: Proposed Development Description and ES Chapter 5: Demolition and Construction Environmental Management.

Potentially Significant Issues

- 2.23 The potentially significant environmental issues that were identified during the EIA scoping process and that have been addressed within the EIA are as follows:
- Socio-Economics (ES Volume 1, Chapter 6);
 - Air Quality (ES Volume 1, Chapter 7);
 - Noise and Vibration (ES Volume 1, Chapter 8);
 - Wind Microclimate (ES Volume 1, Chapter 9);
 - Daylight, Sunlight, Overshadowing and Solar Glare (ES Volume 1, Chapter 10);
 - Cumulative Effects (ES Volume 1, Chapter 11);
 - Townscape and Visual (ES Volume 2, Chapter 1); and
 - Built Heritage (ES Volume 2, Chapter 2).

EIA Approach

Consideration of Alternatives

- 2.24 The EIA Regulations require that the Applicant provides an outline of any alternatives studied and to provide an indication of the reasons for selecting the preferred alternative taking into account environmental effects. The EIA Regulations do not define the term 'alternative' and good practice has tended to consider alternative design proposals and to explain the process through which the proposed development has evolved.
- 2.25 ES Volume 1 Chapter 3: Alternatives and Design Evolution explores the objectives of the proposed development and describes how the development proposals have evolved in response to environmental and planning opportunities and constraints, as well as consultation comments.
- 2.26 The following alternatives have been considered:
- The 'Do-Nothing' alternative where the existing site conditions remain unchanged with no redevelopment; and
 - Alternatives considered in site selection and the course of the design process (such as land uses,

layouts and designs) taking into account environmental and other relevant planning and design constraints as part of the design evolution.

Baseline

- 2.27 The purpose of the EIA is to predict how environmental conditions may change as a result of a proposed development and to specify any investigative measures. This requires that the current environmental conditions and those in the future, are established. This is referred to as the 'baseline' and is usually established through a combination of desk-based research, site survey and empirical studies and projections. Together, these describe the existing and future character of a site and the value and vulnerability of key environmental resources and receptors, against which any changes or effects resulting from a proposed development can be identified, understood and assessed. For the EIA of the proposed development, the baseline represents the existing environmental conditions of the application site and the surrounding study area at the time of the assessments as described in ES Chapter 1: Introduction. The technical assessments in ES Volume 1 (6 - 10) and ES Volume 2 (1 -2) provide a description of topic specific baseline conditions against which the proposed development has been assessed.
- 2.28 For the air quality and noise and vibration assessments, consideration has been given to a projected environmental condition in the future at 2025, which is the projected year of completion of the proposed development.
- 2.29 The baseline conditions have been characterised by means of desk studies, application site visits, surveys and modelling.

Receptors

- 2.30 Receptors that may be sensitive to potential environmental impacts as a result of the proposed development, can be summarised as follows, with further detail provided in respective technical assessments:
- Existing community facilities in proximity to the application site, in particular; dentists and GPs and hospitals; schools including the nearby E P Collier Primary School; Thameside Primary, The Heights Primary and Civitas Academy;
 - Existing open space, outdoor sport facilities and parks;
 - Existing residential occupants in proximity to the application site, in particular those along Vastern Road and Caversham Road;
 - Existing commercial occupants on-site and in proximity to the application site;
 - Future residential and commercial occupants of the proposed development;
 - Potential buried heritage assets on-site;
 - Existing above ground heritage assets such as listed buildings and conservation areas, most notably those located within 250 m of the application site (Main Building of Reading General Station (Grade II*). In addition, the locally listed building, No. 55 Vastern Road;
 - Existing Surrounding Townscape Character;
 - Local views;
 - Local Air Quality;
 - Existing transport infrastructure, in particular the local highway network and public transport facilities;
 - Pedestrians and users of existing and proposed amenity areas;
 - Existing water resources, in particular ground water and public potable water supplies; and
 - Existing ecological receptors.

Impact Assessment

Basis of EIA

- 2.31 The application is made in outline. In accordance with the EIA Regulations and case law, the EIA has been undertaken based on the:
- Application site as shown and described in Chapter 1: Introduction, as well as the individual technical assessments of this Volume and ES Volume 2; and
 - Proposed development as shown and described in ES Chapter 4: Proposed Development Description and Chapter 5: Demolition and Construction Environmental Management of this Volume.
- 2.32 In accordance with the EIA Regulations and case law²⁰, an outline planning application can be subjected to EIA so long as there is sufficient information provided in the ES to enable the local planning authority, in this case the RBC, to form a view on all the likely environmental effects of the project as a whole and there is sufficient prescription in how the future details are to be submitted for approval. In this case the Applicant is volunteering parameters on the basis that the reserved matters must fit within the scope of these parameters.
- 2.33 The assessments have been undertaken on this assumption i.e. that the reserved matters brought forward for the proposed development will fall within the parameters that have been tested. Adopting this approach allows the EIA to be carried out in a manner which is legally robust. In order to ensure that the proposed development remains strictly within the scope of the assessment, RBC will be invited to impose planning conditions on any resultant planning permission requiring that the details to be submitted for approval at a later date must be in accordance with the assumptions and commitments assessed at this outline stage of the application.
- 2.34 The outline planning application seeks to reserve all matters associated with land use; scale and massing; internal layout; appearance; and landscaping. Therefore, these matters have been defined by means of the following:
- Development Parameters (Schedule and Plans);
 - Design Code; and
 - Associated maximum area schedules (and minimum in the case of Use Classes A1-A5, D1-D2, Retail units/ Community Facilities/ Gym) and an indicative residential unit and tenure.
- 2.35 The Development Parameters identified and assessed through the EIA comprise the following:
- Maximum development footprint;
 - Site access and egress points;
 - Maximum building plots;
 - Maximum plot heights (residential, non-residential, and mixed use);
 - Maximum quantum and type of land use;
 - Minimum areas of open space; and
 - Extent of basement footprint and depth.
- 2.36 The parameter plans are presented in Chapter 4: Proposed Development Description, and in summary comprise:
- Development Footprint;

- Site Access and Egress.
- Building Plots;
- Maximum Building Heights (residential, non-residential, and mixed use); and
- Basement Footprint.

- 2.37 The following supporting documents have been considered during the EIA for the proposed development:
- Ground Conditions Preliminary Risk Assessment (PRA) (Technical Appendix 2.2);
 - Ecological Impact Assessment (EcIA) (Technical Appendix 2.3);
 - Flood Risk Assessment (FRA) (Technical Appendix 2.4); and
 - Historic Environment Assessment (HEA) (Technical Appendix 2.5).
- 2.38 Where information is not available due to the outline nature of the proposed development, the EIA has made reasonable assumptions which are clearly set out and which are based on professional experience of developments of a similar type and scale.

Sources of Proposed Development Information

- 2.39 In addition to the above, information on the proposed development has been drawn from the following planning submission documents, as appropriate:
- Planning Statement (and appendices);
 - Design and Access Statement (including Landscape Strategy);
 - Statement of Community Involvement;
 - Operational Waste Management Plan and Site Waste Management Plan;
 - Energy Statement; and
 - Utilities Statement.

Assessment Methodology

General

- 2.40 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 application. Instead reference has been made to national, regional and local policy to inform the scope of technical assessments, the assessment methodologies applied and the existence of any sensitive receptors to be considered. The key policies are summarised in Appendix 2.6 as relevant to individual technical topics assessed within the EIA.
- 2.41 Detailed methodologies for the assessment of each of the environmental topic areas scoped into the EIA are provided within each technical chapter of this ES Volume, as well as ES Volume 2 (1 -2); however, in general terms, the assessments have been based upon:
- Review of the existing conditions at and surrounding the application site for the environmental topic area under consideration via various sources of existing information, data and reports;
 - Desk-top studies;
 - Site surveys;
 - Consideration of relevant legislation;
 - Consideration of relevant planning policies (national, regional and local);

²⁰ Rochdale Envelope arising from two cases: R. v Rochdale MBC ex parte Milne (No.1) and R.v Rochdale MBC ex parte Tew [1999] and R. v Rochdale MBC ex parte Milne (NO.2) [2000]. These cases dealt with outline planning applications for a proposed business park in Rochdale.

- Consultations with stakeholders and consultees as appropriate;
 - Consideration of potentially sensitive receptors that could be affected by the proposed development;
 - Use of technical guidance and best practice;
 - Use of quantitative and qualitative assessment methods, professional judgement and expert opinion;
 - Identification of potential environmental impacts and likely effects, with an evaluation of their likely duration, magnitude and significance, taking into consideration embedded mitigation; and
 - Recommendation for additional mitigation and/or enhancement measures, followed by an assessment of the significance of the residual effects.
- 2.42 How the proposed development might affect the environment relies on predictions about what impact a certain action would have. Some predictions can be made using mathematical or simulation models, particularly where there are well known relationships between cause and effect. For example, the degree to which noise levels may increase as a result of additional traffic flows can be predicted using a mathematical equation. The level of air pollution from a known traffic flow can also be predicted from a computer-based simulation model. The visibility of a building can be predicted by accurately superimposing its outline and position over a photograph. Other impacts are less easy to predict in quantitative terms; for example, whilst the extent of a loss of a habitat can be measured, the effect on the abundance of individual species is more difficult to predict. In such cases, the EIA attempts to quantify the anticipated magnitude of impact and scale of effect using empirical experience, literature and professional judgement.
- 2.43 In all cases, the overall approach and specific methods of predicting the likely nature and magnitude of impact, as well as the scale of effect is set out in each of the technical assessments. Where used, recognised specific predictive methods are referenced. Any assumptions or limitations to knowledge are stated. In either case the thought process leading to the conclusions is based on reasonably reliable data and so is considered to be prudent and robust.
- 2.44 Where detailed information on the proposed development has not been available, reasonable assumptions have been made, and have been clearly set out, based on experience of developments of similar type and scale to enable assessment of likely significant effects.
- 2.45 The proposed development has not yet been approved so the conditional tense ('would') has been used to describe the development proposals, situations, potential impacts and likely effects that could/would arise from the introduction of the proposed development, as well as the mitigation measures that would be delivered or would be required upon approval of the proposed development. This approach does not lessen the Applicant's commitment to deliver the proposed development as presented within this ES. Furthermore, each technical assessment (and in particular summary tables at the conclusion of each chapter) clearly sets out the means by which any required mitigation measures relied upon, would be secured.

Proposed Development Stages

- 2.46 The EIA considers the following stages of the proposed development:
- Demolition and Construction Stage;
 - Completed Development Stage; and
 - Cumulative Stage.
- 2.47 Although it is acknowledged that the construction programme of the proposed development would be sequenced over a period of four years, the EIA has assessed and reported on the completed development. This is because no significant delay (i.e. of more than 12 months) is anticipated between the development phases.

Assessment Scenarios

- 2.48 The assessment of the proposed development has been carried out against the current baseline conditions as described in Chapter 1: Introduction and supplemented by relevant existing and updated surveys.
- 2.49 However, in accordance with standard practice, Chapter 7: Air Quality and Chapter 8: Noise and Vibration also considers a 'future baseline' which comprises the year in which the proposed development would be fully completed, occupied and operational. Accordingly, these assessments consider the following scenarios:
- Existing Baseline (2019);
 - Future Baseline (2025), which is the anticipated opening year of the proposed development (existing baseline + future growth derived from tempo factors);
 - Future Baseline + cumulative schemes; and
 - Future Baseline + cumulative schemes + proposed development.
- 2.50 The future baseline is used to account for predicted background growth associated with transport movements on the surrounding network.
- 2.51 In respect of the proposed development's area schedule, it is noted that the Applicant is seeking flexibility in respect of the type and range of floorspace to be delivered. Accordingly, the minimum and maximum floorspace areas for each use class that could be brought forward by the proposed development are presented in Table 4.3 in ES Chapter 4: Proposed Development Description. In respect of socio-economics, noise and vibration, and air quality, the assessment presented in the respective technical chapters has been based upon a worst case interpretation of the minimum and maximum floorspace schedule. In the case of the socio-economics assessment, assumptions have also been made in relation to a likely unit and tenure mix.
- 2.52 In respect of the proposed development's built form, height and massing, the development parameters allow three separate maximum heights for each of the development plots according to the potential future land use. These are referred to as 'Non-Residential', 'Residential', and 'Mixed Use' and their maximum plot heights are presented in Parameter Plans PP-103, PP-104, and PP-105 respectively. In respect of the wind, daylight, sunlight, overshadowing and solar glare, townscape and visual, and built heritage, the assessments have been based upon a worst-case interpretation of the maximum building heights parameter plans.
- 2.53 Further detail in respect of the worst-case assumptions that have informed each of the technical assessment is provided within the relevant ES Chapter.

Mitigation

- 2.54 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 impacts and effects of a development. Mitigation measures relate to the design stage; the demolition and construction stage; or the activities associated with the completed and operational development.
- 2.55 As part of the EIA, an iterative approach has been adopted where significant environmental effects have been avoided where possible in the first instance through the design refinements and iterations, as reported upon within Chapter 3: Alternatives and Design Evolution of this ES. Where adverse environmental effects were identified through early assessment work, opportunities to reduce or control impacts and effects, or in some cases, to compensate for impacts and effects, were identified and incorporated into the proposed development. In addition, opportunities to enhance the beneficial environmental effects of the proposed development have also been sought and incorporated into the proposed development. These are referred to as 'embedded' mitigation.

- 2.56 Within each technical chapter of this ES, the assessment of the effects that are likely to arise as a consequence of a potential impact/change to environmental receptors from the proposed development is initially presented. If any additional mitigation measures are required, further to that already embedded into the proposed development throughout its evolution, these are proposed and the proposed development is reassessed to ascertain the likely residual effects and the likely significant environmental effects. This is reported on within each technical assessment of the ES.
- 2.57 In all cases, mitigation measures are presented as embedded, specific commitments or statements of fact. It is anticipated that the implementation of mitigation identified throughout the ES, would be secured by means of approval of the planning drawings, appropriately worded planning conditions, planning obligations secured pursuant to section 106 of the Town and Country Planning Act 1990, the collection of any applicable community infrastructure levy (CIL) or through other statutory and building control regimes.

Impacts and Effects

- 2.58 Unless otherwise required by published assessment guidance (such as air quality), the EIA has made distinction between:
- impacts: the change or action; and
 - effects: the result/consequence/outcome of the change.
- 2.59 As a general rule, the EIA assesses the effects that are likely to arise as a consequence of a potential impact/change to environmental receptors following the application/consideration of embedded mitigation measures.
- 2.60 A range of likely effects have been considered, including direct or indirect (or secondary) and cumulative:
- Direct effects are those which arise as a direct consequence of a project action (e.g. the loss of habitat or the run-off of surface water to a watercourse);
 - Indirect effects include, for example, the decline in the abundance of a species as a result of the loss of habitat or the damage to aquatic vegetation as a result of water pollution. Other common examples include the effect on air quality and ambient noise as a result of increased traffic movements; and
 - Inter- and Intra-project cumulative effects are those that could arise concurrently (refer to Cumulative Effects section later in this chapter).
- 2.61 Furthermore, consideration has been given to the temporal and spatial nature of effects including permanent or temporary; reversible and irreversible; short-, medium- or long-term; local, borough, and national levels. In the context of the proposed development, temporary (short- and medium-term) effects would be typically those associated with the demolition and construction works, and permanent (long-term) effects would typically be those associated with the completed and operational development.
- 2.62 Typically, local effects would be those affecting receptors neighbouring the application site, whilst effects upon receptors within the wider study area are assessed at a borough level. Effects upon different parts of the country, or England as a whole, are considered to be at a national level and effects across national boundaries would be considered at an international level (albeit there are no such effects at national or international level).

Significance

- 2.63 The assessment of residual environmental effects is important in that it informs the determination by the local planning authority of the overall acceptability of a proposed development. Determining significance relies on accepted thresholds and criteria where available or, for situations in which such are not available, expert interpretations and value judgments.
- 2.64 Significance is usually a function of the vulnerability or importance (sensitivity) of the resource affected

(receptor) and the magnitude of the potential impact. Importance might be a function of international designation or local relevance. Thus, significance is a concept that can be applied objectively to individual effects. Throughout this ES the same terminology is used to describe these individual effects, unless specific alternative terminology exists in recognised issue specific guidance (e.g. in ES Chapter 7: Air Quality).

- 2.65 Within this ES, significance has been evaluated with reference to definitive standards, accepted/published criteria and legislation, where available. Where it has not been possible to quantify potential impacts and residual effects, qualitative assessments have been carried out, based on expert knowledge and professional judgement. Where uncertainty exists, it has been noted in the relevant assessment and a prudent or conservative approach adopted so that the significance will not be underestimated.
- 2.66 Specific conventions have been developed to define significance, wherever possible, defined and structured as transparently as possible using the following criteria:
- The sensitivity of the receptor to the potential impact, based on a scale of high, medium and low;
 - The magnitude of the potential impact, based on a scale of high, medium, small and unknown;
 - The likelihood of the effect occurring, based on a scale of certain, likely or unlikely;
 - The duration of the effect, based on a scale of short- (temporary), medium- and long-term;
 - The geographical extent of the effects at local, borough, national and international levels; and
 - The reversibility of the effect, being either reversible or irreversible.
- 2.67 Unless indicated otherwise within a technical assessment the duration of the effect is defined as follows:
- Short-term: up to 5 years;
 - Medium-term: 5-10 years; and
 - Long-term: 10 years +.
- 2.68 In order to provide a consistent approach to the presentation of the significance of residual effects, the following terminology has been used throughout the ES to describe the type/nature of residual effect:
- **Adverse** – detrimental or negative effect to an environmental resource or receptor;
 - **Neutral**: an effect that on balance, is neither beneficial nor adverse to an environmental resource or receptor; and
 - **Beneficial** – advantageous or positive effect to an environmental resource or receptor.
- 2.69 The scale of the predicted residual effect has then been classified according to the following semantic scale:
- **Negligible** – imperceptible effect;
 - **Minor** – slight, very short or highly localised effect;
 - **Moderate** – limited effect (by magnitude, duration, reversibility, value and sensitivity of receptor) which may be considered significant; and
 - **Major** – considerable effect (by magnitude, duration, reversibility, value and sensitivity of receptor) which may be more than of a local significance or lead to a breach of a recognised environmental threshold, policy, legislation or standard.
- 2.70 There are some exceptions to this scale due to established terminology for certain topic specific assessments. For example, the Air Quality assessment uses 'slight' instead of 'minor'. This is set out in the relevant chapter.
- 2.71 The specific benchmarks have been established by the project team using available national and local policy together with other relevant guidance, recognised good practice and expert judgement. The development of these benchmarks is explained in more detail in each assessment or technical appendix.

2.72 Throughout the ES, residual effects have been predicted as either 'significant' or 'not significant'. Significant effects are considered material to the planning decision process. Residual effects of 'moderate' and 'major' significance are typically considered significant, but would be dependent on the relevant technical assessment, as well as the existence of published assessment guidance. Where published assessment guidance is not definitive in respect of categorising/determining significant environmental effects, professional judgement would be applied, taking into account the duration, extent and context of the effect, to determine significant effects.

Cumulative Assessment

2.73 The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration is also given to the cumulative impacts and effects which might arise from the proposal in conjunction with other development proposals in the vicinity.

2.74 Two types of Cumulative Effect have been considered within Chapter 11 of the ES, namely:

- Intra Effects: Combined effects of different types of impact or 'impact interactions', for example the multiplying effects arising from noise, dust and visual impacts during the construction of the Proposed Development on a particular sensitive receptor; and
- Inter Effects: Combined effects generated from the proposal together with other planned developments and also referred to as 'in-combination effects'. These other developments may generate their own individually insignificant effects but when considered together could amount to significant cumulative effects, for example, combined townscape and visual impacts from two or more (proposed) developments.

2.75 There is however an exception to this approach. The Townscape, Visual and Built Heritage Assessment in ES Volume 2 follows the good practice guidance produced by the Landscape Institute and Institute of Environmental Management and Assessment, 'Guidelines for Landscape and Visual Impact Assessment' ('GLVIA')²¹ which sets out that an acceptable approach to assessing 'inter-effects' between any given proposed development and cumulative schemes can be as follows:

- to focus "primarily on the **additional effects** of the main project under consideration...on top of the cumulative baseline".

Intra-Project Cumulative Effects

2.76 As mentioned above, there is no established EIA methodology for assessing and quantifying the intra-project cumulative effects of individual effects on sensitive receptors, therefore Ramboll has developed an approach which uses the defined residual effects of the proposed development to determine the potential for effect interactions and so the potential for intra effects of individual effects.

2.77 Intra-project cumulative effects from the proposed development itself on surrounding sensitive receptors during the demolition and construction works and also once the proposed development is completed, have been considered.

2.78 Dependent on the relevant sensitive receptors, the assessment focusses 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 demolition and construction works and the application site, and likely duration of exposure to impacts.

2.79 It should be noted that only residual effects that are 'minor', 'moderate' or 'major' in scale have been considered within this assessment, as 'negligible' effects are, by definition, imperceptible in their nature. Dependent on the relevant sensitive receptors, the assessment will focus 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 will include existing land uses, proximity to the demolition and construction works and the application site, and likely duration of exposure to impacts. The results are presented within a discrete assessment chapter (ES Chapter 11: Cumulative Effects).

2.80 With regard to the potential for cumulative effects to occur, it is anticipated that standard mitigation measures (such as dust suppression measures, use of quiet plant, restrictions on working hours) as referred to in Chapter 5: Demolition and Construction Environmental Management, can be applied to prevent temporary unacceptable effects from the interaction of effects occurring on-site. It is also anticipated that the requirement for a detailed site-specific Construction Environmental Management Plan (CEMP) would form part of the planning conditions, to be imposed by RBC.

Inter-Project Effects

2.81 The EIA Regulations require an assessment of potentially significant cumulative effects of a proposed development along with other 'existing and/or approved projects'. There are no legislative or policy requirements which set out how an inter-project cumulative impact assessment should be undertaken.

2.82 Accordingly, inter-project effects arising from the proposed development in combination with 'cumulative schemes' during the demolition and construction works and also once the proposed development is complete and operational, have been considered in the EIA.

2.83 Each technical ES chapter presents the assessment of combined effects of the proposed development with certain other cumulative schemes. In accordance with Schedule 4 of the EIA Regulations, schemes which are existing and/or approved have been considered, i.e. schemes built or under construction or with approved planning permission. However, to ensure a robust assessment, other reasonably foreseeable schemes that have been submitted but not yet approved have also been taken into consideration in the assessment of effects.

2.84 Spatial considerations and scale of development criteria has been developed based on professional judgement to determine whether cumulative schemes have the potential for cumulative effects when combined with the proposed development's effects. The criteria applied have been developed to account for those schemes which are likely to generate significant effects, which are:

- Have a total floor space area of 10,000 m² gross external area (GEA) and/or comprise >150 residential units; **and**
- Either:
 - Within 1 km of the redline boundary/application site; or
 - Spatially linked to the application site by means of the local road network; or
 - Visible in protected/important views to and from the application site.

2.85 The 1 km study area is considered appropriate as this is generally beyond the distance to which effects are experienced at the proposed development. The viewpoints have been considered based on the extent of visibility and agreed with RBC in advance of the scoping opinion as explained in Volume 2.

2.86 The cumulative assessment has adopted a quantitative assessment where it is relevant, appropriate and reasonable to do so. Where this was not possible a qualitative assessment has been undertaken.

2.87 The list of cumulative schemes that have been considered in the EIA was included in the EIA Scoping Report, and repeated below in Table 2.2. Each technical assessor has reviewed the list and has included within their individual technical assessment those cumulative schemes which have the potential for

²¹ Landscape Institute and Institute of Environmental Management and Assessment, 2013. Guidelines for Landscape and Visual Impact Assessment: Third Edition. New York: Routledge.

cumulative effects. Where a cumulative scheme has been excluded this has been clearly stated within each technical chapter with reasons why.

2.88 The location of each cumulative scheme is shown in Figure 2.1 and the nature of each cumulative scheme is described in Table 2.2 based on publicly available information.

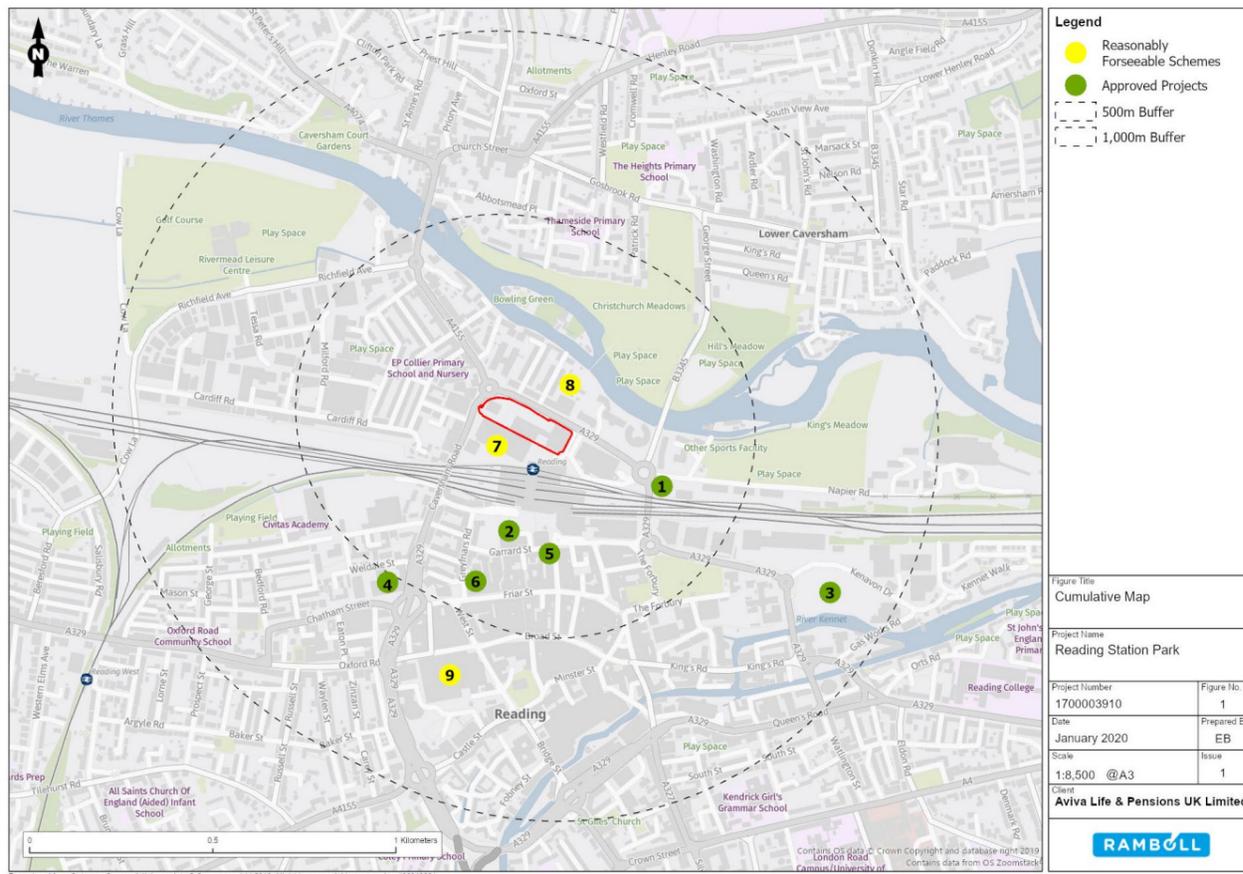


Figure 2.1: Location of Cumulative Schemes

Table 2.2: Description of Cumulative Schemes				
No	Address	App. Ref.	Description of Cumulative Scheme	Assessment Approach
Approved Projects (including Resolution to Approve)				
1	Former BMW Site – Thames Quarter	190809	Erection of a part 13-storey, part 23 storey building comprising 335 apartments in a mix of studio, one-bedroom, two-bedroom and three-bedroom units, residents' lounges, tech-hub, dining room, and cinema room, various rooftop outdoor amenity spaces, concierge/reception with coffee meeting area, gym, residents' storage facilities, post room, ancillary back-of-house facilities, 335 secure cycle parking spaces, car parking spaces, landscaping, and associated works.	Quantitative
2	Station Hill	151426 and 151427	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)	Quantitative

Table 2.2: Description of Cumulative Schemes				
No	Address	App. Ref.	Description of Cumulative Scheme	Assessment Approach
		(as varied by 190441 and 190442 which relate to non-compliance with conditions)	and 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.	
		190465	Application for the approval of reserved matters (access, scale, appearance, layout and landscaping) for Plot E within the development site known as Station Hill submitted pursuant to Outline Planning Permission ref. 190442 and submission of details for approval pursuant to conditions attached to that permission. The proposals comprise the construction of a 12 storey building (plus basement storey) containing 370 'Build to Rent' residential units (Use Class C3), 1,151 m ² (GEA) of flexible retail floorspace (Use Classes A1, A2, A3, A4, A5), cycle storage, car parking, servicing, plant areas, landscaping, new public realm and other associated works (amended description).	
		190466	Application for approval of reserved matters (access, scale, appearance, layout and landscaping) for Plot F within the development site known as Station Hill submitted pursuant to Outline Planning Permission ref. 190441, and submission of details for approval pursuant to Conditions attached to that permission. The proposals comprise construction of a 12 storey (plus basement storey) building containing 168 Build to Rent residential units (Use Class C3), 390 m ² (GEA) of flexible retail floorspace (Use Classes A1, A2, A3, A4, A5, D2), 656 m ² (GEA) of leisure floorspace (Use Class D1 or D2), cycle storage, car parking, servicing, plant areas, landscaping, new public realm and other associated works (amended description).	
3	Kenavon Drive	170509	Demolition of the two existing retail (Homebase and former Toys R Us) structures and the erection of new buildings ranging between 2 and 11 storeys in height, providing 765 (18 x studio, 302x1, 409x2 and 36x3- bed) residential units (Class C3), 5 commercial units (1x flexible Class A1-A4, B1 or D1-D2, 1x flexible D1 or D2, 1x flexible Class A1- A5, 1x flexible Class A3 or A4, 1x flexible A1-A5 or D1-D2 uses), various works to the public realm, including a new riverside square, landscaping, accesses, parking and associated works.	Quantitative
4	Land between Weldale Street	170326	Demolition of all existing buildings (including three retail units) and structures, and erection of new buildings ranging between lower ground and 4 storeys to lower ground and 11 storeys in height, providing 427 (233x1,	Quantitative

Table 2.2: Description of Cumulative Schemes				
No	Address	App. Ref.	Description of Cumulative Scheme	Assessment Approach
	and Chatham Street, Reading		182x2 and 12x3-bed) residential units (Class C3) and one 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).	
5	29 Station Road Reading, RG1 1LG	181930	Demolition of the existing vacant 6-storey retail and office building and erection of a replacement basement and part 4, part 22 (with rooftop plant above) storey building to provide flexible retail (Class A1, A2, A3, A4 or A5) use at part ground floor level, a 135- bedroom hotel (Class C1) at 1 st to 16 th floors and offices (Class B1a) at 17 th to 21 st floors, associated servicing from Garrard Street and other associated works(amended description).	Qualitative
6	52 to 55 Friar Street and 12 Greyfriars Road, Reading RG1 1DX	162210	Demolition of existing building and structures (Class A1) and erection of three new buildings ranging between 6 - 12 (and basement) storeys in height to provide 135 (1xstudio, 54x1, 73x2 and 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 Road, with associated access, parking, servicing, landscaping and engineering works.	Quantitative
Reasonably Foreseeable Schemes				
7	Network Rail Thames Valley Area site office/ Former Royal Mail site	182252 Validated (allocation CR11e)	Outline application considering access, landscaping, layout and scale involving the demolition of all existing buildings and structures (Classes B1a and B2) and erection of new buildings ranging between basement and 2 - 25 storeys in height, providing 658 (79 x studio, 227x1, 335x2 & 17x3-bed) residential units, office accommodation (Class B1a), flexible ground floor Class A1-3 uses, a community centre(Class D1), health centre uses (Class D1) and various works including car parking, servicing, public and private open space, landscaping, highways, pedestrian and vehicular access and associated works.	Quantitative
8	Former Scottish and Southern Energy site	Awaiting application (allocation CR11e)	Demolition of a number of structures on the site and the erection of a new residential scheme (up to 210 units), with a max height of 11 storeys (up to 36 m above ground level) including a new north south pedestrian link, connecting Christchurch Bridge to Vastern Road towards the station as well as drainage infrastructure and landscaping.	Qualitative

Table 2.2: Description of Cumulative Schemes				
No	Address	App. Ref.	Description of Cumulative Scheme	Assessment Approach
9	Broad Street Mall Broad Street Reading, RG1 7QG	182137 (allocation CR12c)	Construction of three residential buildings (Use Class C3) ranging in height from 5 to 22 storeys (Site E to provide 52 units, Site B to provide 139 Units and Site A to provide 172 units) above Broad Street Mall and provision of a podium level amenity area; construction of an 18 storey building on South Court comprising ground and first floor retail (Use Class A1/A2/A3) and residential over upper floors (Use Class C3, Site C to provide 99 units); change of use and extension of Quadrant House to form a 3 storey residential building (Use Class C3, Site D to provide 31 units); and creation of three ground floor retail units (Use Class A1/A2/A3) fronting Dusseldorf Way and Queens Walk.	Qualitative

Assumptions and Limitations

2.89 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 topic have been set out in their respected technical assessment 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 application site and surrounding land uses may change;
- The assessments contained within each of the technical assessments of ES Volume 1 and within ES Volume 2 are based on the current or emerging legislative and policy framework;
- It is assumed that information received from third parties is accurate, complete and up to date;
- The assessments contained within each of the technical assessments of ES Volume 1 and within ES Volume 2 are based upon the planning application drawings submitted as part of the application;
- The assessments contained within each of the ES Volume 1 technical assessments and in ES Volume 2 are based on the assumption that embedded mitigation measures set out in application drawings, through regulatory regimes or via the management controls as set out in ES Chapter 4: Proposed Development Description and ES Chapter 5: Demolition and Construction Environmental Management are implemented;
- The assessments contained within the ES Chapter 7: Air Quality and ES Chapter 8: Noise and Vibration are based on industry-average specifications for construction, mechanical and services plant as project-specific details will be finalised during the demolition and construction planning and procurement stages;
- Demolition and construction works across the application site would take place substantially in accordance with the phasing and programme of works described in Chapter 5: Demolition and Construction Environmental Management;
- Where detailed information has not been available, reasonable assumptions have been made, and have been clearly set out, based on experience of developments of similar type and scale to enable assessment of likely significant effects; and
- Cumulative schemes will be implemented substantially in accordance with information that is publicly available or that has been provided to the Applicant, and subject to the same regulatory regimes and good practice management controls.

Technical Assessment Chapters

- 2.90 A consistent approach to the presentation of EIA findings in the ES has been adopted for each of the technical areas, including:
- an explanation of the information gathering and assessment methodology;
 - a description of the baseline conditions;
 - the identification of the potential impacts arising during the demolition and construction stage and the completed development stage of the proposed development;
 - a description of additional opportunities for mitigation to reduce the significance of any adverse environmental effects, including the requirements for post-development monitoring; and
 - an assessment of the environmental effects these impacts are expected to cause and an evaluation of their significance against defined criteria.
- 2.91 Each environmental topic considered in the EIA has been assigned a separate chapter in ES Volume 1 (Chapter 6-10 inclusive) with the exception of the Townscape and Visual Impact Assessment and Built Heritage Assessment chapters which are assigned separate chapters in ES Volume 2. Within each technical chapter the assessment is presented and reported in the following format:
- Introduction – a brief introduction to the assessment;
 - Consultation Feedback – a summary of the EIA Scoping Opinion and concurrent technical consultations undertaken and where these have been addressed in the assessment;
 - Assessment Scope – an explanation of the spatial, temporal and technical scope that the assessment has been based on.
 - Baseline Characterisation Method – an explanation of how the information relating to the baseline conditions has been procured.
 - Assessment Method and Assessment Criteria- an explanation of the information gathering and assessment methodology, as well as an explanation of the approach to defining the significance of likely environmental effects;
 - Baseline Conditions – a description of the baseline conditions;
 - Assessment of Effects – an assessment of the likely effects of the proposed development and an evaluation of their significance against defined criteria taking into account embedded mitigation;
 - Assessment of Residual Effects and Additional Mitigation – a description of the additional mitigation and enhancement measures, if required, and then an assessment of the likely residual effects of the proposed development;
 - Summary of Residual Effects – a tabulated summary of the conclusions of the assessment;
 - Cumulative Effects – an assessment of inter-project cumulative effects; and
 - Summary – a summary of the assessment.

3 ALTERNATIVES AND DESIGN EVOLUTION

Introduction

- 3.1 The EIA Regulations require the ES to report on the reasonable alternatives (for example in terms of design, technology, location, size and scale) studied by the Applicant, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.
- 3.2 This chapter of the ES therefore explores the objectives of the proposed development, its design evolution and the reasonable alternatives considered. It outlines the analysis of the application site and existing environmental conditions which informed the design evolution of the proposed development. The 'Do Nothing' scenario is also addressed.
- 3.3 Throughout the design process there has been regular consultation with RBC and other key stakeholders. In addition, the Applicant has undertaken a community engagement programme which has also informed the design process.
- 3.4 Further details can be found in the Design and Access Statement and the Statement of Community Involvement (SCI) which accompany the planning application.

Development Objectives

- 3.5 The Applicant's development aspiration for the application site seeks to ensure the comprehensive and high-quality redevelopment of the application site which will optimise the use of the site and integrate positively with the surrounding area.
- 3.6 Accordingly, the overall guiding objectives for the proposed development have been as follows:
 - Create a new urban neighbourhood that is economically thriving and resilient;
 - Produce a flexible development envelope for future reserved matters applications to comply with;
 - Provide a new activated frontage within key routes within the application site;
 - Improve connectivity and permeability throughout the application site; and
 - Work closely with communities and stakeholders.

Development Considerations

Policy Requirements

- 3.7 Development considerations for the application site are set out in the adopted planning policy and guidance documents summarised in Chapter 1 of this ES Volume. These were considered and informed the design of the proposed development.

Site Constraints

- 3.8 Analysis of the existing application site conditions identified the key environmental factors (see ES Chapter 1) and the following physical constraints which were taken into account in the design evolution process:
 - The application site is enclosed to the north and west by Vastern Road and Caversham Road respectively. These roads are busy and congested, they present a source of noise and high level of vehicle emissions to existing and future site users.

- The majority of the application site (approximately 95 %) is located in Flood Zone 2 (Medium Probability). Small areas (<5 %) in the west and centre of the site are located in Flood Zone 1 (Low Probability), and a small portion (< 5 %) of the north-eastern site boundary is located in Flood Zone 3 (High Probability) where the annual probability of flooding from rivers is 1 in 100 (1 %) or greater, and from the sea is 1 in 200 (0.5 %) or greater. This informed site levels and location of habitable rooms.
- The existing buildings offer a limited amount of active frontage onto the Vastern and Caversham Roads as they are set back from these boundaries and discourage pedestrian use as there are no through routes provided.
- The application site has on-site trees predominantly around the application site perimeter. Whilst none of the trees are subject to a Tree Protection Order (TPO), consideration was given to maximising the number of trees to be retained and minimising impacts to retained trees during the demolition and construction works, with continued measures for protection once the proposed development has been completed.
- In addition to the arboricultural survey, ecological surveys were undertaken to determine any constraints in respect of ecology, in particular, protected species (roosting bats) and nesting birds.
- There are low rise terrace houses to the north of the application site, on the other side of Vastern Road, which have informed the height and massing proposals.

Environmental Considerations

- 3.9 Analysis of the existing application site conditions identified the key environmental factors (as summarised in ES Chapter 1: Introduction). The following factors have influenced the design evolution process.

Socio-Economics

- 3.10 The application site currently comprises retail warehouse units housing Aldi, Mothercare, The Range, Majestic Wines and a TGI Fridays. These uses offer job opportunities and contribute to spending in the local economy. The proposed development would create a range of employment opportunities both through the demolition and construction stage and the completed development stage.

Air Quality

- 3.11 The application site is located within an AQMA declared under the Environment Act 1995, which incorporates the whole of the RBC. The AQMA has been designated due to NO₂ and PM₁₀ concentrations in excess of the current National Air Quality Standard objectives.
- 3.12 The proposed development could introduce a new residential population, and therefore early specialist design advice was provided to ensure that the application site is suitable for residential occupation and that residents would not be adversely affected by both existing and future air quality.

Noise

- 3.13 The application site is located in an area where railway and road traffic noise are noticeable. Baseline noise surveys were undertaken at the application site to characterise existing conditions and noise modelling undertaken to inform potential mitigation measures.

- 3.14 Measures to minimise noise emissions from the proposed development (such as those from demolition and construction works, plant, servicing and delivery arrangements and vehicle movements) were actively explored during the design evolution process.

Daylight, Sunlight and Overshadowing

- 3.15 Various height and massing options for the application site were explored during the design evolution process, taking into consideration the strategic policy requirements for the application site's redevelopment and the daylight, sunlight and overshadowing amenity of sensitive receptors.
- 3.16 The proposals were subject to daylight, sunlight and overshadowing assessments to consider impacts to the surrounding sensitive receptors, as well as at the potential on-site residential units and open space provisioning.
- 3.17 These assessments resulted in the refinement of building heights and massing, and where possible, building plots were set back or reduced in height to improve daylight and sunlight levels.

Townscape, Views and Built Heritage

- 3.18 The application site and its immediate setting fall within Reading Tall Building Strategy (RTBS) (2018) Character Area (CA) 22: Vastern Road. The northern edge of the application site immediately abuts CA12: Caversham Road. CA1: Station Hill abuts the boundary of CA22 to the south and CA23: King's Meadow abuts the northern and eastern boundaries of CA22.
- 3.19 There are no established key views within CA22 but views towards it are obtained from elevated land to the north and Oxford Road to the west. The Reading Station Area Framework (RSAF, 2010) sets out the location for two new views to be created within the CA from the Station Square North and Christchurch Bridge.
- 3.20 The CA is considered to be suitable for tall buildings, albeit not along the roadsides and the tallest structures should be nearest to the railway line. The RSAF includes a number of corridor views towards the application site from the west and north and a view to be created from the station subway south of the application site. Accordingly, careful consideration was given to the design proposals and their visual impact.

Transport and Accessibility

- 3.21 The application site is located within an established mixed-use area, comprising both commercial and residential land uses. The site benefits from good transport infrastructure in close proximity which facilitates travel by non-car modes such as walking, cycling and public transport.
- 3.22 The emerging proposals have sought to maximise permeability across the proposed development. At the detailed design stage, the proposed movement routes would be further developed to ensure that an appropriate permeability across the application site is delivered.
- 3.23 Measures to minimise the demolition and construction transport impacts of the proposed development were explored, including other potential routes for construction traffic to and from the application site.

Climate Change

- 3.24 Due to the outline nature of the development proposals, opportunities to integrate climate change resilience and adaptation have been limited to the following:
- Incorporation of measures to reduce the risk of flooding through sustainable drainage.
- 3.25 At the detailed design stage, opportunities would be sought to future-proof the proposed development against climate change effects; whilst at the same time, limiting the proposed development's contribution to climate change. Accordingly, measures would be considered and explored during the detailed design process to:

- minimise water consumption, such as the installation of water saving devices;
- reduce carbon dioxide emissions and overheating through energy efficient design;
- minimise the generation of waste and to maximise re-use or recycling;
- use native species within the landscape proposals;
- avoid overheating within residential units; and
- sustainably source and procure materials with lasting life spans.

Health and Wellbeing

- 3.26 Due to the outline nature of the development proposals, opportunities to integrate health and wellbeing have been limited to the provision of:
- a range of residential unit types and tenures;
 - a range of open space and amenity space;
 - safe, accessible spaces; and
 - opportunities for walking and cycling.
- 3.27 At the detailed design stage, opportunities would be sought to promote healthy lifestyles and to improve personal wellbeing as far as reasonably possible. Accordingly, the Applicant would seek to deliver:
- high quality homes, appropriately sized, energy efficient, warm and dry;
 - access to new open space amenity;
 - internal and external noise levels that comply with the World Health Organisation (WHO) requirements;
 - appropriately designed public open space to enable active play and opportunities for community engagement; and
 - appropriately designed public open space that comply with 'secure by design' principles.

Environmental Opportunities

- 3.28 The redevelopment of the application site presents the following opportunities:
- **Ground Contamination** - Due to the application site's industrial past, hotspots of contamination may be present. The proposed development offers the opportunity to improve conditions by virtue of the removal of existing made ground as part of the proposed excavation for the surface water attenuation tanks;
 - **Landscape, Amenity and Public Realm** - The proposed development represents an opportunity to provide public and private amenity space; landscaping and playspace to create a more accessible and welcoming environment;
 - **Ecology** - The proposed development provides opportunities for ecological and biodiversity enhancement through the planting of new trees and landscaping; and
 - **Socio-Economics** - The proposed development presents the opportunity to provide high-quality residential units; to create employment opportunities and to generate additional local spend in the area.

Alternatives

Do-Nothing

- 3.29 The 'Do-Nothing' alternative is a hypothetical alternative considered in EIA as the basis for comparing the development proposals under consideration.

3.30 The application site could be left in its current state as a retail park. This would result in the following environmental effects:

- **Socio-economics** – The application site currently comprises retail warehouse units. In the Do-Nothing scenario there would be no opportunity to deliver housing in accordance with planning policy objectives and no new employment opportunities which would be generated through both the demolition and construction and completed development stage;
- **Transport** – in the Do-Nothing scenario, there would be no improvement in neighbourhood connectivity and permeability and no reduction in the number of vehicle movements on the surrounding road network;
- **Health and Wellbeing** – in the Do-Nothing scenario, there would be no improvement in public realm or creation of open space which would provide amenity areas for on and off-site users; and
- **Ecology** - No improvement in biodiversity.

3.31 The Local Plan provides a clear framework for development on the application site and in the wider area. If the Applicant were not to bring forward the proposed development, the objectives of the Local Plan would not be met.

3.32 Consequently, the Applicant ruled out the 'Do-Nothing' alternative.

Alternative Sites

3.33 No alternative application sites have been considered by the Applicant for the following reasons:

- The application site is owned by the Applicant and therefore application sites belonging to third parties were not given consideration;
- The application site is suitable for this type of development, as demonstrated by site allocation within adopted local policy; and
- The proposed development presents an opportunity to optimise the use of land in accordance with the NPPF.

Alternative Designs and Layouts

3.34 The proposed development submitted for approval is the result of a thorough analysis of environmental constraints and opportunities, access issues and market demand. Consultation with RBC, the statutory consultees, the local community and other local stakeholders has been a key influence in design evolution.

Alternative Layouts

3.35 The following principles and parameters have been carried forward for the proposed development:

- The layout design continues the south to north pedestrian connection, which links the south of Reading to the north and onwards, creating a quality pedestrian connection from the train station to Caversham;
- The development plots respond to vehicular and pedestrian routes to ensure continuity and additional connections within the local movement network; and
- The location and heights of the development plots within the application site have been refined to respond to provision of daylight and sunlight amenity to surrounding receptors.

3.36 Following discussions with RBC, the separation distance between Plots C and D were increased to reflect RBC aspirations for connectivity and increased public realm, as shown in Figure 3.1. This amendment to the proposed development parameters improves visibility from the railway underpass/Station Square north and Vastern Road in line with the RSAF.

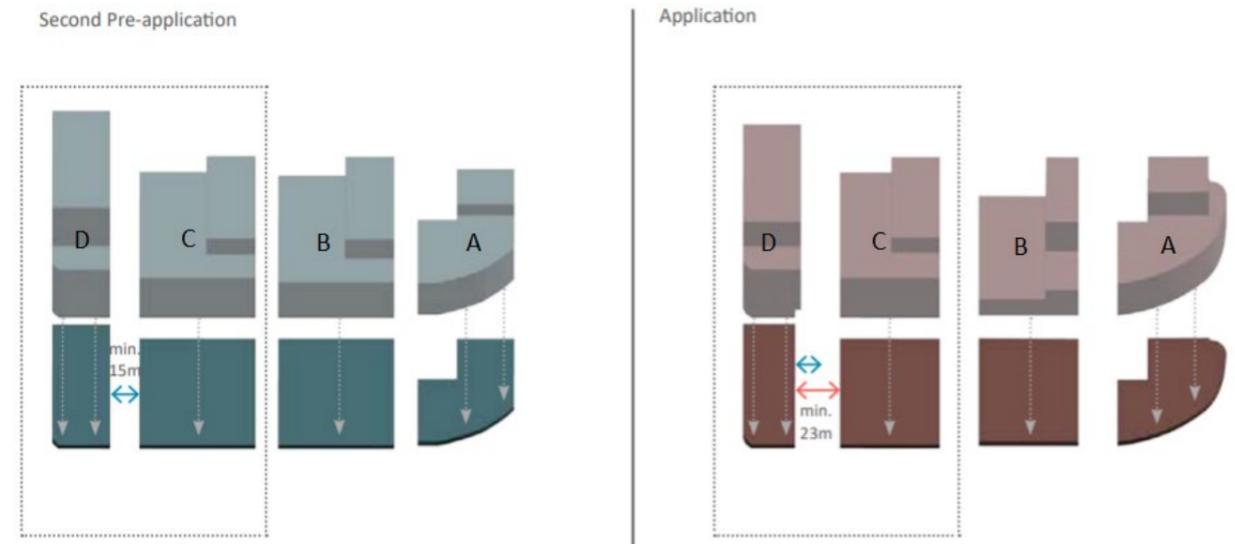


Figure 3.1: Amendment to Separation Distances of Plot C and D

3.37 Further amendments to the layouts following discussions with RBC include:

- The development footprint previously extended to the junction of Vastern Road with Caversham Road. This has been amended to allow for retention of existing trees;
- Distance between development plots has been widened from the minimum 12 m required for commercial use to 15 m to allow for more public realm; and
- Plots A and B were set back from the application site boundary with Vastern Road to allow for a future shared pedestrian and cycle route to be accommodated, should this be progressed by RBC.

Alternative Heights and Massing

3.38 Throughout the design evolution, alternative height and massing options were explored to ensure there would be no significant impacts to surrounding sensitive receptors with regard to daylight and sunlight amenity. In addition, the RSAF recommends future developments to create a gradient of height and density that would reach maximums around Station Square North.

3.39 Following discussions with RBC, the height of Plot D was reduced to demonstrate a clearer hierarchy between Station Hill and the application site. In order to maintain the RSAF's recommendation for the allocated location of a Local Landmark, Plot D was reduced by 14 m, equating to four office storeys or five residential storeys, as shown in Figure 3.2.

3.40 Following extensive daylight and sunlight assessments, the height of the proposed development along Vastern Road was lowered to ensure no unacceptable impact on neighbouring properties. Additional guidelines relating to maximum building heights have been captured in the parameters development schedule to ensure that the tallest elements will not have an adverse effect on existing and future sensitive receptors. The Development Parameters restrict the width of tall elements. In addition, use related height parameter plans were developed following additional daylight and sunlight assessments to ensure that different scenarios are individually covered for schemes coming forwards at reserved matters stage.



Figure 3.2: Alternative Heights of Plot D

Alternative Materials

3.41 Due to the outline nature of the proposed development, alternative materials were not explored for this stage of the planning process. A Design Code has been developed to support the planning application for the proposed development and would inform the detailed design.

Public Engagement and Consultation

3.42 During the design process and in preparing the application, the Applicant carried out a programme of statutory and community consultation.

3.43 The Applicant's approach to consultation comprised the following:

- Meetings with officers from the RBC and relevant statutory consultees; and
- Two public exhibition events undertaken on the 25 and 26 September 2019 and 30 and 31 October 2019.

3.44 The verbal and written feedback provided by local stakeholders as part of the consultation process has directly fed into the evolution of the proposed development.

3.45 A detailed description of the consultation undertaken is provided in the SCI appended to the supporting Planning Statement which accompanies the application.

3.46 In addition to public consultation, pre-application meetings were held with the RBC during the preparation of the planning application. Further information on design-related consultation can be found in the Design and Access Statement which accompanies the application.

Conclusion

3.47 The Applicant's objective for the proposed development is to provide a high-quality development supported by publicly accessible, open space to create an accessible, safe and sustainable urban extension.

3.48 Key environmental considerations informed the design evolution process, especially in the case of Daylight, Sunlight and Overshadowing and Townscape, Built Heritage and Visual.

3.49 No alternative sites were considered for the proposed development as the application site is owned by the Applicant and presents an opportunity to maximise the use of land in accordance with the NPPF.