

4 Environmental Assessment Methodology

Introduction

- 4.1 This chapter of the Environmental Statement (ES) sets out the approach taken to the Environmental Impact Assessment (EIA) of the project. The chapter also includes details of the consultation undertaken to date and the overall approach to the assessment of the likely significant effects of the Proposed Development. Further details of assessment topic specific methodologies, such as survey methods, are provided in each assessment topic chapter of this ES.

Scope

- 4.2 Scoping is the process of identifying the issues to be addressed during the EIA process. Scoping is an important preliminary procedure, which sets the context for the EIA process.
- 4.3 Regulation 15 of the EIA Regulations allows an applicant to request that the local planning authority sets out its opinion (known as a Scoping Opinion) as to the issues to be addressed in the ES. Whilst there is no formal requirement in the EIA Regulations to seek a Scoping Opinion prior to submission of an ES, it is recognised as best practice to do so.
- 4.4 A Scoping Report was submitted to Reading Borough Council on 22 January 2018. The Scoping Report is presented at Appendix 4.1 of this ES.
- 4.5 A Scoping Opinion was provided by Reading Borough Council on 29th March 2018 and is included at Appendix 4.2 of this ES. Further communication to clarify the points raised in the Scoping Opinion was undertaken, the details of which are provided in Appendix 4.3. The scope of the ES has taken into account the points raised in the Scoping Opinion, the consultation responses at the site and expert knowledge regarding current legislative requirement and good practice.
- 4.6 The following consultees have been contacted as part of the scoping process with Reading Borough Council:
- Network Rail;
 - Environment Agency;
 - Berkshire Archaeology;
 - Reading Borough Council Ecology/Planning Natural Environment Team;
 - Reading Borough Council Environmental Protection;
 - Natural England; and
 - Reading Borough Council Transport Strategy.
- 4.7 Appendix 4.4 provides a more detailed overview of the key points raised in the Scoping Opinion or by consultees for each assessment topic area, together with a response to these. The ES

assessment topic chapters also provide a summary of the key points raised during consultation with both statutory and non-statutory consultees.

4.8 The scoping exercise highlighted a number of areas that consultees wished to see addressed within the ES. Taking into account the nature, size and location of the project, the information provided within the Scoping Opinion and other consultation responses provided throughout the EIA process, the following assessment topics have been identified as requiring consideration within this ES:

- Historic Environment (Chapter 5)
- Townscape and Visual Resources (Chapter 6);
- Geology, Hydrogeology and Ground Conditions (Chapter 7);
- Hydrology and Flood Risk (Chapter 8);
- Traffic and Transport (Chapter 9)
- Air Quality (Chapter 10);
- Noise and Vibration (Chapter 11); and
- Community and Socio-economics (Chapter 12).

4.9 Additional environmental information relevant to the ES is provided in Chapter 13.

Climate Change

Climate Change Resilience

4.10 Resilience to future climate change has been considered during the design process. The design has taken into account, for example, future flood risk and resilience to extreme weather events. The conceptual surface water drainage strategy for the project has been designed to take into account the 1 in 100 year flood risk event, plus up to 40% allowance for climate change. Further details are provided in Chapter 2: *Project Description* and Chapter 8: *Hydrology and Flood Risk* of this ES.

Changes to Future Environmental Conditions

4.11 Consideration of predicted changes in baseline environmental conditions, including changes resulting from climate change, has been set out within each ES topic chapter (Chapters 5 to 12), where robust information is available at the time of writing. Details are provided in the methodology section of this chapter.

4.12 The assessment of effects for each assessment topic has taken into account identified trends or changes predicted to arise as a result of climate change.

Effects of the Proposed Development on Climate

- 4.13 Atmospheric emissions associated with use of the Proposed Development are assessed within Chapter 8: *Air Quality* of the ES. These include emissions from construction and operational traffic.

Topics Scoped Out of the EIA Process

- 4.14 Effects on other aspects of the environment are not likely to be significant. The topics scoped out of the assessment are set out in the Scoping Report (Appendix 4.1) and summarised below.

Planning Policy

- 4.15 The ES provides an overview of relevant legislative and planning policy context within each topic chapter. The assessment has had regard to national and local policy documents, where relevant. A separate chapter on planning policy has not been included within the ES, however, a Planning Supporting Statement has been prepared to support the planning application.

Material Assets

- 4.16 The EIA Regulations refer to 'material assets', including architectural and archaeological heritage. The phrase 'material assets' has a broad scope, which may include assets of human or natural origin, valued for socio-economic or heritage reasons. Material assets are in practice considered across a range of topic areas within an ES, in particular the topic areas of historic environment (Chapter 5) and socio-economics (Chapter 12). Therefore, no separate consideration of material assets is considered necessary.

Radiation and Heat

- 4.17 Given the nature of the proposed development, no significant radiation or heat effects are anticipated and these effects have been scoped out of the assessment. The use of the combine heat and power (CHP) plant proposed for the development is considered within the air quality (Chapter 10) and noise and vibration (Chapter 11) chapters of this ES.

Greenhouse Gases

- 4.18 Greenhouse gas emissions can occur throughout the lifecycle of a development, including during the construction and operation of a proposed development. This can be affected by factors such as material use and energy demand.
- 4.19 With respect to construction and embodied carbon, the design of the proposed development will give consideration to measures to minimise and mitigate greenhouse gas emissions, where possible, such as measures to control energy demand and improve energy efficiency. Such measures are outlined in the project description chapter (Chapter 2) of this ES. The operational process of the proposed development would not include the combustion of materials.

Health

- 4.20 Consideration has been given to the potential health pathways associated with the proposed development. The following potential health effects have been identified:
- Changes in local air quality during construction (dust);

- Changes in traffic flows, noise levels and air quality during construction and operation;
 - Identification of asbestos containing materials; and
- 4.21 All of these potential effects have been considered within the EIA process, as part of the assessment of air quality and noise. These assessments are included in Chapters 9: *Traffic and Transport*, 10: *Air Quality*, 11: *Noise and Vibration* and 12: *Community and Socio-economics* of the ES.
- 4.22 An asbestos survey will be undertaken prior to any demolition activities. Should any asbestos containing materials be identified within the building to be demolished, the areas would be isolated and specialist asbestos removal contractors would be utilised in accordance with the Control of Asbestos Regulations 2012.
- 4.23 Given the nature of the proposed development and the lack of any additional health pathways, a separate health assessment in the form of an additional chapter or Health Impact Assessment is not considered necessary in this instance and has been scoped out of the EIA process.

Ecology

- 4.24 The scoping process undertaken for the Proposed Development resulted in the agreement that the effects in relation to ecology and nature conservation are not likely to be significant. Further details on the rationale behind this, along with recent survey results are included in Chapter 12: *Further Information*.

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Relevant EIA Guidance

- 4.25 The EIA process has taken into account relevant government or institute guidance, including:
- Ministry of Housing, Communities and Local Government (MHCLG) (2014, updated 2018) Planning Practice Guidance at <http://planningguidance.planningportal.gov.uk>;
 - Department of the Environment, Transport and the Regions (DETR) (1997) Mitigation Measures in Environmental Statements. HMSO;
 - Highways Agency et al. (2008) Design Manual for Roads and Bridges, Volume 11, Section 2, Part 5. HA 205/08;
 - Institute of Environmental Management and Assessment (2004) Guidelines for Environmental Impact Assessment;
 - Institute of Environmental Management and Assessment (2011) The State of Environmental Impact Assessment Practice in the UK. Special Report;
 - Institute of Environmental Management and Assessment (2015a) Environmental Impact Assessment Guide to Shaping Quality Development;

- Institute of Environmental Management and Assessment (2015b) Climate Change Resilience and Adaptation; and
 - Institute of Environmental Management and Assessment (2016) Guide to Delivering Quality Development.
- 4.26 Other topic specific legislation and good practice guidance, including the National Planning Policy Framework (MHCLG, 2018) has been considered and details of these can be found in the topic chapters within this ES.

Key Elements of the General Approach

- 4.27 The assessment of each environmental assessment topic forms a separate chapter of the ES. For each environmental assessment topic, the following have been addressed:
- Methodology and assessment criteria;
 - Description of the environmental baseline conditions;
 - Measures adopted as part of the project, including mitigation and design measures that form part of the project;
 - Identification of likely effects and evaluation and assessment of the significance of identified effects, taking into account any measures designed to reduce or avoid environmental effects which form part of the project;
 - Identification of any further mitigation or monitoring measures envisaged to avoid, reduce and, if possible, remedy adverse effects (in addition to those measures that form part of the project); and
 - Assessment of any cumulative effects with other developments planned in the area.

Methodology and Assessment Criteria

- 4.28 Each assessment topic chapter provides details of the methodology for baseline data collection and the approach to the assessment of effects. Each environmental assessment topic has been considered by a specialist in that area.
- 4.29 Each assessment topic chapter defines the scope of the assessment within the methodology section, together with details of the study area, desk study and survey work undertaken and the approach to the assessment of effects. The identification and evaluation of effects have been based on the information set out in Chapter 2: *Project Description*, EIA good practice guidance documents, and relevant topic-specific guidance where available.

Description of the Environmental Baseline Conditions (Including Future Baseline Conditions)

- 4.30 The existing and likely future environmental conditions in the absence of the Proposed Development are known as 'baseline conditions'. Each assessment topic based chapter includes a description of the current (baseline) environmental conditions. The baseline conditions at the

- site and within the study area form the basis of the assessment, enabling the likely significant effects to be identified through a comparison with the baseline conditions.
- 4.31 The baseline for the assessment of environmental effects is primarily drawn from existing conditions during the main period of the EIA work in 2018.
- 4.32 The baseline for the assessment should represent the conditions that will exist in the absence of the Proposed Development at the time that it is likely to be implemented. The anticipated start date for construction of the Proposed Development is 2020, with enabling works likely to occur in 2019. The programme would be of approximately 7 years duration (including enabling works) with Phase 1 to be completed after two years (following enabling works), Phase 2 after four years and Phase 3 after six years. Full operation of the site has been assumed to take place in 2026. Further information about the construction programme assessed as part of the EIA process can be found in Chapter 2: *Project Description*.
- 4.33 Consideration has been given to any likely changes between the time of surveys/site walkovers and the future baseline for the construction of the Proposed Development from 2018 and its operation from 2026. In some cases, these changes may include the construction or operation of other planned developments in the area. Where such developments are built and operational at the time of writing and data collection, these have been considered to form part of the baseline environment. Where sufficient and robust information is available, such as expected traffic growth figures, other future developments have been considered as part of the future baseline conditions. In all other cases, planned future developments are considered within the assessment of cumulative effects within each assessment topic chapter (Chapters 5 to 12).
- 4.34 The consideration of future baseline conditions has also taken into account the likely effects of climate change, as far as these are known at the time of writing. This has been based on information available from the UK Climate Projections project (UKCP18), which provides information on plausible changes in climate for the UK (Environment Agency and Met Office, 2018) and on published documents such as the UK Climate Change Risk Assessment 2017 (Committee on Climate Change, 2016).
- 4.35 Climate data from the UKCP18 database has been compiled for a 25 km² grid square containing the site, based on a median emissions scenario¹. Mean air temperature and annual average precipitation data for the period 2070 to 2099 have been used to inform the consideration of how environmental conditions may change at the site and within the study area in future. The data is presented in Appendix 4.5.

¹ The median emission scenario used from UKCP18 is SRES B2 and relates to a population scenario 10.4 billion by 2100 and emphasis is on local solutions to economic, social, and environmental sustainability.

Limitations of the Assessment

- 4.36 Each assessment topic chapter identifies any limitations identified in the available baseline data and whether there were any difficulties encountered in compiling the information required.

Mitigation Measures Adopted as Part of the Proposed Development

- 4.37 During the EIA process, environmental issues have been taken into account as part of an ongoing iterative design process. The process of EIA has therefore been used to inform the design of the Proposed Development.
- 4.38 The Proposed Development assessed within this ES includes a range of measures that have been designed to reduce or prevent significant adverse effects arising. In some cases, these measures may result in enhancement of environmental conditions. The assessment of effects has taken into account measures that form part of the project.
- 4.39 The assessment topic chapters set out the measures that form part of the project and that have been taken into account in the assessment of effects for that topic. These include:
- Measures included as part of the project design (sometimes referred to as primary mitigation);
 - Measures to be adopted during construction to avoid and minimise environmental effects, such as pollution control measures. These measures would be implemented through the Code of Construction Practice (CoCP) (see Appendix 2.1); and
 - Measures required as a result of legislative requirements.

Assessment of Effects

- 4.40 The EIA Regulations require the identification of the likely significant environmental effects of the project. This includes consideration of the likely effects during the construction and operational phases. The assessment is based on consideration of the sensitivity and/or importance/value of an affected receptor and the likely magnitude of the predicted impact on that affected receptor. The process by which effects have been identified and their significance evaluated is set out within each individual assessment topic chapter. The overarching principles are set out below.

Sensitivity or Importance of Receptors

- 4.41 Receptors are defined as the physical or biological resource or user group that would be affected by a project. For each assessment topic, baseline studies have informed the identification of potential environmental receptors. Some receptors will be more sensitive to certain environmental effects than others. The sensitivity or value of a receptor may depend, for example, on its frequency, extent of occurrence or conservation status at an international, national, regional or local level.
- 4.42 Sensitivity is defined within each ES topic chapter and takes into account factors including:
- Vulnerability of the receptor;
 - Recoverability of the receptor; and

- Value/importance of the receptor.

4.43 Sensitivity is generally described using the following scale:

- High;
- Medium;
- Low; and
- Negligible.

4.44 In some cases, a further category of very high has been used.

Magnitude of Impact

4.45 Impacts are defined as the physical changes to the environment attributable to the project. For each topic, the likely environmental impacts have been identified. For each topic the likely environmental change arising from the project has been identified and compared with the baseline (the situation without the project). Impacts are divided into those occurring during the construction and operational phases.

4.46 The categorisation of the magnitude of impact is topic-specific but generally takes into account factors such as:

- Extent;
- Duration;
- Frequency; and
- Reversibility.

4.47 With respect to the duration of impacts, the following has been used as a guide within this assessment, unless defined separately within the topic assessments:

- Short term: A period of months, up to one year
- Medium term: A period of more than one year, up to six years; and
- Long term: A period of greater than six years.

4.48 The magnitude of an impact has generally been defined used the following scale:

- High;
- Medium;
- Low; and

- Negligible.

4.49 In some cases, a further category of 'no change' has been used.

Significance of Effects

4.50 Effect is the term used to express the consequence of an impact (expressed as the 'significance of effect'). This is identified by considering the sensitivity or value of the receptor and the magnitude of the impact.

4.51 The magnitude of an impact does not directly translate into significance of effect. For example, a significant effect may arise as a result of a relatively modest impact on a resource of national value, or a large impact on a resource of local value. In broad terms, therefore, the significance of the effect can depend on both the impact magnitude and the sensitivity or importance of the receptor.

4.52 Significance levels are defined separately for each topic. Unless separately defined in the topic chapters, the assessments take into account relevant topic specific guidance, based on the following scale and guidance:

- Substantial: Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process with regard to planning consent. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer the most damaging impact and loss of resource integrity;
- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process;
- Moderate: These beneficial or adverse effects may be important but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision making if they lead to an increase in the overall adverse effect on a particular resource or receptor;
- Minor: These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project; and
- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

4.53 The terms minor, moderate, major and substantial apply to either beneficial or adverse effects. Effects may also be categorised as direct or indirect, secondary, short, medium or long term, or permanent or temporary as appropriate.

4.54 Each chapter defines the approach taken to the assessment of significance. Unless set out otherwise within the chapter, topic chapters use the general approach set out in Table 4.1. For some topics, a simplified or quantitative approach is considered appropriate.

Table 4.1: Typical Assessment Matrix

Sensitivity	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No change	Minor	Minor or Moderate	Moderate or Major	Major or Substantial
Very high	No change	Minor	Moderate or Major	Major or Substantial	Substantial

- 4.55 Unless set out otherwise in each assessment topic chapter, effects assessed as moderate or above are considered to be significant in terms of the EIA Regulations within this assessment.

Further Mitigation and Future Monitoring

- 4.56 Where required, further mitigation measures have been identified within assessment topic chapters. These are measures that could further prevent, reduce and, where possible, offset any adverse effects on the environment.
- 4.57 Where relevant and necessary, future monitoring measures have been set out within the assessment topic chapters.

Assessment of Cumulative Effects

- 4.58 The EIA Regulations require consideration of cumulative effects, which are effects on a receptor that may arise when the project is considered together with other proposed developments in the area.
- 4.59 The cumulative effects of the project in conjunction with other proposed schemes have been considered within each topic chapter of the ES. Other developments considered within the cumulative assessment include those that are:
- Under construction;
 - Permitted, but not yet implemented;
 - Submitted, but not yet determined; and
 - Identified in the Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.
- 4.60 It is noted that developments that are built and operational at the time of submission are considered to be part of the existing baseline conditions.
- 4.61 Details of the developments included as part of the cumulative assessment are provided in Appendix 4.6 and their locations are shown in Figure 4.1.

Interrelationships

- 4.62 Each topic chapter considers whether or not there are any inter-related effects with other topics included within the EIA that have not already been considered in order to identify any secondary, cumulative or synergistic effects.

Summary Tables

- 4.63 Summary tables have been used to summarise the effects of the Proposed Development for each environmental assessment topic.

Consultation

- 4.64 The project team has undertaken consultation with, or requested information from, those organisations listed in paragraph 4.6 above.

Local Planning Authority

- 4.65 The Proposed Development lies within the administrative area of Reading Borough Council. A number of meetings have been held between the design team and planning officer at Reading Borough Council in order to discuss various aspects of the design of the Proposed Development.
- 4.66 Further to the above, topic specialists have consulted the relevant experts within Reading Borough Council and their consultees on their approach to the EIA through the scoping process. Further information regarding consultation with topic specific organisations is detailed within the individual topic chapters.
- 4.67 Meetings have been undertaken throughout the EIA and design process in order to agree methodologies and request and share information regarding existing environmental conditions. In addition to the organisations listed above, the applicant has held meetings with the Design South East panel to agree the site layout and features.

Public Consultation

- 4.68 As part of the consultation process, the applicant has engaged with the local community in order to inform local people about the Proposed Development, to explain the development and its likely effects and to take on board any concerns or issues raised. A summary of pre-application public consultation carried out is set out below:
- Newsletters were sent to just over 2,000 local residents with information about the scheme and details of the drop in event and website
 - A website (www.readingmet.co.uk), which has been updated as the scheme has evolved, was available to view with a form to allow completion of feedback online
 - A freephone information line number, email address and Freepost address allowed easy access for residents to comment and raise queries regarding the proposals.
 - A pop up consultation event was held outside of Reading station on the afternoon of Thursday 22 November giving commuters a chance to view the scheme and model.

Public Exhibitions

- 4.69 A public consultation event was held at the New Hope Centre, close to the development site, between 3pm and 7.30pm on Tuesday 20 November. 95 people attended over the course of four hours and feedback forms were available to complete on the day or fill in and post back to the project team.

Attendees included:

Cllr Karen Rowland (Abbey Ward, Vice-Chair of Planning Applications)

Cllr Mohammed Ayub (Abbey Ward)

Evelyn Williams (Chair of Conservation Area Advisory Committee (CAAC))

David Neale (Bell Tower Community Association)

David Kenny (Caversham Globe)

Peter Robinson (author of blog www.readingonthames.com)

Hugh Ford (Get Reading)

Alan Bunce (Thames Tap)

- 4.70 A further drop in stall was held outside Reading Station (south side entrance) on Thursday 22 November between 12.30pm and 6.30pm where members of the public could see the model and some of the display materials from the consultation event held earlier on in the week.
- 4.71 A Statement of Community Engagement (SoCE) has been submitted with the application providing further details of the findings of the exhibitions. Feedback received on Hermes' plans for the Land North of Reading Station has been exceptionally positive. Feedback has demonstrated that local residents, and the wider community of Reading, recognise that the brownfield site is underutilised and suitable for aspirational mixed use redevelopment. Furthermore, residents felt the inclusion of a health centre, community and retail space, in addition to the general improvements to access to and from the station, would greatly benefit residents. Hesitation was most keenly expressed on the perceived lack of parking, not only for residents and visitors, but to service the extra retail space and new facilities. More information about this feedback has been included in the SCE with responses to queries and comments raised.
- 4.72 These comments have been taken into account by the design team in the preparation of the planning application and, where relevant, in the EIA process.

References

- Committee on Climate Change (2016) UK Climate Change Risk Assessment 2017.
- Department for Communities and Local Government (DCLG) (2006) Environmental Impact Assessment: A Guide to Good Practice and Procedures – A Consultation Paper.
- Department of the Environment, Transport and the Regions (DETR) (1997) Mitigation Measures in Environmental Statements. HMSO.
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- Ministry of Housing, Communities and Local Government (2018) National Planning Policy Framework.
- Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (2017 SI No. 571)