THE WATERLOO CAR PARK

CIRENCESTER

ENVIRONMENTAL STATEMENT

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Volume 1: Environmental Statement			
Chapter	*Title*	*Lead Author*	*Appendix*
Glossary of Terms			
1.0	Introduction	TEP	A
2.0	Approach to EIA and Methodology	TEP	B
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Appendix	*Document*	*Lead Author*
A	Cotswold District Council Screening Opinion.	CDC
B	Cotswold District Council Scoping Opinion	CDC
C	*Blank*	
D	Historic Environment Desk-Based Assessment	TEP
E	E1: Assessment method E2: Method for verified photomontages E3: TVIA Figures 5.1 - 5.12 E4: Verified Photomontage Viewpoints	TEP
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G	Air Quality Assessment	Bureau Veritas
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I	Flood Risk Assessment	Campbell Reith
J	Phase 1 Preliminary Site Assessment	Curtins
K	*Blank*	

Non-Technical Summary	TEP	Separate Document

Glossary of Terms

Term	Definition
AADT	Average Annual Daily Traffic
ADS	Archaeological Data Service
AEP	Annual Exceedance Probability
Alternatives	The range of options examined including alternative locations, layout, design and construction phasing.
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty – national landscape designation
AQAL	Air Quality Assessment Level
AQMA	Air Quality Management Areas.
AQS	Air Quality Strategy
Archaeology	The scientific study of historic or prehistoric peoples and their cultures by analysis of their artefacts, inscriptions, monuments, and other such remains, especially those that have been excavated.
Baseline	The existing environmental conditions of a site or area upon which impacts are predicted against.
BGS	British Geological Survey
Biodiversity	The variety of forms of life, including genetic diversity, species diversity and ecosystem diversity.
BPM	Best Practicable Means
CA	Conservation Area
CDC	Cotswolds District Council
CEMP	Construction Environmental Management Plan.
CERC	Cambridge Environmental Research Consultants
CIfA	Chartered Institute for Archaeologists
CLEA	Contaminated Land Environmental Assessment.
CRTN	Calculation of Road Traffic Noise

Term	Definition
CTMP	Construction Traffic Management Plan
Cumulative Effects	Effects which arise from a combination or interaction of impacts at a specific location.
dB	Decibel
DCLG	Department for Communities and Local Government
DEFRA	Department for Environment Food and Rural Affairs.
Design and Access Statement (DAS)	Document submitted as part of a planning application, providing detail on the design and access provisions of the proposals.
DfT	Department for Transport.
DMRB	The Highways Agency Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7 HD 213/11 Noise and Vibration
DTM	Digital Terrain Model – topographical mapping.
DWS	Drinking Water Standard.
EA	Environment Agency
EAL	Environmental Assessment Level
EFT	Emissions Factors Toolkit
Environmental Effect	The effect on the environment of a specific impact, for example the impact of removing trees may have an effect on local wildlife.
Environmental Impact	An identified impact (adverse or beneficial) on the environment arising from a certain action, process or activity.
Environmental Impact Assessment (EIA)	A systematic procedure required under the European Directive 2014/52/EU in which involves the identification, prediction, evaluation, mitigation and management of impacts from a proposed development and its alternatives.
EPUK	Environmental Protection UK
EIA Regulations	Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

Term	Definition
Environmental Statement (ES)	The document in which the findings of an EIA are presented to decision-makers and the public.
EQS	Environmental Quality Standard
FCA	Flood Consequences Assessment.
FRA	Flood Risk Assessment
GAC	Generic Assessment Criteria. The use of generic assessment criteria (GAC) is an integral part of the risk assessment process for land affected by contamination.
GLVIA3	Guidelines for Landscape and Visual Impact Assessment Third Edition (2013) produced by the Landscape Institute (LI) and IEMA.
HDV	Heavy Duty Vehicle
HER	Historic Environment Record.
HGV	Heavy Goods Vehicle.
HSE	Health and Safety Executive.
IAQM	Institute of Air Quality Management
IEMA	Institute of Environmental Management and Assessment, formally the Institute of Environmental Assessment (IEA).
IES	Institute of Environmental Sciences
ISIS	Hydrology and hydraulic modelling software.
JCT	Junction Turning Counts
LB	Listed Building
LCT	Landscape Character Type
LCA	Landscape Character Area

Term	Definition
Listed Buildings	Listing gives a building statutory protection against unauthorised demolition, alteration and extension. Grade I: buildings of outstanding or national architectural or historic interest. Grade II: buildings of special architectural or historic interest. Grade II*: particularly significant buildings of more than local interest.
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority.
LPG	Liquefied Petroleum Gas
LQM	Land Quality Management
LAQM.TG(16)	Local Air Quality Management Technical Guidance (TG16). The latest tools and guidance provided by DEFRA for air quality assessments.
Magnitude	A combination of the scale, extent and duration of an effect.
MIOA	Member of the Institute of Acoustics
Mitigation Measures	Measures that are applied to avoid, reduce, remedy or compensate for identified significant adverse impacts.
NCA	National Character Area
NDHA	Non-designated Heritage Asset
NGR	National Grid Reference.
NERC	Natural Environment and Rural Communities Act (2006)
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides. A collective term for Nitric Oxide and Nitrogen Dioxide.
Non-Technical Summary (NTS)	A summary of the ES in non-specialist language so that a large group of the public can understand the main likely significant environmental impacts of a proposal.
NPPF	National Planning Policy Framework
Operational Effects	The effects on the environment resulting from the operation of the Proposed Development.

Term	Definition
OS	Ordnance Survey.
OS NGR	Ordnance Survey National Grid Reference.
PM_{10}	Particulate Mater
PPG	Planning Practice Guidance
PPV	Peak Particle Velocity
PROW	Public Right of Way
Qualitative Data	Data relying on reasons behind various aspects of behaviour.
Quantitative Data	The systematic scientific investigation of countable properties and phenomena and their relationships
Residual Impacts / Effects	Those impacts / effects that would remain following the implementation of mitigation measures
RPG	Registered Park and Garden
Scheduled Monument	National heritage designation.
Scoping	The process of identifying the issues that are to be addresses as part of the EIA, it is method used to ensure that an EIA focuses on the important issues, it is usually done in consultation with the determining authority and statutory consultees.
Screening	The process of determining whether an EIA is required
Screening Opinion	Opinion issued by an LPA on whether the proposals are considered to constitute EIA development
Section 106 Agreements (s106)	Section 106 of the Town and Country Planning Act 1990 (as amended) allows the drafting of agreements (known and planning obligations) between and Council and developers.
Sensitivity	The degree of response of a receiver or instrument to a signal or a change.
SfA	Sewers for Adoption
SFRA	Strategic Flood Risk Assessment

Term	Definition
SGV	Soil Guideline Values are a series of measurements and values used by the United Kingdom's Department for Environment, Food and Rural Affairs (DEFRA) to measure contamination of the soil
Significance	The extent to which something matters. Significance of impacts is defined as substantial, moderate, minor or negligible.
SLA	Special Landscape Area
SM	Scheduled Monument
SPL	Sound Pressure Levels
SSSI	Site of Special Scientific Interest – national ecological and geological designation
Statutory Consultees	Organisations that the relevant determining authority is required to consult with in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, for example the Environment Agency and Natural England.
SUDS	Sustainable Urban Drainage System.
Townscape	The landscape within the built up area, including the buildings and the relationships between them.
Transport Assessment (TA)	Document submitted as part of a planning application that assesses the potential impacts of the proposed development on traffic and transport.
Transport Statement (TS)	Document submitted as part of a planning application that assesses the potential impacts of the proposed development on traffic and transport, where a full TA is not required.
Travel Plan (TP)	A plan intended to reduce reliance on private vehicles
Topographic Map	A detailed and accurate graphic representation of the cultural and natural features on the ground
TPO	Tree Protection Order
TVIA	Townscape and Visual Impact Assessment
UXO	Unexploded Ordnance

Term	Definition
Verified Photomontage	A visual representation of a proposed development. Survey-verified photography involves using a surveyor to capture camera locations and relevant target points, which are recreated in a 3D model (Source: LI, 2018).
Visual Receptors	People that experience views of the Site or who are likely to experience views of the Proposed Development.
WHO	World Health Organisation
WQS	Water Quality Standard
ZTV	Zone of Theoretical Visibility

1.0 Introduction

Background

1.1 This Environmental Statement accompanies an application by Cotswold District Council (CDC) for planning permission for the construction of a four-storey decked car park (the 'proposed development') on the site of the existing Waterloo Car Park in Cirencester ('the Site').

1.2 The Local Planning Authority, CDC, determined in November 2018 (Ref: 18/03953/SCR) that the proposed development represents Environmental Impact Assessment (EIA) Development for which an Environment Statement (ES) is required under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations).

1.3 The application seeks consent for the construction of decked car parking to increase the parking capacity of the Site, comprising four decks (ground floor, plus four decks). The proposals comprise the following:

- 639 parking spaces; 586 standard, 35 disabled, 8 parent and child, and 10 electric vehicle parking.
- A five storey structure (ground plus four decks) with a fully enclosed roof.
- Access via Waterloo at the rear of the site (existing access).
- Egress via the Waterloo at the front of the site (existing egress).

1.4 A plan to show the location of the Site is included in Figure 1.1. The Site boundary is shown in Figure 1.2. A description of the Site, its surroundings and the proposed development is included in Chapter 3.

1.5 This ES sets out the likely significant effects of the proposed development, as required under Schedule 4 of the EIA Regulations.

1.6 A range of guidance documents has been used in the preparation of the ES, in particular, Chapter 3 Approach to EIA, and each of the environmental topic chapters 4 to 10. Where guidance has been used to inform the assessments, references are provided in the chapter.

1.7 This chapter (Chapter 1) of the ES provides an overview of the relevant legislation; the screening process; and the purpose of this ES.

Purpose of this Document

1.8 This document is an Environmental Statement (ES) which reports the findings the of Environmental Impact Assessment (EIA) process that has been undertaken to inform the determination of the planning application. The ES identifies and evaluated the likely significant environmental effects (whether beneficial or adverse) that may occur as a result of the proposed development. Where appropriate, it identifies measures to avoid, reduce and compensate for predicted significant adverse effects on the environment and maximise the potential beneficial effects.

Requirement for Environmental Impact Assessment (EIA)

Legislation

1.9 Environmental Impact Assessment (EIA) is a procedure required under the terms of the European Union Directive 2014/52/EU on the assessment of the effects on certain public and private projects on the environment. Article 2 of the Directive requires that:

'Member States shall adopt all measures necessary to ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects.'

1.10 The EIA Regulations include Schedule 1 developments for which an EIA is mandatory and Schedule 2 developments for which an EIA may be required depending upon criteria including the nature and scale of potential environmental effects and the sensitivity of the receiving environment as set out in Schedule 3 of the EIA Regulations.

EIA Screening

1.11 The proposed development falls within the criteria of Section 10(b) 'Infrastructure Projects' of Schedule 2 of the EIA Regulations. 10(b)(i) states development that includes more than 1 hectare of urban development. The size of the Site is 0.77ha and is therefore below the threshold of 1.0 ha; though once taking account of the decked nature of the proposal this generates a total floor space of 2.8ha (28,000m2).

1.12 The Site is currently in use as a public car park, but is a 'sensitive area' because the Site falls within a Scheduled Monument (SM), as defined in Regulation 2(1) interpretations. Development of a type listed in Schedule 2, which is in a sensitive area requires EIA Screening.

1.13 The proposed development was therefore Screened for EIA development, due to the massing and 'sensitive area' designation.

1.14 A formal EIA Screening request was made to CDC on the 12th October 2018. The request included an EIA Screening Report that contained the following information required under Regulation 6(2) of the EIA Regulations:

a) A plan sufficient to identify the land;

b) A description of the development, including in particular-

(i) A description of the physical characteristics of the development, and, where relevant of demolition works;

(ii) A description of the location of the development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.

c) A description of the aspects of the environment likely to be significantly affected by the development;

d) To the extent the information is available, a description of any likely significant effects of the proposed development on the environment, resulting from-

(i) The expected residues and emissions and the production of waste, where relevant; and

(ii) The use of natural resources, in particular, soil, land, water and biodiversity

e) Such other information or representations as the person making the request may wish to provide or make.

1.15 An EIA Screening Opinion was provided by CDC on 5th November 2018. The Screening Opinion, included as Appendix A, determined that the proposals constitute EIA Development and stated the following:

'…having considered the criteria stated within Schedule 3 of the above Regulations, the Local Planning Authority is of the opinion that the impact of the proposal is therefore considered to be EIA development requiring the submission of an Environmental Statement.'

Structure of this Document

Format of the Environmental Statement

1.16 The ES comprises two volumes, together within a Non-Technical Summary (NTS), which provides a summary of the impact assessments:

- Non-Technical Summary - this is presented as a separate document, with the text also included within the main volume of the ES.
- Volume 1 - Environmental Statement. This document - provides the main text (including all the technical impact assessment chapters) and associated figures.
- Volume 2- Environmental Statement Appendices. Contains the appendices and supporting information to the Environmental Statement.

1.17 All of the ES documents are available in hard copy and electronic (pdf) formats (refer to paragraphs 1.19 - 1.22).

Environmental Statement Contents

1.18 This ES has been co-ordinated and produced by The Environment Partnership (TEP) together with an experienced team of technical specialists who have undertaken the impact assessments as set out in Table 1.1.

Table 1.1: Environmental Statement Structure

Chapter and Number	Lead Author	Appendix
Chapter 1 - Introduction	TEP	A
Chapter 2 - EIA Approach and Methodology	TEP	B
Chapter 3 - The Proposed Development	TEP	C
Chapter 4 - Archaeology and Historic Environment	TEP	D
Chapter 5 - Townscape and Visual Assessment	TEP	E
Chapter 6 - Noise and Vibration	Bureau Veritas	F
Chapter 7 - Air Quality	Bureau Veritas	G
Chapter 8 - Traffic and Transport	Atkins	H
Chapter 9 - Flooding and Drainage	Campbell Reith	I
Chapter 10 - Land Contamination	TEP	J
Chapter 11 - Summary of Impacts and Mitigation	TEP	K

Environmental Statement Availability

1.19 Copies of this ES will be made available for inspection at the following location:

Cotswold District Council

Trinity Road

Cirencester

Gloucestershire

GL7 1PX

Comments on the ES should be either sent to the above address or emailed to planning@cotswold.gov.uk

Further Copies of the Environmental Statement and Non-Technical Statement

1.20 Copies of the accompanying Non-Technical Summary (NTS) are available free of charge.

1.21 Hard copies of the ES can be purchased for a cost of £75 and electronic versions on CD are £5. For a copy of either the ES and NTS please contact TEP on the details below:

Address	Contact
The Environment Partnership The Genesis Centre Garrett Field Birchwood Warrington WA3 7BH	 01925 844004 tep@tep.uk.com

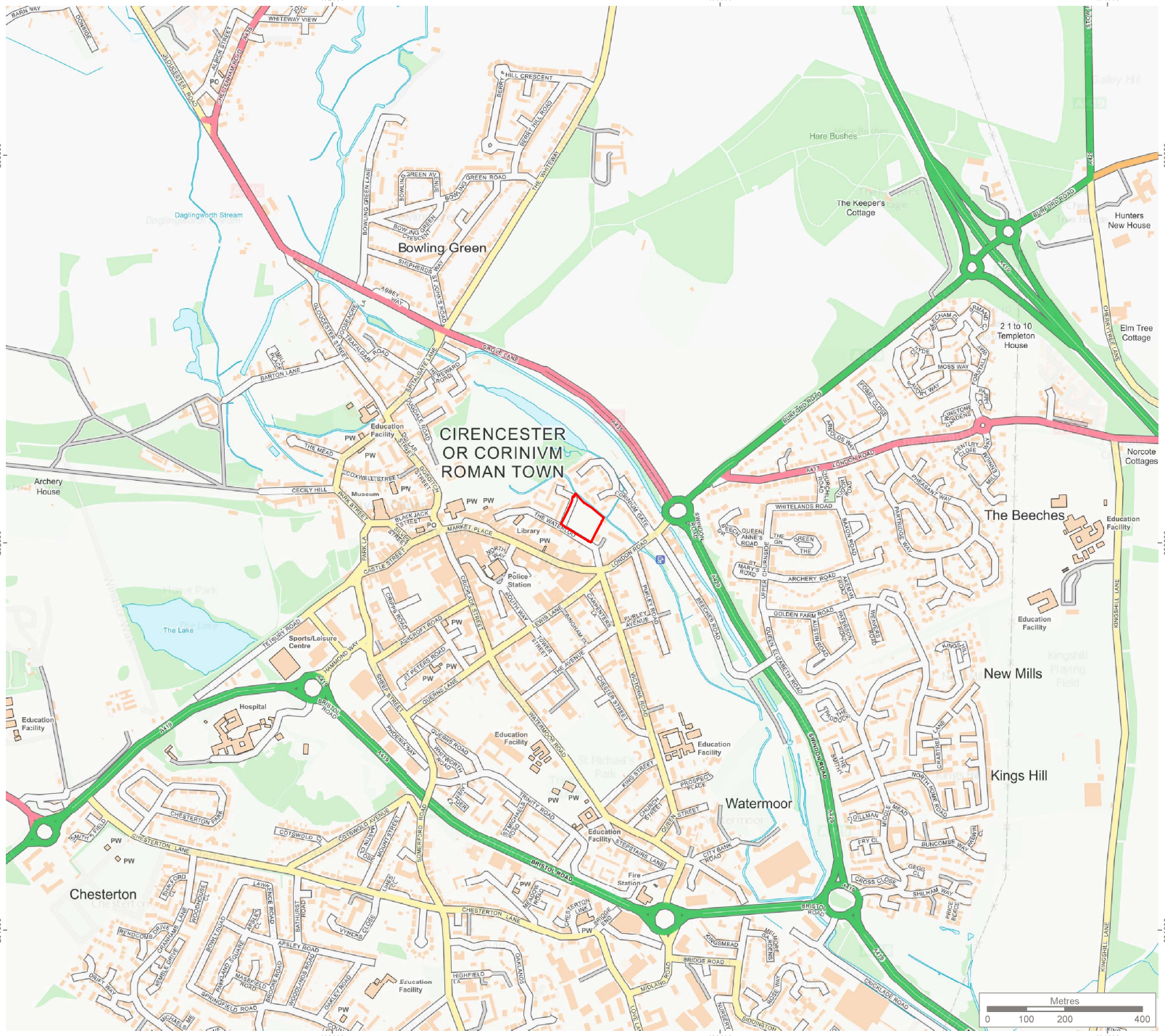
1.22 The documents are also available to download at: https://www.cotswold.gov.uk/planning-and-building/planning-permission/view-planning-applications/

Competent Expert

1.23 Regulation 18 (5) of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 requires that Environmental Statements are prepared by a competent expert. The EIA Practitioner preparing this Environment Statement is a Charter Member of the Royal Town Planning Institute (MRTPI) and a Practitioner of the Institute of Environmental Management and Assessment (PIEMA). He holds a BSc (Hons) and MSc and has over 12 years' experience in Environmental Impact Assessment.

1.24 The Environment Partnership (TEP) is a Corporate Member of Institute of Environmental Management and Assessment (IEMA) and is a registered EIA Quality Mark Consultancy. The EIA Quality Mark demonstrates a commitment to excellence in our EIA activities and that this commitment is independently reviewed.

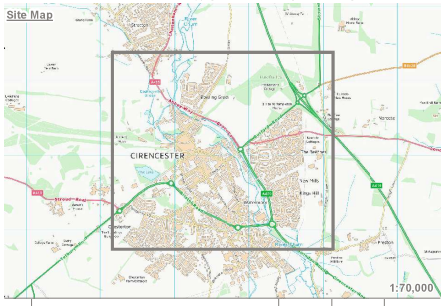
Figure 1.1



KEY

Site boundary

Site Map



Rev	Description	Drawn	Approved	Date

THE ENVIRONMENT PARTNERSHIP

Genesis Centre, Birchwood Science Park, Warrington WA3 7BH
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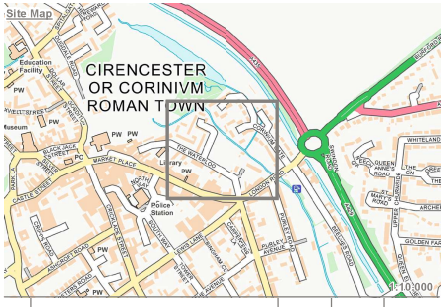
Project
Waterloo Car Park, Cirencester

Title
Site Location Plan for Environmental Statement

Drawing Number
G6285.021

Drawn	Checked	Approved	Scale	Date
CW	AH	JM	1:10,000 @ A3	11/03/2020

Figure 1.2



Rev	Description	Drawn	Approved	Date
A	Site boundary amendment.	JO	JM	20/06/19

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Project
Waterloo Car Park Full Planning Application, Cirencester

Title
Site Location Plan

Drawing Number
G6285.006A

Drawn	Checked	Approved	Scale	Date
JS	JM	JM	1:1,000 @ A3	11/10/2018

2.0 Approach to EIA and Methodology

Introduction

2.1 The overall aim of this ES is to provide a systematic account of the significant environmental effects of the proposed development. This chapter of the Environmental Statement (ES) sets out the methodology used in the preparation of the ES. The methodology applied specifically to each of the technical impact assessments is set out in the third section of each technical chapter.

2.2 This ES has been prepared to comply with the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations').

2.3 The preparation, co-ordination and completion of the ES has been undertaken with reference to Schedule 4 of the EIA Regulations (2017) and the following recognised good practice guidance:

- IEMA (2004) Guidelines for Environmental Impact Assessment;
- DCLG (2006) Environmental Impact Assessment: A Guide to Good Practice and Procedures – a consultation paper;
- Institute of Environmental Management and Assessment (IEMA) (2011) EIA;
- IEMA (2016) EIA Guide to Delivering Quality Development;
- Quality Mark ES Review Criteria;
- IEMA (2017) Delivering Proportionate EIA; and
- Planning Practice Guidance - Environmental Impact Assessment, Department for Communities and Local Government (DCLG), last updated in March 2019.

2.4 Technical assessments have been undertaken in accordance with best practice guidelines published by relevant professional bodies.

Content of the Environmental Statement

2.5 Schedule 4 of the EIA Regulations presents a list of information required for inclusion in Environmental Statements. Regulation 2(1) defines an Environmental Statement as a statement:

a) That includes such of the information referred to in Part 1 of Schedule 4 as is reasonably required to assess the environmental effects of the development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile, but

b) That includes at least the information referred to in Part 2 of Schedule 4.

2.6 In accordance with UK EIA best practice, the ES will aim to include the information requirements set out in Schedule 4 - Information for inclusion in Environmental Statements. Table 2.1 shows where these information requirements have been included or addressed in this ES.

Table 2.1: Information for inclusion in the Environmental Statement

Schedule 4 Requirement	Where addressed in the ES
1. A description of the development comprising information on the site, physical characteristics of the development during construction and operation and an estimate of expected residues and emissions.	Chapter 3 presents information on the Site and the indicative development. This includes details relating to construction phasing.
2. An outline of the main alternatives studied by the applicant and an indication of the main reasons for this choice including a comparison of environmental effects.	This will be included in Chapter 3 of the ES, but limited to scheme design rather than alternative sites.
3. A description of relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution without implementation of the development.	Technical chapters (Chapters 4-10).
4. A description of the factors of the environment likely to be significantly affected by the development, including, in particular:	The ES includes an assessment of the potential significant effects of the indicative development on the listed aspects in the following chapters:
• Population	Chapter 6 - Noise and Vibration Chapter - Traffic and Transport
• Human Health	Chapter 7 - Air Quality
• Biodiversity	Scoped out of the EIA
• Land	Chapter 10 - Land Contamination
• Soil	Chapter 10 - Land Contamination
• Water	Chapter 9 - Flooding and Drainage
• Air	Chapter 7 - Air Quality
• Climate	Technical chapters (Chapters 4-10)
• Material assets	Scoped out of the EIA

Schedule 4 Requirement	Where addressed in the ES
• Cultural Heritage	Chapter 4 - Archaeology and Historic Environment Chapter 5 - Townscape and Visual Assessment
• Landscape	Chapter 5 - Townscape and Visual Assessment
• Interaction of the above factors	Technical chapters (Chapters 4-10)
5. A description of the likely significant effects of the development on the environment which should cover the direct effects and any indirect, secondary, cumulative, transboundary, short, medium and long-term, permanent and temporary, positive and negative effects.	Chapters 4-10 assess the potential significant effects of the proposed development.
6. A description of the measures used to identify and assess the significant effects on the environment including an outline of the difficulties encountered in compiling information.	Chapters 4-10 outline the assessment methods used in each respective topic chapter. General difficulties relating to the undertaking of the EIA are included in Chapter 2. Technical difficulties relating to the assessment of particular aspects of the developments are included in the technical chapters (Chapters 4– 10).
7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant or appellant in compiling the required information.	General difficulties relating to the undertaking of the EIA are included in Chapter 2. Technical difficulties relating to the assessment of particular aspects of the developments are included in the technical chapters (Chapters 4-10).
8. A description of the measures envisaged to avoid, prevent, reduce or, if possible offset any identified significant adverse effects on the environment and any proposed monitoring	Mitigation measures are presented in the fifth section of each of the technical chapters (Chapters 4-10).

Schedule 4 Requirement	Where addressed in the ES
9. 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.	Risks of major accidents and/or disasters are included in each of the technical chapters (Chapters 4-10) where relevant.
10. A non-technical summary of the information provided under paragraphs 1 to 9.	A separate non-technical summary is provided.

Scope of the Environmental Impact Assessment

EIA Scoping

2.7 Scoping is not a mandatory requirement of the EIA Regulations, but is seen as good practice. The purpose of scoping is to ensure that environmental studies undertaken during the preparation of the ES provide all the relevant information on the likely significant environmental effects of the project and the potentially significant impacts are 'scoped in' for consideration.

2.8 Regulation 15(1) of the 2017 EIA Regulations (as amended) states that:

'A person who is minded to make an EIA application may ask the relevant planning authority to state in writing their opinion as to the scope and level of detail of the information to be provided in the environmental statement (a "scoping opinion")'.

2.9 A Scoping Report was prepared in accordance with the guidelines set out in Regulation 15 of the 2017 Regulations to seek the opinion of CDC regarding the proposed approach for the environmental assessment of the Proposed Development.

2.10 The Scoping Report for the Proposed Development was submitted to CDC in November 2018. It provided information about the Proposed Development, summarised the potentially significant environmental effects and set out the scope of assessment proposed. The Scoping Report was also submitted to the following Competent Authorities:

- Historic England;
- Environment Agency;
- Natural England;
- Local Members;
- Gloucestershire County Council Highways Development Management; and
- Gloucestershire County Council Local Lead Flood Authority.

2.11 Within the Scoping Report topic chapters, identified effects, were assessed as to whether they were likely to be significant, or not. Issues which have been assessed as unlikely to give rise to significant environmental effects have been 'scoped out' from the EIA, in accordance with Schedule 4 of the EIA regulations.

2.12 For example Biodiversity was scoped out of the ES. TEP conducted an Ecological Assessment for the Site in June 2017 and again in May 2019 which found there are likely to be no significant impacts on diversity.

2.13 Table 2.2 sets out the environmental topics that have been scoped out of the EIA process and the reasons as to why they are not considered to give rise to significant environmental effects.

Table 2.2: Environmental topics scoped out

EIA Environmental topic scoped out	Reason
Biodiversity	TEP conducted an Ecological Assessment for the Site in June 2017 and was updated over the summer 2019 which found there are likely to be no significant impacts on diversity. Impacts on biodiversity are likely to be localised and can be dealt with via the usual planning application route through the submission of a separate Ecological Impact Assessment. There are no statutory sites within 1km of the site boundary. No habitats of principal importance are present within the Site.
Climatic Factors	Climate change forms a part of each topic. National and local planning policy will be adhered to and this will ensure climate and sustainable aspirations are maintained.
Climate Change	The individual chapters include potential effects from climate change where appropriate.

2.14 On 8th February 2019, CDC provided a Scoping Opinion in response to the Scoping Report (see Appendix B). CDC's response, along with scoping responses from consultees, included commentary on a number of matters which have been addressed throughout this ES. Table 2.3, below, provides an overview of the comments and how they have been addressed in the ES.

Table 2.3: Scoping responses and the response in this ES

Summary of comment	Where address in ES
A recommendation that flood risk is included in the ES.	Chapter 9 - Flood Risk and Drainage
A recommendation that ground water and land contamination is included in the ES.	Chapter 9 - Flood Risk and Drainage. Chapter 10 - Land Contamination.
A clear justification must be provided for any harm that may be caused to a highly designated heritage asset through an assessment of alternatives.	Chapter 4 - Archaeology and Historic Environment
Additional guidance needs to be used for the Archaeology and Historic Environment Chapter.	Chapter 4 - Archaeology and Historic Environment
The use of computer modelling tools to demonstrate noise impacts is encouraged.	Chapter 5 - Noise and Vibration
The scope of the Transport Assessment should include any potential or perceived impacts on the Market Place, which is a relatively recent 'shared space' environment with associated constraints in relation to free movement of vehicular traffic.	Chapter 7- Traffic and Transport
Regard should be had to the relationship of the development site to the Cotswold Area of Outstanding National Beauty and the Special Landscape Area in terms of potential impacts.	Chapter 8 - Townscape and Visual

Technical Scope

2.15 The scope of the ES has been informed by the following:

- Schedule 4 of the EIA Regulations;
- Previous technical assessments of the Site;
- Pre-application with CDC Development Officers in January 2017;
- Pre-application meeting with CDC Development Officers in October 2018;
- CDC Scoping Opinion (Appendix B); and
- Further consultation undertaken as part of the EIA.

2.16 The consultees who have been involved in determining the scope of the EIA to date include:

- Cotswold District Council;
- Environment Agency;
- Gloucestershire County Council;
- Historic England; and
- The Lead Local Flood Authority.

2.17 A summary of the EIA technical scope is shown in Table 2.4. Further information regarding consultation and the scope of the technical assessment work is included in the technical chapters.

Table 2.4: Summary of EIA Scope and ES Content

ES Chapter	Summary of Scope	Lead Author
1.Introduction	• Requirement for EIA and the purpose of the ES; • Application description; • Structure of the ES; and • ES availability.	TEP
2. EIA Approach and Methodology	• Content of the ES; • Scope of the EIA; • Consultations; and • EIA methodology.	TEP
3. Proposed Development	• The Site; • Site surroundings; • Outline of the main alternatives; • Description of the proposed development; and • Anticipated timescales for construction and operation.	TEP
4. Archaeology and Historic Environment	• Assessment of potential impacts on Archaeology; • Assessment of impacts on the Historic Environment.	TEP
5. Townscape and Visual Assessment	• Assessment of impacts on townscape character; • Assessment of visual impacts.	TEP
6. Noise and Vibration	• Assessment of potential impacts from traffic; and • Assessment of impacts from the proposed development.	Bureau Veritas

ES Chapter	Summary of Scope	Lead Author
7. Air Quality	• Assessment of construction impacts; and • Assessment of operational impacts.	Bureau Veritas
8. Traffic and Transport	• Assessment of impacts on the traffic environment.	Atkins
9. Flooding and Drainage	• Assessment of potential impacts of flooding; and • Assessment of impacts on surface water receptors.	Campbell Reith
10. Land Contamination	• Assessment of potential land contamination impacts; and • Assessment of impacts on below ground receptors.	TEP
11. Summary of Impacts and Mitigation	• Summary of Impacts; • Summary of Mitigation Measures; and • Delivery of Mitigation Measures.	TEP

Spatial Scope

2.18 The EIA directly covers the physical extent of the Site as defined in the red line boundary plans.

2.19 The geographical or spatial scope of the ES takes into account the following factors:

- The physical extent of the proposed development which is defined on the planning application boundary plans; and
- The nature of the baseline environment.

2.20 It is important to note that the influence of predicted impacts can extend beyond the immediate site boundary so it is important to put the spatial extent of the predicted impacts into the context of the Site and the nature of their effects. The study area or spatial scope for each technical assessment is defined and stated in the methodology section of each chapter. For example, archaeology will be limited to the Site and the immediate surroundings whereas transport will assess impacts on the local highway network.

2.21 The study area or spatial scope for each technical assessment is defined and stated in the methodology section of each chapter, but due to the nature of the Site the spatial scope is generally restricted to Site and local level.

Temporal Scope

2.22 The EIA assesses the likely significant environmental effects during the site preparation, construction and operational phases of the proposed development.

2.23 Following the determination of the planning application, the Waterloo car park is proposed to be closed for use from February 2021. Measures to control construction impacts will be outlined in a Construction Environmental Management Plan (CEMP).

2.24 Anticipated timescales for each phase of works for the construction of the proposed development that have been used within this ES are shown in Table 2.5. Specific detail relating to the temporal scope for each technical assessment is defined and stated in the methodology section of each of the technical chapters.

Table 2.5: Anticipated timescales of construction and operation

Works	Duration
Earthworks- Infrastructure works on Site	15 weeks
Overall construction Programme, including site works, construction of multi-storey car park and implementation of landscaping scheme	60 weeks
Operation	50 years

Temporary Car Park Provision

2.25 A temporary car park at the Rugby Club in Cirencester is currently being constructed and anticipated to open late May/June 2020. The strategy is to enable the decanting of permit holders to this car park during the Waterloo construction process. It will create 158 spaces.

Assessment of Effects

2.26 The evaluation of significance is usually undertaken by comparing the magnitude of the predicted impact with the sensitivity of the receiving environment. Specialist methods of assessment will be presented in the relevant assessment chapters. The general method for the presentation of environmental impacts across all specialist topic areas is outlined below.

2.27 Best practice guidance has been used for individual chapters where available and appropriate. A full method of approach is set out in each Chapter, however a general principle for the presentation of environmental impacts has been adopted to ensure consistency in the evaluation of significance across all specialist topic areas.

Determining the Significance of Environmental Impacts

2.28 The purpose of the ES is to identify and evaluate the environmental effects associated with the proposed development. These effects are then assessed based on the predicted magnitude of each effect (following mitigation) and the associated sensitivity of the receiving environment or environment. This determines the significance of their impact.

2.29 The magnitude of the impact and the sensitivity of the receptor vary by topic. Therefore, the criteria used to predict the significance of impacts arising are set out in the methodology section of each of the technical assessment chapters.

2.30 There is no statutory definition of significance. In this ES the following descriptive terms are used and these are accepted good practice:

- High;
- Moderate;
- Minor;
- Negligible.

2.31 The meanings of the terms in relation to magnitude and sensitivity are shown below:

2.32 A range of different factors will be included in the evaluation of the significance of each effect, including:

- The topic author/assessor's knowledge and experience of significance evaluation from previous assessments;
- Details of the development proposal, such as construction and operational activities, and the nature of the effect associated with such activity;
- Details about the environmental sensitivity of the area that will be affected;
- Feedback from scoping and consultation; and
- The wider legal and policy context.

Sensitivity of Receptor

2.33 During the determination of the baseline environment, 'receptors' are identified. The value or sensitivity of a receptor or resource is generally defined as a function of factors such as rarity, fragility, replaceability and importance (e.g. whether it is of national, regional or local importance) and its capacity to absorb change.

2.34 Criteria for the determination of sensitivity (very high, high, medium, or low) or of importance or value (international, national, regional or local) are established based on guidance, legislation, statutory designation and/or professional judgment.

2.35 The following criteria provide a general definition for determining the sensitivity of receptors and specific sensitivity criteria will be explained in each specialist topic chapter.

- **High sensitivity** - the receptor has little or no ability to absorb change without fundamentally altering its present character or is of very high environmental value or of international importance (e.g. special qualities of a Special Protection Area or National Park) or is of high environmental value or of national importance (e.g. special qualities of a Site of Special Scientific Interest or Area of Outstanding Natural Beauty (AONBs));
- **Moderate sensitivity** - the receptor has moderate capacity to absorb change without significantly altering its present character, has some environmental value, or is of regional importance e.g. special qualities of a regionally important geological site;
- **Low sensitivity** - the receptor is tolerant of change without detriment to its character, is of low environmental value, or local importance e.g. qualities of a hedgerow or industrial areas; and
- **Negligible sensitivity** - the receptor is resistant to change or is of little environmental value.

Magnitude of Effect

2.36 Magnitude is determined by predicting the scale of any potential change in the baseline conditions. The magnitude of potential effects (both beneficial and adverse) on the relevant receptor in the environmental baseline will be identified through consideration of the following:

- The degree to which the environment is potentially affected e.g. whether the quality is enhanced or impaired;
- The scale or degree of change from baseline conditions as a result of the Proposed Development;
- The duration of the effect e.g. whether it is temporary or permanent; and
- The reversibility of the effect.

2.37 The following criteria provide a general definition for determining the magnitude of a particular effect:

- **High magnitude** - total loss or major alteration to key elements or features of the baseline conditions to the extent that post-development character or composition of baseline conditions will be fundamentally changed;
- **Moderate magnitude** - loss or alteration to one or more key elements or features of the baseline conditions to the extent that post-development character or composition of the baseline conditions will be materially changed;
- **Low magnitude** - minor shift away from baseline conditions. Changes arising will be detectable but not material; the underlying character or

composition of the baseline conditions will be similar to the pre-development situation; and

- **Negligible magnitude** - very little change from baseline conditions. Change is barely distinguishable, approximating to a ‘no change’ situation.

Mitigation of Environmental Impacts

2.38 The development of mitigation measures is an integral part of EIA. Mitigation measures seek to avoid, reduce or compensate adverse effects and reduce the magnitude of potential impacts. These may include design changes, alteration of proposed methods, or other activities in addition to the core activities.

2.39 The level of effect significance is often used to determine the use and level of mitigation measures. Where a potential impact is assessed as 'moderate' or 'major' this is considered 'significant' in EIA terms, so as far as practicable, mitigation measures should be identified that reduces the potential magnitude or significance of effect.

2.40 In each technical chapter, the specialists undertaking the EIA have identified appropriate mitigation measures based on their assessment of potential significant impacts.

Residual Effects

2.41 The overall significance of effects will take into account the identified mitigation measures and consider the residual effects of the Proposed Development after any specific additional mitigation measures have been implemented and established.

Cumulative Impacts

2.42 Cumulative effects are those caused by combined effects of past, present or reasonable foreseeable activities and the proposed development itself. The EIA will take into account other existing and planned development (currently within the planning system) within the area of the Proposed Development, and will consider the cumulative impacts associated with these developments.

2.43 These planned developments have been identified through a planning search of the area local to the proposed development and in consultation with CDC who have confirmed which should be included in the cumulative assessment.

2.44 Table 2.6 identifies the applications that have been considered as part of the cumulative assessment due to their potential to increase car parking provision within Cirencester. All of the above applications are within close proximity of the Application Site lying within a 2km radius and have recently been approved or are currently within the planning system awaiting a decision.

2.45 Projects have been scoped out from further assessment where they are of insufficient scale and nature for them to contribute to significant cumulative effects. Cumulative impacts caused by different aspects of the development are assessed within the technical chapters.

Table 2.6: Cumulative Assessment

Reference	Address	Description	No. of Spaces	Approval Date
19/00853/FUL	The Old Kennels, Tetbury Road, Cirencester, Gloucestershire	Change of use of land at Cirencester Park from horse paddocks, arena, and stables car park to form a new car park of 250 spaces	255 (205 Private, 50 Public-Private only available to public at weekend)	24/01/2020
19/02186/FUL	Cirencester Rugby Football Club, The Whiteway, Cirencester, Gloucestershire GL7 2ER	Creation of a car park providing 160no. car parking spaces (including 3no. disabled spaces), 5no. motorcycle parking spaces and associated landscaping for a temporary period of 10 years	160 (The car park will be for permit holders only, and will be open from 7.30 am to 7.30 pm Monday to Friday only)	16/10/2019
18/04977/FUL	Old Memorial Hospital, Sheep Street, Cirencester, Gloucestershire, GL7 1QW	Demolition of the Old Memorial Hospital, and the creation of additional car parking spaces to create 113no. spaces in total, and associated landscaping for a temporary period of 10 years	36 (net additional)	28/06/2019

Reference	Address	Description	No. of Spaces	Approval Date
18/00766/FUL	2 Midland Road, Love Lane, Cirencester, Gloucestershire, GL7 1PZ	Proposed conversion, extension and subdivision of existing car showroom (Sui Generis) to form up to 6no. Class B8 units (with ancillary trade counter use) and/or for occupation by Class B1(c) (light industrial) and/or Class B2 (general industrial), alongside up to 2no. new 'drive-to' restaurant/coffee shop/ take-away units (Use Class A1/A3, A3 and/or A5), with associated car parking, landscaping and vehicular access from Midland Road	47 (Customer Only)	04/07/2018

EIA Assumptions and Limitations

2.46 The following key assumptions have been made in preparing the ES:

- This ES assumes that the Proposed Development would be constructed in accordance with industry standard techniques according to acceptable standards, assuming that suitable experienced contractors will be appointed to construct the proposed development
- A Construction Environment Management Plan (CEMP) would be prepared prior to commencement and would contain all the design and additional mitigation as identified and reported within this ES.

Difficulties in Compiling Information

2.47 The information contained within this Environmental Statement was based on the detailed design drawings as per April 2020.

2.48 Surveys and site visits were undertaken prior to the COVID-19 outbreak and are therefore based on standard population patterns.

3.0 The Proposed Development

Introduction

3.1 This chapter provides a description of the existing site and the proposed development. In accordance with the requirements of Schedule 4 of the EIA Regulations (2017) and UK best practice guidance, the following information is provided:

- A description of the site and surroundings;
- An outline of the main alternatives to the proposed development, indicating the reasons for the choice, taking into account the environmental effects;
- The design and size of the proposed development during construction and operation and how this has been influenced through the EIA process; and
- Anticipated timescales for construction and operation.

The Site and Local Context

Description of the Site

3.2 The Site comprises the existing Waterloo Car Park which is roughly square in shape and accommodates 233 standard spaces and 2 disabled bays with no provision for motorcycle and bicycle parking. The Site is 0.77 hectares in size and lies on the eastern side of Cirencester town centre in Gloucestershire, to the north of The Waterloo road.

3.3 The existing car park is tarmacked and the topography is generally level. There are scattered trees throughout the Site.

3.4 The Site is bound by the River Churn and associated mature vegetation to the north. Beyond the River Churn to the north is a twentieth century housing development along Corinium Gate, comprising semi-detached properties.

3.5 To the east, two residential properties lie adjacent to the Site, separated from the eastern site boundary by a 2m limestone wall. Directly south of the Site is The Waterloo Road, the road from which Site access is obtained. Beyond the southern footway of The Waterloo lies a mix of residential and commercial properties as well as service areas and private car parks. There is also a fairly recently constructed apartment block on the former Woolmarket car park to the south of The Waterloo. There are four-storey residential flats to the west of the Site. The Site boundaries currently comprise a mixture of low and high limestone walls and natural vegetation.

3.6 The car park is accessible from the A429 Ring Road via London Road, avoiding the need for traffic to be routed through the centre. Access to the Site is obtained in the north west corner of the Site, adjacent to the residential properties which lie to the west of the Site. Egress, in the form of an exit-only route is in the south east corner of the Site directly onto The Waterloo. Left and right movements are segregated by a central reservation.

3.7 Pedestrian access to and from the car park is via a number of access points from the town centre. Access is via steps; wheelchair users and prams need to use the vehicular access and egress points, therefore pedestrian permeability is an area for improvement.

3.8 The majority of the Site lies within Flood Zone 2 with the nearby River Churn to the north-east being in Zone 3.

3.9 The Site is archaeologically sensitive since it is located in Cirencester's Roman town. The Site lies within that part of the Roman town, Corinium, which is designated a Scheduled Monument in recognition of the national importance of the remains (Scheduled Monument No. GC 361). Four heritage assets within the scheduling indicate Roman occupation, including carved Roman stones, Roman clay roof tiles, stone wall foundations found near the Waterloo car park and Roman features including walls and floor layers.

Site Surroundings

3.10 The Site is in the eastern side of the town centre of Cirencester which is an important historic market town within the Cotswolds. The town centre, which encompasses Dyer Street south of the Site, is broadly characterised by densely arranged buildings up to three-storeys around a sinuous medieval street pattern. The town centre contains a mix of independent retailers and well established chain stores as well as bars and restaurants, which is well connected to the Site via the public footpaths which extend north from Dyer Street.

3.11 There are no obvious links to public transport, although a number of bus services can be accessed along London Road and Dyer Street. There are also no obvious links to cycle infrastructure.

3.12 The Site adjoins the Cirencester Town Centre Conservation Area to the south-west, which extends to the eastern boundary of the car park and along the southern footway of the Waterloo. There are no Listed Buildings along the Waterloo, although there are a number of Listed Buildings along Dyer Street to the south of the Waterloo. A further assessment of the proposed development in relation to the Conservation Area is outlined in Chapter 4 - Archaeology and Historic Environment.

Project Need

Background

3.13 CDC owns and manages ten public car parks in Cirencester providing a total of 1,376 parking spaces across the town centre. The Council established a Cirencester Parking Demand Project in the summer of 2015 and the Member-led Board has been working to confirm the current and future demand, and identify ways in which additional capacity can be delivered.

3.14 In May 2015, CDC commissioned Gloucestershire County Council to produce a Cirencester Parking Survey to quantify parking patterns across the town.

3.15 CDC commissioned The Environment Partnership (TEP) in June 2016 to undertake a Stage 1 Feasibility Study to determine the potential for these car parks to increase their capacity. A further review of technical reports and CDC's technical studies concluded that currently The Waterloo was the most suitable and viable option in the town centre area to support an increased car parking provision.

3.16 CDC also commissioned Atkins to conduct a Cirencester Town Centre Off-Street Parking Study (Atkins, February 2017) to assess the long term demand for parking in the town based on the anticipated growth set out in the draft Local Plan. The report forms part of the Council's Parking Strategy and provides evidence of the demand which justifies the need for additional parking.

Need for Increased Car Park Capacity

3.17 Cirencester, as a district centre, must support a vibrant retail and service centre that is accessible to commuting workers and shoppers. The town has a population of approximately 20,000 and a large catchment population which is far greater than other towns typical of its size. Many residents living in the historic centre of the town have limited private parking.

3.18 The rural nature of the surrounding areas and the relative lack of public transport mean that the majority of shoppers, commuters, residents and visitors travel into the town by car. This generates a considerable demand on town centre parking.

3.19 Since May 2015 there has been an exponential growth in demand for parking in Cirencester during peak times. The existing Waterloo Car Park, which has a total of 235 parking spaces, is popular throughout the week and at weekends, with capacity typically reaching 80-100%. It is well-used, and would benefit from additional capacity.

3.20 Atkins' (2017) report found that in Cirencester as a whole, the shortfall in parking provision against parking demand is predicted to be 347 spaces in the morning peak hour on a weekday; the forecast parking demand above operational capacity is approximately 30%.

Consultation

3.21 The proposed development has been developed in consultation with the Local Planning Authority (CDC), Statutory Consultees including Historic England, Cotswold District Council, Environment Agency and Gloucestershire County Council.

3.22 As part of the evolution of the design of the proposed development, a programme of consultation has been undertaken. This has included formal public consultation events since 2017, weekly dialogue with CDC and the project team and a number of informal discussions with key stakeholders to discuss technical issues associated with the design, assessments and proposals for mitigation. This is described in more detail in the Statement of Community Involvement (SoCI) which accompanies the application.

3.23 Two public exhibition consultations were conducted and held at the Bingham Gallery on 27th June 2017 and at the Fleece Inn, Cirencester on the 18th July 2019. These were attended by members of CDC and TEP. Through the forum of a Public Exhibition, members of the team were able to share ideas and gain an insight into the views and ideas of local residents. The consultations provided important information and ideas which aided in the refinement of the proposals.

3.24 Cotswold Borough Council hosted a web page on their website, which went live in early 2018, providing an overview of the parking demand in Cirencester as well as the proposals. The webpage provides an overview of the project, including previous feasibility work conducted to date, and the design process undertaken in order to arrive at three shortlisted external façade proposals. The webpage provides a project overview, within which visitors to the page have an option to click on a link to a 'Waterloo Factsheet' which provides a number of bullet points detailing the need for the project and the status of the project. The webpage also provides information on material shown at public consultation events, detailed later in this section.

3.25 The dedicated webpage provides the public with information on actions being undertaken to reduce car parking pressure in Cirencester in the meantime, termed 'quick wins', as well as information on existing car parking provision.

3.26 Links are provided to the three shortlisted designs so that the public may view the range of design options. A link to a video animation of the same three designs is also provided on the webpage to provide more context to the designs and enable the public to grasp each design concept individually.

3.27 Monthly residents meetings have been held at the Council offices to discuss the scheme. In November 2019, a representative from TEP attended the residents meeting to speak about the EIA process and the contents of the Environmental Statement. The monthly meeting was held up until the submission of the application.

Alternatives

3.28 Paragraph 2, Part I of Schedule 4 of the EIA Regulations requires the Applicant to provide details of the main alternatives considered. This chapter considers the following options:

- Alternative locations for the proposed development;
- Alternative approaches to solving the car parking issue in Cirencester including constructing a new car park(s) at an alternative location, improving public transport provision and/or implementing a Park and Ride facility;
- Alternative designs and layout for the proposed development in the context of Design Evolution; and
- The 'do nothing' alternative where the proposed development is not progressed.

Alternative Locations

3.29 The Stage 1 Feasibility Study conducted by TEP in June 2016 found that four of the eight car parks assessed, were able to accommodate decked parking; The Waterloo being one.

3.30 Two car parks, owned and managed by Cotswold District Council were not considered in the Feasibility Study. The Queen Street car park provides only 15 spaces with little or no ability for increasing capacity. The Trinity Road car park serves the Council Offices and is only a public car park during weekends and bank holidays.

3.31 The report regarded The Waterloo Car Park as the preferred site to promote decked car parking. The study stated the following about The Waterloo Car Park:

"The car park is a well-used facility, with good all round vehicular access. Pedestrian access could be improved and these improvements would be anticipated as part of any development proposals.

The site's size and shape lends itself to decked car parking, with an additional level of decked parking likely to achieve an increase in capacity of some 80%. It is supported both in adopted and emerging planning policy, although careful consideration of design and its integration into surrounding uses would be needed."

3.32 The findings in relation to the seven alternative location options for increasing car park capacity are outlined below.

Brewery Car Park

3.33 The site was identified as having potential for extending surface car parking, with the potential for the inclusion of decking in the southern section of the car park. Further investigation into the site's potential was recommended, which found the following constraints:

- The need to maintain HGV access for delivery to Brewery Court;
- The close proximity of residential properties;
- It is within a Conservation Area designation (which affords protection including to a number of trees on the site);
- It is centrally located (which is beneficial for pedestrian access), but brings
- traffic into the town centre; and
- It is partially within Scheduled Monument designation (GC361 - Corinium Roman Town).

3.34 Due to these identified restrictions The Brewery Car Park is now allocated for residential-led development under Policy CIR_E16A of the Cotswold District Local Plan (2011-2031).

Old Station Car Park

3.35 Physical restrictions were identified on the site as a result of the Listed Building, so once ramps and circulation space had been calculated, the gains in car parking provision were deemed unlikely to justify the construction costs. Gains in parking provision would likely be minor.

3.36 A formal pre-application was submitted to CDC in 2019 to establish whether a temporary car park could be located at this site to temporarily alleviate some of the parking pressure in Cirencester. The pre-application was negative, siting unacceptable impacts to heritage assets. This location was therefore not pursued.

Sheep Street Car Park

3.37 At the time of the Stage 1 Feasibility Study, the site was allocated under Policy CIR.4-Memorial Hospital in the Cotswold District Local Plan (2001-2011) which required the retention of the front section of the Memorial Hospital and the air raid shelter on the site until a suitable redevelopment comes forward. It was concluded that consent to demolish these structures may be difficult to secure as car parking is not the long term land use proposed for the site. A robust business case would be required and without the demolition of these buildings, the site could not accommodate the required infrastructure and circulation space for a decked car park.

3.38 The Cotswolds District Local Plan (2011-2031) also allocates the Memorial Hospital site on Sheep Street for residential development.

Abbey Grounds Car Park

3.39 Although the size and shape of the site make expansion of this car park a possibility, access to the site is through a residential area, which poses issues for increasing capacity at the site. In addition, numerous trees within the site and along the boundary are covered by a Tree Preservation Order (TPO18).

3.40 The site lies entirely within the Scheduled Monument (GC361 - Corinium Roman Town). Previous studies suggest the site is considered to have high potential for buried archaeological remains dating to the Roman and medieval period, associated with the former Abbey.

The Leisure Centre Car Park

3.41 The majority of the use of this car park is associated with the Leisure Centre and it is located some distance from the town centre. The size and shape of the car park does not lend itself to decking once ramps and circulation space have been taken into consideration.

The Forum Car Park

3.42 The size and shape of the site lends itself to decking, with relatively few environmental constraints. The site could accommodate the creation of one additional deck level. Therefore the capacity of the site is not suitable for resolving the current deficit.

3.43 This site is allocated for retail-led development under Policy CIR_E10 of the Cotswold District Local Plan (2011-2031), suggesting that car parking does not form part of the long term aspirations for the site.

Beeches Road Car Park

3.44 The site is relatively remote though is a well-used facility. The car park has a large number of environmental constraints and the elongated shape does not lend itself to decked car parking.

Alternative Approaches to Increasing Car Park Provision

3.45 Beyond an assessment of these eight car parks, further alternatives to increasing car parking capacity across Cirencester town centre have also been considered. These alternatives are outlined below.

New Car Park(s)

3.46 Rather than increasing capacity within existing town centre car parks, the option to create additional car park capacity at a new site has been considered.

3.47 Given the fabric of the historic town centre and the need for the car park to be within suitable walking distance of the town centre, a suitable site has not been identified despite numerous attempts.

Improvements to Public Transport

3.48 The historic built environment of Cirencester with narrow streets and tight turnings, presents issues for bus operators and cyclists.

3.49 A Transport Interchange has previously been proposed to join up the currently fragmented public transport service that serves the town as a whole. However, due to space being a premium, the only sites identified as appropriate are the town's existing car parks such as the Forum or Old Station car parks. Development at these sites would reduce the already stretched car parking capacity, not resolving the existing car parking issue in Cirencester.

3.50 It is suggested that improvements to public transport be sought alongside increased car park capacity.

Park and Ride

3.51 The Stage 1 Feasibility Report outlines the issues in establishing a financially viable Park and Ride Scheme due to the subsidy required from the Local Highway Authority as well as issues in making Park and Ride attractive to users.

3.52 Overall, it is the view of Gloucestershire County Council Public Transport Unit that Cirencester is too small to justify and sustain a dedicated Park and Ride operation.

<u>The 'Do Nothing' Alternative</u>

3.53 As found in the Cirencester car parking survey (May 2015) and subsequent research parking in the town centre is at or exceeding the effective capacity during the day. The Stage 1 Feasibility Report stated that if no action is taken, a lack of available car parking could result in an increase in traffic generation with drivers looking for somewhere to park, creating more congestion and pollution in the town centre.

3.54 Safety concerns were also raised in the narrow streets for pedestrians and cyclists, jeopardising wider sustainable transport initiatives.

3.55 The lack of additional parking on the financial viability and stability of businesses in Cirencester, was also raised as an area of concern.

3.56 Comments from members of the public at the public consultation events, indicated that when they struggled to park in the town centre, they were forced to find alternative options (hair appointments, clothes shopping etc.) outside of the town. In the long term, this would have a detrimental impact on the prosperity and continued viability of Cirencester Town centre.

Conclusions

3.57 Several alternative options for both an alternative location and alternative method for increasing car parking capacity in Cirencester have been considered. The project scheme assessed in the form of increasing additional capacity at The Waterloo Car Park is the preferred option balancing the pros and cons of the above alternatives considered.

3.58 The following section outlines the evolution of the Site Layout, which demonstrates how alternatives in relation to technical feasibility, receptors and baseline conditions on the Site have been considered.

Site Layout

3.59 The layout of the proposed development as shown in Figure 3.1 has been informed by:

- The space requirements for the various elements of the proposed development;
- Residential properties in the vicinity of the Site;
- Flood Risk;
- Archaeological Features;
- Ground water;
- The setting of Cirencester Conservation Area;
- Access and egress;
- Heritage Assets;
- Biodiversity protection and enhancement;
- Pedestrian permeability; and
- Financial viability.

3.60 The site layout has been revised during the preparation of the application, based on the above factors, the findings of the technical assessment and public consultation.

3.61 The following sections provide a brief overview of the evolution of the development process of the scheme on the Waterloo Car Park Site.

Development Options November 2016

3.62 At this point, prior to initial pre-application, three development options were considered for the Waterloo Car Park Site. These options are outlined below and were formulated to aid in pre-application discussions with the Local Planning Authority (LPA).

Option 1- Maximise Site Capacity

3.63 This option proposed to maximise the development potential of the Site for car parking, proposing a maximum of 824 spaces could be provided on the site, representing a 71% increase in overall parking.

Option 2- Provide Commercial Frontage along the Waterloo

3.64 This layout option demonstrated a design which could provide a mix of commercial and residential accommodation up to three-storeys in height. Two separate structures were proposed to accommodate turning facilities for delivery vehicles and a service yard to the rear of the commercial properties. This limited the overall parking capacity to a maximum of 676 spaces.

Option 3- Provide a landscape buffer

3.65 This option proposed a landscape buffer around the edge of the car park to help integrate the car park into its surroundings, conscious to the potential impact of a modern structure in the historic centre of Cirencester. This option would provide a total capacity of 676 spaces, representing an increase of 67% in parking provision.

3.66 Of the above three options, both elements of Option 1 and Option 3 were proposed to be taken forward to respond to under-capacity of car parking in Cirencester whilst integrating the car park into the surrounding townscape.

<u>Development Options February 2019</u>

3.67 An initial design was completed on 13th February 2019 which showed a four-storey car park, comprising a uniform rectangular structure maximising the available space on the Site by extending close to the Site boundaries.

<u>Development Options March 2019</u>

3.68 Stripe Consulting produced an Options Summary Report in March 2019 outlining three proposed options for the multi-storey car park, building on feedback from technical specialists and Statutory Consultees on the previous proposals. Access was to the north of the Site, to the rear of the car park and egress to the south eastern edge of the Site onto The Waterloo.

Option 1

3.69 This option comprises a uniform structure, almost rectangular in shape, with proposed parking spaces on the roof. Interest is added through taller columns which abut the southern and northern building facades, comprising the proposed pedestrian entrance and exit points and pay machines. Limited landscaping is proposed in the north eastern corner of the Site. The proposal includes:

- Ground Floor plus three storey multi-storey car park
- Two-way ramps
- One way circulation with 6m width
- 574 total parking spaces
- 36 disabled parking spaces
- 8 parent and child parking spaces

- 10 electric vehicle charging points

Option 2

3.70 Option 2 comprises a split level design of three distinct blocks. The central block rises to one storey higher (4 storeys) than the eastern and western blocks which rise to three storeys. Three taller rectangular columns abut the northern and southern facades as in Option 1. Again, rooftop parking and limited landscaping in the north eastern corner of the Site are proposed. Option 2 includes:

- Ground Floor plus five storey multi-storey car park
- One-way ramps
- One way circulation with 6m width
- 487 total parking spaces
- 30 disabled parking spaces
- 8 parent and child parking spaces
- 10 electric vehicle charging points

Option 3

3.71 Option 3 comprises a similar uniform structure to that proposed in Option 1, although the taller, rectangular structures are proposed along the south western corner on the southern facade, the north western corner on the western façade and the north eastern corner along the northern façade. Two insets in the rectangular structure are also proposed along the southern boundary fronting The Waterloo. Limited landscaping is proposed in the north eastern corner of the Site. Option 3 includes:

- Ground floor plus three storey multi-storey car park
- Two one-way ramps
- One way circulation with 6m width
- 482 total parking spaces
- 29 disabled parking spaces
- 8 parent and child parking spaces
- 10 electric vehicle charging points

<u>Sketch Masterplan April 2019</u>

3.72 Following a Design Meeting on 3rd April 2019 it was decided that a combination of two of the above massing designs was to be refined to take account of the identified additional spaces that were required and to break the massing of the building that was currently being shown.

3.73 The outcome was the selected core design and this was taken forward fixing the following numbers, which progressed to the next stage:

- 639 parking spaces; 586 standard, 35 disabled, 8 parent and child, and 10 electric vehicle parking.
- A five storey structure (ground plus four decks) with a fully enclosed roof.
- Access via Waterloo at the rear of the site (existing access).
- Egress via the Waterloo at the front of the site (existing egress).

Façade Architect Competition April - September 2019

3.74 A design competition was formulated to find an architect to design the façade of the car park. Stripe had designed the core structure but the external 'wrap' was to be designed by a different architect.

3.75 A long list was produced form the AJ100 (Architects Journal). A shortlist resulted from expressions of interest. The final three architects were invited to produce concept designs based upon a specified brief. In July 2019 their concept designs were presented to CDC Project Team, Project Board and Stripe Consulting.

3.76 In July 2019 a public display of three concept designs and video 'fly-through' were held at a local venue (local to the Waterloo site). The public were invited to vote for their 1st, 2nd, 3rd choice of designs. In addition to this an online 'survey monkey' was implemented to seek public view and vote on the final three designs.

3.77 The Architect with fewest public votes eliminated from the design competition.

3.78 The two remaining architects were invited to attend a design charrette – this involved two separate sessions to discuss costings, technical compliance, material and sustainability and in September 2019 the final architect selected.

Final Masterplan Winter 2019/2020

3.79 The final project scheme assessed in this ES is the preferred option balancing technical feasibility, economic viability and deliverability and is expected to cause the least disturbance to the environment and receptors relative to the other options that have been considered.

3.80 The final scheme was subject to an assessment of viability versus parking need. The outcome was the project requirement to provide no less than 600 car parking spaces. This took into account the current parking provision (233 + disabled), the town centre shortfall (347) plus a small amount (approximately 10%) to ensure future proofing.

Sustainability Design Meeting January 2020

3.81 A design team meeting was held in January 2020 to ensure the current design had optimised its sustainable build elements. With the recent global push to identifying pathways to zero carbon, the design team discussed ways to ensure the car park was designed, developed and constructed to the highest sustainable methods currently available, whilst ensuring the development sat comfortably within its historic setting.

Description of the Proposed Development

3.82 The application comprises a full planning application for a ground plus four storey multi-storey car park, with access and landscaping works at the site of the existing Waterloo car park.

3.83 The new multi-storey car park will provide 639 spaces including 586 standard spaces, 35 disabled spaces, 8 parent and child spaces, an area for cycle storage and 'charging points' for 10 electric vehicles. The total internal floor space provided by the car park will be approximately 14,800m^2.

3.84 The distribution of parking spaces is detailed in Table 6 below:

Table 3.1: Distribution of Parking Spaces

Floor	Non-disabled	Disabled	Parent and Child	Electric Vehicle	Total
L00	80	28	04	-	112
L01	106	07	04	10	127
L02	132	-	-	-	132
L03	132	-	-	-	132
L04	136	-	-	-	136
Total	**586**	**35**	**8**	**10**	**639**

3.85 The multi-storey car park is a five storey structure (ground plus four decks) with a fully enclosed roof. The dimensions are; 71.66m wide and 52.8m deep. The roof level is 17.83m high. The parapet level is 18.94 and the top of core 2 is 21.69m. It has three aisles and utilises a Vertical Circulation Module layout, with one-way aisles. Vehicular ramps are provided in the centre of the car park with two-way ramps accommodating those travelling to both lower and upper levels.

3.86 There are three core lobbies providing pedestrian access to each level of the car park. The Core 1 Primary Lobby is located to the south west and comprises a stairwell, two elevators, secure cycle storage with showers and toilets which are all publically accessible. The cycle store and toilets are located on the ground floor with separate access points. Alongside this is a switch room, office, cleaner's cupboard and maintenance corridor, also located on the ground floor only. The Core 2 and Core 3 lobbies located in the north western corner and north eastern corner respectively comprise a pedestrian stairwell to all levels of the car park.

3.87 The roof level comprises a photovoltaic area of circa 2,960m^2 and maintenance walkway. This level is not publically accessible.

3.88 Access is proposed via an entry-only route in the north west corner of the Site, from The Waterloo which runs along the western Site edge. Egress is from an exit-only route in the south eastern corner of the Site, exiting onto The Waterloo which runs to the south of the Site.

3.89 Pedestrian connections are provided via the existing footpath along The Waterloo along the Site's southern and western boundaries providing safe access to the Core 1 and Core 2 lobbies in the south western and north western corners of the car park. A rear access path is proposed in the north eastern corner of the Site to provide pedestrian access to the Core 3 Lobby.

3.90 The upper levels will be wrapped in woven metal panels using strips of mill finish marine grade and powder coated aluminium sheeting weaving in and out of an aluminium frame, creating a 3 dimensional panel. The eastern and western façades will be more closed with additional fire protection panels fixed to the façade from within the car park. The fire proof panels will be not be visible from outside of the building.

3.91 The lower level and pedestrian entrances will be constructed from Cotswold Stone filled gabions. Cotswold stone filled Gabion cladding is used throughout the south west of England and will ensure that the car park is in keeping with its surroundings, especially where the Proposed Development faces the historic core of Cirencester.

3.92 The Full Planning Application seeks permission for:

"Erection of a multi-storey car park and vehicular access at The Waterloo, Cirencester"

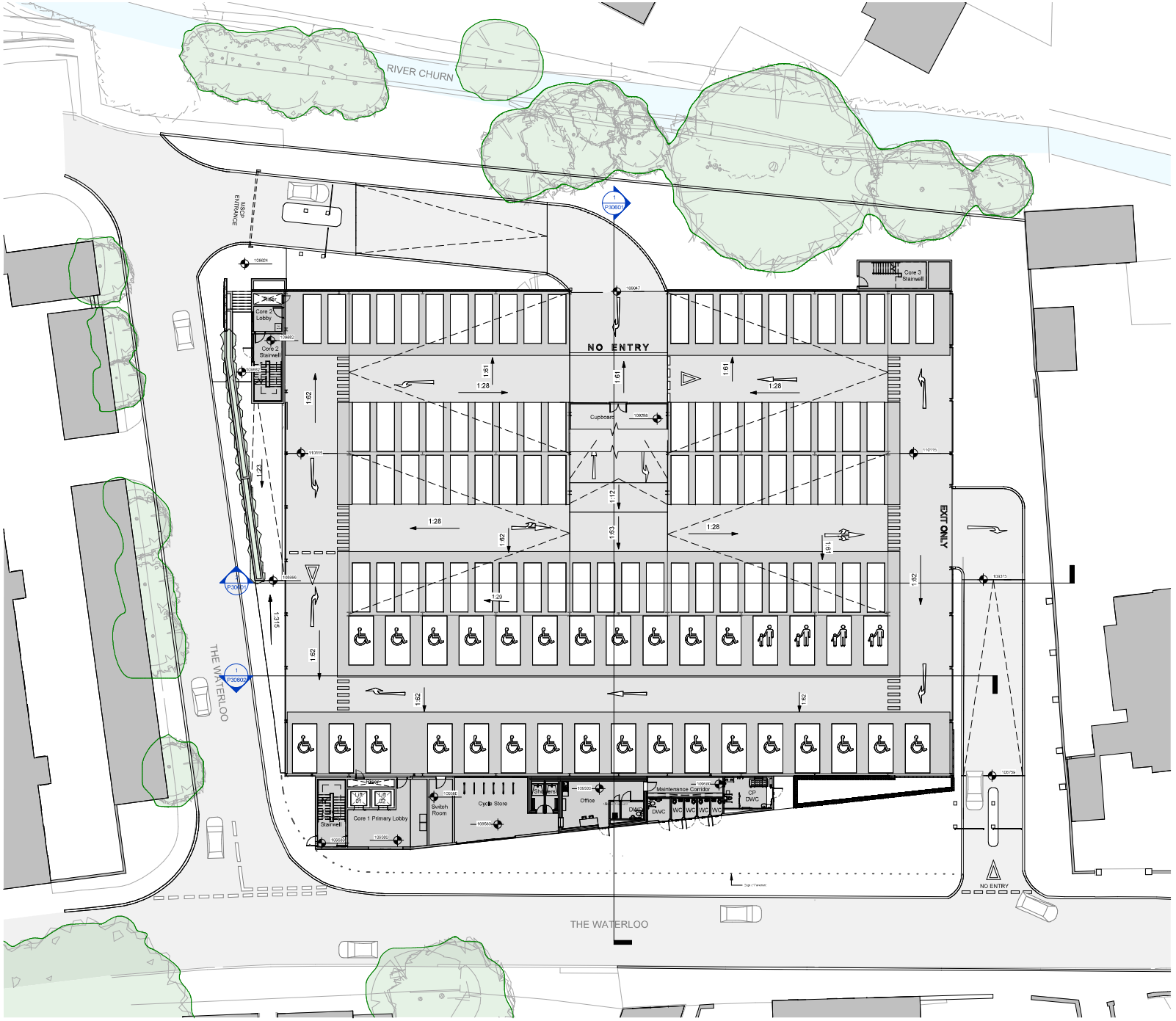
Parameters for the Proposed Development

3.93 Figure 1.2 illustrates the Site boundary for the purposes of the planning application, within which all development, landscaping and highway works will take place at both the construction and operational phases.

3.94 The maximum building height proposed 21.7m at the north west corner and contains core 2. The roof level is 18.9m.

3.95 The following chapters provide a detailed assessment of the effects of the preferred project design on the environment and the identification of mitigation measures which would minimise effects during installation, operation and decommissioning of the project components

Figure 3.1



NOTES

Drawing issued for specified purposes only.
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NB All levels shown indicatively only - subject to change pending confirmation of drainage falls and gradients.

Floor	Non-disabled	Disabled	Parent and child	EV	Total
L04	136	-	-	-	136
L03	132	-	-	-	132
L02	132	-	-	-	132
L01	106	07	04	10	127
L00	80	28	04	-	112
				Total	639

KEY:

Tree to be retained

Rev	Description	Date
P1	Planning Issue	27/03/20

STRIPE CONSULTING
01293 850794 office@stripeuk.com

WATERLOO MSCP
CIRENCESTER

Proposed MSCP Level 00 General Arrangement Plan

ISSUED:	27/03/20
SCALE:	1 : 200 @ A1
PURPOSE:	PLANNING

P1

6576-STRIPE-WP-00-PL-AX-30100

4.0 Archaeology and Historic Environment

Introduction

4.1 The Archaeology and Historic Environment Assessment presents the methodology and findings of the assessment of potential impacts arising from the Proposed Development on archaeology and the historic environment. This chapter evaluates the known and potential archaeological and historical resource within the Site and its surroundings. The baseline conditions have been placed in the local, regional and national context, and assessed against national criteria.

4.2 The historic environment includes all physical remains of past human activity (whether visible, buried or submerged, landscaped or planted or managed flora). Those aspects of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called 'heritage assets'. Some heritage assets are designated; these include World Heritage Sites, Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, Registered Battlefields, and Conservation Areas.

4.3 This ES chapter then presents the results of the assessment of the impact of the Proposed Development on the baseline conditions in order to determine the anticipated magnitude and significance of effect. Mitigation measures are presented and discussed to prevent, reduce or offset the impacts of the Proposed Development.

Assessment Methodology

Legislation, Policy and Good Practice

4.4 The statutory legislation most relevant to the Archaeology and Historic Environment ES chapter comprises;

- Ancient Monuments and Archaeological Areas Act, 1979: It is a criminal offence to carry out any works on or adjacent to a Scheduled Monument without Scheduled Monument Consent. This Act makes no reference to the setting of Scheduled Monuments.
- Planning (Listed Buildings and Conservation Areas) Act, 1990: In considering whether to grant planning permission for development which affects a listed building or its setting, the decision maker shall have special regard to the desirability of preserving the building or its setting (section 66). Special attention shall be paid to the desirability of preserving or enhancing the character or appearance of a conservation area (section 72).

4.5 The assessment will be undertaken having regard to the above legislation and the following additional policy and guidance:

- National Planning Policy Framework 2019;
- Chartered Institute for Archaeologists Code of Conduct and Standard and Guidance documents;
- English Heritage (2008), Conservation Principles; Policy and Guidance for the Sustainable Management of the Historic Environment;

- Planning Practice Guidance on Conserving and enhancing the historic environment;
- Historic England, Historic Environment Advice Note 1, 2nd Edition. Conservation Area Appraisal, Designation and Management (HE 2019);
- Historic England, Historic Environment Advice Note 2. Making Changes to Heritage Assets (HE, 2016); and
- Historic England, Historic Environment Advice Note 3, 2nd Edition. The Setting of Heritage Assets (HE, 2017).

National Planning Policy

4.6 The revised National Planning Policy Framework (NPPF February 2019) includes within Section 2, Achieving sustainable development that the planning system has three overarching objectives, one of which relates to heritage assets. Within Paragraph 8, Section C it states that one of the three overarching objectives of the planning system is:

4.7 "an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy".

4.8 Section 16 of the NPPF then goes on to describe provisions specifically relating to conserving and enhancing the historic environment.

4.9 Paragraph 189 advises local planning authorities to require an applicant to describe the significance of any heritage assets affected by their proposal, including any contribution made by their setting. It states that *"the level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance".*

4.10 The glossary to the NPPF describes significance in relation to heritage policy as *"the value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance."*

4.11 The setting of a heritage asset is defined as "*the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of the asset, may affect the ability to appreciate that significance or may be neutral*".

Local Planning Policy

4.12 Local planning policy relevant to this chapter is included in the adopted Cotswold District Council Local Plan 2011-2031:

POLICY S1: Cirencester Town

4.13 Paragraph 7.2.4 states that "*large areas of Cirencester are designated as scheduled monuments under the Ancient Monuments and Archaeological Areas Act 1979. The objective of such designation is to assist in the management of the resource, including ensuring that it is not needlessly destroyed or damaged*."

4.14 Paragraph 7.2.6 advises that "*Any planning applications for redevelopment within the town should be fully cognisant of the role of Cirencester's Conservation Area Appraisal & Management Plan and the Cirencester Town Centre SPD. The existing Cirencester Archaeological Assessment and any further assessment required should also be taken into account when considering the impact of a proposal on a heritage asset to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal. Although the potential difficulties for development are inescapable, heritage assets should be conserved, unless fully justified, and be used as a key driver and focus for inward investment, regeneration and redevelopment*."

POLICY S3: Cirencester Central Area

4.15 The Cirencester Central Area Strategy which relates to Archaeology and the Historic Environment states that:

"*1. The central area's historic environment should form an integral part of future redevelopment and/or other proposals that are aimed at improving Cirencester's role, function and economy, including future transport and parking schemes. Wherever feasible, the historic environment should be a key driver of, and focus for, inward investment, regeneration and redevelopment.*

2. Any planning applications for redevelopment within the town centre should pay due regard to the Cirencester Conservation Area Appraisal & Management Plan and the Cirencester Town Centre SPD or any superseding SPD. The Cirencester Archaeology Review (January 2014) and any further assessment required should also be taken into account when considering the impact of a proposal on a heritage asset."

4.16 Chapter 10 within the Local Plan sets out specific polices relevant to this chapter, and also mentions the importance of the historic environment within Special Landscape Areas (SLAs), and highlights the interrelationship between the built, natural and historic environment.

POLICY EN1: Built, Natural and Historic Environment

4.17 This policy states that "*New development will, where appropriate, promote the protection, conservation and enhancement of the historic and natural environment by:*

a. ensuring the protection and enhancement of existing natural and historic environmental assets and their settings in proportion with the significance of the asset;

b. contributing to the provision and enhancement of multi-functional green infrastructure;

c. addressing climate change, habitat loss and fragmentation through creating new habitats and the better management of existing habitats;

d. seeking to improve air, soil and water quality where feasible; and

e. ensuring design standards that complement the character of the area and the sustainable use of the development."

Policy EN2: Design of the Built and Natural Environment

4.18 The policy deals with the character and appearance of new development in Cirencester, with particular regard for local distinctiveness, in items such as building materials, e.g. the cream limestone and dry stone walls, and well as the Cotswold vernacular style. Another heritage theme relevant to this chapter highlighted within policy includes the Roman archaeology, focused on Corinium. Policy EN2 states that "*Development will be permitted which accords with the Cotswold Design Code. Proposals should be of design quality that respects the character and distinctive appearance of the locality*."

POLICY EN10: Historic Environment: Designated Heritage Assets

4.19 Policy EN10 reinforces the protection afforded to designated heritage assets in the NPPF and PPG. It sets out that great weight should be given to the conservation of these assets when considering a development proposal, but also highlights the opportunity to better reveal the significance of heritage assets as a result of new development:

"*1. In considering proposals that affect a designated heritage asset or its setting, great weight will be given to the asset's conservation. The more important the asset, the greater the weight should be.*

2. Development proposals that sustain and enhance the character, appearance and significance of designated heritage assets (and their settings), and that put them to viable uses, consistent with their conservation, will be permitted.

3. Proposals that would lead to harm to the significance of a designated heritage asset or its setting will not be permitted, unless a clear and convincing justification of public benefit can be demonstrated to outweigh that harm. Any such assessment will take account, in the balance of material considerations:

- *the importance of the asset;*
- *the scale of harm; and*
- *the nature and level of the public benefit of the proposal*."

POLICY EN11: Historic Environment: Designated Heritage Assets

Conservation Areas

4.20 This policy refers to the conservation areas within Cirencester, and also specifically applies to smaller elements such as walls, significant views, and setting which contribute to the overall identity of the area. Policy EN11 states that "*Development proposals, including demolition, that would affect Conservation Areas and their settings, will be permitted provided they:*

a. preserve and where appropriate enhance the special character and appearance of the Conservation Area in terms of siting, scale, form, proportion, design, materials and the retention of positive features;

b. include hard and soft landscape proposals, where appropriate, that respect the character and appearance of the Conservation Area;

c. will not result in the loss of open spaces, including garden areas and village greens, which make a valuable contribution to the character and/or appearance, and/or allow important views into or out of the Conservation Area;

d. have regard to the relevant Conservation Area appraisal (where available); and

e. do not include internally illuminated advertisement signage unless the signage does not have an adverse impact on the Conservation Area or its setting."

POLICY EN12: Historic Environment: Non-designated Heritage Assets

"*1. Development affecting a non-designated heritage asset will be permitted where it is designed sympathetically having regard to the significance of the asset, its features, character and setting.*

2. Where possible, development will seek to enhance the character of the non-designated heritage asset. Proposals for demolition or total loss of a non-designated heritage asset will be subject to a balanced assessment taking into account the significance of the asset and the scale of harm or loss.

3. The assessment of whether a site, feature or structure is considered to be a non-designated heritage asset, will be guided by the criteria set out in Table 6."

4.21 This policy notes that unlike other areas in the country, no definitive list of non-designated heritage assets exists in the Cotswold District. Non-designated heritage assets are to be identified as part of the planning application process, and Table 6 sets out the type and details of features or structures which will be treated as non-designated heritage assets. Those relevant to this chapter are as below:

- Assets of archaeological interest;
- Buildings and structures; and
- Sites, structures or buildings already recognised as non-designated heritage assets.

Sources of Information/Guidance

4.22 Guidance notes and standards relevant to the historic environment that have been consulted in the production of this ES chapter comprise:

- Chartered Institute for Archaeologists Code of Conduct and Standard and Guidance documents;
- National Planning Practice Guidance (2019);
- Historic England, Conservation Principles; Policy and Guidance for the Sustainable Management of the Historic Environment (HE 2008);
- Planning Practice Guidance on Conserving and enhancing the historic environment;

- Historic Environment Good Practice Planning Advice Note 2 Making Changes to Heritage Assets (Historic England, 2016); and
- Historic Environment Good Practice Planning Advice Note 3, 2nd Ed. The Setting of Heritage Assets (Historic England, 2017).

4.23 Further sources of information that have been used to inform the baseline and assessment methodology comprise:

- The National Heritage List for current data on designated heritage assets;
- The National Monuments Record maintained by Historic England;
- The Historic Environment Records (HER) held by Gloucestershire County Council;
- Gloucestershire Archives and Records Service;
- Ordnance Survey historic mapping;
- Archaeological Data Service;
- Aerial photographs and satellite images; and
- British Geological Survey mapping.

Study Area

4.24 Data was gathered for all designated heritage assets within 200m of the Site boundary. The Zone of Theoretical Visibility (ZTV) provided for the TVIA ES chapter was also consulted (Appendix E3, Figure 5.5, Drawing Number G6285.015). This allowed for the identification of the heritage assets where development could affect the contribution of the heritage asset's setting to its significance. This study area is proportionate to the scale of the Proposed Development, and was informed by a preliminary appraisal of baseline data. The Scheduled Monument of Tar Barrows located outside of the study area, 475m to the north-east is included within the baseline as a result of the surrounding topography and nature of the asset.

4.25 Data has also been gathered for all non-designated heritage assets within the Site boundary and within a 10m buffer from the Site boundary. The area of search has taken into account review of the data received from Gloucestershire Historic Environment Record and has been designed to be fully inclusive of the Site boundary to ensure that assets adjacent to the Site, but with the potential to extend into it, are captured in baseline data. The area of search also allows for assets with archaeological interest within or adjacent to the Site to be placed in context. A further appraisal of the baseline data, and site visit also highlighted a number of non-designated heritage assets, comprising historic buildings located along Dyer Street, London Road and The Waterloo, which have been included within the study area.

4.26 The assets assessed within this ES are shown within Appendix D to this chapter.

Assessment Process

4.27 An Archaeological Desk Based Assessment was by TEP in 2017 (updated April 2020) and is provided as a technical appendix to the ES (Appendix D). This report was a starting point and informed the baseline and assessment sections of this chapter.

4.28 A walkover survey was undertaken in February 2017. Field notes were taken to record the land use, condition of known heritage assets, surface evidence for any previously unrecorded heritage assets, the topography and surrounding landscape character as an indicator of potential for buried archaeology, and any health and safety or methodological constraints to further site surveys.

4.29 A walkover survey was also undertaken in September 2019 to explore views from the Site towards the Cirencester Town Centre Conservation Area, and the nearby listed buildings and non-designated heritage assets, to determine the contribution to significance made by the setting of the nearby heritage assets within the 200m area of search. The site visit assisted in identifying those assets which would be more sensitive to change affecting their setting, and to establish the study for this ES chapter. The preliminary work was undertaken in accordance with "Step 1" of the assessment of effects on the setting of heritage assets (Historic England, GPA Note 3, 2nd Ed. 2017)

4.30 In support of this ES chapter, and to address the scoping response by Historic England in March 2019, ARCA undertook geoarchaeological investigation of three archaeological trenches, hand excavated by Cotswold Archaeology to a depth of 1.2m. Five deposits were sampled and assessed for their palaeoenvironmental potential, by Cotswold Archaeology. A similar stratigraphic sequence was recorded across the site. In Trench 2 the natural sandy clay and gravel was overlain by alluvial deposits, from which three small fragments of Roman CBM were recovered. A surface and a demolition layer were identified within Trench 3 and 'dark earth' deposits were identified in Trenches 1 and 3. Pre-modern deposits were sealed by the modern car park levelling layers and surfacing throughout the excavated trenches, which measured up to 0.9m in thickness.

4.31 In addition, an archaeological evaluation comprising four trial trenches was undertaken in October 2019 by Cotswold Archaeology to investigate, define and understand the archaeological potential and survival of archaeological deposits and artefact within the Site.

Assessing the Significance of Effects

4.32 Effects on the historic environment include direct effects, and any indirect and cumulative effects. These effects could be permanent or temporary (short term, medium term or long term); adverse, negligible or beneficial; the assessment of effects identifies which is the case.

4.33 A staged assessment has been undertaken to determine the likely significance of effects of the Proposed Development on the historic environment. This involved establishing the historic environment baseline to determine the importance of the known assets that may be affected (for the historic environment, "importance" has the same meaning as "heritage significance"). Once the baseline has been established, the extent of the impact of the Proposed Development (the "magnitude of impact") on the heritage significance is assessed. By comparing the importance of the asset and the magnitude of change the overall significance of the effect has been determined. .

Sensitivity of Receptor

4.34 Understanding the importance of the heritage assets includes an assessment of the heritage values of the asset, and the contribution made by setting to those values. The importance of a heritage asset is described in terms of the value of the heritage asset because of its heritage interest (architectural, archaeological, artistic or historic) and is also described in relation to the asset's heritage values (evidential, historical, communal, and aesthetic).

4.35 For designated assets (Listed Buildings, Scheduled Monuments (SM), Registered Parks and Gardens and Conservation Areas), the importance will be recorded as 'high' or 'very high' as these assets meet the national criteria for designation under the relevant legislation. Listed Buildings and Registered Parks and Gardens are graded (I, II* and II) according to relative significance.

4.36 The relative importance of each non-designated heritage asset within the historic environment baseline has also been determined to provide a framework for comparison. These categories do not reflect a definitive level of significance or value of a heritage asset, but a provisional one based on the asset's heritage values to provide an analytical tool that can inform later stages of assessment and the development of appropriate mitigation, where needed. The degree of survival is also taken into account in determining receptor importance. Assets where there is likely to be very limited physical evidence because they have been destroyed or extensively damaged are of low or negligible heritage significance. Determining heritage significance is a professional judgment made with reference to Conservation Principles.

Table 4.1: Criteria for determining relative heritage significance

Receptor Importance	Description
Very High (International)	Internationally important resources and designated heritage assets of the highest significance: Grade I and II* listed buildings, Grade I and II* registered parks and gardens, Scheduled Monuments, World Heritage Sites, Registered Battlefields.
High (National)	Nationally important resources: Grade II Listed Buildings, Conservation Areas, Grade II Registered Parks and Gardens.
Moderate (Regional)	Regionally important resources: Non-designated heritage assets and landscape features with high or moderate evidential, historical, aesthetic and/or communal values.
Low (Local)	Locally important resources: Non-designated heritage assets and landscape features with low evidential, historical, aesthetic and/or communal values.

Receptor Importance	Description
Negligible (Minor)	Assets with very low or no evidential, historical, aesthetic and/ or communal values, or where remains are known to have been significantly altered or destroyed.
Unknown	Assets and structures of uncertain character, extent and/or date where the importance cannot be readily predicted.

Magnitude of impact

4.37 Assessing the impact of the Proposed Development in relation to the historic environment baseline has been considered in relation to the following criteria. This includes “Step 3” of the assessment of effects on the setting of heritage assets (Historic England, GPA Note 3, 2nd Ed. 2017) to determine whether, and to what degree, the heritage significance of an asset may be harmed or lost where the Proposed Development affects its setting, as well as the magnitude of any direct physical effects to the asset.

4.38 Historic England states that setting is not a heritage asset, nor a heritage designation, its importance lies in what it contributes to the significance of a heritage asset. Significance can therefore only be harmed or lost if the significance of the asset is in some way derived from that part of the setting affected by the Proposed Development.

4.39 The descriptions of magnitude of impact, provided in the following table, relate to harm to or loss of significance of the asset (and not, where development only affects its setting, the degree of change within that setting). This is a professional judgement made with reference to Historic England Good Practice Advice Note 2 and Planning Practice Guidance.

Table 4.2 Magnitude of effect

Magnitude	Definition
High	Total loss or substantial harm to key elements of the heritage interest of the asset, or features or characteristics of the baseline (pre-development) conditions such that post development character or composition or attributes of baseline will be fundamentally changed.
Moderate	Partial loss or harm to one or more important elements or features or characteristics of the baseline (pre-development) conditions such that post development character or composition or attributes of baseline will be partially changed.

Magnitude	Definition
Low	Minor loss. Change arising from the loss or alteration will be discernible but underlying character or composition or attributes of the baseline condition will be similar to pre-development circumstances or patterns.
Negligible	No loss or alteration. Change not distinguishable or does not result in loss of heritage significance.
Unknown	The exact location, extent or nature of the baseline receptor is not known and therefore the magnitude of change cannot be discerned.

Duration of effect

4.40 The assessment will consider the likely duration of the effect, based on the following timescales:

- Temporary: Effects that continue for a limited time; and
- Permanent: Effects that result from an irreversible change to the archaeology and historic environment baseline or effects which will continue into the future.

Assessing Significance of Effect

4.41 A professional judgement has been applied in determining the overall significance of effect within the broad categories identified by the below matrix. The assessment takes into account the relative heritage significance of the asset, the contribution made by setting to that significance, and the predicted magnitude of effect on that significance that would result from the proposed development. This determined the overall significance of effect.

Table 4.3: Criteria for determining significance of effect

Magnitude	Importance of Receptor				
	Very High	High	Moderate	Low	Negligible
High	High	High	Moderate	Moderate or Low	Negligible
Moderate	High or Moderate	Moderate or Low	Moderate or Low	Low or Negligible	Negligible or Neutral
Low	Moderate or Low	Low	Low or Negligible	Negligible or Neutral	Neutral

Magnitude	Importance of Receptor				
	Very High	High	Moderate	Low	Negligible
Negligible	Low or Negligible	Low or Negligible	Negligible or Neutral	Neutral	Neutral

4.42 The overall significance of effect reflects national heritage policy, which makes a distinction between substantial and less than substantial harm (NPPF, paragraphs 193 – 195). For the purpose of this assessment, high adverse effects will be considered to be equivalent to substantial harm, and as significant effects in EIA terms. The judgement will be guided by Planning Practice Guidance paragraph: 018 Reference ID: 18a-018-20190723 "How can the possibility of harm to a heritage asset be assessed?"

4.43 The Development Services Conservation Response to the request for an EIA scoping opinion (Ref: 18/04754/SCOPE dated 4th January 2019) included a comment that less than substantial harm is a very broad spectrum that cannot all really be covered by 'moderate' significance as was proposed in the scoping opinion request.

4.44 The response suggested that, in light of the Barnwell[1] case finding that less than substantial harm does not equate to a less than substantial objection:

'there really should be an established and reasoned spectrum of harm within the broad category of 'less-than-substantial' to separate the lowest levels, that can be negligible, to the highest levels that fall just below substantial (as defined by Bedford)[2]*'.*

4.45 Careful consideration has been given to this observation. However there is no established and reasoned spectrum or scale of harm which has been issued by Historic England, the Institute for Chartered Institute for Archaeologists (CIfA) or any other recognised authority or organisation.

4.46 The notion of a theoretical scale is established in custom and practice but this is not defined and effects are judged by experienced specialists according to the merits of each particular circumstance and case. Competent authorities, comprising planning authorities, Planning Inspectors and the Secretary of State take decisions on the extent of less than significant harm they judge and the weight to be carried in the planning balance.

[1] Barnwell Manor Wind Energy Ltd v East Northants District Council, English Heritage, National Trust, [2014], EWCA Civ 137

[2] Bedford Borough Council v Secretary of State for Communities and Local Government, Nuon UK Ltd [2013] EWHC 2847 (Admin) where the High Court confirmed that for harm to the significance of a designated heritage asset to be considered substantial, '*the impact on significance was required to be serious such that very much, if not all, of the significance was drained away'*

4.47 In the reported effects on heritage assets, effects of minor significance will be of less than substantial harm and always will be at a lower part of the theoretical scale of less than substantial harm than effects reported as of moderate significance. However the judgement that effects of moderate significance are equivalent to less than substantial harm has been retained as was suggested in the scoping report.

4.48 Effects of moderate significance are considered significant effects in EIA terminology. Effects of low or negligible significance are less than substantial and are not significant in EIA terms. Effects recorded as negligible or neutral are not significant and are not harmful to the heritage significance of the asset.

Table 4.4 Assessment method for determining level of harm

Magnitude	Definition	Level of harm
High	Total loss or substantial harm to key elements of the heritage interest of the asset, or features or characteristics of the baseline (pre-development) conditions such that post development character or composition or attributes of baseline will be fundamentally changed.	Substantial
Moderate	Partial loss or harm to one or more important elements or features or characteristics of the baseline (pre-development) conditions such that post development character or composition or attributes of baseline will be partially changed.	Less than substantial
Low	Minor loss. Change arising from the loss or alteration will be discernible but underlying character or composition or attributes of the baseline condition will be similar to pre-development circumstances or patterns.	
Negligible	No loss or alteration. Change not distinguishable or does not result in loss of heritage significance.	None
Unknown	The exact location, extent or nature of the baseline receptor is not known and therefore the magnitude of change cannot be discerned.	

4.49 Effects which are equivalent to less than substantial harm should be weighed against the public benefits of a proposed development, taking account of the impact of a development on the heritage significance of a designated heritage asset. In cases of less than substantial harm, great weight should still be placed on the conservation of a designated heritage asset, in order for a balanced judgement to be made.

4.50 The nature of an effect can be classified as adverse, negligible (or neutral), or beneficial:

- Adverse: Classifications of significance indicate disadvantageous or negative effects to an environmental receptor;
- Negligible and Neutral: Classifications of significance indicate imperceptible effects to an environmental receptor;
- Beneficial: Classifications of significance indicate advantageous or positive effects to an environmental receptor.

4.51 Heritage significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. The former relates to any direct physical harm, including total or partial loss of the asset. Where the development only affects the setting of the asset, there is no direct physical harm but loss of or change to the asset's setting can (where setting contributes to the significance of the asset) result in a reduced ability to experience and understand the asset's heritage significance.

4.52 The assessment within this ES chapter will identify and evaluate the nature and likelihood of the impacts of the proposed development, in both the long and short term, on archaeological and built heritage features against clearly defined criteria.

4.53 Heritage assets with archaeological interest are susceptible to a range of impacts during development. These relate to works associated with site preparation as well as construction related activities, including:

- Demolition and site clearance activities that disturb archaeological remains;
- Excavation that extends into archaeological sequences, for example deep foundations or basements resulting in the removal of the resource; and
- Piling activities resulting in disturbance and fragmentation of the archaeological resource.

4.54 The implications, if any, of these actions will be discussed and significance criteria allocated to any identified impact.

Assumption and Limitations

4.55 Data from the HER and the NMR consists of secondary information derived from varied sources. This data, as well as that derived from other secondary sources such as historic mapping, is generally accurate. There are however several limitations to the data set, generic to any desk-based assessment. For example, where the known archaeological data relates to chance finds the full extent, date and nature of the asset is often uncertain. Also, asset records, particularly older records, can fail to accurately locate assets. Due to these limitations, it is possible that previously unrecorded archaeological assets could survive within the Site. Additionally, due to the buried nature of archaeological assets there is often an element of uncertainty regarding the precise survival, condition and extent of the asset.

4.56 This application is being made in full, the assessment that follows is therefore made on a reasonable worst case basis, having regard to the development and design parameters as outlined in ES Chapter 3.

Consultation

4.57 A Scoping Opinion response was received on 4th January 2019 from the Conservation Officer at Cotswold District Council. The Conservation Officer set out in their response that the Proposed Development has the potential to affect the setting of a number of heritage assets. Those assets stated in the response comprised the Scheduled Monument of Corinium Roman Town, Cirencester Town Centre Conservation Area, listed buildings, particularly those along the north side of Dyer Street, numbered 47-57, and two non-designated positive buildings within the conservation area. This advice was as a starting point to create the area of search around the proposed development where impacts upon setting may be seen as a result of the scheme. The Conservation Officer also identified a number of important views within the Town Centre Conservation Area, including views across the Abbey Grounds, and views into the Site and Cirencester Town Centre Conservation Area from the Victoria Road, Dyer Street, London Road junction.

4.58 A Scoping Opinion response was also received on 8th January 2019 from Cotswold District Council which included specific points from Historic England's comments regarding development on the Site, which is included within the Scheduled Monument of Corinium Roman Town. Historic England requested further work in relation to the presence and survival of environmental remains within the Site which was undertaken in March 2019 which concluded the Site holds little palaeoenvironmental potential. Consultation with Historic England has continued from this time to secure Scheduled Monument Consent for the March 2019 geotechnical works, April 2019 GPR survey and September to October 2019 trial trenching.

4.59 Following the evaluation undertaken in 2019, further pre-application advice from Historic England in December 2019 discussed the foundations for the proposed car park, and the use of piling which would harm any archaeological remains within the Site. The alternative raft foundation solution has been ruled out for the design in a foundation assessment presented to Historic England by Stripe Consulting (23rd January 2020).

4.60 The December 2019 Historic England advice letter also noted that a full settings assessment should be undertaken on the impact of the proposed development on Listed Buildings and Conservation Areas, in accordance with Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (2nd Edition), December 2017.

Baseline Conditions

Current Baseline

Archaeological and Historical Background

4.61 A desk-based assessment has been undertaken by TEP in 2017, updated 2020 (Appendix D). A summary of the of the baseline is set out below:

Prehistoric

4.62 Evidence for human settlement and activity is recorded in the Cotswolds since the 4th millennium BC. A high number of causewayed enclosures and long barrows are noted in the region and by the late 2nd millennium BC there was a high increase in settlement across the area. This increase in population lead to the development of hill-fort based societies and it is likely that the Cotswolds was the location of important regional centres connected by the local river systems. Around these centres the land was likely occupied by dispersed farmsteads, associated with nearby barrows and burial grounds (Darvill 2004).

4.63 In 1986 several holes were excavated in the abbey grounds for the construction of play equipment, and a Bronze Age retouched flint scraper was found in one of the areas. During the Iron Age Corinium Dobunorum (Cirencester) would have lain within the territory of the Dobunni tribe. Their seat, Bagendon was situated around 4km to the east of the town. Earthworks and cropmarks have been recorded to the south-eastern edge of the town, and there is evidence for artificial water courses associated with the River Churn, and suggestive of Iron Age occupation.

4.64 Approximately 475m north-east of the Site lie the Tar Barrows, a Scheduled Monument. The Tar Barrows are the earthwork and buried remains of two prehistoric or Roman round barrows and the buried remains of a Romano-British or earlier funerary and ritual site. These were overlain by extensive medieval and post medieval ridge and furrow earthworks, which have been ploughed to reveal rectilinear enclosures around the site of the earlier barrows. This may represent early religious or funerary activity, outside of the Roman town.

Roman

4.65 Early Roman activity in Cirencester is thought to take place between Victoria Road and Watermoor Road, south of the Site. By the late 70s AD, the town of Corinium Dobunnorum was established, following a regular street plan. However there are few remains of this grid street pattern evident today with Ermin Street and the Fosse Way were the main axis, flanking the Forum, a rectangular plaza. An excavation at The Waterloo in 1968 on the projected line of the street between insulae XXIV and XVI. The street was not found, however the investigations confirmed the waterlogging of archaeological deposits. Another excavation in the same year at The Waterloo found low status Roman buildings, with possible courtyards, however little dating evidence was recovered.

4.66 Cirencester was an important early Roman military centre, which later developed into an urban centre, eventually becoming the administrative and political core of the Dobunni tribal area. The amphitheatre is still extant and there are a number of surviving remnants of stonework, currently held in the Corinium Museum, Cirencester. The town would have been enclosed by way of an eastern rampart, later faced with stone to create a town wall. Part of the town rampart was recorded within the abbey grounds in 1986 during a small excavation for the construction of play equipment. A surviving section of the Roman wall is seen 140m to the north-east of the Site. As mentioned in paragraph 4.53 there is evidence of possible early Roman activity beyond the town wall, and in 1986 monitored groundworks at London Road produced possible evidence of a smaller Roman buildings, consisting of walls, cobbled and mortar surfaces, pottery and tile dating to approximately the 4th century.

4.67 The Roman town lies almost entirely in the valley of the River Churn, and prior to Roman intervention and during the early Roman period, the River Churn would have probably intersected the north-western end of the Site. It was not until the 2nd century AD when the river channel was diverted to an extramural course, therefore the area was probably developed following this time. Test pit evaluation by Cotswold Archaeological Trust in 1998 at Waterloo Car Park found later Roman deposits covered by overburden at depths ranging from 0.68m to 2.2m. This evaluation revealed evidence for a pre-Roman watercourse, and structural remains, likely relating to at least one former Roman building within the Site.

4.68 In 2013 and 2014 Cotswold Archaeology undertook archaeological excavation at The Woolmarket Car Park opposite the Site. Roman rubble pits, possibly associated with the demolition of buildings within Insula XVII were recorded as well as wall foundations associated with medieval plot boundaries.

4.69 Waterloo Car Park is situated in the north-eastern part of the Roman town, in insula XVI, approximately 200m west of the site of Verulamium Gate, part of the Roman town defences. Little is currently known about Insula XVI, yet previous investigations have shown that the projected line of Roman Street K runs close to the south-east of the Site. Archaeological evaluation of the Site has revealed likely small buildings situated within the Site, facing the street, or a lane off the main street, as is typical of Roman towns.

Early Medieval to Medieval

4.70 The general urban decline of the major Roman towns is a well-known feature of the late 4th and 5th centuries, however there is a paucity of evidence regarding the fate of these towns (Webster ed. 2008:173). The material record concerning the early post-Roman period in Cirencester is poor, though it is evident that the site ceased to thrive as a town and early medieval occupation in the area seems to be minimal. The Saxon core of the town lay north of the former Roman Forum, to the west of the Site.

4.71 During the later medieval period the Cotswolds' wool industry flourished, and sometime preceding the compilation of the Domesday Book (1086) a market began in Cirencester. By the time of the Norman Conquest the town of Cirencester had increased in value and size, with 63.5 households recorded in the Domesday Book in 1086. Post-Norman Conquest Cirencester was a significant economic, political, and religious centre, that prospered as a result of the wool trade. St Mary's Abbey was founded in 1117 by Henry I, likely over the site of an earlier church and the late 15th century saw inhabitants donate to renovate and expand the parish church of St John the Baptist, built in the late 12th century.

4.72 During the medieval period, water from the Outer Churn was diverted to a new channel to feed the Abbey fish ponds, before draining southwards as the Inner Churn. This watercourse is largely extant, and borders the north-eastern boundary of Waterloo Car Park. In 1974 cable trenches were excavated through the abbey grounds and revealed a layer of limestone rubble 0.75m deep, likely resulting from the demolition of the abbey.

4.73 Medieval Cirencester continued to develop throughout the medieval period, however it was largely controlled by the abbey until 1539, when it was demolished on the order of Henry VIII. It is likely that during this period, the Site was rural land that bordered the edge of medieval Cirencester. A watching brief undertaken in 1973 during the extension of Bingham Library recovered evidence of black occupation soil containing an assortment of medieval and post medical pottery sherds. A further watching brief in 2003 at 20 The Waterloo and 37 Dyer Street recorded a possible Roman layer at 106.99m AOD, overlain by a later medieval drystone wall.

4.74 During repairs to the town's sewer system in 2003, archaeological monitoring recorded truncated remains of ridge and furrow and footings to a drystone wall.

Post Medieval

4.75 The wool trade continued to expand throughout the Cotswolds during the post medieval period, and it continued to flourish in Cirencester. Various street names are a record of this industry, such as Sheep Street and The Woolmarket. A new type of vernacular architecture was developed in the 17th century of terraces of stone built two storey houses with stone slate roofs and chimneys. By the 18th century this had changed to a more classically inspired building type, with Georgian sash windows and pedimented facades.

4.76 During the Industrial Revolution the British wool industry moved to Lancashire to make use of the many fast-flowing watercourses, and the Cotswolds' trade deteriorated abruptly. Consequently, Cirencester declined to a relatively small market town.

4.77 A drawing of Cirencester of 1712 by J Kip shows the area north of Dyer Street at the time, with houses and shops lining the street and large gardens to the rear. Later smaller 18th century outbuildings appear within the gardens. Bull Lane also appears to exist (now The Waterloo) behind the orchards and vegetable gardens, and the Site is located within open fields which back onto the River Churn. In the next 100 years the town develops further, however the Proposed Development site remains within fields to the rear of Dyer Street off Bull Lane. The position of the Site on the outer environs of the town is recorded on the 1795 Map of Cirencester by Richard Hall, the Edward, B. Metcalfe 1816 map of Cirencester and Gloucestershire and 1835 plan by John Wood. First noted in detail on the 1795 map, the east boundary wall for the Site is extant by this time with a small rectangular building seen to the north-east by the river. In 2013 and 2014 Cotswold Archaeology undertook an archaeological excavation at The Woolmarket Car Park, and recorded wall foundations of post medieval manor house, as well as pits and cultivation soils, as part of the gardens of houses on Dyer Street.

4.78 Many domestic and commercial properties were redeveloped in the 19th century, smaller shops were demolished or amalgamated to make bigger frontages on to the streets. By 1837 the population of Cirencester had reached 6,000 and small industrial businesses were operating out of the town. Just to the south of the Site was the Cotswolds Foundry (Iron and Brass), now 35 Dyer Street. On 1875 OS mapping, a small rectangular outbuilding appears in the south-east corner of the Site, likely associated with the use of the field at this time. The buildings currently near the north-east corner are named The Apple Loft, adjacent to Orchard House, and the land around the Site was recorded as used as pasture and arable in the mid-19th century.

Modern

4.79 Cirencester grew fairly rapidly during the 20th century, with tourism as its main industry. Nearby 18th century Abbey House, built in the grounds of the medieval abbey, was demolished and new residential flats for the elderly were built in its place, with the grounds made a public park. The Site was converted into a car park in the late 1960s, and a four storey modern residential development was constructed to the west. In the 21st century three three-storey residential and commercial buildings were constructed to the south of Waterloo Car Park within the land park of The Woolmarket Car Park.

Previous Archaeological Events

4.80 The previous archaeological events have been discussed in the Archaeological Desk Based Assessment was by TEP in 2017, updated 2020 (Appendix D). Further events were undertaken in 2019 in response to Historic England's scoping response and are briefly discussed here.

Waterloo Car Park: Geoarchaeological Report, ARCA 2019

4.81 In March 2019, ARCA, on behalf of Cotswold Archaeology Ltd, recorded three hand-excavated trenches in which boreholes were then drilled by cable percussion at the Waterloo Car Park, Cirencester. The work was undertaken to assess the palaeoenvironmental potential of deposits, including the potential for surviving waterlogged remains dating to the Roman period within the Site, as highlighted in the earlier 1998 excavations on the Site. In the south-west part of the Site, the underlying gravel was covered by a dark cultural diamict which likely dated to the Roman period. In the south-east part of the Site a thick oxidised cultural diamict associated with occupation of the floodplain was recorded covering the gravel. This deposit in turn was sealed by a high level flood deposit with no evidence of occupation and most likely post-Roman in date. In the central part of the Site, the terrace deposit was overlain by a sequence of construction levels for a cobbled surface which was then covered by a sequence of two fine diamicts associated with Roman occupation. All these natural and archaeological deposits were overlain by modern made ground and tarmac (Watson 2019). The alluvial deposits were lain down by slow moving floodwater from the River Churn, the investigations have shown that the potential for waterlogged remains in the Site is unlikely given the environmental conditions. However evidence of Roman activity on the Site is high, and is indicative of some land reclamation for settlement on the margins of the city.

Waterloo Car Park Cirencester Gloucestershire Archaeological Evaluation, Cotswold Archaeology, 2019

4.82 In September and October 2019 an archaeological evaluation was undertaken by Cotswold Archaeology comprising four trial trenches. In the east of the Site, alluvial deposits were encountered which were interpreted as sediments built up as a result of regular overbank flooding of the River Churn. In the south-west corner of the Site two possible phases of limestone surfacing were recorded, which may represent a subsidiary road leading from Roman Street K, or they are related to a wall uncovered in the 1998 excavations. In the centre of the Site a series of Roman made ground deposits were recorded which may represent land reclamation for settlement from the flooded area around the River Churn, when in the 2nd century the river was diverted outside of the city wall. In the centre of the Site, evidence for surfaces and a wall was also recorded, in line with discoveries made in 1998, to suggest that this area of the Site contained at least one building in the Roman period. Occupation and demolition layers were all sealed by post-Roman 'dark earth' deposits or post-Roman alluvial layers associated with the nearby River Churn, which may suggest a continuation of settlement in Corinium after the Romans are thought to have left in the 5th century AD.

Known Heritage Assets with the Study Area

Designated Heritage Assets

4.83 There is one designated heritage asset within the Site comprising:

- **SM1** Corinium Roman town (List Entry Number: 1003426). First established as a fort to guard an important road junction and river crossing

when the Romans occupied the land of the Dobunni tribe. When the troops were withdrawn in 70 AD, the temporary timber buildings were removed and a planned Roman settlement was established as an administrative centre. Laid out on a grid system, the town had blocks of buildings bounded by streets, called insulae. The centre of the town was based around the old fort area and the streets around the forum contained rows of shops. It was a wealthy market town, and by the 2nd century an amphitheatre was built to the west, beyond the town walls. The walls were over two miles in length, and enclosed an area of approximately 240 acres, making it one of the largest Roman towns in Britain, with an estimated population of between 10,000 and 20,000. Established as a replacement for the earlier Dobunnic centre at Bagendon, the town was a successful economic and administrative centre for the region, acting as a centre for exchange of goods and ideas for over 300 years.

- The setting of this asset includes the town of Cirencester and Cirencester Town Centre (CA1), countryside to the north and the Special Landscape Area (SLA), and Tar Barrows (SM2) to the east. This asset has high evidential and associative and illustrative historical heritage, as demonstrated by the standing remains, and number of archaeological events recorded, and the archaeological potential for further buried remains which is yet to be fully understood. As a Scheduled Monument, this asset holds very high heritage value.

4.84 There are 33 designated heritage assets within the wider ES study area comprising one Scheduled Monument, two Conservation Areas, and 30 Listed Buildings;

Scheduled Monument

- **SM2** Tar Barrows: the earthwork and buried remains of two prehistoric or Roman round barrows and the buried remains of a Romano-British or earlier funerary and ritual site (List Entry Number: 1003418). There are two round barrows visible as earthworks which are prominent in the landscape just north-east of Cirencester. Geophysical and aerial surveys have revealed the possibility of associated significant below ground remains of early Roman activity and occupation outside of the town, including a series of ditched enclosures. Surface pottery analysis within the scheduled area has also revealed dates of 5th to 9th century AD which suggests this site was also occupied in the Saxon period. Aerial photography of the mid-20th century demonstrated extensive medieval ridge and furrow cultivation of the land here. The asset holds some group value with Corinium Roman Town (SM1) and has a functional and physical relationship to the later Roman town. Funerary and ritual monument types such as these dating to the prehistoric to Roman period are recognised as nationally rare.
- The setting of this asset includes the North Cirencester Special Landscape Area (SLA), town of Cirencester to the south, west and north-west, the Abbey Grounds, Corinium Roman Town (SM1) and the Town Centre Conservation Area (CA1) to the south-west, and open countryside to the north and east. The Site itself is not visible in views from this asset, due to

extant screening provided by intervening modern development, vegetation and the tree line.

- Due to the nature of this asset containing the buried remains of a Romano-British funerary and ritual site, and its location north of Corinium Roman Town (SM1) this asset holds group value with SM1. The future investigation of this asset is likely to reveal important information of continued land use, distribution of settlement patterns, as well as funerary practices in the area over the last 1000 years. As a result this asset holds very high evidential value, however the archaeological potential of this site has yet to be fully realised. As a Scheduled Monument, this asset holds very high heritage significance.

Conservation Areas

- **CA1** Cirencester Town Centre. The Conservation Area contains the majority of the oldest parts of the town, in particular; the Market Place, the narrow, curvilinear medieval streets, the abbey grounds, and a high number of listed buildings including the church of St John the Baptist. The area around Dyer Street contains a sequence of long narrow medieval plots with built form historically extending to the rear of the properties at to The Waterloo. The houses along this street are characterised by mixture of two to three storey modern and post medieval buildings, with examples of architecture from the 17th to 21st centuries. The post medieval buildings primarily follow the medieval plot forms, however where modern buildings have been constructed in the place of historic buildings, this narrow plot character has been lost. The building material is mostly Cotswold stone with some later brick additions. There are several historic outbuildings to the rear of the properties on Dyer Street which make a positive contribution to CA1 and assist in the understanding and appreciation of the historic layout of the town since the medieval period. Historic boundaries on to The Waterloo are mainly drystone wall and sections of the walls here appear to be in the same position since the 18th century, as demonstrated on historic mapping.
- The setting of this asset comprises Corinium Roman town (SM1), and three other conservation areas to the north, west and south, and the SLA and Tar Barrows (SM2) to the east. The eastern edge of the conservation area borders The Waterloo, and the eastern boundary of the Site, therefore the setting of this asset contains the Site. This asset holds high aesthetic, historic evidential and communal values as part of an historic town, and as a Conservation Area, this asset holds high heritage significance.
- **CA2** Cirencester South. The Conservation Area and contains the majority of the town within the inner ring road. This area represents the 18th and 19th century expansion of the town centre in a southerly direction to cover the land defined by the walls and ramparts of Roman Corinium in this area. The street pattern largely comprises an informal grid layout, populated by rows of terraced or close groups of semi-detached and detached buildings with long narrow rear gardens. There are six areas of important open space and from St Michaels Park and Tower Street, long views can be seen from

the south-west towards the church of St John the Baptist. The distinctive local features of the built form are based around the 18th and 19th century architecture, including timber sash windows, decorative use of terracotta panels and coloured brick, patterned slate and tile and the use of a combination of brick and limestone building materials.

- The immediate setting of this asset comprises Corinium Roman town (SM1), and also the inner ring road on its east, south and west. To the west lies the modern residential development south of London Road and to the south further modern residential development north of Bristol Road. This conservation area abuts the Town Centre Conservation Area (CA1) on its northern boundary and the east edge of the Site can be seen in limited views from the northern end of Victoria Road. This asset holds high aesthetic, historic evidential and communal values as part of an historic town, and as a Conservation Area, this asset holds high heritage significance.

Listed Buildings

4.85 There are 29 Listed Buildings on and around London Road and Dyer Street, south of the Site and within the 200m search buffer. The Grade I Church of St John the Baptist (LB1) is also visible in views from the Site, and therefore is included within this assessment. The other relevant historic buildings are all Grade II Listed and date to the post medieval period except for one which is modern. The majority of these buildings are within Town Centre Conservation Area (CA1) to which they make a positive contribution and form part of the architectural character of the area. The setting of the Listed Buildings comprises their group value and association with the historic core of the town. Those buildings nearest the Site face onto the narrow road of Dyer Street, and their principle elevations provide the majority of the positive contribution to Town Centre Conservation Area (CA1) closest to the Site;

- **LB1** Church of St John the Baptist and attached railings and gates (List Entry Number: 1206356).
- **LB2** Dyer Lodge (List Entry Number: 1205894);
- **LB3** Gloucester House (List Entry Number: 1205927);
- **LB4** 39 and 41 Dyer Street (List Entry Number: 1187466);
- **LB5** The Limes, 57 Dyer Street (List Entry Number: 1187467);
- **LB6** 33 Dyer Street (List Entry Number: 1205903);
- **LB7** 47, 49, and 51 Dyer Street (List Entry Number 1205916);
- **LB8** 86 and 86b Dyer Street (List Entry Number: 1205934).
- **LB9** Oxford House (List Entry Number: 1298710);
- **LB10** 53 and 55 Dyer Street (List Entry Number: 1298710);
- **LB11** 74 Dyer Street, Former Offices of the Wiltshire and Gloucestershire Standard (List Entry Number: 1457440);
- **LB12** 3 and 5 Dyer Street (List Entry Number: 1280514);
- **LB13** 72 Dyer Street (List Entry Number: 1298711);
- **LB14** 76 Dyer Street (List Entry Number: 1280469);
- **LB15** 78, 80 and 82 Dyer Street (List Entry Number: 1187468);
- **LB16** 2 and 4 Dyer Street (List Entry Number: 1298708);

- **LB17** 7 Dyer Street (List Entry Number: 1205876);
- **LB18** 9 and 11 Dyer Street (List Entry Number: 1298709);
- **LB19** 10 Dyer Street (List Entry Number: 1205880);
- **LB20** 12 Dyer Street (List Entry Number: 1187465);
- **LB21** 56 and 58 Dyer Street (List Entry Number: 1205923);
- **LB22** Cotswold Sheepskin Hadleigh Hayes House John Hawes And Company (List Entry Number: 1187464);
- **LB23** Former School and attached railings, Master's House, Gates and Gate Piers (List Entry Number: 1187493);
- **LB24** Fleece Hotel (List Entry Number: 1187504);
- **LB25** 34 and 36 Market Place (List Entry Number: 1280270);
- **LB26** 37, 37a and 39 Market Place (List Entry Number: 1280270);
- **LB27** 15 and 15a The Waterloo (List Entry Number: 1280119);
- **LB28** 6, 8 and 10 London Road (List Entry Number: 1206207);
- **LB29** Bingham Library (List Entry Number: 1205843) and;
- **LB30** 38, 38a, 40 and 40a, Market Street (List Entry Number: 1206327).

Non-designated Heritage Assets

4.86 There are eight non-designated heritage assets recorded by Gloucestershire Historic Environment Record within the 10m buffer study area, of which five lie within the proposed development area boundary. These primarily comprise remains dating to the Roman period such as clay roof tiles, carved stone, wall foundations and floor layers identified during previous investigative works (**NDHA1**, **NDHA2**, **NDHA3** and **NDHA8**), as well as elements of the known Roman Road layout (**NDHA4**). The HER also records three further adjacent assets comprising; a find spot of a Jacobean coin (**NDHA6**), evidence for medieval watercourses (**NDHA5**), and post medieval and modern features found at Waterloo Car Park (**NDHA7**).

4.87 In addition to these non-designated heritage assets, there are ten historic unlisted buildings along Dyer Street, London Road, and The Waterloo. These have been identified within the Cirencester Town Centre Conservation Area Appraisal as making a positive contribution to the architectural and historic significance of the conservation area (CA1);

- **NDHA9** The Old Brewhouse, 5 - 7 London Road;
- **NDHA10** 9 London Road;
- **NDHA11** The Waggon and Horses Inn, 11 London Road;
- **NDHA12** A Slade & Son, 35 Dyer Street;
- **NDHA13** A Slade & Son, Rear Entrance, The Waterloo;
- **NDHA14** 37 Dyer Street;
- **NDHA15** Cotswolds Villas, 29 and 61 Dyer Street;
- **NDHA16** The Apple Loft, The Waterloo
- **NDHA17** 18 The Waterloo; and
- **NDHA18** 14-16 The Waterloo.

Matters which have been Scoped out

4.88 The method of determining which heritage assets the Proposed Development could affect as a result of development within the assets' setting is an iterative one based on the stepped approach outlined in the Historic England guidance, GPA 3, 2nd Ed. The Setting of Heritage Assets. This advocates setting out 'what matters and why' in terms of providing a robust yet proportionate assessment of the likely effects of development. Consequently, the study area of 200m for designated heritage assets and 10m for non-designated heritage assets has been scoped to include only those assets where a significant effect could arise. This study area has been determined by a preliminary appraisal of the archaeology and historic environment assets and those not included within this ES have been scoped out from a more detailed assessment for one or more of the following reasons:

- The setting of the asset does not include the Proposed Development; or
- That aspect of the asset's setting that includes the Proposed Development does not contribute to the significance of the asset; and / or
- The magnitude of change from baseline conditions would not be appreciable and a neutral significance of effect is predicted.

4.89 The designated heritage assets scoped out of this ES assessment comprise:

- **LB16** 2 and 4 Dyer Street (List Entry Number: 1298708);
- **LB17** 7 Dyer Street (List Entry Number: 1205876);
- **LB18** 9 and 11 Dyer Street (List Entry Number: 1298709);
- **LB19** 10 Dyer Street (List Entry Number: 1205880);
- **LB20** 12 Dyer Street (List Entry Number: 1187465);
- **LB21** 56 and 58 Dyer Street (List Entry Number: 1205923);
- **LB22** Cotswold Sheepskin Hadleigh Hayes House John Hawes And Company (List Entry Number: 1187464);
- **LB23** Former School and attached railings, Master's House, Gates and Gate Piers (List Entry Number: 1187493);
- **LB24** Fleece Hotel (List Entry Number: 1187504);
- **LB25** 34 and 36 Market Place (List Entry Number: 1280270);
- **LB26** 37, 37a and 39 Market Place (List Entry Number: 1280270);
- **LB27** 15 and 15a The Waterloo (List Entry Number: 1280119);
- **LB28** 6, 8 and 10 London Road (List Entry Number: 1206207);
- **LB29** Bingham Library (List Entry Number: 1205843) and;
- **LB30** 38, 38a, 40 and 40a, Market Street (List Entry Number: 1206327).

4.90 The non-designated heritage assets scoped out of this ES assessment comprise:

- **NDHA1** Roman clay roof tiles were found at 33, The Waterloo and subsequently recorded under accession number 1971/31. (HER Number 28976);
- **NDHA2** A fragment of carved stone of possible Roman date was found on the bed of the river Churn at 31 Corinium Gate (HER Number 28961);
- **NDHA5** Geophysical anomaly thought to be Post Medieval watercourses through the landscape park grounds of the house known as The Abbey, The Abbey Grounds, Cirencester (HER Number 39491); and

- **NDHA6** A Jacobean coin was found in the rear garden of 75 Corinium Gate in the 1970s (HER Number 28960).

Future Baseline

4.91 The built heritage future baseline conditions could differ from current baseline conditions, if an asset's designated status is altered.

4.92 The likelihood of a change in designation of any nearby heritage asset is low and, in any event, would not necessarily alter the assessment of effects undertaken, as this has been undertaken on a realistic worst case basis. Therefore, the built heritage baseline conditions reported in this chapter are taken to also represent future baseline conditions (at the time of construction). In the unlikely event that the built heritage baseline conditions do alter, this can be taken into account as any heritage measures are refined, agreed and implemented.

Mitigation Measures

Archaeology

4.93 Evaluation has already been undertaken in 2019 on the Site to inform this assessment in the form of geoarchaeological investigation, GPR survey, test pits and trial trenches. This has been undertaken to better understand the archaeological potential of the Site, and does not constitute mitigation. Measures to reduce the impact upon below ground remains part of Corinium Roman Town (SM1) are set out in Paragraphs 4.136 to 4.141 of this ES chapter.

Built Heritage

4.94 The design measures set out in the DAS, will be implemented as part of the project and therefore constitute mitigation 'embedded' in the design of the Proposed Development. As such, any assessment of effects assumes the implementation of the embedded mitigation.

4.95 Standard mitigation measures set out in a Construction Environmental Management Plan (CEMP) and in Chapter 11 of this ES, will be implemented during construction. No further mitigation measures are proposed in relation to built heritage.

Assessment of Environmental Impacts

Construction Phase

4.96 Construction phase effects relate predominantly to physical effects on heritage assets within the Site. No physical effects on heritage assets are predicted during the operation phase, as any further ground disturbance would be within areas that have already been subject to archaeological mitigation during the construction phase. For the same reason, at decommissioning there would be no physical effects on archaeological heritage assets.

Direct Effects

4.97 There is one designated heritage asset within the Site comprising the Scheduled Monument of Corinium Roman town (SM1). This asset is of very high heritage significance. Due to the survival of evidence relating to the use of the Site from the 2nd to 4th century and well as the post-Roman period, construction phase activities such as the proposed piling foundations and drainage ponds, have the potential to affect surviving archaeological evidence associated with this asset.

4.98 There are also two non-designated heritage assets recorded in the Gloucestershire HER relating to features found within Waterloo Car Park (NDHA3) and the nearby Roman street system (NDHA4). Due to the nature of these assets, these have been assessed as part of SM1. Archaeological investigation has taken place on the Site in the form of test pits, trial trenches and boreholes, which have demonstrated the history of the Site. Located adjacent to the River Churn, the Site has been repeatedly subject to overbank flooding prior to and after the Roman period. Evidence for building and activity on the margins of the earlier town has been recorded on the Site from the 2nd until the 5th century AD. The archaeological works have also demonstrated that there is still potential for as yet unknown heritage assets to be located within the Site, primarily in the centre and south of the Site closest to the alignment of NDHA4.

4.99 The creation of two attenuation basins to the rear of the Proposed Development are likely to impact on below ground remains, however investigations in 2019 have indicated that the north of the Site closest to the River Churn is unlikely to hold any significant structural or waterlogged remains. The proposed method of piling foundations should not physically damage deposits outside the area of the pile itself, however if structural remains such as limestone walls and cobbled surfaces, known to be present on the Site, are encountered during the piling creation, they will be harmed by the piling, and may also cause damage to any adjacent deposits. The layout of the below ground remains contained within the Site is not yet fully understood, however there may be areas within the Site where piling would be able to take place and leave more substantial deposits or structural features undisturbed. The ground preparation enabling works will take the form of raising the ground level in order to level the site out for construction, rather than any excavation. This methodology is not anticipated to adversely affect the below ground remains associated with SM1, providing any pile caps are located within the overburden or made ground, then harm to archaeological remains would primarily be from the piles themselves.

4.100 The Site makes up approximately 0.77ha of Corinium Roman town (SM1), the scheduled area of which covers large areas of north-east, south and south-east Cirencester. The construction of the Proposed Development would result in partial loss to one element of this asset, so that post-development character of the baseline of this asset will be partially changed. The change arising from any loss of below ground remains would be discernible but the underlying character of the baseline conditions of SM1 would be comparable to pre-development conditions.

4.101 Therefore the predicted magnitude of impact to this asset based on a realistic worst case scenario, is moderate adverse. The significance of effect is therefore predicted to be moderate adverse, before mitigation.

Indirect Effects

4.102 The construction phase will have an adverse effect on the character and appearance of the Town Centre Conservation Area (CA1) and potentially to the setting of one Scheduled Monument (SM2), one further conservation area (CA2), thirteen listed buildings and ten locally important buildings. However, the impact of these works is temporary and is therefore assessed as resulting in a **negligible to minor adverse** effect which is not considered significant.

4.103 A summary of the effects for all of the assets referenced is provided Table 4.5.

Operational Phase

Direct Effects

4.104 No direct effects are predicted in the operational phase.

Indirect Effects

4.105 The operational phase of the Proposed Development may result in loss of significance of heritage assets resulting from the permanent presence of a modern decked car park in the setting of heritage assets. The loss of significance occurs where the part of the setting affected by the Proposed Development makes a positive contribution to understanding and appreciating the significance of the asset.

4.106 The Site in its current form of a tarmacked car park does not make a particularly strong contribution to the significance of the nearby heritage assets, including views from of within the Site. In the post medieval period the Site would have continued to form part of the green outskirts of the market town and Abbey, and was part of a section of pasture and orchards to the rear of the 17th and 18th expansion of the town, adjacent to the River Churn. The Site's location on the margins of the town continued in the 19th century, and along with the River Churn, it provided an area of transition between the urban form and the countryside beyond. Since its conversion to a car park, the Site's setting and that of the nearby assets and conservation area has been compromised somewhat by poor development.

4.107 It has already been established that the Site forms part of the setting of a number of heritage assets, and is therefore within the surroundings in which they are experienced. The predicted effects which follow below are a result of the assessment of the degree of harm to the assets' significance rather than the scale of the proposed development, and have been undertaken in accordance with includes "Step 3" of the assessment of effects on the setting of heritage assets (Historic England, GPA Note 3, 2nd Ed. 2017)

4.108 The Site is within the surroundings in which these heritage assets are experienced, and therefore is within the setting of the following discussed assets.

SM2 Tar Barrows

4.109 This asset is an archaeological site with above-ground earthworks. It is not overly dominant in the surroundings in which it is experienced, due to some medieval, post medieval and modern land management. The significance of the asset is primarily derived from the evidential and historical heritage values of the asset, with some significance derived from the landscape setting above the east of the town of Cirencester, with views to and from the asset. The Proposed Development is capable of harming the significance of the asset as it increases the amount of modern built form in views of and from the asset, where those views in part make a positive contribution to understanding and experiencing the significance of the asset. The effect relates to the setting of the asset only, and the evidential value of the asset will not be harmed in the operational phase, however this asset does hold group value with Corinium Roman Town (SM1).

4.110 The photomontage undertaken from the Photomontage Viewpoint 8 (IN6285.004) from the Tarbarrow Cricket Club shows that the Proposed Development would be partially screened by the existing vegetation and tree line, and would appear in views of the town as a whole, in the context of existing built form. The magnitude of change to the significance of the asset will be negligible, given that the evidential value of the asset will be unchanged. The heritage significance of the asset is very high and the significance of effect is therefore **neutral.**

CA1 Cirencester Town Centre

4.111 This asset not be physically affected by the Proposed Development but the wider setting of this asset makes a positive contribution to its significance and would be altered in one aspect by the Proposed Development. The primary reason for designation of the conservation area is its architectural heritage interest and in terms of its heritage values, the evidential value of the fabric of the buildings contained within, and the surviving street layout, contributed to by its position in the centre of the medieval and post medieval town. This asset holds high levels of communal value, historical value and aesthetic value.

4.112 The photomontage undertaken as part of the TVIA assessment from Photomontage Viewpoint 3 (IN6285.001), from the View from '5-ways junction' indicates the appearance of the setting of this asset on the approach from the Victoria Road, Dyer Street, London Road junction. The Proposed Development of the decked car park within the setting of the conservation area would be visible in views of, to and from the conservation area, primarily from the Victoria Road, Dyer Street, London Road junction. Therefore the ability to appreciate the setting of this asset here, as comprising the eastern edge of the town in the 18th century, the boundary of which includes the Site, an element of its significance would be slightly adversely affected by the Proposed Development.

4.113 However, the conservation area forms part of a group of assets, including the other conservation areas, and contains a high number of listed buildings, and the Proposed Development would not affect this immediate setting, from which there are limited views out of the town centre towards the Site.

4.114 The design concept for the proposed car park aims to break up the scale and massing of the building along the elevations, utilising bespoke aluminium woven panels combined with Cotswold stone and living green walls. The south facing facade includes tree planting, and the main bulk of the building is stepped back slightly from the edge of The Waterloo, lending the building a naturalised appearance and hinting at the peripheral nature of the Site adjacent to the River Churn, to reflect the edge of the town.

4.115 The relationship between the Town Centre Conservation Area (CA1) and its townscape setting, including key views towards the Church of St John the Baptist (LB1), intervisibility with other conservation areas, listed buildings and locally important buildings which make a positive contribution to the significance of CA1, would in one small part be altered, but would still be legible. The ability to understand and appreciate the contribution made by setting to the significance of the asset would be slightly altered but the reason for designation of the asset and its heritage significance as a whole would be largely unharmed. The magnitude of effect is low and therefore, given that this asset has high heritage significance, the significance of affect is **minor adverse.**

CA2 Cirencester South Conservation Area

4.116 This asset holds similar heritage values to the Town Centre Conservation Area (CA1), and its reason for designation includes the expansion of the town in the 18th and 19th century. The Proposed Development of the decked car park within one part of the setting of the conservation area in the north would be visible in long views of, to and from the conservation area, primarily from the Victoria Road, Dyer Street, London Road junction. However, the ability to appreciate the setting of this asset here, and its significance is not predicted to be adversely affected by the Proposed Development. Key views within CA2 primarily look to and from green spaces within the conservation area, and north towards the Church of St John the Baptist (LB1). The view along Victoria Road towards the Site into the Town Centre Conservation Area (CA1) would experience very slight encroachment at the northern end, however its relationship with CA1, and the linear street form would be unaltered and still be clearly legible.

4.117 The ability to understand and appreciate the contribution made by setting to the significance of the asset would be unaffected, and the reason for designation of the asset and its heritage significance as a whole would be unharmed. The magnitude of effect is negligible and therefore, given that this asset has high heritage significance, the significance of affect is **negligible**.

LB1 Church of St John the Baptist and attached railings and gates

4.118 This asset comprises a Grade I early 12th century church likely built over a Saxon church. Built of square coursed limestone, with 14th and 15th century alterations, including the west tower. The largest parish church in Gloucestershire, its tower can be seen in views across the wider landscape beyond the town centre.

4.119 This asset will not be physically affected by the Proposed Development. The immediate setting of this asset includes the Town Centre Conservation Area (CA1), which makes a positive contribution to its significance. The primary reason for designation of the Church is its architectural heritage interest and in terms of its heritage values, the evidential value of the fabric of the building, contributed to by its townscape position and prominence, its communal value, historical value and aesthetic value, to which setting makes a positive contribution. The Proposed Development of the decked car park within the wider setting of the Church would be visible in views of the Church from the Abbey Grounds and from the east near Tar Barrows (SM2). The west tower can be seen in views from the Site, however this is not a designed view and is only incidental.

4.120 The photomontages undertaken as part of the TVIA assessment from Photomontage Viewpoint 8 (IN6285.004), from the Tarbarrow Cricket Club, and Photomontage Viewpoint 9 (IN6285.005), from Broad Ride, Cirencester Park, demonstrate that the Proposed Development would be partially screened by the existing vegetation and tree line in views from the east to this asset, and would appear in views of the town as a whole, in the context of existing built form. The west tower would still be clearly visible in views of the Church, the view from the Site would be comparable to pre-development conditions, and it would remain a prominent townscape feature in key views of the town.

4.121 The ability to understand and appreciate the contribution made by setting to the significance of the asset would be unaffected, and the reason for designation of the asset and its heritage significance as a whole would be unharmed. The magnitude of effect is negligible and therefore, given that this asset has very high heritage significance, the significance of affect is **negligible.**

LB5 The Limes, 57 Dyer Street

4.122 This asset comprises a house built c.1760-80 in coursed limestone rubble overlain by render with an early 19th century wing to rear, which is also attached to 55 Dyer Street. Now converted to offices, its rear historic boundary is marked by a limestone drystone/mortar wall with some repairs and modification. This asset will not be physically affected by the Proposed Development but the immediate setting of this asset which includes the Town Centre Conservation Area (CA1) and a number of listed buildings and locally important buildings, makes a positive contribution to its significance and the setting would be altered in one aspect by the Proposed Development.

4.123 The primary reason for designation of this asset is its architectural heritage interest and in terms of its heritage values, the evidential value of the fabric of the building. Its historical value and aesthetic value, to which setting makes a positive contribution.

4.124 The aesthetic value of this asset is primarily experienced along Dyer Street, with its principal elevation facing south in towards the road, which leads to the Market Place and centre of town. The nature and character of the tall three storey buildings along Dyer Street would have been dictated by the narrow medieval street layout on which they were built, and this key contributor to understanding and experiencing this asset will not be affected by the Proposed Development.

4.125 The photomontage undertaken as part of the TVIA assessment from Photomontage Viewpoint 3 (IN6285.001), from the View from '5-ways junction' indicates the appearance of the setting of this asset on the approach from the Victoria Road, Dyer Street, London Road junction. The visual intrusion created by the introduction of the decked car park to the rear of this asset would affect the ability to appreciate the setting of this asset here, as part of the eastern edge of the town in the 18th century, the boundary of which includes the Site, an element of its significance would be adversely affected by the Proposed Development.

4.126 The relationship between this asset and its townscape setting, including intervisibility with other listed buildings and locally important buildings which make a positive contribution to the significance of this asset, would in part be altered. The contemporary design of the Proposed Development will clearly signal the difference in architectural style and age of the two buildings seen in the same view, and although the height of the decked car park will make it prominent within the view as a whole, it will not compete with the asset, set back along The Waterloo, and the context of The Limes (LB5) would still be clearly legible as part of the post medieval area of Cirencester. The ability to understand and appreciate the contribution made by setting to the significance of the asset would be slightly altered but the reason for designation of the asset and its heritage significance as a whole would be mostly unharmed. The magnitude of effect is moderate and therefore, given that this asset has high heritage significance, the significance of affect is **minor adverse.**

4.127 A similar moderate magnitude of effect is predicated for five non-designated heritage assets, which are locally important buildings which make a positive contribution to the Town Centre Conservation Area (CA1), and sit within the immediate setting of the Site. These comprise The Old Brewhouse, 5 - 7 London Road (NDHA9), The Waggon and Horses Inn, 11 London Road (NDHA11), A Slade & Son, Rear Entrance, The Waterloo (NDHA13), The Apple Loft, The Waterloo (NDHA16), 18 The Waterloo (NDHA17) and 14-16 The Waterloo (NDHA18). These assets hold low (local) heritage significance, therefore significance of affect is **minor adverse.**

4.128 A **minor adverse** significance of effect is also predicted in relation to thirteen grade II listed buildings assets of high heritage significance, located along Dyer Street and within the Town Centre Conservation Area (CA1) comprising;

- **LB2** Dyer Lodge;
- **LB3** Gloucester House;
- **LB4** 39 and 41 Dyer Street;
- **LB6** 33 Dyer Street;
- **LB7** 47, 49, and 51 Dyer Street;
- **LB8** 86 and 86b Dyer Street;

- **LB9** Oxford House;
- **LB10** 53 and 55 Dyer Street;
- **LB11** 74 Dyer Street;
- **LB12** 3 and 5 Dyer Street;
- **LB13** 72 Dyer Street;
- **LB14** 76 Dyer Street; and
- **LB15** 78, 80 and 82 Dyer Street.

4.129 A similar low magnitude of effect is predicated for five non-designated heritage assets, which are locally important buildings which make a positive contribution to the Town Centre Conservation Area (CA1), resulting from development within the assets' settings. These comprise 9 London Road (NDHA10), The Waggon and Horses Inn, 11 London Road (NDHA11), A Slade & Son, 35 Dyer Street (NDHA12), 37 Dyer Street (NDHA14) and Cotswolds Villas, 29 and 61 Dyer Street (NDHA15). These assets hold low (local) heritage significance, therefore significance of affect is neutral. These effects are not significant and are not harmful to the assets' heritage significance.

4.130 All of the predicted effects arising from the operational phase of the Proposed Development within the setting of heritage assets are equivalent to less than substantial harm in terms of the NPPF 2019. Minor adverse effects are considerably less than substantial. Where the effects result from a negligible magnitude of effect, for Tar Barrows (SM2), Cirencester South Conservation Area (CA2) and the Church of St John the Baptist (LB1), the special architectural or historical interest of these assets would be preserved.

4.131 A summary of the effects for all of the assets referenced is provided Table 4.6.

Assessment of Cumulative Effects

4.132 Cumulative effects on built heritage can occur during construction where more than one development can affect the setting of the built heritage assets For such effects to occur, developments need to be adjacent or within the setting of heritage assets. Where this is not the case the distance of separation is such that inter-project development proposals can be scoped out of any cumulative assessment for built heritage. The following committed developments were considered during the assessment;

- 19/00853/FUL - The Old Kennels, Tetbury Road, Cirencester, Gloucestershire (approximately 1.2km north-west);
- 19/02186/FUL - Cirencester Rugby Football Club, The Whiteway, Cirencester, Gloucestershire GL7 2ER (approximately 572m north-east);
- 18/04977/FUL - Old Memorial Hospital, Sheep Street, Cirencester, Gloucestershire, GL7 1QW (approximately 510m west); and,
- 18/00766/FUL - 2 Midland Road, Love Lane, Cirencester, Gloucestershire, GL7 1PZ (approximately 1.13km north).

4.133 Review of the relevant development proposals has confirmed that there are no committed developments that could result in any significant cumulative effects during construction or operation of the committed developments, as three of the reviewed developments do not have archaeology or built heritage assets common to the proposed development. For these schemes this is due to the distance between the cumulative schemes and the built heritage assets considered in the assessment, and how the setting of the heritage assets contributes to their significance, when considered with the other cumulative developments.

4.134 Planning application 18/04977/FUL includes within the Site boundary part of Corinium Roman town (SM1), the physical evidence of which comprises Romano-British remains alike to those present with the Site at The Waterloo, however these were overlain by deep deposits of black-earth. Due to the nature of the development which comprises demolition of the Old Memorial Hospital and creation of a surface level car park, the groundworks within the Site are not likely to impact upon significant archaeological deposits which are anticipated to be present at around 1500mm bgl. An initial phase of archaeological monitoring in April and October 2019 demonstrated that the current groundworks extended to a maximum depth of 750mm and uncovered later post medieval made ground and garden deposits of limited archaeological sensitivity (Old Memorial Hospital, Sheep Street, Cirencester Written Scheme of Investigation, Oxford Archaeology, January 2020).

4.135 The demolition of the Old Memorial Hospital was assessed as having a minor adverse effect on the Town Centre Conservation Area (CA1), which Historic England described as constituting less than substantial harm to this asset, and several mitigation measure were proposed, including tree planting, to soften a negative views which had been opened up in one aspect of the Site. Due to the mitigation already undertaken in the design of this development (18/04977/FUL), and the monitoring of the groundworks, the significance of the cumulative impact upon archaeology and the historic environment during construction and operation combined with this development will not be significant.

Mitigation of Effects

4.136 It is recommended that the Site is subject to a phased programme of archaeological work, designed to further the objectives of the South West Regional Archaeological Framework and to mitigate the predicted effect in relation to Corinium Roman town (SM1), and the associated non-designated assets located within the Site (NHDA3) and (NDHA4)

4.137 In accordance with Historic England guidance, Piling and Archaeology: Guidance and Good Practice, Historic England 2019, this ES also recommends archaeological input into a risk assessment to identify an appropriate pile choice, and the placement of pile caps to be confined within the overburden. A detailed piling method statement should be produced, and an archaeologist should be present during any ground clearance or preparation works to ensure the methodology is adhered to on site.

4.138 If the piling is to be undertaken in accordance with the Foundation Plan (Drawing Reference 6484-STRIPE-XX-B1-DR-SX-16001, see also Figure 2 of Appendix D (G6285.023)), particularly with reference to the cluster of piles in the centre, and also in south of the Site where there is high potential for structural remains, a strip to the top of archaeological remains is recommended to be undertaken as part of the mitigation strategy. Any deposits should then be cleaned, recorded and where possible, sampled to better assess significance. This will assist in identifying any areas of Roman building remains, which would be of the highest significance within the Site, and would present an obstruction to piling. An archaeologically monitored strip would highlight areas with the possibility for preservation in situ, or allow for a suitable methodology for removal, if required, to be agreed with Historic England.

4.139 A programme of archaeological works would advance understanding of the significance of the known, and any as yet unknown heritage assets that will be affected by the development, in a manner that is proportionate to their importance and impact. Any recovered evidence would undergo analysis, reporting, and made publically available through publication of the results, commensurate to the findings. Any physical archive would be prepared for deposition with an appropriate museum, and the reports deposited with Gloucestershire Historic Environment Record.

4.140 The archaeological works would provide an opportunity to deliver public interpretation of the Site and may contribute to our knowledge and understanding of the relationship between the Roman town and the River Churn, and the expansion of the street system, as well as the later Roman period and supposed abandonment of Roman settlements. Following mitigation, the magnitude of effect is predicted to be low and therefore, given that this asset has very high heritage significance, the residual significance of affect is **minor adverse.**

4.141 Mitigation measures for two Conservation Areas, one Scheduled Monument, fifteen Listed Buildings, and ten locally important buildings are embedded within the design measures set out in the DAS, and will be implemented as part of the project. No further mitigation measures are proposed for these assets.

Summary

4.142 No other heritage assets are foreseen to be directly or indirectly affected by the proposed development. The anticipated effects resulting from the proposed development are summarised below.

Table 4.5 Summary of construction phase effects

Construction Phase Effects											
Name	**Designation**	**Value**	**Duration**	**Direct/ Indirect**	**Adverse/ Beneficial**	**Impact**	**Impact Magnitude**	**Impact Significance**	**Mitigation**	**Residual magnitude of impact**	**Residual significance of effect**
SM1 - Roman Corinium	Scheduled Monument	Very High	Permanent	Direct	Adverse	Construction of the proposed development would impact on below ground archaeological remains part of SM1.	Moderate	Moderate	Phased programme of archaeological investigation and interpretation	Low	Minor Adverse
SM2 - Tar Barrows	Scheduled Monument	Very High	Temporary	Indirect	Beneficial	Construction of the proposed development would impact on below ground archaeological remains that may be beneficial to the understanding of SM2.	Low	Low	None	Low	Minor Beneficial
CA1 - Town Centre	Conservation Area	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the character and appearance of CA1 and introduce a temporary source of intrusion of views of this asset from the east approach at The Waterloo.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse

Construction Phase Effects											
CA2 - Cirencester South	Conservation Area	High	Temporary	Indirect	Adverse	Construction of the proposed development would introduce a temporary source of intrusion of views from the very north edge of this asset.	Negligible	Low	None	Low	Negligible
LB1 - Church of St John the Baptist	Conservation Area	Very High	Temporary	Indirect	Adverse	Construction of the proposed development would introduce a temporary source of intrusion of views of this asset from the west and south west approach from The Waterloo.	Negligible	Negligible	None	Negligible	Negligible
LB2 - Dyer Lodge	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB3 - Gloucester House	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse

Construction Phase Effects											
LB4 - 39 and 41 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB5 - The Limes, 57 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB6 - 33 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB7 - 47, 49, and 51 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB8 - 86 and 86b Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse

Construction Phase Effects											
LB9 - Oxford House	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB10 - 53 and 55 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB11 - 74 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset and introduce a temporary source of intrusion of views from the 3rd floor level of this asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB12 - 3 and 5 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse

Construction Phase Effects											
LB13 - 72 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB14 - 76 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
LB15 - 78, 80 and 82 Dyer Street	Listed Building	High	Temporary	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Low	Standard measures within the CEMP	Low	Minor Adverse
NDHA3 - Roman features including walls and floor layers at the Waterloo Car Park.	Non-designated	Low	Permanent	Direct	Adverse	Construction of the proposed development would impact on below ground archaeological remains part of SM1.	High	Moderate	Part of SM1. Phased programme of archaeological investigation	Low	Minor Adverse
NDHA4 - Roman Street System, Cirencester	Non-designated	Low	Permanent	Direct	Adverse	Construction of the proposed development would impact on below ground archaeological remains part of SM1.	High	Moderate	Part of SM1. Phased programme of archaeological investigation	Low	Minor Adverse

Construction Phase Effects											
NDHA7 - Post-medieval and modern features at Waterloo Car Park.	Non-designated	Low	Permanent	Direct	Adverse	Construction of the proposed development would impact on below ground archaeological remains part of SM1.	High	Moderate	Part of SM1. Phased programme of archaeological investigation	Low	Minor Adverse
NDHA8 - Stone wall foundations, undated	Non-designated	Low	Permanent	Direct	Adverse	Construction of the proposed development would impact on below ground archaeological remains part of SM1.	High	Moderate	Part of SM1. Phased programme of archaeological investigation	Low	Minor Adverse
NDHA9 - The Old Brewhouse, 5 - 7 London Road	Non-designated	Low	Permanent	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset, and introduce a temporary source of intrusion of views into CA1 from this asset.	Low	Neutral	Standard measures within the CEMP	Negligible	Neutral
NDHA10 - 9 London Road	Non-designated	Low	Permanent	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Neutral	Standard measures within the CEMP	Negligible	Neutral

Construction Phase Effects											
NDHA11 - The Waggon and Horses Inn, 11 London Road	Non-designated	Low	Permanent	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset, and introduce a temporary source of intrusion of views into CA1 from this asset.	Low	Neutral	Standard measures within the CEMP	Negligible	Neutral
NDHA12 - A Slade & Son, 35 Dyer Street	Non-designated	Low	Permanent	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Neutral	Standard measures within the CEMP	Negligible	Neutral
NDHA13 - A Slade & Son, Rear Entrance, The Waterloo	Non-designated	Low	Permanent	Indirect	Adverse	Construction of the proposed development would temporarily impact on the setting of this heritage asset.	Low	Neutral	Standard measures within the CEMP	Negligible	Neutral
NDHA14 - 37 Dyer Street	Non-designated	Low	Permanent	Indirect	Adverse	Construction of the proposed development would impact on below ground archaeological remains part of SM1.	Low	Neutral	Standard measures within the CEMP	Negligible	Neutral

Table 4.6 Summary of operational phase effects

Operational Phase Effects											
Name	Designation	Value	Duration	Direct/ Indirect	Adverse/ Beneficial	Impact	Impact Magnitude	Impact Significance	Mitigation	Residual magnitude of impact	Residual significance of effect
SM1 - Roman Corinium	Scheduled Monument	Very High	Permanent	N/A	N/A	Permanent removal of below ground archaeological remains of SM1. Effect seen in construction phase.	N/A	N/A	N/A	N/A	Neutral
SM2 - Tar Barrows	Scheduled Monument	Very High	Permanent	Indirect	Neutral	Proposed car park seen from views of this asset into SM1, but largely screened.	Negligible	Neutral	None	Negligible	Neutral
CA1 - Town Centre	Conservation Area	High	Permanent	Indirect	Adverse	Change to setting of CA1 from one aspect in the east	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
CA2 - Cirencester South	Conservation Area	High	Permanent	Indirect	Adverse	Change to long views towards the Site from CA2 from one aspect in the north	Negligible	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Negligible

Operational Phase Effects											
LB1 - Church of St John the Baptist	Listed Building	Very High	Permanent	Indirect	Adverse	Partial change to views of this asset from north and east. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Negligible	Negligible	None	Negligible	Negligible
LB2 - Dyer Lodge	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB3 - Gloucester House	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse

Operational Phase Effects											
LB4 - 39 and 41 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB5 - The Limes, 57 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Change to setting of this asset to the north. Does not affect the way this asset is understood, limited impact upon its significance.	Moderate	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB6 - 33 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse

Operational Phase Effects											
LB7 - 47, 49, and 51 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB8 - 86 and 86b Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB9 - Oxford House	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse

Operational Phase Effects											
LB10 - 53 and 55 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB11 - 74 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB12 - 3 and 5 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse

Operational Phase Effects											
LB13 - 72 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB14 - 76 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
LB15 - 78, 80 and 82 Dyer Street	Listed Building	High	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse

Operational Phase Effects											
NDHA9 - The Old Brewhouse, 5 - 7 London Road	Locally Important Building	Low	Permanent	Indirect	Adverse	Change to setting of this asset to the north. Does not affect the way this asset is understood, limited impact upon its significance.	Moderate	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
NDHA10 - 9 London Road	Locally Important Building	Low	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Neutral	Project design includes embedded mitigation - no further mitigation proposed.	Negligible	Neutral
NDHA11 - The Waggon and Horses Inn, 11 London Road	Locally Important Building	Low	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Neutral	Project design includes embedded mitigation - no further mitigation proposed.	Negligible	Neutral

Operational Phase Effects											
NDHA12 - A Slade & Son, 35 Dyer Street	Locally Important Building	Low	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Neutral	Project design includes embedded mitigation - no further mitigation proposed.	Negligible	Neutral
NDHA13 - A Slade & Son, Rear Entrance, The Waterloo	Locally Important Building	Low	Permanent	Indirect	Adverse	Major change to setting of this asset to the north. Embedded design mitigation including green walls and tree planting limits the adverse impact upon its significance.	Moderate	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
NDHA14 - 37 Dyer Street	Locally Important Building	Low	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Neutral	Project design includes embedded mitigation - no further mitigation proposed.	Negligible	Neutral

Operational Phase Effects											
NDHA15 - Cotswolds Villas, 29 and 61 Dyer Street	Locally Important Building	Low	Permanent	Indirect	Adverse	Partial change to setting of this asset to the north. Does not affect the way this asset is experienced or understood, limited impact upon its significance.	Low	Neutral	Project design includes embedded mitigation - no further mitigation proposed.	Negligible	Neutral
NDHA16 - The Apple Loft, The Waterloo	Locally Important Building	Low	Permanent	Indirect	Adverse	Major change to setting of this asset to the west. As a private building, behind large stone walls, the development has limited impact upon its significance.	Moderate	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse
NDHA17 - 18 The Waterloo	Locally Important Building	Low	Permanent	Indirect	Adverse	Major change to setting of this asset to the north. Embedded design mitigation including green walls and tree planting limits the adverse impact upon its significance.	Moderate	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse

Operational Phase Effects											
NDHA18 - 14-16 The Waterloo	Locally Important Building	Low	Permanent	Indirect	Adverse	Major change to setting of this asset to the north. Embedded design mitigation including green walls and tree planting limits the adverse impact upon its significance.	Moderate	Low	Project design includes embedded mitigation - no further mitigation proposed.	Low	Minor Adverse

4.143 An assessment of the proposed development on Archaeology and Historic Environment has been undertaken, in the context of national planning policy and guidance, local planning policy, legislation and consultation with statutory and non-statutory consultees

4.144 The assessment has considered the potential effects of the construction and operational phases on heritage assets both within the Site and within a 200m study area.

4.145 There is one designated heritage asset located within the Site boundary comprising the Scheduled Monument of Corinium Roman town (SM1), as well as several non-designated heritage assets related to SM1.

4.146 There are 30 Listed Buildings, within the 200m study area, fifteen of which have the potential to be affected by the proposed development. In addition within the wider study area there are eighteen non-designated heritage assets, fourteen of which have the potential to be affected by the proposed development.

4.147 Taking into account embedded mitigation as part of the project design, and mitigation measures recommended within this ES, the overall residual impact of the Proposed Development is considered to result in a **minor adverse permanent effect**. This is not a significant effect in terms of the EIA Regulations and would result in less than substantial harm, therefore in accordance with paragraph 196 of the revised NPPF (February 2019), should be weighed against the public benefits of the proposal.

5.0 Town and Visual Impact Assessment

Introduction

5.1 This Chapter has been prepared by Chartered Landscape Architects at The Environment Partnership (TEP) Ltd, and provides the Townscape and Visual Impact Assessment (TVIA) of the four-storey decked car park (the 'Proposed Development') on the site of the existing Waterloo Car Park in the northern part of Cirencester ('the Site').

5.2 This TVIA assesses the effects of the Proposed Development on townscape and on its character; on the character of the landscape in the wider area; and on views.

5.3 This TVIA has been undertaken in accordance with the method set out in 'Guidelines for Landscape and Visual Impact Assessment Third Edition' (GLIVIA3) (2013), produced by the Landscape Institute (LI) and the Institute of Environmental Management and Assessment (IEMA). The assessment method is summarised in section 5.3 below and is provided in detail at Appendix E1.

5.4 The method for the production of verified photomontages is provided at Appendix E2, and is in accordance with guidance contained in LI Technical Guidance Note 06/19 Visual Representation of Development Proposals.

5.5 This assessment should be read with reference to TVIA figures provided at Appendix E3, including:

- Figure 5.1: Local Planning Policy and Environmental Designations;
- Figure 5.2: Published Conservation Area Character Areas;
- Figure 5.3: Published Landscape Character Areas;
- Figure 5.4: Zone of Theoretical Visibility (ZTV) - Bare Earth;
- Figure 5.5: Zone of Theoretical Visibility (ZTV) - Screened and Viewpoint Locations 3 to 10 beyond the Site;
- Figure 5.6: Viewpoints 1 to 7;
- Figure 5.7: Viewpoints 8 and 10 within Designated Landscapes;
- Figure 5.8: Viewpoint 1 and 2 Photographs;
- Figure 5.9: Viewpoint 3 and 4 Photographs;
- Figure 5.10: Viewpoint 5 and 6 Photographs;
- Figure 5.11: Viewpoint 7 and 8 Photographs; and
- Figure 5.12: Viewpoint 9 and 10 Photographs.

5.6 Verified photomontages for selected TVIA viewpoints, for on completion of the Proposed Development, are provided at Appendix E4, and include:

- Drawing IN6285.001: Verified Photomontage Viewpoint 3;
- Drawing IN6285.002: Verified Photomontage Viewpoint 4;
- Drawing IN6285.003: Verified Photomontage Viewpoint 7;
- Drawing IN6285.004: Verified Photomontage Viewpoint 8; and
- Drawing IN6285.005: Verified Photomontage Viewpoint 9.

Potential Effects

5.7 The Proposed Development comprises a five storey car park (ground floor plus four decks) with a fully enclosed roof, (supporting a photovoltaic system), with access and landscape works at the site of the existing Waterloo car park.

5.8 The description of the Proposed Development is provided in Chapter 3 of this ES. The Design and Access Statement (DAS) also describes the Proposed Development, including the evolution of its design and its design principles, with reference to its scale, and appearance.

5.9 The Proposed Development is illustrated on Plan, Section and Elevation Drawings produced by Architects from Stripe Consulting, and submitted with this planning application.

5.10 The Proposed Development would be operational for a minimum of 50 years. Operational effects of the Proposed Development on townscape, landscape and views would be long-term and permanent.

5.11 The main aspect of the Proposed Development that would result in adverse effects on townscape, landscape and views relates to the scale and massing of the Proposed Development.

5.12 The Proposed Development would be approximately 72.8m wide and 61m deep at its widest points, (including Core Lobby 1 and additional facilities on its southern elevation, and Core Lobby 2 on its north-western corner). It would occupy the majority of the Site, which is currently open and used as a surface car park.

5.13 The building would have three core lobbies, providing pedestrian access to each level of the car park. The Core 1 Primary Lobby would be at its south-western corner, and would comprise a stairwell, two elevators, secure cycle storage with showers and toilets, all publically accessible on the ground floor. Alongside this, on the southern elevation, would be a single storey switch room, office, cleaner's cupboard and maintenance corridor. The Core 2 and Core 3 lobbies would be at the north-western and north-eastern corners respectively.

5.14 With reference to proposed elevation drawings (Drawing reference 6576-STRIPE-WP-XX-DR-AX-30501 and 6576-STRIPE-WP-XX-DR-AX-30502), the base of the roof would be approximately 17.8m high above proposed ground level, at 109.58m AOD. The roof parapet would be 1.1m high, resulting in the top of the roof being approximately 18.9m high. Core Lobby 2 at the north-western corner of the building would be a further 2.75m higher than the roof parapet, making it approximately 21.7m high, and the tallest part of the proposed building. The taller stairwell in Core Lobby 2 would provide maintenance access to the building roof.

5.15 The Proposed Development would be lit using directional LED lighting at certain points, including access points. The façade has been designed to prevent car headlights at all deck levels, including the top deck, from shining into neighbouring properties. The effect of proposed lighting in the existing urban environment, which includes lighting columns on Site, and on adjacent streets; and from adjacent residential and commercial properties, is considered as part of the townscape and landscape assessment below.

5.16 The assessment of townscape, landscape and visual effects considers embedded mitigation as part of the Proposed Development, referring to the design of the façade of the Proposed Development described within the DAS, and including landscape proposals shown on TEP Drawing R6285.001, Landscape Masterplan. Embedded mitigation is discussed further in section 5.6 below.

Construction of the Proposed Development

5.17 The assessment of construction focusses on effects that would occur only during the construction phase. Construction including site works, building the multi-storey car park and implementation of the landscape scheme would take 60 weeks. Construction effects of the Proposed Development on townscape, landscape and views would be short-term and temporary.

5.18 During construction the following would give rise to effects on townscape character and views:

- Hoarding to Site perimeter;
- Site clearance including removal of existing car park trees, and removal of hardstanding and boundary walls;
- Site compound including two cabins on top of each other (maximum height 6 metres and measuring 5.9m x 18.6m); and laydown area;
- Earthworks, soil storage, and foundation work;
- Movement of construction vehicles and plant;
- Off-site parking for a maximum of fifty construction vehicles at Beeches car park, (southeast of the Site), with a construction staff park-and-ride minibus from this car park to the Site;
- Modifications to the car park accesses;
- Construction of the metal framework for the proposed building;
- Construction lighting;
- Stone gabion construction and metal cladding work to the building façade; and
- Implementation of hard and soft works.

5.19 Trees along the northern boundary of the Site would be retained, and special mitigation construction would be undertaken across the tree root protection zone for mature trees to be retained within the north-eastern part of the Site. The Arboricultural Impact Assessment (AIA) submitted with the planning application shows trees to removed, within the existing car park, and those to be retained along the Site's northern boundary.

Assessment Method

5.20 The method of assessment is summarised below, and is described in full in *Appendix E1*.

5.21 The method for the production of verified photomontages is provided at *Appendix E2*.

5.22 The aim of this TVIA is to identify, as far as reasonably practical, the effects on townscape and landscape character, and on views that will arise from the Proposed Development, including embedded mitigation (during construction and operation), to assess the significance of predicted effects.

5.23 Paragraph 2.7 of GLVIA3 defines townscape as *"…the landscape within the built up area, including the buildings and the relationships between them."*

5.24 Paragraph 5.5 of GLVIA3 identifies a range of factors that must be understood when assessing the effects of development in urban areas. These factors include:

- *"The context or setting of the urban area and its relationship to the wider*
- *landscape;*
- *The topography and its relationship to urban form;*
- *The grain of the built form and its relationship to historic patterns;*
- *The layout and scale of buildings, density of development and building types, including architectural qualities, period and materials;*
- *The patterns of land use, both past and present;*
- *The contribution to the landscape of water bodies, water courses and other water features;*
- *The nature and location of vegetation, including the different types of greenspace and tree cover and their relationships to buildings and streets;*
- *The types of open space and the character and qualities of the public realm; and*
- *Access and connectivity, including streets and footways/pavements."*

5.25 This TVIA has involved:

- Desk based assessment including a review of relevant planning policy and guidance; and published landscape and townscape documentation relevant to the Site and surrounding area; and production and review of Zone of Theoretical Visibility (ZTV) mapping;
- Consultation with Cotswold District Council;
- Site survey and assessment to augment the baseline assessment; assess the townscape, landscape and visual effects of the Proposed Development; and to undertake photography at selected viewpoint locations;
- Baseline reporting and preliminary assessment to inform the design of the Proposed Development;
- Preparation of baseline drawings to inform the assessment; and Assessment and reporting of effects on townscape and landscape character, and on visual amenity, using criteria for receptor sensitivity, magnitude of effect and significance of effect.

5.26 This TVIA considers the findings of the Archaeology and Historic Environment ES Chapter prepared by TEP, (ES Chapter 4.0 above). Whilst it is not within the scope of the TVIA to assess the importance of heritage assets, the TVIA considers the heritage contribution to townscape character.

5.27 This TVIA is based on fieldwork undertaken in January and July 2019. Seasonal differences in effects arising due to varying degrees of filtering and screening from vegetation in summer to winter are referred to where relevant.

5.28 It is feasible to demolish a multi-storey car park and restore a surface car park but this is not intended in the project and for the purposes of this assessment the effects are considered irreversible. Duration of effects has been assessed with the following considerations:

- Short term: 0-5 years during the construction period and completion;
- Medium term: 5-15 years, which represents the establishment phase of planting proposed; and
- Long term: 15 years onwards for the life of the Proposed Development.

Significance of Effects

5.29 *Tables 5 and 10* within the TVIA Method at *Appendix E1*, describe how sensitivity and magnitude judgements combine and the criteria used to assess or determine significance of effect. Professional judgement is used in the assessment of significance and judgements are explained in the assessment of effects in Section 5.6 below.

Consultation

5.30 Cotswold District Council (CDC) commented in its Scoping Opinion that the TVIA should have regard to the Cotswolds Area of Outstanding Natural Beauty (AONB) and the North Cirencester Special Landscape Area (SLA), and should be consistent with the conclusions of the Historic Environment assessment, (which is included as Chapter 4 of this ES).

5.31 CDC commented that regard should be had to comments made by the Council's Tree Officer, which identified:

- trees between the existing car park and the River Churn are a constraint to development;
- a need for clarification of proposed tree removal on Site; and
- a requirement for mitigation planting and landscape enhancement.

5.32 Viewpoints were presented to CDC as part of the request for an EIA scoping opinion. CDC recommended that the footpath alongside the A435 (Grove Lane) was also included as a potential key viewpoint.

5.33 Fieldwork in July 2019 refined the location of assessment viewpoints and assessed the recommended viewpoint on the A435 Grove Lane, which has been included at section 5.5 below, as TVIA viewpoint 6.

5.34 In October 2019, the Council's case officer commented that the view northwards along The Waterloo towards the Site, from the junction between London Road, Victoria Road, Lewis Lane, Dyer Street and The Waterloo, is an *"important consideration in terms of the character of an important entrance into the historic town, as well as the character and appearance of the Conservation Area and the setting of numerous designated and undesignated heritage assets."*

5.35 Views from the junction south of the Site, between London Road, Victoria Road, Lewis Lane, Dyer Street and The Waterloo, have been assessed in this TVIA, with reference to Verified Photomontage Viewpoint 3 located at this road junction.

5.36 In November 2019, the Cotswold Parking Board requested additional viewpoints for consideration including on:

- Gloucester Road (northwest of the Site, over 2km distant);
- Southern boundary of Tarbarrow Cricket Club within the North Cirencester SLA (northeast of the Site); and
- PRoW between A419 Cirencester Road and Preston (southeast of the Site, over 2km distant).

5.37 Viewpoint locations, and the anticipated effect on views from these locations were analysed using google earth, online mapping and field survey findings.

5.38 The Gloucester Road viewpoint is on a road (low sensitivity and difficult to access safely), although views are largely screened by vegetation with perhaps fleeting glimpses towards the Proposed Development at most. From the PRoW viewpoint identified above, southeast of the site, the Site would not be visible in the long distance view.

5.39 A viewpoint at Tarbarrow Cricket Ground was taken forward for full assessment, and is included as Viewpoint 8 within this TVIA, discussed in section 5.5 below.

Scope of the Assessment

5.40 An initial step in the assessment process involves defining the scope of the assessment.

5.41 The physical scope of this TVIA has been informed by desk study, (including analysis of Zone of Theoretical Visibility (ZTV) mapping), and field assessment. Landform and screening by built-form and vegetation in the Site's immediate context, and in the surrounding townscape and landscape has been considered.

Zone of Theoretical Visibility (ZTV)

5.42 ZTV mapping illustrates the area in which the Proposed Development would theoretically be visible and is included as *Figures 5.4 and 5.5 at Appendix E3*.

5.43 The purpose of ZTV mapping is to inform scoping and 'on the ground' visual assessment. It shows potential theoretical visibility only and does not indicate potential visual effects or show the likely significance of effects. The ZTV does not indicate how much of the Proposed Development would be visible. The amount of the Proposed Development that would be visible will vary and in some cases only a very small part of the Proposed Development would theoretically be visible. Visual assessment survey work is undertaken to identify how much of the Proposed Development is likely to be visible and to assess the change to views and visual amenity.

5.44 The ZTV is based on information shown on planning application drawings, including Proposed Block Plan, (Drawing Reference 6576-STRIPE-WP-XX-PL-AX-30000); and Proposed Multi-Storey Car Park (MSCP) Elevation Drawings, (Drawing References 6576-STRIPE-WP-XX-DR-AX-30501 and 6576-STRIPE-WP-XX-DR-AX-30502). The height at each corner of the proposed MSCP, (Above Ordnance Datum (AOD)) is based on AOD levels identified at *Table 5.1* below.

Table 5.1: Height of the Proposed Development

	Height in metres (m) AOD		
	Parapet of Main Structure	*Top of Northwest Core Lobby*	*Top of Northeast Core Lobby*
Four Deck Building	128.5	131.3	128.5

5.45 The most significant potential effects are within the Site and its immediate context, although the ZTV has been generated up to 2km from the Site boundary in order to capture theoretical visibility of the Proposed Development from designated landscapes including:

- North Cirencester Special Landscape Area (SLA) to the northeast and north of the Site; and
- Cirencester Park (a Registered Park and Garden (RPG) within the Cotswolds Area of Outstanding Natural Beauty (AONB) and Cirencester Park Conservation Area), west of the Site.

5.46 *Figure 5.4* shows the ZTV generated from a bare earth terrain and does not take account of the screening effect of features within the landscape such as settlements and woodland blocks.

5.47 The ZTV illustrated on *Figure 5.5 at Appendix E3* takes account of the screening effect of settlements and woodland blocks using a height value of 8m for buildings and 10m for woodland based on OS Open Map Local data (February 2018). The ZTV does not account for the localised screening effects of vegetation, including hedgerows, individual trees, small tree groups or scrub beyond or immediately adjacent to the Site.

Field Assessment

5.48 Effects potentially would be experienced within the geographical extent illustrated on ZTV mapping at *Figure 5.5, Appendix E2*. However the screening effect of additional tree cover in the Site's context, which is not taken account of by the ZTV, has been considered and includes mature trees along the Site's northern boundary; mature trees within a southern part of Abbey Grounds to the northwest; and the belt of mature trees along the south side of the A435 Grove Lane to the north of the Site.

5.49 Visibility of the Site, and potential visibility of the Proposed Development, further to field survey is described further as part of describing existing views at section 5.4 below.

Baseline Conditions: Desk Study

National and Local Planning Policy and Guidance

5.50 This sub-section reviews national and local landscape planning policy and guidance relevant to the Site and the surrounding area, and pertinent to townscape, landscape and views.

National Planning Policy Framework (February 2019)

5.51 The National Planning Policy Framework (NPPF)[3] sets out the Government's planning policies for England, how these are expected to be applied at a local level in development plans and how developers should address them.

5.52 The sub-topics beneath the goal of 'Delivering Sustainable Development', which are most relevant to this TVIA are:

- Section 12: Achieving well-designed places; and
- Section 15: Conserving and enhancing the natural environment.

NPPF Section 12: Achieving well-designed places

5.53 Section 12 recognises the importance of good design as *"the creation of high quality buildings and places is fundamental to what the planning and development process should achieve".*

5.54 Paragraph 124 states that good design is a key aspect of sustainable development.

5.55 Under paragraph 127, planning policies and decisions should ensure that developments are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change.

[3] Ministry of Housing, Communities and Local Government (2019). *National Planning Policy Framework*

NPPF Section 15: Conserving and Enhancing the Natural Environment

5.56 Paragraph 170 of Section 15 states that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes. Paragraph 170 indicates that plans should distinguish between the hierarchy of international, national and locally designated sites and allocate land with the least environmental or amenity value, where consistent with other policies in the Framework.

5.57 Paragraph 172 notes that great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation landscape and scenic beauty.

5.58 Paragraph 180 of Section 15 states that planning polices and decisions should limit the impact of light pollution from artificial light on local amenity.

National Planning Practice Guidance

5.59 The NPPF is accompanied by Planning Practice Guidance (PPG), available online. Elements of the PPG relevant to the design and assessment of the Proposed Development are identified below.

Design

5.60 PPG emphasises the importance of good quality design as an integral part of sustainable development. PPG on design advises on the key points to take into account on design, which include:

- *"Ensure that development can deliver a wide range of planning objectives;*
- *Enhance the quality of buildings and spaces, by considering, amongst other things, form and function; efficiency and effectiveness and their impact on well-being; and*
- *Address the need for different uses sympathetically."*

Natural Environment

5.61 PPG reinforces the NPPF's commitment to recognising the intrinsic character and beauty of the countryside and supports the use of landscape character assessment as a tool for understanding local distinctiveness and the use of Natural England's guidance on landscape character assessment.

National Design Guide (October 2019)

5.62 On the 1st October 2019, the Government issued the 'National Design Guide', which "sets out the characteristics of well-designed places and demonstrates what good design means in practice." This guidance should be read alongside separate planning practice guidance on design process and tools.

5.63 The 'Built Form' section of the National Design Guide advises the following with regard to tall buildings:

"Well-designed tall buildings play a positive urban design role in the built form. They act as landmarks, emphasising important places and making a positive contribution to views and the skyline. Proposals for tall buildings (and other buildings with a significantly larger scale or bulk than their surroundings) require special consideration. This includes their location and siting; relationship to context; impact on local character, views and sight lines; composition - how they meet the ground and the sky; and environmental impacts, such as sunlight, daylight, overshadowing and wind. These need to be resolved satisfactorily in relation to the context and local character."

Local Planning Policy and Guidance

The Cotswold District Local Plan (2011-2031)

5.64 The Cotswold District Local Plan[4] was adopted early August 2018. The Plan guides decisions on the use of land in the District up to 2031. Local Plan Policies relevant to this TVIA are identified in Table 5.2 below:

Table 5.2: Relevant Local Plan Policy

Cotswold Local Plan Policy	Description
Policy S1: Cirencester Town	Land within the Site (0.67ha) is allocated for a decked car park (reference number CIR_E14).
Policy EN1: Built, Natural and Historic Environment	Policy EN1 advises that new development, where appropriate, should *"promote the protection, conservation and enhancement of the historic and natural environment."*
Policy EN2: Design of the Built and Natural Environment	Policy EN2 advises that development should be of a *"…design quality that respects the character and distinctive appearance of the locality."*
Policy EN4: The Wider Natural and Historic Landscape	Policy EN4 states that proposals must take account of *"landscape and historic landscape character, visual quality and local distinctiveness"*. Development proposals will be expected to "*enhance, restore and better manage the natural and historic landscape, and any significant landscape features and elements, including key views, the setting of settlements, settlement patterns and heritage assets."*

[4] Cotswold District Council (2018). *Cotswold District Local Plan 2011-2031*

Cotswold Local Plan Policy	Description
Policy EN5: Cotswolds Area of Outstanding Natural Beauty	Policy EN4 states that *"in determining development proposals within the AONB or its setting, the conservation and enhancement of the natural beauty of the landscape, its character and special qualities will be given great weight".*
Policy EN6: Special Landscape Areas	There are areas within the Cotswold District, outside the Cotswolds AONB, that have been designated as Special Landscape Areas (SLA's). The Cotswold Local Plan states that *"although primarily designated for their landscape value, the criteria for designation also includes conservation interests."* The purpose of the SLA designation is to *"protect locally significant and valued landscapes that have particular intrinsic qualities or character. Although not nationally designated, in some cases they provide important settings and effective buffers for the Area of Outstanding Natural Beauty."*
Policy EN7: Trees, Hedgerows and Woodlands	Policy EN7 relates to the conservation and enhancement of natural assets. Development will be permitted where it conserves and enhances *"trees of high landscape, amenity, ecological or historical value; veteran trees; hedgerows of high landscape, amenity, ecological or historical value; and or woodland of high landscape, amenity, ecological or historical value."* Where trees, woodland or hedgerows are proposed to be removed as part of development, Policy EN7 states that compensatory planting will be required.
Policy EN10: Historic Environment: Designated Heritage Assets	Policy EN10 advises that *"development proposals that sustain and enhance the character, appearance and significance of designated heritage assets (and their settings), and that put them to viable uses, consistent with their conservation, will be permitted."*

Cotswold Local Plan Policy	Description
Policy EN11: Historic Environment: Designated Heritage Assets - Conservation Areas	Policy EN11 states that development proposals that would affect Conservation Areas and their settings will be permitted where they: • *"Preserve and where appropriate enhance the special character and appearance of the Conservation Area in terms of siting, scale, form, proportion, design, materials and the retention of positive features; and* • *Include hard and soft landscape proposals, where appropriate, that respect the character and appearance of the Conservation Area;* • *Will not result in the loss of open spaces, including garden areas and village greens, which make a valuable contribution to the character and/or appearance, and/or allow important views into or out of the Conservation Area;* • *Have regard to the relevant Conservation Area appraisal (where available); and* • *Do not include internally illuminated advertisement signage unless the signage does not have an adverse impact on the Conservation Area or its setting."*
Policy INF7: Green Infrastructure	Policy INF7 advises that development must *"contribute, depending on their scale, use and location, to the protection and enhancement of existing Green Infrastructure and/or the delivery of new Green Infrastructure."*

Cirencester Conservation Area 'Character Appraisal and Management Plan's'

5.65 There are four Conservation Areas (CAs) in Cirencester including:

- CA1: Cirencester Park;
- CA2: Gloucester Street and River Walk;
- CA3: Cirencester Town Centre; and
- CA4: Cirencester South.

5.66 Cirencester CAs cover most of the town centre areas of Cirencester, within the ring road, and are shown on *Figure 5.1 at Appendix E3*.

5.67 There are a few areas that have not been included in a Cirencester Conservation Area, including the Site and a pocket of 20th Century housing development to the immediate northwest and northeast of the Site.

5.68 The Cirencester Town Centre CA (CA3) adjoins the south-eastern boundary of the Site, and is to the immediate southwest of the Site, beyond a road named 'The Waterloo'.

5.69 A detailed appraisal of the CAs listed above, is described within the 'Character Appraisal and Management Plan' for each CA, produced by Cotswold District Council.

5.70 Cirencester Town Centre CA (CA3) is of most relevance to this TVIA. Cirencester South CA (CA4) south of the Site, and Cirencester Park CA (CA1) to the west are also relevant, due to potential inter-visibility between these areas, and the Proposed Development. Relevant parts of the 'Character Appraisal and Management Plan' for these CAs are discussed further below, as part of the description of the townscape baseline.

Cirencester Town Centre Supplementary Planning Document (2008)

5.71 The Cirencester Town Centre Supplementary Planning Document (SPD) was adopted by Cotswold District Council on 25th November 2008.

5.72 The objectives for the SPD include:

- *"To develop Local Plan policies for Cirencester Town Centre in a holistic manner, which seeks to balance the need to manage traffic and improve the appearance of the public realm with other, competing, environmental, social and economic objectives;*
- *To identify alternative strategies for the future use of significant sites, including CIR.2 - CIR.8 (within the context of policies 12, 15, 25 and CIR.1) with the aim of enhancing the town centre's function and its historic and natural environment;*
- *To mitigate the impact of anticipated growth in future car usage through traffic management and parking measures;*
- *To set out formulae for achieving traffic and environmental improvements to the public realm of the town through section 106 obligations;*
- *To propose improvements to, and a rationalisation of, signage, street furniture and streetscape, that will provide consistent styles, materials, clearer direction, and resulting enhancements to the town's appearance and improved legibility;*
- *To propose measures for securing the interpretation of the towns archaeological, built and natural heritage; and*
- *To propose measures to manage and improve the City Bank area in accordance with the principles set out in Policy CIR.15."*

Cotswold Design Code (2018)

5.73 Appendix D of the Cotswold District Local Plan[5] comprises the Cotswold Design Code. The 'Landscape, Settlements and Streets' section of the Cotswold Design Code is of relevance to this TVIA, and advises that:

- *"Proposed development should respond to specific location characteristics and townscape settings;*
- *The layout of proposed development should align with the distinctive layout of a settlement;*

[5] Cotswold District Council (2018). *Cotswold District Local Plan 2011-2031*

- *Proposals must reflect the typical character of the Cotswolds which comprises tightly arranged building, with building lines set immediately on, or close to the rear of the pavement;*
- *Though Cotswold street scenes contain buildings of a variety of scales and architectural styles, the sense of harmony, rhythm and balance should be continued in new development, respecting the particular character of existing streets; and*
- *New additions can add interest but not appear out-of-keeping."*

Local Countryside Designation Review: Special Landscape Areas (2001)

5.74 The adopted Local Plan Policies Map identifies that part of the southern boundary of the North Cirencester SLA, along the A435 Grove Lane, is to the northeast and north of the Site, beyond 20th Century housing development at Corinium Gate, and beyond Abbey Grounds. See *Figure 5.1 at Appendix E3*.

5.75 In 2001, White Consultants undertook a review of SLAs for Cotswold District Council. This review was published as the 'Local Countryside Designation Review: Special Landscape Areas'. Paragraph 5.2 of the report recommends that the entire North Cirencester SLA continued to be designated as a SLA, as it was identified as being of high landscape value.

5.76 The findings of the 'Local Countryside Designation Review: Special Landscape Areas', relevant to the North Cirencester SLA, are discussed further below, as part of the description of the landscape baseline for the Site and its surroundings.

Special Landscape Areas Review, (2017)

5.77 In 2017, White Consultants was commissioned by Cotswold District Council to review change in the Cotswold SLAs since 2001, and to identify the effect of any change on boundaries and qualities, as part of baseline evidence supporting the Local Plan (2011-2031).

5.78 The apparent changes within the North Cirencester SLA since 2001, were identified to include:

- *"Establishment of the services at the junction of A417/A419 bypass and A429. These are set within trees and screened from all directions but the south, and increase movement east of the bypass;*
- *Tree growth in natural regeneration/plantations along the A417 especially adjacent to the laybys which assist in filtering views to parked vehicles;*
- *Growth in young broadleaf tree belt plantation adjacent to the A429; and*
- *Growth of tree mitigation planting around paddocks south and east of The Paddocks development in Baunton which help integrate the housing."*

5.79 The SLA Review identifies that *"overall, the services are a negative influence but they have only a highly localised effect on the landscape character and do not merit a change of boundary. The other changes are slight but positive, enhancing the SLA, and do not influence the boundary or merit any alterations to the boundaries."*

5.80 The SLA Review also identified that the qualities of the North Cirencester SLA as defined in the 2001 SLA report are still relevant, and the following also now apply:

- *"The distinctive sinuous braided channels of the River Churn with the network of drains and small low-key bridges;*
- *The simple, relatively unenclosed valley bottom which, with the valley sides, create a clear and unspoilt rural green corridor between Cirencester and Stratton; and*
- *The Monarch's Way long distance footpath and other public rights of way along the valley floor and lower valley sides."*

5.81 The 2017 SLA review concluded that the North Cirencester SLA remains valid as a locally designated area, and its boundaries are recommended to remain the same.

Study of 'Land Surrounding Key Settlements in Cotswold District'

5.82 An update to the 'Study of Land Surrounding Key Settlements', originally published in 2000, was completed in October 2014 by White Consultants[6]. The study describes the relationship between the settlement of Cirencester and the surrounding landscape.

5.83 The study advises that the following are positive aspects of the relationship between Cirencester and the surrounding landscape:

- *"The tower of St John the Baptist Church is a distinctive landmark and can be seen from a few approaches. These views should be retained;*
- *The Abbey Estate land and area east of Bowling Green form a pleasant parkland landscape wedge linking visually into the Abbey Grounds in the heart of Cirencester. This area should be retained and conserved: and*
- *Cirencester Park is a particularly special formal landscape at a grand scale linking into the town centre. The park and its setting should be protected."*

5.84 With reference to landscape sensitivity, the study advises that *"generally, the landscape north of Fosse Way is of higher value than to the south. This is evidenced by the designations of AONB, SLA and historic parkland. The Churn Valley is also of value."*

5.85 The study also advises that *"generally, screening belts of trees limit views into the town from the higher countryside to the east."*

Townscape and Landscape Baseline

5.86 This sub-section discusses relevant environmental designations; describes relevant townscape character, (discussed within relevant Conservation Area Character Appraisal and Management Plans); and summarises landscape character described within published landscape character assessments.

[6] White Consultants (2014). *Study of Land Surrounding Key Settlements in Cotswold District: Update*

Environmental Designations

5.87 The Site is not within a townscape or landscape designation, but it is part of the Roman Town of Corinium Scheduled Monument (SM), which comprises multiple small parcels across a large expanse of Cirencester town centre.

5.88 There are numerous landscape and historic designations in the Site's immediate and wider context. These are shown on *Figure 5.1 at Appendix E3,* and include:

- Cirencester Conservation Areas (CAs) discussed above under 'Local Planning Policy and Guidance';
- Scheduled Monuments (SMs);
- Listed Buildings (LBs);
- North Cirencester Special Landscape Area (SLA);
- Cirencester Park Registered Park and Garden (RPG); and
- Cotswolds Area of Outstanding National Beauty (AONB).

5.89 Cirencester CAs have been identified under 'Local Planning Policy and Guidance' above. Landscape and heritage designations with the Site's wider context including the Cotswolds AONB; Cirencester Park RPG; and North Cirencester SLA are discussed below.

5.90 CAs, SMs and LBs relevant to the Site and the Proposed Development, and Cirencester Park RPG are assessed in ES Chapter 4, Archaeology and Historic Environment.

Cotswolds Area of Outstanding National Beauty (AONB)

5.91 The Cotswolds AONB is approximately 0.5km to the west of the Site, at its closest point, where it adjoins the north-western edge of Cirencester, and encompasses Cirencester Park RPG.

5.92 The Cotswolds AONB also is approximately 1.5km to the northeast of the Site, where it is defined by the A429 Stow Road, beyond rising agricultural land designated as part of the North Cirencester SLA, and beyond mature woodland on both sides of the A417 dual carriageway. Mature tree cover restricts inter-visibility with the Site.

5.93 Relevant Cotswolds AONB publications include:

- Cotswolds AONB Management Plan 2018-2023[7];
- Position Statements[8];
- The Cotswolds AONB Landscape Character Assessment (2002)[9]; and
- Landscape Strategy and Guidelines[10].

[7] Cotswolds AONB Partnership (2018). *Cotswolds AONB Management Plan 2018-2023*
[8] Cotswolds Conservation Board: https://www.cotswoldsaonb.org.uk/our-landscape/position-statements-2/
[9] Cotswolds AONB Partnership (2002). *The Cotswolds AONB Landscape Character Assessment*
[10] Cotswolds AONB Partnership (2018). *Cotswolds AONB Landscape Strategy and Guidelines*

Cotswolds AONB Management Plan 2018-2023

5.94 The Cotswolds AONB Management Plan 2018-2023 sets out the vision, outcomes, ambitions and policies to guide the management of the AONB for the period 2018-2023. The Management Plan identifies the special qualities of the Cotswolds including the:

- *"Unifying character of the limestone geology – its visible presence in the landscape and use as a building material;*
- *Cotswold escarpment, including views from and to the AONB;*
- *High wolds – a large open, elevated predominately arable landscape with commons, 'big' skies and long-distance views;*
- *River valleys, the majority forming the headwaters of the Thames, with high-quality water;*
- *Distinctive dry stone walls;*
- *Internationally important flower-rich grasslands, particularly limestone grasslands;*
- *Internationally important ancient broadleaved woodland, particularly along the crest of the escarpment;*
- *Variations in the colour of the stone from one part of the AONB to another which add a vital element of local distinctiveness;*
- *Tranquillity of the area, away from major sources of inappropriate noise, development, visual clutter and pollution;*
- *Extensive dark sky areas;*
- *Distinctive settlements, developed in the Cotswold vernacular, high architectural quality and integrity;*
- *Accessible landscape for quiet recreation for both rural and urban users, with numerous walking and riding routes, including the Cotswolds Way National Trail;*
- *Significant archaeological, prehistoric and historic associations dating back 6,000 years, including Neolithic Stone monuments, ancient drove roads, Iron Age forts, Roman villas, ridge and furrow fields, medieval wool churches and country estates and parks;*
- *Vibrant heritage of cultural associations, including the Arts and Crafts movement of the 19th and 20th centuries, famous composers and authors and traditional events such as the Cotswolds Olimpicks, cheese rolling and woolsack races."*

Cotswolds AONB Position Statements

5.95 In line with the AONB Management Plan, the Cotswolds Conservation Board has developed positions on key issues affecting the AONB, presented as Position Statements. The Position Statements referred to below are relevant to landscape and views and have been reviewed for the purposes of this TVIA.

Tranquillity (June 2019)

5.96 Tranquillity is one of the 'special qualities' of the Cotswolds AONB. The Cotswolds AONB has relatively high levels of tranquillity, especially when compared with the surrounding urban areas. However, there is a serious risk that the tranquillity of the AONB could decline as a result of increasing levels of development, infrastructure and traffic.

5.97 The Position Statement advises that adverse impacts on tranquillity should be avoided and minimised as far as possible and, ideally, reduced.

Cotswolds Dark Skies and Artificial Light (March 2019)

5.98 This Position Statement identifies that the Cotswolds AONB has a significant and extensive area of naturally dark night skies and remains an area where the wonders of the night sky can be enjoyed as an integral part of its natural beauty. Dark skies are noted as being a Special Quality of the Cotswolds AONB but are under pressure from increasing light pollution from commercial and domestic security lighting, development and street lighting.

5.99 The Position Statement advises that *"conserving dark skies means ensuring the use of well-designed artificial light that is directed to where it is needed, when it is needed and not into the sky or across the landscape."*

5.100 It also states that *"although the Cotswolds AONB does have relatively dark skies at night, light pollution from the surrounding urban areas, and the market towns of the AONB, does adversely affect the dark skies of the AONB in those locations."*

Development in the Setting of the Cotswolds AONB (June 2016)

5.101 The Position Statement advises that there is a need to manage development pressures and land use changes within the AONB, and within the setting of the AONB, with sensitivity to retain traditional Cotswold character.

5.102 The setting of the Cotswolds AONB is defined as "*the area within which development and land management proposals, by virtue of their nature, size, scale, siting materials or design can be considered to have an impact, positive or negative, on the landscape, scenic beauty and special qualities of the Cotswolds AONB*."

5.103 The Position Statement advises that "*development proposals that affect views into and out of the AONB need to be carefully assessed to ensure that they conserve and enhance the natural beauty and landscape character of the AONB*."

5.104 Cirencester is recognised as one of the major urban areas that edges that borders the AONB. The Position Statement advises that in the major urban areas bordering the AONB "*the pressure for development outside, but in many locations within the setting of the AONB is significant*."

Cotswolds AONB Landscape Character Assessment (2002)

5.105 The Cotswolds AONB Landscape Character Assessment states that the Cotswolds AONB is characterised by *"a dramatic escarpment and expansive high wolds; a network of limestone walls; beech woods clothing the escarpment; secluded valleys and valley bottom meadows and historic small towns."*

5.106 Landscape character within the Cotswolds AONB, and where relevant to the Site, is described further below, as part of discussing published townscape and landscape character assessments.

Cotswolds AONB Landscape Strategy and Guidelines

5.107 The Cotswold AONB Landscape Character Assessment has identified nineteen different landscape character types (LCT) in the Cotswolds AONB. Landscape Strategies and Guidelines have been produced for each of these LCT. The Cotswolds AONB to the west and northeast of the Site is characterised as part of LCT 11: Dip-Slope Lowland. Relevant parts of the Landscape Strategy and Guidelines for LCT 11 are referred to below, following the description of LCT 11 as part of discussing published townscape and landscape character assessments.

Cirencester Park Registered Park and Garden (RPG)

5.108 The following description of Cirencester Park RPG incorporates information available from Historic England's 'National Heritage List for England' (NHLE).

5.109 Cirencester Park adjoins the north-western edge of Cirencester, and is a Grade I RPG that is over 1,000ha in area. The eastern boundary of Cirencester Park RPG, (along Park Lane, east of the Mansion house), is approximately 0.5km to the west of the Site, at its closest point.

5.110 Cirencester Park RPG extends westwards from the Mansion House for 8km, and a 1.5-2m high drystone wall extends around most of the park.

5.111 Cirencester Park RPG is an extensive wooded park, on gently undulating land, divided by long straight avenues or rides between principal viewpoints, discussed further below. Many Listed Buildings exist within Cirencester Park, including the Grade II* Listed Mansion house and attached offices.

5.112 There are two main approaches to Cirencester Park, both from its eastern end adjoining Cirencester. There is a gateway from Park Lane that accesses the enclosed courtyard east of the Mansion House. Approximately 250m northwest of the Mansion House is the main entrance to Cirencester Park from the town, via Cecily Hill. From this gated entrance, one of the principal rides, Broad Ride, extends west for 8km, in a straight line between St John the Baptist's church in Cirencester to the southeast, and the village of Sapperton to the northwest.

5.113 There are other, minor, entrances to the Park from the south side of the park.

5.114 The Park includes park and pleasure grounds to the west and south of the mansion, comprising an Italian Garden and Temple Garden, and a tree-lined lake (approximately 5ha) to the southwest, within the Home Park.

5.115 Historic England's summary description for Cirencester Park identifies that the Broad Ride forms the central axis of the park. The main intersections along it are noted to include the:

- *"Hexagon (c 700m northwest of the mansion, facing Windsor Walk, which runs southwards, with a ha-ha to its west, to bound the Home Park);*
- *Seven Rides (by Pope's Seat, near the Polo Ground, c 2km west of the mansion); and*
- *Ten Rides (deep in the west part of Oakley Wood, c 5.5km west of the mansion)."*

5.116 Several rides are noted to extend beyond the park, including Broad Ride, which extends for approximately 1.5km beyond the west end of the park.

5.117 Elm Avenue runs southwest for 1.5km from the Mansion to the Grade II* Listed Queen Anne's Monument, on higher ground.

North Cirencester Special Landscape Area (SLA)

5.118 The North Cirencester SLA extends north of the built-up areas on the northern side of Cirencester, and is bound by the Cotswolds AONB to the north, east and west.

5.119 Paragraph 5.3 of the 'Local Countryside Designation Review: Special Landscape Areas (2001)'[11], referred to above under 'Local Planning Policy and Guidance' identifies that the North Cirencester SLA encompasses two distinct landscape character types; the Cotswold lower dipslope in the east, and one of the lower dipslope valleys in the west. The southern part of the Cotswold lower dipslope in the east of this SLA is within the northern landscape context of the Site, and is discussed further later in this sub-section, when discussing published landscape assessments.

5.120 The southern boundary of the North Cirencester SLA, where it runs along the south side of the A435 Grove Lane, is approximately 0.3km northeast of the Site at its closest point. See *Figure 5.1 at Appendix E3*.

5.121 Twentieth Century housing development at Corinium Gate; public open space at Abbey Grounds; and mature tree cover along the south side of the A435 Grove Lane, separate the Site from the North Cirencester SLA.

5.122 North of the A435 Grove Lane, between the A429 Burford Road to the southeast and The Whiteway to the northwest, the North Cirencester SLA (within the Cotswold lower dipslope) encompasses large agricultural fields on land that rises northeast towards mature woodland. Tarbarrow Cricket Club adjoins the southern boundary of woodland on higher ground, and Tar Barrow SM is within an agricultural field to the east of the Cricket Club.

[11] White Consultants (2001). *Local Countryside Designation Review: Special Landscape Areas*

5.123 Paragraph 5.4 of the 'Local Countryside Designation Review: Special Landscape Areas (2001)'[12], states that *"land to the east of The Whiteway generally dips southwards giving wide or panoramic views"*, and *"the fine tower of the Church of St John the Baptist is seen rising above trees at intervals from several places, including the historically important approach to the town along The Whiteway".*

5.124 Paragraph 5.4 also states that *"The regular layout of fields and strong woodland structure lends an ordered, uncluttered appearance to the landscape which has more enclosed parkland qualities on southern slopes",* and this landscape acts as *"a green wedge",* which penetrates into the built up area close to the historic core of Cirencester.

5.125 The 'Local Countryside Designation Review: Special Landscape Areas (2001)'[13], summarises the key landscape qualities of the SLA to include:

- *"Large-scale regular grain of elevated plateau landscape;*
- *Clearly defined valley sides and floor;*
- *Strong woodland belts on the dipslope, giving shelter and enclosure;*
- *Well-tree'd valley sides;*
- *River corridor vegetation;*
- *Visual links with the old core of Cirencester, in particular views to the Church of St John the Baptist; and*
- *Historic landscapes of the Chester-Master Abbey estate; and*
- *Traditional Cotswold character of Baunton."*

5.126 At paragraph 5.9 of the 'Local Countryside Designation Review: Special Landscape Areas (2001)'[14], part of the justification for recommending that the entire area of the SLA continues to be designated is of particular relevance to understand part of the Site's landscape context, and is as follows:

- *"The proximity of this typical lower dipslope valley and plateau landscape to the historic core of Cirencester reflects an important characteristic of the Cotswold landscape's relationship with its settlements, with key views from higher ground and along the valley to the Parish church; and*
- *This landscape retains its integrity and exhibits many of the key characteristics of the bordering AONB landscape types to the north and west. Elements such as the recent bypass, pylons and housing on the edges of the town are detractors, but are not sufficiently intrusive to exclude parts of the area from the SLA."*

[12] White Consultants (2001). *Local Countryside Designation Review: Special Landscape Areas*
[13] White Consultants (2001). *Local Countryside Designation Review: Special Landscape Areas*
[14] White Consultants (2001). *Local Countryside Designation Review: Special Landscape Areas*

Published Landscape and Townscape Character Assessments

5.127 The Site is in an urban area, and the focus of this TVIA is upon the potential effects of the Proposed Development on existing townscape features and characteristics. However, the wider landscape and context to the urban area in which the Proposed Development would be located needs to be understood, particularly as there is the potential for some inter-visibility between the Proposed Development and the wider landscape.

5.128 The following paragraphs identify published landscape and townscape character areas relevant to the Site and its context, and summarise the key characteristics and features of each published landscape and townscape character area reviewed.

5.129 Townscape and landscape character areas are shown on *Figures 5.2 and 5.3 at Appendix E3.*

Natural England's National Character Area (NCA) 107: The Cotswolds (2015)[15]

5.130 The Site sits close to part of the southern boundary of NCA 107: The Cotswolds. See *Figure 5.3* at *Appendix E3*.

5.131 The dominant pattern of the Cotswolds landscape is described as *"a steep scarp crowned by a high, open wold; the beginning of a long and rolling dip slope cut by a series of increasingly wooded valleys....The smaller market towns and villages tend to lie in the valley bottoms, occasionally along the valley sides and at the scarp foot on springlines."* This NCA is also described as the *"quintessential English landscape."*

5.132 Key characteristics include:

- *"Locally quarried limestone brings a harmony to the built environment of scattered villages and drystone walls, giving the area a strong sense of unity for which the Cotswolds are renowned;*
- *The high quality of the domestic architecture is particularly notable, with steep roofs of graded limestone slates, parapeted gables and finials, stone mullions, rectangular dripstones and dormer windows, and four-centred archways over doorways;*
- *Open and expansive scarp and high wold dipping gently to the southeast, dissected by river valleys;*
- *Meadows and tree lined watercourses are found along valley bottoms;*
- *Parkland and estates are characteristic of this area;*
- *The A429 runs the length of the Cotswolds along the route of the former Roman road, the Fosse Way; and*
- *There are many thousands of buried archaeological sites reflecting the intensity of past human use of this landscape."*

5.133 Relevant Statements of Environmental Opportunity (SEO) include:

- *"SEO 2: Safeguard and conserve the historic environment, cultural heritage and geodiversity that illustrate the history, evolution, foundations,*

[15] Natural England (2015). *National Character Area Profile 107 - The Cotswolds*

land use and settlement of the Costwold landscape, and allow access to and interpretation of the relationship between natural processes and human influences."

Cirencester Conservation Area 'Character Appraisal and Management Plans'

5.134 The four Conservation Areas in Cirencester are shown on *Figure 5.1 at Appendix E3*.

5.135 The Cirencester Town Centre CA (CA3) adjoins the south-eastern boundary of the Site, and is to the immediate southwest of the Site, beyond The Waterloo.

5.136 The Cirencester South CA (CA4) is to the south of the Site, (defined by London Road and Lewis Lane), and The Park CA (CA1) is to the west of the Site, encompassing Cirencester Park RPG. There is potential inter-visibility between these locally designated areas, and the Proposed Development.

5.137 The 'Conservation Area Character Appraisal and Management Plan' for each Cirencester CA characterises them into character areas. These character areas are shown on *Figure 5.2 at Appendix E3*. Character areas relevant to this TVIA are described below.

Cirencester Town Conservation Area (CA3)

Character Area 5: The Forum

5.138 Part of the northern edge of Character Area 5: The Forum runs along the south-eastern boundary of the Site, and is approximately 10m from the south-western boundary of the Site, beyond The Waterloo.

5.139 Relevant features of this Character Area include:

- *"A number of low key buildings, some former stables and outbuildings, of rubble, brick and Welsh slate, at the rear of residential and commercial premises most notably forming the north eastern boundary of the conservation area along Waterloo Road, are very important in creating an edge where boundary walls and gardens have been lost to car parking;*
- *Views towards the tower of the parish church are numerous with that from the Forum north along South Way being especially important;*
- *Limestone rubble walls, and some brick form a distinctive element and are most important in enclosing gardens and various areas of domestic, commercial and public car parking;*
- *Trees are not numerous but where they are found within the character area they form an important element. Those along Waterloo Road help delineate property boundaries and break up areas of car parking.*
- *Many residential units are to upper floors;*
- *Spatially complex, the Cricklade Street section and parts of Dyer Street are characterised by predominantly historic narrow frontages, built off the back edge of the pavement, at right angles to the road, with extensions developed down long, narrow plots; and*
- *Two and three-storey premises provide an almost continuous built frontage to the more historic areas of Dyer Street."*

Character Area 4: Abbey Grounds

5.140 Character Area 4: Abbey Grounds encompasses the north-eastern extent of the Cirencester Town Centre CA. It is approximately 80m northwest of the Site at its closest point beyond residential flats, in blocks comprising four storeys, to the immediate northwest of the Site.

5.141 Relevant features of this Character Area include:

- *"Hidden behind the large parish church, the Abbey Grounds forms a tranquil and informal, recreational facility incorporating the former Abbey fish pond, a children's play area and equipment, a bandstand used for musical performances and large areas of mown grass…;*
- *The trees in the grounds, and especially along the eastern boundary, are very effective and important in minimising noise, visibility and pollution associated with the dual carriageway and beyond;*
- *Trees are an important, attractive feature…;*
- *Additional visual interest is provided by features such as…the section of Roman wall…and the extensive views across the grounds and especially from east to west towards the parish church tower;*
- *High limestone boundary walls surrounding the Abbey Grounds to the south provide texture and a sense of containment; and*
- *The demolition of the Abbey House and its replacement with flats…does little to enhance the setting of the grounds. Conversely the grounds play a significant role in minimising the impact of the building."*

Character Area 1: Town Core

5.142 Character Area 1: Town Core includes the commercial core of the town, centred on Market Place, and also encompasses Castle Street and Cricklade Street. It includes the central section of the Cirencester Town Centre CA, and is approximately 185m northwest of the Site at its closest point, beyond development on the southern side of The Waterloo.

5.143 Relevant features of this Character Area include:

- *"An architecturally rich area consisting of a varied mixture of intimately-scaled spaces, of mostly enclosed character, and centred on Market Place, with its spectacular parish church whose tall tower provides an iconic landmark for the whole of Cirencester;*
- *Streets are tightly defined by mostly two and three-storey buildings built off the back edge of the pavement in long, narrow, medieval plots;*
- *Market Place, an Important Urban Open Space…acts as a visual focal point;*
- *Views dominated by the tower of St John The Baptist with shorter views towards focal points, most often found on corner plots with frontages on two or more elevations, and glimpsed views into corridor and courtyard mews;*
- *A roofscape enlivened by the use of a large number of gabled frontages interspersed with pitched roofs behind parapets and occasional pediments,*

together with tall chimney stacks and high level ornamentation including cornices encouraging views upwards and reinforcing the vertical emphasis of individual buildings and the townscape of the character area; and

- *Mature trees in the churchyard help to create a tranquil retreat from the activity of the town, whilst overhanging trees from within the Abbey Grounds reflect the nature of that adjoining space."*

Cirencester South Conservation Area (CA4)

5.144 The Cirencester South CA is to the south of the Site, defined by London Road and Lewis Lane.

Character Area 4: Victoria Road

5.145 Character Area 4: Victoria Road is a linear character area encompassing nineteenth Century development centred on Victoria Road, comprising a mix of terraced, semi-detached, and detached residential development of mostly three-stories, with some two-stories. It comprises the central section of the Cirencester South CA and is approximately 100m to the south of the Site, at its nearest point.

5.146 Relevant features of this Character Area include:

- *"The Victoria Character Area appears less densely developed than other parts of southern Cirencester;*
- *Views along Victoria Road, and shorter views into and out of the area, are important in terms of legibility, in aiding perceptions of location and route-finding, with glimpses to open areas and publicly-accessible routes; and*
- *Later development is characterised by greater variety in texture and ornament, built in whole or in part of local materials, giving the area a distinctive yet consistent quality."*

Character Area 5: Purley Road

5.147 Character Area 5: Purley Road encompasses the whole of Purley Road between London Road at the northern end, including part of Purley Avenue, and the recreation ground (north of City Bank), to the south, and includes part of Purley Avenue.

5.148 Character Area 5 comprises *"an early twentieth-century, linear, urban speculative housing development on the east side of the town."* It is approximately 120m southeast of the Site, beyond built-form along London Road.

The Park Conservation Area (CA1)

5.149 The Park CA is to the west of the Site and Cirencester, and encompasses part of the eastern extent of Cirencester Park RPG, within the Cotswolds AONB.

Character Area 3: The Broad Ride

5.150 Character Area 3: The Broad Ride is approximately 0.8km northwest of the Site and encompasses the main axis of Cirencester Park.

5.151 Relevant features of this Character Area include:

- *"Views within this character area are especially important; the alignment of the Broad Ride and the parish church of St John the Baptist is the principle view, with the route to and from the Hexagon forming a secondary but important view;*
- *The close-mown grass bands, some 5 metres wide either side of the hard surfaced Broad Ride, are flanked by a dense band of mature trees of mixed species but predominantly cedar, yew, sycamore, black pine and sequoia form an impressive scene;*
- *The land has a gently undulating form which creates multiple subtly variations in views; and*
- *The Broad Ride, on an east-west alignment forms the principle route for visiting walkers."*

Character Area 4: The Mansion

5.152 Character Area 4: The Mansion encompasses the southern section of CA1, and is approximately 0.5km to the west of the Site.

5.153 Character Area 4: The Mansion comprises an early 18th Century house and its grounds. The whole of Character Area 4: The Mansion, is *"not accessible to the public except as viewed from Windsor Walk; as well as the Mansion itself, the Pleasure Grounds contain the tree-lined informal land, and two listed buildings."*

5.154 Relevant features of this Character Area refer to:

- *"The house is directly aligned to the perpendicular tower of the Parish Church to the east;*
- *Views from Fulham Bridge are a distinctive and impressive feature of the conservation area focusing attention on key features within the Park, most notably the mansion itself with the Parish Church tower behind, Queen Anne's Monument and surrounding pasture land, and northward towards the Hexagon; and*
- *Avenue of mature limes along Windsor Walk with oblique views to the Parish Church across the Mansion grounds."*

Cotswolds AONB Landscape Character Assessment (2002)[16]

5.155 In October 2002 the Cotswolds AONB Partnership, together with the Countryside Agency, appointed Landscape Design Associates (LDA) to carry out a Landscape Character Assessment of the Cotswolds AONB with supporting Guidelines.

5.156 The AONB landscape to the west, (and northeast) of the Site, is within Landscape Character Type (LCT) 11 Dip-Slope Lowland, and Landscape Character Area (LCA) 11A South and Mid Cotswolds Lowlands. See *Figure 5.3 at Appendix E3*.

[16] Cotswolds AONB Partnership (2002). *The Cotswolds AONB Landscape Character Assessment*

5.157 LCT 11 Dip-Slope Lowland, comprises a broad tract of land that forms the transition between the High Wold Dip Slope to the northwest and the lower lying flatter Thames Basin to the southeast. LCT 11 comprises a broad area of gently undulating lowland, approximately 160m AOD to 100m AOD, with a gentle fall from northwest to southeast, except for the southern part, which has a more pronounced fall west-east.

5.158 Relevant landscape features and characteristics of LCT 11 include:

- *"Medium to large scale, regular fields predominate mainly enclosed by hedgerows, with hedgerow trees, together with some stone walls or post and wire fencing;*
- *Well-managed, productive agricultural landscape of mixed arable and improved pasture;*
- *Views to the south from the Dip-Slope Lowland are often long and expansive;*
- *Designed parkland and estate landscapes are a distinctive feature of this landscape character type and include a number of nationally important Registered Gardens and Parks. The extensive woodlands, and planned features, such as avenues and vistas, impart a dramatic and impressive scale to the landscape, and have a strong influence on local landscape character;*
- *There are few landmarks in the landscape although church spires and towers represent important focal features and points of orientation within the lower lying landform; and*
- *Woodland cover limited to intermittent copses and shelterbelts within agricultural land, but balanced by extensive broadleaved, mixed and coniferous plantations within the large estates and associated farmland areas."*

5.159 LCA 11A, South and Mid Cotswolds Lowlands, forms an almost continuous area of Dip-Slope Lowland along the eastern and south-eastern side of the Cotswolds, broken only by the valley of the River Churn at Cirencester. Despite the linear extent of the area, there is a strong continuity in its character principally relating to landform.

5.160 Relevant landscape features and characteristics of the South and Mid Cotswolds Lowlands (LCA11A) include:

- *"Generally below the 160m AOD levels, the area has a gently sloping mainly south-easterly grain;*
- *A consistent pattern of well-managed productive mixed arable and pastoral landscape across this lower tract of land enclosed by both stone walls and hedgerows with hedgerow trees being a common feature;*
- *The main section of the Dip-Slope Lowland is remarkable for the concentration of Historic Parks, Registered Gardens and private estates throughout the area…the planned landscape of Cirencester Park is noteworthy;*
- *Woodlands vary between the extensive woodlands and plantations within the large estates and a pattern of intermittent smaller woodlands associated with the farmed landscape."*

Cotswolds AONB Landscape Strategy and Guidelines

5.161 Further to the Cotswolds AONB Landscape Character Assessment, a subsequent study was undertaken to provide a Landscape Strategy and Guidelines for each of the LCT identified within the AONB.

5.162 With reference to landscape sensitivity, LCT 11 is stated to be *"sensitive to large scale developments that might interrupt wide views across the landscape and in particular to developments that would introduce tall vertical elements."*

5.163 LCT 11 is noted to have an *"open character and long views across the Dip-Slope Lowlands."*

5.164 Although the Landscape Strategy and Guidelines for LCT 11 do not directly reference development within the setting of the LCT, the following strategies and guidelines are provided for development, expansion and infilling of settlements:

- *"Avoid development that will intrude negatively into the landscape and cannot be successfully mitigated, for example, extensions to settlements on visible hillsides or areas of open landscape;*
- *Ensure new development is proportionate and does not overwhelm the existing settlement;*
- *Ensure that new development does not adversely affect settlement character and form or impact on views of key features such as church towers/spires; and*
- *Ensure new development is visually integrated into its surroundings and does not interrupt the setting of existing settlements."*

Assessment of Landscape Character outside the Cotswolds AONB (2000)

5.165 Land within the North Cirencester SLA, approximately 0.3km northeast of the Site (at its closest point), is within the Cotswolds Lower Dipslope landscape character type (LCT), and the Cirencester North Fringe Dipslope landscape character area (LCA).

5.166 This part of the Cotswolds Lower Dipslope LCT, and Cirencester North Fringe Dipslope LCA (CLD2) comprises agricultural land and mature woodland on land rising northeast towards Galley Hill, and is defined to the south by the A435 Grove Lane, and contained to the southeast by the A429 Burford Road and residential development within the eastern extent of Cirencester. Cirencester North Fringe Dipslope LCA (CLD2) is defined to the northwest by a minor road, and residential development at Bowling Green.

5.167 The Cotswolds Lower Dipslope LCT is defined as being *"contiguous with the AONB"* and as having *"a very similar character with no obvious distinction."*

5.168 Relevant key characteristics of the Cotswolds Lower Dipslope LCT include:

- *"Generally a large-scale landscape with wide distant views southward over the lowland of the Thames valley and beyond;*
- *Arable farming is the dominant land use, with large or medium-sized regular fields and isolated farmsteads;*
- *There are small blocks of woodland, many being shelterbelt plantations;*

- *It is crossed by various straight Roman roads and other ancient routes still used as roads; and*
- *Appears elevated in comparison with the Thames valley."*

5.169 The Cirencester North Fringe Dipslope LCA (CLD2) comprises *"an area of regular fields and large blocks and belts of woodland which form enclosure and screening for the outlying parts of Cirencester and the recent bypass*."

Baseline Conditions: Site Assessment

Townscape Character of the Site and Surrounding Area

5.170 The following description of the existing townscape and landscape baseline takes into account the advice in paragraph 5.5 of GLVIA3 and is augmented with observations from site surveys. It concludes with judgements on townscape and landscape value.

The Site and its Context

5.171 The Site is in an urban area within the northern part of Cirencester, and comprises the existing Waterloo car park, which is a rectangular area of tarmac hardstanding used as a surface car park. The Site is open, with no buildings, and has a more open feel than Cirencester town centre to the south and west, due to the existing surface car park allowing visual permeability across the Site.

5.172 The Site is defined by a 1m high limestone wall to the south and west; a 2.5-3m high limestone wall to the east (shared with two adjacent properties); and mature trees and the River Churn to the north. There are semi-mature trees planted irregularly throughout the car park.

5.173 The road named The Waterloo runs along the south-western and north-western boundaries of the Site, and includes areas of on-street parking. The car park and The Waterloo is lit by standard lighting poles.

5.174 There is a row of street trees to the northwest of the Site, on the west side of The Waterloo, which provides access to the existing car park. There also are street trees on the south side of The Waterloo, in the vicinity of Woolrich House opposite the Site's south-western corner.

5.175 Residential development surrounds the Site, and there are multiple businesses to the south of the Site and The Waterloo, with associated private car parks, and service areas. Development south of The Waterloo is within the Cirencester Town Centre CA and largely fronts onto Dyer Street to the south. The Cirencester Town Centre CA also encompasses residential properties to the immediate east and southeast of the Site, between the Site and London Road.

Topography

5.176 The Site is at approximately 110m Above Ordnance Datum (AOD) which is largely consistent with the immediate surrounding townscape. Local variations to this include along the River Churn, and where the land rises within the northern part of the modern housing development at Corinium Gate, bound by the A435 Grove Lane to the north. Land northeast of the Site and the A435 Grove Lane rises gradually, and reaches 130m AOD at Tarbarrow Cricket Club. The land continues to rise northwards towards Hare Bush woodland, between 135m and 140m AOD.

5.177 The relatively flat nature of the area surrounding the Site and across Cirencester town centre more widely, results in built-form and vegetation restricting longer distance views.

5.178 Land within Cirencester Park to the west of the Site, rises to 124m AOD on Broad Ride, south of the Listed Hexagon (Viewpoint 9, Figure 5.12 at Appendix E3); to approximately 120m AOD near Fulham Bridge on the Windsor Walk (Viewpoint 10, Figure 5.12 at Appendix E3); and to approximately 140m AOD at the Grade II* Listed Queen Anne's Monument. The Monument is on higher ground southwest of Fulham Bridge and the Mansion house and offices on the eastern boundary of Cirencester Park RPG.

Surrounding Built-form

5.179 The Site's immediate context comprises residential and commercial development.

5.180 Flats are a prominent feature including eight blocks of flats, four storeys high, to the immediate northwest of the Site; and Woolrich House, a three-storey modern building, opposite the south-western corner of the Site. The ground floor of Woolrich House is occupied by businesses and the upper two floors are residential flats. There is also Orchard House and Oxford House to the southeast of the Site.

5.181 To the north of mature trees along the Site's north-eastern boundary, along the River Churn, there is a modern residential development, comprising two-storey semi-detached and detached properties at Corinium Gate. This housing development is built using Cotswold stone and is arranged in cul-de-sacs. This area of housing bears no relationship to the historic pattern of the built-form in the Cirencester Town Centre CA.

5.182 The Cirencester Town Centre CA is more widely characterised by a linear layout, comprising narrow streets lined with buildings of high density. The Waterloo in the vicinity of the Site is less constrained by development on both sides, with wider footways, reaching 3m in places. On the south side of The Waterloo, there is inconsistency in the building line with irregular plots reflected by older houses and later infills creating an informal pattern. Properties are set back at varying distances from The Waterloo and areas of hardstanding between properties allow more visual permeability along this edge of the Cirencester Town Centre CA, contrasting with the remainder of Character Area 5: The Forum (within this CA), where high density street edges are more common.

5.183 Dyer Street to the south of the Site is wider than other streets within Character Area 5: The Forum, although two and three-storey premises provide an almost continuous built frontage providing a sense of containment to the street. The gently curving Dyer Street comprises sequences of long, narrow medieval plots with development extending lengthways to the rear, interspersed with larger buildings with a varied roofline. Pedestrian routes on either side of the street provide some channelled visual permeability through built-form.

5.184 The Abbey Grounds comprises open green space northwest of the Site, within its own CA Character Area (CA4), and is a wedge-shaped expanse of urban parkland enclosed by mature trees, but with strong links to Cirencester Town and access to the Site.

Listed Church of St John the Baptist

5.185 The Church of St John the Baptist is a key landmark in the centre of Cirencester town, and is a prominent feature on the skyline.

5.186 The Church tower is perceptible from the south-eastern edge of the Site, looking beyond built-form within the intervening CA. The Church also is a key feature of some views from Corinium Gate, and from the Roman Walls to the north of the Site, within the south-eastern part of Abbey Grounds.

Townscape Value

5.187 The TVIA method provided at *Appendix E1* explains the factors used to inform judgements about landscape value. The paragraphs below provide a summary of pertinent information for each factor and concludes with an overall judgement on the value of the townscape potentially affected. The value of the landscape in the Site's context, potentially affected, is also discussed below.

Townscape quality and condition

5.188 The Site currently is used as a surface car park defined by a 2.5-3m high stone wall to the east, and a low wall to the south and west, approximately 1m high. Mature trees along the Site's north-eastern boundary, along the River Churn, background the Site and partially screen 20th Century housing development to the north, and contribute positively to local townscape character.

5.189 Townscape quality is reduced in the Site's immediate context by the presence of eight blocks of flats rising to four storeys to the northwest, and commercial car parking and servicing areas to the south. The flats are of modern brick construction with little distinctive character or features.

Scenic Quality

5.190 The Site as a surface car park has a limited contribution to the scenic quality of townscape, although it provides a degree of openness in this part of the town with car park trees breaking up and softening the appearance of the car park.

5.191 Late 19th Century residential properties of Cotswold stone construction east and southeast of the Site and mature trees along the northern Site boundary make a positive contribution to the scenic quality of the Site and its immediate context.

5.192 Scenic quality is reduced by the modern four storey flats to the immediate northwest of the Site, and by the car park and servicing areas to the rear of commercial properties south of The Waterloo.

Rarity

5.193 The Site does not contain any rare townscape elements or features, and surface car parks are found elsewhere within Cirencester town.

Representativeness

5.194 The Site is not included within a Cirencester CA Character Area, but is within the immediate setting of Character Area 5: The Forum (within Cirencester Town Centre CA), to the southeast and southwest.

5.195 The Site has a more open feel than its urban context, due to its use as a surface car park, which allows visual permeability across the Site.

Conservation Interests

5.196 The Site is designated as part of the Corinium Scheduled Monument, which extends across a much larger area, as shown on *Figure 5.1 at Appendix E3*.

5.197 Cirencester Town Centre CA adjoins the Site's south-eastern boundary and is to the southwest of the Site beyond The Waterloo. There are numerous Listed Buildings within this CA including along Dyer Street to the south of the Site. CAs within the Site's wider context include Cirencester South CA to the south, defined by London Road and Lewis Lane; and The Park CA encompassing the Cotswolds AONB and Cirencester Park RPG to the west of the Site, adjoining the north-western edge of Cirencester.

Recreational Value

5.198 The Site is used as a public car park. From the car park, pedestrians can access Cirencester town centre to the south and west along The Waterloo, and can access public open space at Abbey Grounds to the northwest. Access to Abbey Grounds is via a footpath running to the north of residential flats immediately northwest of the Site, and running northwest along the River Churn. Open space within Abbey Grounds is to the northwest of the Site, and the Roman stone wall feature within the south-eastern part of Abbey Grounds is to the north, north of modern housing development at Corinium Gate.

Perceptual Aspects

5.199 The Site comprises the existing Waterloo surface car park, within an urban area in the northern part of Cirencester. The Site is influenced by residential development surrounding the Site, including blocks of flats, 4 storeys high, to the immediate northwest. There also is commercial development and associated car parking to the south.

5.200 Traffic movement local to the Site, including on The Waterloo, London Road, Victoria Road, and the A435; and associated traffic noise, reduces tranquillity on Site and in the surrounding area. Traffic movement; traffic noise; and lighting within the car park and on the surrounding streets reinforce the Site's existing urban character and context.

Associations

5.201 The Site and its immediate context has no known associations with an artist or writer.

Overall Judgement on Value

5.202 With consideration to the above, the Site and the surrounding townscape is of **local value** overall.

Landscape Value

5.203 North Cirencester SLA is approximately 0.3km northeast of the Site, at its closest point. The landscape within the North Cirencester SLA is of **local value**.

5.204 The Cotswolds AONB, encompassing Cirencester Park RPG, is approximately 0.5km to the west of the Site, at is closest point. There are elevated views eastwards from the AONB, and RPG, towards Cirencester on lower ground. The boundary of the Cotswolds AONB also is approximately 1.5km to the northeast of the Site, although inter-visibility with the Site is restricted by intervening mature woodland.

5.205 The landscape encompassed by the Cotswolds AONB and Cirencester Park RPG is of **national value**.

Existing Views

5.206 This sub-section summarises visibility of the Site from the surrounding townscape and landscape with reference to ZTV mapping; identifies visual receptors and assessment viewpoints; and describes existing views from identified receptors and viewpoints.

Visibility of the Site and Proposed Development

5.207 Visibility of the Site and the Proposed Development has considered ZTV mapping shown on *Figures 5.4 and 5.5 at Appendix E3*; aerial photography; and Ordnance Survey (OS) mapping. Visibility has been verified during field survey.

5.208 There are open views towards the Site from residential and commercial property surrounding the Site, with filtering and screening in some views by mature trees along the north-eastern boundary of the Site and along the River Churn; by street trees and by property trees.

5.209 The Proposed Development would not be visible from Market Place, in the vicinity of the Grade I Listed Church of St John the Baptist, west of the Site, or from Dyer Street to the south and southwest, due to views being contained within the street by continuous built-form, typically two and three storeys high.

5.210 *Figure 5.5 at Appendix E3* indicates theoretical visibility of the Proposed Development from land north and northwest of the Site, including the Roman Walls within the south-eastern part of the Abbey Grounds; and Abbey Grounds to the northwest beyond intervening blocks of flats, 4 storeys high. The existing Waterloo car park is not visible in these views due to screening by intervening residential development and by mature trees along the north-eastern boundary of the Site and along the southern edge of Abbey Grounds.

5.211 ZTV mapping shows limited visibility of the Proposed Development from the A435 Grove Lane northeast of the Site, and shows some theoretical visibility of the Site from Grove Lane to the north. Fieldwork indicates that between the gated entrance to the Abbey Grounds and the roundabout to the southeast, (where the A435 Grove Lane meets London Road) the Site is not visible and the Proposed Development likely would be screened or heavily filtered during the winter, by the belt of mature trees on the south side of the A435 Grove Lane.

5.212 The ZTV in this location also extends north and northeast across rising agricultural land in the North Cirencester SLA, and extends towards woodland on higher ground, screening the Cotswolds AONB beyond. The ZTV indicates theoretical visibility from Tarbarrow Cricket Club on higher ground.

5.213 To the northeast of the Site, the ZTV extends along the A417 London Road. Looking southwest towards the Site, the Site is screened by intervening built-form and trees, but the upper part of the Proposed Development likely would be perceptible within a very small proportion of the overall view.

5.214 To the southeast and south of the Site, there are areas of theoretical visibility, in particular from the Recreation Ground at the southern end of Purley Road, from part of the open playing fields of Cirencester Primary School, and from the full extent of Victoria Road. The upper part of the Proposed Development likely would occupy only a very small proportion of the overall view northwest, due to distance and screening by intervening residential properties. The Proposed Development likely would occupy a greater proportion of the view north from the northern extent of Victoria Road.

5.215 To the southwest, across Cirencester town centre, there is an area of theoretical visibility across and in the vicinity of the Roman Amphitheatre. Fieldwork identified dense mature tree cover along the dual carriageway in this location, which likely would restrict visibility of the Proposed Development to being no greater than a very small proportion of the overall view that comprises intervening built-form.

5.216 There are some areas of theoretical visibility of the Proposed Development, from parts of Cirencester Park to the west, including on Broad Ride, on Windsor Walk near Fulham Bridge; and on a path between the Monument on higher ground to the southwest, and Fulham Bridge to the northeast.

5.217 The ZTV indicates theoretical visibility from footpaths to the northwest of the Site, and further analysis identified that the uppermost part of the Proposed Development likely would only comprise a very small proportion of the view and would be barely distinguishable.

Visual Receptors

5.218 The following paragraphs identify visual receptors i.e. people that experience views of the Site or who are likely to experience views of the Proposed Development. Existing views towards the Site are described with reference to viewpoints discussed above and identified below.

5.219 This TVIA has focussed on the following visual receptors:

- Persons at Cirencester Park (RPG within the Cotswolds AONB) to the west;
- Persons at Tarbarrow Cricket Ground to the northeast of the Site;
- Persons at Abbey Grounds to the northwest and north;
- Residents of flats to the immediate northwest of the Site;
- Residents at properties south of the Site, and The Waterloo, including at Woolrich House;
- Workers at businesses south of the Site and The Waterloo, including at Woolrich House;
- Residents of properties to the east and southeast, accessed off The Waterloo;
- Residents of properties on London Road, to the southeast;
- Residents of properties on Victoria Road and Lewis Lane, to the south;
- Residents at Corinium Gate to the north and northeast;
- Pedestrians and cyclists on The Waterloo, and on local roads and footways; and
- Motorists on the local road network, including the A435 Grove Lane to the north.

5.220 The land use planning system considers that public views are of greater value than views from private property. This TVIA assesses effects on both public and private views.

TVIA Viewpoints

5.221 This visual assessment is informed by ten photograph viewpoints, described in *Table 5.3* below, and which have been selected to show views from the receptors listed above. Viewpoint photography also assists in understanding the baseline townscape, landscape and visual environment at the Site and in its context.

5.222 Viewpoint locations are shown on *Figures 5.6 and 5.7 at Appendix E3*.

5.223 *Figures 5.8 to 5.12 at Appendix E3* include photographs showing the existing view in the direction of the Site from Viewpoints 1 to 10 described below.

Table 5.3: TVIA Viewpoint Locations

Viewpoint Reference	Description	Approximate Viewpoint Distance (from red line boundary) and Direction of the View to the Site	Visual Receptors Represented
1	West side of The Waterloo near the boundary wall for Smythe House	Adjacent to the Site boundary. Looking northeast to southwest	Residents at the flats to the immediate northwest of the Site. Road users on The Waterloo.
2	South side of The Waterloo (road) opposite the south-western corner of the Site	10m Looking east	Road users on The Waterloo. Residents and workers south of The Waterloo, including at Woolrich House.
3	London Road, at the road junction, south of the Site	95m Looking north	Road users and residents on London Road and Victoria Road close to the road junction.
4	The Waterloo (road)	40m Looking north	Road users on The Waterloo. Residents southeast of the Site.
5	Corinium Gate (residential road)	82m Looking southwest	Residents of properties at Corinium Gate. Road users on Corinium Gate. Visitors to the Roman Wall within the south-eastern part of Abbey Grounds.
6	Layby on the north side of the A435 Grove Lane	200m Looking southwest	Road users on the A435 Grove Lane.

Viewpoint Reference	Description	Approximate Viewpoint Distance (from red line boundary) and Direction of the View to the Site	Visual Receptors Represented
7	Seating area at Abbey Grounds	265m Looking southeast	Persons within Abbey Grounds.
8	North-western perimeter of Tarbarrow cricket pitch (within the North Cirencester SLA)	585m Looking southwest	Persons at Tarbarrow Cricket Club.
9	Broad Ride, Cirencester Park	1.17km Looking southeast	Persons at Cirencester Park, (RPG within the Cotswolds AONB)
10	Path near Fulham Bridge, Cirencester Park	1.24km Looking northeast	Persons at Cirencester Park, (RPG within the Cotswolds AONB)

5.224 The following paragraphs describe existing views towards the Site, experienced by visual receptors listed above, and with reference to relevant viewpoint photography.

Existing Views

Persons at Cirencester Park

5.225 Cirencester Park adjoins the north-western edge of Cirencester and is approximately 0.5km to the west of the Site, at its closest point. Cirencester Park is designated as a RPG, and is within the Cotswolds AONB and The Park CA.

5.226 Broad Ride is noted within Historic England's summary description for Cirencester Park RPG as being the central axis of the park, and one of the principal rides that divide the Park. Broad Ride extends in a straight line, westwards from its main entrance off Cecily Hill, for 8km. Persons on Broad Ride have open distant views southeast towards the Church of St John the Baptist within the centre of Cirencester. Beyond the Church, and screened from view, is the Site. See Viewpoint 9 shown at *Figure 5.12, Appendix E3.*

5.227 Windsor Walk is a tree lined path that runs southwards of Broad Ride, and along the western edge of Home Park, which includes a lake surrounded by trees to the south. The majority of views from this path in the direction of the Site are filtered or screened by mature trees.

5.228 There is an open distant view northeast towards the Site from this path, near Fulham Bridge. The Site is beyond Cirencester Park Mansion house and offices, and the tower belonging to the Church of St John the Baptist, which are seen in the distance, on lower ground beyond Home Park. The Site is screened in the view by these landmark buildings, which form the focal point of the view. See Viewpoint 10 shown at *Figure 5.12, Appendix E3.*

5.229 A similar view to the one available at Viewpoint 10 (shown at *Figure 5.12, Appendix* E3) is possible from a path that runs southwest of Fulham Bridge, and on rising ground towards the Grade II* Listed Queen Anne's Monument on localised high ground. Views northeast from path and the Listed Monument would become more distant and elevated than that shown at Viewpoint 10.

Persons at Abbey Grounds

5.230 Abbey Grounds comprises public green space with open views southeast towards the Site across an area of open grassland.

5.231 Viewpoint 7 (*Figure 5.11 at Appendix E3*) shows that the Site is screened by mature trees within the southern part of Abbey Grounds. The eight four storeys' blocks of flats to the immediate northwest of the Site also screen the Site in views, particularly in the winter when tree screening is reduced in the view.

5.232 Northeast of the Site, beyond modern housing at Corinium Gate, are the remains of a Roman Wall within the south-eastern part of Abbey Grounds. Views southwards towards the Site, from the public information board for this heritage feature, are enclosed by the grass bank encompassing the Roman wall. There are open views south towards the Site from the top of the grass bank, but the existing surface car park on Site is screened from view by intervening trees and residential properties at Corinium Gate. The view includes the tower of the Church of St John the Baptist and the top of a block of flats to the immediate northwest of the Site. See Viewpoint 7 shown at *Figure 5.10 at Appendix E3*, which is a similar view although from lower ground within the Corinium Gate housing area.

Persons at Tarbarrow Cricket Club

5.233 There are open elevated views south and southwest from Tarbarrow Cricket Club towards Cirencester, which is filtered and screened in the view by intervening mature trees, including mature trees along the south side of the A435 Grove Lane in the middle distance. See Viewpoint 8 at *Figure 5.11, Appendix E3*.

5.234 The tower belonging to the Church of St John the Baptist to the south, is a focal point of the open panoramic view, seen above the sky line. The Site is screened from view by intervening mature trees on the south side of the A435 Grove Lane. Open green space at Abbey Grounds is seen through these mature trees in the direction of the Church tower.

Residents of the flats northwest of the Site

5.235 To the immediate northwest of the Site, (beyond The Waterloo that provides access to the existing car park on Site), there is a complex of eight blocks of flats arranged at right-angles to each other. These residential buildings comprise four-storeys and are approximately 12m high with the ground level occupied by garages. A 2m high wall defines the perimeter of the grounds of these flats, and there are street trees between this boundary wall and The Waterloo, along the north-western boundary of the Site. Four residential blocks, named Smythe House, Paget House, Hill House and Colville House, include flats with views towards and of the Site, with some filtering by street trees.

5.236 There are views of the Site from southeast facing windows of first, second and third floor flats in Smythe House. Mature trees are present along the eastern edge of the apartment grounds opposite Smythe House. The trees partially filter views of the Site.

5.237 The upper two floors of southeast facing flats at Paget House also have open, short distance views towards and across the Site, with more oblique views southeast towards the southern part of the Site and beyond.

5.238 Hill House is a small block in the north of the group with windows facing southeast. Views are oblique, open and short range towards the north-western corner of the Site and beyond. Paget House to the south of Hill House beyond a road, restricts some views southeast of the wider Site, in particular from flats on the southern elevation of this block.

5.239 Flats within the northern part of Colville House, facing southeast, have restricted open views southeast towards the northern part of the Site, channelled through the gap between Paget House to the south and Hill House to the north.

Residents south of The Waterloo

5.240 Woolrich House is a three storey building opposite the south-western corner of the Site. The ground floor of Woolrich House comprises multiple businesses, and the upper two storeys include residential accommodation. There are open and filtered views northeast and east towards the Site beyond The Waterloo.

5.241 Viewpoint 2 *(Figure 5.8 at Appendix E3)* shows an open, close view towards and across the Site, partially screened by the boundary wall to the existing Waterloo car park. Residents of the upper two floors of Woolrich House are likely to have views across the entire Site, broken up by car park trees.

5.242 Amongst commercial property south of The Waterloo, there are two semi-detached properties, approximately 30m south of the Site, which have open, upper storey, rear views northeast towards the Site.

Workers at businesses south of The Waterloo

5.243 Workers on the ground floor of Woolrich House have open views northeast towards the Site, with some filtering by a mature street tree in views northeast from the western end of Woolrich House. See Viewpoint 2 *(Figure 5.8 at Appendix E3).*

5.244 Two buildings comprising the Chyp Charity Shop and Waterloo Opticians are approximately 15m and 25m south of the Site respectively. Workers at the Chyp Charity Shop have direct open views north across the Site, with some screening of the existing Waterloo car park by the car park boundary wall. The Waterloo Opticians is set back from The Waterloo, and has upper storey views towards the Site, partially screened by intervening built-form directly adjacent to the southern side of The Waterloo. The backdrop to the view is provided by mature trees along the Site's north-eastern boundary along the River Churn.

5.245 There are also commercial properties that front onto Dyer Street to the south, which have rear views, predominantly from upper storey windows, towards the Site. The ground plane of the Site likely would be partially obscured by intervening buildings south of The Waterloo.

Residents of properties to the east and southeast, accessed off The Waterloo

5.246 Two detached residential properties adjoin the Site's south-eastern boundary, which is defined by a 2.5-3m high limestone wall. The two storey property adjoining the northern part of this Site boundary, (named 'Old Apple Loft'), has oblique, close views southwest towards the Site from upper storey windows. Lower storey views, and garden views towards the ground plane of the Site would be screened by the 2.5-3m high wall defining the boundary between this property and the Site.

5.247 The property adjoining the southern part of the Site's south-eastern boundary, is a bungalow (at 33 The Waterloo), with close views westwards towards the Site largely enclosed by the 2.5-3m high wall on the boundary between this property and the Site. The ground plane of the Site is not visible from this property.

5.248 Viewpoint 4 shown at *Figure 5.9 at Appendix E3* includes the bungalow at 33 The Waterloo and the two storey property 'Old Apple Loft', partly visible in this view towards the Site.

5.249 Approximately 30m south-east of the Site, there are two blocks of flats named Orchard House and Oxford House. Flats on the western end of Orchard House have oblique views northwest towards the Site, partially screened by the wall defining the Site's south-eastern boundary. Four storey residential flats enclose the Site to the northwest.

5.250 The 'Old Brewhouse Guesthouse', accessed off The Waterloo, likely would have rear property views northwest towards the Site, filtered and screened by property trees, with four storey residential flats enclosing the Site to the northwest.

Residents of properties on London Road, to the southeast

5.251 There are properties facing London Road, to the southeast of the Site that have upper storey rear property views northwest towards the Site. Views extend between and beyond intervening properties, with some filtering and screening by intervening garden trees. Properties comprisee two or three storeys and face London Road. See Viewpoint 4 at *Appendix E3*.

Residents of properties on Victoria Road, to the south

5.252 Residents on Victoria Road have oblique front property views northwest along this road towards the Site, channelled by property on both sides of this road and The Waterloo. The ground plane of the Site is screened by intervening built-form. Viewpoint 4 shown at *Figure 5.9, Appendix E3* shows a view from the road junction at the northern end of Victoria Road.

Residents of properties at Corinium Gate to the north and northeast

5.253 Northeast and north of the Site, beyond mature trees on the Site's north-eastern boundary, and along the River Churn, there is a modern residential development comprising two storey properties accessed off a residential road named Corinium Gate.

5.254 Residents of semi-detached properties at numbers 21 to 31 Corinium Gate, opposite the north-eastern boundary of the Site, (beyond mature Site trees), have rear and side property views southwest from upper storey windows, that would include the ground plane of the existing surface car park on Site. Glimpsed lower storey and garden views of the Site are likely from numbers 25 and 27 over close-boarded boundary fencing. Viewpoint 1 shown at *Figure 5.8, Appendix E3*, shows some properties at Corinium Gate that overlook the Site, through gaps between mature trees on the Site's north-eastern boundary.

5.255 Views from numbers 21 to 31 Corinium Gate referred to above, are close and filtered by mature Site trees. The proportion of the view occupied by the Site would vary in each property's view.

5.256 North of the Site, residents of semi-detached properties at numbers 65 to 75 Corinium Gate, have glimpsed oblique views south and southwest towards the Site with the ground plane partially visible. The views are from upper storey windows on the south-eastern elevations of these properties, and also from the western elevations of properties at numbers 71 and 73 Corinium Gate. Views of the Site are heavily filtered by mature trees on the northeast side of the River Churn.

5.257 There is a group of semi-detached properties at numbers 47 to 63 Corinium Gate that have rear upper storey oblique views southwest and south towards the Site, although the Site likely is screened by intervening residential development.

5.258 On higher ground within the northern part of this modern residential development, there are detached properties at numbers 10 to 18 Corinium Gate. Residents at 10 and 12 Corinium Gate have open, elevated views southwest towards the Site which are truncated by intervening houses. The upper part of the tower belonging to the Listed Church of St John the Baptist is visible above intervening houses, as shown at Viewpoint 5 (*Figure 5.10 at Appendix E3*). This viewpoint is located on a grassed area adjacent to Corinium Gate road. The upper part of the Listed Church tower is a focal point in the view.

5.259 Views towards the Site from numbers 14 to 18 Corinium Gate are heavily filtered and screened by tall mature trees on land between the residential road accessing these properties and the main Corinium Gate road to the southwest. Views towards the Site would be less restricted after leaf fall in the autumn and winter, but views would remain filtered.

Pedestrians and Cyclists along The Waterloo and Local Roads and Footways

5.260 The Waterloo is used by local residents and workers, and visitors to the area. Pedestrians and cyclists on The Waterloo can access Cirencester town centre to the south and west, and can access public open space at Abbey Grounds to the northwest of the Site. Access to and from Abbey Grounds towards the Site, is via a footpath that runs along the River Churn to the north of residential flats immediately northwest of the Site. Pedestrian and cyclist views towards the Site, from The Waterloo along and close to the Site's south-western and north-western boundaries, are open, close and transient, comprising existing development surrounding the Site.

5.261 Visibility of the Site from the road network beyond The Waterloo is reduced by intervening properties (predominantly residential) in the view or are screened by mature trees along the A435 Grove Lane to the northeast of the Site. See Viewpoints 1 to 6 shown at *Figures 5.8 to 5.10, Appendix E3*.

Motorists on the Local Road Network

The Waterloo

5.262 The Waterloo runs between London Road to the south, and Market Place to the west. This road runs along the south-western and north-western boundaries of the Site. It provides access to the existing Waterloo surface car park on Site and provides access to four storey residential flats to the immediate northwest of the Site.

5.263 Travelling north along The Waterloo from London Road, views towards the Site are channelled between built-form and limestone walls on the roadside. The Site occupies part of the view as its southeast corner is approached. See Viewpoint 3 shown at *Figure 5.9 at Appendix E3*.

5.264 Travelling alongside the Site, views into the Site are transient and oblique, and partly screened by a limestone wall along the south-western and north-western boundaries of the Site.

5.265 Travelling eastwards along The Waterloo, views are channelled between built-form with features at the Site including trees and the existing car park boundary wall visible in part of the view. Viewpoint 2 at *Figure 5.8, Appendix E3*, shows that there are open views across the Site on the approach to the south-western corner of the Site.

Road Junction South of the Site, and London Road

5.266 Approximately 90m south of the Site, several roads meet at a junction, including London Road, Victoria Road, Lewis Lane, Dyer Street and The Waterloo. Motorists at this junction have oblique and direct views northwards towards the Site, between properties on both sides of The Waterloo. See Viewpoint 4 shown at *Figure 5.8, Appendix E3*. The existing Waterloo surface car park on Site is screened by an intervening property wall. Four storey residential flats are partly visible, enclosing the Site to the northwest.

5.267 Oblique motorist views towards the Site from London Road are limited, beyond and between properties fronting onto this road.

Victoria Road

5.268 Victoria Road is a straight residential road that runs south from the above road junction. Mature trees at Abbey Grounds, and Smythe House, a four storeys' block of flats on the north-western boundary of the Site are partially visible through gaps in buildings and mature trees. Viewpoint 3 shown at *Figure 5.9, Appendix E3* is from the western end of London Road, close to the northern end of Victoria Road.

5.269 With distance from the Site, visibility of Smythe House and the area around the Site reduces and occupies a smaller proportion of the view.

A435 Grove Lane

5.270 The A435 Grove Lane is to the northeast and north of the Site, beyond modern residential development at Corinium Gate and beyond Abbey Grounds. Views southwest towards the Site from this road are transient and oblique, and screened by intervening mature tree cover. See Viewpoint 6 at *Figure 5.10, Appendix E3*.

5.271 During the winter, when screening by tree cover is reduced, intervening properties at Corinium Gate may be perceptible in some motorist views towards the Site.

TVIA Viewpoints

Viewpoint 1: The Waterloo, west of the Site

5.272 Viewpoint 1, shown at *Figure 5.8, Appendix E3*, is at the footway on the west side of The Waterloo, alongside the boundary wall to Smythe House, and to the immediate northwest of the Site. The view extends across the open site and includes the roofs of residential properties east of the Site and the businesses and residential properties south of the Site. Semi-mature trees within the Site provide some filtering in views across the Site, and provide seasonal variation. Street lighting is a feature in the view.

5.273 There is a glimpsed view of residential property at Corinium Gate to the northeast, through mature trees along the north-eastern boundary of the Site, along the River Churn.

Viewpoint 2: The Waterloo, west of the south-western corner of the Site

5.274 Viewpoint 2 shown at *Figure 5.8 at Appendix E3,* is on the footway on the south side of The Waterloo, near Woolrich House, opposite the south-western corner of the Site.

5.275 The view extends northeast to include the frontage of Smythe House, a four storey residential block with the ground floor occupied by garages, seen above the boundary stone wall. The view also extends across the existing Waterloo car park within the Site, and extends southeast along The Waterloo, which runs along the Site's south-western boundary.

5.276 Several two-storey properties on the southern edge of a housing area at Corinium Gate are seen to the north, between and above mature trees along the north-eastern boundary of the Site, along the River Churn.

5.277 Two residential properties to the immediate east of the Site are seen partly visible above a 2.5-3m high limestone wall that defines the Site's south-eastern boundary. The view through gaps between these properties, include the rooftops of Orchard House and Oxford House, and the rear upper storeys of residential properties that front onto London Road to the southeast.

Viewpoint 3: London Road, at the road junction south of the Site

5.278 This viewpoint is at the road junction south of the Site, between London Road and Victoria Road.

5.279 The view extends north towards the Site, which is partly screened by intervening properties and boundary walls. Four storeys' residential blocks to the immediate northwest of the Site are partly visible beyond the Site, seen above intervening property boundary walls.

Viewpoint 4: The Waterloo, south of the Site

5.280 Viewpoint 4 is on the east side of The Waterloo, near the entrance to the car park for The Old Brewhouse guesthouse. The view extends north towards the Site, and includes four storeys' residential blocks to the immediate northwest of the Site.

Viewpoint 5: Corinium Gate, northeast of the Site

5.281 Viewpoint 5 is on Corinium Gate residential road, looking west and south towards the Site. The Site is screened by intervening residential properties including houses at number 25 and 27 Corinium Gate, at the end of the cul-de-sac. The tower of the Church of St John the Baptist is visible above rooftops.

5.282 A similar view to that available at Viewpoint 5, is experienced by visitors to the Roman Wall to the north, within the south-eastern part of Abbey Grounds. Views southwest are from the grass mound behind the Roman Walls, and extend beyond residential properties at Corinium Gate towards the Site. The Site is screened by intervening properties and mature trees along the Site's north-eastern boundary, along the River Churn.

Viewpoint 6: Layby on the north side of the A435 Grove Lane

5.283 This viewpoint is at the layby on the north side of the A435 Grove Lane. The Site is screened in the view southwest by mature trees to the immediate south of the A435 Grove Lane.

Viewpoint 7: Abbey Grounds seating area

5.284 Viewpoint 7 is at the seating area on the west side of open green space at Abbey Grounds, northwest of the Site. The Site is screened in the view southeast by mature trees on the southern edge of Abbey Grounds, in the middle-distance, and by four storey residential blocks to the immediate northwest of the Site, filtered and partly screened between mature trees at Abbey Grounds.

Viewpoint 8: Tarbarrow Cricket Club

5.285 Viewpoint 8 is adjacent to the north-western edge of the cricket pitch at Tarbarrow Cricket Club on higher ground northeast of the Site, within the North Cirencester SLA. The Site is screened in the view south by intervening mature trees along the A435 Grove Lane. The view southwest includes the Church of St John the Baptist.

Viewpoint 9: The Broad Ride, Cirencester Park

5.286 Viewpoint 9 is located on the eastern end of Broad Ride, within Cirencester Park to the west of the Site. The viewpoint is at approximately 124m AOD on this principal ride through the Cirencester Park RPG, within the Cotswolds AONB.

5.287 Viewpoint 9 at *Figure 5.12, Appendix E3* shows the view extending southeast along Broad Ride, between an avenue of mature trees either side of the wide surfaced path. The Grade I Listed Church of St John the Baptist is a focal point and key landmark in the view towards Cirencester, and screens the Site in the view.

Viewpoint 10: Path near Fulham Bridge, Cirencester Park

5.288 This viewpoint is at Cirencester Park, on a path south of the Broad Ride, near Fulham Bridge. The viewpoint is at approximately 120m AOD.

5.289 Viewpoint 10 (at *Figure 5.12 at Appendix E3*) shows the view northeast towards the Site, screened from view by the Cirencester Park Mansion house and offices (including Bathurst Estate Office), on lower ground at one of two main entrances to Cirencester Park.

5.290 The Mansion house and offices, and the tower belonging to the Church of St John the Baptist are key landmark buildings and focal points in the view.

Mitigation Measures

During Construction

5.291 Standard mitigation measures set out in a Construction Environmental Management Plan (CEMP) and in *Chapter 11* of this ES, will be implemented during construction.

During Operation

5.292 The assessment of operational effects at section 5.7 below assesses embedded mitigation measures that are an integral part of the Proposed Development, referring to the external design and appearance of the Proposed Development, and tree planting proposed as part of the new public realm designed along The Waterloo.

5.293 The evolution of the design and appearance of the Proposed Development is presented in the DAS referred to in section 5.2 above.

5.294 The external treatment of the upper levels of the Proposed Development would comprise woven aluminium metal panels, creating a 3 dimensional panel with parts absorbing and parts reflecting light, and with a milled finish in yellow. The eastern and western façades would be more enclosed with additional fire protection panels (not visible from outside the building) fixed to the façade from within the car park.

5.295 The lower level and pedestrian entrances of the Proposed Development would be constructed from gabions filled with Cotswold Stone, in keeping with its surroundings, especially where the Proposed Development faces the historic core of Cirencester, and identifying the southern elevation as the main entrance.

5.296 The proposed landscape scheme would create a new public realm along The Waterloo to the south and west of the Proposed Development, and would incorporate attractive hardscaping and planting, including trees to soften the new interface between the Proposed Development, and The Waterloo road and Cirencester Town Centre to the south.

5.297 Proposed improvements to the public realm would provide a better quality pedestrian and cyclist link between the Proposed Development and Abbey Grounds to the northwest (through intervening residential development), and between the Proposed Development and Cirencester town centre to the south.

5.298 No additional and actionable mitigation measures are proposed.

Assessment of Environmental Impacts

Townscape and Landscape Assessment

5.299 The following paragraphs provide an assessment of the sensitivity of the townscape and landscape potentially affected, and the magnitude and significance of the effects resulting from the construction and operation of the Proposed Development.

Townscape and Landscape Sensitivity

5.300 The assessment of townscape and landscape sensitivity takes account of the value of townscape and landscape, discussed in section 5.5 above; and the overall susceptibility to change of the townscape and landscape, which is discussed below.

Townscape Susceptibility to Change

5.301 The Site is a surface car park surrounded by built-form to the east, south and west. Dense mature tree cover along the Site's north-eastern boundary, along the River Churn, separates the Site from housing development to the north.

5.302 Built-form to the east, south and west of the Site varies in density and height, including 1, 2 and 3 storey high properties. Smythe House is a 4 storeys' residential block to the west, comprising garages at ground level. Woolrich House is a three storey property opposite the south-western corner of the Site, beyond The Waterloo.

5.303 There are street trees on the west side of The Waterloo running along the Site's north-western boundary, softening this edge. To the south of the Site, street tree planting is limited, comprising a few mature trees opposite the south-western corner of the Site near Woolrich House. To the east of the Site, vegetation screening of the Site is provided by trees within property gardens.

5.304 The Site's susceptibility to the proposed change is reduced by its existing use for car parking; the presence of four storey buildings to the immediate northwest and the three storey Woolrich House to the southwest; and due to the presence of some tree screening of the Site, in particular from the north. The Site generally is able to accommodate the development proposed without suffering widespread detrimental effects on its townscape character.

5.305 The susceptibility to change of the Site has been assessed as medium.

5.306 The townscape to the southeast and southwest of the Site is designated as part of the Cirencester Town Centre Conservation Area, which includes numerous Listed Buildings on Dyer Street, London Road and Market Place to the south and west of the Site. The Grade I Listed St John the Baptist Church is to the west of the Site. The Site features in the some views northwest towards the Church tower, from the south-eastern context of the Site. The view includes the Church tower above intervening built-form and in the context of four storey residential flats to the immediate northwest of the Site.

5.307 Townscape surrounding the Site would not be physically affected by the Proposed Development. The Proposed Development has potential to affect aesthetic and perceptual aspects of townscape including the setting to the Conservation Area. It has potential to affect views towards and from parts of the Conservation Area, including from the area southeast of the Site, (e.g. approaching Cirencester town along London Road) and from Abbey Grounds to the northwest. The presence of existing development surrounding the Site and mature trees along the north-eastern boundary of the Site, has the potential to minimise effects on townscape.

5.308 It is judged that the susceptibility of townscape surrounding the Site is medium overall.

Townscape Sensitivity

5.309 The assessment of sensitivity is a combined judgement about the value of the townscape, discussed above as part of the baseline, and the overall susceptibility to change of the townscape potentially affected. Townscape sensitivity is assessed in accordance with the criteria set out at *Appendix E1, Table 3*.

5.310 The townscape character of the Site and the wider townscape, surrounding the Site, is judged to be of local value.

5.311 The sensitivity of the Site and surrounding townscape to the change proposed is assessed as **medium.**

Landscape Susceptibility to Change

Landscape within the Cotswolds AONB

5.312 The Site is to the east and southwest of the Costwolds AONB. There are long distance elevated views southeast towards Cirencester from Broad Ride and parkland within Cirencester Park. These views include built-form and landmark buildings within Cirencester, including the Church of St John the Baptist and the Cirencester Park Mansion house and offices.

5.313 There is no inter-visibility between the Site, and the AONB landscape due to screening by parkland trees and woodland, and due to intervening built-form. However, the upper part of the Proposed Development potentially would be discernible from the Cotswolds AONB and Cirencester Park RPG in views eastwards.

5.314 The susceptibility to change of the Cotswolds AONB and Cirencester Park RPG is assessed as low.

Landscape within the North Cirencester SLA

5.315 Northeast of the Site, beyond modern housing at Corinium Gate, and the A435 Grove Lane, the land rises northeast, and comprises agricultural fields and woodland within the North Cirencester SLA.

5.316 There is no inter-visibility between the Site, and the landscape designated as a SLA to the northeast, due to screening by mature trees on the south side of the A435 Grove Lane. However, elevated panoramic views towards Cirencester, and the St John the Baptist Church, from higher ground at Tarbarrow Cricket Ground, within the North Cirencester SLA, (Viewpoint 8 at *Figure 5.11, Appendix E4*) are a characteristic of this landscape. The upper part of the Proposed Development would be discernible from part of the SLA.

5.317 The susceptibility to change of the North Cirencester SLA is assessed as medium.

Landscape Sensitivity

5.318 The assessment of sensitivity is a combined judgement about the value of the landscape, discussed previously as part of the baseline, and the overall susceptibility to change of the landscape potentially affected. Landscape sensitivity is assessed in accordance with the criteria set out at *Appendix E1, Table 3*.

5.319 The Cotswolds AONB has national value. The AONB landscape is judged to be of **medium sensitivity.**

5.320 The SLA landscape northeast of the Site, beyond the A435 Grove Lane on the edge of Cirencester, has local value. This landscape is judged to be of **medium sensitivity.**

Assessment of Townscape and Landscape Effects during Construction

5.321 During construction the Site would undergo transformation from its present character to the operational development. The main changes would result from the removal of Site boundary walls, car park trees and lighting columns, and groundworks to facilitate the construction of the Proposed Development, along with the installation of site accommodation and hoarding to the site perimeter. Construction activity would take place across the full extent of the Site.

5.322 Mature trees along the north-eastern boundary of the Site would be retained and protected during construction; however trees within the Site would be removed permanently.

5.323 The removal of trees would result in limited amounts of change to the townscape baseline. The presence of construction activities and the partially completed development would occur for the duration of the construction phase, and would be a more noticeable change to townscape, perceptible within the wider landscape to the northeast of the Site, and barely perceptible from Cirencester Park RPG and the Cotswolds AONB, on rising ground to the west.

5.324 The magnitude of effect at the Site is assessed as medium adverse, and in the wider area is assessed as low adverse or negligible.

5.325 The significance of effect on townscape at the Site during construction is judged to be **moderate adverse** for the short-term. There would be a **minor adverse** or **negligible** significance of effect on townscape and landscape character in the wider area.

Assessment of Townscape and Landscape Effects during Operation

5.326 On completion, and in the short and medium-term, the Proposed Development would result in an adverse effect on townscape character, with the effect beyond the immediate area partially screened by surrounding built-form and by mature tree cover and housing development to the north.

5.327 The Proposed Development would occupy the majority of the Site, and would be approximately 18.9m high to the top of the building parapet, resulting in new built-form that would be taller and of a greater massing than existing development surrounding the Site, including built-form within the adjacent Conservation Area.

5.328 The Site is currently open in character with no buildings. The Proposed Development would reduce the openness of this part of Cirencester and introduce a building that does not fit the prevailing scale and pattern of built-form and urban grain. It also would be introduced into some views towards St. John Baptist Church, including some views southwest from Corinium Gate, north of the Proposed Development.

5.329 Additional traffic movement, noise and lighting would be introduced into this part of Cirencester, and there would be a great scale of change to the character of the Site and its immediate context. The magnitude of effect on this medium sensitivity townscape would be high adverse.

5.330 The significance of the effect on Site and its immediate context would be **substantial adverse**.

Cirencester Town Centre Conservation Area (CA3)

5.331 The Proposed Development would be introduced into the immediate setting of Character Area 5: The Forum, within the Cirencester Town Centre Conservation Area (CA3) to the southeast and southwest.

5.332 The Proposed Development would be a very noticeable new feature in views from a localised part of CA3, and Character Area 5: The Forum, primarily in the eastern part, at The Waterloo and at the junction of London Road, Victoria Road, Lewis Lane, Dyer Street and The Waterloo. See Verified Photomontage Viewpoints 3 and 4 at *Appendix E4*.

5.333 The Proposed Development would not physically alter features and elements of this CA and of The Forum Character Area. The arrangement of streets, buildings and other features would not be affected. However, the Proposed Development would be a noticeable new feature from its eastern part.

5.334 The Proposed Development would not influence the townscape character of Character Area 1: Town Core due to screening by intervening built-form on the north side of Market Place and Dyer Street.

5.335 The Proposed Development would be discernible from the Abbey Grounds (within Character Area 4: Abbey Grounds) to the northwest, although views towards the Proposed Development would be filtered and partially screened by intervening mature trees in the Abbey Grounds. See Verified Photomontage Viewpoint 7 at *Appendix E4*.

5.336 The Proposed Development would be a prominent new feature adjacent to CA3 and Character Area 5: The Forum, affecting views across it and impinging upon views of the Church of St John the Baptist from a small area to the southeast of the Proposed Development.

5.337 The magnitude of effect on the Cirencester Town Centre CA would be medium adverse in a limited area, and the significance of effect on the medium sensitivity townscape, would be **moderate adverse**.

5.338 The Proposed Development would result in a low adverse magnitude of effect, and a **minor adverse** significance of effect on the Cirencester Town Centre CA, as a whole.

Cirencester South Conservation Area (CA4)

5.339 The Proposed Development would be introduced into the townscape, approximately 95m to the north of the northern boundary of the Cirencester South CA, defined by London Road and Lewis Lane.

5.340 Verified Photomontage Viewpoint 3 at *Appendix E4* shows that the Proposed Development would be visible at the junction of London Road, Victoria Road, Lewis Lane, Dyer Street and The Waterloo, and along Victoria Road. The Proposed Development would not impinge upon views of the Church of St John the Baptist although it would introduce a very noticeable new feature into views along Victoria Road. While the proposed development would not physically alter features and elements of this Conservation Area it would be a noticeable new feature in views along Victoria Road truncating long distance views to the north. However, the Proposed Development would not substantially affect the townscape character of the Conservation Area.

5.341 The Proposed Development would result in a low adverse magnitude of effect, and a **minor adverse** significance of effect on the Cirencester South Conservation Area including Character Area 4 - Victoria Road.

The Park Conservation Area (CA1)

5.342 The Proposed Development would be introduced into the urban context of The Park CA, including Character Area 3: The Broad Ride, and Character Area 4: The Mansion. A key feature of these character areas refers to views towards Cirencester that include the Listed Church of St John the Baptist, and views that include Cirencester Park Mansion with the Listed Church beyond.

5.343 Verified Photomontage Viewpoint 9, (at *Appendix E4),* from the eastern part of Broad Ride, shows that the Proposed Development would result in a very minor change in the view. Visual effects in views from Cirencester Park are discussed further below as part of the visual assessment.

5.344 The Proposed Development would result in a **negligible** magnitude and significance of effect on The Park CA, including Character Area 3: The Broad Ride, and Character Area 4: The Mansion.

Cotswolds AONB Landscape

5.345 The Proposed Development would be within the northern part of Cirencester, separated from the Costwolds AONB to the west by intervening built-form within the existing settlement. The Proposed Development would not result in a physical change to the Cotswolds AONB, and the South and Mid Cotswolds Lowlands LCA. When viewed from the AONB, the upper parts only of the Proposed Development would be discernible occupying a very small proportion of the view, and seen in the context of existing buildings, including the Church of St John the Baptist. It is unlikely that the MSCP would be a readily identifiable new feature.

5.346 The Proposed Development would not compete with the Church of St John the Baptist as a focal point in some views, for example looking east along Broad Ride at Cirencester Park. The Church would continue to be seen as a key landmark building within the centre of Cirencester. See Verified Photomontage Viewpoint 9 at *Appendix E4*.

5.347 The magnitude and significance of effect on the Cotswolds AONB, and the South and Mid Cotswolds Lowlands LCA, would be **negligible**.

Cirencester Park RPG

5.348 There would be views from Cirencester Park RPG towards the Proposed Development, including along Broad Ride and from parkland to the south. The Proposed Development would not be a readily identifiable new feature in these views, and would have a **negligible** magnitude and significance of effect on Cirencester Park RPG. See Verified Photomontage Viewpoint 9 at *Appendix E4*.

North Cirencester SLA

5.349 The Proposed Development would not physically alter North Cirencester SLA. It would affect the key characteristic of elevated views towards Cirencester and the Church of St John the Baptist from elevated parts of the SLA. However the Proposed Development would not become a competing focal point in views of the Church of St John the Baptist. See Verified Photomontage Viewpoint 8 at *Appendix E4*.

5.350 The magnitude of effect on this locally designated landscape is assessed as low adverse. The significance of the effect on North Cirencester SLA would **minor adverse**.

Cirencester North Fringe Dipslope LCA (CLD2)

5.351 There would be some inter-visibility between part of this LCA, covered by North Cirencester SLA, and the Proposed Development. The degree of change on this LCA would be similar to that described for North Cirencester SLA.

5.352 The magnitude of effect on this landscape character area would be low adverse within the SLA, and the significance of the effect would **minor adverse**. The magnitude and significance of effect on the Cirencester North Fringe Dipslope LCA overall would be **negligible**.

National Character Area 107: The Cotswolds

5.353 Cirencester is mentioned frequently in the profile description of NCA 107, although the town is not linked specifically to any of the key characteristics of the NCA. The Proposed Development would result in a substantial localised change to the townscape of Cirencester in a limited part of the town. The change would arise primarily from the introduction of a new large structure, the mass and scale of which is not wholly in keeping with the prevailing pattern of built-form and urban grain.

5.354 The key characteristics and features of NCA 107 would not be affected by the Proposed Development, and the townscape of Cirencester would be adversely affected in a limited area, in a very small proportion of the NCA.

5.355 The magnitude and significance of effect of the Proposed Development on NCA 107 as a whole, would be **negligible**.

Assessment of Operational Effects after Fifteen Years

5.356 After 15 years, street trees, proposed as part of public realm improvements along The Waterloo, would continue to soften the appearance of the Proposed Development.

5.357 Given the nature of the Proposed Development, the significance of effect on townscape and on landscape character would remain as reported above, after fifteen years and for the long-term.

Residual Townscape and Landscape Impact Assessment

5.358 No actionable mitigation measures are proposed, in addition to embedded mitigation which has been assessed as part of the townscape and landscape assessment above.

5.359 Residual effects on townscape and landscape character would be of the same significance as those reported above during construction and operation of the Proposed Development.

Cumulative Townscape Assessment

5.360 Planning applications have been approved for three surface car parks proposed within Cirencester at the locations below:

- The Old Kennels, Tetbury Road, Cirencester;
- Cirencester Rugby Football Club, The Whiteway, Cirencester, GL7 2ER; and
- Old Memorial Hospital, Sheep Street, Cirencester, GL7 1QW.

5.361 There is a fourth approved planning application relating to a site at 2 Midland Road, Love Lane, Cirencester, Gloucestershire, GL7 1PZ. The development proposed comprises the proposed conversion, extension and subdivision of an existing car showroom to form up to six Class B8 units and/or for occupation by Class B1(c) (light industrial) and/or Class B2 (general industrial), alongside up to two new 'drive-to' restaurant/coffee shop/take-away units (Use Class A1/A3, A3 and/or A5), with associated car parking, landscaping and vehicular access from Midland Road. The maximum height of the development proposed would be 9.75m.

5.362 Given the distance between the Proposed Development and the above application sites, or screening by intervening built-form and or mature trees, or both, the above applications would not affect townscape character which would be significantly affected by the Proposed Development. There would be no cumulative effect on townscape character.

Visual Assessment

5.363 The following paragraphs provide an assessment of the sensitivity of the views potentially affected, and the magnitude and significance of the visual effects that would result from the construction and operation of the Proposed Development.

Visual Sensitivity

5.364 Visual sensitivity depends on the value of the view, and the susceptibility of the visual receptor to changes in views as a result of the development proposed.

5.365 Sensitivity is assessed in accordance with the criteria set out in *Appendix E1, Tables 6 to 8,* and are presented in *Table 5.4* below.

Table 5.4 Visual Sensitivity

Visual Receptor	Value of the View	Susceptibility to Change	Sensitivity
Persons at Cirencester Park	National (views from the nationally designated AONB landscape and RPG)	High	**High**
Persons at Abbey Grounds	Regional (valued by residents and visitors from the local area, and from further afield)	High	**High**
Persons at Tarbarrow Cricket Club	Local (valued by residents within the community, and views have landscape value due to the Cricket Club being within North Cirencester SLA with views that include the Church of St John the Baptist)	Medium	**Medium**
Motorists, pedestrians and cyclists on local roads and footways	Local (valued by persons within the community, and views have historic value due to roads being within a Conservation Area or within its immediate setting)	Medium	**Medium**
Residents	Local (valued by residents within the community, and views with historic value due to residences being within a Conservation Area or its immediate setting)	High and Medium	**Medium**
Workers	Local (valued by workers within the community, and views have historic value due to businesses being within a Conservation Area or its immediate setting)	Low	**Low**

Assessment of Visual Effects during Construction

5.366 Construction activities would be temporary and of short duration. The effects of construction on visual amenity would be incremental and would vary over time.

5.367 The greatest adverse visible effects would be in close open views experienced by residents, pedestrians, businesses and motorists overlooking the Site. Cranes and construction activities would be visible above and between mature trees retained and protected along the Site's northern boundary, between intervening built-form to the southeast, and along The Waterloo and Victoria Road. Significant adverse effects on views during construction would be localised.

5.368 The upper part of cranes and building works would be perceptible in a small part of the view from Abbey Ground to the northwest and from Tarbarrow Cricket Ground on rising ground to the northeast; and would be barely perceptible from the A435 Grove Lane to the north and northeast in heavily filtered winter views. The upper parts of cranes and building works would barely be distinguishable in views eastwards from Cirencester Park RPG to the west of Cirencester, (within the Cotswolds AONB and The Park Conservation Area).

5.369 The overall magnitude of effect on visual amenity is assessed as medium adverse in close views of the Site, and low adverse beyond the Site's boundary, where intervening built-form and mature tree screening would reduce visibility of proposed construction activities. The magnitude of effect would be negligible in more distant views eastwards from Cirencester Park RPG, the Cotswolds AONB and The Park Conservation Area.

5.370 The significance of effect on views during construction would be **moderate adverse** in close views of the Site and **minor adverse** from the surrounding area (from the southeast, north and northwest), where views become more restricted by intervening buildings and mature trees. Visual effects would be of **negligible** significance in distant views eastwards from Cirencester Park RPG, the Cotswolds AONB and The Park Conservation Area.

Assessment of Visual Effects during Operation

Persons at Cirencester Park

5.371 Cirencester Park adjoins the north-western edge of Cirencester, and is an extensive wooded park on undulating land, divided by long, straight avenues or rides.

5.372 The Proposed Development would not be visible or distinguishable in the majority of views from Cirencester Park, due to screening by mature parkland trees. Where the Proposed Development would be visible, including from the eastern part of Broad Ride, and from Windsor Walk, (the path running south of Broad Ride), near Fulham Bridge, the uppermost part of the Proposed Development would occupy no greater than a very small part of the distant view.

5.373 Verified Photomontage Viewpoint 9, (at *Appendix E4),* from the eastern part of Broad Ride, shows that the uppermost part of the Proposed Development would result in a very minor change to the backdrop of the Church of St John the Baptist, and would be below the skyline with backgrounding by mature tree cover beyond. The proposed external façade also would reduce prominence of the Proposed Development in the view.

5.374 The Church of St John the Baptist (Grade I Listed) would remain the focal point of the view towards the centre of Cirencester from Broad Ride (Verified Photomontage Viewpoint 9 *at Appendix E4*), along with the Mansion House at the entrance to Cirencester Park, in the view from Viewpoint 10. See *Figure 5.12 at Appendix E3*.

5.375 The magnitude and significance of effect in high sensitivity views from Cirencester Park would be **negligible** overall.

Persons at Abbey Grounds

5.376 Persons at Abbey Grounds have open views southeast across open grassland towards the Proposed Development. The upper part of the Proposed Development would be introduced into a small part of the view. It would seen above four storey residential flats northwest of the Site, and filtered and partially screened by mature trees along the southern edge of Abbey Grounds. See Verified Photomontage Viewpoint 7 at *Appendix E4*. The proposed external façade would reduce prominence of the Proposed Development in the view, and the Proposed Development would not break the horizon which is formed by intervening mature trees in the grounds of the park.

5.377 The magnitude of effect in these high sensitivity views would be low adverse and the significance of effect would be **minor adverse**.

Persons at Tarbarrow Cricket Club

5.378 The Proposed Development would be introduced into the middle distance of the open elevated view south towards Cirencester, filtered and screened by mature trees, including along the south side of the A435 Grove Lane. See Verified Photomontage Viewpoint 8 at *Appendix E4*.

5.379 The Proposed Development would be backgrounded by mature trees beyond, and would be seen in the context of other development further south at Cirencester perceptible above and between mature tree screening to the left of the view. The proposed external façade would reduce prominence of the Proposed Development in the view.

5.380 The Proposed Development would be seen in the context of the Church of St John the Baptist, in a small part of the open panoramic view southwards. The Listed Church however would remain the key landmark and focal point in the view.

5.381 The magnitude of effect in these medium sensitivity views would be low adverse and the significance of effect would be **minor adverse**.

Residents of flats, to the immediate northwest of the Site

5.382 Some residents of flats in Smythe House, Paget House, and Hill House would experience views of the Proposed Development. The Proposed Development would be seen in open close views southeast and east, and would occupy a large proportion of the view, resulting in a major alteration to the composition of views. The Proposed Development would be a very prominent feature in affected views from these apartments.

5.383 Residents of east facing flats within the central part of Colville House, would have channelled views east of the Proposed Development, seen between Paget House and Smythe House. The Proposed Development would shorten this part of the view and would increase built-form across the view.

5.384 Given the above scale of change in views east and southeast from these flats, the magnitude of effect is assessed as high adverse, and the significance of effect would be **substantial adverse**.

Residents south of The Waterloo

5.385 The Proposed Development would be introduced into open close views northeast and east from residences at Woolrich House, and into open upper storey rear property views from a small number of residential properties to the south on The Waterloo.

5.386 The Proposed Development would result in a major alteration to the existing view, and would introduce a prominent built structure into close views. The Proposed Development would occupy a large proportion of the view, and would truncate views of the wider area from north facing windows of these properties. In some views, the Proposed Development would be seen in the context of the four storey flats to the northwest, which would be lower in height than the Proposed Development.

5.387 The Proposed Development would be a very prominent feature in views, and the magnitude of effect would be high adverse. The significance of the effect would be **substantial adverse**.

Workers at businesses south of The Waterloo

5.388 There are a small number of commercial properties to the south of the Site on The Waterloo and on Dyer Street from which there would be views of the Proposed Development. These properties have a dual aspect with views to the north in the direction of the Proposed Development and to the south. In views to the north the Proposed Development would be a very noticeable new feature in a large proportion of the views, and would result in a major alteration to the composition of views. The Proposed Development also would shorten views (that currently extend across a surface car park), reducing visual permeability across this area.

5.389 The Proposed Development would occupy a smaller proportion of the view from some rear property windows, where there would be some screening of the lower part of the Proposed Development by intervening buildings on the south side of The Waterloo.

5.390 Overall, the Proposed Development would be a dominant focal point in views from the rear of a small number of properties. The magnitude of effect would be high adverse, and the significance of the visual effect in low sensitivity worker views would be **moderate adverse**.

Residents of properties to the east and southeast, accessed off The Waterloo

5.391 Views from the two detached residential properties adjacent to the eastern edge of the Proposed Development would be restricted due to the angle of the view southwest and due to screening by the 2.5-3m high boundary wall between these properties and the Proposed Development.

5.392 However, there would be close oblique views of the Proposed Development from upper storey windows belonging to Old Apple Loft, to the north, and close views from the garden belonging to the bungalow to the south (at 33 The Waterloo). See Verified Photomontage Viewpoint 4 at *Appendix E4*.

5.393 The magnitude of effect in these property views would be high adverse and the significance of effect would be **substantial adverse**.

5.394 There would be oblique views of the Proposed Development from two flats in the west of Orchard House. Views in the direction of the Proposed Development are restricted and there are alternative views to the north and south from these properties in which the Proposed Development would not be a focal point. However, the Proposed Development is likely to impinge upon views of the Church of St John the Baptist from these two flats. The magnitude of effect is assessed as medium adverse and the significance of effect would be **moderate adverse**.

Residents of properties on London Road, to the southeast

5.395 Residents of a small number of properties fronting London Road, between Purley Road and Dyer Street, would have open and filtered views of the Proposed Development from upper storey windows to the rear of properties. See Verified Photomontage Viewpoint 3 at *Appendix E4*.

5.396 The Proposed Development would be a very noticeable feature in views from the rear of a small number of properties. The magnitude of the effect in these views would be high adverse, and the significance of effect would be **substantial adverse.**

Residents of properties on Victoria Road to the south

5.397 Views vary from properties on Victoria Road to the south of the Site. Residents of some properties are likely to experience no view or restricted views of the Proposed Development. Views of the Proposed Development from other properties would be partial through gaps between buildings or filtered by vegetation. Where visible the Proposed Development would be a noticeable new feature in views occupying an area of land of presently open character with visual permeability. Verified Photomontage Viewpoint 3 at *Appendix E4* shows a direct open view towards the Proposed Development.

5.398 Overall, the magnitude of effect in affected medium sensitivity views, would be low adverse and the significance of effect would be **minor adverse.**

Residents of properties at Corinium Gate to the north and northeast

5.399 Residents of properties in the residential area of Corinium Gate immediately to the north of the Site would experience a range of different views of the Proposed Development. Residents of some properties would not experience views of the Proposed Development while others would experience views restricted by vegetation, buildings or by the angle of view. Residents of some properties would experience uninterrupted views of the upper part of the Proposed Development from upper storey windows or from public spaces in the residential area.

5.400 The Proposed Development would be clearly visible for the majority of those residents of properties at Corinium Gate who would experience views due to the short distance between residential properties and the relatively low height of trees and intervening buildings immediately to the north of the Proposed Development.

5.401 The Proposed Development would result in a great scale of change from the present situation, and visibility of the Proposed Development would increase during the winter months when filtering and screening by mature trees on the Site's northern boundary would reduce. The magnitude of effect is assessed as high adverse in these views, and the significance of effect would be **substantial adverse**.

5.402 The Proposed Development would be introduced into views from other properties, above intervening properties with partial screening and filtering by mature trees along the Site's north-eastern boundary. The upper part of the Proposed Development would be introduced into views southwest, above intervening housing, and seen alongside the upper part of the tower of the Church of St John the Baptist. The magnitude of effect is assessed as low adverse overall, and the significance of these visual effects would be **minor adverse**.

Pedestrians and Cyclists along The Waterloo and Local Roads and Footways

5.403 The Proposed Development would introduce a new, prominent built structure into pedestrian and cyclist views from The Waterloo. See Verified Photomontage Viewpoint 4 at *Appendix E4*.

5.404 Persons on The Waterloo would have open, very close views of the Proposed Development. Travelling from Cirencester town centre to the south and west, and from Abbey Grounds to the northwest, the Proposed Development would be very noticeable and would increase the massing and prominence of built-form in views across this area. Street trees, proposed as part of public realm improvements along The Waterloo, would soften the appearance of the Proposed Development, and would provide low level filtering and screening in close views towards the Proposed Development.

5.405 The greatest effect on pedestrian and cyclist views would be of high adverse magnitude and of **substantial adverse** significance from The Waterloo.

Motorists on the Local Road Network

The Waterloo

5.406 The Proposed Development would introduce a new, prominent built structure into motorist views from The Waterloo, and would increase the massing of built-form in the view.

5.407 Persons on The Waterloo would have open, very close, transient views of the Proposed Development. From the southern and western parts of The Waterloo, the Proposed Development would be seen in views extending between built-form on both sides of this road. See Verified Photomontage Viewpoint 4 at *Appendix E4*.

5.408 Overall, the Proposed Development would be a very prominent feature in views from The Waterloo. The magnitude of effect is assessed as high adverse and the significance of effect in medium sensitivity motorist views would be **substantial adverse**.

Junction South of the Proposed Development, and London Road

5.409 The Proposed Development would truncate views northwards from the junction between London Road, Victoria Road, Lewis Lane, Dyer Street and The Waterloo, and would introduce a large scale of change, infilling a gap in built-form and creating a new roofline contiguous with that of buildings situated around the junction. See Verified Photomontage Viewpoint 3 at *Appendix E4*.

5.410 The magnitude of effect would be medium adverse in medium sensitivity motorist views north from the road junction. The significance of effect would be **moderate adverse**.

5.411 The Proposed Development would be perceptible in a very small proportion of the oblique transient view to the north, through gaps between properties on the north side of London Road. The magnitude of effect on views overall from London Road would be negligible, and the significance of the effect would be **negligible**.

Victoria Road

5.412 Travelling north along Victoria Road towards the road junction discussed above, the Proposed Development would introduce prominent built-form into a small proportion of the channelled view north, with some screening by intervening built-form along The Waterloo. See Verified Photomontage Viewpoint 3 at *Appendix E4*.

5.413 The Proposed Development would be a noticeable feature in views from the northern part of Victoria Road and would reducing the permeability of views in this area. The Proposed Development would occupy a smaller proportion of the view from the southern part of Victoria.

5.414 The magnitude of effect in medium sensitivity motorist views from Victoria Road overall would be low adverse, and the significance of the effect would be **minor adverse**.

A435 Grove Lane

5.415 The Proposed Development would be screened by dense mature tree cover along the south side of the A435 Grove Lane. In winter, views towards the Proposed Development would be heavily filtered, and the Proposed Development would be barely noticeable in oblique transient views.

5.416 The magnitude and significance of the visual effect would be **negligible** in the winter views.

Assessment of Operational Effects after 15 Years

5.417 After 15 years, street trees, proposed as part of public realm improvements along The Waterloo, would continue to soften the appearance of the Proposed Development. Proposed trees would provide low level filtering and screening in close views towards the Proposed Development experienced by local residents, pedestrians, cyclists, motorists and workers overlooking the Proposed Development.

5.418 After 15 years, tree planting along the south-eastern edge of the Proposed Development also would provide additional filtering and screening in views from residential properties east and southeast of the Proposed Development, accessed off The Waterloo and London Road.

5.419 Given the nature of the Proposed Development, the significance of effect on views would remain as reported above, for the long-term.

Residual Visual Impact Assessment

5.420 No actionable mitigation measures are proposed, in addition to embedded mitigation which has been assessed as part of the visual assessment above. Residual visual effects would be of the same significance as those reported above during construction and operation.

Cumulative Visual Impact Assessment

5.421 As stated above in relation to the cumulative townscape assessment, planning applications have been approved for three surface car parks proposed within Cirencester at the locations below:

- The Old Kennels, Tetbury Road, Cirencester;
- Cirencester Rugby Football Club, The Whiteway, Cirencester, GL7 2ER; and
- Old Memorial Hospital, Sheep Street, Cirencester, GL7 1QW.

5.422 There is a fourth approved planning application relating to a site at 2 Midland Road, Love Lane, Cirencester, GL7 1PZ, south of the Site. The development proposed comprises the proposed conversion, extension and subdivision of an existing car showroom to form up to six Class B8 units and/or for occupation by Class B1(c) (light industrial) and/or Class B2 (general industrial), alongside up to two new 'drive-to' restaurant/coffee shop/take-away units (Use Class A1/A3, A3 and/or A5), with associated car parking, landscaping and vehicular access from Midland Road. The maximum height of the development proposed would be 9.75m.

5.423 Given the distance and or intervening screening by built-form and or mature trees, the above applications would not affect views that would be significantly affected by the Proposed Development. The ZTV shown at *Figure 5.5, at Appendix E3*, shows that there is the potential for some visibility of the Proposed Development from the above application sites; however the visual effect would be no greater than negligible given the distance and intervening screening by built-form and mature trees.

Summary

Townscape and Landscape Effects

5.424 The townscape and landscape potentially affected by the Proposed Development is assessed as being of medium sensitivity to the change proposed.

5.425 The Proposed Development would result in a high adverse magnitude of effect and a **substantial adverse** significance of effect, on the townscape character of the Site and its immediate context. There would be some screening from the wider townscape by mature trees along the north-eastern edge of the Proposed Development and along the A435 Grove Lane; and by surrounding built-form including four storey residential blocks to the immediate northwest, and built-form on the north side of Dyer Street and Market Place.

5.426 The Proposed Development would be introduced into the setting of the Cirencester Town Centre CA (CA3). The magnitude of effect on the Cirencester Town Centre CA would be medium adverse in a limited area, and the significance of effect on the medium sensitivity townscape, would be **moderate adverse**. The Proposed Development would result in a low adverse magnitude of effect, and a **minor adverse** significance of effect on the Cirencester Town Centre CA, as a whole.

5.427 Beyond the Site's immediate context, the significance of adverse effects on townscape and visual amenity, and adverse effects on the landscape to the northeast (within North Cirencester SLA) and to the west (within the Cotswolds AONB and Cirencester Park RPG), would be lower, due to less inter-visibility between the Proposed Development and the surrounding townscape and landscape.

5.428 Inter-visibility would be less due to dense built-form within the urban area, (including three storey buildings), combined with the generally flat topography across Cirencester; due to mature tree screening even in the winter months; and due to distance.

5.429 The Proposed Development would result in a low adverse magnitude of effect and a **minor adverse** significance of effect on the North Cirencester SLA, and on the Cirencester North Fringe Dipslope LCA (CLD2), covered by this SLA. The magnitude and significance of effect on the Cirencester North Fringe Dipslope LCA overall would be **negligible**.

5.430 There would be a **negligible** effect on the Cotswolds AONB and the South and Mid Cotswolds LCA 11A; and on the Cirencester Park RPG. The Proposed Development also would result in a **negligible** effect on NCA 107: The Cotswolds, as a whole.

Visual Effects

5.431 *Table 5.5* below summaries receptor sensitivity and the magnitude and significance of effect reported for each of the visual receptors assessed, during the operation of the Proposed Development (on completion and in the short and medium-term).

Table 5.5: Summary of Effects on Views during Operation

Visual Receptor	Sensitivity to change	Magnitude of effect	Significance of effect
Persons at Cirencester Park (within the Cotswolds AONB, Cirencester Park RPG, and The Park CA) See Verified Photomontage Viewpoint 9 at *Appendix E4*.	High	Negligible	Negligible
Persons at Abbey Grounds See Verified Photomontage Viewpoint 7 at *Appendix E4*.	High	Low adverse	Minor adverse
Persons at Tarbarrow Cricket Club See Verified Photomontage Viewpoint 8 at *Appendix E4.*	Medium	Low adverse	Minor adverse
Residents of the flats northwest of the Site, including Smythe House, Paget House and Colville House	High	High adverse	Substantial adverse
Residents south of The Waterloo	High and Medium	High adverse	Substantial adverse
Workers at businesses south of The Waterloo	Low	High adverse	Moderate adverse

Visual Receptor	Sensitivity to change	Magnitude of effect	Significance of effect
Residents of properties to the east and southeast, accessed off The Waterloo	High and Medium	High adverse; and Medium adverse for Orchard House	Substantial adverse; and Moderate adverse for Orchard House
Residents of properties on London Road, to the southeast and south	Medium	High adverse	Substantial adverse
Residents of properties on Victoria Road to the south	Medium	Low adverse	Minor adverse
Residents of properties at Corinium Gate to the north and northeast	Medium	High adverse (greatest effect)	Substantial adverse (greatest effect)
Pedestrians and cyclists along The Waterloo and local roads and footways See Verified Photomontage Viewpoints 3 and 4 at *Appendix E4.*	Medium	High adverse (greatest effect)	Substantial adverse (greatest effect)
Motorists on the local road network including The Waterloo; road junction to the south; London Road; Victoria Road; and the A435 Grove Lane See Verified Photomontage Viewpoints 3 and 4 at *Appendix E4*.	Medium	High adverse (greatest effect)	Substantial adverse (greatest effect)

5.432 The greatest adverse visual effect of high adverse magnitude is predicted in views of the Proposed Development from:

- Flats to the immediate northwest of the Site;
- Residential and commercial properties on the south side of The Waterloo;

- Residential properties on the south-eastern edge of the Proposed Development;
- Properties on the southern edge of modern housing at Corinium Gate with open or filtered close views; and from
- The Waterloo.

5.433 The Proposed Development would shorten views and new built-form would occupy a large proportion of the view. There would be a major alteration in the above views.

5.434 The significance of the visual effect in high and medium sensitivity views would be **substantial adverse**, on completion, and in the short and medium-term.

5.435 In the long-term, tree planting proposed as part of public realm improvements along The Waterloo would continue to provide low level filtering and screening in close views towards the Proposed Development experienced by local residents, pedestrians, cyclists, motorists and workers overlooking the Proposed Development. Tree planting along the south-eastern edge of the Proposed Development also would provide additional filtering and screening in views from residential properties east and southeast of the Proposed Development, accessed off The Waterloo and London Road.

5.436 Given the nature of the Proposed Development, the significance of effect on views would remain as reported above, for the long-term.

6.0 Noise and Vibration

Introduction

6.1 This chapter of the ES assesses the likely significant effects of the Development on the environment in respect of Noise & Vibration.

6.2 The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the Site and surroundings, the potential direct and indirect impacts of and on the Development arising from noise and vibration, the mitigation measures required to prevent, reduce, or offset the impacts and the residual effects.

6.3 An assessment of the noise impact of the development on the noise sensitive receptors has been undertaken in accordance with planning and technical best practice guidance. This considers the sound levels at outdoor amenity areas and within habitable residential rooms due to future on-site and off-site noise sources and whether noise mitigation would be needed to protect amenity at the existing receptors. The purpose of the assessment, within the context of the planning application, is to demonstrate to Cotswold District Council (CDC) that the Development can be delivered without having a significant adverse effect on local amenity.

6.4 This chapter has been prepared by Bureau Veritas UK Ltd, involving the following technical specialists:

- Mr Ric Cope, Technical Director (Acoustics & Vibration) with more than 22 years of industry experience, was contributor and Approver of this chapter. Ric holds a BSc (Hons) in Environmental Analysis; a Post-Graduate Diploma in Acoustics and Noise Control; and has been a Corporate Member of the Institute of Acoustics (MIOA) for 12 years.
- Dr Yiying Hao, Senior Acoustic Consultant with nine years' research and practical experience in acoustics. Yiying has a PhD in Architectural Acoustics and has been a Corporate Member of the Institute of Acoustics (MIOA) for 3 years.

Potential Effects

6.5 For the Development, the impact assessment with respect to noise and vibration on the existing environment covers the following issues:

- Potential increase in noise during the construction works;
- Potential vibration generated by the construction works;
- Operational noise associated with vehicle movements within the car park; and
- Potential change in offsite road traffic noise once the Development is fully occupied.

6.6 Due to the typically low vibration levels that are likely to be generated, primarily by on site vehicle movements, it is expected that operational activities would not result in perceptible vibration impacts on any sensitive receptors. Therefore, no further assessment of operational vibration was undertaken.

Assessment Methodology

6.7 The assessment approach takes account of the key policies, guidance and legislation described in the policy section above, together with the following technical guidance:

6.8 Construction Noise and Vibration Guidance:

- BS5228-1: 2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Part 1: Noise; and
- BS5228-2: 2009+A1:2014 - Code of practice for noise and vibration control on construction and open sites - Part 2: Vibration.

6.9 Operational Traffic Noise and Vibration Guidance:

- BS4142:2014 Methods for rating and assessing industrial and commercial sound
- Calculation of Road Traffic Noise; and
- Design Manual for Roads and Bridges.

Study Area

6.10 The Study Area for direct effects of generated noise and vibration focussed on the offsite sensitive properties closest to the Site. Existing residential receptors are located to the west and east on The Waterloo and to the north on Corinium Gate. The assessment and the control of noise and vibration at the nearest properties to the west, east and north therefore represents the limiting case.

6.11 The Study Area for indirect effects (road traffic on the wider road network) was informed by the Traffic Consultant (Atkins). The effects of road traffic further away from the Development are increasingly diluted by non-development traffic. The Study Area for indirect effects represents a realistic worst-case scenario of likely noise and vibration impacts.

Data Sources

6.12 Assessments have been based on measurements taken on the Site for baseline conditions. Baseline noise monitoring was agreed in principle with the Publica, a company wholly owned by Cotswold District Council, Forest of Dean District Council, West Oxfordshire District Council and Cheltenham Borough Council to deliver local services on their behalf. Full details of the baseline measurement survey, including measurement locations, are presented in ES Appendix F.

6.13 For the prediction of construction noise, source levels arising from each item of plant are taken from British Standard BS5228-1.

6.14 For the prediction of changes in road traffic noise, traffic information has been provided by the Traffic Consultant.

Significance Criteria

Construction Noise and Vibration Magnitude

6.15 The assessment criteria for noise and vibration effects from construction activities are defined in Table 6.1.

Table 6.1 Magnitude of Construction Noise and Vibration Effects

Magnitude of Effect	Construction Noise Criterion	Construction Vibration Criterion
High	Construction noise levels predicted to exceed 75 dB LAeq 08:00–18:00 Monday to Friday for a sufficient duration*	Vibration exceeding threshold values at frequencies likely to be encountered. Threshold vibration level is 10mms-1 PPV
Medium	Construction noise levels predicted to be between 65 and 75 dB LAeq 08:00–18:00 Monday to Friday for a sufficient duration*	Vibration effects measurable and likely to cause complaint. Levels within the following range: 1.0 – 9.9mms-1 PPV
Low	Construction noise levels predicted to be between 65 and 75 dB LAeq 08:00–18:00 Monday to Friday, but not for a sufficient duration*	Vibration effects just perceptible in residential environments and within the following range: 0.3 – 0.9mms-1 PPV
Negligible	Construction noise levels predicted to be below 65 dB dB LAeq 08:00–18:00 Monday to Friday	Vibration effects minimal and below threshold of perceptibility in most residential environments. Threshold effect level is <0.3mms 1 PPV

* A ‘sufficient duration’ in this context is a period of 10 or more days of working in any 15 consecutive days or for a total number of days exceeding 40 in any 6 consecutive months.

Operational Noise Magnitude

6.16 The assessment criteria for the magnitude of effect of operational noise are provided in Table 6.2.

Table 6.2 Magnitude of Operation Noise Effects

Magnitude of Effect	Operational Noise Criterion	
	Short-term change in LA10,18-hour (dB)	Long-term change in LA10,18-hour (dB)
High	≥5	≥10
Medium	3.0 - 4.9	5.0 - 9.9
Low	1.0 - 2.9	3.0 - 4.9
Negligible	0.1 - 0.9	0.1 - 2.9
No effect	0	0

Receptor Sensitivity

6.17 Residential properties are assessed as being noise sensitive, although developments such as hospitals and residential schools also contain buildings that are potentially noise sensitive. It is therefore appropriate to determine sensitivity on a case by case basis at a local level.

6.18 The WHO 'Guidelines for Community Noise' offer some comment on degrees of sensitivity, identifying 'vulnerable subgroups' such as those suffering from particular medical conditions. Taking this into account, the sensitivity scale in Table 6.3 has been developed:

Table 6.3: Sensitivity of Receptors

Sensitivity of Receptor	Description
High	Patients in hospitals/hospices etc. – defined as a “vulnerable subgroup” with very high or continuous rates of occupancy Education facilities
Medium	Residential receptors
Low	Area used primarily for leisure activities, including Public Rights of Way (PRoW), sports facilities and sites of historic or cultural importance
Negligible	All other areas such as those used primarily for industrial or agricultural purposes

6.19 For this assessment, the noise-sensitive receptors are predominantly existing residential dwellings along The Waterloo and Corinium Gate.

Significance of Effects

6.20 A combination of receptor sensitivity and magnitude of effect was used to determine the overall significance of the effect, as shown in Table 6.4. Moderate and major effects are considered to be significant.

Table 6.4: Effect Significance Matrix

Magnitude of Effect	Sensitivity			
	High	Medium	Low	Negligible
High	Major Adverse / Beneficial	Major – Moderate Adverse / Beneficial	Moderate – Minor Adverse / Beneficial	Negligible
Medium	Major – Moderate Adverse / Beneficial	Moderate – Minor Adverse / Beneficial	Minor Adverse / Beneficial	Negligible
Low	Moderate – Minor Adverse / Beneficial	Minor Adverse / Beneficial	Minor Adverse / Beneficial - Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Construction Noise & Vibration Guidance

6.21 Assessment of the potential impact of construction noise has been predicted using methods described in BS5228: 2009 'Noise and Vibration Control on Construction and Open Sites'. The assessment has been conducted to a level of detail that is proportionate to the level of risk to the existing receptors, and has focused on any potential impact on new residences based on phasing.

British Standard BS5228-1: 2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise

6.22 On 6th April 2015, BS5228-1 gained Approved Code of Practice status (in England) under the powers conferred by sections 71(1)(b), (2) and (3) of CoPA 1974, as enacted under The Control of Noise (Code of Practice for Construction and Open Sites) (England) Order 2015. Compliance with the best practice noise mitigation requirements stated therein became a statutory obligation under the Act.

6.23 Noise emissions from the construction of a proposed development are assessed differently to noise from permanent installations as it is recognised that the former are an inevitable by-product of required works and their effects are temporary. Indicative durations of construction phasing are presented in Table 2.5 in Chapter 2, although effects at individual receptors will be over significantly shorter durations as the respective working areas migrate across the Site. Construction activities are controlled by guidelines and subject to Local Authority control. BS5228-1 contains a database of noise emissions from individual items of equipment and activities for use in predicting the noise from demolition and construction methods at sensitive receptors. Guidance is given on the effects of different ground type, barrier attenuation and how to assess the impact of fixed and/or mobile plant. Predictions of noise levels in accordance with BS5228-1 were undertaken and the calculation inputs and assumptions are presented in Appendix 5 of ES Appendix F.

6.24 Whilst not mandatory, Annex E of BS5228-1 provides advice to assist the development of noise assessment criteria based on previous published guidance and methodologies adopted successfully for other planning applications.

6.25 In assessing the requirement for noise limits, or operating period, controls relating to construction, Government Agencies and Local Authorities generally give consideration to the following aspects of planned works, all of which have a bearing on the 'significance' of the impact:

- The duration of the planned construction activities (weeks, months, years);
- Whether some construction works are planned for the night-time and/or weekend periods;
- The proximity of construction works relative to residential areas; and
- The predicted noise levels and noise impact at residential areas.

6.26 Central to the setting of construction noise limits is the concept of "best practicable means (BPM)" which is defined by section 79, part 3 of the Environmental Protection Act 1990, as follows:

(a) 'Practicable' means reasonably practicable having regard, among other things, to local conditions and circumstances, the current state of technical knowledge and the financial implications;

(b) The means to be employed include the design, installation, maintenance and manner and periods of operation of plant and machinery, and the design, construction and maintenance of buildings and structures; in the context of this scheme this includes consideration of:

- What plant and methods will carry out the job;
- How noisy are the plant and methods that will carry out the job; and
- How long it will it take to do the works with such plant; or any alternative quieter methods.

(c) The test of best practicable means is to apply only so far as compatible with-

- Any duty imposed by law; In the context of this scheme this includes consideration of:

- safety and safe working conditions; and
- the exigencies of any emergency or unforeseeable circumstances.

6.27 The above factors mean that when setting noise limits for construction works it is important to consider what noise levels are achievable and compare these with appropriate criteria to assess the impact; and where impacts are assessed as unacceptable to implement mitigation, and then re-assess the impacts against the same criteria after mitigation.

6.28 For the purposes of this assessment, work sites shall include the main working areas, plus those locations utilised by the Contractor for the purposes of delivery and storage of plant, machinery, materials and the siting of cabins, workers accommodation, etc., in connection with the construction works.

BS5228-2:2009+A1:2014 - Noise and Vibration Control on Construction and Open Sites – Part 2: Vibration

6.29 On 6th April 2015, BS5228-2 gained Approved Code of Practice status (in England) under the powers conferred by sections 71(1)(b), (2) and (3) of CoPA 1974, as enacted under The Control of Noise (Code of Practice for Construction and Open Sites) (England) Order 2015[17]. Compliance with the best practice vibration mitigation requirements stated therein became a statutory obligation under the Act.

6.30 BS5228-2 describes methods of mitigation that can be employed for ground-borne vibration from construction activities and provides historical library data of vibration levels measured during various activities on various ground types.

6.31 Table 6.5 (Table B.1 from BS5228-2) describes the likely response to various peak particle velocity (PPV) vibration levels.

Table 6.5: Typical Human Responses to Different PPV Levels

Vibration Level (mms-1)	Effect	Impact
0.14	Vibration might just be perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.	Negligible
0.3	Vibration might just be perceptible in residential environments.	Minor
1.0	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.	Moderate

[17] The Control of noise (Code of Practice for Construction and Open Sites) (England) Order 2015

Vibration Level (mms-1)	Effect	Impact
10	Vibration is likely to be intolerable for any more than a very brief exposure to this level.	Major

6.32 BS5228-2 states transient vibration guide values in the 4Hz – 15Hz and 15Hz and above frequency bands that lead to cosmetic damage. BS5228-2 discusses the assessment of the vulnerability of ground-related structures and services concluding that a maximum PPV for intermittent or transient vibration of 30mms-1 and a maximum PPV for continuous vibration of 15mms-1. BS5228 also discusses the vulnerability of building contents and activities within buildings to vibration, concluding that they too should be assessed on an individual basis.

Operational Traffic Noise Guidance

Calculation of Road Traffic Noise & Design Manual for Roads and Bridges

6.33 The 'Calculation of Road Traffic Noise' (CRTN) produced by the Department of Transport Welsh Office provides a method for the prediction of noise from road traffic. The Highways Agency Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7 HD 213/11 Noise and Vibration (DMRB), provides guidance on the assessment of noise and vibration effects from road traffic.

6.34 An initial review of the data should be undertaken as part of the noise assessment to assess whether the traffic effect would be considered negligible (i.e. a change of less than 1dB).

6.35 The magnitude of effects described in Table 6.2 is used to assess the effect of construction traffic on existing routes.

Limitations and Assumptions

6.36 For the purposes of this EIA, construction of the full Development is anticipated to take approximately 75 weeks (Table 2.5).

6.37 The road traffic data provided by the Transport Consultant did not include any future growth figures for existing road traffic, i.e. the Do Minimum condition for the future assessment year. The assumption is that committed development in the area will introduce more traffic onto the road network in the future than normal growth. Therefore, the Do Minimum condition in the future assessment year is assumed to be the same as the Do Minimum condition in the year of opening.

6.38 Following a desk-top scoping exercise utilising the supplied road traffic data (presented in Appendix 7 of ES Appendix F), Development road traffic on just one link was found to increase noise levels by more than 1 dB at nearby sensitive receptors in either the short-term or long-term. As such, detailed road traffic noise modelling of the wider area was considered unnecessary and individual CRTN calculations for the affected road links were considered to comprise a proportionate approach.

6.39 Baseline noise surveys were undertaken at a limited number of monitoring locations identified as being representative of groups of sensitive receptors, e.g. residential dwellings in a certain area.

6.40 Assumptions have been made about the type of equipment and machinery to be used during the construction works based upon previous development project experience. Contractors may adopt different working methods based on specific site conditions to reach the same goals. The assessment presented herein therefore has adopted a worst-case scenario wherever possible. It has been assumed for the purposes of the calculations that site hoardings are in place at the boundaries with the nearest existing residential receptors.

6.41 The construction assumptions are stated in Appendices 5 and 6 of ES Appendix F are in accordance with BS5228. Effects are considered in relation to criteria determined from measured existing ambient noise levels.

6.42 It is assumed that the Construction Environmental Management Plan (CEMP) (to be secured by planning condition) will ensure that best practicable means are employed and, despite the limitations, the approach taken is considered to be robust.

Baseline Conditions

6.43 To establish the ambient sound levels and background sound levels at the nearest receptors, an attended sound level survey has been conducted at three locations that are representative of the nearest residential receptors on The Waterloo and Corinium Gate between 7th and 8th September 2017. Full details of the baseline survey are provided in Appendix F: Noise Impact Assessment, whilst a summary of the measured data is presented in Table 6.6.

Table 6.6: Summary of Derived Sound Levels

Location	Period	Sound Pressure Level, dB re: 20µPa (Fast, Free-field)			
		LAeq,T	LAFmax,T	LA10,T	LA90,T
L1 - North of site - residential receptors on Corinium Gate and The Waterloo	Daytime	43-54 Average 49	57-82	45-53 Mode 52	38-47 Average 44
	Night time	32-40 Average 37	54-63	35-42 Average 40	27-35 Average 32
L2 – Southwest of the site -	Daytime	42-57 Average 52	59-77	44-61 Mode 52	37-48 Average 44

Location	Period	Sound Pressure Level, dB re: 20µPa (Fast, Free-field)			
		LAeq,T	LAFmax,T	LA10,T	LA90,T
residential receptors on The Waterloo	Night time	35-47 Average 41	52-70	37-47 Average 43	30-37 Average 34
L3 - Southeast of the site - residential receptors on The Waterloo	Daytime	49-59 Average 55	70-85	48-62 Mode 61	36-47 Mode 47
	Night time	36-45 Average 41	58-68	36-45 Average 40	27-33 Average 30

Note: T = 15 minutes

Subjective Assessment of Ambient Sound Climate

6.44 Notes were made of the significant sound sources affecting the site, which included:

- Vehicle movements on The Waterloo and within the existing car park;
- Mid-distant road traffic;
- Car door slams within the existing car park;
- The movement of nearby foliage in the wind; and
- Birdsong.

Assessment of Environmental Impacts

Construction Phase Noise

Significance Thresholds

6.45 Based on the measured ambient levels in the baseline environment, and the threshold criteria presented in BS5228-1, the construction noise thresholds that have been adopted for the Development to indicate the potential significant effect are presented in Table 6.7.

Table 6.7: Weekday Daytime (0700-1900) and Saturday Morning (0700-1300) Construction Noise Thresholds

Receptor	Ambient Noise Level, dB LAeq	BS5228-1 ABC Category	Construction Noise Threshold, dB LAeq
L1 - North of site - residential receptors on Corinium Gate and The Waterloo	49	A	65

Receptor	Ambient Noise Level, dB LAeq	BS5228-1 ABC Category	Construction Noise Threshold, dB LAeq
L2 – Southwest of the site - residential receptors on The Waterloo	52	A	65
L3 - Southeast of the site - residential receptors on The Waterloo	55	A	65

6.46 The construction activity and plant schedule presented in Appendix 5 of ES Appendix F has been assumed, based on previous experience on similar schemes, in order to provide an indication of the likely noise levels that could occur during construction.

Effects

6.47 The predicted daytime construction noise levels at noise sensitive receptors, for the different construction activities, are presented in Table 6.8.

Table 6.8: Predicted daytime construction noise levels

Receptor	Daytime Threshold, dB LAeq,T	Predicted Activity Noise Level, dB LAeq,T		
		Site demolition & clearance	Foundations and superstructure construction	Construction of site roads
L1 - North of site - residential receptors on Corinium Gate	65	71	65	67
L2 – West and southwest of the site - residential receptors on The Waterloo	65	71	65	60
L3 - Southeast of the site - residential receptors on The Waterloo	65	74	68	74

6.48 The equipment activity levels presented are worst-case and are per phase of the Development, and assume no screening by site hoardings. It is assumed that the three activities occur sequentially rather than simultaneously.

6.49 The values are determined, assuming that all the activity is located at a reasonable closest approach to receptors, and therefore represent the typical worst-case scenario. Construction noise levels would be expected to reduce as works move further from the receptors.

6.50 Unmitigated daytime construction noise levels at each of the receptors are predicted to exceed the threshold criteria, during the varying construction activities due to the proximity of the dwellings to the site boundary. In no instances is the magnitude of effect sufficient to trigger eligibility for noise insulation or temporary rehousing. However, depending on duration there would be potential for short-term, local, moderate to minor adverse effects at a limited number of dwellings on The Waterloo and Corinium Gate if a sound level of 65 - 75 dBA is experienced for a sufficient duration.

6.51 It is unlikely that the construction activities would exceed this duration, and furthermore mobility of the works within the site would further reduce the effect over an extended period. As such, it is considered that there is potential for the impact at some dwellings on The Waterloo and Corinium Gate to be short-term, local, and moderate to minor adverse, depending on the final duration of works near these dwellings.

6.52 It is expected that the use of standard construction site hoardings (2.4m high) around the site would reduce the predicted construction noise levels by 5-10dB at the receptors (except superstructure construction at elevated levels). This specific mitigation and the implementation of standard best practice, including good community liaison, will help to minimise the disturbance to local residents during these temporary works.

6.53 No evening and night-time construction work is proposed.

Construction Phase Vibration

Effects

6.54 The predicted daytime construction vibration levels at sensitive receptors, for the vibration generating construction activities that are likely to be employed, are presented in Table 6.9. Assumptions and the basis for calculations are given in Appendix 6 of ES Appendix F).

Table 6.9: Predicted construction vibration levels

Receptor	Predicted Vibration Level, PPV (mms-1)		
	Vibratory compaction (steady state)	Vibratory compaction (start up and run down)	Bored piling
V1 - North of site - nearest residential property on Corinium Gate	1.2	1.8	1.2
V2 – West of the site - Apartment building on The Waterloo	0.6	1.0	0.9
V3 - 33 The Waterloo	2.7	3.7	1.8

6.55 The results indicate that vibration effects at the nearest property on Corinium Way (No. 23) and No. 33 The Waterloo may be short term, and of moderate to minor adverse significance, should vibration inducing activities be undertaken at the closest approach. The levels are not sufficiently high to cause damage to buildings but may cause complaint and residents will be warned in advance of any such activities. Construction vibration activities at these dwellings could, therefore, be short-term, local, and of moderate to minor adverse significance.

6.56 Airborne vibration typically can be effectively controlled via best practice mitigation measures employed to reduce the effect of airborne noise.

Operational Phase Noise

Road Traffic Noise (Offsite)

6.57 The local traffic flow off site considers the increased traffic on The Waterloo in the Opening Year with the Development.

6.58 Baseline traffic count data in 2018 was provided by the Transport Consultant (Atkins) and supplemented with predicted traffic flow data associated with the future baseline in Opening Year 2021 and Opening Year with Development. Road traffic data associated with the developments in the wider area that have been scoped into the assessment were also provided (refer to Appendix 7 of ES Appendix F).

6.59 This Opening Year traffic data incorporates additional traffic movements associated with other identified development projects (refer to Chapter 2, Table 2.6). The assessment therefore represents the cumulative noise impact resulting from operational road traffic.

6.60 An initial review of the data has been conducted to screen out roads on which traffic flows would result in a <1dB change in noise levels (equivalent to a 25% change in traffic flow). From this review, it was evident that only receptors on The Waterloo would experience a noise level change in excess of 1 dB, as a result of the Development. The detailed calculation results are shown in Appendix 8 of ES Appendix F.

6.61 The maximum cumulative impact is predicted to be up to +2.2 dB in the short-term at the receptors by The Waterloo. This represents an effect of low magnitude (see Table 6.2) on receptors of medium sensitivity, which would result in a permanent impact of minor adverse significance at all dwellings aligning The Waterloo.

Road Traffic Noise (Onsite)

6.62 A noise prediction model was developed to predict noise from vehicles using the car park at the nearest sensitive receptors. The model, and assumptions upon which it was based, is detailed in ES Appendix F.

6.63 Separate assessments were conducted for the peak periods (morning and afternoon typical of working day start and finish) and for the quiet daytime periods when vehicle number entering/egressing the car park would be significantly reduced. The predicted sound pressure levels (SPL) due to noise from the car park are presented in Table 6.10.

Table 6.10: Summary of predicted sound levels at the nearest residential facades

Receptor	Predicted SPL, dBA	Baseline SPL, dB LAeq,T	Total SPL, dB LAeq,T	Change, dB
Quiet Daytime				
L1	40.3	46.4	47.4	+1.0
L2	37.9	46.6	47.1	+0.5
L3	39.8	51.1	51.4	+0.3
Peak Daytime				
L1	49.0	51.0	53.1	+2.1
L2	46.8	56.6	57.0	+0.4
L3	48.1	57.8	58.2	+0.4

6.64 The greatest noise change is predicted to be +2.1 dB (peak daytime period) at residential receptors to the north of the Development on Corinium Gate. This represents an effect of low magnitude (see Table 6.2) on receptors of medium sensitivity, which would result in a permanent impact of minor adverse significance. At all other nearby dwellings, the change is less than 1dB and therefore there would be a permanent impact of negligible adverse significance.

Mitigation Measures

Construction Phase

6.65 To reduce the potential impact of noise and vibration levels generated by the construction phase of the development, at existing receptor locations in the immediate vicinity of the site, mitigation measures will be incorporated into the Construction Environmental Management Plan (CEMP).

6.66 All construction contractors would be required to follow standard good construction practice as outlined in BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014.

6.67 Construction works would be managed to avoid, minimise and mitigate any adverse construction effects, in accordance with the principles of Best Practicable Means as required by the Control of Pollution Act (CoPA) and summarised below:

- Hours of working to be planned, taking into account the nature of land use in the areas concerned and duration of the work;
- Working hours limited to Monday to Friday: 07:00 - 19:00; Saturday: 08:00 - 13:00; and on Sunday and Bank Holiday no noisy working (other than special works subject to prior agreement with CDC).
- Where practicable, quiet working methods should be employed, including the use of the most suitable plant, and suitably sized plant;
- Haulage vehicles should not access the Site outside of day time periods;
- Equipment should be switched off when not required;
- Internal haul routes should be well maintained and avoid steep gradients;
- The drop height of materials should be minimised;
- Plant and vehicles should be started up sequentially rather than all together;
- Broadband (i.e. white noise) reversing alarms should be used rather than tonal alarms;
- The siting of plant should be considered to avoid noise being directed towards dwellings; and
- Noise barriers in the form of temporary hoarding, stacks of materials such as bricks, timber or top soil, should be used to provide screening to nearby sensitive receptors.

6.68 At this stage it is not proposed to introduce any specific vibration mitigation measures to any receptors. However, as with noise from construction works, working practices should be implemented to prevent unnecessary vibration at all receptors as much as possible.

6.69 To keep groundborne vibration to a minimum the following measures, as referred to in BS5228-2, should be put in place:

- Substitution: Where reasonably practicable plant and or methods of work likely to cause significant levels of vibration at the receptors identified, should be replaced by less intrusive plant/methods of working.
- Vibration Isolation of plant at source: This may prove a viable option where the plant is stationary (e.g. a compressor, generator) and located close to a receptor.

6.70 In relation to piling, should it be required, there are a number of measures which can be implemented, depending upon the type of piling chosen. BS5228-2 indicates that mitigation might include: use of alternative methods, removal of obstructions, provision of cut-off trenches, reduction of energy input per blow, reduction of resistance to penetration. Continuous flight augering would cause minimal vibration even very close to the piling operation. Monitoring of vibration levels as a result of construction / demolition is recommended to be considered in the CEMP for each phase for periods were piling is necessary.

Operation Phase

6.71 The assessment indicates that the noise impacts associated with operation of the new car park development would be of minor adverse significance. Therefore no specific noise mitigation measures are proposed.

Summary

Construction Phase

6.72 The noise and vibration impacts of the construction phase, with the implementation of best working practice and restriction on working hours, are assessed as short-term, local, and moderate to minor adverse, depending on the final duration of works near dwellings on The Waterloo and Corinium Gate.

Operation Phase

6.73 The assessment of future operational noise impacts is based upon reasonable worst-case assumptions relating to the generation of vehicle movements on local roads and within the car park building itself. The assessment concludes that the noise impact on the nearest residential receptors would be of minor adverse significance.

7.0 Air Quality

Introduction

7.1 This chapter of the ES assesses the likely significant effects of the Development on the environment in respect of Air Quality.

7.2 The chapter describes the methods used to assess the impacts, the baseline conditions currently existing at the Site and surrounding area, the potential impacts of the Development arising from emissions of dust, Nitrogen Dioxide, and fine Particulate Matter (PM_{10}) arising during the construction phase and operational phase of the development, and the mitigation measures required to prevent, reduce, or offset the impacts.

7.3 The approach adopted in this assessment to assess the impact of dust and particulates during the construction phase is based on the Institute of Air Quality Management (IAQM) guidance for construction sites.

7.4 The approach adopted in this assessment to assess the impact of road traffic and car park emissions on air quality has utilised Cambridge Environmental Research Consultants (CERC) ADMS-Roads™ dispersion model (version 4.1.1) with the latest vehicle emission factors released by the Department for Environment, Food and Rural Affairs (Defra) in 2019 (Emissions Factors Toolkit (EFT) version 9.0, focusing on NO_2 and PM_{10}. These pollutants are the main pollutants of concern associated with traffic emissions against the relevant AQS objectives, both nationally and within the Council's administrative area.

7.5 In order to provide consistency with the Council's own work on air quality, the guiding principles for air quality assessments as set out in the latest guidance, and the tools provided by Defra for air quality assessments (LAQM.TG(16))[18] have been used where relevant.

7.6 This chapter has been prepared by Bureau Veritas UK Ltd, involving the following technical specialists:

- Toby Campbell, Senior Consultant (Air Quality) with more than 20 years of industry experience. Toby holds a BSc (Hons) in Environmental Management; a MSc in Air Pollution Management and Control; and is a Full Member of both the Institute of Air Quality Management (IAQM) and Institute of Environmental Sciences (IES).
- Paul Bentley, Senior Consultant (Air Quality) with more than 5 years of industry experience. Paul holds a BSc (Hons) in Environmental Studies; a MSc in Air Pollution Management and Control; and is a Full Member of both the Institute of Air Quality Management (IAQM) and Institute of Environmental Sciences (IES).

[18] DEFRA (2018). *Local Air Quality Management Technical Guidance (TG16)*

Potential Effects

7.7 For the Development, the impact assessment with respect to air quality on the existing environment covers the following issues:

- Potential emissions of dust/PM10 in relation to the development's construction phase and the consequential impact on air quality.
- Potential emissions of NO2 and PM10 from road traffic in relation to the operational phase of the development, based on modelling of emissions from road traffic and the multistore car park development and the subsequent impact on the local road network.

Assessment Methodology

7.8 The Air Quality Strategy (AQS) provides the over-arching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the UK Government and Devolved Administrations to protect human health. The air quality objectives incorporated in the AQS and the UK Legislation are derived from Limit Values prescribed in the EU Directives transposed into national legislation by Member States.

7.9 The EU Limit Values are considered to apply everywhere with the exception of the carriageway and central reservation of roads and any location where the public do not have access (e.g. industrial sites). In comparison to the EU Limit Values, the AQS objectives that are presented in **Error! Reference source not found.**7.1 apply at locations outside buildings or other natural or man-made structures above or below ground, where members of the public are regularly present and might reasonably be expected to be exposed to pollutant concentrations over the relevant averaging period. Typically these include residential properties and schools/care homes for long-term (i.e. annual mean) pollutant objectives and high streets for short-term (i.e. 1-hour) pollutant objectives.

7.10 This assessment focuses on NO_2 and PM_{10} as these are the pollutants of principal concern arising from road traffic, and it is from road traffic sources that potential impacts from the development may arise.

Table 7.1: Relevant AQS Objectives for Assessed Pollutants

Pollutant	AQS Objective	Concentration Measured as:	Date for Achievement
Nitrogen dioxide (NO_2)	200µg/m³ not to be exceeded more than 18 times per year	1-hour mean	31st December 2005
	40µg/m³	Annual mean	31st December 2005
Particles (PM_{10})	50µg/m³ not to be exceeded more than 35 times per year	24-hour mean	31st December 2005

Pollutant	AQS Objective	Concentration Measured as:	Date for Achievement
	40µg/m³	Annual mean	31st December 2005

7.11 The approach applied to this assessment, as agreed through consultation with the Council, has been based on the following:

- Qualitative assessment of impacts from the proposed development's construction phase on air quality through emission of dust and particulates; and
- An exposure assessment completed by quantitative prediction of the ambient NO_2 and PM_{10} concentrations beyond the Site boundary, based on modelling of emissions from road traffic and the car park on the local road network to assess the pre-existing conditions of the Site.

Significance Criteria

7.12 Although no formal procedure exists for classifying the magnitude and significance of air quality effects from a new development, guidance issued by Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) suggests ways to address the issue. In the EPUK/IAQM guidance, the magnitude of impact due to an increase in annual mean NO_2, PM_{10} and other pollutants is described using the criteria in Table 7.2. These criteria are based on the change in concentration brought about by a new development as a percentage of the Air Quality Assessment Level (AQAL).

7.13 When describing the impact at a specific receptor, the actual concentration at that receptor should be taken into account, in combination with the magnitude of change, using the approach detailed in EPUK/IAQM guidance.

7.14 The impact descriptors set out in Table 7.2 are not, themselves, a clear and unambiguous guide to reaching a conclusion on significance. These impact descriptors are intended for application at a series of individual receptors. Whilst it may be that there are 'slight', 'moderate' or 'substantial' impacts at one or more receptors, the overall effect may not necessarily be judged as being significant in some circumstances. The impact descriptors defined in Table 7.2 below are comparable to those expressed in Section 2.0 of the Environmental Statement (ES) as follows:

- Negligible = Negligible;
- Slight = Minor;
- Moderate = Moderate; and
- Substantial = High

7.15 The factors in Table 7.3 will be considered in the determination of overall significance, based on professional judgement, whilst other factors may also be relevant in individual cases.

Table 7.2: Impact Descriptors for Changes in Pollutant Concentrations at a Receptor

Long term average concentration at receptor in assessment year	Change in Concentration relative to Air Quality Assessment Level (AQAL)			
	1% a	2-5%	6-10%	>10%
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial
AQAL = Air Quality Assessment Level, which may be an AQS objective, EU limit or target value, or an Environment Agency 'Environmental Assessment Level (EAL)'.				
a Changes of 0%, i.e. less than 0.5% will be described as Negligible.				

Table 7.3: Factors to Judge Overall Significance

Factors
The existing and future air quality in the absence of the development.
The extent of current and future population exposure to the impacts.
The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

Construction Phase - Qualitative Assessment

7.16 Construction site activities are divided into four types to reflect their different potential impacts. These activities are:

- Demolition – an activity involved with the removal of an existing structure or structures;

- Earthworks – the processes of soil-stripping, ground-levelling, excavation and landscaping;
- Construction – an activity involved in the provision of a new structure; and
- Trackout – the transport of dust and dirt from the site onto the public road network. This arises when lorries leave site with dusty materials or transfer dust and dirt onto the road having travelled over muddy ground on-site.

7.17 A detailed assessment is required where a sensitive human receptor is located within 350m from the site boundary and/or within 20m of the route(s) used by vehicles on the public highway, up to 500m from the site entrance(s). There are a number of residential properties located on the A141 that are located within 350m from the boundary of the Site, thus a detailed assessment is required.

7.18 The first step of the detailed assessment is to assess the risk of dust impacts. This is undertaken separately for each of the four activities (demolition, earthworks, construction and trackout) and takes account of:

- The scale and nature of the works, which determines the potential dust emission magnitude; and
- The sensitivity of the area.

7.19 These factors are combined to give an estimate of the risk of dust impacts occurring. Risks are described in terms of there being a low, medium or high risk of dust impact for each of the four separate potential activities. Where there are low, medium or high risks of an impact, then site specific mitigation will be required, proportionate to the level of risk.

7.20 Based on the threshold criteria and professional judgment, one or more of the groups of activities may be assigned a 'negligible' risk. Such cases could arise, for example, because the scale is very small and there are no receptors near to the activity.

7.21 Site-specific mitigation for each of the four potential activities is then determined based on the risk of dust impacts identified. Where a local authority has issued guidance on measures to be adopted at demolition/construction sites, these should also be taken into account. Professional judgment is then employed to examine the residual dust effects assuming mitigation to determine whether or not they are significant.

7.22 Given the limited nature of the demolition phase and the comparatively low volume of vehicle movements that will likely arise (when compared to the operational phase, for which a full assessment has been undertaken), there is not considered to be any potential for significant air quality effects from development related road traffic emissions during the construction phase. Such potential impacts have therefore been scoped out from requiring detailed assessment on the basis of their negligible impact.

Operational Phase - Quantitative Exposure Assessment

7.23 In order to appropriately consider the impacts of the development, the following scenarios have been assessed:

- 2018 Base Case (2018 BC) – Without development base traffic flows for the base year (2018), used to enable model verification and with the car park as an area source.
- 2021 Do Minimum (2021 DM) – Without the proposed development flows but including future flows for the proposed earliest year of opening (2021), and with the car park as an area source.
- 2021 Do Something (2021 DS) – With the proposed development and permitted development flows for the proposed earliest year of opening (2021), and with the car park as a volume source.

Model Inputs

Road Traffic Emissions

7.24 Assessing the air quality effects of a proposed development that affects local traffic flows is typically carried out by using an atmospheric dispersion model to calculate pollutant concentrations at sensitive human receptors, based on the calculated vehicle exhaust emissions, having due regard to their spatial distribution. The predicted annual mean modelled road contributions are added to the relevant annual mean background concentration in order to predict the total pollutant concentration at each receptor location.

7.25 Where possible the performance of the dispersion model is evaluated by comparison against measured pollutant concentrations from the monitoring sites within the study area, through a process known as model verification. Future concentrations then can be predicted with and without the proposed development and compared with the relevant air quality standards and significance criteria.

7.26 The ADMS-Roads assessment incorporates numbers of road traffic vehicles, vehicle speeds on the local roads and the composition of the traffic fleet.

7.27 The traffic data used for this assessment was provided by Atkins, originally obtained by Department for Transport (DfT), comprising of Junction Turning Counts (JTC) – undertaken in 2018 were used by Atkins to factor surveyed data, with the DfT supplied TEMPro (Trip End Model Presentation Program) growth factors being used to account for potential growth in traffic from developments in the local area. JTC data consisted of Average Annual Daily Traffic (AADT) flows with the proportions of Heavy Duty Vehicles (HDVs) provided.

7.28 Traffic speeds were modelled at the relevant speed limit for each road. Where appropriate, vehicle speeds have been reduced to simulate queues at junctions, traffic lights and other locations where queues or slower traffic are known to be an issue, in accordance with Defra's TG(16). All traffic flow data, including the Car Park flow data, has been provided by Atkins.

7.29 The Emissions Factors Toolkit (EFT) version 9.0 developed by Defra[19] has been used to determine vehicle emission factors for input into the ADMS-Roads model. The emission factors are based upon the traffic data inputs.

[19] DEFRA (2019). *Emissions Factor Toolkit*

7.30 Details of the traffic flows used in this assessment are presented in Table 7.4; modelled roads in relation to the site are presented in Figure 4.2 in Appendix G.

Table 7.4: Traffic Data Provided

Ref	Link Name	2018 BC		2021 DM		2021 DS	
		AADT	% HDVb	AADT	% HDVb	AADT	% HDVb
1	A429 Burford Road	25,851	3.5%	26,742	3.5%	27,745	3.4%
2	A429 Swindon Road	25,458	3.7%	26,336	3.7%	27,108	3.6%
3	London Road (1)	15,222	1.7%	15,518	1.7%	17,560	1.5%
4	A417 Grove Lane	14,758	2.3%	15,440	2.3%	15,707	2.3%
5	London Road (2)	14,370	1.7%	14,638	1.7%	16,679	1.5%
6	Victoria Road	3,222	2.4%	3,333	2.4%	3,333	2.4%
7	Lewis Lane	8,471	2.5%	8,763	2.5%	8,992	2.4%
8	Dyer Street	4,056	3.3%	4,196	3.3%	4,196	3.3%
9	The Waterloo	3,462	0.8%	3,353	0.8%	5,623	0.5%

Notes:

a Data provided by the client.

b HDV denotes Heavy Goods Vehicles (HGVs) and Buses/Coaches with a total unladen weight ≥3.5 tonnes.

Car Park Emissions

7.31 Modelling emissions from the proposed car park is more complex in comparison to typical area or volume source modelling approaches, hence the CERC guidance Note 54: Modelling Car Parks, has been followed. The guidance was used to calculate the emissions from the car park for each scenario, with the car park representing an area source for the 2018 BC scenario as the existing structure is ground level, whereas, for the 2021 DM and 2021 DS scenarios the car park was modelled as a volume source to represent the entire structures emissions. Details of the model inputs in relation to the car park area and volume source is detailed in Table 7.5.

Table 7.5: Car Park Model Inputs

Parameter		
	2018 BC	2021 DM/DS
Area m^2	3,313a	-
Volume m^3	-	58974
Roof Height m	-	17.8a
Average Distance Travelled km	0.161	0.635
NOx Emission Rate	3.34E-07	1.47E-07
PM10 Emission Rate	2.38E-08	1.09E-08
Notes: a Data provided by the client.		

Sensitive Receptors

7.32 The receptors considered in the assessment of emissions from road traffic are detailed in **Error! Reference source not found.** and their locations are presented in **Error! Reference source not found.** of Appendix G. These receptors are sited at locations of worst-case exposure in order to predict the maximum pollutant concentrations that they will be exposed to. All 49 receptors were considered in relation to exposure at ground level, i.e. 1.5m height.

7.33 In addition, for the purposes of producing concentration isopleths (if required), concentrations were also output across a regular gridded area and at additional receptor points added close to the modelled road links, through application of the intelligent gridding option in ADMS-Roads.

7.34 In alignment with DMRB guidance, any ecologically designated sites within 200m of roads affected by the development must be considered. There are no designated ecological sites within 200m of such roads, as listed on the Defra Magic Map resource. Hence there is no need to consider potential effects on ecological receptors further as part of this assessment

General Model Inputs

7.35 A site surface roughness value of 1m was entered into the ADMS-Roads model, consistent with the nature of the urban area surrounding the Site, whilst a surface roughness value of 0.5m was used to represent the open nature of the area surrounding the meteorological measurement site.

7.36 One year of hourly sequential meteorological data from a representative synoptic observing station is required by the dispersion model. 2018 meteorological data from Fairford weather station, located approximately 13.8km to the east-southeast of the Site, has been used in this assessment. A wind rose for this site for the year 2018 is shown in Figure 4.1 of Appendix G.

Model Outputs

7.37 Background pollutant values have been used in the ADMS-Roads model to calculate predicted total annual mean concentrations of NO_2, and PM_{10}. Further detail on the background values used is presented in Appendix G.

7.38 For the prediction of annual mean NO_2 concentrations for the modelled scenarios, the output of the ADMS-Roads modelled for road-NOx has been converted to total NO_2 following the methodology in LAQM.TG(16) and using the NO_x to NO_2 conversion tool developed on behalf of Defra. This tool also utilises the total background NO_x and NO_2 concentrations. This assessment has utilised version 6.1 (October 2017) of the NO_x to NO_2 conversion tool[20]. The road contribution is then added to the appropriate NO_2 background concentration value to obtain an overall total NO_2 concentration.

7.39 For the prediction of short term NO_2 impacts, LAQM.TG(16) advises that it is valid to assume that exceedances of the 1-hour mean AQS objective for NO_2 are only likely to occur where the annual mean NO_2 concentration is 60µg/m3 or greater. This approach has thus been adopted for the purposes of this assessment.

7.40 Annual mean PM_{10} road and car park contributions were also output from the model and processed in a similar manner, i.e. combined with the relevant background annual mean PM_{10} concentrations to obtain an overall total PM10 concentration.

7.41 For the prediction of short term PM_{10}, LAQM.TG(16) provides an empirical relationship between the annual mean and the number of exceedances of the 24-hour mean AQS objective for PM_{10}. This relationship has thus been adopted to determine whether exceedances of the short-term PM10 AQS objective are likely in this assessment.

[20] DEFRA (2019). *NO_x to NO_2 Calculator*. http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html#NOxNO2calc

7.42 Verification of the ADMS-Roads assessment has been undertaken using a number of local authority diffusion tube monitoring locations. All results presented in the assessment are those calculated following the process of model verification, using adjustment factors of 1.651 for NO_2 and PM_{10} respectively, as detailed in Appendix G (within Appendix 2 - ADMS Model Verification).

Model Limitations and Uncertainty

7.43 Due to the number of inputs that are associated with the modelling of the study area there is a level of uncertainty that has to be taken into account when drawing conclusions from the predicted concentrations of NO_2 and PM_{10}. The predicted concentrations are based upon the inputs of traffic data, background concentrations, emission factors, meteorological data, modelling terrain limitations and the availability of monitoring data from the assessment area(s). Further detail on the uncertainty in NO_x and NO_2 trends is presented in Appendix G.

Baseline Conditions

7.44 Baseline conditions of ambient air quality has been established through the review of local air quality monitoring and analysis of air quality background concentration estimates.

Local Air Quality Monitoring

7.45 During 2017 the Council deployed passive NO_2 diffusion tubes at thirteen locations across the District. The details of monitoring locations positioned within AQMAs, and upon roadlinks to be assessed within the air quality assessment, are presented in Table 7.6.

7.46 It can be seen from Table 7.6 that diffusion tube N@IS1 recorded an annual mean concentration in exceedance of the annual mean AQS and 1-hour acute objective. In addition to the N@IS1 monitoring site there one other site which is within 10% of the annual mean AQS objective; N@IS2. Both locations are located around 17km and 19km respectively, and are within in Huntingdon AQMA, subsequently they are not representative of the exposure conditions that are experienced at the Site. Notwithstanding this, all of the monitoring locations have been presented within this section with locations used for verification being highlighted; these have been used in the modelling process to verify the predicted results. Further details on the process is presented in Appendix G.

Table 7.6: Council Diffusion Tube Monitoring Locations

Site ID	Site Type	OS Grid Ref (E, N)	Within an AQMA	Distance to Site (km)	2017 Annual Mean NO_2 Concentration (µg/m3)	Used in Model Verification (corrected x, y)
N@ISI2	Roadside	419079, 226054	No	29	23.2	No

Site ID	Site Type	OS Grid Ref (E, N)	Within an AQMA	Distance to Site (km)	2017 Annual Mean NO_2 Concentration (µg/m3)	Used in Model Verification (corrected x, y)
N@ISI3	Set back from road	403124, 202245	No	0.52	17.8	Yes
N@IS6	Kerbside	402439, 200297	No	1.7	9.4	No
N@ISI	Kerbside	393462, 216111	Yes	17	61.4	No
N@IS4	Roadside	401064, 201044	No	1.9	24.6	No
N@IS8	Roadside	402305, 202519	No	0.65	34.8	Yes (402310, 202532)
N@IS9	Roadside	402039, 201765	No	0.68	21.0	No
T5/N@IS3	Kerbside	421374, 199511	No	19	29.0	No
N@IS2	Kerbside	421397, 199489	Yes	19	36.2	No
N@IS10	Roadside	402480, 201772	No	0.29	22.6	Yes (402482, 201765)
N@IS11	Kerbside	402783, 201946	No	0.13	25.7	Yes (402729, 201935)
N@IS7	Roadside	402241, 201102	No	1.0	17.6	No
N@IS5	Roadside	402394, 199581	No	2.5	9.6	No

Air Quality Background Concentration Estimates

7.47 Defra maintains a nationwide model of existing and future background air quality concentrations at a 1km grid square resolution. The data sets include annual average concentration estimates for NO_x, NO_2, and PM_{10} 5 using a base year of 2017. The model used is semi-empirical in nature; it uses the National Atmospheric Emissions Inventory (NAEI) emissions to model-predict the concentrations of pollutants at the centroid of each 1km grid square, but then calibrates these concentrations in relation to actual monitoring data.

7.48 Annual mean background concentrations have been obtained from the Defra published background maps for consideration in the assessment, based on the 1km grid squares which cover the modelled area. The Defra mapped background concentrations for 2018, and 2021 are presented in Table 7.7.

7.49 All of the mapped background concentrations presented are well below the respective annual mean AQS objectives.

7.50 Pollutant background concentrations used for model verification purposes, and for the subsequent predictions at receptor locations, could either be obtained from concentrations recorded at Council operated background monitoring sites during 2017, or derived from the 2018 Defra supplied background for NO_2 and PM_{10}, specifically, for the relevant 1km x 1km grid squares covering the modelled domain. In reference to this assessment the Council do not currently operate any background sites hence the Defra supplied background maps were utilised for this assessment

Table 7.7: 2018 and 2021 Background Pollutant Concentrations

Grid Square (E,N)	Annual Mean Background Concentration (µg/m3)					
	NO_{xa}		NO_{2a}		PM_{10a}	
	2018	2021	2018	2021	2018	2021
402500, 202500	12.91	11.32	9.65	8.55	12.92	14.45
402500, 201500	15.31	13.41	11.82	10.0	13.20	12.72
AQS objective	-		40		40	
Notes a Taken from the Defra Supplied Background Maps (2017 reference year)						

Assessment of Environmental Impacts - Construction Phase

7.51 The IAQM guidance includes a series thresholds and criteria in order to guide the assessor to define the dust emissions magnitude and sensitivity of the area. Where figures relating to area of the site, volume of the site, approximate number of construction vehicles or distances to receptors relate to thresholds as defined in the IAQM guidance.

7.52 A summary of the dust emission magnitude for the four activities (demolition, earthworks, construction and trackout). is detailed in Table 7.8:

Table 7.8: Construction Dust Emission Magnitude

Activity	Dust Emission Magnitude
Demolition	Small
Earthworks	Medium
Construction	Medium
Trackout	Small

Sensitivity of the Area

7.53 The Site is immediately located within a residential locality to the north, east and west, with a commercial district located southwest of the Site, bordering The Waterloo. There are approximately 20-30 residential properties (10-100 Receptors) located within 20m of the development site boundary with 20-30 residential properties (10-100 receptors) located less than 20m from sections of access roads (The Waterloo and London Road) that are within 200m from the Site entrance. Further afield, there are approximately 20-30 residential properties (10-100 receptors) within 100m of the site boundary. The sensitivity of the area with respect to dust soiling effects on people and property in relation to earthworks, and construction and trackout activities is therefore high.

7.54 The highest existing background PM10 concentration derived from the Defra 2017 background maps is predicted to be 13.2µg/m3 (within the 1 x 1km grid square with the centroid grid reference of 402500, 201500), this concentration is well below the annual objective. Given the above information regarding the number of residential receptors within 20m of the site boundary and within 200m from the site entrance on the access road, the sensitivity of the area with respect to human health impacts in relation to earthworks, construction and trackout is therefore considered to be low.

7.55 There are no designated ecological sites within 50m of the development site as listed on the Defra Magic Map resource[21]. In accordance with the IAQM methodology[22], there is no need to consider potential dust effects on ecological receptors further as part of this assessment. A summary of the sensitivity of the surrounding area is detailed in **Error! Reference source not found.** 7.9 below.

Table 7.9: Sensitivity of Surrounding Area

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Low

Risk of Dust Impacts

7.56 The risk of dust impacts is defined using Tables 6, 7, 8 and 9 in the IAQM guidance for earthworks, construction and trackout respectively. The dust emission magnitude classes in Table 7.8 combined with the sensitivity of surrounding area classes in Table 7.9, result in the site risk categories as shown in Table 7.10.

Table 7.10: Summary of Dust Risk

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium Risk	Medium Risk	Medium Risk	Low Risk
Human Health	Negligible	Low Risk	Low Risk	Negligible

7.57 Following the construction dust assessment, the development site is found to be at worse Medium Risk in relation to dust soiling effects on people and Low in relation to property and human health impacts, as summarised in Table 7.10.

7.58 Commensurate with the above designation of dust risk, mitigation measures, as identified by IAQM guidance, are required to ensure that any potential impacts arising from the construction phase of the proposed development are reduced and, where possible, completely removed. In accordance with IAQM guidance, providing effective mitigation measures are implemented, such as those outlined the Mitigation Measures section, construction dust impacts are considered to be not significant.

[21] Magic Maps (2017). available online at http://www.natureonthemap.naturalengland.org.uk/
[22] Institute of Air Quality Management (IAQM) (2014). *Guidance on the Assessment of Dust from demolition and Construction (v1.1)*

Assessment of Environmental Impacts - Operational Phase

7.59 This assessment has considered emissions of NOx/NO_2 and PM_{10} from road traffic and the car park at receptor locations local to the Site.

7.60 The results of the dispersion modelling are summarised below, for those receptor locations detailed in **Error! Reference source not found.** and illustrated in **Error! Reference source not found.** of Appendix G.

Assessment of Nitrogen Dioxide (NO_2)

7.61 **Error! Reference source not found.** in Appendix G presents the annual mean NO_2 concentrations predicted at receptors in consideration of the proposed development for all scenarios, and a comparison against the 40 µg/m3 annual mean AQS objective.

7.62 The maximum predicted annual mean NO_2 concentration at receptors in 2018 BC was 24.1 µg/m3, located at 'R18' – representing 60.3% of the annual mean AQS objective. Receptor R18 is located to the east of the Site on Burford Road, close to the Swindon Road roundabout. Notwithstanding this, all results for scenario 2018 BC report annual mean NO_2 concentrations be well below the AQS objective limit.

7.63 The maximum predicted annual mean NO2 concentration at receptors in 2021 DM was 20.3 µg/m3, located at 'R18' – representing 50.6% of the annual mean AQS objective. Receptor R18 is located to the east of the Site on Burford Road, close to the Swindon Road roundabout. Notwithstanding this, all results for scenario 2021 DM report annual mean NO_2 concentrations be well below the AQS objective limit.

7.64 The maximum predicted annual mean NO_2 concentration at receptors in 2021 DS was 21.2 µg/m3, located at 'R22' – representing 53.0% of the annual mean AQS objective. Receptor R22 is located to the east of the Site on London Road, close to the Swindon Road roundabout. Notwithstanding this, all results for scenario 2021 DS report annual mean NO_2 concentrations be well below the AQS objective limit.

7.65 The empirical relationship given in LAQM.TG(16) states that exceedances of the 1-hour mean objective for NO_2 are only likely to occur where annual mean concentrations are 60µg/m3 or above. Annual mean NO_2 concentrations at all receptor locations are well below this limit. Therefore it is unlikely that an exceedance of the 1-hour mean objective will occur within the Site.

7.66 NO_2 annual mean concentrations predicted at all receptors associated with the proposed development in all scenarios, are well below the annual mean AQS objective. Furthermore, in consideration in the determination of overall significance; in line with EPUK/IAQM guidance, the impact at 46 out of 49 receptors has been assessed as being "Negligible" with the impact at the remaining 3 receptors being "Slight". On this basis it is considered that the proposed development site is considered suitable for the proposed use.

Assessment of Particulate Matter (PM_{10})

7.67 **Error! Reference source not found.** in Appendix G presents the annual mean PM_{10} concentrations predicted at all receptors linked with the proposed development for all scenarios, and a comparison against the 40 µg/m3 annual mean AQS objective.

7.68 Similarly to NO_2 annual mean concentrations, the maximum predicted annual mean PM10 concentration at receptors in scenario 2018 BC was 15.3 µg/m3, located at 'R18' – representing 38.3% of the annual mean AQS objective. Receptor R18 is located to the east of the Site on Burford Road, close to the Swindon Road roundabout. Notwithstanding this, all results for scenario 2018 BC report annual mean PM_{10} concentrations be well below the AQS objective limit.

7.69 The maximum predicted annual mean PM10 concentration at receptors in scenario 2021 DM was 14.7 µg/m3, located once again at 'R18' – representing 36.8% of the annual mean AQS objective. Notwithstanding this, all results for scenario 2021 DM report annual mean PM_{10} concentrations be well below the AQS objective limit.

7.70 The maximum predicted annual mean PM10 concentration at receptors in scenario 2021 DS was 14.8 µg/m3, again located at 'R18' – representing 37.0% of the annual mean AQS objective. Notwithstanding this, all results for scenario 2021 DM report annual mean PM_{10} concentrations be well below the AQS objective limit.

7.71 PM_{10} annual mean concentrations predicted at all receptors associated with the proposed development in all scenarios, are well below the annual mean AQS objective. Furthermore, in consideration in the determination of overall significance; in line with EPUK/IAQM guidance, the impact at all receptors has been assessed as being "Negligible". On this basis it is considered that the proposed development site is considered suitable for the proposed use.

7.72 At all receptors linked with the site considered within this assessment, the maximum number of predicted exceedances of the 24-hour PM10 50µg/m3 AQS objective in all scenarios resulted in 1 day. This is significantly below the 35 permitted exceedances, and so the site is considered suitable for the proposed developmental use.

Mitigation Measures - Construction Phase

7.73 Construction impacts associated to the proposed development would result in the generation of dust and PM_{10}. However, it is considered that employment of construction best practice should ensure that no problematic dust or PM_{10} concentrations occur during the construction process

7.74 IAQM guidance outlines a number of site specific mitigation measures based on the assessed site risk. The measures are grouped into those which are highly recommended and those which are desirable. The list of mitigation measures detailed below represents and edited version of this list based on what would be practical for the proposed development.

7.75 As the site is classed as medium risk the following mitigation measures are highly recommended:

With respect to communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.
- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real time PM10 continuous monitoring and/or visual inspections.

With respect to site management:

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.
- Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport deliveries which might be using the same strategic road network routes.

With respect to monitoring:

- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

With respect to preparing and maintaining the site:

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

With respect to operating vehicle/machinery and sustainable travel:

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.
- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.

With respect to operations:

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

With respect to waste management:

- Avoid bonfires and burning of waste materials.

7.76 Additionally as the site is classed as medium risk the following mitigation measures are desired:

With respect to monitoring:

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window

sills within 100m of site boundary, with cleaning to be provided if necessary.

With respect to operating vehicle/machinery and sustainable travel:

- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

7.77 As the site is classed as medium risk for demolition the following mitigation measures are highly recommended:

- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

7.78 As the site is classed as medium risk for earthworks the following mitigation measures are desirable:

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

7.79 As the site is classed as medium risk for construction the following mitigation measure is highly recommended:

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

7.80 Additionally, as the site is classed as medium risk for construction the following mitigation measures are desirable:

- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

7.81 As the site is classed as low risk for trackout the following mitigation measures are desirable:

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving site are covered to prevent escape of materials during transport.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

Mitigation Measures - Operational Phase

7.82 Predicted concentrations of NO_2 and PM_{10} at receptor locations in relation to the Site operational phase are believed to be 'well below' the respective AQS objective limits, with impacts being assessed as generally negligible. Therefore, mitigation measures associated with the site during the operation phase are not considered to be required.

Summary

Construction Effects

7.83 The assessment of dust/PM_{10} effects from the construction phase of the development was subject to a qualitative assessment following IAQM guidance. Following the construction dust assessment the development site is found, in relation to dust soiling to be medium risk for demolition, earthworks, construction and low risk for and trackout activities. In regards to human health impacts, there is a negligible risk for demolition and trackout and a low risk for earthworks, construction.

7.84 Effective mitigation measures should be implemented under site management controls put in place by the development company including the production of a Dust Management Plan. Providing effective mitigation measures are implemented, such as those outlined within this report, impacts from dust emissions during the construction phase would be not significant.

Operational Effects

7.85 The assessment of operational effects considered impacts at receptor locations in terms of road traffic emissions associated with the proposed development. The ADMS-Roads dispersion model (version 4.1.1) has been used to determine the likely NO_2 and PM_{10} concentrations at proposed receptor locations.

7.86 NO_2 annual mean concentrations predicted at all receptors associated with the proposed development in all scenarios, are well below the annual mean AQS objective. Furthermore, in consideration in the determination of overall significance; in line with EPUK/IAQM guidance, the impact at 46 out of 49 receptors has been assessed as being “Negligible” with the impact at the remaining 3 receptors being “Slight”. On this basis it is considered that the proposed development site is considered suitable for the proposed use.

7.87 PM_{10} annual mean concentrations predicted at all receptors associated with the proposed development in all scenarios, are well below the annual mean AQS objective. Furthermore, in consideration in the determination of overall significance; in line with EPUK/IAQM guidance, the impact at all receptors has been assessed as being “Negligible”. On this basis it is considered that the proposed development site is considered suitable for the proposed use.

8.0 Traffic and Transport

Introduction

8.1 This chapter of the ES assesses the potential traffic and transport impacts and considers the likely significant effects of the proposed development on the environment in respect of traffic and transport.

8.2 The assessment encompasses the vehicular, pedestrian, cycling and public transport infrastructure in the vicinity of the proposed development. It considers the potential transport impacts of the proposed development on the environment, during both the construction and operational phases.

8.3 This chapter has been informed by a Transport Assessment (TA) produced in support of the proposed development, as provided in Appendix H. The TA should therefore be referred to for further information on detailed transport analysis.

8.4 Information on the likely traffic movements associated with the construction phase of the proposed development has been provided by the potential construction contractor.

8.5 An EIA Scoping Opinion note was submitted to Cotswold District Council (CDC) on December 3rd, 2018. A response to the EIA Scoping Opinion was received on February 8th, 2019 and included minor comments from the Local Highway Authority (LHA) on the extent of the traffic and transport study area.

Relevant Policy and Guidance

8.6 This ES chapter has been developed to demonstrate the environmental impact of the proposed development, in line with national policy guidance, as follows.

National Planning Policy Framework (NPPF) (2019)

8.7 The NPPF sets out the requirements and objectives of the Government for planning policies in England and how they should be applied.

8.8 It states that:

"*All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account whether:*

- *Safe and suitable access to the site can be achieved for all people; and*
- *Improvements can be undertaken within the transport network that cost effectively limits the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual impacts of development are severe*".

Planning Practice Guidance (PPG) (2014)

8.9 PPG was launched on March 6th, 2014 and provides an internet-based source of all national planning guidance. Two guidance documents relevant to traffic and transport include: 'Transport evidence bases in plan-making and decision-taking' and 'Travel plans, transport assessments and statements in decision-taking'.

8.10 'Transport evidence bases in plan-making and decision-taking', which was updated on March 13th, 2015 (Paragraph: 001 Reference ID: 42-001-20140306), states that it is important for Local Planning Authorities (LPAs) to undertake assessments of the transport implications of developments in developing or reviewing their Local Plan. This is for the purpose of developing a robust transport evidence base that can support the preparation and / or review of the Local Plan.

8.11 'Travel plans, transport assessments and statements in decision-taking' describes how Travel Plans (TPs), TAs and Statements (TS) are ways of assessing and mitigating the negative transport impacts of development.

The Guidelines for the Environmental Assessment of Road Traffic (2003)

8.12 The methodology for assessing the traffic and transport effects of the proposed development is based on the Institute of Environmental Management and Assessment (IEMA) guidelines, set out in 'The Guidelines for the Environmental Assessment of Road Traffic' (Institute of Environmental Management and Assessment).

8.13 The guidelines are primarily for the assessment of off-site traffic impacts associated with major new developments are intended to complement professional judgement.

Potential Effects

8.14 The IEMA guidelines set out a list of environmental effects which should be reviewed if proposed development traffic is considered to impact on a road link. The potential effects outlined within the IEMA guidelines relevant to this report include:

- Severance;
- Driver delay;
- Pedestrian delay and amenity;
- Accident and safety; and
- Fear and intimidation.

8.15 The impact of the proposed development on these potential effects will be considered further as part of this ES chapter.

Assessment Methodology

Study Area

8.16 As part of the EIA Scoping Opinion, the study area was proposed to include the road links surrounding The Waterloo / London Road / Dyer Street signalised junction. The LHA accepted this extent, with the addition of the shared-space located on Market Place.

8.17 The study area is therefore considered as follows:

- The Waterloo - from The Waterloo / London Road / Dyer Street signalised junction to the proposed development access;
- London Road - from The Waterloo / London Road / Dyer Street signalised junction to the A429 / A417 roundabout;
- Victoria Road - from The Waterloo / London Road / Dyer Street signalised junction to The Avenue;
- Lewis Lane - from The Waterloo / London Road / Dyer Street signalised junction to Tower Street;
- Dyer Street - from The Waterloo / London Road / Dyer Street signalised junction to North Way; and
- Market Place - from North Way to Cricklade Street, inclusive of the shared-space.

Baseline Methodology

8.18 The following assessment years have been utilised for the ES traffic and transport analysis:

- 2018 base year;
- 2020 construction year; and
- 2021 opening year.

8.19 Traffic data was calculated for the 2018 base year and provided to the Air Quality and Noise teams for assessment as part of this ES. It is considered that the baseline conditions within the study area will not have changed significantly between 2018 and 2019. Therefore, 2018 has been utilised as the base year within the traffic and transport analysis to ensure a consistent baseline is reported.

8.20 The 2020 construction year and 2021 opening year have been utilised as they are the likely earliest year of construction and operation, respectively. Through assuming the earliest possible year of construction and operation, the traffic and transport assesses the proposed development against lower baseline flows, ensuring a robust assessment in terms of proportional impact.

8.21 In order to obtain baseline traffic data, a turning count survey was undertaken at The Waterloo / London Road / Dyer Street signalised junction on Thursday, July 12th (2018) and Saturday, July 14th (2018). The traffic survey captured 12-hours of data (0700-1900) on both days.

8.22 A conversion factor of 1.3 has been derived from permanent traffic survey data, provided by the LHA, for the A417 (Grove Lane) and applied to the 12-hour traffic data to obtain the annual average daily traffic (AADT) flows utilised within this ES chapter.

8.23 Following calculation of the 2018 baseline AADT flows, an average day TEMPro (version 7.2) growth factor (Cotswold - Urban All Road Types) was applied. The TEMPro growth factors utilised are as follows:

- 2018-2020: 1.022; and

- 2018-2021: 1.034.

8.24 The traffic survey also captured the number of heavy-duty vehicles (HDVs) currently utilising the highway network within the study area. The daily proportion of HDVs (%HDV) within the study area has therefore been obtained per road link from the traffic survey data. It is acknowledged that the survey only captured 0700-1900, however this is considered a reasonable representation of the existing daily %HDV.

8.25 As the traffic survey data only captured vehicle movements at The Waterloo / London Road / Dyer Street signalised junction, no traffic data was available for the Market Place road link. As Market Place feeds directly into Dyer Street, the Dyer Street traffic data has been applied to Market Place, as it is considered that the traffic volumes on the two links are likely to be of a similar magnitude.

8.26 In addition to the TEMPro growth factors, the assessment years have taken into account committed developments in the area; as detailed within the TA. The calculated daily traffic flows for the Cirencester Rugby Club, Old Kennels Car Park and Sheep Street Car Park committed developments were attributed to the assessment years as follows:

- 2020 Construction Year - Cirencester Rugby Club and Sheep Street Car Park only, as the Old Kennels Car Park development includes an opening year of 2021; and
- 2021 Opening Year - Cirencester Rugby Club, Old Kennels Car Park and Sheep Street Car Park.

Proposed Development Traffic

Construction Phase

8.27 Information on the likely traffic movements associated with the construction phase of the proposed development has been provided by the potential construction contractor. \As the construction methodology has yet to be determined, there is currently uncertainty as to the bulk of materials and required construction movements. On this basis, robust assumptions have applied to calculate potential construction traffic associated with the proposed development.

8.28 It has been identified that during the peak period of construction (concrete pouring), on isolated days, up to five concrete lorries could be accessing the Site per hour. Assuming an eight-hour working day, this correlates to a total of 40 concrete lorries accessing the Site per day. In addition to the concrete pouring lorries, it is estimated that up to two deliveries by articulated lorries could occur per day.

8.29 It has been estimated that up to 50 staff vehicles could be located on or off-site (potentially at the nearby Beeches Car Park), with up to an additional 20 delivery vehicles per day (light goods vehicles). To ensure a robust assessment, it has been assumed that the 50 staff vehicles will be based on-site, requiring use of The Waterloo.

8.30 The following daily traffic movements have therefore been assumed as part of the construction phase:

- HDVs - 84 two-way;
- Light Vehicles - 140 two-way; summing
- Total - 224 two-way.

8.31 It is considered that the assumed construction traffic is robust as it is only expected on isolated days that up to 40 HDVs will be accessing the Site. Furthermore, AADT data is required for ES traffic and transport purposes and the assumed construction phase trips does not account for Sundays and non-working bank holidays where construction will be postponed.

Operational Phase

8.32 The proposed development peak hour trip generation has been derived from the AM and PM peak trip rates calculated from ticketing information for the existing Waterloo car park. The proposed development trip generation presents the number of additional vehicle trips within the study area, above the existing Waterloo car park trip generation.

8.33 Following derivation of the AM and PM peak hour trip generation, the proposed development trips were distributed within the study area, by journey purpose, based on Census 2011 data.

8.34 In order to convert the peak hour trip generation to a daily equivalent, a peak-hours (AM and PM combined) to daily conversion factor of 5.8 was calculated from the permanent traffic survey data, provided by the LHA.

8.35 The total daily trip generation of the proposed development is forecast to be 2,270 additional two-way trips.

8.36 The proposed development trips have been added to the 2021 opening year reference case AADT flows in order to derive the traffic data for the 2021 opening year with development flows.

8.37 It has been assumed that the operational phase of the proposed development will not generate any HDVs.

Assessment Criteria

8.38 In line with the IEMA guidance, when considering the significance of transport effects, the assessment is based on two considerations: the sensitivity of the receptor (or road link) and the magnitude of change (increase / decrease in traffic flow).

Sensitivity of Receptors

8.39 The framework for determining the sensitivity of a receptor, in the case of this traffic and transport chapter, is presented in **Error! Reference source not found.**.

Table 8.1: Definition of Sensitivity

Sensitivity	Typical Receptors
High	Schools, colleges and other educational institutions

Sensitivity	Typical Receptors
	Retirement / care homes for the elderly or infirm
	Roads with no footway that may be used by pedestrians
	Accident black spots
Medium	Hospitals, surgeries and clinics
	Parks and recreation areas
	Shopping area with roadside frontage
	Residential areas
	Roads with narrow footway that may be used by pedestrians
Low	Open spaces
	Tourist / visitor attractions
	Historic buildings
	Churches and other places of worship
Negligible	Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junction

8.40 A review of the study area was undertaken to obtain the sensitivities of the road links, as shown in Table 8.2.

Table 8.2: Sensitivity of Road Links

Road Link	Extent	Sensitivity	Justification
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	Medium	Due to the provision of a limited number of shops with roadside frontages, the road link is considered as medium sensitivity.
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A417 Roundabout	Medium	There is a slight narrow footway located on the northern side of London Road, causing the road link to be considered medium sensitivity.

Road Link	Extent	Sensitivity	Justification
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	Medium	The road link has terraced housing on both sides and is typical of an urban residential area. It is therefore considered of medium sensitivity.
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	Medium	The provision of narrow footways in the vicinity of The Waterloo / London Road / Dyer Street signalised junction, combined with limited shop roadside frontage, causes the road link to be considered medium sensitivity.
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	Medium	Dyer Street forms the southern end of Cirencester town centre and thus has a number of shop roadside frontages, causing the road link to be considered medium sensitivity.
Market Place	North Way - Cricklade Street	High	Although there is no prescribed receptor criteria for shared-use spaces, Market Place is considered of high sensitivity, due to the significant interaction between all modes of travel.

Magnitude of Change

8.41 The IEMA guidelines recommend two rules to be considered when assessing the magnitude of change of development traffic on a highway link, as follows:

- Consider highway links where daily traffic flows will increase by more than 30%, or the number of HDVs will increase by more than 30%; and
- Consider any specifically sensitive areas where daily traffic flows will increase by more than 10%.

8.42 On this basis, where a road link is identified as being of high sensitivity, further consideration is therefore given to where the change in flow (HDVs or all vehicles) is below 30%, but above 10%. Within the study area, the Market Place road link is considered of high sensitivity.

8.43 In line with the principles of the IEMA guidelines, the following thresholds have been used to obtain the magnitude of change on non-sensitive road links:

- High: >90% change in flow of either HDVs or all vehicles;

- Medium: 60-90% change in flow of either HDVs or all vehicles;
- Low: 30-60% change in flow of either HDVs or all vehicles; and
- Negligible: <30% change in flow of either HDVs or all vehicles.

8.44 In line with the principles of the IEMA guidelines, the following thresholds have been used to obtain the magnitude of change on sensitive road links:

- High: >70% change in flow of either HDVs or all vehicles;
- Medium: 40-70% change in flow of either HDVs or all vehicles;
- Low: 10-40% change in flow of either HDVs or all vehicles; and
- Negligible: <10% change in flow of either HDVs or all vehicles.

Significance of Effects

8.45 The significance of effects can be considered as either beneficial or negative and are derived from a combination of the sensitivity of receptors and magnitude of change. The effects can be either temporary or permanent.

8.46 With reference to the sensitivity of receptors and the magnitude of change, significance levels have been applied to the potential environmental effects in accordance with IEMA guidelines, as set out in **Error! Reference source not found.**.

Table 8.3: Significance of Effects Assessment Matrix

Sensitivity	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Substantial	Substantial	Moderate	Negligible
Medium	Substantial	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

8.47 The significance of effects are considered as follows:

- Major: large beneficial or adverse effects that are considered to be material considerations in the decision-making process;
- Moderate: relatively significant beneficial or adverse effects that may be important, but are not considered as determining factors in the decision-making process;
- Minor: slight beneficial or adverse effects that are primarily local in nature. 'Minor' effects are not considered critical factors in the decision-making process; however, they should be considered to enhance the subsequent design of a project; and
- Negligible: no beneficial or adverse effects, or those that are beneath levels of perception.

8.48 A moderate effect or greater is considered to be significant in ES terms, however for the purpose of this assessment, if a significance of effect of minor or above is recorded, further consideration will be given to the potential environmental effects on the receptor.

8.49 The IEMA guidelines set out a list of environmental effects which should be considered if development traffic is considered to impact on a receptor, as outlined in Section 8.14.

Baseline Conditions

8.50 This section describes the baseline conditions in the local area for transport by all modes. The section has been informed by a desktop study supplemented by a site visit to the study area.

Walking, Cycling and Equestrian Users (Non-Motorised Users)

8.51 Due to the nature of the Waterloo Car Park, the vast majority of users will be seeking to access Cirencester town centre by foot. It is considered that the Waterloo Car Park is located in an ideal location to allow users to access a range of sites within Cirencester town centre.

8.52 The surrounding network is considered of convenience for pedestrian movements. It is considered that pedestrians are able to utilise The Waterloo and connect to a number of footways to access the primary retail area of Cirencester town centre along Dyer Street and Market Place.

8.53 In addition to the high-quality pedestrian provision surrounding the site, it is considered that the proposed development is located within desirable and acceptable walking distances to the majority of other sites within Cirencester town centre.

8.54 The proposed development is also considered within an acceptable cycle to work distance for those who will utilise pedal cycles as part of a multi-modal journey. Due to the town centre nature of the surrounding highway network, on-road cycling is considered appropriate in the vicinity of the site. In addition to the suitable on-road cycling routes, routes 48 and 45 of the national cycle network run nearby to the Waterloo Car Park and can assist cyclists in accessing the proposed development from out of town.

Public Transport

8.55 Due to the nature of the proposed development, it is unlikely that users would require access to public transport. Notwithstanding this, the most accessible bus stops to the proposed development is Bingham House on Dyer Street. The bus services at Bingham House combine to provide half hourly frequency services.

8.56 There is no rail station location within Cirencester, with the nearest station located in Kemble.

Collision Data

8.57 Collision data for a slightly larger study area than the ES study area has been assessed within the submitted TA. The collision data was assessed for a five-year period January 1st, 2014 - September 30th, 2019, revealing a total of 21 collisions, broken down as follows:

- Seven serious collisions; and
- 14 total collisions.

8.58 The collisions are spread across the study area, with an increase in slight collisions at the main interchanges, which is to be expected on a typical highway network.

8.59 There are a number of serious collisions recorded within the study area which involved pedestrians. The majority of these serious collisions were recorded within the town centre highway network, located to the west of the Waterloo Car Park.

8.60 It is also noted that no collisions were recorded along The Waterloo in the vicinity of the proposed development.

Motor Vehicles

8.61 The highway network surrounding the proposed development is typical of a town centre road network, with low speeds and pedestrian movements a key factor.

8.62 In the direct vicinity of the proposed development, The Waterloo is a two-way single carriageway link that provides direct access to residential dwellings and the rear of retail stores located on Dyer Street. A 20-mph speed limit is enforced along The Waterloo, with footways and street lighting present on both sides of the carriageway. At its eastern end, The Waterloo links to The Waterloo / London Road / Dyer Street Signalised Junction, which provides access to the wider town centre network.

8.63 To the west of The Waterloo / London Road / Dyer Street Signalised Junction, a one-way system is in place. Eastbound vehicles are required to travel through Market Place and along Dyer Street prior to reaching The Waterloo / London Road / Dyer Street Signalised Junction, while westbound vehicles travel along Lewis Lane that links to the west of Cirencester. All three-road links are restricted to 20-mph, with a large presence of shop frontages and residential properties accessed directly from the roads. Market Place is an existing shared-use space, with a high interaction between pedestrians, cyclists and motor vehicles.

8.64 To the east of The Waterloo / London Road / Dyer Street Signalised Junction, London Road links to the A429 / A427 Roundabout, which provides access to the principal highway network. At its eastern end, London Road is subject to a 30-mph speed limit for about 80m, before dropping to a 20-mph speed limit. The road is considered a key link facilitating vehicle movements to Cirencester town centre from the east.

8.65 The 2018 base year traffic data is provided in **Error! Reference source not found.**

Table 8.4: 2018 Base Year Traffic Data

Road Link	Extent	2018 Base Year	
		AADT	%HDV
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	3,462	0.8%
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A427 Roundabout	14,370	1.7%
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	3,222	2.4%
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	8,471	2.5%
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	4,056	3.3%
Market Place	North Way - Cricklade Street	4,056	3.3%

Mitigation Measures

8.66 A construction traffic management plan (CTMP) will be produced by the contractor prior to commencement of construction. The document will reduce the impact of construction traffic on the local highway network by providing a set of measures that will be undertaken that be undertaken during construction of the proposed development.

8.67 Consideration could be given to the provision of an uncontrolled pedestrian crossing, located on The Waterloo, to enable pedestrians to safely access Cirencester town centre from the site, which would be secured by condition as part of the planning process.

Assessment of Environmental Impacts

Construction Phase

8.68 The assessment of construction effects has utilised the 2020 assessment year, based on this being the earliest reasonable year of construction commencement. Therefore, the assessment of construction effects is considered robust.

8.69 The traffic data (2020) utilised for the assessment of construction effects is provided in **Error! Reference source not found.**.

Table 8.5: 2020 Construction Year Traffic Data

Road Link	Extent	Reference Case		With Development	
		AADT	%HDV	AADT	%HDV
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	3,309	0.8%	3,533	3.1%
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A427 Roundabout	14,456	1.7%	14,662	2.3%
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	3,292	2.4%	3,292	2.4%
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	8,656	2.5%	8,673	2.5%
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	4,144	3.3%	4,144	3.3%
Market Place	North Way - Cricklade Street	4,144	3.3%	4,144	3.3%

8.70 The magnitude of change on each of the assessed road links, related to the construction phase of the proposed development, is shown in **Error! Reference source not found.**.

Table 8.6: 2020 Construction Year Magnitude of Change (% Change)

Road Link	Extent	HDVs	All Traffic	Magnitude of Change	
				HDVs	All Traffic
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	313.1%	6.8%	High	Negligible
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A427 Roundabout	33.8%	1.4%	Low	Negligible

Road Link	Extent	HDVs	All Traffic	Magnitude of Change	
				HDVs	All Traffic
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	0.0%	0.0%	Negligible	Negligible
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	0.0%	0.2%	Negligible	Negligible
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	0.0%	0.0%	Negligible	Negligible
Market Place	North Way - Cricklade Street	0.0%	0.0%	Negligible	Negligible

8.71 Due to the relatively low total daily trip generation of the proposed development during the construction phase, the magnitude of change relating to all traffic is negligible on all road links. The largest increase in traffic (6.8%) is forecast along The Waterloo; however, despite the low baseline traffic flow, the impact is still significantly within the 30% negligible magnitude of change threshold.

8.72 Despite the magnitude of change relating to all traffic being negligible on all road links, there is a forecast to be a high and low magnitude of change relating to HDVs on The Waterloo and London Road, respectively.

8.73 Although there is a reasonable daily HDV trip generation forecast, the high and low magnitudes of change are primarily due to the limited number of HDVs currently utilising both road links. Of particular note, The Waterloo only has a %HDV of 0.8% (of 3,309 AADT) without the proposed development (2020 assessment year).

8.74 A summary of the significance of potential effects on each road link, relating to the construction phase of the proposed development, with reference to the significance criteria matrix (Table 8.3) is provided in **Error! Reference source not found.**. It should be noted that the construction environmental effects will be temporary for the duration, or part, of the construction period.

Table 8.7: 2020 Construction Year Significance of Potential Environmental Effects

Road Link	Extent	Sensitivity	Magnitude of Change	Significance of Effects
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	Medium	High	Substantial
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A427 Roundabout	Medium	Low	Minor
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	Medium	Negligible	Negligible
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	Medium	Negligible	Negligible
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	Medium	Negligible	Negligible
Market Place	North Way - Cricklade Street	High	Negligible	Negligible

8.75 The significance of effects assessment demonstrates that the proposed development will have a negligible effect on the majority of the assessed road links. However, a substantial significance of effects is forecast along The Waterloo, while a minor significance of effects is forecast on London Road.

8.76 Further consideration has been given to the potential environmental effects, in the form of a qualitative review, on both The Waterloo and London Road. As summarised in Table 8.8, the qualitative review has been undertaken on the potential environmental effects outlined in Section 8.14, in line with IEMA guidance.

Table 8.8: Review of Potential Significant Environmental Effects (Construction Phase)

Road Link	Environmental Effect	Qualitative Review
The Waterloo	Severance	Although there will be a reasonable increase in traffic flow along The Waterloo during the construction phase, the increase is not considered to be considered to be of an order of magnitude that will have a significant adverse impact on severance. During the assumed eight working hours, there will be an increase in traffic flow of under one vehicle every two minutes; which is unlikely to have an adverse impact on severance. In addition, the CTMP will set out the traffic management during the construction phase, which will ensure the safe and convenient of pedestrians across The Waterloo.
	Driver Delay	During the assumed eight working hours, there will be an increase in traffic flow of under one vehicle every two minutes, which is not considered to be of an order of magnitude to incur significant driver delay.
	Pedestrian Delay and Amenity	During the assumed eight working hours, there will be an increase in traffic flow of under one vehicle every two minutes, which is not considered to be of an order of magnitude to increase pedestrian delay. Although it is noted that there will be an impact on pedestrian amenity on the northern footway along The Waterloo during the construction phase, it is considered that the CTMP will identify measures to ensure suitable alternative routes are put in place for pedestrians. This impact will only be temporary, with impacts on pedestrians minimised wherever possible.
	Accident and Safety	During the assumed eight working hours, there will be an increase in traffic flow of under one vehicle every two minutes, which is not in the magnitude that is likely to have an adverse impact on safety. This being said, to ensure the safety of all road users, the CTMP will outline the proposed working arrangements and set out mitigation measures to ensure pedestrians are not required to walk along The Waterloo carriageway for any significant length.

Road Link	Environmental Effect	Qualitative Review
	Fear and Intimidation	Although it is acknowledged that the increase in HDVs of up to one every six minutes (during working hours) is notable, due to the low speed nature of The Waterloo combined with sufficient width and visibility, it is not considered that the proposed development will have a significant impact on fear and intimidation. In addition, measures to reduce a potential impact on fear and intimidation will be set out within the CTMP.
London Road	Severance	An increase of under one vehicle every two minutes is forecast, which is not considered to be of an order of magnitude to increase severance. Furthermore, the controlled pedestrian crossing will be retained at The Waterloo / London Road / Dyer Street Signalised Junction, which will continue to serve pedestrians seeking to cross the road link.
	Driver Delay	During the assumed eight working hours, there will be an increase in traffic flow of under one vehicle every two minutes, which is not considered to be of an order of magnitude to incur significant driver delay.
	Pedestrian Delay and Amenity	An increase of under one vehicle every two minutes is forecast, which is not considered to be of an order of magnitude to increase pedestrian delay. Furthermore, the controlled pedestrian crossing will be retained at The Waterloo / London Road / Dyer Street Signalised Junction, which will continue to serve pedestrians seeking to cross the road link. It is also noted that there is currently a reasonably significant traffic demand which operates alongside the existing pedestrian provision. This provision will not be significantly impacted by the construction phase traffic, as it is not considered to be of an order of magnitude to do so.
	Accident and Safety	During the assumed eight working hours, there will be an increase in traffic flow of under one vehicle every two minutes, which is not considered to be of an order of magnitude that is likely to have an adverse impact on safety.

Road Link	Environmental Effect	Qualitative Review
	Fear and Intimidation	The existing road link has a reasonably significant traffic demand and therefore an increase in traffic flow of under one vehicle every two minutes is not considered to be of an order of magnitude to change the nature of fear and intimidation along the road link.

8.77 The review of potential significant environmental effects, outlined in **Error! Reference source not found.**, indicates that there are unlikely to be any significant environmental effects associated with the construction phase of the proposed development. It is considered that the provision of a comprehensive CTMP will ensure that no significant environmental effects are experienced during the construction phase.

Operational Phase

8.78 The assessment of operational effects has utilised the 2021 assessment year, based on this being the earliest reasonable year of completion. Therefore, the assessment of operational effects is considered robust.

8.79 The traffic data (2021) utilised for the assessment of operational effects is provided in **Error! Reference source not found.**.

Table 8.9: 2021 Opening Year Traffic Data

Road Link	Extent	Reference Case		With Development	
		AADT	%HDV	AADT	%HDV
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	3,353	0.8%	5,623	0.5%
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A427 Roundabout	14,638	1.7%	16,679	1.5%
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	3,333	2.4%	3,333	2.4%
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	8,763	2.5%	8,992	2.4%

Road Link	Extent	Reference Case		With Development	
		AADT	%HDV	AADT	%HDV
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	4,196	3.3%	4,196	3.3%
Market Place	North Way - Cricklade Street	4,196	3.3%	4,196	3.3%

8.80 The magnitude of change on each of the assessed road links, related to the operational phase of the proposed development, is shown in **Error! Reference source not found.**.

Table 8.10: 2021 Opening Year Magnitude of Change (% Change)

Road Link	Extent	HDVs	All Traffic	Magnitude of Change	
				HDVs	All Traffic
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	0.0%	67.7%	Negligible	Medium
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A427 Roundabout	0.0%	13.2%	Negligible	Negligible
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	0.0%	0.0%	Negligible	Negligible
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	0.0%	2.6%	Negligible	Negligible
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	0.0%	0.0%	Negligible	Negligible
Market Place	North Way - Cricklade Street	0.0%	0.0%	Negligible	Negligible

8.81 As shown in **Error! Reference source not found.**, due to the proposed development not producing any new HDV trips, there is considered to be a negligible impact from HDVs across all assessed road links.

8.82 However, the increase in 'all traffic' flow is shown to be above the 30% threshold for non-sensitive receptors on The Waterloo. The increase in 'all traffic' on this road link is forecast as 67.7%, which is considered a medium magnitude of change. The significant increase in traffic flow is due to the proposed development being located adjacent to The Waterloo, meaning all new traffic applicable to the proposed development is required to utilise the road link which has a relatively low base flow.

8.83 A summary of the significance of potential effects on each road link, relating to the operational phase of the proposed development, with reference to the significance criteria matrix (**Error! Reference source not found.**) is provided in **Error! Reference source not found.**.

Table 8.11: 2021 Opening Year Significance of Potential Environmental Effects

Road Link	Extent	Sensitivity	Magnitude of Change	Significance of Effects
The Waterloo	The Waterloo / London Road / Dyer Street Signalised Junction - Proposed Development	Medium	Medium	**Moderate**
London Road	The Waterloo / London Road / Dyer Street Signalised Junction - A429 / A427 Roundabout	Medium	Negligible	**Negligible**
Victoria Road	The Waterloo / London Road / Dyer Street Signalised Junction - The Avenue	Medium	Negligible	**Negligible**
Lewis Lane	The Waterloo / London Road / Dyer Street Signalised Junction - Tower Street	Medium	Negligible	**Negligible**
Dyer Street	The Waterloo / London Road / Dyer Street Signalised Junction - North Way	Medium	Negligible	**Negligible**

Road Link	Extent	Sensitivity	Magnitude of Change	Significance of Effects
Market Place	North Way - Cricklade Street	High	Negligible	**Negligible**

8.84 The significance of effects assessment demonstrates that the proposed development will have a negligible effect on all but one of the assessed road links.

8.85 Despite this, it is noted that potential moderate environmental effects related to the proposed development are possible on The Waterloo. On this basis, further consideration has been given to the potential environmental effects on this road link, in the form of a qualitative review. As summarised in **Error! Reference source not found.**, the qualitative review has been undertaken on the potential environmental effects outlined in Section 8.14, in line with IEMA guidance.

Table 8.12: Review of Potential Significant Environmental Effects (Operational Phase)

Road Link	Environmental Effect	Qualitative Review
The Waterloo	Severance	The increase in traffic flow along The Waterloo across the day equates to 94 vehicles per hour, or between one and to vehicles a minute two-way; it is notable that this increase is on top of a low base flow and that traffic speeds are low on this road link. Nevertheless, the increase in flow could potentially increase the perception of severance, with pedestrians finding it more difficult to cross. Therefore, the potential mitigation referred to in 8.67 is considered appropriate to mitigate this potential effect.
	Driver Delay	The impact of the proposed development on driver delay has been tested in full within the TA, which has established that there is sufficient capacity within the highway network to accommodate the proposed development traffic. The analysis presented within the TA demonstrates that the impact on driver delay would be negligible.

Road Link	Environmental Effect	Qualitative Review
	Pedestrian Delay and Amenity	The increase in traffic flow along The Waterloo across the day equates to 94 vehicles per hour, or between one and to vehicles a minute two-way; it is notable that this increase is on top of a low base flow and that traffic speeds are low on this road link. Nevertheless, the increase in flow could potentially impact on pedestrian delay and amenity, with pedestrians finding it more difficult to cross. Therefore, the potential mitigation referred to in 8.67 is considered appropriate to mitigate this potential effect, in combination with the public realm improvements proposed adjacent the Waterloo.
	Accident and Safety	The base traffic flow along The Waterloo is low, along with vehicle speeds. The review of historic collision data has not identified any safety concerns along The Waterloo, and the increase in traffic is not expected to change the nature of the road, whilst there is suitable visibility at the car park egress onto The Waterloo. It is also noted that the potential mitigation referred to within 8.67 would serve to minimise the risk of collisions between vehicles and pedestrians. Therefore, it is not considered that there would be a residual impact on accident and safety.
	Fear and Intimidation	The Waterloo is currently an access route to an existing car park, in addition to a pedestrian thoroughfare into Cirencester town centre. The proposed development is not changing the nature of the road and is not generating any change in the composition of traffic (i.e. there is no increase in HDVs). In addition, the potential mitigation referred to in 8.67 could reduce any fear and intimidation, through providing improved wayfinding from the site to Cirencester town centre. Therefore, it is not considered that there would be a residual impact in relation to fear and intimidation.

8.86 The review of potential significant environmental effects, outlined in **Error! Reference source not found.**, indicates that there are unlikely to be any significant environmental effects associated with the operational phase of the proposed development. It is considered that the provision of the mitigation referred to in 8.67 will ensure that no significant residual environmental effects are experienced during operation of the proposed development.

Summary

8.87 This chapter of the ES has considered the potential traffic and transport impacts of the proposed development and reviewed the potential significant effects on the environment in respect of traffic and transport. The assessment has considered both the construction and operation of the proposed development, and has been informed by a comprehensive TA, produced in support of the proposed development, as provided in Appendix H.

8.88 The chapter has been prepared using best practice methodology, as recommended within 'The Guidelines for the Environmental Assessment of Road Traffic' (Institute of Environmental Management and Assessment), and the study area has been based on the recommendations of the Local Highway Authority.

8.89 The assessment has established that during construction there are potentially significant effects on The Waterloo and London Road, relating to the increase in HDV traffic flow, which would be temporary in nature. This chapter has reviewed the potential significance of these effects against the traffic and transport related environmental effects and determined that there is unlikely to be any significant residual effects from the construction of the proposed development. A construction traffic management plan would ensure that any potential effects are mitigated during construction.

8.90 The assessment has established that during operation there are potentially significant effects on The Waterloo relating to the increase in general traffic flow. This chapter has reviewed the potential significance of this increase against the prescribed environmental effects and acknowledged that there could be a perceived increase in severance due to the additional traffic flow. Potential mitigation for this could be to provide an uncontrolled crossing, located on The Waterloo, to improve pedestrian safety and reduce the perceived severance. This could be secured by condition as part of the planning process. It is considered that there would not be any significant residual effects from the proposed development during operation.

9.0 Flooding and Drainage

Introduction

9.1 CampbellReith was appointed to assess the impact of the proposed development on drainage and flood risk and propose mitigation measures, where appropriate, to prevent, reduce or offset any significant adverse effects to the site. Information presented within this Chapter is supported by the Flood Risk Assessment (FRA) prepared by CampbellReith, which can be found in Appendix I of this Environmental Statement.

9.2 Below is a complete list of tables and appendices used to support this Chapter:

Tables

- Table 9.1: Standardised Definitions of Significance Levels
- Table 9.2: Flood Mechanisms which may affect the site

Appendices

- Appendix I - CampbellReith Flood Risk Assessment & Drainage Strategy (Doc ref EHeh12670-260719-FRA-D1)

Potential Effects

9.3 This section details the activities that could potentially affect the environment as a result of the proposed development.

Construction Phase

9.4 During the construction phase, the presence and movement of large machinery may increase the mobilisation of mud and debris into nearby drainage systems. This could result in an increased risk of blockages and localised flooding in and around the site. Similarly, if there are contaminants within the top layers of the ground, this could result in an increased risk of contaminants entering the nearby watercourse.

9.5 The construction phase also has the potential to affect groundwater quality beneath the site, through the mobilisation of contaminants and creation of new pathways during the excavation and earthworks, or through a pollution incident. The effect is considered to be temporary during construction but may affect the groundwater quality permanently.

9.6 The site is located within Flood Zone 2, associated with fluvial flooding from the River Churn. During extreme rainfall events it is likely that the watercourse may burst its banks, resulting in the site becoming inundated with water. During construction works, the weight and movement of the heavy machinery could increase the compaction of soils, leading to localised flooding within the site. The reduction in ground permeability may also exacerbate the impact of flooding from the River Churn during extreme rainfall events.

9.7 The site is located within a scheduled monument (GC361 - Corinium Roman Town) and is considered to overlay Roman remains that lie approximately 600mm below the current ground surface. The construction of the site, particularly during the installation of the drainage infrastructure, has the potential to impact the archaeological remains as pipes, manholes and any potential underground attenuation would typically be installed around the level at which the archaeological remains are presumed to lie.

Operational Phase

9.8 Following the development of the site, the impermeable area is not anticipated to increase, therefore the volume of surface water runoff and risk of surface water flooding is not expected to change.

9.9 However, the increase in the number of cars accessing the site could cause an increase in the amount of hydrocarbons entering the surface water drainage network, which could have an adverse impact on the water quality of the River Churn.

Assessment Methodology

9.10 The study area was set to ensure / demonstrate that the proposed works within the site will not have a detrimental effect on the water environment. The available information has been reviewed to assess the impact of the proposed development on flood risk and drainage and to determine suitable mitigation measures in line with policy and specific stakeholder requirements.

9.11 To assess the impact of the proposed development on the drainage infrastructure, a CCTV survey of the existing drainage system will be undertaken to determine the current condition and layout of the existing networks present within the site.

9.12 To assess the current risk of flooding to the site, a review of the latest Environment Agency (EA) flood maps will be undertaken. The level of risk will be based on the definitions provided by the National Planning Policy Framework (NPPF) which are as follows:

Flood Zone 1: Low probability of flooding (less than 1 in 1,000 annual probability of river or sea flooding in any year);

Flood Zone 2: Medium probability of flooding (between a 1 in 100 and 1 in 1,000 annual probability of river flooding and between a 1 in 200 and 1 in 1,000 annual probability of sea flooding in any year);

Flood Zone 3a: High probability (1 in 100 or greater annual probability of river flooding or 1 in 200 or greater annual probability of sea flooding in any year); and

Flood Zone 3b: The functional floodplain (where water is stored in times of flood, including water conveyance routes, annual probability of 1 in 20 or greater in any given year).

9.13 Furthermore, to gain an understanding of the baseline conditions for flood risk within the site, the EA longer term flood risk maps were reviewed along with the Cotswold Level 2 Strategic Flood Risk Assessment (SFRA). Stakeholder consultation will also be undertaken as part of the assessment, which will include the EA and Gloucester County Council, the LLFA.

9.14 There are no 'industry standard' significance criteria for the consideration of drainage and flood risk impacts and a qualitative approach, based upon available knowledge, experience and professional judgement, is therefore used to determine impact significance. The significance criteria used in this report are set out below:

Table 9.1: Standardised Definitions of Significance Levels

Significance	Criteria
Major Beneficial	Considerable beneficial effects to the existing baseline conditions as a result of the development whereby the character/composition/attributes can be of more than local significance or exceed the existing standards.
Moderate Beneficial	Limited beneficial effects which may be considered significant such that the post development character/composition/attributes will be substantially improved.
Minor Beneficial	Slight or highly localised enhancement to the baseline conditions post development.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximately to a 'no change' situation.
Minor Adverse	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition attributes of the baseline will be materially changed.
Moderate Adverse	Major/substantial alteration to key elements/features of the baseline conditions such that the post development character/composition/attributes will be substantially changed.
Major Adverse	Total loss of key elements/features of the baseline conditions such that the post development character/composition/attributes will be fundamentally changed.

9.15 CampbellReith has endeavoured to assess all information provided to them during this assessment. The report summarises information from a number of external sources and cannot offer any guarantees or warranties for the completeness or accuracy of information relied upon.

Baseline Conditions

9.16 There are a variety of flood mechanisms that can affect the risk of flooding to a site, most of which are largely dependent on the site's characteristics and location. The flood mechanisms that were identified within the FRA to be relevant to the site are outlined in table 9.2 below.

Table 9.2: Flood Mechanisms which may affect the site

Source	Flood Mechanism	Evidence Base
Fluvial Flooding	Exceedance of the flow capacity of the channel of a river, stream or other natural watercourse, typically associated with heavy rainfall events. Excess water spills onto the flood plain.	EA Flood Map for Planning shows the site to be located in Flood Zone 2 with a Medium risk of fluvial flooding associated with the River Churn, which runs along the northern boundary of the site.
Groundwater Flooding	Raised groundwater levels, typically following prolonged rain (may be slow to recede). High groundwater levels may result in increased overland flow flooding.	SFRA indicates site to be at low risk of groundwater flooding.
Flooding from Overland Flow	Water flowing over the ground surface that has not reached a natural or artificial drainage channel. This can occur when intense rainfall exceeds the infiltration capacity of the ground, or when the ground is so highly saturated that it cannot accept any more water.	SFRA and EA surface water flood risk map indicate the site to be at low risk of surface water flooding.

9.17 Furthermore, a CCTV survey undertaken in July 2017 confirmed that the existing site is positively drained via a series of linear drainage channels, which ultimately outfall to the River Churn. The survey also identified the existing surface water network to contain a 'Three stage interceptor' upstream of the outfall into the watercourse. As such, the site currently has a level of treatment incorporated to remove hydrocarbons prior to discharge into the watercourse. Therefore the risk of pollution to the River Churn is considered to be low.

Mitigation Measures

9.18 For any substantial adverse effects identified during the assessment, further mitigation should be proposed and discussed with the relevant authorities. Some of the potential effects identified will be controlled though the use of a Construction Environmental Management Plan (CEMP), method statements and best practice criteria in the SuDS design. For a full list of the guidance and best practice documents used for this assessment, please refer to the FRA provided within Appendix I.

9.19 This section will outline general mitigation measures that will be, or are very likely to be, implemented to reduce the risk of adverse impacts affecting the site. These measures have been separated into three categories:

- Inherent Mitigation Measures - Those 'designed in' to the scheme and are certain to be delivered;
- Standard Mitigation Measures - Measures with a high degree of certainty over their delivery; and
- Actionable Mitigation Measures - Those that require a controlling mechanism or legal undertaking to be implemented, but are under the control of the applicant and therefore, have a good certainty of delivery.

9.20 Furthermore, this section will outline mitigation measures specific to surface water, groundwater, flood risk and archaeological impacts that have been identified and outlined within the 'Assessment of Environmental Impacts' section of this Chapter.

Inherent Mitigation Measures

9.21 The proposed development does not contain any basement structures. This will reduce the risk of damaging the archaeological remains during the construction phase and also mitigate any potential risk of groundwater flooding to the proposed car park.

9.22 The finished floor level of the proposed development is to be raised by either 600mm above the existing ground level, or 300mm above the modelled flood level, whichever is higher, in accordance with Standing Advice provided by the Environment Agency. Raising the ground will reduce the ingress of flood waters into the car park and reduce the risk of fluvial flooding to the development.

9.23 The surface water and foul drainage strategy for the proposed development should be designed in accordance with Sewers for Adoption (SfA) to ensure that the infrastructure is constructed to an adoptable standard. This will improve the longevity of the drainage system and reduce the risk of any future maintenance issues.

9.24 Attenuation should also be incorporated into the surface water drainage design to reduce the risk of surface water flooding on site. This will subsequently decrease the volume of flow entering the River Churn, which in turn will aid in the potential reduction in the risk of fluvial flooding.

9.25 A petrol interceptor is proposed to be installed upstream from the outfall into the River Churn. This mitigation measure will prevent water contaminated with hydrocarbons from entering the watercourse from the drainage network.

Standard Mitigation Measures

9.26 A variety of environmental risks to the site will be mitigated through the production and implementation of the CEMP, such as contaminants entering the River Churn through the direct impact of construction activities.

Actionable Mitigation Measures

9.27 Actionable mitigation measures that are likely to be implemented include an 8 metre buffer from the top of the River Churn embankment, to allow future access for maintenance. This measure is usually enforced as a planning condition and results in a reduction of flood risk to the surrounding area, as the EA will be able to maintain the watercourse's banks, reducing the risk of it becoming overgrown.

9.28 Another actionable mitigation measure will be through the agreement of a restricted discharge rate for the surface water network into the River Churn. Consultation with Gloucestershire County Council indicates that they will require a 40% reduction from the existing discharge rate from the site. This mitigation measure is likely to be controlled by a planning condition and will reduce flood risk to the site and the surrounding area.

Assessment of Environmental Impacts

9.29 This section will identify and evaluate the environmental effects associated with the proposed development. These effects are assessed based on their magnitude (following mitigation) and the sensitivity of the receiving environment, as described in Table 9.1 in this Chapter.

Construction Phase

9.30 The potential risk of localised flooding from construction works blocking nearby drainage systems will be managed through the implementation of the CEMP. Mitigation measures provided within the CEMP will reduce the risk of flooding to the site and the surrounding area, and also reduce the risk of contamination to the River Churn. If the CEMP is properly adhered to, the potential impact of these risks are considered to be minor adverse.

9.31 The CEMP will also mitigate the potential effect of construction works contaminating groundwater and compacting the soil on site exacerbating any potential fluvial flood risk. Construction workers are to be briefed on the importance of following the CEMP and any other relevant Health, Safety and Environmental procedures. If all procedures are followed correctly, the risk of groundwater contamination and/or a potential exacerbation of fluvial flood risk is considered to be minor adverse.

Operational Phase

9.32 The inherent mitigation measure of increasing the finished floor levels of the proposed development would reduce the impact of fluvial flooding during an extreme rainfall event. Following mitigation the risk of fluvial flooding impacting the operation of the site is minor beneficial.

9.33 Mitigation measures associated with the proposed surface water drainage strategy should result in a reduction of surface water flooding and a reduction in the volume of runoff entering the River Churn. As such, the impact of this measure should provide a minor beneficial influence on the flood risk to the site and surrounding area.

9.34 Furthermore, the retention or upgrade of the petrol interceptor will ensure that the contaminants are removed from surface water runoff prior to discharge into the river. Therefore the proposed development is considered to have a negligible to minor beneficial impact on the current water quality of the River Churn.

9.35 As there are no basement structures proposed as part of the development, the impact on groundwater flooding is considered to be negligible.

Summary

9.36 The site currently has a medium risk of fluvial flooding and low risk of surface water flooding in accordance with Environment Agency flood maps. The proposed development is considered to have a minor beneficial impact on the risk flooding from these sources through the implementation of the proposed drainage strategy, which will include the attenuation of surface water runoff.

9.37 The site is currently considered to have a low risk of groundwater flooding. Since there are no basement structures within the design of the proposed car park, the impact on groundwater flooding is regarded as negligible.

9.38 The incorporation of a petrol interceptor upstream from the outfall for the surface water drainage network will have a minor beneficial impact on the water quality of the River Churn, as there is a reduced likelihood of contaminated water entering the watercourse during the operation of the site.

9.39 Overall the proposed development is not considered to have any significant adverse effects on the water environment so long as the appropriate mitigation measures are implemented.

10.0 Land Contamination

Introduction

10.1 The scoping assessment submitted to the Local Authority in November 2018 (Ref: 6285.008) scoped out Land Contamination due to the studies that had been undertaken on site and the conclusions that the risks posed by contamination at this site are generally low. The existing reports consisted of the following:

- Cotswold Geotechnical Ltd. 1998. Waterloo Car Park, Cirencester - Site Investigation.
- Curtins. 2017. Waterloo Car Park, Cirencester - Phase 1 Preliminary site Assessment.

10.2 As the risks were identified as low, they were not deemed to pose a significant environmental effect. EIA Regulations[23] identify EIA development as development likely to have significant effects on the environment.

10.3 Notwithstanding this, the Environment Agency and Local Authorities Contaminated Land Officer both requested that Land Contamination be included within the Environmental Statement, although they both acknowledged that the supporting information had not been read:

"While we have reviewed the EIA Scoping Request document, we have not seen the Curtins Phase 1 Preliminary Site Assessment (dated December 2017) referenced in the EIA scoping document. We are currently unaware of any contamination issues with this site…"

"The accompanying documentation refers to a Phase 1 Preliminary Site Assessment report by Curtins and dated December 2017, which I have not seen to review, however our own information suggests that the proposed development is located close to land that was once in part occupied by an iron and brass foundry. This kind of activity is associated with metals and combustion wastes such as ash that may require specialist handling if encountered during the redevelopment.

I therefore concur with the recommendation in section 5.19 and 5.20 of the scoping report that an intrusive ground investigation for land contamination is undertaken and that a GQRA (generic qualitative risk assessment) is included as part of the ground investigation in support of the engineering design of the proposed development."

10.4 After highlighting to the Local Authority that the key information providing the evidence base to scope out Land Contamination had not been read by the consultees a revised scope was agreed.

10.5 This revised scope entailed a summary of the studies done to date. This chapter fulfils that element. This chapter is not an impact assessment but a summary of recent studies.

[23] The Town Country Planning (Environmental Impact Assessment) Regulations 2017

Potential Impacts

10.6 A review of the available historical mapping and other information for the site, as presented within the Phase 1 Preliminary site Assessment (Appendix J) has been undertaken and is presented in Table 10.1 below.

Table 10.1: Potential Sources of Contamination (Curtins, 2017)

Date	Description	Potential Sources of Contamination
1875	Site is mostly open land apart from in the far south east where the Cotswold Foundry producing iron and brass is located.	Possibility for contamination resulting from the iron and brass production process.
1876 - 1902	Cotswold Foundry demolished during this period leaving the site completely undeveloped.	Uncontrolled deposition of Made Ground during demolition of the Cotswold Foundry.
1902 - 1969	The site is undeveloped until at least 1960. By 1969 the site is shown as being utilised as a car park.	Limited potential for further contamination.
1970 - Present day	No further changes occur at the site during this period.	Limited potential for further contamination.

Assessment Methodology

10.7 Desk study (Curtins, 2017 - Appendix J)

- A study of the Envirocheck records, British Geological Survey (BGS) 1:50,000 mapping records (Bedrock and Superficial Editions) for Cirencester (Sheet 235) and the BGS online Geology of Britain Viewer.
- The Envirocheck Report and The Coal Authority's online interactive mapping.
- The BGS Radon Mapping.
- Preliminary Unexploded Ordnance (UXO) Risk Assessment - Regional UXO risk mapping for Gloucestershire.

10.8 Investigations carried out in August 1998 (Cotswold Geotech):

- Five boreholes each position was located over a back-filled trailpit previously dug by Cotswold Archaeological trust. Standard penetration test were carried out, undisturbed 100m diameter samples were taken at about

1m intervals and disturbed samples were taken throughout the drilling operations

- Fieldwork carried out in accordance with recommendations of BS5930: Site investigations and lab tests in accordance with BS1377: Methods of test for soils for civil engineering purposes.

Baseline Conditions

10.9 Beneath the surface materials related to the car park there are discontinuous layers of soft sandy or gravelly clay. These clay deposits continue to depths of between 1.7 and 2.8m bgl and are directly underlain by River Terrace Deposits which are indicated on local BGS mapping.

10.10 The River Terrace Deposits are described as a brown yellow fine to coarse rounded Jurassic limestone gravel. These deposits continue to depths of 5.8 to 7.6m bgl and are underlain by the Forest Marble Formation which is actually a mudstone unit.

10.11 The Forest Marble Formation is described as a stiff to very stiff dark grey clay with a shaley texture becoming stiffer with depth. At the depth where boreholes refused the Forest Marble is described as a very stiff to hard clay shale.

10.12 The nearest BGS mineral site is a quarry in the Forest Marble Formation 462m to the east of the site.

10.13 The site is not in a Coal Mining area.

10.14 The risk to controlled waters (groundwater and surface waters) from sources of pollution within the Made Ground on and off site is assessed as Low/Moderate. This is because while the site is directly underlain by a Secondary A Aquifer and the River Churn runs along the northern boundary, it is considered that sources of pollution within the Made Ground are likely to be limited.

10.15 The chronic health risk to site end users from on and off site soils with potential to generate ground gases via vertical and horizontal migration through the underlying deposits is assessed as Low/Moderate. This is because while there is likely to be a considerable quantity of Made Ground surrounding the site, organic inclusions within Made Ground and natural sources are considered to have a very low to low gassing potential.

10.16 The site is situated in an intermediate probability radon area where 3-5% of homes are above the radon action level. On this basis basic radon protective measures are considered necessary in the construction of new dwellings or extensions, however the end use as a car park may provide sufficient natural ventilation.

10.17 UXO - Low risk based upon the fact that Cirencester is not known to have been bombed during the war and historical mapping shows that there were no strategic targets within the vicinity of the site during the war.

Assessment of Environmental Impacts

10.18 Table 10.2 represents the first stage in the land quality risk assessment process: The Qualitative Risk Assessment.

10.19 In order for a development site to be deemed 'suitable for use', the level of risk needs to be brought down to acceptable levels, i.e. low to negligible risk. The purpose of each stage of risk assessment is ultimately to establish, if there is a requirement for additional levels of assessment to be made in order to have sufficient confidence to support a risk characterisation or management decision, e.g. remedial action.

Mitigation Measures

10.20 It is recommended that the Generic Quantitative Risk Assessment (GQRA) is conducted as part of a ground investigation in support of the engineering design of the proposed development. This can be conditioned as part of the planning process.

10.21 Basic radon protective measures are also to be considered depending on final design.

Summary

10.22 The qualitative risk assessment (QRA) determined a varied level of risk associated with the proposed development.

10.23 The QRA concluded by recommending that generic quantitative risk assessments (GQRA) were conducted to confirm the assessment of risk ascribed to each of the respective potential pollutant linkages (PPLs). It is recommended that the GQRA is conducted as part of a ground investigation in support of the engineering design of the proposed development an outline scope for which is detailed in the section hereafter.

10.24 It should be noted that while the risks posed by contamination at this site are generally low the structure to be built on the site is likely to involve relatively high loadings. The focus of the ground investigation should therefore be on the geotechnical properties of the site.

10.25 In summary, the following recommendations are made:

- Undertake an intrusive ground investigation; and
- Undertake a GQRA as part of the ground investigation.

Table 10.2: Qualitative Risk Assessment

Conceptual Site Model			Qualitative Risk Assessment			Recommended Actions
Source	**Pathway(s)**	**Receptor(s)**	**Consequence (with explanations, if applicable)**	**Likelihood of Occurrence (with explanations if applicable)**	**Risk Rating**	
Made Ground from demolition of Cotswold Foundry in the late 19th century.	**Direct contact, ingestion, inhalation (dust and vapours)**	**Site end users** Residents and visitors	**Medium** Chronic health risk	**Unlikely** Given the limited potential sources of contamination on site. Furthermore, the planned car park hardstanding will cut any pathway to end users.	**Low**	**No further action required**
	Vertical migration through the weathered bedrock (soils) May occur due to processes including; capillary action, burrowing animals inducing soil mixing and downwards into the natural deposits through infiltration.	**Water Environment** Underlying superficial deposits (River terrace deposits) and bedrock (Forest marble formation) are both classified as Secondary A Aquifers	**Medium** Pollution of sensitive water resources	**Low Likelihood** There are limited potential sources of contamination on site. However, the pathway between these potential sources and the underlying aquifer is short.	**Low/Moderate**	**Ground Investigation** Including testing of groundwater samples **GQRA as part of Ground Investigation**
	Horizontal migration through preferential pathways in the underlying bedrock May occur due to the influence of perched or natural groundwater flow patterns and natural or man-made high permeability zones, e.g. fractures or drainage runs.	**Water Environment** Nearest surface water feature is the moderate quality River Churn on the northern boundary of the site.	**Medium** Pollution of sensitive water resources	**Low Likelihood** While there are limited potential sources of contamination at the site, the River Churn is very close to the northern boundary of the site. The pathway to the potential receptor is therefore short.	**Low/Moderate**	**Ground Investigation** **GQRA as part of Ground Investigation**
Off-site sources of potential contamination: Made Ground from construction of surrounding buildings over the last century. .	**Horizontal migration through the superficial deposits and air (dust/particulates)** Followed by… **Direct contact, ingestion, inhalation (dust and vapours)**	**Site end users** Residents and visitors	**Medium** Chronic health risk	**Unlikely** There are no obvious potential sources of gross contamination in the surrounding area. Furthermore, the site is to be covered by a car park meaning that there will be no pathway from the underlying deposits to site end users.	**Low**	**No further action required**
	Horizontal migration through the superficial and bedrock deposits	**Water Environment** Secondary A Aquifer The site is not situated within a Source Protection Zone (SPZ)	**Medium** Pollution of sensitive water resources	**Low Likelihood** While there are no obvious sources of potential gross contamination within the surrounding area the site is underlain by a Secondary A Aquifer and the soils are of high leaching potential.	**Low/Moderate**	**Ground Investigation** **GQRA as part of Ground Investigation**

On and off-site soils with the potential to generate ground gases Made Ground deposits on and off site. Mostly associated with construction throughout the last century.	**Vertical and horizontal migration through the superficial and bedrock deposits**	**Site end users**	**Medium** Chronic health risk	**Unlikely** The Made Ground deposits in the vicinity of the site are mostly associated with construction and are unlikely to contain large quantities of putrescible material. Assuming the car park is an open structure and thus vented, ground gases would be unlikely to accumulate	**Low**	**No further action required**
Radon	**Vertical and horizontal migration through the superficial and bedrock deposits**	**Site end users**	**Medium** **Chronic health risk**	**Likely** 3-5% of homes are above the radon action level. Assuming the car park is an open structure and thus vented, Radon risk could possibly be reduced, this should be confirmed with the designer.	**Moderate**	Basic radon protective measures to be considered depending on final design.

11.0 Summary of Impacts and Mitigation

Summary

11.1 The Environmental Statement has presented the findings of the Environmental Impact Assessment (EIA) process for the proposed development at the Waterloo, Cirencester.

11.2 Each of the technical chapters have presented a number of mitigation measures aimed at avoiding, reducing or compensating for potential significant environmental effects. Mitigation measures have been classified based on their deliverability:

- Inherent mitigation measures – those 'designed in' to the scheme and certain to be delivered, i.e. what is proposed by Plans and Quantums;
- Standard mitigation – e.g. construction mitigation with a high degree of certainty over delivery i.e. measures to be included in a draft Construction Environmental Management Plan (CEMP); and
- Actionable mitigation measures - those that require a controlling mechanism or legal undertaking to be implemented, but are under the control of the applicant, Cotswold District Council (CDC)) or Statutory Bodies and therefore, have a good certainty over delivery, e.g. Planning Conditions.

11.3 Potential significant impacts as a result of the proposed developments have been assessed firstly with inherent and standard mitigation measures implemented. The residual impacts have then been assessed with inherent, standard and actionable (under the control of the applicant) mitigation measures implemented.

11.4 Table 11.1 presents a summary of the proposed mitigation measures and the residual impacts that are predicted to remain once these mitigation measures are in place.

Table 11.1: Summary of Impacts and Mitigation

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
Archaeology and Historic Environment	*Construction & Operation*		
	<u>Inherent Mitigation Measures</u> Location of below ground construction methods - Pile locations and attenuation tanks.	Scheme design.	<u>Construction & Operational Phases</u> Taking into account embedded mitigation as part of the project design, and mitigation measures recommended within this ES as a whole, the overall residual impact of the Proposed Development is considered to result in a **minor adverse permanent effect.**
	<u>Standard Mitigation Measures</u> Standard Considerate Construction methods.	Delivered through Construction Environmental Management Plan (CEMP).	
	<u>Actionable Mitigation Measures</u> None.		

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
Townscape and Visual Assessment	*Construction & Operation*		
	<u>Inherent Mitigation Measures</u> Landscape Proposals. External Façade treatments.	Landscape Design / Tree Planting. Scheme design.	<u>Construction Phase</u> **Negligible** impact on receptors. <u>Operational Phase</u> The Proposed Development would result in a high adverse magnitude of effect and a **substantial adverse** significance of effect, on the
	<u>Standard Mitigation Measures</u> None.		

	<u>Actionable Mitigation Measures</u> None.		townscape character of the Site and its immediate context. The magnitude of effect on the Cirencester Town Centre CA would be **medium adverse** in a limited area, and the significance of effect on the medium sensitivity townscape, would be **moderate adverse.** The Proposed Development would result in a **low adverse** magnitude of effect, and a **minor adverse** significance of effect on the Cirencester Town Centre CA, as a whole. The Proposed Development would result in a **low adverse** magnitude of effect and a **minor adverse** significance of effect on the North Cirencester SLA, and on the Cirencester North Fringe Dipslope LCA (CLD2). The magnitude and significance of effect on the Cirencester North Fringe Dipslope LCA overall would be **negligible.** There would be a **negligible** effect on the Cotswolds AONB and the South and Mid

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
			Cotswolds LCA 11A; and on the Cirencester Park RPG. The Proposed Development also would result in a **negligible** effect on NCA 107: The Cotswolds, as a whole. The significance of the visual effect in high and medium sensitivity views would be **substantial adverse.**
Noise and Vibration	*Construction & Operation*		
	<u>Inherent Mitigation Measures</u> None.		

	<u>Standard Mitigation Measures</u> Hours of working to be planned, taking into account the nature of land use in the areas concerned and duration of the work; Working hours limited to Monday to Friday: 07:00 - 19:00; Saturday: 08:00 - 13:00; and on Sunday and Bank Holiday no noisy working (other than special works subject to prior agreement with CDC). Where practicable, quiet working methods should be employed, including the use of the most suitable plant, and suitably sized plant; Haulage vehicles should not access the Site outside of day time periods; Equipment should be switched off when not required; Internal haul routes should be well maintained and avoid steep gradients; The drop height of materials should be minimised;	Delivered through Construction Environmental Management Plan (CEMP).	<u>Construction Phase</u> The noise and vibration impacts of the construction phase, with the implementation of best working practice and restriction on working hours, are assessed as short-term, local, and **moderate to minor adverse**. <u>Operational Phase</u> The assessment concludes that the noise impact on the nearest residential receptors would be of **minor adverse**.

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
	Plant and vehicles should be started up sequentially rather than all together; Broadband (i.e. white noise) reversing alarms should be used rather than tonal alarms; The siting of plant should be considered to avoid noise being directed towards dwellings; and Noise barriers in the form of temporary hoarding, stacks of materials such as bricks, timber or top soil, should be used to provide screening to nearby sensitive receptors.		
	<u>Actionable Mitigation Measures</u> None.		
Air Quality	*Construction & Operation*		
	<u>Inherent Mitigation Measures</u> None		<u>Construction Phase</u> **Negligible** impacts resulting from demolition works.

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
	<u>Standard Mitigation Measures</u> All dust and air quality complaints recorded and acted upon. Ensure effective water suppression is used during demolition operations. Measures to reduce potential dust effects during site preparation works. Measures to reduce potential dust effects as a result of material being brought on-to site. Measures to reduce potential dust effects as a result of the trackout of dirt and mud onto the public highway.	Delivered through Construction Environmental Management Plan (CEMP).	**Negligible** impacts resulting from earthworks. **Low** impacts resulting from construction of the proposed development. **Low** impacts resulting from construction phase traffic. <u>Operational Phase</u> **Negligible** impact on receptors.
	<u>Actionable Mitigation Measures</u> Dust Management Plan (DMP).	Planning Condition.	

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
Traffic and Transport	*Construction & Operation*		
	<u>Inherent Mitigation Measures</u> Location of car park access and egress	Delivered through scheme plans.	<u>Construction Phase</u> **Low** impact resulting from construction phase. <u>Operational Phase</u> **Low** impact on pedestrian users. **Negligible** impact on operational users.
	<u>Standard Mitigation Measures</u> All construction drivers provided with route plans. All parking for construction workers to be off site and park and ride facility provided. Wheel washing facilities provided within the site (where required).	Delivered through Construction Environmental Management Plan (CEMP) and Construction Traffic Management Plan (CTMP).	
	<u>Actionable Mitigation Measures</u> Uncontrolled pedestrian crossing located on The Waterloo.	Planning Condition.	

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
Flooding and Drainage	*Construction & Operation*		
	<u>Inherent Mitigation Measures</u> Finished floor levels set at either 600mm above existing ground or 300mm above modelled flood level. Surface water and foul drainage strategy for the proposed development should be designed in accordance with Sewers for Adoption (SfA). Attenuation to be incorporated into the surface water drainage design to reduce the risk of surface water flooding on site.	Scheme design.	<u>Construction Phase</u> Following the implementation of the proposed mitigation measures, the residual impacts on the flooding and drainage during the construction hases of the proposed development are anticipated to be **Negligible**. <u>Operational Phase</u> Following implementation of the proposed mitigation measures, the residual impacts during the operational phase of the proposed development are anticipated to be **Negligible**.
	<u>Standard Mitigation Measures</u> Prevention of contaminants entering the River Churn.	Delivered through Construction Environmental Management Plan (CEMP)	

Environmental Topic	Mitigation Measures	Means by which Mitigation will be delivered	Significant Residual Impacts
	<u>Actionable Mitigation Measures</u> 8 metre buffer from the top of the River Churn embankment, to allow future access for maintenance. 40% reduction from the existing discharge rate from the site.	Planning Condition.	
Land Contamination	<u>None</u>		

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