



Environmental Statement Addendum – Volume 1, Main Text

Station Hill, Reading

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Environmental Statement Addendum – Volume 1, Main Station Hill, Reading

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This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

Issue	Date	Prepared by	Checked by	Approved by
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Our Markets



Property & Buildings



Transport & Infrastructure



Energy & Utilities



Environment

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Glossary of Terms

Above Ordnance Datum (AOD)	Land levels in the UK are measured relative to the average sea level at Newlyn in Cornwall. This average level is referred to as 'Ordnance Datum'. Benchmarks, spot heights and contours on Ordnance Survey maps of the UK show heights above Ordnance Datum in metres.
Baseline	Existing environmental conditions present on, or near a site, against which future changes may be measured or predicted.
C3 Use Class	Class of land use as set out in Town and Country Planning (Use Classes) Order 1987, and its subsequent amendments, for dwelling houses, whether or not as a sole or main residence, by a single person or people living together as a family, or by not more than six residents living together as a single household (including a household where care is provided for residents).
Conservation Area	An area designated under Planning (Listed Buildings and Conservation Areas) Act 1990 as being of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance
Cumulative Effects	Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions
Decision Notice	A notice setting out the planning authority's decision on a planning application including details of any conditions attached to a planning consent.
Development	2019 Consented Scheme as amended by the Proposed Amendments
Directive	European Commission (EC) Directives impose legal obligations on European Member States. They are binding as to the results to be achieved, but allow individual states the right to decide the form and methods used to achieve the results.
E Use Class	Class of land use as set out in Town and Country Planning (Use Classes) Order 1987, and its subsequent amendments, for commercial, business and service use classes including shops, cafes and restaurants, and offices.
EIA Development	Development that falls under Schedule 1 or 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 as requiring an EIA
Environmental Effect	The total effect of any operation on the surrounding environment.
Environmental Impact Assessment (EIA)	A technique for ensuring that the likely effects of new development on the environment are fully understood and taken into account before the development is allowed to go ahead. It provides a focus for public scrutiny of the project and enables the importance of the predicted effects, and the scope for modifying or mitigating them, to be properly evaluated by the decision-making authority.
Environmental Statement (ES)	A report describing the EIA process and technical assessments undertaken.
ES Addendum	An addendum to the Environmental Statement to describe changes to assessments resulting from changes to the scheme design.
F Use Class	Class of land use as set out in Town and Country Planning (Use Classes) Order 1987, and its subsequent amendments, for learning and non residential institutions and local community uses.
Façade	Generally one side of the exterior of a building, especially the front, but also sometimes the sides and rear.
Footprint	Perimeter of building's ground floor plan.
Future baseline	A change in baseline conditions anticipated to occur in future either as a result of the Development itself or adjacent planning conditions resulting in a change in sensitive receptors relevant to the assessments undertaken.
Historic Environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.

Glossary of Terms

Listed Building	A building included in a statutory list produced by the Secretary of State for Culture, Media and Sport. It comprises buildings and other structures that are of special architectural or historic interest and are protected under the terms of the Planning (Listed Buildings and Conservation Areas) Act 1990
Mitigating factor	A matter to be taken into account as a benefit to offset any perceived or demonstrable harmful impact
Mitigation (measure)	The measures put forward to prevent, reduce and where possible, offset any adverse effects on the environment
Non-Technical Summary (NTS)	A summary of the Environmental Statement in non-technical language providing a concise, yet comprehensive summary of the likely effects of the project on the environment
North Site	Areas to the north of Garrard Street comprising Phases 2 and 3, 1.66ha.
Outline planning application	Applications for outline planning permission seek to establish whether the scale and nature of a proposed development would be acceptable to the local planning authority, before a fully detailed proposal is put forward. This type of planning application allows fewer details about the proposal to be submitted. Once outline permission has been granted, the details ("reserved matters") of the development need to be agreed before work can start. These details will be the subject of a "reserved matters" application at a later stage.
Parameter Plan	A drawing which sets out the parameters of the Development that would be approved as part of any future planning consent. For example, maximum and minimum building heights and footprints.
Pedestrian level wind speed	Mean or gust wind speed measured at 1.5m above ground level.
Permeability	The extent to which an environment allows a variety of access routes through it. A permeable environment is one where there is ease of movement and where people have a choice in the routes they may use.
Phase 1	The area encompassing Plots E and F. Also referred to as the South Site.
Phase 2	For the 2019 Consented Scheme, Phase 2 comprises the area of the Site to the north of Garrard Street. For the 2019 Hybrid Application, Phase 2 encompasses Plot G only.
Phase 3	Applicable to the 2019 Hybrid Application only and encompassing Plots A to D.
Proposed Amendments	The collective term for the changes being made to the planning application.
Reserved Matters Applications	A reserved matters application deals with some or all of the outstanding details of an outline application proposal, for example, appearance- aspects of a building or place which affect the way it looks, including the exterior of the development
Residual impacts	Those impacts of the development that cannot be mitigated following implementation of mitigation proposals.
Schedule 2 (development)	Development project types under the EIA Regulations where EIA is not mandatory in all cases but may be required, depending on the size, nature and scale of the development and the potential for significant environmental effects to arise.
Scheduled Monument	A Scheduled Monument is defined in the <i>Ancient Monuments and Archaeological Areas Act 1979</i> and the <i>National Heritage Act 1983</i> of the UK Government.
Scoping	An initial stage in determining the nature and potential scale of environmental impacts arising as a result of a development, and an assessment of what further studies are required to establish their significance.
Scoping Study	Preliminary study investigated the potential environmental impacts that could arise from the development, used to identify issues for further investigation in the EIA.

Glossary of Terms

Section 73 Application	An application pursuant to Section 73 of the Town and Country Planning Act, 1990 which enables minor material amendments to be made to an existing application.
Sensitive receptor	Natural, human or man-made receptors that are sensitive to changes in baseline conditions brought about as a result of a proposed development.
Setting	The context in which a building or area can be appreciated.
Setting of a Heritage Asset	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 an asset, may affect the ability to appreciate that significance or may be neutral.
SH3 Scheme	The planning application submitted in 2013 covering Plots A to G.
Site	Includes both the North and South Sites bound by Friar Street to the south and Station Hill to the north. It is 2.56ha.
South Site	Phase 1 (Plots E and F), comprising land between Friar Street (south) and Garrard Street (north), bisected by Friars Walk. 0.9ha
Wind Comfort Criteria	The so called 'Lawson' criteria which define whether a space is comfortable for business walking, strolling or sitting by a threshold wind speed i.e. the hourly mean wind speed exceeded 5% of the time.
2013 ES	The ES submitted in support of the 'SH3 Scheme' in 2013 as amended by the 2013 ES Addendum.
2015 Scheme	Consented The Station Hill Outline Planning Permission 130436 (SH3 Scheme), and; Temporary Flexible Event Space within the north of the Site (Planning Application Reference: 130440/FUL) granted consent in January 2014.
2015 ES	This ES was a full update of the 2013 ES to support the application for the '2016 Consented Scheme' and includes a letter setting out the EIA implications of the design amendments.
2016 Scheme	Consented Planning approvals under planning references 151426 and 151427 comprising amendments to the 2016 Consented Scheme to incorporate the Telecom House Site.
2019 Applications	Section 73 The two Section 73 applications (which propose minor material amendments to the Outline Planning Permissions 151426 and 151427) referenced 190441 and 190442 submitted in March 2019. Approved in December 2019
2019 Matters Applications	Reserved The two RMA applications submitted in March 2019 which provide access, scale, layout, appearance and landscaping details for the proposed Plot E and Plot F buildings. (Refs. 190465 and 190466).
2019 ES Addendum	An ES Addendum submitted in support of the '2019 Section 73 Applications' in March 2019.
2019 Scheme	Consented The scheme as defined by planning approvals under 190441 and 190442.
2019 Scheme ES	Consented The 2015 ES as amended by the 2019 ES Addendum.
2019 Application	Hybrid A hybrid application (part outline, part detailed) submitted for the North Site (the area of land to the north of Garrard Street) covering Phase 2 (Plot G in detail) and Phase 3 (Plots A to D) in outline. Planning ref: 192032.
2019 Application ES	Hybrid The Environmental Statement undertaken of the 2019 Hybrid Application and Plots E and F as defined by planning applications 190441 and 190442.

Abbreviations

ADF	Average Daylight Factor
AOD	Above Ordnance Datum
CEMP	Construction Environmental Management Plan
DPD	Development Plan Document
EDG	Employment Density Guidance
EIA	Environmental Impact Assessment
ES	Environmental Statement
FTE	Full Time Equivalent – the number of full time jobs created
GEA	Gross External Area
GIA	Gross Internal Area
NCP	National Car Parks
NIA	Net Internal Area
NPPF	National Planning Policy Framework
NSC	No-Sky Contour
NSL	No Sky Line
NTS	Non-Technical Summary
OD	Ordnance Datum
ONS	Office for National Statistics
OS	Ordnance Survey
PPG	Planning Practice Guidance (national guidance to provide further details on the policies contained in the NPPF)
RBC	Reading Borough Council
SDRL	Sackville Developments Reading Ltd (the applicants of SH3 and the 2016 Consented Scheme)
SH3	The 2015 Consented Scheme
VSC	Vertical Sky Component





Non-Technical Summary of the ES Addendum

Station Hill, Reading

Environmental Statement Addendum – Volume 1, Main Text

Non-Technical Summary of the ES Addendum

WIE14788-100-R-35.2.2-ES Addendum



Volume1: ES Addendum (Main Text)

Station Hill, Reading

Environmental Statement Addendum – Volume 1, Main Text

Non-Technical Summary of the ES Addendum

WIE14788-100-R-35.2.2-ES Addendum

1. Introduction

Brief

- 1.1. Waterman Infrastructure & Environment Limited ('Waterman IE') has been commissioned by SH Reading Master LLP (the 'Applicant'), to prepare this ES Addendum to accompany the submission of a planning application pursuant to section 73 of the Town and Country Planning Act, 1990 for Plots E and F of the Station Hill Development (Existing Planning References: 190441 and 190442). Station Hill is located in the administrative boundary of Reading Borough Council.

Planning Background

- 1.2. In March 2013 an Outline Planning Application for the redevelopment of approximately 2.14 hectares (ha) of previously developed land at Station Hill was submitted by Sackville Developments Reading Ltd (SDRL) (Planning Reference: 130436). The development was known as the Station Hill 3 Scheme (SH3) and included the demolition of all the existing buildings and structures within the SH3 Site, excluding the existing multi-storey NCP car park, and replacement with four new commercial buildings (referred to as Building Plots A - D) and two new primarily residential buildings (referred to as Building Plots E and F). The existing NCP car park would be reconfigured and refurbished.
- 1.3. The Planning Application was subsequently granted planning consent by Reading Borough Council (RBC) in January 2015 and is hereafter referred to as the '2015 Consented Scheme'.
- 1.4. In August 2015, SDRL submitted two further planning applications to extend and amend Plot E of the 2015 Consented Scheme to incorporate an adjacent site referred to as the Telecom House Site. The applications comprised:
- (i) an application pursuant to section 73 of the Town and Country Planning Act 1990 to amend the 2015 Consented Scheme (this Section 73 application was submitted under planning reference 151427); and
 - (ii) an outline planning application for a new Plot E incorporating the areas of both the 2015 Consented Scheme Plot E and the Telecom House Site (planning reference 151426).
- 1.5. These two applications were granted planning consent in July 2016 and are together referred to in this report as the '2016 Consented Scheme'. The area covered by the 2016 Consented Scheme is hereafter referred to as 'the Site' and is shown in Consolidated Parameter Plan 1: Planning Application Boundary included in Volume 3 of this ES Addendum.
- 1.6. Following acquisition of the SH3 Site from SDRL in 2018, the Applicant made changes to the 2016 Consented Scheme in respect of Plots E and F (referred to collectively as Phase 1 or the South Site) to respond to a series of design alterations. This was undertaken by way of applications pursuant to section 73 of the Town and Country Planning Act 1990 (hereafter referred to as 'the 2019 Section 73 Applications', planning application references 190441 and 190442). At the same time, reserved matters applications and applications for condition discharge were submitted for approval for Plots E and F (reserved matters application references 190465 and 190466). These applications were granted planning consent in December 2019 and are hereafter referred to as the '2019 Consented Scheme'.

- 1.7. In December 2019, the Applicant submitted a new hybrid application (the ‘2019 Hybrid Application’) for the area of the Site to the north of Garrard Street, known as Phases 2 and 3 or the North Site (planning application reference: 192032). Changes to the 2019 Hybrid Application were submitted in June 2020 during the determination period. Once approved, the 2019 Hybrid Application would replace the 2019 Consented Scheme for the North Site.

Proposed Amendments to the 2019 Consented Scheme

- 1.8. The Applicant is now seeking to make further changes to Phase 1 (Plots E and F) of the Station Hill Development by means of applications pursuant to section 73 of the Town and Country Planning Act 1990. These are hereafter referred to as the ‘Proposed Amendments’ which are set out in detail in Chapter 5 of this report, and summarised as follows:

Plot E

- Additional height and articulation on Friar Street;
- An increase in height of the central wing by an additional two full storeys;
- Lowering of the southern courtyard;
- Repositioning of amenity space into commercial units along Friars Walk to provide active frontage;
- Provision of additional residential units at ground floor; and
- Lower ground floor amendments, including the relocation of cycle parking.

Plot F

- The addition of a level on Plot F with unit layout on level 10 replicated on Level 11;
- Conversion of the amenity space on Level 11 of Plot F into two residential units with amenity provided on level 12; and
- Introduction four duplex units on Friars Walk.

- 1.9. At the same time, reserved matters applications will be submitted for Plots E and F.
- 1.10. The 2019 Consented Scheme as amended by the Proposed Amendments is hereafter referred to as the ‘Development’. The area of the 2019 Consented Scheme is hereafter referred to as the ‘Site’.

EIA Background

- 1.11. In 2013, an Environmental Impact Assessment (EIA) was undertaken of the SH3 Scheme and an Environmental Statement (ES) prepared to accompany the planning application. An ES Addendum was subsequently prepared and submitted in September 2013 to address additional environmental issues that had come to light during the determination period. Together, the ES and ES Addendum are hereafter collectively referred to as the ‘2013 ES’.
- 1.12. In 2015, an ES was prepared to accompany the applications to revise Plot E to incorporate the Telecom House Site (planning references 151426 & 151427). This ES was a full update of the 2013 ES and covered the entire SH3 Scheme as amended by Telecom House. During the

determination period, amendments were made to the planning application for Plot E incorporating the Telecom House Site, and a letter setting out the EIA implications of the design amendments was submitted to RBC in December 2015. Together, the ES and EIA implications of design amendments letter are referred to as the '2015 ES'.

- 1.13. The 2019 Section 73 Applications (references 190441 and 190442) were accompanied by an ES Addendum which considered the proposed amendments to the 2016 Consented Scheme together with new cumulative schemes that had come forward since the 2015 ES and / or changes to the baseline conditions at, and surrounding the Site. This is hereafter referred to as the '2019 ES Addendum'. Collectively the 2015 ES and the 2019 ES Addendum are referred to as the '2019 Consented Scheme ES'.
- 1.14. A new ES was submitted as part of the 2019 Hybrid Application (planning application reference: 192032). This ES considered the South Site in the context of the revised North Site proposals. An ES Addendum was subsequently prepared to consider changes proposed to the 2019 Hybrid Application submitted during the determination period in June 2020. Together the ES and ES Addendum submitted as part of the 2019 Hybrid Application are referred to as the 2019 Hybrid Application ES.

This ES Addendum

- 1.15. The Proposed Amendments to the 2019 Consented Scheme together with new cumulative schemes that have come forward since the 2019 Consented Scheme ES and / or changes to the baseline conditions surrounding the Site, may result in changes to the assessment of the effects described in the 2019 Consented Scheme ES.
- 1.16. This ES Addendum, therefore, considers the Proposed Amendments to the 2019 Consented Scheme and the implications on the findings of the EIA presented in the 2019 Consented Scheme ES. Because the 2019 Hybrid Application has not yet received planning consent, this ES Addendum is an addendum to the 2019 Consented Scheme ES and not the 2019 Hybrid Application ES. However, the 2019 Hybrid Application has been considered as a cumulative scheme in this ES Addendum in order that the Proposed Amendments can be assessed in the context of both the 2019 Consented Scheme and the 2019 Hybrid Application.
- 1.17. Where there is potential for changes to the significance of effects reported in the 2019 Consented Scheme ES, updated or new assessments have been undertaken. This ES Addendum reports the findings of these updated or new assessments and makes reference, where necessary, to the 2019 Consented Scheme ES.
- 1.18. Information and impact assessments that remain unchanged from the 2019 Consented Scheme ES have not been reproduced within this ES Addendum unless explicitly stated. This ES Addendum should be read in conjunction with the 2019 ES; together, the 2019 ES and this ES Addendum form the ES for the purposes of the Section 73 applications.

Project Team

- 1.19. The ES Addendum has been compiled by Waterman IE, in conjunction with the Applicant and a team of specialist consultants. These consultants are presented in Table 1.1 along with their respective disciplines and contributions to the EIA.

Table 1.1: EIA and Design Team

Organisation	Expertise/EIA Input
Station Hill Master LLP	Applicant
Cast Real Estate and Construction Consultancy	Development Project Managers
CRTKL	Architect
Cityscape	Visualisations
DP9	Planning consultants
GIA	Daylight, sunlight and overshadowing assessors
Hatch Regeneris	Socio economics and health consultants
Hoare Lea and Partners	Building services engineer and energy and sustainability consultants
Peter Brett Associates (PBA), part of Stantec	Traffic and transportation consultants
Ramboll	Structural and Civil Engineers
RWDI	Wind microclimate consultants
Waterman IE	EIA co-ordinators, air quality, noise and vibration, ecology, archaeology, land quality, flood risk and townscape and visual consultants

ES Availability and Comments

- 1.20. Electronic copies of this ES Addendum, the 2019 Consented Scheme ES and Non-Technical Summaries are available on Reading Borough Council's planning portal (<http://planning.reading.gov.uk/>).
- 1.21. Due to restrictions associated with COVID 19, hard copies of the documents are currently not normally available. If you experience difficulties in accessing the electronic copies online, please contact either:

Reading Borough Council
Civic Offices
Bridge Street
Reading
RG1 2LU
Phone: 0118 937 3787
Email: Planning.Administration@reading.gov.uk

Or:

Waterman Infrastructure & Environment Limited
Pickfords Wharf
Clink Street
London
SE1 9DG
Phone: 0207 928 7888
Email: ie@watermangroup.com

- 1.22. Any comments on the application or in response to the ES Addendum should be submitted to Reading Borough Council using the contact details above.

2. EIA Methodology

Introduction

- 2.1. The authors of each of the technical chapters of the 2019 Consented Scheme ES have reviewed the Proposed Amendments, as summarised in Chapter 1 and detailed in Chapter 5 of this ES Addendum, together with the changes to the sensitive receptors and cumulative schemes described in Chapters 3 and 17 of this ES Addendum. On the basis of this review they have provided a professional opinion on whether these are considered to have the potential to alter the significance of the effects presented in the 2019 Consented Scheme ES. This review is presented in Table 2.1.

Table 2.1: Assessment of the Effects of the Proposed Amendments on the Findings of the 2019 ES

Chapter		Reviewed By	Assessment of effects of the Proposed Amendments, Sensitive Receptors and Cumulative Schemes
7	Socio Economics & Health	Hatch Regeneris	Due to the changes to floorspace areas and increase in residential units proposed, a review of the Socio-Economics & Health assessment has been undertaken and is presented in Chapter 7 of this ES Addendum.
8	Archaeology	Waterman IE	The Archaeology Chapter of the 2019 Consented Scheme ES led to the agreement of a comprehensive mitigation strategy, responding to the impact upon archaeological assets within the footprint of Plots E and F. The mitigation strategy remains a proportionate and appropriate response to the proposed Development and, therefore, no further assessment is considered to be required. No changes were made to the 2015 ES in respect of Archaeology in the 2019 ES Addendum and therefore the 2015 ES chapter remains the relevant chapter for the purposes of this topic.
9	Transportation	PBA part of Stantec	The Transport Chapter of the 2015 ES showed that the Station Hill Scheme incorporating the Telecom House Site (the 2016 Consented Scheme) resulted in a reduction of trips compared with the 2015 Consented Scheme when considering the potential trip generation of the extant uses of Telecom House. The net reduction in vehicle trips is shown in Table 9-12 of the Transport Chapter of the 2015 ES, which concluded that the traffic modelling presented in the 2013 ES (and reproduced in the 2015 ES) demonstrated a 'worst-case' scenario. The anticipated increase in vehicle trips generated by the increase in the maximum number of units (an additional 123 units) brought about by the changes submitted as part of the 2019 section 73 Applications and the Proposed Amendments set out within this ES Addendum, is less than the net reduction in vehicle trips shown in the 2015 Transport ES Chapter. Stantec, the Transport Consultants for the 2015, 2016 and 2019 Consented Schemes, and authors of the 2013 and 2015 ES chapters, therefore, consider that the transport modelling presented in the 2013 ES (and reproduced in the 2015 ES) still represents a 'worst-case' scenario, with the impacts previously assessed considered to accurately represent the likely significant effects of the proposed Development.

Chapter		Reviewed By	Assessment of effects of the Proposed Amendments, Sensitive Receptors and Cumulative Schemes
10	Air Quality	Waterman IE	On the basis that the traffic flow data, used in the air quality assessment presented in the 2015 ES, represents a worst-case scenario even with the Proposed Amendments, the findings of the Air Quality Chapter will remain unchanged and no further assessment is considered to be required. No changes were made to the 2015 ES in respect of Air Quality in the 2019 ES Addendum and, therefore, the 2015 ES chapter remains the relevant chapter for the purposes of this topic.
11	Noise	Waterman IE	On the basis that the traffic flow data, used in the noise and vibration assessment presented in the 2015 ES, represents a worst-case scenario even with the Proposed Amendments, the findings of the noise chapter will remain unchanged and no further assessment is considered to be required. No changes were made to the 2015 ES in respect of Noise in the 2019 ES Addendum and therefore the 2015 ES chapter remains the relevant chapter for the purposes of this topic.
12	Ground Conditions	Waterman IE	The Proposed Amendments to the 2019 Consented Scheme and the other changes to sensitive receptors and cumulative schemes are not considered to alter the significance of effects on Ground Conditions and Contamination as set out in the 2019 Consented Scheme ES. No further assessment of ground conditions and contamination is therefore considered to be required. No changes were made to the 2015 ES in respect of Ground Conditions in the 2019 ES Addendum and therefore the 2015 ES chapter remains the relevant chapter for the purposes of this topic.
13	Flood Risk and Drainage	Waterman IE	The Proposed Amendments have not resulted in any change to the surrounding ground levels or entrance levels compared with the 2019 Consented Scheme. The internal levels at lower ground floor also remain at a minimum of 39.00m AOD. No further assessment of flood risk is therefore considered to be required. An update to the Flood Risk and Drainage ES Chapter was made in the 2019 ES Addendum and, therefore, the 2019 ES Addendum and 2015 ES should be referred to for the purposes of this topic.
14	Ecology	Waterman IE	The Proposed Amendments and other changes to the sensitive receptors and cumulative schemes are considered not to alter the significance of effects presented in the 2019 Consented Scheme ES. No further assessment of ecology is therefore considered to be required. No changes were made to the 2015 ES in respect of Ecology in the 2019 ES Addendum and, therefore, the 2015 ES chapter remains the relevant chapter for the purposes of this topic.
15	Wind	RWDI	Due to the changes in massing proposed as part of the Proposed Amendments, an updated wind tunnel test has been undertaken and reported within Chapter 15 of this ES Addendum.

Chapter		Reviewed By	Assessment of effects of the Proposed Amendments, Sensitive Receptors and Cumulative Schemes
16	Daylight, Sunlight and Overshadowing	GIA	Due to the changes in massing as part of the Proposed Amendments along with the changes to surrounding and future sensitive receptors, an updated Daylight, Sunlight and Overshadowing Assessment has been undertaken and is reported within Chapter 16 of this ES Addendum.
Vol 2	Townscape, Conservation and Visual Assessment	Waterman IE	Due to the changes in massing proposed as part of the Proposed Amendments, an updated Townscape, Conservation and Visual Assessment has been undertaken and is presented as Volume 2 of this ES Addendum.
17	Cumulative Effects	All technical authors	The list of cumulative schemes requiring consideration has been updated since preparation of the 2019 ES. The technical assessments being updated as part of this ES Addendum have also undertaken an updated cumulative assessment with the new cumulative schemes. No changes to the significance of cumulative effects reported in the 2019 Consented Scheme ES are anticipated for those technical assessments not being updated as part of this ES Addendum. The list of cumulative schemes includes the 2019 Hybrid Application which, if consented, would replace the 2019 Consented Scheme for the North Site. An updated Cumulative Effects assessment is included as Chapter 17 of this ES Addendum.

2.2. On the basis of the above review, further information and / or assessment has been provided in relation to Socio Economics & Health, Wind, Daylight, Sunlight and Overshadowing, Townscape, Conservation and Visual Assessment and Cumulative effects. These have been included within this ES Addendum in accordance with the chapter numbering used in the 2019 Consented Scheme ES. Therefore, the chapter numbering within this ES Addendum is as follows:

- Chapter 1: Introduction;
- Chapter 2: EIA Methodology;
- Chapter 3: Existing Land Use;
- Chapter 4: Alternatives and Design Evolution;
- Chapter 5: Description of the Development;
- Chapter 6: Development Programme, Demolition and Construction;
- Chapter 7: Socio Economics and Health;
- Chapter 15: Wind;
- Chapter 16: Daylight, Sunlight and Overshadowing;
- Chapter 17: Cumulative Effects; and
- Volume 2: Addendum Townscape, Conservation and Visual Assessment.

2.3. Where Tables and Figures have been updated, the original Table or Figure number of the 2019 Consented Scheme ES has been referenced for clarity where relevant.

- 2.4. As there has been no change to the assessment of Archaeology (Chapter 8), Transportation and Access (Chapter 9), Air Quality (Chapter 10), Noise and Vibration (Chapter 11), Ground Conditions and Contamination (Chapter 12), Surface Water Drainage and Flood Risk (Chapter 13) or Ecology (Chapter 14), these chapters of the 2019 Consented Scheme ES have not been reproduced in this ES Addendum.

Approach to Assessment

General Approach

- 2.5. There has been no change to the general approach to the EIA compared with that set out in the 2019 Consented Scheme ES.

Approach to Assessment of the Outline Planning Application

- 2.6. There has been no change to the general approach to the assessment of the outline planning application compared with that set out in the 2019 Consented Scheme ES.

Baseline Scenario

Existing Baseline

- 2.7. The buildings within Plots E and F have been demolished since preparation of the 2019 Consented Scheme ES. However, as this demolition represents part of the Development being assessed, the baseline conditions considered in this ES Addendum assume that the buildings within Plots E and F are still present. This enables the effects of the Development now proposed to be compared with those of the development assessed within the 2019 Consented Scheme ES. Nevertheless, the technical authors have reviewed the baseline conditions currently present at the Site to provide a professional opinion on the potential for the change in baseline conditions at the Site to alter the significance of the effects assessed.
- 2.8. The surrounding sensitive receptors have been updated since the 2019 Consented Scheme ES as described in Chapter 3. Accordingly, the technical assessments presented in this ES Addendum have taken account of the change in surrounding sensitive receptors.
- 2.9. The Temporary Flexible Events Space, which was located on the North Site and was considered as an Interim Scenario in the 2019 Consented Scheme ES, has now been enclosed within construction hoarding to allow the enabling works for the 2019 Hybrid Application to take place. As the Temporary Events Space effectively no longer exists, reference to it has been removed from this ES Addendum.

Future Baseline

- 2.10. The Former Coopers BMW site, Napier Road / Kings Meadow Road, Planning Ref 162166 which was previously a cumulative scheme is now under construction. It has, therefore, been considered as part of a 'future baseline' rather than a cumulative scheme. In any event, for this ES Addendum, this future baseline scheme does not alter the significance of the effects as it is too far away from the Site to affect the assessments for wind or daylight, sunlight and overshadowing as presented in Chapters 15 and 16 of this ES Addendum. It is also not visible in the viewpoints selected for assessment within the Townscape, Conservation and Visual Impact assessment presented in this

ES Addendum, which focuses on those views containing Plots E and F. None of the other technical assessments are affected by the change of this scheme from a cumulative scheme to a future baseline scheme.

Covid-19

- 2.11. Since early 2020 the outbreak of the global COVID-19 ('coronavirus') pandemic has had significant and adverse effects on society and the UK economy as a whole. For the majority of technical studies considered in this ES Addendum, and the 2019 Consented Scheme ES as a whole, this is not considered to result in a change to the significance of the effects. Whilst employment levels and spending, which are considered in the Socio Economics assessment, have been affected by the pandemic, the Office for Budget Responsibility project that despite the severe immediate economic effects of the pandemic, a longer-term period of economic recovery to pre-pandemic levels will occur by 2026. On this basis, this socio-economic assessment has assessed the potential impacts against pre-pandemic baseline levels.

Scoping the ES Addendum

- 2.12. Given the nature of the Proposed Amendments, a specific scoping study was not considered necessary in advance of this ES Addendum. The scope has been defined on the basis of previous scoping studies undertaken and scoping opinions received from RBC as part of the 2019 Consented Scheme ES and the technical assessors' review of the Proposed Amendments as described in Table 2.1.

Scenarios Assessed

- 2.13. As described in Chapter 1, concurrent with the submission of the Section 73 Applications to amend the parameters of Plots E and F of the 2019 Consented Scheme, Reserved Matters Applications will be submitted for Plots E and F. As a result, the wind, townscape and visual and daylight, sunlight and overshadowing assessments have tested the following scenarios:
- Proposed Development Scenario: Reserved matters details for Plots E and F with the remaining Station Hill Development (as maximum parameters) in place; and
 - Cumulative Scenario: Reserved matters details for Plots E and F with the remaining Station Hill Development shown in accordance with the 2019 Hybrid Application with Phase 3 as maximum parameters, plus Cumulative Surrounds.
- 2.14. For socio economics, because the floor space areas are defined across the Development as a whole and, therefore, there are variations in floor space areas in the elements of the scheme that remain in outline, the assessment has considered the proposed amendments to Condition 6 of the 2019 Consented Scheme (planning references: 190441 and 190442) which controls the maximum floor space areas that can be provided across the Development. The minimum floor space areas remain as previously assessed with the exception of residential amenity which has been combined with the overall residential floor space areas.
- 2.15. The cumulative scenario considers the 2019 Hybrid Application on the North Site, rather than the 2019 Consented Scheme on the North Site effectively separating the Phase 1 Development from the remainder of the Site. Therefore, in the cumulative scenario the socio economics assessment has

considered the reserved matters details for Plots E and F with the maximum and minimum floor space areas being applied for the 2019 Hybrid Scheme for the North Site.

Evaluation of Significance

- 2.16. There has been no change to the evaluation of significance compared with that set out in the 2019 Consented Scheme ES.

Comparison with the 2019 Consented Scheme

- 2.17. In order to provide RBC, other statutory consultees and interested parties with an understanding of the differences between the effects of the 2019 Consented Scheme and those of the Development (that is the 2019 Consented Scheme as amended by the section 73 Applications), each technical chapter of the ES has included a summary, in the summary and conclusions section and where appropriate, throughout the chapter, of the differences between the effects of the 2019 Consented Scheme and those of the Development. This may be a qualitative or a quantitative assessment, depending upon the technical study in question.

Assumptions and Limitations

- 2.18. The principal assumptions that have been made, and any limitations that have been identified in undertaking the EIA remain the same as set out in the 2019 Consented Scheme ES with the exception of:
- Where the authors of each technical chapter of the 2019 Consented ES consider that the Proposed Amendments may result in a change to the significance of the effects, the updated or new assessment has considered the surrounding existing baseline conditions; that is those currently prevailing in the area surrounding the Site. The baseline conditions on the Site remain as described in the 2019 Consented Scheme ES given that changes within the Site form part of the Development being assessed.

3. Existing Land Uses and Sensitive Receptors

Baseline Conditions

- 3.1 The existing land uses on the Site are slightly different from those at the time of the 2019 Consented Scheme ES because buildings within Plots E and F have recently been demolished. This area of the Site now comprises of hardstanding, stockpiles of material and bare ground contained within construction hoardings ready for construction of the new buildings. Xafinity House and the NCP car park are still present on the Site. The NCP car park remains in use but Xafinity House is partly vacant and partly being used as a construction compound for the contractors working on the proposed Development.
- 3.2 The current quantum of existing land uses on the Site is shown in **Table 3.1**. This updates Table 3.2 of the 2019 Consented Scheme ES.

Table 3.1: Current Quantum of Land Uses on the Site

Use Class	Approximate Gross External Area (GEA) m ² (2019 Consented Scheme ES)	Approximate Gross External Area (GEA) m ² (current)
Office	16,765	0 (5,738m ² still present in Xafinity House but vacant except for construction contractor use)
Retail & Related Uses	5,743	0
Leisure m ²	0	0
Residential m ²	0	0
Total Floor Space Area	22,508	0
Car Parking spaces	1,089*	950

* This figure includes 950 spaces in the NCP car park, 58 spaces in Telecom House and 81 spaces in Xafinity House. The spaces in Telecom House and Xafinity House are not currently in use.

- 3.3 As described in Chapter 2, although the buildings within Plots E and F have been demolished since the 2019 ES Addendum, as this is a recent change to the Site conditions and forms part of the Development being assessed, the baseline conditions have been assumed to be the same as that presented in the 2019 Consented Scheme ES.

Sensitive Receptors

Existing Sensitive Receptors

- 3.4 As part of this ES Addendum, the Sensitive Receptors were reviewed to determine if new sensitive receptors were present in the surrounding area. The list of existing Sensitive Receptors is presented in Table 3.2. This updates Table 3.2 of the 2019 Consented Scheme ES. The list has been refined to remove residential units that are more than 150m from the Site as beyond this distance, impacts have previously been found not to be significant. In addition, 25a and b Friar Street have been

removed from the list of residential receptors as this is the Hotel Ibis rather than a residential receptor. The following residential receptors have been added since the 2019 ES Addendum:

- 53 Greyfriars Road – 20m west;
- First floor flat 127 Friar Street;
- Housing on Sackville Street;
- Malcolm Place, Caversham Road;
- 18-29 Regent Court.

Table 3.1: Potentially Sensitive Receptors

Category	Existing Sensitive Receptor/Land Use	Nearest Approximate Distance from the Site Boundary
Residential Properties (representative properties within 150m of the Site)	Garrard House, 30 Garrard Street	Immediately adjacent to the Site
	The Gateway Public House, 31 Greyfriars Road, with residential use at first floor level	15m west
	Malthouse Public House, 53 Greyfriars Road/Tudor Road junction, residential uses above the pub	15m west
	Summit House, 49-51 Greyfriars Road – serviced apartments	20m west
	53 Greyfriars Road	20m west
	Projection West, Merchant's Place (flats and serviced apartments)	20m south-east
	Projection East, Merchant's Place (flats and serviced apartments)	30m south-east
	Icon House, Merchant's Place	50m east
	7-11 Station Road	80m east
	32-34 Friar Street	35m east
	1 st Floor Flat, 125 Friar Street	20m south
	1 st Floor Flat, 127 Friar Street	20m south
	136-137 Friar Street	50m south east
	144 Friar Street	80m south-east
	Bridewell House/Samuel House (student accommodation), junction of Friar Street/Greyfriars Road	60m west
	Housing on Stanshawe Road	30m west
	Housing on Vachel Road	30m west
	Housing on Sackville Street	50m west
	3 to 21 Tudor Road	60m west
	Malcolm Place, Caversham Road	120m west
	33 Caversham Road	140m west
	18-29 Regent Court	125m west
Hotels	Malmaison, Station Road	70m east
	Novotel, 25b Friar Street	85m east

Category	Existing Sensitive Receptor/Land Use	Nearest Approximate Distance from the Site Boundary
	Ibis, 25a Friar Street	85m east
Commercial properties	Occupants of existing office and retail premises adjacent to the Site, including on Station Road, Friar Street and Greyfriars Road	Adjacent east, south and west
Educational	Forbury Gardens Day Nursery	600m east
Local Views	Views to and from the Site, (including those associated with listed buildings, conservation areas, Scheduled Monuments and historic parks and gardens)	Various
Built Heritage	Reading Abbey Scheduled Monument and Grade I Listed Buildings and associated Forbury Gardens Historic Park and Garden	300m east
	High Bridge Scheduled Monument	480m south-east
	Market Place/London Street Conservation Area	120m east
	St. Mary's Butts/Castle Street Conservation Area	250m south-west.
	Russell Street/Castle Hill Conservation Area (views from this area only).	350m south-west
	St Peter's Conservation Area (views from this area only)	850m north
	Grade I listed Greyfriars Church	120m south-west
	Grade I listed Church of St Laurence (views from this area only)	280m east
	Grade II Listed Queen Victoria Jubilee Statue	250m east
	Grade I listed St. Mary's Church in St. Mary Butts (views from this area only)	245m south-west
	Grade II* listed Town Council Chamber and Offices with Clock Tower	280m east
	Grade II listed Municipal Buildings Concert Hall	280m east
	Grade II Listed Municipal Buildings School of Art	280m east
	Grade II* listed Church of St Peter (views from this area only)	950m north
	Grade II listed St Giles' Church (views from this area only)	700m south
	Grade II listed (Three Guineas Public House) Reading General Station, Station Hill	30m north
	Grade II listed statue of King Edward VII	30m east
	Grade II listed Great Western House	50m south-east
	Grade II Listed 13 & 15 Station Road	60m east

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Category	Existing Sensitive Receptor/Land Use	Nearest Approximate Distance from the Site Boundary
	Grade II Listed Quadrant Walls and Railings to Former No.64 (Greyfriars Vicarage)	100m south-west
	Grade II listed The Mitre Inn, 47 West Street	125m south-west
	Grade II listed Regent Place	130m west
	Grade II Listed 11, 12, 13, 14 & 15 Friar Street	230m east
	Grade II listed 147 Friar Street.	150m south-east
	Grade II listed 154 Friar Street	230m east
	Grade II listed 155 Friar Street	230m east
	Grade II listed 1-31 & 2-32 Queen Victoria Street, 148, 149 & 150 Friar Street and 24-28 & 35-38 Broad Street	220m east
	Grade II listed Church of St James (views from this area only)	690m east
	Grade II listed 29 & 31 Caversham Road	160m west
	The Grade II Listed Walter Parsons Corn Stores	220m east
	Grade II Listed 55 and 55a St Mary's Butts	225m south
Archaeology	Potential archaeological remains beneath the Site; the southern part of the Site between Garrard Street and Friar Street is located within an Archaeology Priority Area	On-Site
Transportation	Users of Reading Mainline Railway Station together with the buses and the taxi rank on Station Road	Adjacent north and north-east
	Pedestrian, cyclists and other road users in the local area	Adjacent in all directions
	Users of buses including the bus interchanges located on Station Hill, Station Road and to the north of Reading Station	Adjacent to the north and east
Controlled Waters	Principal Aquifer (Seaford Chalk Formation)	Beneath the Site
	Secondary A Aquifer (Alluvium and the Taplow Gravel Formation)	Beneath the Site
	River Thames	400m north-east
	River Kennet / Kennet and Avon Canal	500m south-east
Habitats and Species	Black Redstart	On-Site
	Peregrine Falcon	On-Site

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Future Sensitive Receptors

- 3.5 Future potentially sensitive receptors are those receptors that are not yet present, but planning applications have been consented for developments surrounding the Site that would introduce sensitive receptors. These have, therefore, been considered in the assessments, where relevant. The list of future sensitive receptors was reviewed as part of this ES Addendum to identify if the planning applications previously considered remained valid or if any new planning applications had been submitted that may introduce new sensitive receptors into the area surrounding the Site in future.
- 3.6 Other than the future sensitive receptors on Site and at 52-55 Friar Street, the future sensitive receptors considered within this ES Addendum have changed since the 2019 ES Addendum because the applications included in the 2019 ES Addendum have either lapsed or been superseded and are therefore, no longer considered as a future sensitive receptor. 136-137 Friar Street Reading RG1 1EX (Planning application reference 150068) and 30-31 Friar Street, Reading (Planning application reference 150829) were identified as future sensitive receptors in the 2019 ES Addendum because change of use applications had been submitted for these properties; these applications have now lapsed and they are not considered within this ES Addendum. The application for 29-35 Station Road included in the 2019 ES Addendum for a change of use to provide residential units (Application Ref 141275) has been superseded by Application ref 181753 which is for office and a hotel use. However, a new future sensitive receptor has been identified from a change of use application to residential units at 20 Greyfriars Street. The future sensitive receptors considered in this ES Addendum are set out in Table 3.4. This updates Table 3.4 of the 2019 Consented Scheme ES.

Table 3.4: Future Sensitive Receptors / Land Uses

Category	Future Sensitive Receptor/Land Use	Nearest Approximate Distance from the Site Boundary
Residential Properties	Proposed: Residential Uses within the Site itself	On Site
	52-55 Friar Street and 12 Greyfriars Road, Reading (planning application reference 162210) - residential and retail redevelopment	Immediately adjacent to the west of the Site
	20 Greyfriars Road (planning application reference 200211). Application for change of use from offices to 43 residential units	Adjacent to the west of the Site

4. Alternatives and Design Evolution

- 4.1. No alternative development proposals for the Site have been considered since the 2019 Consented Scheme and the main alternatives remain as presented in the 2019 Consented Scheme ES.
- 4.2. Whilst no alternative development proposals for the Site have been considered since the 2019 Consented Scheme, the Proposed Amendments represent a design evolution of the South Site (to the south of Garrard Street) since the 2019 Consented Scheme ES and the rationale for the design evolution is set out below.

Design Evolution

- 4.3. This application differs from the previously 2019 Consented Scheme in that the Applicant proposes to provide additional homes and altered ground floor uses as part of their strategy to ensure that the scheme meets the changing market needs and is commercially viable over the long term.
- 4.4. In summary, the proposals will increase the number of residential units by approximately 10%, whilst retaining active frontages and increasing the types of commercial uses permitted at ground and lower ground levels. To deliver the residential units, an increase in height is proposed at three locations:
 - The western end of Friar Street where units are placed at the same level as the consented east end of the block;
 - The middle leg of Plot E, where two new floors are proposed; and
 - Across Plot F.
- 4.5. Two changes are also proposed to Friars Walk:
 - It is proposed to lower the southern courtyard on Plot E from its current first floor location to the same level as Friar Street and to face it on three sides with residential accommodation, as well as to provide views through the retail/commercial units along from Friars Walk; and
 - The provision of two storey maisonettes at the ground floor of Plot F.
- 4.6. All new homes will be designed so that they are consistent with the current architectural strategy and maintain the mixed-use, residential scale and character of Friars Walk. The inclusion of ground floor accessible dual aspect units will support the residential and domestic character of Friars Walk.

5. The Proposed Development

- 5.1. As set out in the 2019 Consented Scheme ES, the principles of the Development assessed, were defined by the Parameter Plans and a Design Code. These were secured through planning conditions. As a result of the Proposed Amendments, the Parameter Plans have been amended. The Design Code remains as described in the 2019 Consented Scheme ES. The changes brought about by the Proposed Amendments on the Description of the Development Chapter of the 2019 ES are described below.
- 5.2. Drawings of the proposed Development that were included within the 2019 ES and that have changed as a result of the Proposed Amendments have been replaced in this ES Addendum.

Overview of the Development

- 5.3. The minimum and maximum floorspace proposed for each land use compared with that of the 2016 and 2019 Consented Schemes is set out within Table 5.1 – this updates Table 5.1 of the 2019 Consented Scheme ES. Figures in bold text are those that have changed in the proposed Development (as amended by the Proposed Amendments). The maximum residential, office and back of house floor space areas have increased compared with the 2019 Consented Scheme. However, the residential amenity floor space, that was introduced as part of the 2019 Section 73 Applications, was combined with the overall residential floor space area within the 2019 Consented Scheme Decision Notices and is no longer separately identified.
- 5.4. Whilst the maximum retail and leisure uses are also shown to have increased, this is not a change that is being applied for, it is a result of a change in the details of Condition 6 of the 2019 Plot E Planning Consent (190442) compared with Condition 6 of the 2016 Plot E Planning Consent (151426). Condition 6 of the 2016 Plot E Planning Consent (151426) set a cumulative maximum floor space area within each land use class across the Plot E and Plot A to D & G Planning Consents (referenced 151426 & 151427). The sum of the maximum floor space areas within each land use class on each application was greater than the cumulative maximum, allowing flexibility in the arrangement of land uses across the Site. Within the 2019 Planning Consents, a similar cumulative maximum was not included. This ES Addendum has, therefore, amended the maximum floor space areas to reflect the latest planning position as set out within Condition 6 of the 2019 Planning Consent (planning references 190441 and 190442).
- 5.5. In addition to the above, the minimum area of retail use in Plot F (as set out in planning condition 54) has reduced as a result of the Proposed Amendments. These changes are described in the notes below Table 5.1.

Table 5.1: Proposed Total Minimum and Maximum Floorspace by Land Use

Land Use / Use Class	2016 Scheme Minimum External GEA	Consented Overall Gross Area (M ² GEA)	2016 Scheme Maximum External GEA	Consented Overall Gross Area (M ² GEA)	2019 Scheme Minimum External GEA	Consented Overall Gross Area (M ² GEA)	2019 Scheme Maximum External GEA	Consented Overall Gross Area (M ² GEA)	Proposed Development Overall Minimum Gross External Area (M ² GEA)	Proposed Development Overall Maximum Gross External Area (M ² GEA)
Retail (Use classes E and Sui Generis)	3,900*		13,500		3,900* [no change]		13,500 [no change]		3,900* [no change]	17,000 [amended to reflect combined floor areas of Condition 6 of 190441 and 190442]
Leisure (Class D2)	0		2,200		0 [no change]		2,200 [No change]		0 [no change]	3,200 [amended to reflect combined floor areas of Condition 6 of 190441 and 190442]
Residential	26,000 (300 units)		41,050 (475 units)		41,050 (475 units)		45,000 (550 units)		41,050 (475 units)	54,741 (599 units)
Offices (Class B1)	69,000		122,000		69,000 [no change]		122,000 [no change]		69,000 [no change]	123,000 [increase of 1,000m ² to allow for office space in Plot E]
Back of House Facilities	0		3,200		0 [no change]		3,200 [no change]		0 [no change]	3,257 [amended to reflect combined floor areas of Condition 6 of 190441 and 190442]
Residential amenity space (internal)	0		0		1000		1,500		0	0 [Residential amenity has been included in the residential floor space area and is not separately identified in Condition 6 of 190441 and 190442]
Total Floorspace	98,900		181,950		114,950		187,400		113,950	201,198
Car Parking	550		1000		550 [no change]		1000 [no change]		550 [no change]	1000 [no change]

* Within the 2015 ES the minimum area of retail was set at 6,000m². However, the planning conditions on 130436 and 151427 specify minimum areas of retail within each plot which totals 3,900m². The above table (including overall totals) has therefore been amended in line with the planning conditions. Although this change would result in a reduction of associated jobs as assessed in Chapter 7: Socio Economics of the 2015 ES, the overall assessment of effects would remain unchanged as demonstrated by the assessment presented in this ES Addendum.

1. All proposed floorspace figures exclude basement plans as per Condition 6 of Planning application reference 151426 & 151427 and 190441 & 190442.
2. The public realm may additionally include small retail kiosks (Use Class A1 –A5), which in total will not exceed 10% of the approved retail floorspace.
3. The leisure floorspace excludes the roof top pitches on the roof of Plot G.
4. Condition 54 of the Outline Planning Consent (130436 as amended by 151427) set a minimum amount of retail space in Plot F of 800m². This was amended as part of Planning Consent 190441 to a minimum of 350sqm retail in Plot F. However, following the detailed design process, Condition 54 will be amended such that the minimum retail floorspace area provided within Plot F is 75 sqm.

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Parameter Plans

- 5.6. As a result of the Proposed Amendments, a number of the approved Parameter Plans have been changed. For clarity, a full new suite of Parameter Plans and updated Phasing Plan (now referred to as a Sequencing Plan) has been prepared by CRTKL for each section 73 Application. In addition, as the EIA is of all Plots within the Site, a consolidated set of plans (showing all plots) has also been prepared and included in this ES Addendum (Volume 3). However, the consolidated plans would not be approved as part of the section 73 Applications.
- 5.7. A summary of the changes to the Parameter Plans and the revised plan references is set out in Table 5.2. This updates Table 5.2 of the 2019 Consented Scheme ES.

Table 5.2: Minimum and Maximum Building Heights.

Parameter Plan Number	Parameter Plan Title	Change since 2016 Consented Scheme	Change since 2019 Consented Scheme	Revised Plan References
1	Red line boundary plan	No change	No change	SHR-CRL-SB-ZZ-PL A-100-101-Rev P10 SHR-CRL-SB-ZZ-DR A-100-003- Rev P10 Consolidated plan referenced SHR-CRL-SB-ZZ-PL A-100-120-Rev P1
2	Demolition and Retained Buildings	No change	No change	SHR-CRL-SB-ZZ-PL A-100-102- Rev P11 SHR-CRL-SB-ZZ-PL A-100-111-Rev P10 Consolidated plan referenced SHR-CRL-SB-ZZ-PL A-100-121-Rev P1
3	Building Plot (including heights)	Change in the layout of Plot E to reflect the creation of two open courtyards rather than a single courtyard enclosed by a perimeter block as previously proposed. The 'zone for courtyard' in Plot F has also been removed as this is no longer required. The Limit of Deviation on the Plot F façades facing Friars Walk and Merchants Place have been increased from +/- 2.5m to +/-5m. The Limit of Deviation of the Friar Street façade of Plot E has	Increase in the maximum height of the south western part of Plot E from 66.5m AOD to 70m AOD. Increase in maximum height of Plot F from 85m AOD to 88m AOD. The dark blue hatch within the northern part of Plot E has been	SHR-CRL-SB-ZZ-PL A-100-103- Rev P50 SHR-CRL-SB-ZZ-PL A-100-112-Rev P50 Consolidated plan referenced SHR-CRL-SB-ZZ-PL A-100-122-Rev P50.

Parameter Plan Number	Parameter Plan Title	Change since 2016 Consented Scheme	Change since 2019 Consented Scheme	Revised Plan References
		increased from +/- 1.5m to +/- 2.5m. The minimum building height of Plot F has increased from 63m AOD to 81m AOD. The maximum building height of Plot F remains unchanged at 85m AOD. The minimum height of Plot E has reduced from 63m AOD to 50m AOD except in the north western corner of Plot E where the minimum height has increased from 63m AOD to 81.6m AOD. The maximum height of Plot E has also increased from 85m AOD to 85.6m AOD. The maximum height of the central section of Plot E (which is lower than the overall maximum height) has also increased from 78m AOD to 78.5m AOD.	extended slightly further south to allow for an increase in height of the middle arm of Plot E.	
4	Public realm	No change	No change	SHR-CRL-SB-ZZ-PL A-100-103- Rev P10 SHR-CRL-SB-ZZ-PL A-100-111-Rev P10 Consolidated plan referenced SHR-CRL-SB-ZZ-PL A-100-123-Rev P1
5	Vehicular and Pedestrian Access Routes	Amended to create an additional zone for servicing along the Friar Street frontage of Plot E.	No change	SHR-CRL-SB-ZZ-PL A-100-104- Rev P11 SHR-CRL-SB-ZZ-PL A-100-112-Rev P11 Consolidated plan referenced SHR-CRL-SB-ZZ-PL A-100-124-Rev P1
6	Ground floor uses	Amended to reflect the fact that leisure will be included at lower ground, mezzanine and ground floor level in Plot F (rather than first floor level as previously proposed) and also that Plot F will be predominantly mixed residential and retail uses at	Residential lobbies changed to residential entrances in the key defining active frontages to allow for duplex units at	SHR-CRL-SB-ZZ-PL A-100-106-Rev P50 SHR-CRL-SB-ZZ-PL A-100-115-Rev P50

Parameter Plan Number	Parameter Plan Title	Change since 2016 Consented Scheme	Change since 2019 Consented Scheme	Revised Plan References
		ground floor level rather than retail as previously shown. There is no change to this parameter plan in relation to Plot E	ground floor level, and cycle store at lower ground floor.	Consolidated plan referenced SHR-CRL-SB-ZZ-PL A-100-125-Rev P50.
7	Upper floor uses	Amended to remove leisure uses from first floor level in Plot F. There is no change to this parameter plan in relation to Plot E	No change	SHR-CRL-SB-ZZ-PL A-100-106-Rev P10 SHR-CRL-SB-ZZ-PL A-100-114-Rev P10 Consolidated plan referenced SHR-CRL-SB-ZZ-PL A-100-126-Rev P1
N/A	Indicative Sequencing	The sequencing is now anticipated to be Plots E and F as part of Phase 1 and Plots A, B, C, D and G as part of Phase 2.	The plan has been updated to show the sequencing as described in the 2019 Consented Scheme ES.	SHR-CRL-SB-ZZ-PL A-100-100-Rev P12 This has been included as figure 6.1 of this ES Addendum. This replaces Figure 6.1 of the 2019 Consented Scheme ES.

5.8. The above plans are included as Figures in Volume 3 of this ES Addendum.

Building Heights and Massing

5.9. Minimum and maximum building heights are annotated on Parameter Plan 3 (consolidated plan reference SHR-CRL-SB-ZZ-PL A-100-122-Rev P50). The maximum footprints would remain unchanged from the 2019 Consented Scheme. However, the maximum height of Plot F has been increased from 85m AOD to 88m AOD. Whilst localised changes have been made to the various heights of Plot E, the overall maximum and minimum height remains unchanged. The amendments are shown in Table 5.3. This updates Table 5.3 of the 2019 Consented Scheme ES. Whilst the minimum and maximum heights have changed slightly, the design rationale for the varying heights and relationship of building heights to each other, as set out in the 2019 Consented Scheme ES remains unchanged.

Table 5.3: Minimum and Maximum Building Heights.

Building Plot	Minimum Building Heights (metres Above Ordnance Datum (AOD))	Maximum Building Heights (m AOD)
Plot A	67m	91m
Plot B	94m	121m
Plot C	109m	128m

Building Plot	Minimum Building Heights (metres Above Ordnance Datum (AOD))	Maximum Building Heights (m AOD)
Plot D	75m	105m
Telecom House / Plot E	50m / 81.6m	66.5 to 85.5m
Plot F	81m	88m [increase from 85m AOD in the 2019 Consented Scheme]
Plot G	72m	83m

Land Uses

- 5.10. Parameter Plans 6 and 7 (consolidated plan references SHR-CRL-SB-ZZ-PL A-100-125-Rev P1 and SHR-CRL-SB-ZZ-PL A-100-126-Rev P1) illustrate the location and distribution of the proposed land uses within the Development. These remain as set out in the 2019 Consented Scheme. However, the residential unit numbers have increased to between 475 and 598 units rather than 475 units to 550 units as previously consented within the 2019 Consented Scheme. The unit mix remains consistent with the 2019 Consented Scheme; that is, 11% studio apartments, 46% one bedroom, 41% two bedroom and 2% three bedroom (note: the three bedroom % has been rounded down to 2% rather than rounded up to 3%, as previously, to allow a whole number unit mix to be applied). However, the affordable housing provision on site is now proposed to be 5%, rather than 10% as part of the 2019 Consented Scheme. These would comprise affordable rented levels with approximately half of the affordable housing being 1 bed apartments and half 2 bed apartments.
- 5.11. Retail uses in Plot F are lower than originally envisaged as part of the 2016 Consented Scheme with a minimum of 75m² of retail uses proposed rather than a minimum of 390m² approved as part of the 2019 Consented Scheme and a minimum of 800m² as part of the 2016 Consented Scheme.

6. Development Programme, Demolition and Construction

Programme of Works

- 6.1. An updated indicative sequencing plan has been prepared by CRTKL and is included as **Figure 6.1**. This updates Figure 6.1 of the 2019 Consented Scheme ES. Whilst the sequencing plan has been updated, the sequence remains as previously described in the 2019 Consented Scheme ES, that is Plots E and F would form Phase 1 of the Development with Plots A to D and G forming Phase 2.

Materials and Resource Use

Excavation and Demolition

- 6.2. This section remains as set out in the 2015 ES.

Construction

- 6.3. As set out in the 2019 Consented Scheme ES, the generation of waste material would occur at all stages of the construction process, from structural and foundation works to fit-out of the new buildings. Following a number of audits, the Building Research Establishment (BRE) has determined that, as a broad guideⁱ, approximately 18.1m³ of waste is generated in the construction of 100m² of residential developments, approximately 19.8m³ of waste is generated in the construction of 100m² of commercial offices, 20.98m³ of waste is generated in the construction of 100m² of retail developments, and 14.4m³ of waste is generated in the construction of 100m² of leisure developments. The waste generated by the construction of the Development has been estimated based on these figures, as shown in **Table 6.3**. This updates Table 6.3 of the 2019 Consented Scheme ES.

Table 6.3: Waste Arisings

Land Use/Use Class	Minimum Gross External Area (m ² GEA)	Waste Arisings (m ³)	Maximum Gross External Area (m ² GEA)	Waste Arisings (m ³)
Offices (Class B1)	69,000	13,662	123,000	24,354
Retail (Class A1-A5)	3,900	818	17,000	3,567
Leisure (Class D2)	0	0	3,200	461
Back of House Facilities	0	0	3,257	683
Residential	41,050	7,430	54,741	9,908
Total Floorspace	114,250	21,910	201,198	38,973

- 6.4. Using the BREs broad indicators, and including additional waste generated by the refurbishment of the car park, it is estimated that approximately 42,000m³ of waste would be generated, equivalent to approximately 8,400m³ per year. This is slightly higher than that of the 2019 Consented Scheme, which estimated that there would be approximately 41,000m³ of waste generated, equivalent to approximately 8,200m³ per year. This due to the slight increase in floor space areas. However, as set out in the 2015 ES, all relevant contractors would be required to investigate opportunities to minimise waste arisings at source and, where such waste generation is unavoidable, to maximise

the recycling and reuse potential of demolition and construction materials. Wherever feasible, such arisings would be dealt with in a manner that reduces environmental impact and maximises potential re-use of materials.

- 6.5. The remainder of this chapter remains unchanged from the 2019 Consented Scheme ES and has, therefore, not been repeated in this ES Addendum.

ⁱ Building Research Establishment, June 2012, BRE Waste Benchmark Data, Watford

7. Socio Economics and Health

Introduction

- 7.1. This Chapter provides an update to the Socio-Economic baseline and assesses the Socio Economic effects associated with the proposed Development. The Development considered within this Chapter is the 2019 Consented Scheme as amended by the Proposed Amendments to Plot E and F. The key differences between the Development and the 2019 Consented Scheme of relevance to the socio-economic impact assessment is the increase in the maximum number of residential units, and an increase in the maximum commercial (retail and leisure) floorspace.
- 7.2. An assessment of the potential for health-related effects associated with the proposed Development was undertaken as part of a separate Health Impact Assessment that was appended to the Socio Economics and Health Chapter of the 2019 Consented Scheme ES. Significant health related effects were also summarised in the Socio Economics and Health ES Chapter. As the Proposed Amendments have not resulted in significant changes to the information presented in the HIA, it has not been reproduced as part of this ES Addendum. The health related effects have, nevertheless, still been summarised in this Chapter for clarity and consistency.
- 7.3. This assessment has been prepared by Hatch Regeneris and should be read in conjunction with the 2019 Consented Scheme ES.

COVID-19

- 7.4. Since early 2020 the outbreak of the global COVID-19 ('coronavirus') pandemic has had significant and adverse effects on society and the UK economy as a whole. In relation to socio-economics, the most noticeable impacts include employment levels and spending. However, the most recent publicly available data largely reflects economic and social conditions prior to the outbreak of coronavirus due to the timing of annual surveys and a lag in reporting. Notwithstanding this, the Office for Budget Responsibility (OBR) project that despite the severe immediate economic effects of the pandemic, a longer-term period of economic recovery to pre-pandemic levels will occur by 2026. On this basis, this socio-economic assessment has assessed the potential impacts against pre-pandemic baseline levels.

Legislation, Planning Policy and Guidance

- 7.5. This section provides a summary of any new or updated legislation, planning policy and guidance since the 2019 Consented Scheme ES.

National Legislation and Policy

National Planning Policy Framework, 2019

- 7.4 The National Planning Policy Framework (NPPF)¹ was introduced in 2012 and revised in July 2018 and February 2019 with an erratum (to remove paragraph 209a relating to minerals planning) in June 2019. As the parts of the NPPF relevant to this Socio Economics and Health Chapter have not changed since preparation of the 2019 Consented Scheme ES, it is not discussed further within this Chapter.

Local Policy

Reading Borough Local Plan, Adopted (November 2019)

- 7.5. Reading Borough Council (RBC) adopted its Local Plan in November 2019² which replaces the previous plan (the Core Strategy, Reading Central Area Action Plan and Sites and Detailed Policies Document). The new plan sets out how Reading will develop up to 2036. The plan defines the amount of development that will take place within the borough, the areas and sites where development is expected to be accommodated, and where it will be restricted, and sets out policies for how planning applications will be decided.
- 7.6. The priorities of the plan, described in paragraph 2.1.7 are as follows:
- *“Safeguarding and protecting those that are most vulnerable;*
 - *Providing the best help through education, early help and healthy living;*
 - *Providing homes for those most in need;*
 - *Keeping the town clean, safe, green and active;*
 - *Providing infrastructure to support the economy; and*
 - *Remaining financially sustainable to deliver these service priorities.”*
- 7.7. The Local Plan for Reading sets out in Policy H1, a housing target of 15,847 new dwellings to be delivered in the period 2013-2036 equating to 689 dwellings per annum (dpa) and with an affordable housing target of 30% on sites with 10 dwellings or more.
- 7.8. The Plan also notes in paragraph 3.2.4, that around 7,600 new homes are expected to be delivered within the central area of Reading over the plan period. The Plan indicates that a mix of different sized dwellings are required in the Central area of Reading and sets maximum threshold for the proportion of one-bedroom units (40%) together with a minimum threshold for the proportion of three bedroom units (5%) in order to ensure a diverse mix of sizes.

Station Hill South Planning and Urban Design Brief, 2007

- 7.9. The information in this document remains the same as described in paragraphs 7.24 and 7.25 of the 2015 ES.

[Station Area Framework, 2010](#)

- 7.10. The information in this document remains the same as described in paragraphs 7.26 and 7.27 of the 2015 ES.

[Affordable Housing Supplementary Planning Document, 2013](#)

- 7.11. The information in this document remains the same as described in paragraph 7.28 of the 2015 ES.

[Employment, Skills and Training Supplementary Planning Document, 2013](#)

- 7.12. The information in this document remains the same as described in paragraph 7.29 of the 2015 ES.

Assessment Methodology and Significance Criteria

- 7.13. The assessment methodology has remained largely the same as that presented in the 2019 Consented Scheme ES although the data and assumptions have, in some cases, been updated. In terms of baseline conditions, other than the 2011 Census, the baseline socio economic survey data has been updated since the 2019 Consented Scheme ES. The revised baseline data sources and calculation methodologies are described below.

- 7.14. The baseline socio-economic conditions used to inform this Chapter have been established through the interpretation of nationally recognised research and survey information, including:

- 2011 Census data³;
- Business Register and Employment Survey data (2018)⁴;
- Indices of Multiple Deprivation (2019)⁵;
- Claimant Count (JSA) data (2019)⁶;
- National Health Service (NHS) Choices and NHS South Reading Clinical Commissioning Group (CCG);
- Department for Education (DfE) (school locations and capacity information); and

- 7.15. Where relevant, the assessment of effects has been undertaken using the following methods, estimates and assumptions:

- Construction related employment effects have been assessed using the Homes and Communities Agency (HCA) Labour Coefficients¹ (person years of employment per £1m spend) applied to the costs associated with the demolition and construction works. Person years of employment are divided by the expected timescale of the demolition and construction works to

¹ See Homes and Communities Agency (2015), 'Calculating Cost Per Job – Best Practice Note. Third Edition'

provide an average annual number of jobs. This method is the same as that used in the 2019 Consented Scheme ES;

- Completed Development commercial floorspace employment was calculated by applying standard job density ratios and based on the quantum of Development sought for approval. The jobs density ratios remain the same as those used in the 2019 Consented Scheme ES⁷;
- Completed Development population projections have been forecast using a model based on data from the 2011 Census (Average Household Size of 1.99 for Abbey Ward). The methodology remains the same as stated in the 2019 Consented Scheme ES;
- An estimate of the demand for education provision within the 2015 ES was calculated based on the child yield methodology set out in Reading Borough Council's SPD on Planning Obligations published in 2004⁸. This document was updated in 2015 and the 2004 version is no longer available. However, the child yield methodology has not been included in the 2015 revisions to the SPD. In the absence of any further guidance on this matter, Brighter Futures for Children² have advised that pupil product ratios produced by Cognisant are suitable for use in Reading. These ratios have been applied to an assumed housing mix for the maximum number of units (599) which reflects a worst-case scenario in terms of child yield;
- An estimate of the spending generated as a result of the completed and operational Development is calculated using an average regional household expenditure figure of £187.30 per week on convenience and comparison goods (ONS, 2019)⁹ and £12³ per day¹⁰ on food and drink by employees. This is broadly the same approach as used in the 2019 Consented Scheme ES although spending figures have been updated to reflect more recently available data and to take account of expenditure on convenience and comparison goods rather than total expenditure; and
- A comparison of the existing average ratio of patients to General Practitioners (GPs) with the most frequently used planning assumptions of an acceptable average ratio of 1,800 patients per GP. This is the same as the approach used in the 2019 Consented Scheme ES.

Approach to Outline Assessment

- 7.16. The assessment of the Development has been based on the minimum and maximum area schedules set out in Chapter 5: Description of Development, to identify the likely significant effects.
- 7.17. The ranges proposed would vary the level of employment generated by the commercial floorspace, and the increase in residential units would result in associated population effects. Therefore, for the purpose of this assessment and the associated effects arising from the Development, two development scenarios are assessed. The minimum development scenario is based on the minimum area schedule and includes 72,900m² GEA of commercial floorspace (Use Class E (formerly known as B1 and A1-5)) and 475 residential units. The maximum development scenario is based on the maximum area schedule and includes 143,200m² GEA commercial and leisure floorspace (Use Class E (formerly known as B1, A1-5 and D2)) and 599 residential units. These figures exclude back of house, residential amenity space or car parking areas as this is not typically included in employment calculations. However, an estimate of employment generated by these elements in the impact assessment section later in this Chapter.

² Bright Futures are Reading Borough Council's Children's Social Services.

³ Visa Europe 2014. N.B. this figure has been updated to 2018 prices

Approach to Future Baseline

- 7.18. For the purposes of this assessment it has been assumed that the on-Site uses would remain were it not for the proposed Development. The future baseline scheme at the former Coopers BMW site will result in additional residential floorspace coming forward resulting in increased housing provision and overall population growth. This change in the baseline position may bring about increased demand for social and community infrastructure, such as healthcare, education and open space. The extent to which the capacity of these facilities will evolve is not possible to quantify as it will depend on mitigation measures adopted as part of the future baseline scheme (including built-in mitigation as well as the deployment of S106/Community Infrastructure Levy by the Council).

Limitations and Assumptions

- 7.19. The assessment of effects was carried out against socio-economic baseline conditions as defined by the data sources referenced throughout this Chapter. As with any data set, these may be subject to change.
- 7.20. The assessment of effects assumes that the Development would be constructed in accordance with the parameters and area schedules being applied for.

Comparison with the 2019 Consented Scheme

- 7.21. As discussed in the Planning Background section of Chapter 1 of this ES Addendum, the Site benefits from existing planning consents, collectively referred to as the 2019 Consented Scheme. The key differences between the 2019 Consented Scheme and the proposed Development (that is the 2019 Consented Scheme as amended by the Proposed Amendments) in relation to socio-economics impacts are set out under each area of assessment in order to provide a clear comparison.

Significance Criteria

- 7.22. The significance criteria used in the assessment of socio economic effects remain the same as set out in paragraphs 7.41 to 7.44 of the 2015 ES.

Baseline Conditions

- 7.23. This section provides an update to the socio-economic baseline conditions set out within the Baseline Conditions section of the 2019 Consented ES. Where there has been either no change in conditions reported in the 2019 Consented ES, or there is no more recently published data, this has been stated.

Existing Site and Spatial Context

- 7.24. Telecom House and Friars Walk Shopping Centre which previously occupied the South Site have been demolished. However, at the time of the 2019 ES Addendum, Savers retail unit was still occupied. With 482 sqm Gross Internal Area (GIA)/434 sqm Net Internal Area⁴ (NIA) it was estimated that the unit supported 25 FTE jobs. As the baseline conditions are being assumed to

⁴ Based on the HCAs employment density guidance (3rd Edition) a 90% ratio has been applied to convert GIA to NIA and an employment density of 17.5 sqm (mid-way between 15-20) has been used.

be those in existence in March 2019, reference to the 25 existing jobs will be maintained within this Chapter.

- 7.25. The North Site is occupied by Xafinity House (a vacant office building which is currently being used by the contractors undertaking works at the Development) and the NCP car park, which is still in use. The central part of the North Site is currently open land behind construction hoardings following the demolition of the Mecca Bingo Hall, Bus Station, Western Tower and the associated retail arcade in 2016.
- 7.26. The Site is located in Reading Town Centre, within Abbey Ward in the administrative boundary of RBC.

Demographics

Population

- 7.27. According to ONS mid-year population estimates of 2019¹¹, there are 14,880 people living in Abbey ward. This represents 9% of Reading's population of 161,780. The ward's population was around 9,700 in 2007, indicating an increase of 5,170 or 53%. Over the same period, Reading's population grew by 12,080 or 8%.

Age Profile

- 7.28. Based on ONS mid-year population estimates of 2019¹¹, Abbey ward has a higher proportion of working-age residents (77% are aged between 16 and 64) than Reading (67%) and the South East (61%). This is shown in Table 7.1. Abbey ward has a young working-age population, with 61% of working-age residents aged 45 or under, compared to Reading (46%) and the South East (36%). There is a lower proportion of children living in Abbey ward (17% of residents are under 16 years old) compared to Reading (21%) and the South East (19%).

Table 7.1: Age Profile

	Abbey Ward		Reading Borough		South East	
	2018 No.	2018 % Share	2018 No.	2018 % Share	2018 No.	2018 % Share
Total residents	14,876	100%	161,780	100%	9,180,135	100%
0-15	2,560	17%	33,814	21%	1,767,424	19%
16-64	11,395	77%	107,696	67%	5,621,495	61%
16-45	9,034	61%	73,672	46%	3,315,766	36%
65+	921	6%	20,270	13%	1,761,765	19%

Source: Mid-Year Population Estimates, Office for National Statistics, 2018

Ethnicity

- 7.29. The available baseline data on ethnicity remains the same as described in the Ethnicity Section of the 2019 Consented Scheme ES.

Qualifications

- 7.30. Abbey ward has a high proportion of residents with at least degree level qualifications. According to the 2011 Census¹², 50% of residents hold these qualifications compared to 35% in Reading and 30% in the South East. However, based on Annual Population Survey¹³ data for 2019, this proportion has risen to 49% for Reading and 43% for the South East.

Economic Profile

Unemployment

- 7.31. Economic activity refers to residents who are either in employment or actively seeking employment. According to data from the 2011 Census¹², 80% of usual residents aged 16 to 74 in Abbey ward were economically active. This compared to 74% in Reading and 72% in the South East. However, the Annual Population Survey¹³ provides more up to date information on Reading and the South East. In 2018, Reading had an economic activity rate of 83%, while the South East had 82%.
- 7.32. The 2011 Census¹² also provided information on the unemployment rate of economically active residents. 5.1% in Abbey ward were unemployed compared to 4.6% in Reading and 3.4% in the South East.
- 7.33. Claimant count data from March 2019 shows that 3.2% of economically active residents in Abbey ward are both claiming work-related benefits and actively seeking employment. This compares to 2.8% in Reading and 2.2% in the South East.

Occupation and Industry

- 7.34. The available baseline data on Occupation and Industry remains the same as described in the Occupation and Industry section of the 2019 Consented Scheme ES.

Business Base

- 7.35. There are 43,500 jobs in Abbey ward, according to the Business Register and Employment Survey¹⁴ from 2018. This represents 41% of Reading borough's 106,700 jobs.
- 7.36. The largest sector in Abbey ward is financial and professional services with 23% of total jobs in this sector. This sector makes up a larger proportion of jobs in Abbey ward compared to both Reading and the South East.

- 7.37. The second and third most common sectors in Abbey ward are retail and public admin, education and health with each sector accounting for 14% of total jobs. The share of retail is slightly higher than the job share in Reading and the South East at 12% for each, meanwhile the job share of public admin, education and health is notably lower than the 22% in Reading and 25% in the South East.

Table 7.2: Key Sectors

	Abbey Ward		Reading Borough		South East	
	No.	% Share	No.	% Share	No.	% Share
Agriculture and Mining	0	0%	0	0%	55,300	1%
Business Support Services	4,600	11%	10,900	10%	351,200	8%
Construction	400	1%	2,400	2%	227,000	5%
Creative	5,500	13%	16,200	15%	270,500	6%
Financial and Professional Services	10,100	23%	16,500	15%	541,200	13%
Hospitality, Leisure and Recreation	3,900	9%	8,400	8%	432,600	10%
ICT & Digital	200	0%	400	0%	36,500	1%
Manufacturing	300	1%	2,000	2%	266,100	6%
Other Services	400	1%	1,800	2%	79,700	2%
Public Admin, Education, Health	6,000	14%	23,900	22%	1,077,500	25%
Retail	6,300	14%	13,200	12%	494,700	12%
Transport	2,200	5%	3,000	3%	119,700	3%
Utilities and Waste - gas, water, electricity	2,600	6%	3,200	3%	49,700	1%
Warehousing and Logistics	200	0%	1,600	1%	77,100	2%
Wholesale	700	2%	3,400	3%	207,200	5%

Source: Business Register and Employment Survey, Office for National Statistics, 2018

Housing Profile

- 7.38. The available baseline data on the housing profile remains the same as described in the Housing profile section of the 2019 Consented Scheme ES.

Deprivation

- 7.39. The Index of Multiple Deprivation¹⁵ (IMD) measures a number of social, economic and housing indicators to measure deprivation across lower super output areas (LSOA) across England. Table 7.3 shows how Reading's LSOAs perform in terms of the different domains and overall. Of the 97 LSOAs in Reading, only 10 are in the top 20% most deprived LSOAs nationally. None of these ten LSOAs is located in Abbey ward. Figure 7.2 shows the level of deprivation in Reading Borough. This has been updated since the 2019 Consented Scheme ES.

Table 7.3: Index of Multiple Deprivation

	Overall	Income	Employment	Education, Skills and Training	Health Deprivation and Disability	Crime	Housing and Access to Services	Living Environment
Top 10% Deprived	5	3	1	9	1	6	9	6
Top 20%	5	9	7	10	8	8	29	15
Top 30%	17	13	9	11	9	17	16	8
Top 40%	14	13	10	10	23	15	14	7
Top 50%	14	9	14	4	14	13	11	12
Bottom 50%	42	50	56	53	42	38	18	49

Source: Index of Multiple Deprivation, Ministry of Housing, Communities and Local Government, 2019

Crime

- 7.40. Given the Site's location within Reading town centre and its proximity to a major transport interchange it would be expected to have higher crime rates, particularly for opportunistic crimes. Town centres tend to have higher crime levels due to concentration of people passing through and the mix of uses such as retail, entertainment and transport interchanges.
- 7.41. The crime domain of the IMD measures the incidence of recorded crime including burglary, theft, criminal damage and violence. Figure 7.3 illustrates the crime IMD figures; this has been updated since the 2019 Consented Scheme ES. This shows that 14 of Reading's 97 LSOAs are in the 20% most deprived LSOAs nationally in terms of crime, five of which are in Abbey Ward.
- 7.42. Data from the ONS¹⁶ show that overall crime figures have risen in the Thames Valley area since March 2019. Table 7.4 sets out a summary of notifiable offences in Reading as the number of crimes per 1,000 population.

Table 7.4; Crime Data

Crime Type	Crimes per 1000 population	
	2018/19	2019/20
Violence Against the Person	20.2	23.0
Sexual Offences	2.3	2.4
Robbery	0.7	0.7

Crime Type	Crimes per 1000 population	
	2018/19	2019/20
Burglary	4.9	4.6
Vehicle Offences	7.2	8.0
Criminal Damage and Arson	7.9	7.9
Total Victim Based Crime	43.3	46.6
Crimes Against Society (Drugs, public disorder, possession of weapons etc.)	7.2	8.5
All Crime	50.5	55.1

Source: Police Force Area Data Tables, Office for National Statistics

Social Infrastructure

Education

- 7.43. There is a total of 40 primary schools and 10 secondary schools across the borough of Reading.¹⁷ These are also illustrated on Figure 7.4 of the 2019 Consented Scheme ES; this remains unchanged and has therefore not been reproduced in this ES Addendum.
- 7.44. The Council's latest Infrastructure Delivery Plan¹⁸ (IDP) suggests there is a borough-wide lack of surplus capacity within primary and secondary schools, in particular amongst primary schools. According to the IDP, Reading sends about 10% of primary pupils and 38% of secondary pupils across the borough's boundaries to attend school in surrounding authorities.
- 7.45. For primary schools, the Education Authority has identified pressure on capacity in the east of Reading, the town centre and along the Oxford Road corridor. According to the IDP, housing growth will exacerbate this position.
- 7.46. Table 7.5 sets out capacity data for schools that fall within 3.2 km (two miles) of the Site. This suggests that 6 of the 26 primary schools within the catchment of the Site is currently over capacity. Among the schools within the catchment, there are 758 surplus places.

Table 7.5: Primary Schools

Name of School	Capacity	Pupil Roll	Surplus
Alfred Sutton Primary School	682	688	-6
All Saints Church of England Aided Infant School	60	60	0
All Saints Junior School	100	95	5

Name of School	Capacity	Pupil Roll	Surplus
Battle Primary Academy	472	424	48
Caversham Primary School	450	447	3
Civitas Academy	420	209	211
Coley Primary School	300	273	27
E P Collier Primary School	472	350	122
Emmer Green Primary School	420	450	-30
Katesgrove Primary School	708	681	27
Micklands Primary School	420	400	20
New Christ Church Church of England Primary School	210	184	26
New Town Primary School	472	290	182
Oxford Road Community School	292	286	6
Ranikhet Academy	236	256	-20
Redlands Primary School	210	269	-59
Southcote Primary School	600	593	7
St Anne's Catholic Primary School	237	220	17
St John's Church of England Primary School	420	468	-48
St Mary & All Saints Church of England Primary School	460	360	100
Thameside Primary School	420	408	12
The Heights Primary School	350	276	74
The Hill Primary School	420	450	-30
The Palmer Primary Academy	498	441	57
Whitley Park Primary and Nursery School	630	631	-1
Wilson Primary School	477	469	8
Total	10,436	9,678	758

Source: School Capacity Survey, Department for Education, 2020

- 7.47. In terms of secondary schools, there are 10 across the Borough of Reading, with the closest to the Site being Kendrick School, which has a capacity of 760 and a current pupil roll of 739. Table 7.6 provides a list of secondary schools within the borough together with their capacity information. The data indicates that only one school is over capacity, while the majority have a current surplus in capacity. However, by 2023/24, data from the DfES suggests that demand will outstrip capacity and there will be a requirement for additional secondary school places in the borough to meet demand.

Table 7.6: Secondary Schools

Name of School	Capacity	Pupil Roll	Surplus
UTC Reading	849	815	34
John Madejski Academy	950	612	338
Highdown School and Sixth Form Centre	1440	1357	83
Kendrick School	760	739	21
Reading School	887	1027	-140
Prospect School	1700	1044	656
UTC Reading	600	453	147
Maiden Erlegh School in Reading	900	715	185
The WREN School	1176	589	587
Reading Girls' School	947	405	542
Total	10,209	7,756	2,453

Source: School Capacity Survey, Department for Education, 2020

Healthcare

- 7.48. Healthcare facilities within 1.6km of the Site are illustrated on Figure 7.5. This remains unchanged and has therefore not been reproduced in this ES Addendum. There are ten GP surgeries within 1.6km (1 mile) of the Site¹⁹. All of these surgeries are currently accepting new patients. Within these surgeries there are 58 GPs operating (based on information available from the NHS, which assumes each GP is a full time equivalent). The average list size of these surgeries is approximately 1,725 patients per GP. The Healthy Urban Development Unit (HUDU) benchmark list size is 1,800 patients per FTE GP. This indicates there may be some surplus capacity within the existing surgeries and represents a slight increase in capacity compared to the baseline position set out within the 2019 Consented Scheme ES.

Open Space

- 7.49. The available data on Open Space remains as described in the Open Space section of the 2019 Consented Scheme ES.

Potential Effects

Demolition and Construction

- 7.50. The existing uses on the Site include a vacant office building and the Garrard Street NCP car park. There is therefore no employment currently generated by the Site, other than construction employment associated with the proposed Development. However, at the time of the 2019 ES Addendum one retail unit was in occupation, and accommodated up to 25 FTE jobs (as set out in the baseline).
- 7.51. The Development would require the retention and refurbishment of the car park and the demolition of the remaining buildings on the Site.

Loss of Existing Employment

- 7.52. The 25 jobs present on site at the time of the 2019 ES Addendum have been displaced. It is assumed that these jobs have relocated within the Borough and have not been lost to the economy as a whole. Therefore, the potential effect of the proposed Development on employment compared with the baseline conditions at the time of the 2019 ES Addendum, remains unchanged from that set out within the 2019 Consented Scheme ES that is **temporary, short term, adverse** and of **minor significance** at the local level. There would be no loss of employment when compared with the baseline conditions currently present on the Site, which would therefore be considered a negligible effect. In the **long-term**, the effect is considered **negligible**.

Construction Employment

- 7.53. The likely direct effects of the construction employment on regional construction levels remains unchanged from that set out within the 2019 Consented Scheme ES, that is **negligible**.

Construction Workforce Spending

- 7.54. The likely effect of the construction phase on spending remains unchanged from that set out within the 2019 Consented Scheme ES, that is **temporary, short-term, beneficial** and of **minor significance** at the **local level**.

Completed Development

- 7.55. The proposed Development would result in the comprehensive redevelopment of the Site. The mixed-use proposals would comprise of the following land uses:

- Office (Use Class E);
- Retail (Use Class E/F2/Suis Generis.);
- Leisure (Use Class E/F1.);
- Residential (475 to 599 units);
- Public realm and open space; and
- Car parking.

7.56. The completed Development would have a range of effects including employment generation, delivery of new housing, effects on social infrastructure and the creation of new areas of open space and public realm.

Employment

7.57. The provision of office, retail and leisure floorspace would generate employment on Site. The minimum and maximum parameters would vary the level of employment generated by the commercial floorspace. Table 7.7 sets out the number of FTE jobs generated based on the minimum and maximum Gross External Area (GEA) floorspace proposed within the Development using standard job densities as set out in the Methodology Section.

Table 7.7: Proposed Employment Generating Floorspace and Job Creation

Land Use	Min. GEA (m ²)	Max. GEA (m ²)	Jobs Min.	Jobs Max.
Office (B1)	69,000	123,000	4,760	8,480
Retail (A1-A4)	3,900	17,000	190	830
Leisure (D2)	0	3,200	0	40
Total			4,950	9,350

Source: Hatch Regeneris

Note: Job numbers have been rounded to the nearest 10

7.58. Table 7.7 indicates that the Development would generate a minimum of 4,950 FTE jobs and a maximum of 9,350 FTE jobs through the commercial end uses. This compares with the 2019 Consented Scheme ES which estimated that the Development would generate 4,900 FTE jobs and a maximum of 9,100 FTE jobs through the commercial end uses. However, this change has primarily been brought about as a result of the cumulative maximum floor space areas across the two planning consents covering the Site not having been incorporated into Condition 6 of the Plot E decision notice (planning reference 190442). An increase in office floor space area only is being sought, to allow up to 1,000m² of this land use in Plot E. This results in up to an additional 80 FTE jobs.

- 7.59. In addition, a small number of jobs (up to 10) would be created from car-parking and residential uses through management and maintenance roles. This is consistent with the 2019 Consented Scheme ES.
- 7.60. Despite some changes to the amount of floorspace uses described above from the 2019 Consented Scheme ES, the overall effect of the additional employment created on Site remains unchanged, that is **substantial beneficial** in the **long term** at **district level**.

Demand for Housing

- 7.61. The Development would deliver a minimum of 475 and a maximum of 599 residential build-to-rent units. These would be studio, one, two and three-bedroom apartments and would include 5% affordable units. These units would make a significant contribution towards Reading's annual housing targets, equating to between 3% and 4% of the of the 2013-2036 housing target (15,847) set out within the Local Plan, 2019 and between 6% and 8% of the target (7,600) for the central area of Reading for the same period. The units will be build-to-rent units thereby contributing to the variety and mix of units on offer in the centre of Reading.
- 7.62. Although there has been an increase in the maximum number of residential units provided as part of the Development compared with the 2019 Consented Scheme, the overall effect of the Development in delivering new housing remains unchanged from the 2019 Consented Scheme ES, that is **moderate beneficial** in the **long term** at the **local** level. At the Borough (District) level, the overall effect is considered to be minor beneficial in the long term.

Population

- 7.63. The expected residential population of the new housing is estimated to be between 950 and 1,190 people⁵. This compares to an estimated population of between 950 and 1,100 residents for the 2019 Consented Scheme ES; that is up to an additional 90 people. These new residents would create demand for community facilities, particularly primary healthcare, education and open space. These are considered in further detail below.

Education

- 7.64. Based on the methodology set out earlier in this Chapter, it is estimated that there would be around 56 primary school children, 15 secondary school children and around 6 post-16 aged children living within the new residential units. This compares to 53 primary school children, 14 secondary school children and around 5 post-16 aged children calculated as part of the 2019 Consented Scheme ES.

⁵ Based on an average household size for Abbey Ward of 1.99 derived from the Census 2011

- 7.65. However, the net demand for school places could be lower than predicted as some children living within the Development are likely to have moved from within the local area and therefore already have a place in schools in the area.
- 7.66. As set out in the Baseline Section there are fourteen primary schools within 3.2 km of the Site. There are 758 surplus places within these schools. Additional pressure on existing primary schools may have been generated from residential schemes that have been completed subsequent to the data on school capacity being collated (2019). In light of this, and despite of the overall surplus in capacity at present, without mitigation, increased demand for primary school places is assessed to remain unchanged from the 2019 Consented Scheme ES that is of **minor adverse** significance at the **local** level.
- 7.67. Across Reading Borough there are ten secondary schools, which have a surplus of 2,453 places amongst them. Whilst additional pressure may have been generated from housing completions since the schools' data was collated (2019), given the relatively small number of secondary school pupils anticipated to be generated by the proposed Development the effect of the Development is assessed to remain unchanged from the 2019 Consented Scheme ES, that is **negligible**.

Healthcare

- 7.68. The additional population could increase demand for primary healthcare facilities. As set out in the Baseline Section above, there is considered to be some limited surplus capacity available locally based on the average number of patients per GP in the local surgeries compared to the HUDU benchmark of 1,800 patients per GP. Despite an increase in capacity from the 2019 Consented Scheme ES, the additional population has increased and therefore, without mitigation the effect of the Development on demand for primary healthcare is assessed to remain unchanged from the 2019 Consented Scheme ES that is of **minor adverse** significance at the **local** level. Further details can be found in the Health Impact Assessment (HIA) appended to this Addendum.

Additional Spending

- 7.69. In addition to the direct effect of additional employment and housing on Site there are likely to be indirect spending effects as a result of the Development.
- 7.70. ONS data estimates that the average weekly household spending on comparison and convenience goods in the South East is £187.30 per week. Therefore, the additional 475 – 599 residential units are estimated to generate spending of £4.6 million to £5.8 million per year.
- 7.71. Employees working on Site would also generate additional spending. As set out in the Assessment Methodology section above, research shows that on average workers spend £12 per day on food and drink alone in the area local to their place of employment. Therefore, as a result of the Development, local spending by employees could range from £13.9 million to £26.4 million per year.

- 7.72. Given the town centre location of this Site, it would be expected that a significant proportion of this spending would be captured locally.
- 7.73. On the basis of the above, the generation of additional spending as a result of the Development is assessed to remain unchanged from the 2019 Consented Scheme ES, that is of **minor beneficial** significance under the minimum Development scenario to **moderate beneficial** significance under the maximum Development scenario in the **long term** at the **local** level.

Open Space

- 7.74. There is currently no open space on the Site. The Development would include approximately 5,500m² of public realm which remains unchanged from the 2019 Consented Scheme ES. In addition, each apartment would have access to a shared amenity space and / or private balcony. A minimum of 6m² of private or shared amenity space would be provided per residential unit.
- 7.75. The effect of the proposed Development on delivering open space and improved public realm therefore remains unchanged from the 2019 Consented Scheme ES, that is of **minor beneficial** significance in the **long term** at the **local level**. Further details can be found in the HIA appended to this Addendum.

Crime & Safety

- 7.76. As stated in the 2019 Consented Scheme ES, the masterplan for the Development has considered various aspects of crime and safety in order to minimise opportunities for crime on Site. The effect of the proposed Development on crime and safety therefore remains unchanged from the 2019 Consented Scheme ES that is of **minor beneficial** significance in the **long term** at the **local** level. Further details can be found in the HIA appended to this Addendum.

Mitigation

Demolition and Construction

- 7.77. The mitigation measures for the demolition and construction phase remain unchanged from those described within paragraphs 7.116 to 7.118 of the 2015 ES.

Completed Development

- 7.78. The mitigation measures for the completed development remain unchanged from those described within paragraphs 7.119 to 7.120 of the 2015 ES.

Residual Effects

Demolition and Construction

- 7.79. The residual effects for the demolition and construction phase remain unchanged from those described within paragraphs 7.121 of the 2015 ES.

Completed Development

- 7.80. The significance of the residual effects for the Completed Development remain unchanged from those described within paragraphs 7.122 to 7.129 of the 2015 ES.

Summary and Conclusions

Summary of Effects

- 7.81. A summary of potential and residual socio-economic effects of the Development are summarised within Table 7.8. All the effects and mitigation remain unchanged from that set out in the 2019 Consented Scheme ES.

Table 7.8: Summary of Effects

Issue	Potential Effect	Mitigation	Residual Effect
Demolition and Construction			
Construction Employment	Negligible	None required. Consider implementation of job brokerage schemes, apprenticeships and training schemes	Negligible
Loss of Existing Employment	Temporary, short term, Minor, Adverse, Local (compared with March 2019 baseline levels. Negligible compared with existing levels). Long term, negligible	None required	Temporary, short term, Minor, Adverse, Local (compared with March 2019 baseline levels. Negligible compared with existing levels). Long term, negligible
Construction workforce spending	Temporary, Minor Beneficial, Local	None required	Temporary, Minor Beneficial, Local
Completed Development			
Employment	Long Term, Substantial Beneficial, District	None required	Long Term, Substantial Beneficial, District
Housing	Long Term, Moderate Beneficial, Local Long Term, Minor Beneficial Borough	None required	Long Term, Moderate Beneficial, Local Long Term, Minor Beneficial Borough
Education (Primary)	Short term, Minor, Adverse, Local	Financial Contributions	Negligible
Education (Secondary)	Negligible	None required	Negligible
Healthcare	Short term, Minor, Adverse, Local	Financial Contributions	Negligible
Additional Spending	Long Term, Minor/Moderate, Beneficial, Local	None required	Long Term, Minor/Moderate, Beneficial, Local
Open Space	Long Term, Minor Beneficial, Local	None required	Long Term, Minor Beneficial, Local
Crime	Long Term, Minor Beneficial, Local	None required	Long Term, Minor Beneficial, Local

Comparison of Effects between this ES Addendum and the 2019 Consented Scheme ES

- 7.82. The Development considered within this Chapter is the 2019 Consented Scheme as amended by the Proposed Amendments to Plot E and F. The key differences between the Development and the 2019 Consented Scheme of relevance to the socio-economic impact assessment is the increase in the maximum number of residential units, and an increase in the maximum commercial (retail and leisure) floorspace. Despite these changes, the scale and significance of potential socio-economic effects on employment, housing, spending, education, health and crime remains unchanged from the 2019 Consented Scheme ES.

References

- ¹ National Planning Policy Framework, Ministry for Housing, Communities and Local Government, 2019
- ² Reading Borough Local Plan, Reading Borough Council, 2019
- ³ Census data, 2011 and 2001;
- ⁴ Business Register and Employment Survey data (2018);
- ⁵ Indices of Multiple Deprivation (2019);
- ⁶ ONS Claimant Count, (September 2018);
- ⁷ Homes and Communities Agency (2015) Employment Densities, 3rd Edition
- ⁸ Reading Borough Council, 2004. Supplementary Planning Guidance, Planning Obligations under Section 106 of the Town and Country Planning Act 1990.
- ⁹ Office for National Statistics, 2019, Family Sending.
- ¹⁰ Visa Europe, 2014, UK Working Day Spend Report
- ¹¹ ONS Mid-Year Population Estimates, 2019
- ¹² ONS Census, 2011
- ¹³ ONS Annual Population Survey, March 2019-March 2020
- ¹⁴ ONS Business Register and Employment Survey, 2018
- ¹⁵ Index of Multiple Deprivation, Ministry of Housing, Communities and Local Government, 2019
- ¹⁶ ONS Police Force Area Data Tables, 2019
- ¹⁷ School Capacity Survey, Department for Education, 2019
- ¹⁸ Reading Infrastructure Delivery Plan, May 2017, Reading Borough Council
- ¹⁹ NHS Choices, 2019

15. Wind

Introduction

- 15.1. This Chapter has been written by RWDI. It assesses the likely significant effects of the Development on the local wind microclimate within and around the Development. In particular, it considers the likely significant effects of wind upon pedestrian comfort and safety and summarises the findings of a full wind tunnel testing exercise undertaken by RWDI. The full results of this study are presented within Technical **Appendix 15.1**.
- 15.2. The Chapter updates the assessment presented in Chapter 15 of the 2019 Consented Scheme ES and should be read in conjunction with that Chapter.

Planning Policy Context

National Planning Policy and Guidance

National Planning Policy Framework, 2019

- 15.3. The National Planning Policy Framework was revised in 2018 and 2019¹. However, in accordance with the 2015 ES, there are no planning policies directly relating to wind microclimate issues.

National Planning Practice Guidance, 2019

- 15.4. The national Planning Practice Guidance² (PPG) was published in November 2016 to support the National Planning Policy Framework and is subject to rolling updates, with the last updates provided in October 2019. There is no guidance within the PPG related to tall buildings and wind microclimate issues.

Local Planning Policy

Reading Borough Local Plan (November 2019)

- 15.5. RBC's Local Plan was adopted in November 2019³, replacing the development plans described in the 2019 Consented Scheme ES (the Core Strategy, Reading Central Area Action Plan and Sites and Detailed Policies Document). The plan sets out how Reading will develop up to 2036. The plan defines the amount of development that will take place within the borough, the areas and sites where development is expected to be accommodated, and where it will be restricted, and sets out policies for how planning applications will be decided.
- 15.6. The priorities of the plan are as follows:
- *"Safeguarding and protecting those that are most vulnerable;*
 - *Providing the best help through education, early help and healthy living;*
 - *Providing homes for those most in need;*
 - *Keeping the town clean, safe, green and active;*
 - *Providing infrastructure to support the economy; and*
 - *Remaining financially sustainable to deliver these service priorities."*

15.7. In relation to wind, Policy CC3: Adaption to Climate Change states:

“new buildings shall be orientated to [...] reduce exposure to wind [...]”

15.8. Policy CC8: Safeguarding Amenity states:

“Development will not cause a detrimental impact on the living environment of existing residential properties or unacceptable living conditions for new residential properties, in terms of:

... Wind, where the proposals involve new development of more than 8 storeys.”

15.9. Policy CR10: Tall Buildings (v) states:

“[...] all tall building proposals should be of excellent design and architectural quality, and should: [...] Create safe, pleasant and attractive spaces around them, and avoid detrimental impacts on the existing public realm; [...] Mitigate any wind speed or turbulence or overshadowing effects through design and siting;”

15.10. Specific reference to mitigating the adverse effects of tall buildings on the microclimate and using green infrastructure to provide a comfortable microclimate is provided in paragraphs 5.3.45 and assessing the wind environment using the Lawson Criteria and possible mitigation is provided in paragraphs 5.3.47 and 5.3.48 respectively.

Assessment Methodology and Significance Criteria

Assessment Methodology

15.11. The assessment methodology remains largely as set out in the 2019 Consented Scheme ES except that wind speed measurements were taken at 218 locations around the Site rather than 188 as part of the 2019 Consented Scheme ES. This is because additional probes were included at ground level and on the roof terraces of Plots E and F.

Scenarios Tested

15.12. Wind tunnel testing has been undertaken and the analysis conducted for the full year with regards to pedestrian safety and for all seasons with regards to pedestrian comfort. The results are presented for the windiest season (typically December, January and February in the UK), and summer season (June, July and August) for the following test configurations, all of which have made use of 1:300 scale models of the Site and surrounding context:

- Configuration 1: Existing Baseline comprising the Site, as existing in 2019 prior to the recent demolition works, with existing surrounding buildings. This scenario is the same as that tested in the 2019 Consented Scheme ES;
- Configuration 2: Proposed Development with no Landscaping, comprising reserved matters details for Plots E and F with the remaining Station Hill Development as per the 2019 Consented Scheme (as maximum parameters) and existing surrounding buildings;
- Configuration 3: Proposed Development with Landscaping comprising reserved matters details for Plots E and F with the remaining Station Hill Development as per the 2019 Consented Scheme (as maximum parameters) and existing surrounding buildings;

- Configuration 4: Proposed Development with Landscaping comprising reserved matters details for Plots E and F with the Station Hill Phase 2 and Phase 3 Development in accordance with the 2019 Hybrid Application in place (as maximum parameters for Plots A, B, C and D and in accordance with the detailed application for Plot G) with cumulative surrounding buildings.

- 15.13. The results of the cumulative scenario assessment are presented in Chapter 17: Cumulative Effects.
- 15.14. Photographs of the wind tunnel model in the above scenarios are shown in **Figure 15.2**. This updates Figure 15.2 of the 2019 Consented Scheme ES.

Lawson Comfort Criteria

- 15.15. The Lawson comfort criteria remain as described in the 2019 Consented Scheme ES. Target conditions based on the Lawson criteria are outlined as:
- thoroughfares (target conditions are strolling use during the windiest season);
 - entrances (target conditions are standing use during the windiest season);
 - amenity spaces (target conditions are sitting use during the summer season);
 - outdoor seating (target conditions are sitting use during the summer season); and
 - private balconies (target conditions are standing use during the summer season).

Strong Winds

- 15.16. This section remains as described in the 2019 Consented Scheme ES.

Significance Criteria

- 15.17. The significance criteria remain as set out in the 2019 Consented Scheme ES.

Limitations and Assumptions

- 15.18. The limitations and assumptions remain as set out in the 2019 Consented Scheme ES.

Baseline Conditions

General Meteorological Conditions

- 15.19. The meteorological conditions are consistent with those presented in the 2019 Consented Scheme ES.

Terrain Roughness

- 15.20. This section is consistent with the 2019 Consented Scheme ES.

Baseline Scenario - Configuration 1

- 15.21. This section is the same as presented in the 2019 Consented Scheme ES.
- 15.22. The buildings situated within Plots E and F which were assessed in the 2019 Consented Scheme ES have now been demolished. However, the wind conditions presented for the baseline scenario

within the area surrounding the Site would not be expected to significantly change, as the existing buildings were not significantly taller than the surrounding buildings. The wind conditions on the Site itself may change as a result of the open space created by demolition of the buildings, but as the Site would not be accessible to pedestrians, this is not considered to be a significant effect.

Potential Effects

Demolition and Construction

- 15.23. The effects during demolition and construction would remain as set out in the 2019 Consented Scheme ES and have therefore not been reproduced in this Chapter.

Configuration 2 - Proposed Development Without Mitigation -

- 15.24. Configuration 2 was tested with the proposed Development in place comprising the reserved matters details for Plots E and F with the remaining Station Hill Development as per the 2019 Consented Scheme (as maximum parameters). No landscaping was included. Wind conditions are shown in **Figure 15.5** at ground level during the windiest season, and Figures **15.6 and 15.7** at ground and terrace levels respectively during the summer season. Strong wind exceedances at ground level are shown in **Figure 15.8**. Figure 15.5 and 15.6 replace Figure 15.7 and 15.8 of the 2015 ES and 15.5 and 15.6 of the 2019 ES Addendum. Figure 15.7 replaces Figure 15.7 of the ES Addendum; there was no equivalent figure in the 2015 ES. Figure 15.8 in this ES Addendum is a new figure.

Existing Surrounding Streets

- 15.25. Wind conditions across existing streets would generally be similar to those in Configuration 1, suitable for their intended strolling use or calmer during the windiest season. This therefore represents a **Negligible (not significant)** effect. Conditions at the north-western corner of Plot A (location 51) would be one category calmer than those of the 2019 Consented ES with conditions suitable for strolling use (a **Negligible** effect) rather than walking use (a **Minor Adverse** effect) as identified in the 2019 Consented Scheme ES. This is likely due to the (relatively small) changes to the Development since the 2019 Consented ES adjusting wind flow around and through the North Site.

Proposed Thoroughfares

- 15.26. Wind conditions at the majority of thoroughfares within the Proposed Development Site would be suitable for their intended strolling use or calmer during the windiest season. This therefore represents effects ranging from **Moderate Beneficial (not significant)** to **Negligible (not significant)**.
- 15.27. There are however, two thoroughfare locations within the North Site where conditions would be windier, being suitable for walking use during the windiest season (locations 54 and 80). These conditions would be one category windier than the recommended criteria for their intended use representing a **Minor Adverse (significant)** effect. Conditions at the east facing façade of Plot B (location 81) would be calmer than those of the 2019 Consented Scheme ES with conditions suitable for strolling use (a **Negligible** effect) rather than walking use (a **Minor Adverse** effect) as

identified in the 2019 Consented Scheme ES. This is likely due to the changes to the Development since the 2019 Consented ES adjusting wind flow around and through the North Site.

Entrances

- 15.28. Wind conditions at entrance locations to the proposed Development and buildings surrounding the Site would be suitable for standing use or calmer during the windiest season. These conditions would be suitable for their intended use and thus represent effects ranging from **Minor Beneficial (not significant)** to **Negligible (not significant)** for both on- and off-Site locations tested. This is the same as described in the 2019 Consented Scheme ES.

Ground Level Amenity Spaces

- 15.29. Wind conditions at ground level amenity spaces would be suitable for their intended sitting use during the summer season, when amenity spaces would be expected to be most frequently used. This represents a **Negligible (not significant)** effect. This is the same as described in the 2019 Consented Scheme ES.

Podium Roof Terraces

- 15.30. Wind conditions at the podium and roof terrace amenity spaces on Plots E and F would be suitable for their intended sitting use during the windiest season. This represents a **Negligible (not significant)** effect. It should be noted that only level 07 of Plot E and level 12 of Plot F would be accessible roof terrace amenity spaces. All other measured locations on the roof would not be accessible for occupants.
- 15.31. The 2019 Consented Scheme ES found that four areas on the roof terrace of Plot E (locations 168, 173 and 174) had conditions suitable for standing use during the summer season; one category above the recommended criteria for their intended use. However, the Development as now proposed, no longer shows exceedances on the roof terrace of Plot E. This is because locations 168 and 174 are not accessible to occupants, and the conditions at location 173 have changed likely due to the changes in building form.

Balconies

- 15.32. Wind conditions at all balconies within Plots E and F would be suitable for their intended sitting use during the summer season. This represents a **Negligible (not significant)** effect.

Strong Winds

- 15.33. In Configuration 2, There would be three locations with strong winds exceeding the pedestrian safety criteria. These are located in the North Site (locations 54, 80 and 81). These would require mitigation as the design of the North Site evolves in order to be made safe for pedestrian use and are therefore be considered an **Adverse (significant)** effect. The occurrences of strong winds have reduced compared with the 2019 Consented Scheme ES, which identified five occurrences of strong winds (at location 51 as well as the locations above). Location 51 would no longer have strong winds due to the changes to the Development since the 2019 Consented ES adjusting wind flow around and through the North Site.

Mitigation

Demolition and Construction

- 15.34. No mitigation measures are required during the demolition and construction stages as no adverse wind effects are expected off-Site during this period.

Completed Development

- 15.35. Based on the wind tunnel test results, only the proposed thoroughfare locations within the North Site would require wind mitigation measures. Windier than desired conditions within the North Site would be mitigated with the use of landscaping, sculptural elements and elevated porous screens developed through iterative wind tunnel testing as the detailed design of this part of the Site comes forward.
- 15.36. Mitigation for the roof terraces of Plot E, as described in the 2019 Consented Scheme ES, is no longer required given that the conditions on the roof terraces were found in the latest wind tunnel tests, to be either suitable for the intended use of these spaces, or the spaces are not accessible to occupants.

Residual Effects – Configuration 3

Demolition and Construction – Wider Development

- 15.37. The residual effects during demolition and construction would remain **Negligible (not significant)**.

Configuration 3 - Completed Development with Mitigation

- 15.38. Configuration 3 was tested with the Proposed Development in place comprising the reserved matters details for Plots E and F with the remaining Station Hill Development as per the 2019 Consented Scheme (as maximum parameters). Landscaping, comprising trees at ground level, shrubs at podium level, and trees and shrubs on the roof terraces, was included in this Configuration. Wind conditions are shown in **Figure 15.9** at ground level during the windiest season, and **Figures 15.10 and 15.11** at ground and terrace levels respectively during the summer season. Strong wind exceedances at ground level are shown in **Figure 15.12**. Figure 15.9, 15.10 and 15.11 replace Figures 15.8, 15.9 and 15.10 of the 2019 ES Addendum. Testing with landscaping / mitigation was not carried out as part of the 2015 ES as this level of detail was not available at that time.

Existing Surrounding Streets

- 15.39. Wind conditions across existing streets would remain suitable for their intended strolling use or calmer during the windiest season. These represent a **Negligible (not significant)** residual effect. As per Configuration 2, wind conditions at Location 51, at the north western corner of Plot A, which were one category above the criteria for their intended use in the 2019 Consented Scheme ES, were shown to be suitable for their intended strolling use within the latest wind tunnel test.

Proposed Thoroughfares

- 15.40. With the introduction of landscaping to the South Site, wind conditions at the majority of thoroughfares within the proposed Development Site would remain suitable for their intended strolling use during the windiest season. These conditions are suitable for their intended use and therefore represent residual effects ranging from **Moderate Beneficial (not significant)** to **Negligible (not significant)**.
- 15.41. Conditions at the North Site at locations 54 and 80 would however remain suitable for walking use during the windiest season, one category windier than suitable, representing a **Minor Adverse (significant)** effect.
- 15.42. Wind mitigation measures in the area of locations 54 and 80 would be developed when the detailed design of the North Site, specifically Plots A and B, comes forward.

Entrances

- 15.43. Wind conditions at entrance locations would remain similar to those in Configuration 2. As such, the potential effects on the entrances would be **Minor Beneficial (not significant)** to **Negligible (not significant)** and this remains the case with landscaping in place.

Ground Level Amenity Spaces

- 15.44. Wind conditions within the ground floor amenity spaces would remain as in Configuration 2. The potential effects on the ground level amenity spaces would therefore remain **Negligible (not significant)** with landscaping in place.

Podium Roof Terraces

- 15.45. With the introduction of landscaping, wind conditions at the podium and roof terrace amenity spaces on Plots E and F remain suitable for their intended sitting use during the windiest season. This represents a **Negligible (not significant)** residual effect.

Balconies

- 15.46. Wind conditions at balcony levels would be suitable for standing use or calmer during the summer season, acceptable conditions for private amenity spaces at height. The potential effects on the balconies would therefore be **Negligible (not significant)** with landscaping in place.

Strong Winds

- 15.47. In Configuration 3, there are three locations with strong winds exceeding the pedestrian safety criteria. These conditions persist from Configuration 2. Areas where the pedestrian safety criteria are exceeded are located within the North Site (locations 54, 80 and 81). These would require further mitigation in order to be made safe for pedestrian use. These wind mitigation measures should be developed when the detailed design of the North Site comes forward. These conditions thus represent an **Adverse (significant)** residual effect at these locations.

Summary

Table 15:4 Summary of Potential Effects, Mitigation Measures and Residual Wind Effects

Issue	Potential Effect	Mitigation	Residual Effect
Demolition and Construction			
Thoroughfares in and around the Site during demolition and construction	Negligible	N/A	Negligible
Completed Development			
Existing Streets	Negligible	N/A	Negligible
Proposed Thoroughfares on Site	Moderate Beneficial to Minor Adverse	Locations 54 and 80 within the North Site are windier than desired in Configurations 2 and 3 (Proposed Development without and with landscaping). Mitigation will be developed with the detailed design of the northern area of the Site.	Moderate Beneficial to Minor Adverse
Entrances	Minor Beneficial to Negligible	N/A	Minor beneficial to negligible
Ground Level Amenity Spaces	Negligible	N/A	Negligible
Podium Roof Terraces	Negligible	N/A	Negligible
Balconies	Negligible	N/A	Negligible
Strong Winds (location 54, 80 and 81)	Adverse	Wind mitigation measures will be developed for these locations with the detailed design of the North Site.	Adverse

Comparison of Effects between this ES Addendum and the 2019 Consented Scheme ES

- 15.48. The wind conditions in and around the Site during this assessment are comparable to the assessments presented in the 2019 Consented Scheme ES. Localised differences were noted as a result of the detailed design of Plots E and F. However, the intended use of the spaces in and around the proposed Development largely remain suitable for their intended uses consistent with the conclusions of the 2019 Consented Scheme ES.

References

- ¹ Ministry of Housing, Communities & Local Government, Revised National Planning Policy Framework, February 2019
- ² Ministry of Housing, Communities & Local Government, Planning Practice Guidance, 2019
- ³ Reading Borough Council, Local Plan, November 2019

16. Daylight, Sunlight and Overshadowing

Introduction

- 16.1. This Chapter has been prepared by GIA and provides an update to the assessment of the effects of the Development on daylight, sunlight and overshadowing within neighbouring properties and amenity areas as presented in Chapter 16 of the 2019 Consented Scheme ES. The Chapter is supported by the following documents which can be found in **Technical Appendices 16.1 to 16.5**:
- Technical Appendix 16.1 – Daylight and Sunlight Summary Tables (Comparison with 2019 Consented Scheme ES summary table and Consented v Proposed Development);
 - Technical Appendix 16.2 - Drawings of the Baseline, Proposed Development, Consented and Cumulative Scenario;
 - Technical Appendix 16.3 - Daylight and Sunlight Results for all scenarios;
 - Technical Appendix 16.4 - Daylight and Sunlight Results for Proposed Development;
 - Technical Appendix 16.5 - Overshadowing Assessment.
- 16.2. An updated stand-alone report entitled ‘Daylight, Sunlight and *Overshadowing Amenity within the Site*’ has been prepared by GIA to review the daylight and sunlight amenity within the amended proposed Development in more detail. A summary of the assessment results is provided within this Chapter.

Legislation, Planning Policy and Guidance

- 16.3. The following sections provide a review of legislation and guidance together with national, regional and local planning policy relevant to daylight, sunlight and overshadowing where this has been revised since the 2019 ES Addendum.

National Legislation and Policy

Planning Practice Guidance

- 16.4. The national Planning Practice Guidance¹ (PPG) was launched in March 2014 and provides a web-based resource in support of the National Planning Practice Framework (NPPF). The PPG is subject to regular reviews and rolling updates to reflect current guidance and best practice. The updated PPG includes in the section entitled ‘Effective Use of Land’ reference to daylight and sunlight (paragraph 007 Reference ID: 66-006-20190722). The update which was made on 22nd July 2019 notes, “*What are the wider planning considerations in assessing appropriate levels of sunlight and daylight? All developments should maintain acceptable living standards. What this means in practice, in relation to assessing appropriate levels of sunlight and daylight, will depend to some extent on the context for the development as well as its detailed design.*”
- 16.5. The above paragraph recognises the potential significance of context in the wider planning balance when determining what are appropriate levels of daylight and sunlight amenity.

Local Policy

Reading Borough Local Plan (November 2019)

- 16.6. The Local Plan sets out how Reading will develop up to 2036. It defines the amount of development that will take place within the borough, the areas and sites where development is expected to be accommodated, and where it will be restricted, and sets out policies for how planning applications will be decided.
- 16.7. In relation to daylight, sunlight and overshadowing, Policy CC8: Safeguarding Amenity states:
- “Development will not cause a detrimental impact on the living environment of existing residential properties or unacceptable living conditions for new residential properties, in terms of:*
- ...Access to sunlight and daylight;...”*
- 16.8. Daylight and sunlight are also referenced within Policy CR10: Tall Buildings, for which the Site is located within an area designated for tall buildings, CR10a – Station Area Cluster. Policy CR10 states that:
- v) In addition to the area-specific requirements, all tall building proposals should be of excellent design and architectural quality, and should:*
- *Ensure adequate levels of daylight and sunlight are able to reach buildings and spaces within the development;*
 - *Avoid significant negative impacts on existing residential properties and the public realm in terms of outlook, privacy, daylight, sunlight, noise, light glare and night-time lighting;*

Guidance

- 16.9. No revisions have been made to the guidance described within Chapter 16 of the 2019 Consented Scheme ES.

Assessment Methodology and Significance Criteria

Assessment Methodology

- 16.10. The methodology and significance criteria employed in the assessment of daylight, sunlight and overshadowing effects upon existing sensitive receptors remains the same as described in Chapter 16 of the 2019 Consented Scheme ES. The principal document upon which the assessment has been based remains the Building Research Establishment (BRE) Guidelines ‘Site Layout Planning for Daylight and Sunlight 2011: A Guide to Good Practice’, Second Edition (hereafter the BRE Guidelines)².

Scenarios Assessed

- 16.11. The following scenarios have been assessed and are reported within this Chapter of the ES:
- Existing Baseline;
 - Demolition and Construction;

- Proposed Development; and
- 2019 Consented Scheme vs Proposed Development.

16.12. These scenarios are described in more detail below.

16.13. The Cumulative Scenario has also been assessed and the results are presented in Chapter 17: Cumulative Effects.

16.14. Owing to the scale of the 2019 Hybrid Application, the study area was increased for the 2019 Hybrid Application ES. Due to the inclusion of the 2019 Hybrid Application within the Cumulative Scenario, the increased study area has also been included within the proposed Development scenario.

16.15. Where additional room layouts for neighbouring properties has been obtained since preparation of the 2019 ES Addendum, these have been incorporated within the model to provide the most accurate analysis.

Baseline Scenario

16.16. The Baseline Scenario reflects the baseline conditions prevailing on Site at the time of the 2019 ES Addendum. The surrounding buildings have however, been updated to reflect the existing conditions. Since the 2019 ES Addendum, it is understood that the 30 Garrard Street extension (part level 04, level 05 and level 06) and 136 -137 Friar Street have now been implemented and therefore exist in the Existing Baseline scenario. These buildings were previously included as future sensitive receptors within Chapter 17 Cumulative Effects of the 2019 ES Addendum.

16.17. Whilst the buildings within Plots E and F have been demolished since preparation of the 2019 Consented Scheme ES, as this demolition represents part of the Development being assessed, the baseline conditions considered in this Chapter assume that the buildings within Plots E and F are still present. This enables the effects of the Development now proposed to be compared with those of the development assessed within the 2019 Consented Scheme ES.

16.18. The existing on site baseline conditions, including demolition of Telecom House and Friar Street Shopping Centre, would lead to slightly improved daylight and sunlight levels when compared to those of the Baseline Scenario. This would only impact those properties in close proximity to the Site, with windows directly overlooking the demolished massing. Telecom House and Friar Street Shopping Centre were relatively low-rise expect for the massing along Friar Street. Therefore, the only properties that would be likely to see an improvement in their daylight and sunlight levels are:

- 125 Friar Street;
- 175 Friar Street; and
- The west facing windows on the lowest floors of 30 Garrard Street.

16.19. The improved daylight and sunlight levels to these properties would lead to slightly greater alterations in light between the existing levels and those of the Development.

16.20. The Baseline Scenario is depicted on drawing numbers 5847/82/01/01, 5847/82/01/02 and 5847/82/01/03 (**Technical Appendix 16.2**).

Demolition and Construction

16.21. The Demolition and Construction Scenario has been assessed qualitatively, based on professional judgement.

Proposed Development

- 16.22. This scenario considers the Development, comprising the proposed amendments to Plots E and F with the remaining Station Hill Development (Plots A, B, C, D and G) as maximum parameters as per the 2019 Consented Scheme.
- 16.23. This scenario is depicted on drawings numbers 5847/82/01/04, 5847/82/01/04 and 5847/82/01/04 (**Technical Appendix 16.2**).

Comparison with the 2019 Consented Scheme

- 16.24. The effects of the proposed Development have also been assessed against the effects of the 2019 Consented Scheme to establish changes from the approved position.
- 16.25. This scenario is depicted in drawings 5847/76/02/01, 5847/76/02/02 and 5847/76/02/03 (**Technical Appendix 16.2**).

Baseline Conditions

Daylight and Sunlight

- 16.26. The Baseline Scenario is depicted on drawings numbers 5847/82/01/01, 5847/82/01/02 and 5847/82/01/03 (**Technical Appendix 16.2**).
- 16.27. Table 16.1 identifies the 63 surrounding buildings considered sensitive to potential alterations in daylight and sunlight. The properties highlighted in grey have been added to the assessment based on the increased study area.

Table 16.1: Daylight and Sunlight Sensitive Receptors

Daylight and Sunlight Receptor Location	
1-15 Tanfields, Vachel Road	30 Garrard Street (partially new)
Reada Court, Vachel Road	125 Friar Street
1-29 Sackville Street (odds)	127 Friar Street
5-21 Tudor Road (Friary Court)	136-137 Friar Street (new)
Alexia Court, 3 Tudor Road	144 Friar Street
9-11 Stanshawe Road	1-29 Projection East, Merchants Place
5-19, and 25 Vachel Road (odds)	1-41 Icon House, Merchants Place
Belmont Court, Vachel Road	1-45 Projection West, Merchants Place
20-24 Vachel Road	7-11 Station Road
Montrose House, Vachel Road	49-51 Greyfriars Road
8-18 Stanshawe Road (evens)	53 Greyfriars Road
13-19 Stanshawe Road (odds)	Bridewell & Samuel House, Greyfriars Road - Student Housing
32-34 Friar Street	The Gateway Public House, 31 Greyfriars Road
18-29 Regent Court	Malcolm Place, Caversham Road
21-23 Vachel Road	27-31 Vachel Road

- 16.28. The properties in the above list noted as 'new' have been implemented following the 2019 ES Addendum and are now considered as an existing sensitive receptor. These were assessed as future receptors within Chapter 17 of the 2019 ES Addendum.
- 16.29. In terms of daylight and sunlight, the neighbouring consented schemes at 52-55 Friar Street and 12 Greyfriars Road (ref: 162210) and 20 Greyfriars Road (ref: 200211) have been considered future sensitive receptors in the proposed Development scenario and Cumulative Scenario (included in Chapter 17 of this ES Addendum).
- 16.30. Only buildings with windows facing south have been assessed for sunlight as these properties would have an expectation of sunlight.

Amenity Areas

- 16.31. The amenity areas in **Table 16.2** are located to the north of the site and are considered sensitive receptors in terms of overshadowing. Those highlighted in grey have been added to the assessment following the increased study area for the 2019 Hybrid Application ES.

Table 16.2: Overshadowing Receptor Locations

Overshadowing Receptor Location
Station Hill Square
Montrose House Communal Roof Terrace
Private gardens serving 5-21 Tudor Road (Friary Court)
Rear private gardens serving 9-17 Stanshawe Road (odds)
Rear private gardens serving 8-28 Stanshawe Road (evens)
Rear private gardens serving 7-31 Vachel Road (odds)

Existing Baseline

Baseline Daylight and Sunlight to Surrounding Sensitive Receptors

- 16.32. A total of 1,208 windows serving 869 rooms within the 63 surrounding residential properties have been assessed for daylight. 476 windows have been assessed in regard to sunlight.
- 16.33. **Table 16.3** below sets out a summary of the results of the baseline daylight and sunlight assessment. Full details of the baseline daylight and sunlight assessment results are provided in **Technical Appendix 16.3**.
- 16.34. The results of the baseline assessment indicate that out of the 1,208 windows assessed, 419 (35%) have an existing VSC of 27% or more. In regard to NSL, 505 (58%) out of the 869 rooms assessed have a daylight distribution of at least 80% of the total room area.
- 16.35. The results of the sunlight assessment indicate 279 (59%) out of the 476 windows assessed, have a baseline annual APSH of at least 25% with at least 5% in the winter period.
- 16.36. The existing on site baseline conditions, including demolition of Telecom House and Friar Street Shopping Centre, would lead to slightly improved daylight and sunlight levels when compared to those of the Baseline Scenario below. This would only impact those properties in close proximity

to the Site, with windows directly overlooking the demolished massing and would lead to slightly greater alterations in light between the existing levels and those of the Development.

Table 16.3: Existing Baseline Daylight and Sunlight Results

	Total No. Windows that meet VSC criteria (>27%)		Total No. of Rooms that receive NSL in excess of 80%		Total no. of windows that meet APSH criteria	
	Pass	Total	Pass	Total	Pass	Total
1-15 Tanfields	7	18	8	10	4	11
Reada Court	12	14	10	10	14	14
1 Sackville Street	3	4	1	4		
3 Sackville Street	6	7	4	5	0	2
5 Sackville Street	4	5	5	5		
7 Sackville Street	6	6	4	4		
9 Sackville Street	4	4	4	4		
11 Sackville Street	4	4	3	4		
13 Sackville Street	2	3	2	3		
15 Sackville Street	3	5	4	5	0	1
17 Sackville Street	3	5	3	4	0	1
19 Sackville Street	5	7	3	4	0	4
21 Sackville Street	2	3	1	3		
23 Sackville Street	4	4	3	4		
25 Sackville Street	3	6	3	5	0	2
27 Sackville Street	4	6	3	4	0	3
29 Sackville Street	2	4	2	4	0	1
5-21 Tudor Road (Friary Court)	41	52	37	39	48	48
Montrose House	20	20	20	20		
125 Friar Street	7	28	3	3		
127 Friar Street	3	6	4	5		
1-29 Projection East	20	94	24	66	0	15
13 Stanshawe Road	3	3	2	2		
136-137 Friar Street	1	9	3	4	1	1
1-41 Icon House	10	54	13	38	0	16
144 Friar Street	0	2	0	2		
1-45 Projection West	51	138	68	110	62	102
7-11 Station Road	0	57	0	24	0	36
8 Stanshawe Road	0	5	3	5		

	Total No. Windows that meet VSC criteria (>27%)		Total No. of Rooms that receive NSL in excess of 80%		Total no. of windows that meet APSH criteria	
	Pass	Total	Pass	Total	Pass	Total
10 Stanshawe Road	1	5	0	4		
12 Stanshawe Road	1	2	2	2		
14 Stanshawe Road	1	4	2	3		
15 Stanshawe Road	3	3	2	2		
16 Stanshawe Road	1	3	2	3		
17 Stanshawe Road	3	3	2	2		
18 Stanshawe Road	3	6	2	3	0	1
19 Stanshawe Road	3	3	3	3		
30 Garrard Street	29	246	85	160	41	81
32 Friar Street	1	7	0	5		
33 Friar Street	0	4	0	4	0	1
34 Friar Street	0	4	0	3		
49-51 Greyfriars Road	22	33	14	24	22	31
5 Vachel Road	0	5	0	5		
7 Vachel Road	0	6	0	4		
9 Vachel Road	0	4	0	4		
11 Vachel Road	0	5	0	5		
13 Vachel Road	0	6	2	6		
15 Vachel Road	0	5	2	5		
17 Vachel Road	0	10	0	4		
19 Vachel Road	0	10	0	4		
20-24 Vachel Road	9	16	12	12		
21-23 Vachel Road	2	8	0	8		
25 Vachel Road	1	4	0	4		
27-31 Vachel Road	3	12	0	12		
53 Greyfriars Road	6	13	6	9	6	6
9-11 Stanshawe Road	2	9	8	8	2	4
Alexia Court-3 Tudor Road	11	31	7	12	22	26
Bridewell & Samuel House - Student Housing	24	67	34	57		
Building to Rear Of 136-137 Friar Street	0	6	1	1	0	1

	Total No. Windows that meet VSC criteria (>27%)		Total No. of Rooms that receive NSL in excess of 80%		Total no. of windows that meet APSH criteria	
	Pass	Total	Pass	Total	Pass	Total
The Gateway Public House - 31 Greyfriars Road	1	11	3	7	1	5
Belmont Court	17	21	21	21		
Malcom Place	26	39	31	39	35	39
18-29 Regent Court	19	24	24	24	21	24
	419	1,208	505	869	279	476

Baseline Overshadowing to Sensitive Surrounding Amenity Areas

- 16.37. One public amenity area, one communal roof terrace and 30 private gardens serving 29 buildings to the west of the Site have been assessed for overshadowing.
- 16.38. The full baseline transient overshadowing assessment is presented within **Technical Appendix 16.5**. Owing to the medium rise nature of the existing buildings within the Site minimal shadow is cast on the surrounding area during the summer months and the equinox. It follows that much of the shadow currently seen surrounding the Site is a function of the surrounding buildings themselves. Shadows are longer on the winter solstice and this is consistent with expectations for an urban area. Station Hill Square is partially in shadow as a result of the existing buildings within the Site and Thames Tower throughout the year however the Sun Hours on Ground assessment for this area demonstrates that 88% of the amenity area experiences two or more hours of direct sunlight on 21st March and therefore achieves the levels of sunlight recommended by the BRE.
- 16.39. The changes to the existing baseline condition would not impact the overshadowing of the surrounding amenity areas.

Potential Effects

Demolition and Construction

- 16.40. The potential demolition effects of the proposed Development on daylight, sunlight and overshadowing remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES; that is **negligible** to **temporary, short-term** and of **minor beneficial** significance. During construction, these would gradually increase to those of the proposed Development. That is, **negligible** to **permanent, long-term** and of **substantial adverse** significance.

Completed Development

Daylight to Existing Surrounding Properties

- 16.41. The potential daylight impacts on surrounding residential properties arising from the proposed Development have been assessed against the Baseline conditions in regard to VSC and NSL in accordance with the BRE Guidelines. A comparison against the 2019 Consented Scheme has also been undertaken to identify those existing properties that experience alterations to their affected

windows or rooms. This has been summarised in **Technical Appendix 16.1**. Only those receptors that experience changes between the summary of effects of the 2019 Consented Scheme ES and the Development are discussed further. Full details of the results can be found in **Technical Appendix 16.3** and are summarised in **Table 16.4** below.

- 16.42. A total of 1,208 windows serving 869 rooms have been assessed within the 63 surrounding residential properties in terms of daylight. Owing to the increased study area as a result of the 2019 Hybrid Application scheme being considered within the cumulative scenario, the windows and rooms vary from those reported in Chapter 16 of the 2019 Consented Scheme ES which comprised of 719 windows serving 426 rooms within 21 buildings.
- 16.43. A total of 742 (61%) windows out of the 1,208 assessed will meet the BRE Guidelines for VSC. A total of 636 (73%) out of the 869 rooms assessed will meet the BRE Guidelines for NSL.
- 16.44. 40 (63%) out of the 63 properties assessed are fully BRE compliant and the effects of the proposed Development on these properties are considered **negligible**. These properties are highlighted in grey in **Table 16.4** below. The 2019 Consented Scheme ES reported that eight (38%) of the 21 properties assessed were fully BRE compliant; all eight would also meet the BRE Guidelines in this assessment.
- 16.45. From the comparison with the 2019 Consented Scheme, 15 properties would not experience changes in their affected windows/rooms as a result of the Proposed Amendments. This includes those that experience technical changes of less than 0.2% VSC and less than 1% NSL. Technical changes are changes that are not perceptible and that likely occur as a result of tolerances within the calculation method. These 15 properties are highlighted in orange within **Table 16.4**. Five of these properties were assessed within the 2019 ES Addendum and their overall effect does not change from the 2019 Consented Scheme ES whilst 10 are properties that were not assessed previously. The overall effect to these 15 properties is outlined below:
- 1-15 Tanfields – **Minor Adverse** (not previously assessed);
 - 1 and 7 Sackville Street – **Minor Adverse** (not previously assessed);
 - 3, 9, 11, 15 and 23 Sackville Street – **Negligible** (not previously assessed);
 - 49-51 Greyfriars Road – **Substantial Adverse**;
 - 5 Vachel Road – **Minor Adverse**;
 - 53 Greyfriars Road – **Moderate Adverse**;
 - 9-11 Stanshawe Road – **Minor Adverse**;
 - Alexia Court-3 Tudor Road – **Minor to Moderate Adverse** (not previously assessed);
 - The Gateway Public House-31 Greyfriars Road – **Moderate Adverse**; and
 - Malcom Place – **Minor Adverse** (not previously assessed).
- 16.46. The remaining properties for which there are potential impacts owing to the Proposed Amendments are discussed below.

Table 16.4: Proposed Development – Summary of Daylight Results (VSC, NSL)

Address	VSC							NSL					
	Total No. of Windows	No. Windows that meet BRE Guidelines	Below BRE Guidelines				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines				Total
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total	
1-15 Tanfields	18	18	0	0	0	0	10	7	1	2	0	3	
Reada Court	14	14	0	0	0	0	10	10	0	0	0	0	
1 Sackville Street	4	4	0	0	0	0	4	2	2	0	0	2	
3 Sackville Street	7	7	0	0	0	0	5	4	1	0	0	1	
5 Sackville Street	5	5	0	0	0	0	5	5	0	0	0	0	
7 Sackville Street	6	6	0	0	0	0	4	3	0	1	0	1	
9 Sackville Street	4	4	0	0	0	0	4	3	1	0	0	1	
11 Sackville Street	4	4	0	0	0	0	4	3	1	0	0	1	
13 Sackville Street	3	3	0	0	0	0	3	3	0	0	0	0	
15 Sackville Street	5	5	0	0	0	0	5	4	1	0	0	1	
17 Sackville Street	5	5	0	0	0	0	4	4	0	0	0	0	
19 Sackville Street	7	7	0	0	0	0	4	4	0	0	0	0	
21 Sackville Street	3	3	0	0	0	0	3	3	0	0	0	0	
23 Sackville Street	4	4	0	0	0	0	4	3	1	0	0	1	
25 Sackville Street	6	6	0	0	0	0	5	5	0	0	0	0	
27 Sackville Street	6	6	0	0	0	0	4	4	0	0	0	0	
29 Sackville Street	4	4	0	0	0	0	4	4	0	0	0	0	
5-21 Tudor Road (Friary Court)	52	52	0	0	0	0	39	39	0	0	0	0	
Montrose House	20	20	0	0	0	0	20	20	0	0	0	0	
125 Friar Street	28	28	0	0	0	0	3	3	0	0	0	0	
127 Friar Street	6	6	0	0	0	0	5	5	0	0	0	0	

Address	VSC							NSL					
	Total No. of Windows	No. Windows that meet BRE Guidelines	Below BRE Guidelines				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines				Total
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total	
1-29 Projection East	94	24	35	16	19	70	66	44	13	5	4	22	
13 Stanshawe Road	3	3	0	0	0	0	2	2	0	0	0	0	
136-137 Friar Street	9	9	0	0	0	0	4	4	0	0	0	0	
1-41 Icon House	54	41	8	3	2	13	38	26	5	7	0	12	
144 Friar Street	2	2	0	0	0	0	2	2	0	0	0	0	
1-45 Projection West	138	67	11	18	42	71	110	64	11	14	21	46	
7-11 Station Road	57	57	0	0	0	0	24	24	0	0	0	0	
8 Stanshawe Road	5	5	0	0	0	0	5	5	0	0	0	0	
10 Stanshawe Road	5	5	0	0	0	0	4	4	0	0	0	0	
12 Stanshawe Road	2	2	0	0	0	0	2	2	0	0	0	0	
14 Stanshawe Road	4	4	0	0	0	0	3	3	0	0	0	0	
15 Stanshawe Road	3	3	0	0	0	0	2	2	0	0	0	0	
16 Stanshawe Road	3	3	0	0	0	0	3	3	0	0	0	0	
17 Stanshawe Road	3	3	0	0	0	0	2	2	0	0	0	0	
18 Stanshawe Road	6	6	0	0	0	0	3	3	0	0	0	0	
19 Stanshawe Road	3	3	0	0	0	0	3	3	0	0	0	0	
30 Garrard Street	246	36	22	19	169	210	160	85	18	12	45	75	
32 Friar Street	7	6	1	0	0	1	5	4	1	0	0	1	
33 Friar Street	4	3	1	0	0	1	4	1	0	0	3	3	
34 Friar Street	4	4	0	0	0	0	3	0	0	1	2	3	
49-51 Greyfriars Road	33	0	0	2	31	33	24	0	0	1	23	24	
5 Vachel Road	5	5	0	0	0	0	5	3	2	0	0	2	
7 Vachel Road	6	6	0	0	0	0	4	4	0	0	0	0	

Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE Guidelines	Below BRE Guidelines				Total No. of Rooms	No. Rooms that meet the 0.8 times former value criteria	Below BRE Guidelines			
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	Total
9 Vachel Road	4	4	0	0	0	0	4	4	0	0	0	0
11 Vachel Road	5	5	0	0	0	0	5	5	0	0	0	0
13 Vachel Road	6	6	0	0	0	0	6	6	0	0	0	0
15 Vachel Road	5	5	0	0	0	0	5	5	0	0	0	0
17 Vachel Road	10	10	0	0	0	0	4	4	0	0	0	0
19 Vachel Road	10	10	0	0	0	0	4	4	0	0	0	0
20-24 Vachel Road	16	16	0	0	0	0	12	12	0	0	0	0
21-23 Vachel Road	8	8	0	0	0	0	8	8	0	0	0	0
25 Vachel Road	4	4	0	0	0	0	4	4	0	0	0	0
27-31 Vachel Road	12	12	0	0	0	0	12	12	0	0	0	0
53 Greyfriars Road	13	6	1	0	6	7	9	4	0	0	5	5
9-11 Stanshawe Road	9	5	2	0	2	4	8	7	0	0	1	1
Alexia Court-3 Tudor Road	31	23	2	3	3	8	12	10	0	0	2	2
Bridewell & Samuel House - Student Housing	67	27	18	14	8	40	57	41	6	4	6	16
Building to Rear Of 136-137 Friar Street	6	6	0	0	0	0	1	1	0	0	0	0
The Gateway Public House - 31 Greyfriars Road	11	3	1	0	7	8	7	2	0	0	5	5
Belmont Court	21	21	0	0	0	0	21	21	0	0	0	0
Malcom Place	39	39	0	0	0	0	39	34	5	0	0	5
18-29 Regent Court	24	24	0	0	0	0	24	24	0	0	0	0
Total	1,208	742	102	75	289	466	869	636	69	47	117	233

1-29 Projection East

- 16.47. A total 94 windows serving 66 rooms have been assessed within 1-29 Projection East. 24 (26%) of the 94 windows assessed will meet the BRE Guidelines for VSC. Of the 70 windows that don't meet the BRE Guidelines, 35 experience an alteration to VSC of 20-30% which is considered a minor adverse effect, 16 windows experience an alteration between 30-40% which is considered a moderate adverse effect and 19 windows experience an alteration over 40% which is considered a substantial adverse effect.
- 16.48. A number of windows that are below the BRE Guidelines in the proposed Development scenario have projecting balconies above and below which severely restricts visibility of the sky dome, meaning even modest increases in massing can result in a disproportionate percentage change.
- 16.49. Three of the windows experiencing minor adverse alterations, four experiencing moderate adverse and five experiencing substantial adverse alterations see low existing levels of VSC, of less than 10%, where even a small alteration would lead to a disproportionate percentage change.
- 16.50. 19 of the windows experiencing a minor adverse effect, two windows that experience a moderate adverse effect and two of the windows experiencing a substantial adverse effect retain VSC levels of 15% or greater and are therefore considered commensurate with the urban location.
- 16.51. 44 (67%) of the 66 rooms assessed will meet the BRE Guidelines for NSL. Of the 22 rooms that don't meet the BRE Guidelines, 13 experience an alteration in NSL of 20-30% which is considered a minor adverse effect, five rooms experience an alteration of 30-40% which is considered a moderate adverse effect and four rooms experience an alteration over 40% which is considered a substantial adverse effect.
- 16.52. Many of the rooms that are below the BRE Guidelines in the proposed Development Scenario have balconies located above and below the window apertures which severely restricts visibility of the sky dome, meaning even modest increases in massing can result in a disproportionate percentage change.
- 16.53. Seven rooms experiencing a minor adverse effect, one room experiencing a moderate adverse effect and one room experiencing a substantial adverse effect retain an NSL in excess of 50% and are therefore considered commensurate with the urban location.
- 16.54. The effects are not directly comparable to the 2019 Consented Scheme ES owing to the amended Baseline which now includes the 30 Garrard Street extension which impacts daylight to windows and rooms within this building. An assessment against the 2019 Consented Scheme has shown that 51 of the 70 affected windows experience a change in their retained VSC levels when comparing the Development with the 2019 Consented Scheme however the alterations are all by 1.2% VSC or less which is not a perceptible change in light. In terms of NSL, 11 of the 22 affected rooms experience a change in the retained NSL levels when comparing the Development with the 2019 Consented Scheme. Eight of these rooms experience a change in their retained NSL level of less than 3% NSL which is not considered perceptible whilst the remaining three would experience reductions between 4.8% NSL and 5.4% NSL. These changes would just be perceptible but overall the daylight levels within this building are not materially altered from those of 2019 Consented Scheme.
- 16.55. In consideration of the above, the overall effect of the proposed Development upon this building is considered **moderate adverse**. This remains unchanged from the significance of the effect set out within Chapter 16 of the 2019 Consented Scheme ES.

1-41 Icon House

- 16.56. A total of 54 windows serving 38 rooms have been assessed within 1-41 Icon House. 41 (76%) of the 54 windows assessed will meet the BRE Guidelines for VSC. Of the 13 windows that don't meet the BRE Guidelines, eight windows experience an alteration to VSC of 20-30% which is considered a minor adverse effect, three windows experience an alteration between 30-40% which is considered a moderate adverse effect and two window experiences an alteration greater than 40% which is considered a substantial adverse effect.
- 16.57. Many of the windows that are below the BRE Guidelines in the proposed Development Scenario have projecting balconies above and below which severely restricts visibility of the sky dome, meaning even modest increases in massing can result in a disproportionate percentage change.
- 16.58. The eight windows experiencing a minor adverse effect and one window that experiences a moderate adverse effect retain VSC levels of 15% or greater and are therefore considered commensurate with the urban location.
- 16.59. 26 (68%) of the 38 rooms assessed will meet the BRE Guidelines for NSL. Of the 12 rooms that don't meet the BRE Guidelines, five rooms experience an alteration in NSL of 20-30% which is considered a minor adverse effect and seven rooms experience an alteration of 30-40% which is considered a moderate adverse effect.
- 16.60. A number of rooms that are below the BRE Guidelines in the proposed Development Scenario have balconies located above and below the window apertures. This severely restricts visibility of the sky dome meaning even modest increases in massing can result in a disproportionate percentage change.
- 16.61. Five rooms experiencing a minor adverse alteration and four rooms experiencing a moderate adverse alteration retain an NSL in excess of 50% and are therefore considered commensurate with the urban location.
- 16.62. The effects are not directly comparable to the 2019 Consented Scheme ES owing to the amended Baseline which now includes the 30 Garrard Street extension which impacts daylight to windows and rooms within building. An assessment against the 2019 Consented Scheme has shown that 12 of the 13 affected windows experience a change in their retained VSC levels with the Development (as amended) in place. However, the alterations are all by 0.7% VSC or less which is not a perceptible change in light. In terms of NSL, five of the 12 affected rooms experience a change in the retained NSL levels with the Development (as amended) in place. One of these rooms experiences a change in their retained NSL level of less than 3% NSL which is not considered perceptible. The remaining four would experience changes between 3.4% NSL and 9.1% NSL. These changes would be perceptible but overall the effect to daylight within this building is not altered from those of 2019 Consented Scheme.
- 16.63. In consideration of the above, the overall effect of the proposed Development upon this building is considered **moderate adverse** with a number of substantial reductions, and the overall potential effect of the proposed Development on daylight remains unchanged from that set out within Chapter 16 of the 2019 Consented Scheme ES.

1-45 Projection West

- 16.64. A total of 138 windows serving 110 rooms have been assessed within 1-45 Projection West. 67 (49%) of the 138 windows assessed will meet the BRE Guidelines for VSC. Of the 71 windows that don't meet the BRE Guidelines, 11 windows experience an alteration to VSC of 20-30% which is considered a minor adverse effect, 18 windows experience an alteration of 30-40% which is

considered a moderate adverse effect and 42 windows experience an alteration over 40% which is considered a substantial adverse effect. Many of the windows that are below the BRE Guidelines have projecting balconies above and below. This severely restricts visibility of the sky dome meaning even modest increases in massing can result in a disproportionate percentage change.

- 16.65. Two of the 11 windows experiencing a minor adverse effect, three of the 18 windows experiencing a moderate adverse alteration and 12 of the 42 windows experiencing a substantial adverse effect see low existing levels of VSC, below 10%, where even a small alteration would lead to disproportionate percentage change. 13 of these windows also see small absolute losses of less than 3% VSC which is unlikely to be perceptible to the occupant.
- 16.66. Two windows experiencing a minor adverse effect, 12 of the 18 windows that experience a moderate adverse effect and eight of the windows experiencing a substantial adverse effect retain VSC levels of 15% or greater and are therefore considered commensurate with the urban location.
- 16.67. 64 (58%) of the 110 rooms assessed will meet the BRE Guidelines for NSL. Of the 46 rooms that don't meet the BRE Guidelines, 11 experience an alteration in NSL of 20-30% which is considered a minor adverse effect, 14 rooms experience an alteration of 30-40% which is considered a moderate adverse effect and 21 rooms experience an alteration over 40% which is considered a substantial adverse effect. A number of these rooms have balconies located above and below the window apertures. This severely restricts visibility of the sky dome meaning even modest increases in massing can result in a disproportionate percentage change.
- 16.68. Seven of the 11 rooms experiencing a minor adverse effect, 10 of the 14 rooms experiencing a moderate adverse effect and two of the rooms experiencing a substantial adverse effect retain an NSL in excess of 50% and are therefore considered commensurate with the urban location.
- 16.69. Two of the rooms experiencing a minor adverse effect, two experiencing a moderate adverse effect and five experiencing a substantial adverse effect see low existing NSL levels owing to the urban location. Within these rooms, even a small alteration would lead to disproportionate percentage change.
- 16.70. The effects are not directly comparable to the 2019 Consented Scheme ES owing to the amended Baseline which now includes the 30 Garrard Street extension which impacts daylight to windows and rooms within building. An assessment of the proposed Development against the 2019 Consented Scheme has shown slight changes in retained levels of VSC and NSL. 62 of the 71 affected windows experience a change in their retained VSC levels however the alterations are all by 1.7% VSC or less which is not a perceptible change in light. In terms of NSL, 28 of the 46 affected rooms experience a change in the retained NSL levels between the 2019 Consented Scheme and the proposed Development. 16 of these rooms experience a change in their retained NSL level of less than 3% NSL which is not considered perceptible. The remaining 12 would experience changes between 3.2% NSL and 8.5% NSL. The daylight levels within isolated areas of this building are therefore, affected by the Proposed Amendments.
- 16.71. In consideration of the above, the overall effect of the proposed Development upon this building is considered **substantial adverse**; an increase from the moderate adverse effect with a number of substantial reductions in daylight as set out within Chapter 16 of the 2019 Consented Scheme ES.

30 Garrard Street

- 16.72. A total of 246 windows serving 210 rooms have been assessed within 30 Garrard Street. 36 (13%) of the 246 windows assessed will meet the BRE Guidelines for VSC. Of the windows that don't meet the BRE Guidelines, 22 windows experience an alteration to VSC of 20-30% which is

considered a minor adverse effect, 19 windows experience an alteration of 30-40% which is considered a moderate adverse effect and 169 windows experience an alteration greater than 40% which is considered a substantial adverse effect.

- 16.73. 17 windows experiencing a minor adverse effect, 14 windows that experience a moderate adverse effect and 39 windows that experience a substantial adverse effect see low existing levels of less than 10% of VSC where even a small alteration would lead to disproportionate percentage change. 39 of these windows see an absolute loss of less than 3% which is unlikely to be perceptible to the occupant.
- 16.74. 85 (53%) of the 160 rooms assessed will meet the BRE Guidelines for NSL. Of the rooms that don't meet the BRE Guidelines, 18 rooms experience an alteration in NSL of 20-30% which is considered a minor adverse effect, 12 rooms experience an alteration of 30-40% which is considered a moderate adverse effect and 45 rooms experience an alteration greater than 40% which is considered a substantial adverse effect.
- 16.75. 14 rooms experiencing a minor adverse effect, six rooms experiencing a moderate adverse effect and one experiencing a substantial adverse effect retain an NSL in excess of 50% and are therefore considered commensurate with the urban location.
- 16.76. This property was converted from office space to residential following the various Station Hill planning consents. As such, this property has been implemented with the knowledge that a large-scale development would occur directly opposite that would lead to substantial alterations in daylight.
- 16.77. Owing to the location of this property, the majority of affected rooms and windows overlook Plots C and G which remain unchanged from the consented maximum parameters, assessed in Chapter 16 of the 2019 Consented Scheme ES. However, an assessment of the proposed Development against the 2019 Consented Scheme has shown slight changes in retained levels of VSC and NSL. 53 of the 160 affected windows experience a change in their retained VSC levels however the alterations are all by 1% VSC or less which is not a perceptible change in light. In terms of NSL, Seven of the 75 affected rooms experience a change in the retained NSL levels. These seven rooms experience a change in their retained NSL level of between 2% and 4.9% NSL. As such, the daylight levels within this building are not materially altered from those of 2019 Consented Scheme.
- 16.78. This property is not directly comparable to that assessed in the 2019 ES Addendum owing to the extension having been implemented. In addition, more detailed room layouts have been sourced since the 2019 ES Addendum.
- 16.79. In consideration of the above, the overall effect of the proposed Development upon this building is considered **substantial adverse**; an increase from the moderate adverse effect with a number of substantial reductions in daylight as set out within Chapter 16 of the 2019 Consented Scheme ES. However, the increase in effect is attributed to the inclusion of the extension and more detailed information being sourced in relation to this building rather than the Proposed Amendments themselves.

32 Friar Street

- 16.80. A total of seven windows serving five rooms have been assessed within 32 Friar Street. Six (86%) of the seven windows assessed will meet the BRE Guidelines for VSC. One window experiences a reduction in VSC of 20-30% which is considered a minor adverse effect. This window is to a bedroom which is considered less sensitive in terms of daylight. It also has a low existing VSC

level and would experience a low absolute loss of 3.6% which is unlikely to be perceptible to the occupant.

- 16.81. Four (80%) of the five rooms assessed will meet the BRE Guidelines for NSL. One room experiences a reduction in NSL of 20-30% which is considered a minor adverse effect. This room is understood to be a bedroom which is considered less sensitive to changes in light.
- 16.82. An assessment against the 2019 Consented Scheme has shown a slight change in retained levels of VSC to the affected window. The change to this window is 0.7% VSC which is not considered perceptible. The room affected in terms of NSL experiences a technical change which has led to it now experiencing a minor adverse effect. Therefore, whilst one room would be considered adversely affected when it was not previously, the daylight levels within this building are not materially altered from those of 2019 Consented Scheme.
- 16.83. In consideration of the above, the overall effect of the proposed Development upon this building is considered **negligible** and the overall potential effects of the proposed Development on daylight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

33 Friar Street

- 16.84. A total of four windows serving four rooms have been assessed within 33 Friar Street. Three (75%) of the four windows assessed will meet the BRE Guidelines for VSC. The remaining window experiences an alteration to VSC of 20-30% which is considered a minor adverse effect. This window has a low existing VSC level of 9.5% and sees a low absolute loss of 2.2% which is unlikely to be perceptible to the occupant. The low existing level has led to a disproportionate percentage change to VSC.
- 16.85. One (25%) of the four rooms assessed will meet the BRE Guidelines for NSL. The three remaining rooms experience an alteration over 40% which is considered a substantial adverse effect. All three rooms see low existing levels of NSL between 17.5% and 45.4%, where even a small alteration would lead to disproportionate percentage change.
- 16.86. An assessment against the 2019 Consented Scheme has shown a slight change in retained levels of NSL to one of the three affected rooms. The change to this room is 1.2% NSL which is not considered perceptible. In terms of VSC, the window affected experiences a technical change therefore the VSC is not considered to be altered. As such, the daylight levels within this building are not materially altered from those of 2019 Consented Scheme.
- 16.87. In consideration of the above, the overall effect of the proposed Development upon this building is considered **moderate adverse** and the overall potential effects of the proposed Development on daylight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

34 Friar Street

- 16.88. A total four windows serving three rooms have been assessed within 34 Friar Street. All four windows assessed will meet the BRE Guidelines for VSC. However, all three rooms assessed will fall short of the BRE Guidelines for NSL. Of these, one room experiences a reduction in NSL of 30-40% which is considered a moderate adverse effect and two rooms experience a reduction of over 40% which is considered a substantial adverse effect. The one room experiencing a moderate adverse effect would have a retained NSL of 52.8% which is considered commensurate with the urban location, whilst the two rooms that experience a substantial adverse effect have low existing

levels of NSL of 14.7% and 38.5%, where even a small alteration would lead to disproportionate percentage change.

- 16.89. An assessment against the 2019 Consented Scheme has shown a slight change in retained levels of NSL to one of the affected rooms. The change to this room is 2% NSL which is not considered perceptible but has led to it now experiencing a moderate adverse effect when it previously experienced a minor adverse effect. The remaining two affected rooms experience a technical change therefore the NSL is not considered to be altered. Whilst one room sees an increase in its significance of effect, the daylight levels within this building are not materially altered from those of 2019 Consented Scheme.
- 16.90. In consideration of the above, the overall effect of the proposed Development upon this building is considered **moderate adverse** and the overall potential effects of the proposed Development on daylight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

Bridewell and Samuel House, 60-61 Friar Street (Student Accommodation)

- 16.91. A total 67 windows serving 57 rooms have been assessed within Bidwell and Samuel House, 60-61 Friar Street. 27 (40%) of the 67 windows assessed will meet the BRE Guidelines for VSC. Of the 40 windows that don't meet the BRE Guidelines, 18 windows experience an alteration to VSC of 20-30% which is considered a minor adverse effect, 14 windows experience an alteration of 30-40% which is considered a moderate adverse effect and eight window experiences an alteration greater than 40% which is considered a substantial adverse effect.
- 16.92. 11 windows experiencing minor adverse effects, four experiencing moderate adverse effects and two experiencing major adverse effects retain VSC levels of 15% or greater which is considered commensurate with the urban location.
- 16.93. Six windows experience low existing levels of daylight at less than 10% VSC owing to the urban location and courtyard configuration, where even a small absolute loss will lead to disproportionate percentage change.
- 16.94. 41 (72%) of the 57 rooms assessed will meet the BRE Guidelines for NSL. Of the 16 rooms that don't meet the BRE Guidelines, six rooms experience an alteration in NSL of 20-30% which is considered a minor adverse effect, four rooms experience an alteration of 30-40% which is considered a moderate adverse effect and six rooms experience an alteration over 40% which is considered a substantial adverse effect.
- 16.95. Four rooms that experience a minor adverse effect and two that experience a moderate adverse effect retain an NSL in excess of 50% which is considered commensurate with the urban location.
- 16.96. This property is student accommodation which has a transient population and thus may be considered less sensitive from a daylight perspective.
- 16.97. An assessment of the Development (as amended) against the 2019 Consented Scheme has shown changes in retained levels of VSC and NSL to the affected windows and rooms. 38 of the 40 affected windows experience a change in their retained VSC levels however, the alterations are all by 2.3% VSC or less which would not perceptibly alter the light within the rooms. In terms of NSL, 14 of the 16 affected rooms experience a change in the retained NSL levels when compared with the 2019 Consented Scheme. These seven rooms experience a change in their retained NSL level between 2% and 15.8% NSL. As such, whilst the VSC within this building is not materially altered from that of the 2019 Consented Scheme, there are isolated areas that experience a noticeable change in NSL.

- 16.98. This property is not directly comparable to the 2019 ES Addendum owing to updated information having been sourced and input into the model. In consideration of the above, the overall effect to this building is assessed as **moderate adverse** and the overall potential effects of the proposed Development on daylight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

Daylight to Future Surrounding Properties

- 16.99. As these developments are yet to be implemented and would therefore not have occupants to experience changes in light, the retained levels are assessed against the BRE Guidelines.
- 16.100. This assessment is depicted on drawings numbers 5847/82/04/01, 5847/82/04/02, 5847/82/04/03, 5847/82/04/04, 5847/82/04/05 and 5847/82/04/06 (**Technical Appendix 16.2**) and full details of the results can be found in **Technical Appendix 16.3**.

20 Greyfriars Road

- 16.101. No detailed room layouts were submitted for this permitted development; therefore, this scheme has been assessed in terms of retained VSC levels.
- 16.102. A total of 127 windows have been assessed within 20 Greyfriars Road. Four of the 127 windows assessed meet the BRE Guidelines of 27% VSC in the proposed Development scenario, whilst 31 of the 127 windows see over 27% in the existing scenario. 21 of the 123 windows falling below 27% VSC would however retain VSC levels in excess of 15% which is considered commensurate with the urban location.
- 16.103. The absolute alterations in VSC to 29 of the remaining 102 windows is less than 3% VSC, therefore the lower levels of VSC experienced by these windows are a function of the urban location rather than the proposed Development.
- 16.104. Furthermore, 51 of the 127 windows see lower VSC levels, less than 15%, in the existing scenario, therefore lower daylight levels are a function of the obstructed, urban location of this permitted development. Whilst the proposed Development leads to alterations in VSC to this future residential property when compared to the existing Site, the lower daylight levels following implementation of the proposed Development would have been understood when permission was granted for this permitted development.
- 16.105. In consideration of the above, the overall effect of the proposed Development is considered **moderate adverse**. This property has been approved since the 2019 ES Addendum and therefore was not previously assessed.

52-55 Friar Street and 12 Greyfriars Road

- 16.106. Detailed room layouts were obtained for this future receptor; therefore, this scheme has been assessed in terms of ADF and NSL.
- 16.107. A total of 68 rooms have been assessed within 52-55 Friar Street and 12 Greyfriars Road. This comprises 19 living/kitchen/diners and 49 bedrooms. 23 (34%) of the 68 rooms within this future property would comply with the BRE Guidelines for ADF in the proposed Development scenario.
- 16.108. Four of the 19 living/kitchen/diners meet the BRE Guidelines of 2% ADF for rooms with a kitchen. Of the 15 that do not achieve 2% ADF, four see no alteration compared with the Baseline scenario, seven see an alteration of 0.1% ADF, two see an alteration of 0.2% ADF, and the final two living/kitchen/diners see an alteration of 0.3% and 0.4% ADF respectively.

- 16.109. 19 of the 49 bedrooms retain an ADF of 1% or greater and therefore comply with the BRE Guidelines. 16 of the bedrooms fall marginally short of the BRE Guidelines with 0.8% of 0.9% in both the Baseline and the proposed Development scenarios. The levels of light within these rooms is commensurate with the urban location. 13 of the remaining bedrooms see no alteration from the Baseline scenario and the final bedroom sees an alteration of 0.1% ADF in the proposed Development scenario.
- 16.110. 10 of the 68 rooms (15%) meet the BRE Guidelines for NSL in the proposed Development scenario. 22 of the 68 rooms retain an NSL in excess of 50% which is considered acceptable given the urban location. 28 would experience alterations of less than 20% which is not considered noticeable and the remaining eight are living/kitchen/diners which look into the courtyard with a balcony overhead. These eight living/kitchen/diners see NSL levels between 21% and 37% in the proposed Development scenario; the NSL levels in the Baseline scenario were between 49% and 58%.
- 16.111. Owing to the courtyard nature and urban location of this development, it is not uncommon to experience lower levels of NSL, particularly in living/kitchen/diners.
- 16.112. Given the low magnitude of the majority of the alterations in ADF and NSL, the urban location of this consented scheme and the few significant alterations being largely attributed to the rooms having balconies overhead meaning that even modest increases in massing can result in a disproportionate percentage change in NSL, the overall effect of the proposed Development is considered **moderate adverse**. The overall potential effects of the proposed Development on daylight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

Sunlight to Existing Surrounding Properties

- 16.113. The potential sunlight impacts of the proposed Development have been assessed against the Baseline conditions in regard to Annual Probable Sunlight Hours (PSH) in accordance with the BRE Guidelines. A comparison against the 2019 Consented Scheme has also been undertaken to identify those existing properties that experience alterations to their affected windows when comparing the proposed Development (as amended) with the 2019 Consented Scheme; this has been summarised in **Technical Appendix 16.1**. Only those receptors that experience changes between the proposed Development (as amended) and the 2019 Consented Scheme are discussed further. Full details of the results can be found in **Technical Appendix 16.3** and are summarised in **Table 16.5** below.
- 16.114. A total of 476 windows serving 368 rooms have been assessed within the 26 surrounding residential properties in terms of sunlight. Owing to the increased study area as a result of the 2019 Hybrid Application scheme being considered within the Cumulative Scenario, the windows vary from those reported in Chapter 16 of the 2019 Consented Scheme ES which comprised of 270 windows serving 191 rooms within 10 buildings.
- 16.115. A total of 357 (75%) windows out of the 476 assessed will meet the BRE Guidelines for annual PSH and winter PSH.
- 16.116. A total of 17 (65%) out of the 26 properties assessed will meet the BRE Guidelines for annual and winter PSH and the effect of the proposed Development on these properties is therefore considered **negligible**. These properties are highlighted in grey in **Table 16.5** below. The 2019 Consented Scheme ES reported that two (20%) of the 10 properties assessed were fully BRE compliant; both would also meet the BRE Guidelines in this assessment.

16.117. From the comparison with the 2019 Consented Scheme, five properties would not experience changes to their affected windows as a result of the Proposed Amendments. These five properties are highlighted in orange within **Table 16.5**. Four of these properties were assessed within the 2019 ES Addendum and their overall effect does not change from the 2019 Consented Scheme ES whilst the remaining property was not assessed previously. The overall effect to these five properties are outlined below:

- 49-51 Greyfriars Road – **Substantial Adverse**;
- 53 Greyfriars Road – **Substantial Adverse**;
- 9-11 Stanshawe Road – **Moderate Adverse**;
- Alexia Court-3 Tudor Road – **Minor Adverse** (not previously assessed); and
- The Gateway Public House-31 Greyfriars Road – **Moderate Adverse**.

16.118. The remaining properties for which there are potential impacts owing to the Proposed Amendments are discussed below.

Table 16.5: Proposed Development – Summary of Sunlight Results

Address	Total No. of Windows	No. Windows that meet BRE Guidelines	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
1-15 Tanfields	11	11	0	0	0	0	0	0
Reada Court	14	14	0	0	0	0	0	0
3 Sackville Street	2	2	0	0	0	0	0	0
15 Sackville Street	1	1	0	0	0	0	0	0
17 Sackville Street	1	1	0	0	0	0	0	0
19 Sackville Street	4	4	0	0	0	0	0	0
25 Sackville Street	2	2	0	0	0	0	0	0
27 Sackville Street	3	3	0	0	0	0	0	0
29 Sackville Street	1	1	0	0	0	0	0	0
5-21 Tudor Road (Friary Court)	48	48	0	0	0	0	0	0
1-29 Projection East	15	7	0	0	8	0	0	0
136-137 Friar Street	1	1	0	0	0	0	0	0
1-41 Icon House	16	6	1	1	6	0	0	10
1-45 Projection West	102	92	1	7	2	0	0	0
7-11 Station Road	36	36	0	0	0	0	0	0
18 Stanshawe Road	1	1	0	0	0	0	0	0
30 Garrard Street	81	38	4	6	33	0	0	12
33 Friar Street	1	1	0	0	0	0	0	0
49-51 Greyfriars Road	31	0	0	0	31	0	0	31
53 Greyfriars Road	6	0	0	0	6	0	0	6
9-11 Stanshawe Road	4	3	0	0	1	0	0	0
Alexia Court-3 Tudor Road	26	21	1	1	3	0	0	2
Building to Rear Of 136-137 Friar Street	1	1	0	0	0	0	0	0
The Gateway Public House - 31 Greyfriars Road	5	0	1	3	1	1	0	4

Address	Total No. of Windows	No. Windows that meet BRE Guidelines	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
Malcom Place	39	39	0	0	0	0	0	0
18-29 Regent Court	24	24	0	0	0	0	0	0
Total	476	357	8	18	91	1	0	65

1-29 Projection East

- 16.119. A total 15 windows serving 15 rooms have been assessed within 1-29 Projection East. Seven (47%) of the 15 windows assessed will meet the BRE Guidelines for annual PSH. All of the remaining eight windows experience an alteration to annual PSH of over 40% which is considered a substantial adverse effect. However, these eight windows meet the BRE Guidelines in regard to winter PSH.
- 16.120. All eight windows have low levels of existing annual PSH owing to their almost due west orientation and the building's urban context. As such, any alterations could result in a disproportionate percentage change.
- 16.121. An assessment against the 2019 Consented Scheme has shown changes in retained levels of annual PSH to one of the eight affected windows. The affected window experiences a change in its retained annual PSH levels however the alterations is by 1% annual PSH which would not perceptibly alter the light within this room and there is no change in winter PSH. As such, the sunlight levels within this building are not materially altered from those of 2019 Consented Scheme.
- 16.122. In consideration of the above, the overall effect of the proposed Development upon this building is considered **moderate adverse** and the overall potential effects of the proposed Development on sunlight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

1-41 Icon House

- 16.123. A total 16 windows serving 16 rooms have been assessed within 1-41 Icon House. Six (38%) of the 16 windows assessed will meet the BRE Guidelines for annual and winter PSH. Of the remaining ten windows, two are not affected in terms of annual PSH, one window experiences an alteration to annual APSH of 20-30% which is considered a minor adverse effect, one window experiences an alteration of 30-40% which is considered a moderate adverse effect and six windows experience an alteration of greater than 40% which is considered a substantial adverse effect.
- 16.124. Ten windows experience an alteration in winter PSH of greater than 40% which is considered a substantial adverse effect. All ten windows experience low existing winter PSH owing to their urban location, which leads to disproportionate percentage change. All ten windows also face almost due west, where even a modest development would intercept the low angle afternoon sunlight.
- 16.125. A comparison of the Development (as amended) with the 2019 Consented Scheme has shown changes in retained levels of annual PSH to six of the ten affected windows. The affected windows experience a change in their retained annual PSH levels, with alterations between 1% and 2% which has led to a change in significance to two windows from moderate adverse to substantial adverse. In terms of winter PSH, just one of the affected windows would experience a change of 1% winter PSH. Therefore, whilst two windows would be considered to experience additional effects, the sunlight levels within this building are not materially altered from those of 2019 Consented Scheme.

16.126. In consideration of the above, the overall effect of the proposed Development upon this building is considered **moderate adverse** and the overall potential effects of the proposed Development on sunlight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

1-45 Projection West

16.127. A total 102 windows serving 83 rooms have been assessed within 1-45 Projection West. 92 (90%) of the 102 windows assessed will meet the BRE Guidelines for annual and winter APSH. Of the remaining 10 windows, one window experiences an alteration to annual PSH of 20-30% which is considered a minor adverse effect, seven windows experience an alteration of 30-40% which is considered a moderate adverse effect and two windows experience an alteration over 40% which is considered a substantial adverse effect. However, these 10 windows meet the BRE Guidelines in regard to winter PSH.

16.128. Many of the windows that fall below the annual BRE Guidelines have balconies located above and below, which substantially reduces the ability of the sun to reach the windows.

16.129. An assessment against the 2019 Consented Scheme has shown changes in retained levels of annual PSH to three of the 10 affected windows. The affected windows experience a change in their retained annual APSH levels however the alterations are by 1% annual PSH which would not perceptibly alter the light within these rooms and there is no change in winter PSH. As such, the sunlight levels within this building are not materially altered from those of 2019 Consented Scheme.

16.130. Considering the dense urban context of the site, the inherent architectural design of this building, the overall level of compliance with the BRE Guidelines and the retained levels of annual PSH, the overall effect of the proposed Development upon this building is considered **moderate adverse** and the overall potential effects of the proposed Development on sunlight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

30 Garrard Street

16.131. A total 81 windows serving 38 rooms have been assessed within 30 Garrard Street. 38 (47%) of the 81 windows assessed will meet the BRE Guidelines for annual and winter PSH. Of the remaining 43 windows, four windows experience an alteration in annual PSH of 20-30% which is considered a minor adverse effect, six windows experience an alteration of 30-40% which is considered a moderate adverse effect and 33 windows experience an alteration of greater than 40% which is considered a substantial adverse effect.

16.132. 12 windows experience an alteration in their winter PSH of greater than 40% which is considered a substantial adverse effect. 27 windows face almost due west, where even a modest development would intercept the low angle afternoon sunlight.

16.133. This property was converted from office space to residential uses following the previous Station Hill planning consents. As such, this conversion has been implemented with the knowledge that a large-scale development would occur directly opposite that would lead to substantial alterations in daylight.

- 16.134. An assessment against the 2019 Consented Scheme has shown changes in retained levels of annual PSH to 14 of the 43 affected windows. The affected windows experience a change in their retained annual PSH levels. However, the alterations are between 1% and 3% annual PSH which would not perceptibly alter the light within this room and there is no change in winter PSH. As such, the sunlight levels within this building are not materially altered from those of 2019 Consented Scheme.
- 16.135. This property is not directly comparable to that assessed within the 2019 ES Addendum owing to the extension having been implemented. In addition, more detailed room layouts have been sourced since the 2019 ES Addendum.
- 16.136. The overall effect of the proposed Development upon this building is considered **substantial adverse** and the overall potential effects of the proposed Development on sunlight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

Sunlight to Future Surrounding Properties

20 Greyfriars Road

- 16.137. A total of 79 windows have been assessed within 20 Greyfriars Road in terms of annual and winter PSH. Nine (11%) of the 79 windows assessed are compliant with the BRE Guidelines in terms of annual and winter PSH in the proposed Development scenario.
- 16.138. 28 windows fall short of the BRE Guidelines for both annual and winter PSH. 42 windows that fall short of the BRE Guidelines for annual PSH meet the BRE Guidelines for winter PSH.
- 16.139. 44 of the windows retain an annual PSH of 15% or greater; this is considered commensurate with the urban location.
- 16.140. Room uses for this property are unknown and therefore windows serving bedrooms have also been considered in this assessment.
- 16.141. In consideration of the above, the overall effect of the proposed Development upon this building is considered **moderate adverse**. This property has been approved since the 2019 ES Addendum.

52-55 Friar Street and 12 Greyfriars Road

- 16.142. There are no living/kitchen/dining room windows facing within 90° of due south facing the Site, therefore, the overall effect of the proposed Development upon this building is considered **negligible**. The overall potential effects of the proposed Development on sunlight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

Overshadowing to Surrounding Amenity Areas

- 16.143. The potential overshadowing impacts of the proposed Development on surrounding amenity areas have been assessed against the Baseline and 2019 Consented Scheme. The full overshadowing assessment can be found within **Technical Appendix 16.5**.
- 16.144. One public amenity area (Station Hill Square), one communal roof terrace and 30 private gardens serving 29 buildings have been assessed in terms of overshadowing.

16.145. The communal roof terrace and all 30 private gardens serving the 29 buildings outlined below would experience no or little alteration (below 20%), and the effect on overshadowing to these properties would therefore be **negligible**:

- Montrose House Communal Roof Terrace;
- 5 – 21 Tudor Road (Friary Court) private gardens;
- 9 – 17 Stanshawe Road rear private gardens (odds);
- 8 – 28 Stanshawe Road rear private Gardens (evens); and
- 7 – 31 Vachel Road rear private gardens (odds).

16.146. The remaining existing area of amenity, Station Hill Square, also known as Station Plaza, is partially within the proposed red line boundary, and is complete and operational. As half the space is outside the red line boundary and given the fact that it would read as one large amenity area, the space has been assessed in its entirety as a surrounding amenity area.

21st March (equinox)

16.147. Station Hill Square is unaffected by shadow cast from the Development until approximately 15:00 GMT. From 15:00 GMT shadow from the Development would start to encroach onto the square and by 16:00 GMT the majority of the square would be cast under shadow by the Development until sunset at approximately 18:00 GMT.

21st June (summer solstice)

16.148. On June 21st, Station Hill Square would be unaffected by the Development until approximately 15:00 BST thus receiving approximately eight hours of direct sunlight. Between 16:00 BST and 18:30 BST the Development would cast shadow on the majority of the Square. From 18:30 BST the Square would again receive direct sunlight on the majority of its area, until 20:00 BST, at which point, existing buildings would overshadow segments of the Square.

21st December (winter solstice)

16.149. On December 21st, due to the extent of existing overshadowing, small segments of Station Hill Square would be cast under shadow as a result of the Development from 14:00 BST to 15:00 BST.

16.150. An assessment of sun hours on the ground of this area sees 72% of this area receiving two or more hours of direct sunlight on 21st March. As such, this amenity area is fully compliant with the BRE Guidelines.

16.151. An assessment against the 2019 Consented Scheme has shown that this amenity area does not experience a change in effects.

16.152. Overall, with only three hours of additional shadow occurring on 21st March, the majority of 21st June being unaffected by shadow and only one hour of additional shadow as a result of the Development on December 21st, as well as the space being fully BRE compliant, the effect of the proposed Development on overshadowing is considered minor adverse and remains unchanged for the 2019 Consented Scheme ES.

Daylight within the Proposed Development

- 16.153. Detailed daylight assessments have been undertaken for the habitable rooms within Plots E and F. An updated standalone Internal Daylight, Sunlight and Overshadowing report accompanies the Reserved Matters applications for these two plots and discusses the assessment results in more detail.
- 16.154. The detailed assessments have been undertaken in the proposed Development Scenario comprising the Reserved Matters details for Plots E and F and the 2019 Consented Scheme at maximum parameters on the remainder of the Site. An additional cumulative assessment has been undertaken to assess the quantum of light should surrounding consented schemes (including the 2019 Hybrid Application) be implemented; this can be found in Chapter 17: Cumulative Effects.
- 16.155. 979 rooms were assessed within Plot E in terms of average daylight factor (ADF), NSL and room depth criterion (RDC). 735 (75%) of the 979 habitable rooms within Plot E meet the BRE Guidelines in terms of ADF, whilst 521 (53%) meet the BRE Guidelines for NSL. All rooms have been designed in accordance with the RDC.
- 16.156. 425 rooms were assessed within Plot F in terms of ADF, NSL and RDC. 302 (71%) of the 425 habitable rooms within Plot F meet the BRE Guidelines in terms of ADF, whilst 241 (57%) meet the BRE Guidelines for NSL. All rooms have been designed in accordance with the RDC.
- 16.157. 134 additional habitable rooms have been included within the proposed Development. The overall compliance for ADF has reduced slightly compared with the 2019 Consented Scheme from 82% (to 75%) for Plot E and 73% (to 71%) for Plot F, and the overall compliance for NSL has reduced slightly within Plot E from 55% in the 2019 Consented Scheme to 53% in the proposed Development scenario. Plot F sees a slight improvement in its overall compliant for NSL from 53% in the 2019 Consented Scheme to 57% in the proposed Development scenario.

Sunlight with the Proposed Development

- 16.158. Detailed sunlight assessments have been undertaken for living rooms within Plots E and F served by a window within 90 degrees of due south. A standalone Internal Daylight, Sunlight and Overshadowing report accompanies the Reserved Matters applications and discusses the assessment results in more detail.
- 16.159. The detailed assessments have been undertaken in the proposed Development Scenario comprising the Reserved Matters details for Plots E and F and the maximum parameter massing on the remainder of the Site. An additional cumulative assessment was undertaken to assess the quantum of light should surrounding consented schemes be implemented; this can be found in Chapter 17: Cumulative Effects.
- 16.160. 190 living rooms within Plot E have been assessed in terms of annual and winter PSH. 140 (74%) are compliant with both annual and winter SPH BRE Guidelines. In addition, 10 meet the BRE Guidelines for annual PSH whilst falling short of the BRE Guidelines for winter PSH. A further three living rooms meet the BRE Guidelines in winter whilst falling short of the annual PSH BRE Guidelines. 37 living rooms fall short of the BRE Guidelines for both annual and winter PSH.
- 16.161. 124 living rooms within Plot F have been assessed in terms of annual and winter PSH. 68 (55%) are compliant with both annual and winter SPH BRE Guidelines. A further 34 living rooms meet

the BRE Guidelines in winter whilst falling short of the annual PSH BRE Guidelines. 22 living rooms fall short of the BRE Guidelines for both annual and winter PSH.

- 16.162. 32 additional living rooms have been included within the proposed Development that are applicable for APSH assessment. The overall compliance for APSH has reduced slightly from 79% for Plot E and 61% for Plot F in the 2019 Consented Scheme to 74% and 55% in the proposed Development scenario.

Overshadowing within the Proposed Development

- 16.163. Sun Hours on Ground (SHOG) assessments have been undertaken for all public and communal amenity areas within the proposed Development. A standalone Internal Daylight, Sunlight and Overshadowing report accompanies the Reserved Matters applications and discusses the assessment results for Plots E and F in more detail.
- 16.164. The proposed Central Square sees less than two hours of direct sunlight within its area on 21st March and therefore does not meet the BRE Guidelines. The overshadowing of this area remains unchanged from the levels reported within Chapter 16 of the 2019 Consented Scheme ES.
- 16.165. Friar's Walk complies with the BRE Guidelines with 50% of its area seeing two or more hours of direct sunlight on 21st March. There is a slight reduction when compared to the 2019 Consented Scheme ES which saw 53% of the area seeing two or more hours, however the area remains BRE compliant.
- 16.166. All four communal courtyard amenity areas of Plot E see less than two hours of direct sunlight on 21st March within their area. Lower levels of sunlight within courtyards is common and has been mitigated through the introduction of roof terraces to provide the future occupants with a well sunlit amenity area. The courtyard spaces have been amended since the 2019 ES Addendum, where there are now four courtyard spaces compared to the three of the 2019 Consented Scheme. The sun hours on ground within the southern courtyard has reduced owing to the lowering of this courtyard from first floor to ground level.
- 16.167. The roof terraces of Plots E and F see 100% and 90% of their areas with two or more hours of direct sunlight on 21st March, both being in excess of the BRE Guidelines. The overshadowing of this area remains unchanged from the levels reported for the 2019 Consented Scheme ES.

Mitigation

Demolition and Construction

- 16.168. As set out in the 2019 Consented Scheme ES demolition and construction of the wider Development would not give rise to any significant adverse potential effects. Therefore, no mitigation is required.

Completed Development

- 16.169. The mitigation measures remain unchanged from those set out within Chapter 16 the 2019 Consented Scheme ES. During the design process of the Plots E and F proposed scheme

amendments consideration was given to minimising additional impacts on daylight and sunlight to surrounding sensitive receptors as much as possible.

Residual Effects

Demolition and Construction - Wider Development

- 16.170. No mitigation is required for the demolition and construction of the proposed Development in relation to daylight, sunlight and overshadowing. Accordingly, the likely residual effects would remain as the potential effects, that is **negligible** to **temporary, short-term** and of **minor beneficial** significance. During construction, these would gradually increase to those of the proposed Development, that is **negligible** to **permanent, long-term** and of **substantial adverse** significance.

Completed Development

Daylight - Surrounding Properties

- 16.171. Overall, in the proposed Development Scenario, 61% (742 of 1,208) of residential windows around the Site meet the BRE Guidelines in terms of VSC. 73% (636 of 869) of residential rooms surrounding the Site meet the BRE Guidelines for NSL. Many affected properties are those with low existing levels of VSC or NSL for which some reduction below the BRE Guidelines is inevitable. Many others are located below overhanging balconies, which greatly restricts visibility of the sky dome meaning even modest increases in massing can result in a disproportionate percentage change. A number also retain levels of VSC and NSL that are commensurate with the urban context.
- 16.172. The overall effect of the proposed Development on daylight to the surrounding residential properties is considered to be **long term, local** and of **negligible to substantial adverse** significance. The residual effects are unchanged from those set out in Chapter 16 of the 2019 Consented Scheme ES.

Sunlight - Surrounding Properties

- 16.173. In relation to sunlight, in the proposed Development Scenario 75% (357 out of 476) of the residential windows around the Site meet the BRE Guidelines. The majority of the 119 windows that fail to meet the BRE Guidelines have existing levels of sunlight below the recommended levels or are influenced by the presence of balconies, so some reduction below the BRE Guidelines is likely to be inevitable for any new massing on the Site beyond the existing profiles.
- 16.174. The overall effect of the proposed Development on sunlight to the surrounding residential properties is considered to be **long term, local** and of **negligible to substantial adverse** significance. The residual effects are unchanged from those set out in Chapter 16 of the 2019 Consented Scheme ES, which were considered to be long term, local and of moderate to substantial adverse significance.

Overshadowing - Surrounding Amenity Areas

- 16.175. The residual overshadowing effect on the surrounding private amenity areas is likely to be **negligible**. Station Hill Square experiences additional shadow in the afternoons throughout the year. The overall effect of the proposed Development on sunlight to the surrounding amenity areas is considered to be **long term, local** and of **minor adverse** significance. The residual effects of the proposed Development remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

Summary and Conclusions

Summary of Effects

Table 16.6: Summary of effects

Issue	Potential Effects	Mitigation	Residual Effect
Demolition and Construction - Wider Development			
Daylight levels in neighbouring properties	Negligible to short term, local, minor beneficial increasing to those of the proposed Development – that is negligible to permanent, long-term and of substantial adverse significance during construction	None required	Negligible to temporary, short-term effect of minor beneficial significance increasing to those of the proposed Development – that is negligible to permanent, long-term and of substantial adverse significance during construction
Sunlight levels in neighbouring properties	Negligible to short term, local, minor beneficial increasing to those of the proposed Development – that is negligible to permanent, long-term and of substantial adverse significance during construction	None required	Negligible to temporary, short term effect of minor beneficial significance increasing to those of the proposed Development – that is negligible to permanent, long-term and of substantial adverse significance during construction
Proposed Development			
Daylight levels in neighbouring properties	46 properties experience a negligible effect, 6 properties experience a minor adverse impact, 1 property experiences a minor to moderate adverse impact, 6 properties experience a moderate adverse impact, 1 property experiences a moderate	Mitigation inherent in design.	Long term, local, adverse effect of negligible to substantial adverse significance.

Issue	Potential Effects	Mitigation	Residual Effect
	adverse impact with a number of substantial reductions in daylight and 3 properties experience a substantial adverse impact. 2 future receptors experience moderate adverse impacts.		
Sunlight levels in neighbouring properties	17 properties experience a negligible effect, 1 property experiences a minor adverse impact, 5 properties experience a moderate adverse impact and 3 properties experience substantial adverse effects. 1 future receptor experience a negligible impact and one experiences a moderate adverse impacts.	Mitigation inherent in design.	Long term, local adverse effect of negligible to substantial adverse significance
Overshadowing of surrounding area	30 private gardens, 1 communal gardens and 1 communal roof terrace experience negligible effects and one public open space experiences a minor adverse effect.	Mitigation inherent in design.	Long term, local, adverse effects of negligible to minor adverse significance.

Comparison of Effects between this ES Addendum and the 2019 Consented Scheme ES

16.176. The effects to the following properties have changed in comparison to the 2019 Consented Scheme ES:

- 1-45 Projection West – Change in the effect of the proposed Development on daylight from moderate adverse to substantial adverse. Garrard House, 30 Garrard Street – Change in the effect of the proposed Development on daylight from moderate adverse to substantial adverse. This is due to additional information sourced about internal layouts and implementation of the roof top extension to this property. However, the retained levels of daylight do not materially alter from those of 2019 Consented Scheme.

¹ Ministry of Housing, Communities & Local Government, Planning Practice Guidance, 2018

² BRE, Site Layout Planning for Daylight and Sunlight: a Guide to Good Practice (BR 209) Second Edition, BRE Press, September 2011.

17. Cumulative Effects

- 17.1. Given the time that has elapsed since preparation of the 2015 ES, the list of 'consented and reasonably foreseeable schemes' requiring consideration in conjunction with the Proposed Development has been updated to reflect the current position.
- 17.2. The chapter has been prepared by Waterman IE with input from each of the technical specialists who have contributed to the EIA and this ES Addendum.

Assessment Methodology

- 17.3. The methodology employed in the Cumulative Assessment remains the same as described in the 2015 ES. As with the 2015 ES, consideration has been given to two types of cumulative effects:
- **Type 1 Cumulative Effects:** Combined effects of a number of individual effects (for example noise, dust and visual intrusion) from the construction of the Development (in isolation) on a particular receptor; and
 - **Type 2 Cumulative Effects:** Combined effects of the proposed Development with other schemes, which individually might be insignificant, but when considered together could cause a significant cumulative effect.
- 17.4. The schemes assessed as part of the Type 2 Cumulative assessment have been updated since the 2019 Consented Scheme ES as detailed in **Table 17.1** and shown on **Figure 17.1**. This updates Table 17.1 and Figure 17.1 of the 2019 Consented Scheme ES.
- 17.5. The updates comprise:
- Replacement of the Former Sorting Office, Caversham Road, Planning Ref 11/00276/OUT with a new application for this site referenced 182252 / OUT;
 - Removal of Building B of Station Hill which had been submitted in detail and replacement with the proposed 2019 Hybrid Application for the North Site as this would supersede previous applications for this area of the Site and is considered more likely to be constructed in future than the reserved matters details for Building B;
 - Removal of Garrard House, 30 Garrard Street from the cumulative scheme list as this has been constructed and therefore is included as part of the existing baseline;
 - Moving the former Coopers BMW site, Napier Road / Kings Meadow Road, Planning Ref 162166 to the future baseline scenario as it is now under construction;
 - Removal of Kings Point, 120 Kings Road, Planning Ref 162087 as it is considered too far from the Site (over 900m away) to result in significant cumulative effects. This is in line with that agreed with Reading Borough Council for the 2019 Hybrid Application ES.
- 17.6. Inclusion of four new cumulative schemes comprising:
- Kenavon Drive, Planning Ref 170509;
 - Former Scottish and Southern Electricity Site, North of Vastern Road, Planning Ref 200188;
 - Broad Street, Reading, Planning Ref 182137; and
 - Station Hill North Site Hybrid Application (planning reference: 192032).

Table 17.1 Schemes considered within the Type 2 Cumulative Assessment

No	Site	Application Reference	Proposals	Decision/Date	Distance and direction from the Site (at its closest point)
1.	Former Sorting Office, 80 Caversham Road	182252 / OUT	Outline application considering access, landscaping, layout and scale involving the demolition of all existing buildings and structures (Classes B1a & B2) and erection of new buildings ranging between basement and 2 – 25 storeys in height, providing 658 (79 x studio, 227x1, 335x2 & 17x3-bed) residential units, office accommodation (Class B1a), flexible ground floor Class A1-3 uses, a community centre(Class D1), health centre uses (Class D1) and various works including car parking, servicing, public and private open space, landscaping, highways, pedestrian and vehicular access and associated works.	Decision Pending	150m north
2.	29-35 Station Road, Reading, RG1 1LG	181930	Demolition of existing building and the erection of a 22 storey building (at 121m AOD) for hotel accommodation, office accommodation and ground floor retail uses. No parking is proposed on site although servicing will be provided for to the rear of the site accessed from Garrard Street.	Approved October 2019	45m south-east
3.	52 to 55 Friar Street and 12 Greyfriars Road, Reading RG1 1DX	162210	Demolition of existing building and structures (Class A1) and erection of 3 new buildings ranging between 6 - 12 (and basement) storeys in height to provide 135 (1xstudio, 54x1, 73x2 & 7x3-bed) residential units (Class C3), a flexible Class A1-A5 use at ground floor level fronting onto Friar St, a flexible Class A1-5, B1(a) or D2 (gym only) use at ground floor level fronting onto Greyfriars Rd, with associated access, parking, servicing, landscaping and engineering works (amended description).	Approved March 2018	Immediately adjacent to the west of the Site.

No	Site	Application Reference	Proposals	Decision/Date	Distance and direction from the Site (at its closest point)
4.	Bristol and West Arcade, Market Place	180358	Demolition of vacant former Bristol & West Arcade (173 – 175 Friar Street) and erection of an eight storey mixed-use building (plus basement) to provide 35 residential units, 4,212 sqm of B1 office floorspace, and 5 retail units (A1/A2/A3), demolition of rear parts of 29 – 31 and 32 Market Place, the change of use of the retained units at 27 – 28, 29 – 31 Market Place at first, second and third floors to provide 8 residential units, change of use at ground and basement level of 32 Market Place from A2 to flexible retail use (A1/A2/A3), retention of 260.4 sqm of A4 use at ground and basement at 29-31 Market Place, change of use at ground and basement of 27 – 28 Market Place to flexible retail use (A1/A2/A3), and associated internal and external works to the Listed Buildings, landscaping, refuse, plant, cycle stores and substation at basement level.	Approved January 2019	300m to the east.
5.	Land between Weldale Street and Chatham Street	170326	Demolition of all existing buildings (including 3 retail units) and structures, and erection of new buildings ranging between lower ground & 4 storeys to lower ground & 11 storeys in height, providing 427 (233x1, 182x2 & 12x3-bed) residential units (Class C3) and 1 flexible ground floor retail shop (Class A1) or restaurant and café (Class A3) unit, together with new public realm, landscaping, accesses, parking and associated works (amended description).	Approved March 2018	180m to the west of the Site.

No	Site	Application Reference	Proposals	Decision/Date	Distance and direction from the Site (at its closest point)
6.	Kenavon Drive	170509	Demolition of the two existing retail (Homebase and former Toys R Us) structures and the erection of new buildings ranging between 2 and 11 storeys in height, providing 765 (18 x studio, 302x1, 409x2 and 36x3- bed) residential units (Class C3), 5 commercial units (1x flexible Class A1-A4, B1 or D1-D2, 1x flexible D1 or D2, 1x flexible Class A1- A5, 1x flexible Class A3 or A4, 1x flexible A1-A5 or D1-D2 uses), various works to the public realm, including a new riverside square, landscaping, accesses, parking and associated works	Approved October 2018	700m east
7.	Former Scottish and Southern Electricity Site, North of Vastern Road	200188	Demolition of existing structures and erection of a series of buildings ranging in height from 1 to 11 storeys, including residential dwellings (C3 use class) and retail floorspace (A3 use class), together with a new north-south pedestrian link, connecting Christchurch Bridge to Vastern Road	N/A – decision pending	300m north
8.	Broad Street, Reading	182137	Construction of three residential buildings (Use Class C3) ranging in height from 5 to 22 storeys (Site E to provide 52 units , Site B to provide 139 Units and Site A to provide 172 units) above Broad Street Mall and provision of a podium level amenity area; Construction of an 18 storey building on South Court comprising ground and first floor retail (Use Class A1/A2/A3) and residential over upper floors (Use Class C3, Site C to provide 99 units); Change of use and extension of Quadrant House to form a 3 storey residential building (Use Class C3, Site D to provide 31 units); Creation of three ground floor retail units (Use Class A1/A2/A3) fronting Dusseldorf Way and Queens Walk	N/A – decision pending	160m south west

No	Site	Application Reference	Proposals	Decision/Date	Distance and direction from the Site (at its closest point)
9.	Station Hill North Site Hybrid Application	192032	Hybrid application comprising (i) application for Full Planning Permission for Phase 2 (Plot G and public realm) including demolition of existing structures, erection of an eighteen storey building containing office use (Class B1) and flexible retail, non-residential institution and assembly and leisure uses (Class A1, A2, A3, A4, A5, D1 and D2). Provision of podium deck, vehicular access and parking. New public open space and landscaping. Bridge link over Garrard St and(ii) Application for Outline Planning Permission for Phase 3 (all Matters reserved) for four building Plots (A, B, C and D). Demolition of existing buildings and structures. Mixed-use redevelopment	N/A – decision pending	On Site. This would replace the proposals within the 2016 Consented Scheme for the area to the north of Garrard Street.

Type 1 Cumulative Effect Assessment

- 17.7. Although there have been some minor amendments to the scale of effects in certain individual topic areas assessed, these are not considered to affect the Type 1 Cumulative Effect Assessment set out in the 2019 Consented Scheme ES. This has therefore, not been reproduced in this ES Addendum.

Type 2 Cumulative Effect Assessment.

Socio - Economics and Health

Demolition and Construction

- 17.8. The implementation of the proposed Development along with the nine cumulative schemes would bring about additional construction-related employment. The scale of the construction employment generated cannot be readily quantified on the basis of the information available for each scheme as this information is commercially sensitive.
- 17.9. Despite the above, due to the nature of the construction industry, construction-related employment is relatively mobile and therefore it is not considered appropriate to assess construction employment at the local level. It is, therefore, expected that the proposed Development along with the cumulative schemes would have **negligible** effect on construction-related employment. This assessment is consistent with that of the 2019 Consented Scheme ES.

Completed Development

- 17.10. The nine cumulative schemes included in this assessment would bring forward a range of land uses including residential, commercial and leisure floorspace.
- 17.11. The likely type 2 cumulative effect on employment has been assessed using the same methodology and employment densities used to assess the proposed Development (refer to Chapter 7: Socio-Economics and Health). On this basis, it has been estimated that the cumulative schemes alongside the proposed Development would generate up to approximately 10,960 jobs, resulting in a **substantial beneficial** type 2 cumulative effect in the **long-term** and at the **district level**.
- 17.12. The cumulative schemes alongside the proposed Development would deliver in the region of 2,773 and 3,475 residential units. Accordingly, the cumulative schemes and the proposed Development would contribute towards housing delivery and meeting RBC's housing targets. The overall likely type 2 cumulative effect on housing is therefore considered to be **long-term, district** and of **substantial beneficial** significance. This is an increase in effect from moderate when compared with the 2019 Consented Scheme ES.
- 17.13. The cumulative provision of homes can be reasonably expected to bring more people to the area. This could increase demand for community facilities such as education and healthcare facilities. The extent of additional demand expected to be generated by the cumulative schemes for social infrastructure depends on the number of additional residents. Population assumptions have been made for this assessment of cumulative effects using the same methodology used to assess the proposed Development (refer to Chapter 7: Socio-Economics). This results in an estimate that the cumulative schemes would accommodate between 5,530 and 6,930 residents. The cumulative schemes would also give rise to additional children requiring school places although it is not possible to estimate this based on the information available for each cumulative scheme.
- 17.14. It is expected that the applicant of each of the cumulative schemes would have undertaken the required assessment on demand for social infrastructure and should any mitigation have been required, this would have been agreed with RBC for each application and delivered through Section 106 or Community Infrastructure Levy. It is therefore assumed the likely type 2 cumulative effect upon community facilities would be **negligible**. This assessment is consistent with that of the 2019 Consented Scheme ES.

Wind

Demolition and Construction

- 17.15. The likely type 2 cumulative wind effects during demolition and construction have not been directly assessed by the wind tunnel tests due to the constantly changing nature of the Site during this period. However, professional judgement has been used to consider these effects taking account of the baseline scenario and the completed development scenario, that would be expected to represent a worst case scenario.
- 17.16. During demolition and construction, the presence of surrounding off-Site cumulative schemes (namely 52-55 Friar Street, Weldale Street, 173-175 Friar Street, Broad Street Mall, 29-35 Station

Road and the Former Sorting Office at Caversham Road) would potentially provide a small amount of additional shelter to the Site and nearby area; however, effects are expected to be **negligible**.

- 17.17. If the nearby cumulative schemes were demolished concurrently with the Proposed Development, this potentially creates a more 'open' scenario where wind speeds at street level (particularly in vicinity of Thames Tower) could be higher than at present. However, site hoarding around the cleared sites (2 – 3m in height) would be expected to provide sufficient localised shelter to pedestrians using the thoroughfares around the sites in this scenario.
- 17.18. Once construction of the Proposed Development begins and progresses, the local wind conditions at the Site would adjust to those reported in the later sections of this Chapter. However, it is anticipated that the likely effect of the construction works on the wind microclimate of the Site and immediate surrounding area would be **negligible**. The demolition and construction assessment is consistent with that of the 2019 Consented Scheme ES.

Completed Development

- 17.19. Configuration 4 was tested with the Proposed Development in place, comprising the reserved matters details for Plots E and F (including landscaping) with the Station Hill Phase 2 and 3 Development in accordance with the 2019 Hybrid Application (as maximum parameters for Plots A, B, C & D and the detailed design for Plot G), plus Cumulative Surrounds. Wind conditions are shown in **Figure 17.2** at ground level during the windiest season, and **Figures 17.3 and 17.4** at ground and terrace levels respectively during the summer season. Strong wind exceedances at ground level are shown in **Figure 17.5**. Figures 17.2 and 17.3 replace the same numbered figures of both the 2015 ES and 2019 ES Addendum. Figure 17.4 was not provided as part of the 2015 ES but replaces the figure of the same number in the 2019 ES Addendum. Figure 17.5 is a new figure.

Existing Surrounding Streets

- 17.20. Wind conditions across the majority of existing streets are suitable for their intended strolling use or calmer during the windiest season. These represent a **Negligible (not significant)** cumulative effect. Wind conditions at location 52, situated at the north-western corner of Plots A, B, C and D would however be suitable for walking use, one category windier than suitable, representing a **Minor Adverse** (significant) effect. Mitigation measures would be developed with the detailed design of the North Site. These conditions are windier than in the cumulative scenario tested for the 2019 Consented Scheme ES. This is due to the change in configuration of buildings within the North Site and are broadly consistent with the findings of the 2019 Hybrid Application ES.

Proposed Thoroughfares

- 17.21. Wind conditions at all thoroughfares within the Proposed Development Site would be suitable for their intended strolling use during the windiest season. These conditions are suitable for their intended use and therefore represent cumulative effects ranging from **Moderate Beneficial (not significant)** to **Negligible (not significant)**. This is an improvement compared with the 2019 Consented Scheme ES which found windier than desired conditions at Location 80, adjacent to Plot B.

Entrances

- 17.22. Wind conditions at entrance locations to the Proposed Development and the surrounding buildings are suitable for standing use or calmer during the windiest season. These conditions are therefore suitable for their intended use and thus represent cumulative effects ranging **from Minor Beneficial (not significant) to Negligible (not significant)** for both on- and off-Site locations tested.

Ground Level Amenity Spaces

- 17.23. Wind conditions at ground level amenity spaces are suitable for their intended sitting use during the summer season. This represents a **Negligible (not significant)** cumulative effect.

Podium Roof Terraces

- 17.24. Wind conditions at the podium and roof terrace amenity spaces on Plots E and F would be suitable for their intended sitting use during the windiest season. This represents a **Negligible (not significant)** cumulative effect.

Balconies

- 17.25. Wind conditions across all balconies on Plots E and F would be suitable for their intended use during the summer season in the cumulative scenario. This represents a **Negligible (not significant)** cumulative effect.

Strong Winds

- 17.26. In Configuration 4, there would be five locations with strong winds exceeding the pedestrian safety criteria. Areas where the pedestrian safety criteria are exceeded are located within the North Site (locations 43, 51, 52, 59 and 208). These would require further mitigation in order to be made safe for pedestrian use. These wind mitigation measures would include use of landscaping, sculptural elements and elevated porous screens developed through iterative wind tunnel testing as the detailed design of the North Site comes forward. These conditions thus represent an **Adverse (significant)** residual effect at these locations.

Comparison of Cumulative Effects between this ES Addendum and the 2019 Consented Scheme ES

- 17.27. In the cumulative scenario, wind conditions at Plots E and F remain suitable for their intended use. However, the wind conditions on and around the North Site become windier because of the greater height of the buildings proposed as part of the 2019 Hybrid Application. Mitigation measures to alleviate the windier than desired conditions on the North Site will be developed when the detailed design of Plots A to D is developed.

Daylight, Sunlight and Overshadowing

- 17.28. This scenario considers the proposed Development plus cumulative schemes, which includes applications for planning permission in the surrounding area that have been submitted or proposed

but are not yet under construction. This enables the potential for cumulative effects to the daylight, sunlight and overshadowing amenity to existing neighbouring buildings to be considered.

- 17.29. The list of cumulative schemes relevant to this assessment is as follows:
- 80 Caversham Road (182252/OUT);
 - 29-35 Station Road, Reading RG1 1LG (181930);
 - 52-55 Friar Street and 12 Greyfriars Road, Reading RG1 1DX (162210); and
 - The 2019 Hybrid Application for Station Hill North Site (192032).
- 17.30. The remaining cumulative schemes are considered to be too far away from the proposed Development to result in cumulative daylight, sunlight and overshadowing effects.
- 17.31. The cumulative scenario is depicted in drawings 5847/82/03/04, 5847/82/03/05 and 5847/82/03/06 within **Technical Appendix 16.2**.
- 17.32. Where comparisons have been made to the 2019 Hybrid Application have been made, an alternative terminology has been applied. The 2019 Hybrid Application refers to substantial adverse effects as 'major adverse'.

Demolition and Construction

- 17.33. The demolition of the cumulative schemes would lead to some temporary improvements in daylight availability at surrounding properties, and reduced overshadowing. However, given the short-term, temporary nature of the effect which would rapidly change as construction of the relevant cumulative schemes progresses, the likely type 2 cumulative effect is considered to be **negligible**.

Daylight to Existing Surrounding Properties

- 17.34. The full daylight assessment for the cumulative scenario can be found within **Technical Appendix 16.3** and is summarised in **Table 17.2**.
- 17.35. Overall, of the 1,208 windows assessed for Vertical Sky Component (VSC) 647 (54%) would meet the BRE Guidelines in the cumulative scenario. Of the 869 rooms assessed for No sky line (NSL), 543 (63%) would meet the BRE Guidelines in the cumulative scenario.
- 17.36. In comparison to the assessment of the proposed Development in the absence of the relevant cumulative schemes, the cumulative VSC and NSL results indicate that there would be changes in the daylight received by the majority of surrounding residential properties; this is predominantly due to the additional effects resulting from the 2019 Hybrid Application. The results of the proposed Development scenario can be seen in **Table 16.4** and the results of the cumulative scenario can be seen in **Table 17.2**. The detailed results can be found in **Technical Appendix 16.3**.
- 17.37. The results in **Table 17.2** demonstrate that the majority of properties assessed would see changes in VSC and NSL as a result of the implementation of relevant cumulative schemes when compared to the results for the assessment of the proposed Development in isolation. The 30 properties highlighted in grey in **Table 17.2** would experience no or little alteration (below 20% change in VSC) in the cumulative scenario, and the effect on daylight to these properties would therefore be **negligible**. The two properties highlighted in green experience no or little alteration from the

assessment of proposed Development. The remaining affected properties that differ from the proposed Development scenario, are discussed in detail below.

Table 17.2: Cumulative Scenario – Summary of Daylight Results

Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE	Below BRE Guidelines				Total No. of Rooms	No. Rooms that meet the 0.8 times	Below BRE Guidelines			
			20-29.9% Reductio	30-39.9% Reductio	>40% Reductio	Total			20-29.9% Reductio	30-39.9% Reductio	>40% Reductio	Total
1-15 Tanfields	18	18	0	0	0	0	10	6	2	0	2	4
Reada Court	14	14	0	0	0	0	10	10	0	0	0	0
1 Sackville Street	4	4	0	0	0	0	4	1	2	1	0	3
3 Sackville Street	7	7	0	0	0	0	5	4	1	0	0	1
5 Sackville Street	5	5	0	0	0	0	5	1	4	0	0	4
7 Sackville Street	6	6	0	0	0	0	4	3	0	0	1	1
9 Sackville Street	4	4	0	0	0	0	4	2	1	1	0	2
11 Sackville Street	4	4	0	0	0	0	4	2	2	0	0	2
13 Sackville Street	3	3	0	0	0	0	3	2	1	0	0	1
15 Sackville Street	5	5	0	0	0	0	5	3	0	2	0	2
17 Sackville Street	5	5	0	0	0	0	4	4	0	0	0	0
19 Sackville Street	7	6	1	0	0	1	4	3	1	0	0	1
21 Sackville Street	3	3	0	0	0	0	3	1	2	0	0	2
23 Sackville Street	4	4	0	0	0	0	4	3	1	0	0	1
25 Sackville Street	6	6	0	0	0	0	5	4	1	0	0	1
27 Sackville Street	6	6	0	0	0	0	4	4	0	0	0	0
29 Sackville Street	4	4	0	0	0	0	4	3	1	0	0	1
5-21 Tudor Road (Friary Court)	52	52	0	0	0	0	39	38	1	0	0	1
Montrose House	20	20	0	0	0	0	20	20	0	0	0	0
125 Friar Street	28	28	0	0	0	0	3	2	1	0	0	1
127 Friar Street	6	6	0	0	0	0	5	3	2	0	0	2
1-29 Projection East	94	13	10	21	50	81	66	24	28	8	6	42

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Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE	Below BRE Guidelines				Total No. of Rooms	No. Rooms that meet the 0.8 times	Below BRE Guidelines			
			20-29.9% Reductio	30-39.9% Reductio	>40% Reductio	Total			20-29.9% Reductio	30-39.9% Reductio	>40% Reductio	Total
13 Stanshawe Road	3	3	0	0	0	0	2	2	0	0	0	0
136-137 Friar Street	9	9	0	0	0	0	4	4	0	0	0	0
1-41 Icon House	54	4	3	10	37	50	38	7	3	7	21	31
144 Friar Street	2	2	0	0	0	0	2	2	0	0	0	0
1-45 Projection West	138	62	10	14	52	76	110	61	10	13	26	49
7-11 Station Road	57	57	0	0	0	0	24	24	0	0	0	0
8 Stanshawe Road	5	5	0	0	0	0	5	5	0	0	0	0
10 Stanshawe Road	5	5	0	0	0	0	4	4	0	0	0	0
12 Stanshawe Road	2	2	0	0	0	0	2	2	0	0	0	0
14 Stanshawe Road	4	4	0	0	0	0	3	3	0	0	0	0
15 Stanshawe Road	3	3	0	0	0	0	2	2	0	0	0	0
16 Stanshawe Road	3	3	0	0	0	0	3	3	0	0	0	0
17 Stanshawe Road	3	3	0	0	0	0	2	2	0	0	0	0
18 Stanshawe Road	6	6	0	0	0	0	3	3	0	0	0	0
19 Stanshawe Road	3	3	0	0	0	0	3	3	0	0	0	0
30 Garrard Street	246	31	14	19	182	215	160	79	18	8	55	81
32 Friar Street	7	5	1	1	0	2	5	3	1	1	0	2
33 Friar Street	4	0	3	1	0	4	4	1	0	0	3	3
34 Friar Street	4	2	2	0	0	2	3	0	0	1	2	3
49-51 Greyfriars Road	33	0	0	1	32	33	24	0	0	1	23	24
5 Vachel Road	5	4	1	0	0	1	5	3	0	2	0	2
7 Vachel Road	6	6	0	0	0	0	4	4	0	0	0	0
9 Vachel Road	4	4	0	0	0	0	4	4	0	0	0	0
11 Vachel Road	5	5	0	0	0	0	5	5	0	0	0	0

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Address	VSC						NSL					
	Total No. of Windows	No. Windows that meet BRE	Below BRE Guidelines				Total No. of Rooms	No. Rooms that meet the 0.8 times	Below BRE Guidelines			
			20-29.9% Reductio	30-39.9% Reductio	>40% Reductio	Total			20-29.9% Reductio	30-39.9% Reductio	>40% Reductio	Total
13 Vachel Road	6	6	0	0	0	0	6	6	0	0	0	0
15 Vachel Road	5	5	0	0	0	0	5	5	0	0	0	0
17 Vachel Road	10	10	0	0	0	0	4	4	0	0	0	0
19 Vachel Road	10	10	0	0	0	0	4	4	0	0	0	0
20-24 Vachel Road	16	11	5	0	0	5	12	12	0	0	0	0
21-23 Vachel Road	8	8	0	0	0	0	8	8	0	0	0	0
25 Vachel Road	4	4	0	0	0	0	4	4	0	0	0	0
27-31 Vachel Road	12	12	0	0	0	0	12	12	0	0	0	0
53 Greyfriars Road	13	6	0	1	6	7	9	4	0	0	5	5
9-11 Stanshawe Road	9	5	0	2	2	4	8	5	2	0	1	3
Alexia Court-3 Tudor Road	31	21	0	0	10	10	12	10	0	0	2	2
Bridewell & Samuel House - Student Housing	67	12	9	18	28	55	57	20	9	9	19	37
Building to Rear Of 136-137 Friar Street	6	6	0	0	0	0	1	1	0	0	0	0
The Gateway Public House - 31 Greyfriars Road	11	1	2	1	7	10	7	2	0	0	5	5
Belmont Court	21	21	0	0	0	0	21	21	0	0	0	0
Malcom Place	39	34	5	0	0	5	39	32	1	6	0	7
18-29 Regent Court	24	24	0	0	0	0	24	24	0	0	0	0
TOTAL	1,208	647	66	89	406	561	869	543	95	60	171	326

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1-15 Tanfields

- 17.38. A total of 18 windows serving 10 rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.39. For NSL, six of the 10 (60%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the four affected rooms, two would experience an alteration in NSL between 20-30% which is considered a minor adverse effect whilst two would experience an alteration greater than 40% which is considered a substantial adverse effect.
- 17.40. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.41. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

1 Sackville Street

- 17.42. A total of four windows serving four rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.43. For NSL, one of the four (25%) rooms assessed would meet the BRE Guidelines and is therefore considered to experience a negligible effect. Of the three affected rooms, two would experience an alteration in NSL between 20-30% which is considered a minor adverse effect whilst one would experience an alteration between 30-40% which is considered a moderate adverse effect.
- 17.44. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.45. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

5 Sackville Street

- 17.46. A total of five windows serving five rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.47. For NSL, one of the five (20%) rooms assessed would meet the BRE Guidelines and is therefore considered to experience a negligible effect. Of the four affected rooms, all would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.48. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.

- 17.49. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

7 Sackville Street

- 17.50. A total of six windows serving four rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.51. For NSL, three of the four (75%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected room would experience an alteration in NSL greater than 40% which is considered a major adverse effect.
- 17.52. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.53. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

9 Sackville Street

- 17.54. A total of four windows serving four rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.55. For NSL, two of the four (50%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, one would experience an alteration in NSL between 20-30% which is considered a minor adverse effect whilst one would experience an alteration between 30-40% which is considered a moderate adverse effect.
- 17.56. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.57. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

11 Sackville Street

- 17.58. A total of four windows serving four rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.59. For NSL, two of the four (50%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, both would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.60. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.

- 17.61. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

13 Sackville Street

- 17.62. A total of three windows serving three rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.63. For NSL, two of the three (67%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected room would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.64. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.65. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

15 Sackville Street

- 17.66. A total of five windows serving five rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.67. For NSL, three of the five (60%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, both would experience an alteration in NSL between 30-40% which is considered a moderate adverse effect.
- 17.68. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.69. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

19 Sackville Street

- 17.70. A total of seven windows serving four rooms were assessed for daylight within this building. For VSC, six of the seven (86%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected window would experience an alteration in VSC between 20-30% which is considered a minor adverse effect.
- 17.71. For NSL, three of the four (75%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected room would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.72. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.

- 17.73. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

21 Sackville Street

- 17.74. A total of three windows serving three rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.75. For NSL, one of the three (33%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, both would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.76. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.77. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

25 Sackville Street

- 17.78. A total of six windows serving five rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.79. For NSL, four of the five (80%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected room would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.80. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.81. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

29 Sackville Street

- 17.82. A total of four windows serving four rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.83. For NSL, three of the four (75%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected room would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.84. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.

- 17.85. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

5-21 Tudor Road (Friary Court)

- 17.86. A total of 52 windows serving 39 rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.87. For NSL, 38 of the 39 (97%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected room would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.88. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was negligible.
- 17.89. The cumulative effect on daylight within this building would be **negligible**. This building was not assessed within the 2019 Consented Scheme ES.

125 Friar Street

- 17.90. A total of 28 windows serving three rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.91. For NSL, two of the three (67%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected room would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.92. The additional NSL effects are attributed to the increased massing of 52-55 Friar Street and 12 Greyfriars Road in conjunction with the proposed Development.
- 17.93. The cumulative effect on daylight within this building would be **minor adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was negligible. This change is due to a combination of the Proposed Amendments and the 2019 Hybrid Application.

127 Friar Street

- 17.94. A total of six windows serving five rooms were assessed for daylight within this building. For VSC, all windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.95. For NSL, three of the five (60%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, both would experience an alteration in NSL between 20-30% which is considered a minor adverse effect.
- 17.96. The additional NSL effects are attributed to the increased massing of 52-55 Friar Street and 12 Greyfriars Road in conjunction with the proposed Development.

- 17.97. The cumulative effect on daylight within this building would be **minor adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight remain unchanged from those set out within Chapter 17 of the 2019 Consented Scheme ES.

1-29 Projection East

- 17.98. A total of 94 windows serving 66 rooms were assessed for daylight within this building. For VSC, 13 of the 94 (14%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 81 affected windows, 10 would experience an alteration in VSC between 20-30% which is considered a minor adverse effect and 21 would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 50 windows would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.99. For NSL, 24 of the 66 (36%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 42 affected rooms, 28 would experience an alteration in NSL between 20-30% which is considered a minor adverse effect and eight would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining six rooms would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.100. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application and 29-35 Station Road in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate to major adverse significance.
- 17.101. The effects are not directly comparable to the 2019 Consented Scheme ES owing to the amended Baseline which now includes the 30 Garrard Street extension which impacts daylight to windows and rooms within this building.
- 17.102. The cumulative effect on daylight within this building would be **moderate to substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was moderate adverse.

1-41 Icon House

- 17.103. A total of 54 windows serving 38 rooms were assessed for daylight within this building. For VSC, four of the 54 (7%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 50 affected windows, three would experience an alteration in VSC between 20-30% which is considered a minor adverse effect and 10 would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 37 windows would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.104. For NSL, seven of the 38 (18%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 31 affected rooms, three would experience an alteration in NSL between 20-30% which is considered a minor adverse effect and seven would experience an alteration between 30-40% which is considered a moderate adverse effect. The

remaining 21 rooms would experience an alteration in excess of 40% which is considered a substantial adverse effect.

- 17.105. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application and 29-35 Station Road in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of major adverse significance.
- 17.106. The effects are not directly comparable to the 2019 Consented Scheme ES owing to the amended Baseline which now includes the 30 Garrard Street extension which impacts daylight to windows and rooms within building.
- 17.107. The cumulative effect on daylight within this building would be **substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was moderate adverse with a number of substantial reductions.

1-45 Projection West

- 17.108. A total of 138 windows serving 110 rooms were assessed for daylight within this building. For VSC, 62 of the 138 (45%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 76 affected windows, 10 would experience an alteration in VSC between 20-30% which is considered a minor adverse effect and 14 would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 52 windows would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.109. For NSL, 61 of the 110 (56%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 49 affected rooms, 10 would experience an alteration in NSL between 20-30% which is considered a minor adverse effect and 13 would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 26 rooms would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.110. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate to major adverse significance.
- 17.111. The effects are not directly comparable to the 2019 Consented Scheme ES owing to the amended Baseline which now includes the 30 Garrard Street extension which impacts daylight to windows and rooms within this building.
- 17.112. The cumulative effect on daylight within this building would be **moderate to substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was moderate adverse with a number of substantial reductions.

30 Garrard Street

- 17.113. A total of 246 windows serving 160 rooms were assessed for daylight within this building. For VSC, 31 of the 246 (13%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 215 affected windows, 14 would experience an alteration in VSC between 20-30% which is considered a minor adverse effect and 19 would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 182 windows would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.114. For NSL, 79 of the 160 (49%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 81 affected rooms, 18 would experience an alteration in NSL between 20-30% which is considered a minor adverse effect and eight would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 55 rooms would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.115. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application and 29-35 Station Road in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate to major adverse significance.
- 17.116. This property is not directly comparable to the 2019 ES Addendum owing to the extension having been implemented. In addition, more detailed room layouts have been sourced since the 2019 ES Addendum.
- 17.117. The cumulative effect on daylight within this building would be **substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was moderate adverse with a number of substantial reductions.

32 Friar Street

- 17.118. A total of seven windows serving five rooms were assessed for daylight within this building. For VSC, five of the seven (71%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected windows, one would experience an alteration in VSC between 20-30% which is considered a minor adverse effect whilst one would experience an alteration between 30-40% which is considered a moderate adverse effect.
- 17.119. For NSL, three of the five (60%) rooms assessed would meet the BRE guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, one would experience an alteration in NSL between 20-30% which is considered a minor adverse effect whilst one would experience an alteration between 30-40% which is considered a moderate adverse effect.
- 17.120. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.

17.121. The cumulative effect on daylight within this building would be **minor adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight has increased from that set out within Chapter 17 of the 2019 Consented Scheme ES which was negligible.

33 Friar Street

17.122. A total of four windows serving four rooms were assessed for daylight within this building. For VSC, all four windows assessed see losses greater than recommended by BRE. Of the four affected windows, three would experience an alteration in VSC between 20-30% which is considered a minor adverse effect whilst one would experience an alteration between 30-40% which is considered a moderate adverse effect.

17.123. For NSL, one of the four (25%) rooms assessed would meet the BRE Guidelines and is therefore considered to experience a negligible effect. Of the three affected rooms, all would experience an alteration in NSL of greater than 40% which is considered a substantial adverse effect.

17.124. The additional VSC effects are attributed to the increased massing of the 2019 Hybrid Application in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate adverse significance.

17.125. The cumulative effect on daylight within this building would be **moderate adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight remain unchanged from those set out within Chapter 17 of the 2019 Consented Scheme ES.

34 Friar Street

17.126. A total of four windows serving three rooms were assessed for daylight within this building. For VSC, two of the four (50%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected windows, both would experience an alteration in VSC between 20-30% which is considered a minor adverse effect.

17.127. For NSL, all three rooms assessed see losses greater than recommended by BRE. Of the three affected rooms, one would experience an alteration in NSL between 30-40% which is considered a moderate adverse effect whilst two would experience an alteration in excess of 40% which is considered a substantial adverse effect.

17.128. The additional VSC effects are attributed to the increased massing of the 2019 Hybrid Application in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate adverse significance.

17.129. The cumulative effect on daylight within this building would be **moderate adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight remain unchanged from those set out within Chapter 17 of the 2019 Consented Scheme ES.

49-51 Greyfriars Road

17.130. A total of 33 windows serving 24 rooms were assessed for daylight within this building. For VSC, all 33 windows assessed see losses greater than recommended by BRE. Of the 33 affected

windows, one would experience an alteration in VSC between 30-40% which is considered a moderate adverse effect whilst 32 would experience an alteration in excess of 40% which is considered a substantial adverse effect.

- 17.131. For NSL, all 24 rooms assessed see losses greater than recommended by BRE. Of the 24 affected rooms, one would experience an alteration in NSL between 30-40% which is considered a moderate adverse effect whilst 23 would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.132. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of major adverse significance.
- 17.133. The cumulative effect on daylight within this building would be **substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight remain unchanged from those set out within Chapter 17 of the 2019 Consented Scheme ES.

5 Vachel Road

- 17.134. A total of five windows serving five rooms were assessed for daylight within this building. For VSC, four of the five (80%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The affected window would experience an alteration in VSC between 20-30% which is considered a minor adverse effect.
- 17.135. For NSL, three of the five (60%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, both would experience an alteration in NSL between 30-40% which is considered a moderate adverse effect.
- 17.136. The additional NSL effects are attributed to the increased massing of the 2019 Hybrid Application, and 52-55 Friar Street and 12 Greyfriars Road in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.137. The cumulative effect on daylight within this building would be **minor adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight remain unchanged from those set out within Chapter 17 of the 2019 Consented Scheme ES.

20-24 Vachel Road

- 17.138. A total of 16 windows serving 12 rooms were assessed for daylight within this building. For VSC, 11 of the 16 (69%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the five affected windows, all would experience an alteration in VSC between 20-30% which is considered a minor adverse effect.
- 17.139. For NSL, all rooms assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.140. The additional VSC effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.

17.141. The cumulative effect on daylight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

53 Greyfriars Road

17.142. A total of 13 windows serving nine rooms were assessed for daylight within this building. For VSC, six of the 13 (46%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the seven affected windows, one would experience an alteration in VSC between 30-40% which is considered a moderate adverse effect whilst six would experience an alteration in excess of 40% which is considered a substantial adverse effect.

17.143. For NSL, four of the nine (44%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the five affected rooms, all would experience an alteration in NSL greater than 40% which is considered a substantial adverse effect.

17.144. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate to major adverse significance.

17.145. The cumulative effect on daylight within this building would be **moderate to substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was moderate adverse.

9-11 Stanshawe Road

17.146. A total of nine windows serving eight rooms were assessed for daylight within this building. For VSC, five of the nine (56%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the four affected windows, two would experience an alteration in VSC between 30-40% which is considered a moderate adverse effect whilst two would experience an alteration in excess of 40% which is considered a substantial adverse effect.

17.147. For NSL, five of the eight (63%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the three affected rooms, two would experience an alteration in NSL between 20-30% which is considered a minor adverse effect whilst one would experience an alteration greater than 40% which is considered a substantial adverse effect.

17.148. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor to moderate adverse significance.

17.149. The cumulative effect on daylight within this building would be **minor to moderate adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was minor adverse.

Alexia Court-3 Tudor Road

17.150. A total of 31 windows serving 12 rooms were assessed for daylight within this building. For VSC, 21 of the 31 (68%) windows assessed would meet the BRE Guidelines and are therefore

considered to experience a negligible effect. Of the 10 affected windows, all would experience an alteration in VSC greater than 40% which is considered a substantial adverse effect.

- 17.151. For NSL, 10 of the 12 (83%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the two affected rooms, both would experience an alteration in NSL greater than 40% which is considered a substantial adverse effect.
- 17.152. The additional VSC effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate adverse significance.
- 17.153. The cumulative effect on daylight within this building would be **moderate adverse**. This building was not assessed within the 2019 Consented Scheme ES.

Bridewell & Samuel House - Student Housing

- 17.154. A total of 67 windows serving 57 rooms were assessed for daylight within this building. For VSC, 12 of the 67 (18%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 55 affected windows, nine would experience an alteration in VSC between 20-30% which is considered a minor adverse effect and 18 would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 28 windows would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.155. For NSL, 20 of the 57 (35%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 37 affected rooms, nine would experience an alteration in NSL between 20-30% which is considered a minor adverse effect and nine would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining 19 rooms would experience an alteration in excess of 40% which is considered a substantial adverse effect.
- 17.156. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application, and 52-55 Friar Street and 12 Greyfriars Road in conjunction with the proposed Development. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate to major adverse significance.
- 17.157. The cumulative effect on daylight within this building would be **moderate to substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was moderate adverse.

The Gateway Public House - 31 Greyfriars Road

- 17.158. A total of 11 windows serving seven rooms were assessed for daylight within this building. For VSC, one of the 11 (9%) windows assessed would meet the BRE Guidelines and is therefore considered to experience a negligible effect. Of the 10 affected windows, two would experience an alteration in VSC between 20-30% which is considered a minor adverse effect and one would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining seven windows would experience an alteration in excess of 40% which is considered a substantial adverse effect.

- 17.159. For NSL, two of the seven (28.6%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the five affected rooms, all would experience an alteration in NSL greater than 40% which is considered a substantial adverse effect.
- 17.160. The additional VSC effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of moderate to major adverse significance.
- 17.161. The cumulative effect on daylight within this building would be **moderate to substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was moderate adverse.

Malcom Place

- 17.162. A total of 39 windows serving 39 rooms were assessed for daylight within this building. For VSC, 34 of the 39 (87%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the five affected windows, all would experience an alteration in VSC between 20-30% which is considered a minor adverse effect.
- 17.163. For NSL, 32 of the 39 (82%) rooms assessed would meet the BRE guidelines and are therefore considered to experience a negligible effect. Of the seven affected rooms, one would experience an alteration in NSL between 20-30% which is considered a minor adverse effect whilst six would experience an alteration between 30-40% which is considered a moderate adverse effect.
- 17.164. The additional VSC and NSL effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on daylight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor to moderate adverse significance.
- 17.165. The cumulative effect on daylight within this building would be **minor to moderate adverse**. This building was not assessed within the 2019 Consented Scheme ES.

Daylight to Future Surrounding Properties

- 17.166. As these developments are yet to be implemented and would therefore not have occupants to experience changes in light, the retained levels are assessed against the BRE Guidelines.
- 17.167. This assessment is depicted on drawings numbers 5847/82/05/01, 5847/82/05/02, 5847/82/05/03, 5847/82/05/04, 5847/82/05/05 and 5847/82/05/06 (**Technical Appendix 16.2**) and full details of the results can be found in **Technical Appendix 16.3**.

20 Greyfriars Road

- 17.168. No detailed room layouts were submitted for this permitted development; therefore, this scheme has been assessed in terms of retained VSC levels.
- 17.169. A total of 127 windows have been assessed within 20 Greyfriars Road. Four of the 127 windows assessed meet the BRE Guidelines of 27% VSC in the Cumulative scenario. 22 of the 123 windows falling below 27% VSC would however retain VSC levels in excess of 15% which is considered commensurate with the urban location.

- 17.170. The absolute alterations in VSC to 29 of the remaining 108 windows is less than 3% VSC, therefore the lower levels of VSC experienced by these windows are a function of the urban location rather than the proposed Development and cumulative schemes.
- 17.171. The additional VSC effects are attributed to the increased massing of the 2019 Hybrid Application.
- 17.172. The cumulative effect on daylight within this building would be **moderate adverse**. This property has been approved since the 2019 ES Addendum and therefore was not previously assessed.

52-55 Friar Street and 12 Greyfriars Road

- 17.173. Detailed room layouts were obtained for this future receptor; therefore, this scheme has been assessed in terms of ADF and NSL.
- 17.174. A total of 68 rooms have been assessed within 52-55 Friar Street and 12 Greyfriars Road. This comprises 19 living/kitchen/diners and 49 bedrooms. 22 (32%) of the 68 rooms within this future property would comply with the BRE Guidelines for ADF in the proposed Development scenario.
- 17.175. Four of the 19 living/kitchen/diners meet the BRE Guidelines of 2% ADF for rooms with a kitchen. Of the 15 that do not achieve 2% ADF, one sees no alteration compared with the Baseline scenario, seven see an alteration of 0.1% ADF, four see an alteration of 0.2% ADF, two see an alteration of 0.3%, and the final living/kitchen/diner sees 0.4% ADF.
- 17.176. 18 of the 49 bedrooms retain an ADF of 1% or greater and therefore comply with the BRE Guidelines. 17 of the bedrooms fall marginally short of the BRE Guidelines with 0.8% or 0.9% in both the Baseline and the Cumulative scenarios. The levels of light within these rooms is commensurate with the urban location. 12 of the remaining bedrooms see no alteration from the Baseline scenario and the final two bedrooms see an alteration of 0.1% ADF in the Cumulative scenario.
- 17.177. 10 of the 68 rooms (15%) meet the BRE Guidelines for NSL in the proposed Development scenario. 21 of the 68 rooms retain an NSL in excess of 50% which is considered acceptable given the urban location. 26 would experience alterations of less than 20% which is not considered noticeable.
- 17.178. The additional ADF and NSL effects are attributed to the increased massing of the 2019 Hybrid Application.
- a. The cumulative effect on daylight within this building would be **moderate adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on daylight remain unchanged from those set out within Chapter 17 of the 2019 Consented Scheme ES.

Sunlight to Existing Surrounding Properties

- 17.179. The full sunlight assessment can be found in **Appendix 16.3** in of this ES Addendum and the summary results are presented in **Table 17.3**.
- 17.180. Of the 476 windows assessed for sunlight, 348 (73%) would meet the BRE Guidelines for both total and winter Probable Sunlight Hours (PSH) which is considered a negligible effect.
- 17.181. In comparison to the assessment of the proposed Development in the absence of the relevant cumulative schemes, the cumulative PSH results indicate that there would be changes in sunlight received by many of the surrounding residential properties. This is predominantly due to the

additional effects resulting from the 2019 Hybrid Application. The results of the proposed Development scenario can be seen in **Table 16.5** and the results of the cumulative scenario can be seen in **Table 17.3**.

- 17.182. The buildings highlighted in grey in **Table 17.3** experience little or no change in sunlight levels with the cumulative scenario in place resulting in a **negligible** effect. The two properties highlighted in green experience no or little alteration from the assessment of proposed Development. The remaining affected properties that differ from the proposed Development scenario, are discussed in detail below.

Table 17.3: Cumulative scenario – Summary of Sunlight Results

Address	Total No. of Windows	No. Windows that meet BRE Guidelines	Annual PSH			Winter PSH		
			Below BRE Guidelines			Below BRE Guidelines		
			20-29.9% Reduction	30-39.9% Reduction	>40% Reduction	20-29.9% Reduction	30-39.9% Reduction	>40% Reduction
1-15 Tanfields	11	11	0	0	0	0	0	0
Reada Court	14	14	0	0	0	0	0	0
3 Sackville Street	2	2	0	0	0	0	0	0
15 Sackville Street	1	1	0	0	0	0	0	0
17 Sackville Street	1	1	0	0	0	0	0	0
19 Sackville Street	4	3	0	0	0	0	0	1
25 Sackville Street	2	2	0	0	0	0	0	0
27 Sackville Street	3	3	0	0	0	0	0	0
29 Sackville Street	1	1	0	0	0	0	0	0
5-21 Tudor Road (Friary Court)	48	48	0	0	0	0	0	0
1-29 Projection East	15	7	0	0	8	0	0	0
136-137 Friar Street	1	1	0	0	0	0	0	0
1-41 Icon House	16	6	1	1	6	0	0	10
1-45 Projection West	102	92	1	7	2	0	0	0
7-11 Station Road	36	36	0	0	0	0	0	0
18 Stanshawe Road	1	1	0	0	0	0	0	0
30 Garrard Street	81	38	4	6	33	0	0	12
33 Friar Street	1	1	0	0	0	0	0	0
49-51 Greyfriars Road	31	0	0	0	31	0	0	30
53 Greyfriars Road	6	0	0	0	6	0	0	6
9-11 Stanshawe Road	4	3	0	0	1	0	0	0
Alexia Court-3 Tudor Road	26	16	1	2	7	0	0	2
Building To Rear Of 136-137 Friar Street	1	1	0	0	0	0	0	0

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The Gateway Public House - 31 Greyfriars Road	5	0	1	3	1	1	0	4
Malcom Place	39	36	1	2	0	0	0	3
18-29 Regent Court	24	24	0	0	0	0	0	0
Total	476	348	9	21	95	1	0	68

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19 Sackville Street

- 17.183. Four windows were assessed for sunlight within this building. For annual PSH, all four windows assessed would meet the BRE Guidelines and so are considered to experience a negligible effect.
- 17.184. For winter PSH, three (75%) of the four assessed windows would meet the BRE Guidelines and so are considered to experience a negligible effect. The remaining window sees a loss greater than 40% which is considered a substantial adverse effect.
- 17.185. The additional winter PSH effects are attributed to the increased massing 52-55 Friar Street and 12 Greyfriars Road in conjunction with the proposed Development.
- 17.186. The cumulative effect on sunlight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

49-51 Greyfriars Road

- 17.187. A total of 31 windows were assessed for sunlight within this building of which none would meet the BRE Guidelines for both Annual and Winter PSH. For annual PSH, all 31 rooms assessed see losses greater than 40% which is considered a substantial adverse effect.
- 17.188. For winter PSH, one of the 31 (3%) windows assessed would meet the BRE Guidelines and is therefore considered to experience a negligible effect. The remaining 30 see losses greater than 40% which is considered a substantial adverse effect.
- 17.189. The additional winter PSH effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on sunlight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of major adverse significance.
- 17.190. The cumulative effect on daylight within this building would be **substantial adverse**. As such, the overall potential effects of the proposed Development and cumulative schemes on sunlight remain unchanged from those set out within Chapter 17 of the 2019 Consented Scheme ES.

Alexia Court-3 Tudor Road

- 17.191. A total of 26 windows were assessed for sunlight within this building of which 16 (62%) would meet the BRE Guidelines for both annual and winter PSH. For annual PSH, 16 of the 26 (62%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the 10 windows affected annually, one would experience an alteration in annual PSH between 20-30% which is considered a minor adverse effect whilst two would experience an alteration between 30-40% which is considered a moderate adverse effect. The remaining seven would experience an alteration greater than 40% which is considered a substantial adverse effect. The majority of affected windows serve rooms with mitigating, unaffected windows.
- 17.192. For winter PSH, 24 of the 26 (92%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The remaining two see alterations greater than 40% which is considered a substantial adverse effect.

- 17.193. The additional annual APSH effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on sunlight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.194. The cumulative effect on sunlight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

Malcom Place

- 17.195. A total of 39 windows were assessed for sunlight within this building of which 36 (92%) would meet the BRE Guidelines for both annual and winter PSH. For annual PSH, 36 of the 39 (92%) windows assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. Of the three windows affected annually, one would experience an alteration in annual PSH between 20-30% which is considered a minor adverse effect whilst two would experience an alteration between 30-40% which is considered a moderate adverse effect.
- 17.196. For winter PSH, 36 of the 39 (92%) rooms assessed would meet the BRE Guidelines and are therefore considered to experience a negligible effect. The remaining three see losses greater than 40% which is considered a substantial adverse effect.
- 17.197. The additional annual and winter APSH effects are attributed to the increased massing of the 2019 Hybrid Application. The cumulative effect on sunlight to this building outlined in the 2019 Hybrid Application ES was permanent, local and of minor adverse significance.
- 17.198. The cumulative effect on sunlight within this building would be **minor adverse**. This building was not assessed within the 2019 Consented Scheme ES.

Sunlight to Future Surrounding Properties

20 Greyfriars Road

- 17.199. There are no cumulative effects to this building, the overall effects remain as per the proposed Development, which is **moderate adverse**. This property has been approved since the 2019 ES Addendum.

52-55 Friar Street and 12 Greyfriars Road

- 17.200. There are no living/kitchen/dining room windows facing within 90° of due south facing the Site, therefore, the overall effect of the proposed Development and cumulative schemes upon this building is considered **negligible**. The overall potential effects of the proposed Development on sunlight remain unchanged from those set out within Chapter 16 of the 2019 Consented Scheme ES.

Overshadowing to Surrounding Amenity Areas

- 17.201. The potential overshadowing impacts of the proposed Development and cumulative schemes on surrounding amenity areas have been assessed. The full overshadowing assessment can be found within **Technical Appendix 16.5**.

17.202. One public amenity area (Station Hill Square), one communal roof terrace and 30 private gardens serving 29 buildings have been assessed in terms of overshadowing. One future receptor, the 2019 Hybrid Application, has also been assessed in the cumulative scenario.

17.203. The communal roof terrace and all 30 private gardens serving the 29 buildings outlined below would experience no or little alteration (below 20%), and the effect on overshadowing to these properties would therefore be **negligible**.

- Montrose House Communal Roof Terrace;
- 5 – 21 Tudor Road (Friary Court) private gardens;
- 9 – 17 Stanshawe Road rear private gardens (odds);
- 8 – 28 Stanshawe Road rear private Gardens (evens); and
- 7 – 31 Vachel Road rear private gardens (odds).

17.204. The effect to Station Hill Square and a future receptor in the 2019 Hybrid Application is discussed below.

Station Hill Square

17.205. Station Hill Square is partially within the proposed red line boundary. As half the space is outside the red line boundary and given the fact that it would read as one large amenity area, the space has been assessed in its entirety as a surrounding amenity area.

21 March (equinox)

17.206. The area is unaffected by the Proposed Development from sunrise (06:08 Greenwich Mean Time (GMT)) until approximately 11:00 GMT on 21st March. From 11:00 GMT, shadow from the proposed Development with the 2019 Hybrid Application would start to encroach onto the square and by 16:00 GMT the majority of the square would be cast under shadow until sunset at approximately 18:00 GMT.

21 June (summer solstice)

17.207. On June 21st, the area would be unaffected by the proposed Development and the 2019 Hybrid Application until approximately 12:00 British Summer Time (BST). From 12:00 BST until 15:00 BST the western portion of the amenity area would be cast under shadow by the proposed Development and the 2019 Hybrid Application. However, the north-eastern portion of the square would receive eight hours of direct sunlight (between sunrise and 15:00 BST). Between 15:00 BST and 18:00 BST the proposed Development and the 2019 Hybrid Application would cast shadow on the majority of the amenity area and then from 18:00 BST the shadow travels southwards, having completely passed by approximately 19:30 BST.

21 December (winter solstice)

17.208. On December 21st, due to the extent of existing overshadowing, the area is unaffected by the proposed Development and the 2019 Hybrid Application.

Sun Hours on Ground

17.209. . The sun hours on ground assessment of the amenity area confirms compliance with the BRE Guidelines. In total, 73% of the area sees at least two hours of direct sunlight on the 21st March.

17.210. The effects in terms of overshadowing to this amenity area are a result of the 2019 Hybrid Application. Overall, taking into consideration that the amenity space is fully compliant with the BRE Guidelines and the extent of additional shadow cast by the proposed Development and cumulative schemes, the effect of overshadowing is considered **moderate adverse**. The cumulative effect of overshadowing within this amenity area as outlined in the 2019 Hybrid Application ES was permanent, local and of moderate adverse significance. As such, the overall potential effects of the proposed Development and cumulative schemes on overshadowing increase from that set out within Chapter 17 of the 2019 Consented Scheme ES which was minor adverse.

2019 Hybrid Application Public Realm – Future receptor

17.211. The sun hours on ground assessment of the amenity area within the 2019 Hybrid Application confirms that 4.7% of the area sees at least two hours of direct sunlight on the 21st March. Whilst this is below the BRE Guidelines of 50%, it does show an improvement compared with the level of direct sunlight received by the Central Square that formed part of the 2019 Consented Scheme. This area was not assessed within the 2019 Consented Scheme ES.

Daylight with the Proposed Development

17.212. Detailed daylight assessments have been undertaken for the habitable rooms within Plots E and F. A standalone Internal Daylight, Sunlight and Overshadowing report accompanies the Reserved Matters applications and discusses the assessment results in more detail.

17.213. 979 rooms were assessed within Plot E in terms of average daylight factor (ADF), NSL and room depth criterion (RDC). In the cumulative scenario, 696 (71%) of the 979 habitable rooms within Plot E meet the BRE Guidelines in terms of ADF, whilst 471 (48%) meet the BRE Guidelines for NSL. All rooms have been designed in accordance with the RDC.

17.214. 425 rooms were assessed within Plot F in terms of ADF, NSL and RDC. 301 (71%) of the 425 habitable rooms within Plot F meet the BRE Guidelines in terms of ADF, whilst 233 (55%) meet the BRE Guidelines for NSL. All rooms have been designed in accordance with the RDC.

17.215. 134 additional habitable rooms have been included within the proposed Development. With these additional rooms, the overall compliance for ADF has reduced compared to the 2019 Consented Scheme ES cumulative scenario from 78% for Plot E and 73% for Plot F to 71% for both plots. The overall compliance for NSL has also reduced slightly within Plot E from 49% to 48%. Plot F sees a slight improvement in its overall compliance for NSL from 53% to 55%.

Sunlight with the Proposed Development

17.216. Detailed sunlight assessments have been undertaken for living rooms within Plots E and F served by a window within 90 degrees of due south. A standalone Internal Daylight, Sunlight and Overshadowing report accompanies the Reserved Matters applications and discusses the assessment results in more detail.

17.217. 190 living rooms within Plot E have been assessed in terms of annual and winter PSH. In the cumulative scenario, 113 (59%) are compliant with both the annual and winter SPH BRE Guidelines. In addition, 10 meet the BRE Guidelines for annual PSH whilst falling short of the BRE

Guidelines for winter APSH. A further three living rooms meet the BRE Guidelines in winter whilst falling short of the annual PSH BRE Guidelines. 37 living rooms fall short of BRE Guidelines for both annual and winter PSH.

- 17.218. 124 living rooms within Plot F have been assessed in terms of annual and winter PSH. 68 (55%) are compliant with both the annual and winter SPH BRE Guidelines. A further 34 living rooms meet the BRE Guidelines in winter whilst falling short of the annual PSH BRE Guidelines. 22 living rooms fall short of BRE Guidelines for both annual and winter PSH.
- 17.219. 32 additional living rooms have been included within the proposed Development that are applicable for APSH assessment. The overall compliance for APSH has reduced slightly from 79% for Plot E and 61% for Plot F to 59% and 55% respectively.

[Overshadowing within the Proposed Development](#)

- 17.220. Sun Hours on Ground (SHOG) assessments have been undertaken for all public and communal amenity areas within the proposed Development. A standalone Internal Daylight, Sunlight and Overshadowing report accompanies the Reserved Matters applications and discusses the assessment results for Plots E and F in more detail.
- 17.221. The cumulative assessment sees the 2019 Hybrid Application implemented on the North Site, therefore the proposed Central Square does not exist in the cumulative scenario. Overshadowing within the public realm of the 2019 Hybrid Scheme has been included at para 17.211.
- 17.222. In the cumulative scenario, the SHOG within all proposed open spaces within the Site remain unchanged from the levels of the proposed Development scenario.

[Comparison of Cumulative Effects between this ES Addendum and the 2019 Consented Scheme ES](#)

- 17.223. The effects to the following properties have changed in comparison to the 2019 Consented Scheme ES:
- For daylight, 15 additional properties that have been included within the study area experience cumulative effects; 13 experience minor adverse effects, one experiences a minor to moderate adverse effect and one experiences a moderate adverse effect. These additional properties have been included due to the increased study area associated with the 2019 Hybrid Application within the Cumulative Scenario.
 - 125 Friar Street – Change to daylight from negligible to minor adverse, due to the Proposed Amendments and the 2019 Hybrid Application.
 - 1-29 Projection East – Change to daylight from moderate adverse, to moderate to substantial adverse, due to the amended baseline condition, the Proposed Amendments and the 2019 Hybrid Application.
 - 1-14 Icon House – Change to daylight from moderate adverse with substantial reductions in daylight, to substantial adverse, due to the amended baseline condition, the Proposed Amendments and the 2019 Hybrid Application.

- 1-45 Projection West – Change to daylight from moderate adverse with substantial reductions in daylight, to moderate to substantial adverse, due to the amended baseline condition, the Proposed Amendments and 2019 Hybrid Application.
- 30 Garrard Street – Change to daylight from moderate adverse with substantial reductions in daylight, to moderate to substantial adverse, due to the Proposed Amendments and the 2019 Hybrid Application.
 - 32 Friar Street – Change to daylight from negligible to minor adverse, due to the Proposed Amendments and the 2019 Hybrid Application.
 - 53 Greyfriars Road – Change to daylight from moderate adverse, to moderate to substantial adverse, due to the 2019 Hybrid Application.
 - 9-11 Stanshawe Road – Change to daylight from minor adverse, to minor to moderate adverse, due to the 2019 Hybrid Application.
 - Bridewell & Samuel House – Change to daylight from moderate adverse, to moderate to substantial adverse, due to the Proposed Amendments and the 2019 Hybrid Application.
 - The Gateway Public House, 31 Greyfriars Road – Change to daylight from moderate adverse, to moderate to substantial adverse, due to the 2019 Hybrid Application.
 - For sunlight, three additional properties that have been included within the study area experience cumulative effects. All three experience minor adverse effects. These additional properties have been included due to the increased study area associated with the 2019 Hybrid Application within the Cumulative Scenario.
 - Station Hill Square – Changes to overshadowing from minor adverse to moderate adverse, due to the 2019 Hybrid Application.

Townscape, Conservation and Visual Assessment

Demolition and Construction

- 17.121. In the worst case scenario that the cumulative schemes are constructed at the same time, it is considered that there would be some temporary **moderate adverse** effects in the surrounding area, as a result of the visual effects of construction activities such as presence of cranes, deliveries and loss of trees. This assessment is consistent with that of the 2015 TCVA.

Completed Development

- 17.122. The full assessment of the proposed Development alongside cumulative schemes is set out in Volume 3: Townscape, Conservation and Visual Assessment. In summary, the cumulative effects from the reassessed viewpoints would be **beneficial** and of **minor to major** significance. This assessment is consistent with that of the 2019 Consented Scheme TCVA.

VOLUME 2 TOWNSCAPE, CONSERVATION AND VISUAL ASSESSMENT

VOLUME 3 FIGURES

Figure 3.2	Existing Surrounding Land Uses
Figure 3.3	Listed Buildings
Figure 3.5	Residential Units, Future Residential Units and Hotels
Figure 5	Consolidated Parameter Plans: 1 Planning Application Boundary (Drawing reference: SHR-CRL-SB-ZZ-PL A-100-120-Rev P50) 2 Demolition and Retained Buildings (Drawing reference: SHR-CRL-SB-ZZ-PL A-100-121-Rev P50) 3 Building Plot Parameters (including heights) (Drawing reference: SHR-CRL-SB-ZZ-PL A-100-122-Rev P50) 4 Public Realm (Drawing reference: SHR-CRL-SB-ZZ-PL A-100-123-Rev P50) 5 Vehicle and Pedestrian Access Routes (including car parking) (Drawing reference: SHR-CRL-SB-ZZ-PL A-100-124-Rev P50) 6 Ground Floor Uses (Drawing reference: SHR-CRL-SB-ZZ-PL A-100-125-Rev P50) 7 Upper Floor Uses (Drawing reference: SHR-CRL-SB-ZZ-PL A-100-126-Rev P50)
Figure 6.1	Indicative Phasing Plan (Drawing Referenced: SHR-CRL-SB-ZZ-PL-A-100-100-P12)
Figure 7.2	Indices of Multiple Deprivation (IMD)
Figure 7.3	Crime Deprivation
Figure 15.2	Wind Tunnel Study Model
Figure 15.3	Configuration 1: Existing Baseline – Windiest Season
Figure 15.4	Configuration 1: Existing Baseline – Summer Season
Figure 15.5	Configuration 2: Proposed Development – Windiest Season
Figure 15.6	Configuration 2: Proposed Development – Summer Season
Figure 15.7	Configuration 2: Proposed Development - Balconies, Terraces and Roof View – Summer Season
Figure 15.8	New figure – Configuration 2: Proposed Development – Wind Safety Conditions, Ground level

Figure 15.9	Configuration 3: Proposed Development with Landscaping – Windiest Season (was Figure 15.8)
Figure 15.10	Configuration 3: Proposed Development with Landscaping – Summer Season (was Figure 15.9)
Figure 15.11	Configuration 3: Proposed Development with Landscaping - Balconies, Terraces and Roof View – Summer Season (was Figure 15.10)
Figure 15.12	New Figure – Configuration 3: Proposed Development with Landscaping – Wind Safety Conditions, Ground level
Figure 17.1	Cumulative Schemes
Figure 17.2	Configuration 4: Proposed Development with Landscaping and Cumulative Surrounding Buildings– Windiest Season
Figure 17.3	Configuration 4: Proposed Development with Landscaping and Cumulative Surrounding Buildings – Summer Season
Figure 17.4	Configuration 4: Proposed Development with Landscaping and Cumulative Surrounding Buildings – Balconies, Terraces and Roof View – Summer Season
Figure 17.5	New Figure - Configuration 4: Proposed Development with Landscaping and Cumulative Surrounding Buildings – Wind Safety Conditions, Ground level

VOLUME 4 TECHNICAL APPENDICES

Technical Appendix 15.1	Pedestrian Level Wind Microclimate Assessment.
Technical Appendix 16.1	Daylight and Sunlight Summary Tables (Comparison with 2019 Consented Scheme ES summary table and Consented v Proposed Development)
Technical Appendix 16.2	Drawings of the Baseline, Proposed Development and Cumulative Scenario.
Technical Appendix 16.3	Daylight and Sunlight Results for all scenarios.
Technical Appendix 16.4	Daylight and Sunlight Results for Proposed Development.
Technical Appendix 16.5	Overshadowing Assessment

UK and Ireland Office Locations

