

receptors within the following residential consented scheme within the proximity of the Proposed Development: Garrard House, 30 Garrard Street.

- 17.75. The total numbers of windows and rooms assessed within the Cumulative Scenario differs from the Baseline. This is due to some of the existing surrounding receptors forming part of the cumulative schemes. In regards to 29-35 Station Road, an assessment has been undertaken to establish the effect of the proposed development on the potential for daylight within the residential units in this property.

Demolition and Construction

- 17.76. 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**.

Completed Development

Daylight and Sunlight

- 17.77. Full details of the results can be found in Appendix 16.2 and are summarised in Table 17.3 below.
- 17.78. A total of 865 windows serving 452 rooms have been assessed within the 23 surrounding residential properties in terms of daylight.
- 17.79. In comparison to the assessment of the proposed Development in the absence of the relevant cumulative schemes, the cumulative VSC, NSL and APSH results indicate that there would be either no, or only marginal, changes in the daylight and sunlight received by the majority of surrounding residential properties, which are not considered to be perceptible to the occupant. The results of these marginal changes can be seen in Tables 17.3 and 17.4. The detailed results can be found in Appendix 16.2
- 17.80. The results in Tables 17.3 and 17.4 demonstrate that the majority of properties assessed would see no change in VSC, NSL or APSH when compared to the results for the assessment of the proposed Development in isolation as a result of the implementation of relevant cumulative schemes. Furthermore, where there are alterations, they are for the most part minor in nature when compared against results for the Development in isolation, with only a number of small alterations to a very limited number of windows/rooms and the significance of the cumulative effects therefore remain as set out in Chapter 16: Daylight, Sunlight and Overshadowing.
- 17.81. For those properties highlighted in green in Table 17.3 and Table 17.4, the levels of BRE compliance for daylight and sunlight are unchanged from those of the proposed Development in isolation, therefore these properties do not experience any cumulative daylight impacts.
- 17.82. The where there are changes to the BRE compliance for daylight and sunlight are discussed in the following paragraphs.

Table 17.3: Summary of Cumulative Daylight Results Compared Against Proposed Development

Address	Proposed Development Scenario				Cumulative Development Scenario			
	Total No. of Windows	No. Windows that meet VSC	Total No. of Rooms	No. Rooms that meet the NSL	Total No. of Windows	No. Windows that meet VSC	Total No. of Rooms	No. Rooms that meet the NSL
30-31 Friar Street	40	28	10	6	40	28	10	6
32 Friar Street	7	5	5	3	7	5	5	3
33 Friar Street	7	2	5	0	7	2	5	0
34 Friar Street	5	5	4	0	5	5	4	0
1-45 Projection West	138	59	110	67	138	59	110	67
1-29 Projection East	94	24	66	38	94	20	66	31
1-41 Icon House	54	41	38	23	54	3	38	6
30 Garrard Street	194	19	32	18	252	16	66	21
29-35 Station Road	40	39	30	6				
5 Vachel Road	5	5	5	3	5	5	5	3
9-11 Stanshawe Road	11	5	9	5	11	5	9	5
13 Stanshawe Road	6	6	3	3	6	6	3	3
15 Stanshawe Road	5	5	3	3	5	5	3	3
17 Stanshawe Road	5	5	3	3	5	5	3	3
19 Stanshawe Road	3	3	3	3	3	3	3	3
The Gateway Public House - 31 Greyfriars Road (PH)	8	1	5	1	8	1	5	1
49-51 Greyfriars Road	38	0	6	0	38	0	6	0
53 Greyfriars Road (Consented)	14	7	10	5	14	7	10	5
144 Friar Street	2	2	2	2	2	2	2	2

Address	Proposed Development Scenario				Cumulative Development Scenario			
	Total No. of Windows	No. Windows that meet VSC	Total No. of Rooms	No. Rooms that meet the NSL	Total No. of Windows	No. Windows that meet VSC	Total No. of Rooms	No. Rooms that meet the NSL
136-137 Friar Street	11	11	6	6	11	11	6	6
127 Friar Street	7	7	6	5	7	7	6	5
125 Friar Street	32	32	4	4	32	31	4	4
60-62 Friar Street	63	12	58	24	63	12	58	24
7-11 Station Road	57	57	24	24	57	57	24	22
Totals	846	380	447	252	865	296	452	224

1-29 Projection East

- 17.1. In the cumulative scenario 20 out of the 94 windows will meet the BRE guidelines in terms of VSC. This is slightly lower than that for the proposed Development Scenario in isolation. The level of BRE compliance will also be slightly lower in regards to NSL and this is likely a result of the additional massing on 30 Garrard Street and 29-35 Station Road in conjunction with the proposed development. Whilst the levels of compliance are reduced the effect is considered unchanged from that of the proposed scenario and remains **moderate adverse**.

1-41 Icon House

- 17.2. In the cumulative scenario 3 out of 54 windows will meet the BRE guidelines in terms of VSC. This is significantly different to the results of the proposed Development Scenario in isolation and we can therefore conclude that the impacts of the cumulative schemes are causing the compliance to drop. It is likely that the additional massing at 30 Garrard Street and 29-35 Station Road have contributed to the lower levels of both VSC and NSL compliance in the cumulative scenario. Due to the reduced compliant the effect is considered to be **moderate adverse**, with a number of **substantial** reductions in daylight. It should be noted that, the BRE criterion does not specifically relate to city centre locations (such as that which surrounds the Site), thus a degree of flexibility needs to be applied when assessing and considering the significance of daylight and sunlight effects in urban locations.

30 Garrard Street

- 17.3. Additional windows have been considered in 30 Garrard Street as the planning application for a two storey extension to this building has been assessed. Therefore it is unfair to compare these figures as the total number of windows and rooms differs. The results are discussed below.
- 17.4. A total of 16 (6%) out of the 252 windows assessed will meet the BRE guidelines in terms of VSC.
- 17.5. 17 windows experience an alteration of 20-30%. 12 of these windows will experience an absolute loss of less than 1.5% VSC which is unlikely to be perceptible to the occupant. In addition all of these 12 windows have low existing levels of VSC below 5.5% which is below the BRE Guidelines (recommended 27%), whereby any alteration could result in a disproportionate percentage change.
- 17.6. 13 windows experience an alteration of 30-40%. Seven of these windows will experience an absolute loss of less than 2% VSC which is unlikely to be perceptible to the occupant. In addition all of these seven windows have low existing levels of VSC below 6% which is below the BRE Guidelines (recommended 27%), whereby any alteration could result in a disproportionate percentage change.
- 17.7. 206 windows will experience an alteration of over 40%. 120 windows have low existing levels of VSC below 13% which is below the BRE Guidelines (recommended 27%), whereby any alteration could result in a disproportionate percentage change. 11 of these windows experience an absolute loss of less than 2% VSC which is unlikely to be perceptible to the occupant.
- 17.8. A total of 21 (32%) out of the 66 rooms assessed within this property will meet the criteria for NSL.
- 17.9. Four rooms will experience an alteration of 20-30%. One of these rooms is a bedroom and is therefore considered less sensitive in terms of daylight compared to living rooms. Two of the rooms will retain a daylight distribution above 76%, compared to the British Standard recommended 80%. The remaining room only experiences a 20.29% alteration which is just above the BRE criteria of 20%.
- 17.10. Seven rooms will experience an alteration of 30-40%. Three rooms will retain a daylight distribution above 58%, which could be considered commensurate with an urban location. The remaining rooms

are large in size at 210.05-250.15 sq.ft and therefore it would be unreasonable to expect light to reach the full depth of the room.

- 17.11. 34 rooms will experience an alteration of over 40%. 11 rooms have a low daylight distribution below 43% in the baseline, whereby any alterations could result in a disproportionate percentage change. 15 rooms are large in size at 250.15-1190.26 sq.ft and therefore it would be unreasonable to expect light to reach the full depth of the room.
- 17.12. It is likely that the 22 storey tower massing at 29-35 Station Road has heavily impacted the results for both VSC and Daylight in the Cumulative Scenario and the additional two storey extension to this property could also be having an impact.
- 17.13. In consideration of the above, the overall effect to this building is assessed as **moderate adverse**, with a number of substantial reductions in daylight.

125 Friar Street

- 17.14. In the cumulative scenario 31 out of the 32 windows will meet the BRE guidelines in terms of VSC. This is only one less than for the proposed development in isolation. All 4 rooms will meet the BRE guidelines in terms of NSL. In the proposed Development Scenario there were no effects to this property so it was considered negligible, as there is only one window affected in the Cumulative Scenario and the property as whole still has high levels of compliance the effect is therefore considered to be **minor adverse**.

7-11 Station Road

- 17.15. In the cumulative scenario all 57 windows will meet the BRE guidelines in terms of VSC. 22 rooms out of 24 assessed will meet the BRE guidelines in terms of NSL. In the proposed Development Scenario there were no effects to this property so it was considered negligible, as there are only two rooms affected in the Cumulative Scenario and the property as whole still has high levels of compliance the effect is therefore considered to be **minor adverse**.

Impact Assessment on 29-35 Station Road

- 17.16. As the 29-35 Station Road Cumulative Scheme is located in proximity to the site and includes residential accommodation an assessment has been undertaken through VSC facade studies to understand the effect that the proposal will have on the potential for daylight. The results can be found in Appendix 16.5 and are summarised below.
- 17.17. The results indicate that the daylight potential for the majority of the facades will be unaffected by the proposed development with the exception of the Western façade (View 2) at the lowest levels where there will be a marginal reduction in the proportion of the facade which receives 27% VSC. However as the reduction is located close to the corner, it is likely that these rooms will have mitigating windows to the North which will be unaffected by the proposed development.
- 17.18. Therefore it can be concluded that the effect of the proposed development will be negligible for the majority if this property with one instance of **minor adverse** on the Western facade.

Sunlight to Surrounding Properties

The potential sunlight impacts of the Cumulative Scenario have been assessed against the Future Baseline Scenario. Full details of the results can be found in Appendix 16.2 and are summarised in Table 17.4 below.

Table 17.4: Summary of Cumulative Sunlight Results Compared Against Proposed Development

Address	Proposed Development Scenario			Cumulative Development Scenario		
	Total No. of Windows	Meet BRE Guidelines Annual & Winter		Total No. of Windows	Meet BRE Guidelines Annual & Winter	
30-31 Friar Street	40	40		40	40	
32 Friar Street	7	7		7	7	
33 Friar Street	7	7		7	7	
34 Friar Street	5	5		5	5	
1-45 Projection West	138	99		138	99	
1-29 Projection East	94	49		94	47	
1-41 Icon House	54	37		54	32	
30 Garrard Street	194	149		252	183	
29-35 Station Road	40	39				
5 Vachel Road	5	5		5	5	
9-11 Stanshawe Road	11	5		11	5	
13 Stanshawe Road	6	0		6	0	
15 Stanshawe Road	5	0		5	0	
17 Stanshawe Road	5	0		5	0	
19 Stanshawe Road	3	0		3	0	
The Gateway Public House - 31 Greyfriars Road (PH)	8	3		8	3	
49-51 Greyfriars Road	38	1		38	1	
53 Greyfriars Road (Consented)	14	7		14	7	
144 Friar Street	2	2		2	2	
136-137 Friar Street	11	11		11	11	

Address	Proposed Development Scenario			Cumulative Development Scenario		
	Total No. of Windows	Meet BRE Guidelines Annual & Winter		Total No. of Windows	Meet BRE Guidelines Annual & Winter	
127 Friar Street	7	7		7	7	
125 Friar Street	32	32		32	32	
60-62 Friar Street	63	54		63	54	
7-11 Station Road	57	57		57	57	
Totals	846	616		865	605	

1-29 Projection East

- 17.19. In the cumulative scenario 47 out of the 94 windows will meet the BRE guidelines in terms of annual and winter sunlight. This is only two less than for the proposed Development Scenario in isolation and this is likely a result of the additional massing on 30 Garrard Street and 29-35 Station Road in conjunction with the proposed development. Whilst the levels of compliance are reduced the effect is considered unchanged from that of the proposed scenario and remains **moderate adverse**.

1-41 Icon House

- 17.20. In the cumulative scenario 32 out of the 54 windows will meet the BRE guidelines in terms of annual and winter sunlight. This is only five less than for the proposed Development Scenario in isolation and this is likely a result of the additional massing on 30 Garrard Street and 29-35 Station Road in conjunction with the proposed development. Whilst the levels of compliance are reduced the effect is considered unchanged from that of the proposed scenario and remains **moderate adverse**.

30 Garrard Street

- 17.21. Additional windows have been considered in 30 Garrard Street as the planning application for a 2 storey extension to this building has been assessed. Therefore it is unfair to compare these figures as the total number of windows and rooms differs. The results are discussed below.
- 17.22. 252 windows have been assessed in regards to sunlight of which 183 (73%) windows will meet the BRE guidelines in regards to both annual and winter sunlight.
- 17.23. Four windows experience an alteration of 20-30%. None of these windows experience an alteration in regards to winter sunlight beyond the BRE criteria. In addition one window retains an annual APSH of 20% which is just below the BRE criteria of 25%.
- 17.24. One window experiences an alteration of 30-40%. This window does not experience an alteration in regards to winter sunlight beyond the BRE criteria.
- 17.25. 64 windows experience an alteration over 40% in regards to annual sunlight. 13 of these windows do not experience an alteration in regards to winter sunlight beyond the BRE criteria. 11 windows have low existing annual APSH of 6-15% which is below the 25% recommended in the BRE guidelines, whereby any alterations could result in a disproportionate percentage change. Two further windows retain an annual APSH above 20% which is just below the BRE criteria of 25%.

The likely effect of the proposed Development is therefore considered to be **moderate adverse**.

Sun on Ground - Amenity Areas

- 17.26. Due to the distance separation of the cumulative schemes the results of the Sun Hours assessment are almost identical in the cumulative scenario to that of the proposed development in isolation. Area 2 will experience a marginal reduction to 62.4% of the area receiving 2 hours of direct sunlight. It can therefore be considered that there will be no cumulative effects in regards to this assessment.

Transient Overshadowing

- 17.27. A cumulative transient overshadowing assessment has been undertaken and can be found in Appendix 16.4. Whilst both 30 Garrard Street and 29-35 Station Hill involve an increase in massing, the levels of transient overshadowing on the surrounding area will be unchanged from the proposed development in isolation.

17.28. The effects in terms of overshadowing remain as reported for the proposed Development and there will be no likely cumulative impacts.

References

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- ¹ HMSO (2011) The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011, 2011 No.1824.
 - ² European Commission. Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. 1999.
 - ³ Arup Environmental/Ove Arup and Partners, The Environmental Effects of Dust from Surface Mineral Workings (HMSO, 1995)
 - ⁴ Department of Communities and Local Government (DCLG) (2009); 'Part IIA of the Environmental Protection Act (EPA) 1990.

18. Summary of Mitigation and Residual Effects

Introduction

- 18.1. The likely significant residual effects of the Development are described in the preceding technical Chapters of this ES, following the implementation of mitigation measures. For ease of reference, **Table 18.1** presents a summary of the likely significant effects, proposed mitigation measures and residual effects as reported by each technical Chapter (Chapters 7 to 16 and Volume 2: Townscape and Visual Assessment).
- 18.2. This EIA was undertaken in parallel with the design process. As a consequence, many measures to mitigate likely significant adverse environmental effects are incorporated into the scheme design in order to avoid, reduce or offset such effects. Further mitigation measures would be implemented during the detailed design of the Development. These are specified in Chapters 7 to 16 where appropriate.
- 18.3. With respect to the management of the demolition and construction process, it is intended that a Construction Environmental Management Plan (CEMP), as outlined in Chapter 6: Development Programme Demolition and Construction, would be prepared and implemented. This is an established method of controlling and minimising environmental effects arising from demolition and construction activities, and would serve to reduce likely significant adverse environmental effects such as noise and vibration, dust and the risk of surface and groundwater pollution. The CEMP would also control and manage hours of work, traffic routing and access, the protection of archaeological resources and nesting birds, and the generation and disposal of waste. In addition, the CEMP would include monitoring and reporting requirements. It is anticipated that the CEMP and other mitigation measures identified have already been secured by appropriate planning obligations or conditions with regard to SH3. Similar obligation and conditions are anticipated to be applied to the Telecom House/Plot E Application.
- 18.4. The effects of the proposed Development remain largely consistent with those of the consented SH3 Scheme. Where changes have occurred, these are due to either alterations in reporting or as a result of changes to guidance. One receptor would experience stronger wind conditions than identified in the 2013 ES although in the cumulative scenario, similar conditions were reported at this location. It is therefore considered that wind conditions at this location result from inclusion of the cumulative schemes (now in the future baseline). The wind conditions in this area are expected to reduce as a result of the detailed design but further testing would be undertaken at that time to confirm this and additional mitigation implemented where necessary.

Table 18.1: Summary of Potential Effects, Mitigation Measures and Residual Effects

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
Socio-Economics	Demolition and Construction	Loss of employment	Short Term Minor Adverse , Long Term Negligible : Approximately 42 jobs are estimated to be present on Site. These would be displaced by the proposed Development.	None Required	Short term Minor Adverse , Long Term Negligible
		Employment	Negligible : Approximately 370 permanent Full-Time Equivalent construction jobs at the local level would be created. However, the effects are considered to be negligible in comparison with the scale of the broader regional construction workforce.	None Required. Consider implementation of job brokerage schemes, apprenticeships and training schemes	Negligible
		Construction Workforce Spending	Minor Beneficial : Spending on food and drink.	None Required	Minor Beneficial
	Operational Temporary Flexible Events Space	Creation of temporary Employment and Community and Cultural use	Minor Beneficial : The implementation of temporary uses would provide temporary employment and community and cultural benefits for the town centre.	None Required	Minor Beneficial
	Completed Development	Employment	Substantial Beneficial : The Development would create a minimum of 4,900 FTE jobs and a maximum of 8,845 FTE jobs through the commercial end uses.	None Required	Substantial Beneficial
		Demand for Housing	Moderate Beneficial : The Development would deliver a minimum of 300 and a maximum of 475 residential units. These units would make a significant contribution towards Reading's annual housing targets, equating to between 6% and	None Required	Moderate Beneficial

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
			9% of the annual targets for the period 2016 to 2026.		
		Primary School Capacity	Minor Adverse: There are 5 primary schools within 1km of the Site with 235 surplus places. However, surplus capacity at reception level is low.	Financial contributions	Negligible
		Secondary School provision	Negligible: Across Reading Borough, there are 7 secondary schools, which have 559 surplus places amongst them. It is estimated that a maximum of 17 secondary school children would yield from the Development under the maximum scenarios and would not place significant pressure on secondary schools.	None Required	Negligible
		Healthcare	Minor Adverse: the Development would increase the resident base by 540-855 residents and there is limited surplus capacity locally for GPs.	Financial contributions	Negligible
		Additional Spending	Minor to Moderate Beneficial: The additional 300-475 residential units are estimated to generate spending of £4.2 - £6.7 million per year. The Development local spending by employees could range from £11.4-£20.6 million per year. Given the location of the Site, it would be expected that a significant proportion of this spending would be captured locally.	None Required	Minor to Moderate Beneficial
		Open Space	Minor Beneficial: The Development would provide amenity space across	None Required	Minor Beneficial

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
Archaeology			Central Square, Station Square and additional public realm.		
		Crime and Safety	Minor Beneficial: The proposed mix of uses would animate the currently vacant Site and the introduction of residential units would create a 24 hour presence. CCTV and PAC entry phone systems for residential entrances would be employed throughout the Development.	None Required	Minor Beneficial
	Demolition and Construction	Loss, disturbance and/or truncation of locally, regionally, nationally important archaeological deposits	Moderate Adverse to Substantial Adverse: In the absence of mitigation, the removal of existing substructures, excavation, piling and foundations could have moderate adverse effects, and in the event Viking remains are present in this part of the Site, substantial adverse effects.	Archaeological evaluation post-demolition; archaeological watching brief during embankment reduction and/or strip, map and sample works during/after site clearance, localised archaeological excavation, archaeological watching brief during construction on areas as appropriate. Preservation <i>in situ</i> is unlikely to be required unless nationally important features are identified. The precise methodologies would be agreed in consultation with the archaeological advisors to RBC. All measures could be implemented by way of suitable planning conditions or obligations.	Negligible to Minor Adverse
	Temporary Flexible Events Space	Loss, disturbance and/or truncation of locally, regionally, nationally important archaeological deposits	Moderate Adverse to Substantial Adverse: In the absence of mitigation, the removal of existing substructures, excavation, piling and foundations could have moderate adverse effects, and in the event Viking remains are present in this part of the Site, substantial adverse effects.	In line with the planning conditions for the consented Station Hill 3 scheme, archaeological evaluation post demolition of former Station Hill retail parade (including 26 to 58 Station Hill).	Negligible to Minor Adverse

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
	None: Effects would occur during the intrusive demolition and construction works.	No significant issues.	Negligible: On completion, the Development would not give rise to any further intrusive ground works or activities.	None Required	Negligible
Transport	Demolition and Construction	Local highway networks and traffic flows	Negligible: The average volume of HGVs movements associated with demolition and construction works is approximately 35 vehicles per day. This is considered insignificant in relation to the volume of existing HGV traffic.	None Required	Negligible
		Driver Delay	Minor Adverse: Any road closures and traffic diversions would not be unusual given the scale and nature of the works. Road closures and traffic diversions would be well planned and agreed with RBC and any other affected parties.	Disruptions to the local transport network would be managed and any changes required being would be agreed with RBC. Implementation of a construction traffic management plan and adherence to a construction method statement to be prepared with RBC. No further major mitigation measures have been identified as being necessary at this stage.	Minor Adverse
		Severance	Negligible: It is considered that the increase in traffic on severance is negligible during the demolition and construction phases.	None Required	Negligible
		Pedestrian Delay and Amenity	Moderate Adverse: Any demolition and construction works may result in the need to introduce temporary footpath closures or diversions.	Disruptions to the local transport network would be managed and any changes required being agreed with RBC. Implementation of a construction traffic management plan and adherence to a construction method statement to be prepared with RBC.	Minor Adverse

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
				No further major mitigation measures have been identified as being necessary at this stage.	
		Fear and Intimidation	Negligible: There will be a higher proportion of HGVs during the works. However, given the extended phasing programme, the level of impact on fear and intimidation is below the IEA guidelines threshold.	None Required	Negligible
		Accidents and Safety	Minor Adverse: The increase in HGV traffic could lead to increased conflict with pedestrians and cyclists within the vicinity of the Site.	Implementation of a construction traffic management plan and adherence to a construction method statement to be prepared with RBC. The defined HGV routes set out within the Construction Traffic Management Plan will ensure vehicles are driven slowly and cautiously, and that drivers will be familiar with the routes and any potential risks associated with them. The routes which HGVs will be travelling along will already have pedestrians and cyclist facilities, such as footways, cycle routes and crossings. This will mitigate the risk of conflict between vehicles and pedestrians and cyclists.	Negligible
	Temporary Flexible Events Space	Change in traffic flows	Minor Adverse: The potential effect of the Flexible Space relates to the potential conflict between people and vehicles accessing the site to set up or remove the uses being undertaken.	In line with the planning conditions for the consented Station Hill 3 scheme, a Service Management Plan would be developed to ensure conflicts are suitably managed.	Negligible
	Completed Development	Local highway network and traffic flows	Negligible: The changes in traffic levels associated with the completed Development would result in indiscernible changes in the environmental effects of traffic according to the IEMA. There are not any increases in traffic flows greater	A Site-Wide Framework Travel Plan (SWFTP) has been prepared.	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
			than 10% on more sensitive residential roads.		
		Bus Access	Minor adverse: The analysis of trip modes has shown that buses would be one of the dominant means of travel to the Site. This could impact on the existing capacity of the bus network.	Bus operators are likely to respond to this increased demand through provision of additional services if needed, mitigating any impacts. Therefore no mitigation is proposed as part of the Development.	Negligible
		Rail Network	Negligible: The Reading Station upgrades would accommodate a doubling of passenger numbers from today's figures.	None Required	Negligible
		Driver Delay	Minor Beneficial: Comparing the driver delay between the baseline and completed Development scenarios the key links have all remained the same, excluding Greyfriars Road which has reduced from a 'high' driver delay to a 'medium' driver delay during the PM Peak hour.	None Required	Minor Beneficial
		Severance	Negligible: None of the links were predicted to result in an AADT (Annual Average Daily Traffic) change greater than 30%. According to the IEMA Guidelines, the changes to traffic flows across the network are all classified as having a low level of severance.	None Required	Negligible
		Pedestrian Delay and Amenity	Minor Beneficial: The Development proposals are based upon the principle of creating a new primary pedestrian street that connects Reading Station and Friar Street. The benefit of the new link to the town centre outweighs the slight delay associated with crossing	A wide raised crossing facility is proposed at Garrard Street. No further mitigation required.	Minor Beneficial

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
Air Quality			Garrard Street in the centre of the Site.		
		Fear and Intimidation	Negligible: Changes in traffic flows are not considered to result in any change to the degree of hazard and have a negligible effect on fear and intimidation.	None Required	Negligible
		Accidents and Safety	Negligible: The highway impact assessment shows that the Development will not result in any significant increases in traffic movements.	None Required	Negligible
	Demolition and Construction	Nuisance Dust	Moderate Adverse: In the absence of mitigation, given that residential properties would be located between 10 – 100m from an active construction Site, there would be the potential for moderate adverse effects.	Implementation of a CEMP.	Minor Adverse
		Emissions from construction vehicles	Negligible to Minor adverse: Given that the town centre is an AQMA, during the peak construction period there would be potential for a minor adverse effect from construction traffic on air quality. Outside the peak construction period, the effect would be negligible.	Detailed mitigation measures to control construction traffic will be discussed and agreed with RBC. The most effective mitigation would be achieved by ensuring that construction traffic does not pass along sensitive roads where possible.	Negligible to Minor Adverse
		Emissions from construction plant	Negligible: Any emissions from plant operating on the Site would be small in comparison to the emissions from the traffic movements on the roads adjacent to the Site.	None Required	Negligible
	Temporary Flexible Event Space	Emissions from traffic	Negligible: Given the effects of traffic are considered to be negligible, the resultant effect from	None Required	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
Noise and Vibration	Completed Development		traffic emissions on air quality is also considered to be negligible.		
		Emissions from traffic associated with the completed Development and emissions from the operation of the heating plant	Negligible: The Development is predicted to result in a negligible effect at all receptors considered.	None Required	Negligible
		Introduction of residential uses to the Site	Negligible: annual and hourly mean NO ₂ concentrations are all below the objectives when assume no improvements (reduction) in NO _x and NO ₂ emission rates.	None Required	Negligible
	Demolition and Construction	Noise	Negligible to Major Adverse: Potential for temporary noise effects to occur during demolition and construction works at the closest noise sensitive receptors and at on-Site receptors should the residential building be occupied before completion of the construction phrase.	Implementation of Site Specific CEMP	Negligible to Moderate Adverse
		Traffic	Negligible: It is anticipated that noise and vibration arising from construction vehicles should not be any greater than can presently arise from existing local heavy duty vehicle movements.	Implementation of Site Specific CEMP and traffic management plan	Negligible
		Vibration	Negligible to Moderate Adverse: There is the potential for vibration generated during construction to potentially affect properties surrounding the Site, including 39 Friar Street Grade II listed building.	Contractors would be required to use best practicable means (BPM) throughout the duration of the Site works and are to register with the National Considerate Constructors Scheme.	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
	Temporary Flexible Event Space			On-site monitoring of noise and/or vibration would also be undertaken if necessary, which would assist in controlling levels at specific sensitive receptors	
		Event Noise	Negligible: Predicted noise levels fall below the monitored background noise levels. As such, adverse comment or complaint by local residents is unlikely to arise.	In line with the planning conditions for the consented Station Hill 3 scheme it is anticipated that a condition will set noise limits to be set for live music events. External PA systems would utilise small directional speakers to minimise noise transmission. Use of stewards to control crowd noise.	Negligible
		Plant Noise	Negligible: Given the distance to the nearest noise sensitive receptor Garrard House, approximately 80m away) it is considered that effects from plant noise would be negligible.	None required. It is proposed that plant noise limits are set relative to the existing background noise levels in the area of the Site.	Negligible
	Completed Development	Traffic Noise	Negligible: The proposed uses of the Temporary Flexible Events are not considered likely to attract primary trips into Reading. On this basis traffic generated would be limited to low levels of servicing.	None Required	Negligible
		Assessment of Residential Amenity – Noise Levels	Moderate to Substantial Adverse: Sources of noise that may affect residential amenity areas include road traffic noise and noise from the railway line.	Selection of suitable glazing combined with appropriate ventilation strategy. Most exposed facades, high specification glazing in combination with through wall passive acoustic vent.	Negligible
		Assessment of Public Realm – Noise Levels	Negligible to Moderate Adverse: Noise levels in Central Square will be attenuated to negligible levels by the intervening buildings. Station Square will be subject to moderate adverse noise levels due to un-obscured	None Required	Negligible to Moderate Adverse

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
			views of Station Hill and Station Road.		
		Fixed Plant and Mechanical Services Noise	Negligible to Moderate Adverse: Plant located within basements would give rise to negligible effects given the enclosure of plant and sound reduction design measures. Where roof mounted plant is adopted there is the potential for at worst moderate adverse effects.	Planning condition to ensure that plant noise is below background.	Negligible
		Service and Delivery Noise	Negligible: it is the intention of the Applicant to liaise with RBC during the detailed design stage and reserved matters stage to ensure the effect of service vehicles and activities is negligible.	None Required beyond a servicing and delivery plan.	Negligible
		Noise Breakout out from Proposed Uses	Negligible: Adequate sound insulation afforded by the building façade would be inherent in the detailed design.	Planning condition and appropriate façade construction.	Negligible
		Car Park Noise	Negligible: the potential effects of cars arriving and departing from the Development are expected to be negligible.	Use of design measures to reduce reverberant noise levels and breakout.	Negligible
		Road Traffic Noise	Negligible to Minor Beneficial: Changes in road traffic noise are 1dB or less, with the exception of Station Hill. A noise level decrease of 3dB is predicted for Station Hill.	None Required	Negligible to Minor Beneficial
		Road Traffic Vibration	Negligible: Vibration effects due to changes in traffic flows would have a negligible effect upon existing conditions.	None Required	Negligible
Ground Conditions	Demolition and Construction	Disposal of Spoil and Demolition Material	Negligible: Assuming that legislative requirements are adhered to.	All waste to be removed off Site would be subject to waste classification and any	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
				necessary treatment in accordance with legislation. Additional methods of pre-treatment of spoil and demolition material set out in the CEMP. Adoption of appropriate mitigation measures to remove asbestos prior to demolition work.	
		Risks and Effects to Site Workers and Public Safety	Negligible: Adherence to legislative requirements of COSHH Regulations (2003) and CDM Regulations (2007) and the use of hoarding around the secured Site would significantly reduce health and safety risks.	Undertaking a Site Investigation and remedial work where necessary. Compliance with legislative requirements and implementation of a CEMP which would stipulate the use to standard dust control and other construction site management measures.	Negligible
		Risk and Effects to Soils	Minor to Moderate Adverse: In the absence of soil quality protection measures.	Implementation of a CEMP to minimise the risks of contamination spillages to soils.	Minor Adverse
		Groundwater – Introduction of New Pathways	Minor Adverse: Potential for the creation of a temporary pathway in the regionally important Chalk aquifer.	A Foundation Works Risk Assessment (FWRA) will be conducted to consider appropriate piling methodologies. Implementation of best practice and a CEMP.	Negligible
		Groundwater – Accidental Spillages	Moderate Adverse: Risk to groundwater related to unforeseen accidental material or fuel spillages.	Implementation of a CEMP to minimise the risks of contamination spillages to groundwater.	Minor Adverse
		Surface Waters	Negligible: There are no surface waters on the Site and the nearest surface water resource is located 400m from the Site.	Implementation of a CEMP. Identify and suitably contain leachate containing spoil.	Negligible
		Risk and Effects to Flora and Fauna	Minor Adverse: Given that the Site supports protected species, accidental spillages could result in temporary and local risk of minor adverse significance.	Implementation of a CEMP to minimise risks of generating contaminated runoff.	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
	Temporary Flexible Events Space	Risk and Effects to Future Site Users and Occupants	Negligible: The effect to Site users from any sources of contamination is negligible.	None Required	Negligible
		Contamination by the Completed Development	Negligible: The proposed uses of the Site are not considered to give rise to additional sources of contamination.	None Required	Negligible
	Completed Development	Risks and Effects to Future Site Occupiers and Users	Negligible: All soft landscaped areas would be capped from any residual contamination risk due to their location at roof and podium level, therefore future occupants and Site users would not come into contact with contaminated soil, ground gas and groundwater.	Remediation of the Site and implementation of gas protection measures as necessary, undertaken in consultation with the Environment Agency and RBC. Use of clean cover material in landscaped areas.	Negligible
		Risks and Effects to Groundwater	Negligible: The majority of the completed Development would be hard-surfaced, limiting infiltration.	Storage of fuel tanks for backup generators and cleaning chemicals etc on hardstanding or within appropriately bunded areas. Provision of interceptors on the drainage system as required.	Negligible
		Risks and Effects to Surface Water	Negligible: The risk of potentially contaminated run-off from the completed Development is low.	None Required	Negligible
		Risks and Effects to Flora and Fauna	Negligible: All proposed landscaped areas would be capped from underlying soils.	None Required	Negligible
		Contamination by the Completed Development	Negligible to Minor Beneficial: The Development does not include land uses that are likely to give rise to the contamination of soil, groundwater or surface waters. Improvements to the existing foul public sewer are proposed.	Storage of fuel tanks for backup generators and cleaning chemicals etc on hardstanding or within appropriately bunded areas. Provision of interceptors on the drainage system as required.	Negligible to Minor Beneficial

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
Flood Risk and Drainage	Demolition and Construction	Flood Risk to Construction Workers	Negligible: There is a low risk on Site of flooding from all potential sources, including fluvial, pluvial and groundwater.	None Required	Negligible
		Surface Water Drainage	Minor Adverse: In the absence of mitigation, construction earthworks, temporary Site drainage and potential dewatering all have the potential to give rise to changes in surface water runoff regimes and potentially increase the risk of flooding.	All drainage flow routes and connections to be maintained. Any increase in discharges would be subject to prior agreement with the Thames Water.	Negligible
		Foul Drainage	Negligible: It is proposed that the existing primary foul water sewer would be retained and a smaller sewer running under the proposed Plot D would be dewatered. Access to the sewer would be maintained.	None Required	Negligible
	Temporary Flexible Events Space	Surface Water Drainage	Negligible: The proportion of hard-standing would decrease by 13.5% post development and the increase in soft landscaping would account for any increase in rainfall intensity. The effect on flood risk is therefore considered to be negligible.	None Required	Negligible
	Completed Development	Flood Risk to Occupants of the Development from tidal and fluvial flooding	Negligible: The Site is at low risk of flooding.	None Required	Negligible
		Flood Risk to Occupants of the Development from Surface water flooding	Minor Adverse: The Environment Agency's Surface Water map indicates that there are some potential areas of surface water flooding indicated within the highways in and around the Site.	If potential surface water flows / ponding cannot be ruled out, the drainage strategy should be designed to ensure that this can be appropriately accommodated in line with best practice	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
		Surface Water Drainage	Negligible: The Drainage Strategy demonstrates that the Development would provide approximately 900m ³ of surface water attenuation. The location of attenuation tanks would be determined at detailed design.	None Required	Negligible
		Groundwater Flow	Negligible: No significant substructure works are proposed and piled foundations would not be of sufficient mass to adversely affect groundwater flows or levels.	None Required	Negligible
		Foul Drainage	Minor Adverse: Should the receiving foul drainage network be close to capacity, in the absence of mitigation, the additional effluent has the potential to overload the existing drainage system.	Consultation with Thames Water at detailed design, and if required foul water infrastructure would be upgraded.	Negligible
	Ecology	Designated Sites	Negligible: There are no statutory designated sites within 2km of the Site. The nearest non-statutory designated site is located approximately 700m south of the Site.	None Required	Negligible
		Direct Mortality and Disturbance of Protected Species	Temporary and Minor Adverse: If works undertaken outside of the breeding bird season. Permanent and Moderate Adverse: If works are undertaken during the breeding bird season, in the absence of mitigation.	Netting has been placed on Western Tower to discourage Peregrine Falcons from nesting prior to demolition works commencing. Demolition and Site clearance works would be undertaken outside the main breeding season where practicable. Where this is not practicable, an Ecological Watching Brief would be maintained including a pre-demolition check. Implementation of a CEMP.	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
		Habitat Loss and Creation	Negligible: Loss of a small area of amenity grassland and ornamental planting of negligible ecological value. Minor Adverse: Loss of the potential Peregrine perch on Western Tower. Minor Beneficial: Open and sparsely vegetated areas of the construction Site may provide temporary foraging benefits for Black Redstarts.	None Available.	Temporary Minor Adverse (prior to replacement habitats being introduced as part of the completed Development) Minor Beneficial for Black Redstarts.
	Temporary Flexible Event Space	Temporary Habitat Creation	Negligible: Some additional foraging habitat would be available; however, it would be of value to the Site only.	None Required	Negligible
	Completed Development	Effect on Designated Sites	Negligible: The completed and operational Development would likely result in a negligible effect on designated sites for nature conservation given their distance from the Site.	None Required	Negligible
		Direct Mortality and Disturbance of Protected Species	Negligible: On completion of construction works, there would be no further risk of mortality directly through human activity. The bird species recorded on-Site are adapted to the urban environment and the proposed uses of the Development would therefore have a negligible effect.	None Required	Negligible
		Habitat Creation	Minor Beneficial: Green or brown roofs would cover a minimum of 25% of the total roof area of each plot. The area of proposed would represent an increase compared to the existing Site.	A Peregrine Falcon nest box would be erected at a high elevations on the vertical sides of a tall building or on one of the brown roof to encourage Peregrines to nest. Nest boxes suitable for Black Redstarts, Starlings, Grey Wagtails and House	Minor to Moderate Beneficial

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
Wind				Sparrows would be provided in appropriate locations around the Site.	
		Effect of Tall Buildings on Bird Sightlines and Flyways	Negligible: The proposed Development represents a significant increase in building massing. However, bird species living in urban environments are quick to adapt to change, provided vegetation is not planted next to reflective glass windows. Minor Beneficial: Peregrine Falcons favour tall buildings.	None Required	Minor Beneficial
	Demolition and Construction	Existing Streets	Negligible: Wind conditions during the demolition phase are expected to be similar to those for the existing Site. During construction, the wind conditions would start to become similar to those of the completed Development	None Required	Negligible
	Temporary Flexible Event Space	Thoroughfares	Negligible: The majority of the Site would be suitable for standing or sitting during the winter months. The effect on thoroughfares along the perimeter of the Site would be of negligible significance.	None Required	Negligible
		Event Space	Negligible to Moderate Beneficial: the Temporary Event Space observes a mix of standing and sitting conditions throughout the year and is therefore suitable or better than required.	None Required	Negligible to Moderate Beneficial
	Completed Development	Existing Streets	Negligible to Minor Adverse: Wind conditions would range from sitting to business walking during the windiest season. However, conditions would	Conditions at the northwest corner of Plot A are expected to be sensitive to the detailed design of plot A. Requirement for mitigation	Negligible to Minor Adverse (on the basis that detailed design

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
			remain suitable for the desired use except at receptor 69.	should be reassessed at detailed design of Plot A.	mitigation measures are not currently known)
		Proposed Thoroughfares	Negligible to Moderate Beneficial: Conditions along all proposed thoroughfares would be suitable for leisure walking, or better. Conditions along Friars Walk and the Arcade would be suitable for standing or sitting during winter months, giving rise minor to moderate beneficial effects.	None Required	Negligible to Moderate Beneficial
		Entrances	Minor Beneficial to Minor Adverse: Without mitigation, the likely effect for building entrances ranges from minor beneficial to minor adverse. However, the location of entrances is currently unknown due to the outline nature of the planning application.	Wind tunnel testing would inform detailed design and entrances would be located in benign conditions where possible. Mitigation measures would include localised screening or recessed entrances.	Minor Beneficial to Minor Adverse (on the basis that detailed design mitigation measures are not currently known)
		Amenity Areas – Station Square	Negligible to Minor Adverse: The wind microclimate in Station Square is one category windier than desired at certain locations. Without mitigation, the likely effect is considered to be minor adverse.	Final mitigation measures would be determined at detailed design but may include localised screening and/or landscaping.	Negligible to Minor Adverse (on the basis that detailed design mitigation measures are not currently known)
		Amenity Areas – Central Square	Negligible to Minor Adverse: Without mitigation, conditions would be suitable for sitting and standing.	Detailed design to ensure seating areas are set in areas with more benign wind conditions. Should seating be proposed in areas suitable for standing, localised screening from prevailing winds would be provided.	Negligible to Minor Adverse (on the basis that detailed design mitigation measures are not currently known)
		Roof Terraces or other beneficial shelter	Minor to Moderate Adverse: Roof terrace areas throughout the Development are generally windier than desired mainly due to the absence of balustrades in the maximum parameter scheme.	Further wind tunnel testing at the detailed designed stage would be required and additional mitigation included as necessary.	Minor to Moderate Adverse (on the basis that detailed design mitigation measures are not currently known)

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Daylight, Sunlight and Overshadowing	Demolition and construction	Increase in daylight and sunlight availability to surrounding properties following demolition	Minor Beneficial: Demolition of the existing buildings and structures on Site would improve daylight and sunlight at the closest sensitive receptors. Those further away would experience negligible effects.	None Required	Negligible to Minor Beneficial
	Temporary Flexible Events Space	Increase in daylight and sunlight availability to surrounding properties	Negligible: No built development is proposed and the effect is therefore negligible as set out for demolition	None Required	Negligible
	Completed Development	Daylight availability to surrounding properties	Negligible to Moderate Adverse: In consideration of the VSC (Vertical Sky Component) and NSL (No Sky Line) criteria, the overall impact to residential buildings surrounding the completed Development is considered to range predominately from minor to moderate adverse.	None Required	Negligible to Moderate Adverse
		Sunlight to existing surrounding residential properties	Negligible to Moderate Adverse Adverse: 1 property experiences a negligible impact and 5 properties experience a moderate adverse impact. Considering the proposed Development, the poor levels of existing daylight to many of the rooms, the dense urban location and inherent architectural features of buildings.	None Required	Negligible to Moderate Adverse
		Permanent overshadowing (<i>sun-hours on ground</i>) – proposed amenity areas within and surrounding the Site	Negligible: Amenity Area 1 (Central Square) falls below the BRE's recommendations for <i>sun-hours on ground</i> . However, amenity Area 2 (Station Square) will achieve direct sunlight for 2 hours or more to over 65.7% of its area, in excess of the BRE guidelines.	None Required	Negligible

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
		Transient overshadowing – surrounding area	Minor Adverse: Overall there will be a small increase in the amount of shadow cast by the Development with regards to the surrounding residential properties and open spaces, limited to the later part of the day.	None Required	Minor Adverse
Townscape, Conservation and Visual Assessment	Demolition and Construction	Townscape, Heritage and Visual Effects	Minor to Moderate Adverse: Temporary moderate adverse local townscape and visual effects with Minor adverse effects from more distant views.	Hoarding and good practice measures	Minor to Moderate Adverse
	Temporary Flexible Events Space	Townscape, Heritage and Visual Effects	Minor beneficial: The temporary events space would have a beneficial effect on the setting of the listed station and the character of the surrounding townscape.	None Required	Minor Beneficial
	Completed Development	Townscape	Substantial Beneficial: The high quality architecture and public realm would have substantial beneficial effect on local townscape.	None Required	Substantial Beneficial
		Heritage	Negligible to Moderate Beneficial: The effect on the setting of surrounding listed buildings and Conservation Areas would be negligible to moderate beneficial.	None Required	Negligible to Moderate Beneficial
		Local Views	Moderate to Substantial Beneficial: From the south and east of the Site, views of the Development will be very restricted. The streets to the west of the Site have a fragmented appearance and are characterised by varied housing and light industrial buildings, the setting of which will be positively transformed by the Development. Views from the north	None Required	Moderate to Substantial Beneficial

Effect Types	Stage of Development	Issue	Potential Effect	Mitigation Measures	Residual Effect
			of the Site would be positively transformed by the creation of Station Square and routes through the Site.		
		Distant Views	Negligible to Substantial Beneficial: The Development will have a positive impact on the setting and perception of Reading.	None Required	Negligible to Substantial Beneficial