

CHAPTER 15:

RESIDUAL EFFECTS AND CONCLUSIONS

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15.0 RESIDUAL EFFECTS AND CONCLUSIONS

15.1 Introduction

15.1.1 This chapter provides a summary of the mitigation measures identified by the environmental assessments in the ES along with a summary of the residual effects following the implementation of the mitigation measures. Full details of the assessment can be found in the respective ES Chapters.

15.2 Summary of the Mitigation Measures

15.2.1 Schedule 4, Part 1 of the EIA Regulations require an ES to include:

“a description of the measures envisaged to prevent, reduce and where possible offset any significance adverse effects on the environment.”

15.2.2 The mitigation, monitoring and enhancement measures included in this ES fall into one of two categories:

- embedded mitigation: this includes committed measures incorporated into the proposals which make up the Proposed Development applied for; and
- additional mitigation: further mitigation beyond that included in the embedded mitigation which seeks to further prevent, reduce and where possible offset those significant effects of the environment anticipated as being likely to arise following the assessment of the Proposed Development incorporating the embedded mitigation.

15.2.3 **Table 15.1** outlines a topic by topic summary of the key issues addressed by the ES and the key mitigation measures identified. The mitigation measures are separated into the above categories. The Applicant anticipates that, where appropriate, RBC will seek to ensure the effective delivery of these mitigation measures, via legal agreement, obligation or conditions attached to the planning permission.

Table 15.1 Summary of Key Embedded and Additional Mitigation Measures

Topic	Effect	Measures	
		To Reduce Effects During Construction	To Reduce Effects During Operation
Socio-economics	<ul style="list-style-type: none"> • Impact on demand for housing, childcare, primary school places, secondary school places, healthcare from construction workforce. • Impact of the additional population on the availability of open spaces. • Impact of additional population on the availability of community facilities. • Impact of construction phase on crime levels. • Impact of employment and skills of residents. • Impact on employment increase in labour supply. • Spending of additional population in local economy. • Impact of additional provision for housing. • Impact of additional population on the supply of childcare, primary school places, secondary school places and healthcare services. • Impact of additional population and built development on levels of crime. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • None. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • None. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • Provision of open and play space within the development. • Design and layout measures to secure the Proposed Development and prevent crime. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • CIL contribution towards secondary education provision in the Borough. • CIL contribution towards community facility provision in the Borough. • S106 contribution towards healthcare - contributions towards Emmer Green Surgery

Topic	Effect	Measures	
		To Reduce Effects During Construction	To Reduce Effects During Operation
Traffic and Transport	<ul style="list-style-type: none"> • Severance; • Driver Delay; • Pedestrian Delay; • Pedestrian Amenity; • Fear and Intimidation; • Accidents and Safety; 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • None. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Traffic management measures to be outlined in CEMP. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • Footpaths and cycleway in illustrative masterplan. • Residential Travel Plan. • Traffic crossing on Kidmore End Road. • Mini-roundabout on Kidmore Ed Road/Peppard Rd. <p><u>Additional Mitigation:</u></p> <p>None.</p>
Air Quality	<ul style="list-style-type: none"> • Construction dust. • NO_z and particulates pollution from construction and operational traffic. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • None. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Standard measures in line with IAQM guidance. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • Committed measures in the Residential Travel Plan <p><u>Additional Mitigation</u></p> <ul style="list-style-type: none"> • Potential measures outlined in the Residential Travel Plan
Noise and Vibration	<ul style="list-style-type: none"> • Construction noise experienced by local residential and community receptors. • Construction vibration experienced by local residential and community receptors. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • Best Practicable Means measures. • Control of activities through Section 61 process. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Prior warning to residents. • Vibration risk assessment, and vibration monitoring if necessary. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • None. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • None.

Topic	Effect	Measures	
		To Reduce Effects During Construction	To Reduce Effects During Operation
Water Resources and Flood Risk	<ul style="list-style-type: none"> Contamination of surface water or groundwater. Increase to flood risk. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> Standard water protection measures in CoCP. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> None. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> Infiltration basins as outlined in drainage strategy. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> None.
Ecology	<ul style="list-style-type: none"> Disturbance and pollution from construction on LWS. Disturbance through increased recreational pressure on priority habitats. Injury, trapping or killing of badgers. Loss of bat roosts and foraging habitat. Disturbance of red kites from nests and vegetation loss. Temporary removal of amenity grassland habitat. Injury, trapping or killing of hedgehogs. Impact of planting invasive, non-native species. Degradation through increased recreational pressure on LWS and priority habitats. Light disturbance on bats. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> Hedgerow retention. Retention of all trees. Sensitive vegetation removal, monitoring of red kite nests. Creation of new grassland habitat. Covering holes and trenches overnight. Planting only native species of local origin. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> Covering trenches to protect badgers, badger surveys every 6 months if badger setts are found within 30m of the construction site. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> Improvement of footpath and thorny hedging to restrict resident access to priority habitats. Enhanced opportunities for nesting birds. The adoption of native planting schemes. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> Habitat and Visitor Management Plan for the Reading Golf Course LWS. Sensitive lighting scheme for the development and incorporation of bat roosting features on new buildings. A Landscape Ecological Management Plan (LEMP) to show ecological permeability for hedgehogs. Seed mixes and tree/shrub planting schemes detailed within a site-wide LEMP.

Topic	Effect	Measures	
		To Reduce Effects During Construction	To Reduce Effects During Operation
Archaeology and Heritage	<ul style="list-style-type: none"> • Complete removal of buried archaeological deposits. • Impact on setting of designated heritage assets. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • None. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Recording deposits prior to loss. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • None. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • None.
Climate Change and GHG Emissions	<ul style="list-style-type: none"> • GHG emissions embedded in construction materials. • GHG emissions from construction plant. • GHG emissions from construction traffic. • GHG emissions from regulated and unregulated energy use. • GHG emissions from operational traffic. • GHG emissions from the end of life of the development. • Risks to the Proposed Development from climate change, including exacerbation of any adverse effects. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • Construction traffic management plan, including measures such as careful management of construction traffic, sourcing products locally to reduce transportation distances, encouraging workers to use public/active travel. • Increased replacement of trees felled on site. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Use of materials with lower embedded carbon. • Consider using more efficient construction vehicles and plant. • Consider the circular economy, with respect to safeguarding opportunities for the reuse or better recycling of materials. • 1,000 new trees planted at Cucumber Wood to offset trees felled. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • The use of energy hierarchy principles set out in the Energy and Sustainability Strategy. • Proposed U Values for materials in homes. • Roof mounted PV arrays on each of the homes. • Carbon offset payment of £135,000 <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Travel Plans. • Climate Change Adaptation Plan.

Topic	Effect	Measures	
		To Reduce Effects During Construction	To Reduce Effects During Operation
Landscape and Visual Impact Assessment	<ul style="list-style-type: none"> • Effect on the character of the local landscape. • Effect on views from local homes, education and community facilities, roads and public rights of way, open space and designated landscapes 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • None. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Measures to be included in a CEMP, including location of construction compound, hoarding and lighting details. 	<p><u>Embedded Mitigation:</u></p> <ul style="list-style-type: none"> • Illustrative landscape scheme. <p><u>Additional Mitigation:</u></p> <ul style="list-style-type: none"> • Detailed design to include sympathetic material palette and street furniture. • Lighting strategy. • Landscape maintenance plan.

15.3 Significant Residual Effects

- 15.3.1 The significant residual effects of the Proposed Development following implementation of both embedded and additional mitigation measures have been assessed. Although each technical chapter (**Chapters 6 to 13**) contains detailed consideration of residual effects, **Table 15.2** summarises these. It is assumed for the purposes of this EIA that any effects of minor-moderate significance or greater will be considered a significant effect in EIA terms unless otherwise stated. The significance criteria are set within relevant technical chapters where a different approach has been followed.

Table 15.2: Summary of Significant Residual Effects

Topic	Stage of Development	Residual Effects	Duration of Effect	Significance of Residual Effect
Socio-economics	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> Impact of additional provision for housing. 	<ul style="list-style-type: none"> Permanent. 	<ul style="list-style-type: none"> Moderate – minor beneficial.
Traffic and Transport	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
Air Quality	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
Noise and Vibration	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
Water Resources and Flood Risk	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
Ecology	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> 10% biodiversity net gain. 	<ul style="list-style-type: none"> Permanent. 	<ul style="list-style-type: none"> Moderate beneficial.
Archaeology and Heritage	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
Climate Change and GHG Emissions	Construction	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
	Operation	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> None.
Landscape and Visual Impact Assessment	Construction	<ul style="list-style-type: none"> Night time character. 	<ul style="list-style-type: none"> Temporary. 	<ul style="list-style-type: none"> Moderate adverse.
		<ul style="list-style-type: none"> Effect on site landscape character. 	<ul style="list-style-type: none"> Temporary. 	<ul style="list-style-type: none"> Major adverse.
		<ul style="list-style-type: none"> Change to site land cover. 	<ul style="list-style-type: none"> Permanent. 	<ul style="list-style-type: none"> Major adverse.
		<ul style="list-style-type: none"> Trees and vegetation pattern and Site Landscape Features. 	<ul style="list-style-type: none"> Temporary. 	<ul style="list-style-type: none"> Major- moderate adverse to minor beneficial.
		<ul style="list-style-type: none"> Changes to building height form. 	<ul style="list-style-type: none"> Temporary. 	<ul style="list-style-type: none"> Ranging from moderate-major beneficial to moderate to major adverse.
		<ul style="list-style-type: none"> Reduction in quality of views from nearby homes. 	<ul style="list-style-type: none"> Temporary 	<ul style="list-style-type: none"> Major-moderate adverse.
		<ul style="list-style-type: none"> Reduction in quality of views from schools, community facilities, residents in the wider area, worst affected roads, and open space. 	<ul style="list-style-type: none"> Temporary. 	<ul style="list-style-type: none"> Moderate-minor adverse.
	Operation	<ul style="list-style-type: none"> Change to Site landscape character. 	<ul style="list-style-type: none"> Permanent. 	<ul style="list-style-type: none"> Moderate adverse – Moderate beneficial.
		<ul style="list-style-type: none"> Change to night-time character. 	<ul style="list-style-type: none"> Permanent. 	<ul style="list-style-type: none"> Major adverse.
		<ul style="list-style-type: none"> Change to tree vegetation pattern. 	<ul style="list-style-type: none"> Permanent. 	<ul style="list-style-type: none"> Moderate beneficial.

Topic	Stage of Development	Residual Effects	Duration of Effect	Significance of Residual Effect
		• Change to Site land cover.	• Permanent.	• Moderate adverse - Moderate beneficial.
		• Increased public access and footpaths around the Site.	• Permanent.	• Moderate beneficial.
		• Appropriate built height and form in the context of surroundings.	• Permanent.	• Moderate-major beneficial.
		• Views from adjacent residential properties	• Permanent	• Moderate adverse
		• Views from local roads, until planting matures	• Temporary	• Moderate - minor adverse
Inter-Project Cumulative Effects	Construction	• Increased construction employment opportunities.	• Temporary.	• Moderate beneficial.
	Operation	• Impact on population of increase in housing supply, including affordable housing.	• Permanent.	• Major – moderate beneficial.
		• Impact on employment and skills of residents.	• Permanent.	• Moderate – minor beneficial.
		• Impact on employment increase on labour supply.	• Permanent.	• Moderate – minor beneficial.
		• Spending of additional population within local economy.	• Permanent.	• Moderate – minor beneficial.
		• Impact of new population on demand for secondary school places.	• Permanent.	• Moderate – minor adverse.
		• Effect due to better use of currently developed space, and due to more appropriate building height and urban grain compared to existing site uses.	• Permanent.	• Moderate beneficial.

15.4 Conclusion

- 15.4.1 The Site is approximately 12.15 ha and is centred at Ordnance Survey (OS) National Grid Reference (NGR) SU715767. The Site has been used as a golf course since the early 1900s and is bound to the north by the existing golf course; this boundary aligns with the county border between Berkshire and South Oxfordshire. The Site is identified as a site for development and change of use in the RBC Local Plan adopted in November 2019.
- 15.4.2 The outline application is intended to comprise up to 223 new residential units (C3) in a mixture of 1,2, 3, 4 and 5-bed houses, flats and maisonettes; associated landscaping, including 5ha of public open space, highways provisions and infrastructure provision across an overall area of development of approximately 12.15 ha.
- 15.4.3 It is expected that construction will begin in May 2022, with only one phase of construction which will last approximately 4 - 5 years. The completed development is expected to be fully operational by January 2027.

- 15.4.4 The environmental effects of the Proposed Development during both construction and operation have been assessed, and appropriate mitigation has been recommended.
- 15.4.5 The significant adverse residual effects anticipated during construction comprise:
- a moderate adverse effect on the night-time character of the Site;
 - a major- moderate adverse effect arising from the change to site land cover;
 - a major - moderate adverse effect due to the temporary reduction in trees on Site, before they are replaced;
 - a moderate-major adverse effect on building height and form due to construction works;
 - a major adverse effect on the Site landscape character;
 - a major-minor adverse effect due to the reduction in quality of views from adjacent homes; and
 - a moderate-minor adverse effect due to the reduction in quality of views from schools, community facilities and open space.
- 15.4.6 There would be significant beneficial effects associated with the demolition of the clubhouse (moderate major beneficial on built height and form).
- 15.4.7 The significant adverse residual effects anticipated during operation comprise:
- a major adverse effect on the night-time character of the Site due to increased lighting;
 - a moderate-major adverse effect on views from adjacent residential properties; and
 - a temporary moderate adverse effect on views from local roads.
- 15.4.8 The significant beneficial residual effects anticipated during operation comprise:
- a moderate beneficial effect from the achievement of 10% biodiversity net gain;
 - a moderate beneficial change to Site land cover due to increased planting and public open space;
 - a moderate beneficial effect due to increased public access and footpaths around the Site;
 - a moderate-major beneficial effect due to the appropriate built height and form in the context of surroundings; and
 - a moderate-minor and significant beneficial effect on the housing supply in the local area.
- 15.4.9 The effect on Site landscape character would range from moderate adverse in more densely developed areas to moderate beneficial where landscaped open space is provided.
- 15.4.10 During the construction of the Proposed Development, there is a potential for significant disturbance and nuisance effects to local residents and early site residents due to visual impact and construction noise effects. This is likely to be limited to residents of Kidmore End Road and Eric Avenue, particularly those with properties fronting or abutting the Site.

- 15.1.1 During operation, there may be increased demand for Emmer Green Primary School and Emmer Green Youth and Community Centre; users of both facilities would also experience a worsening of views northwards from these locations. The interactive effect is not considered significant.
- 15.4.11 The significant cumulative effect of the Proposed Development and other schemes during construction would be:
- a moderate beneficial effect due to increased construction employment opportunities.
- 15.4.12 The significant cumulative effects of the Proposed Development and other schemes during operation would be:
- a moderate – minor adverse effect on demand for secondary school places due to the increased population;
 - a major – moderate beneficial effect due to the increase in housing supply, including affordable housing;
 - a moderate – minor beneficial effect on the local economy due to the employment and skills of residents;
 - a moderate-minor beneficial effect on employment and local economy due to an increase on labour supply;
 - a moderate-minor beneficial effect on the local economy due to the spending of additional population; and
 - a moderate beneficial effect through better use of currently developed space and due to more appropriate building height and urban grain compared to existing site uses.