

## 16 INTRA-DEVELOPMENT CUMULATIVE EFFECTS

### 16.1 INTRODUCTION

This chapter of the ES provides an assessment of the potential for intra-development cumulative effects.

### 16.2 INTRA-DEVELOPMENT CUMULATIVE EFFECTS

The Institute of Environment Management and Assessment (IEMA) (1) Guidance identifies two types of cumulative effects:

- Inter-project (or 'inter-development') effects – incremental changes caused by other existing and/or approved development schemes occurring together with the proposed development and the cumulative effects combining to worsen the effect of a particular impact; and
- Intra-project (or 'intra-development') effects – those effects that occur as a result of impact interaction between different environmental topics within the same project. For example, a project might affect bird species as a result of direct loss of habitat and by noise and light disturbance. Each of these when considered in isolation may have a limited effect but taken together the sum is greater than the parts.

The cumulative schemes considered relevant to this EIA are identified within Chapter 2: EIA Methodology. The inter-development effects of these schemes have been assessed within each individual technical chapter, as appropriate. Intra-development effects have subsequently been assessed within this chapter.

The assessment of cumulative intra-development effects considers the combination of identified significant effects of more than one technical assessment category which have the potential to affect the same sensitive receptor.

All residual effects, both those deemed to be significant (Major/Moderate) and those of lesser significance (Minor) have been considered. This is because, in aggregate, several minor effects could lead to the sensitive receptors experiencing an overall effect that is greater than the sum of its parts. However, Negligible effects (which also includes 'neutral' or 'no impact' assessments) have not been listed as these are considered unlikely to result in significant effects even in aggregate.

Residual effects of both an adverse and beneficial nature are considered as part of the assessment. When fully and thoroughly considered with all aspects shown, if a receptor has an effect identified from only one topic then the overall effect is considered to remain that identified. If several topics identify effects for a single receptor then they have been considered and the residual effect adjusted according to the collective weight of the effects' significance and nature (adverse/beneficial).

For some environmental aspects, no interactions with other aspects can occur and so no combined cumulative effects could arise. Where this is the case, the assessment states that there is no potential for effect interactions.

Based on the methodology detailed within this chapter, Table 16.1 and Table 16.2 present the potential for interactions of individual effects during the construction and operational phases respectively.

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Table 16.1  
Intra-development Cumulative Effects Assessment – Construction Phase

SENSITIVE RECEPTOR/RECEPTOR GROUP	CONSTRUCTION RESIDUAL EFFECTS	INTRA-DEVELOPMENT CUMULATIVE EFFECT POTENTIAL?	POTENTIAL FOR INTRA-DEVELOPMENT CUMULATIVE EFFECT INTERACTION?
Walton Lane North of Priory Road	<u>Transport</u> Effects of construction traffic on road safety — <b>Minor Adverse</b>	No	No
9 Goodison Road, 29a Goodison Road, 41 Goodison Road, Goodison Road, 21 Gwladys Street, 63a Gwladys Street, 105 Gwladys Street, Gwladys Street Community Primary and Nursery School, 2 Muriel Street, 1 Bullens Road, Proposed Multi-Storey Residential Development, Walton Lane (Planning Ref. 18F/1316) (noise chapter refs R01-R10 & P01)	<u>Noise</u> Noise associated with demolition and construction works — <b>Minor Adverse</b>	No	No
Goodison Park stadium	<u>Townscape &amp; Visual</u> Proposed demolition and clearance of the stadium — <b>Major Adverse</b> <u>Built Heritage</u> Proposed demolition and clearance of the stadium — <b>Minor Adverse</b>	Yes	No — this is the same effect but judged from two perspectives. It is considered a major adverse effect as a townscape asset and a minor adverse effect as a heritage asset. There is no interaction between these effects.
NCR 810	<u>Townscape &amp; Visual</u> Change to the amenity value and setting of the route — <b>Major Adverse: Significant (as immediately passes the site) / Negligible: Not Significant (for the route as a whole)</b>	No	No
Sports Ground Townscape Character Area	<u>Townscape &amp; Visual</u> Change to townscape character due to demolition and construction activities — <b>Major Adverse: Significant</b>	No	No
Grid Iron Terraces Townscape Character Area	<u>Townscape &amp; Visual</u> Change to townscape character due to demolition and construction activities — <b>Moderate Adverse: Not Significant</b>	No	No
Public Park and Cemetery Townscape Character Area	<u>Townscape &amp; Visual</u> Change to townscape character due to demolition and construction activities — <b>Minor Adverse: Not Significant</b>	No	No
Viewpoint 01 Anfield Cemetery Parterre, Viewpoint 02 Ince Avenue (residents only), Viewpoint 03 Stanley Park — Path junction, Viewpoint 10 Anfield Cemetery	<u>Townscape &amp; Visual</u> Change to view due to demolition and construction activities — <b>Minor Adverse: Not Significant</b>	No	No
Viewpoint 04 Stanley Park — Formal Terrace	<u>Townscape &amp; Visual</u> Change to view due to demolition and construction activities — <b>Moderate Adverse: Not Significant</b>	No	No
Viewpoint 06 Goodison Road, Viewpoint 07 Walton Lane, Viewpoint 09 Spellow Lane	<u>Townscape &amp; Visual</u> Change to view due to demolition and construction activities — <b>Moderate Adverse: Not Significant (Pedestrians/cyclists) — Minor Adverse: Not Significant (Residential /Road Users)</b>	No	No
Viewpoint 08 Priory Road junction with Walton Lane	<u>Townscape &amp; Visual</u> Change to view due to demolition and construction activities — <b>Moderate Adverse: Significant (Pedestrians/cyclists/cemetery visitors) — Moderate Adverse: Not Significant (Road Users)</b>	No	No

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SENSITIVE RECEPTOR/RECEPTOR GROUP	CONSTRUCTION RESIDUAL EFFECTS	INTRA-DEVELOPMENT CUMULATIVE EFFECT POTENTIAL?	POTENTIAL FOR INTRA-DEVELOPMENT CUMULATIVE EFFECT INTERACTION?
Residents within close proximity to the site on Goodison Road, Gwladys Street, Diana Street, and Bullens Road.	<u>Townscape &amp; Visual</u> Change to views due to demolition and construction activities — <b>Major Adverse: Significant</b>	No	No
Labour Market & Employment	<u>Socio-economic</u> Generation of construction employment — <b>Moderate Beneficial</b>	No	No
Labour Market & Skills	<u>Socio-economic</u> Generation of training and apprenticeship opportunities — <b>Minor Beneficial</b>	No	No
Local Economy	<u>Socio-economic</u> Generation of GVA — <b>Moderate Beneficial</b>	No	No

Table 16.1  
Intra-Development Cumulative Effects Assessment – Operational Phase

SENSITIVE RECEPTOR/RECEPTOR GROUP	OPERATIONAL RESIDUAL EFFECTS	INTRA-DEVELOPMENT CUMULATIVE EFFECT POTENTIAL?	POTENTIAL FOR INTRA-DEVELOPMENT CUMULATIVE EFFECT INTERACTION?
Walton Lane North of Priory Road, Gwladys Street, Goodison Road South of Gwladys Street, Bullens Road North of site access, Spellow Lane West of Goodison Road.	<u>Transport</u> Effects of operational traffic on road safety — <b>Minor Adverse</b>	No	No
9 Goodison Road (noise chapter ref R01/TR04)	<u>Noise</u> Operational traffic noise effects (short-term/long-term, 2023/2028) — <b>Minor Adverse</b> Operation building services plant noise effects — <b>Minor Adverse</b> <u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Moderate Adverse</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Moderate Adverse</b> effect is anticipated.
63a Gwladys Street (noise chapter ref R06/TR12)	<u>Noise</u> Operational traffic noise effects (short-term/long-term, 2023/2028) — <b>Minor Adverse</b> Operation building services plant noise effects — <b>Minor Adverse</b> <u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Negligible to Minor Beneficial</b> Change in internal sunlight levels — <b>Minor to Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Neutral</b> effect is anticipated.
29a Goodison Road (noise chapter ref R02)	<u>Noise</u> Operation building services plant noise effects — <b>Minor Adverse</b> <u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Minor to Moderate Beneficial</b> Change in internal sunlight levels — <b>Minor to Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Neutral</b> effect is anticipated.
41 Goodison Road (noise chapter ref R03)	<u>Noise</u> Operation building services plant noise effects — <b>Minor Adverse</b> <u>Daylight, Sunlight &amp; Overshadowing</u>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Minor Beneficial</b> effect is anticipated.

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SENSITIVE RECEPTOR/RECEPTOR GROUP	OPERATIONAL RESIDUAL EFFECTS	INTRA-DEVELOPMENT CUMULATIVE EFFECT POTENTIAL?	POTENTIAL FOR INTRA-DEVELOPMENT CUMULATIVE EFFECT INTERACTION?
	Change in internal daylight levels — <b>Minor to Moderate Beneficial</b> Change in internal sunlight levels — <b>Major Beneficial</b>		
37 Goodison Road (noise chapter ref TR05)	Noise Operational traffic noise effects (short-term/long-term, 2023/2028) — <b>Minor to Moderate Adverse</b> Daylight, Sunlight & Overshadowing Change in internal daylight levels — <b>Minor to Moderate Beneficial</b> Change in internal sunlight levels — <b>Minor to Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Neutral</b> effect is anticipated.
21 Gwladys Street (noise chapter ref R05),	Noise Operation building services plant noise effects — <b>Minor Adverse</b> Daylight, Sunlight & Overshadowing Change in internal daylight levels — <b>Negligible to Minor Beneficial</b> Change in internal sunlight levels — <b>Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Minor Beneficial</b> effect is anticipated.
105 Gwladys Street (noise chapter ref R07), Gwladys Street Community Primary and Nursery School (noise chapter ref R08), 2 Muriel Street (noise chapter ref R09)	Noise Operation building services plant noise effects — <b>Minor Adverse</b>	No	No
1 Bullens Road (noise chapter ref R10/TR13)	Noise Operational traffic noise effects (short-term/long-term, 2023/2028) — <b>Minor Adverse</b> Operation building services plant noise effects — <b>Minor Adverse</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Minor Adverse</b> effect is anticipated.
161 Walton Lane (noise chapter ref TR01), 56a Spellow Lane (noise chapter ref TR02), 59 Andrew Street (noise chapter ref TR06), 71 Goodison Road (noise chapter ref TR08), 1 Frodsham Street (noise chapter ref TR09), 77a City Road (noise chapter ref TR10), 20 City Road (noise chapter ref TR11), 267 Walton Lane (noise chapter ref TR14), 293 Walton Lane (noise chapter ref TR15), 333 Walton Lane (noise chapter ref TR16)	Noise Operational traffic noise effects (short-term/long-term, 2023/2028) — <b>Minor Adverse</b>	No	No
61a Gwladys Street (noise chapter ref TR12)	Noise Operational traffic noise effects (short-term/long-term, 2023/2028) — <b>Minor to Moderate Adverse</b> Daylight, Sunlight & Overshadowing Change in internal daylight levels — <b>Negligible to Minor Beneficial</b> Change in internal sunlight levels - <b>Minor to Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Negligible</b> effect is anticipated.
41 Nimrod Street (noise chapter ref TR07),	Noise Operational traffic noise effects (short-term/long-term, 2023/2028) — <b>Minor to Moderate Adverse</b>	No	No
Proposed Residential Development, Land bounded by Walton Lane, Bullens Road and Diana Street (Planning Ref. 18F/1316) (noise chapter ref P01)	Noise Operation building services plant noise effects — <b>Minor Adverse</b> Daylight, Sunlight & Overshadowing Change in internal daylight levels — <b>Negligible to Minor Adverse</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Minor Adverse</b> effect is anticipated.
Proposed Sensitive Receptors at the Application Site (noise chapter refs PR1-	Noise	No	No

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SENSITIVE RECEPTOR/RECEPTOR GROUP	OPERATIONAL RESIDUAL EFFECTS	INTRA-DEVELOPMENT CUMULATIVE EFFECT POTENTIAL?	POTENTIAL FOR INTRA-DEVELOPMENT CUMULATIVE EFFECT INTERACTION?
PR34)	Noise effects associated with surrounding road network — <b>Minor Adverse</b>		
5 Goodison Road	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Moderate Adverse</b>	No	No
7 Goodison Road	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Moderate Adverse</b>	No	No
11 Goodison Road	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Minor Adverse</b>	No	No
19-29 (odds) Goodison Road (excluding 29a Goodison Road already covered above)	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Minor to Moderate Beneficial</b> Change in internal sunlight levels — <b>Minor to Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Minor to Moderate Beneficial</b> effect is anticipated.
Winslow Hotel Public House	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Minor to Moderate Beneficial</b> Change in internal sunlight levels — <b>Major Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Moderate to Major Beneficial</b> effect is anticipated.
33A — 43 (odds) Goodison Road (excluding 37 and 41 Goodison Road already covered above)	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Minor to Moderate Beneficial</b> Change in internal sunlight levels — <b>Major Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Moderate Beneficial</b> effect is anticipated.
Church of St Luke the Evangelist: HER No. MME16142	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal sunlight levels — <b>Minor to Moderate Beneficial</b> <u>Built Heritage</u> Change to setting of heritage asset — <b>Minor Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Minor to Moderate Beneficial</b> effect is anticipated.
5-13 (odds) Gwladys Street	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal sunlight levels — <b>Negligible to Minor Beneficial</b>	No	No
15-23 (odds) Gwladys Street (excluding 21 Gwladys Street already covered above)	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Negligible to Minor Beneficial</b> Change in internal sunlight levels — <b>Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Minor Beneficial</b> effect is anticipated.
25-33 (odds) Gwladys Street	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Major Beneficial</b> Change in internal sunlight levels — <b>Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Moderate to Major Beneficial</b> effect is anticipated.
35-43 (odds) Gwladys Street,	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Major Beneficial</b> Change in internal sunlight levels — <b>Moderate to Major Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Major Beneficial</b> effect is anticipated.
45-53 (odds) Gwladys Street	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Major Beneficial</b> Change in internal sunlight levels — <b>Moderate Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a <b>Moderate to Major Beneficial</b> effect is anticipated.
55-65 (odds) Gwladys Street (excluding 61a and 63a Gwladys Street already covered above)	<u>Daylight, Sunlight &amp; Overshadowing</u> Change in internal daylight levels — <b>Negligible to Minor Beneficial</b>	Yes	These effects are considered to have the potential to interact to produce an intra-development cumulative effect. Considering the collective weight of the effects’ significance and nature, a

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SENSITIVE RECEPTOR/RECEPTOR GROUP	OPERATIONAL RESIDUAL EFFECTS	INTRA-DEVELOPMENT CUMULATIVE EFFECT POTENTIAL?	POTENTIAL FOR INTRA-DEVELOPMENT CUMULATIVE EFFECT INTERACTION?
	Change in internal sunlight levels — <b>Minor to Moderate Beneficial</b>		<b>Minor Beneficial</b> effect is anticipated.
Goodison Park stadium	<u>Townscape &amp; Visual</u> Loss of stadium from the site — <b>Major Adverse</b>	No	No
NCR 810	<u>Townscape &amp; Visual</u> Change to the amenity value and setting of the route — <b>Major Beneficial: Significant (as immediately passes the site) / Negligible: Not Significant (for the route as a whole)</b>	No	No
Sports Ground Townscape Character Area	<u>Townscape &amp; Visual</u> Change to townscape character due to completed development — <b>Moderate Beneficial: Not Significant</b>	No	No
Grid Iron Terraces Townscape Character Area	<u>Townscape &amp; Visual</u> Change to townscape character due to completed development — <b>Moderate Beneficial: Not Significant</b>	No	No
Public Park and Cemetery Townscape Character Area	<u>Townscape &amp; Visual</u> Change to townscape character due to completed development — <b>Minor Adverse: Not Significant</b>	No	No
Viewpoint 01 Anfield Cemetery Parterre	<u>Townscape &amp; Visual</u> Change to view due to completed development — <b>Minor Adverse: Not Significant</b>	No	No
Viewpoint 02 Ince Avenue (residents only), Viewpoint 03 Stanley Park — Path junction, Viewpoint 10 Anfield Cemetery	<u>Townscape &amp; Visual</u> Change to view due to completed development — <b>Minor Beneficial: Not Significant</b>	No	No
Viewpoint 04 Stanley Park — Formal Terrace	<u>Townscape &amp; Visual</u> Change to view due to completed development — <b>Moderate Beneficial: Not Significant</b>	No	No
Viewpoint 06 Goodison Road, Viewpoint 07 Walton Lane	<u>Townscape &amp; Visual</u> Change to view due to completed development — <b>Moderate Beneficial: Not Significant</b> (Pedestrians/cyclists) — <b>Minor Beneficial: Not Significant</b> (Residential/Road Users)	No	No
Viewpoint 08 Priory Road junction with Walton Lane, Viewpoint 09 Spellow Lane	<u>Townscape &amp; Visual</u> Change to view due to completed development — <b>Moderate Adverse: Not Significant</b> (Pedestrians/cyclists/cemetery visitors) — <b>Moderate Adverse: Not Significant</b> (Road Users)	No	No
Residents within close proximity to the site on Goodison Road, Gwladys Street, Diana Street, and Bullens Road.	<u>Townscape &amp; Visual</u> Change to views due to completed development — <b>Major Beneficial: Significant</b>	No	No
Stanley Park: Grade II* List Entry Number 1001000, Anfield Cemetery Grade II* List Entry Number 1000993, 87 Langham Street, Salop Chapel: HER No. MME19234	<u>Built Heritage</u> Change to setting of heritage asset — <b>Minor Beneficial</b>	No	No
Surface water drainage at the application site	<u>Water Resources and Flood Risk</u> Surface water runoff from the developed site will be managed on site and discharged at a controlled rate to the public sewer network — <b>Minor Beneficial</b>	No	No
Labour Market & Employment	<u>Socio-economic</u> Generation of operational employment — <b>Minor Beneficial</b>	No	No
Labour Market & Employment	<u>Socio-economic</u> Generation of GVA — <b>Moderate Beneficial</b>	No	No
Local Economy	<u>Socio-economic</u>	No	No

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SENSITIVE RECEPTOR/RECEPTOR GROUP		INTRA-DEVELOPMENT CUMULATIVE EFFECT POTENTIAL?	POTENTIAL FOR INTRA-DEVELOPMENT CUMULATIVE EFFECT INTERACTION?
Local Economy	Generation of additional household income — <b>Moderate Beneficial</b>	No	No
	<u>Socio-economic</u> Generation of additional expenditure — <b>Minor Beneficial</b>		
Local Community	<u>Socio-economic</u> Generation of societal value — <b>Moderate Beneficial</b>	No	No
	<u>Socio-economic</u> Provision of new housing — <b>Minor Beneficial</b>		
Local Social Infrastructure	<u>Socio-economic</u> Increased demand for education facilities — <b>Minor Beneficial</b>	No	No
	<u>Socio-economic</u> Increased demand for healthcare facilities — <b>Minor Beneficial</b>		
Local Social Infrastructure	<u>Socio-economic</u> Provision of open space and playspace — <b>Minor Beneficial</b>	No	No



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## 16.3 SUMMARY

From the intra-development cumulative effects assessment, it can be seen that there is the potential for both adverse and beneficial combined effects arising on individual receptors or receptor groups and, in some cases, there is the potential for those effects to interact with one another to produce intra-development cumulative effects. The anticipated intra-development cumulative effects range from **Moderate Adverse** to **Major Beneficial**.

## 16.4 WORKS CITED

1. Institute of Environmental Management and Assessment. The State of Environmental Impact Assessment Practice in the UK. s.l. : IEMA, 2011.