



THE GOODSYARD

Environmental Statement Addendum Volume 2

July 2020 – Chapter 20 of 21



ballymore.



CHAPTER 20: RESIDUAL EFFECTS AND CONCLUSIONS

20.1 INTRODUCTION

- 20.1.1 This chapter provides a summary of the mitigation identified by the environmental assessments in the ES Addendum 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 Addendum Chapters.

20.2 SUMMARY OF MITIGATION MEASURES

- 20.2.1 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.”

- 20.2.2 The mitigation, monitoring and enhancement measures included in this ES Addendum 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.

- 20.2.3 **Table 20.1** outlines a topic by topic summary of the key issues addressed by the ES Addendum and the key mitigation measures identified. The mitigation measures are separated into the above categories. The Applicant anticipates that, where appropriate, the GLA will seek to ensure the effective delivery of these mitigation measures, via legal agreement, obligation or conditions attached to planning permission.

Table 20.1. Summary of Key Embedded and Additional Mitigation Measures

Topic	Effects	Construction Mitigation Measures	Operational Mitigation Measures
Waste and Recycling	Increase in waste from the Revised Scheme potentially placing strain on the local waste management infrastructure, should existing capacity within the waste management infrastructure be limited.	SWMP as part of the CEMP.	Operational Waste Management Strategy provided in support of the Application.
Socio-Economics	<ul style="list-style-type: none"> • Additional population on supply of childcare • Increased population and pressure on health services • Increased population and impact on community and recreational facilities • Increased population and impact on open and play space • Increased population and impact on levels of crime • Population impact on change in employment and net loss of ten jobs • Increase in labour supply and skills 	<ul style="list-style-type: none"> • Ensuring open space is designed and provided within the Revised Scheme as the phasing progresses for use by the early tenants. 	<ul style="list-style-type: none"> • The healthcare centre will initially accommodate 1FTE GP with potential for a further GP to be accommodated in the future. • Contribution of 25,812 m² of public realm <p><u>Additional</u></p> <ul style="list-style-type: none"> • Community Infrastructure Levy Payments • Art exhibition spaces, information about the local area, local skills and training measures.
Ground Conditions	<ul style="list-style-type: none"> • Potential for significant existing contaminated ground to be discovered during site works. • Potential for land contamination due to new activities on site: chemical spillages 	<ul style="list-style-type: none"> • Environmental Risk Management Strategy (ERMS), Remediation Methods Statement • Concrete to be selected based on the results of soil and groundwater sulphate analyses. Service pipes will be suitable to the site ground conditions. • Piling Method Statement and Risk Assessment • Audit trail, testing frequency and verification to ensure chemically suitable materials across the site • Gas membranes to prevent the ingress of volatile gases. • Unexploded bomb survey. • Reducing materials stockpiling duration • Materials located away from sensitive receptors • Stockpile dampening and covering • Vehicle maintenance and wheel washing • PPE and Health and Safety Protocols, Plans and Procedures • Disposal of contaminated soil off-site to an appropriate landfill; waste classification determined by chemical analysis or Waste Acceptance Criteria testing • Oils and hydrocarbons stored away from surface water drains, on an impermeable base with an impermeable bund - measures to prevent leakage and vandalism • Drip trays beneath oil tanks/engines/gearboxes/hydraulics • CoCP measures to prevent and manage spills and protect health and safety of construction workers. • Adherence to Pollution Prevention Guidelines; • Materials Management Strategy • Verification testing for landscape areas and imported materials • Environmental watching brief during site enabling works. <p><u>Additional</u></p> <ul style="list-style-type: none"> • Remediation for areas of Made Ground likely to exceed environmental screening levels for lead. • Asbestos removal in accordance with relevant regulations and Duty of Care responsibilities if discovered on site. 	<p><u>Additional</u></p> <ul style="list-style-type: none"> • Operational environmental management plan to protect groundwater etc from contamination through future use.

Topic	Effects	Construction Mitigation Measures	Operational Mitigation Measures
Traffic and Transport	<ul style="list-style-type: none"> • Delay to pedestrians, cyclists, motorists and public transport users as a result of construction traffic. • Increased fear and intimidation to cyclists as a result of public transport. • Delay and reduced amenity to pedestrians, cyclists, motorists and public transport users as a result of increased operational traffic. • Delay and reduced amenity to pedestrians as a result of increased pedestrian footfall. • Delay and reduced amenity to public transport users as a result of increased demand for public transport. 	<p><u>Additional</u></p> <ul style="list-style-type: none"> • Phased opening to minimise conflict • Pedestrian signage • Construction Logistics Plan 	<p>Public realm design</p> <p><u>Additional</u></p> <ul style="list-style-type: none"> • Pedestrian wayfinding; travel pack. • Delivery and Servicing Plan.
Wind Microclimate	<ul style="list-style-type: none"> • Average wind speeds increased by the Revised Scheme in some locations. • Wind speeds unsuitable without mitigation for thoroughfares and entrances. 	Mitigation for the operational stage to be applied as construction progresses.	<ul style="list-style-type: none"> • 11 elevated banners in staggered arrangement along thoroughfare to north of Plot 2 – 1.5m wide, 6m tall, approximately 50% porous medium 6m above ground suspended from poles; • Baffles hanging suspended from the underside of the Overground structure where this crosses pedestrian thoroughfares, 1.5m high in staggered arrangement; • Dense planting or hedging at platform level west of Plot 2 running perpendicular from the local Building 2 elevation (in four radial strips) and following the eastern edge of the Oriel (single broken strip), 1.5m in height (including planter); • Three deciduous trees east of the southwestern corner of Plot 2, 8m tall; • Two planters with dense planting or hedging between southeastern corner of Plot 2 and southwestern corner of Plot 8A, 1.5m total high; • Solid screens in staggered arrangement between southeastern corner of Plot 2 and southwestern corner of Plot 8A, 1.5m wide by 2m in height; and • Solid balustrade around the Building 2 roof terraces, 1.8m in height.
Daylight, Sunlight, Overshadowing, Solar Glare and Light Pollution	<ul style="list-style-type: none"> • Reduction of daylight and sunlight in neighbouring properties • Light pollution • Overshadowing of amenity areas 	Reduction in the massing of the scheme to reduce the overall effect on neighbouring properties.	None
Noise and Vibration	<ul style="list-style-type: none"> • Construction noise disruption to residents on and off site • Construction vibration disruption to residents on and off site • Construction traffic noise disruption to residents on and off site • Mechanical Plant Noise • Noise due to changes in road traffic 	<p><u>Embedded</u></p> <ul style="list-style-type: none"> • CoCP measures • Noise barriers • Vibration risk assessment • Construction logistics traffic management plan <p><u>Additional</u></p> <ul style="list-style-type: none"> • Address impacts during noisiest periods through best practicable means, control and manage through Section 61 of the Control of Pollution Act 1924 • Prior warning to residents of vibration impacts • Use of techniques less likely to cause vibration 	Mechanical plant noise will comply with LBH and LBTH noise limits.
Water Resources and Flood Risk	<ul style="list-style-type: none"> • Disturbance and mobilisation of physical contaminants and changes to pollution pathways. • Increased water demand and production of effluent • Increased impermeable surface. • Leaks and spillage of pollutants 	<ul style="list-style-type: none"> • CEMP, SWMP, Emergency Response Plans and Healthy and Safety Plans. • CoCP <p><u>Additional</u></p> <ul style="list-style-type: none"> • Site investigation to inform piling strategy to be submitted at detailed design stage to protect the London Clay Formation. 	<ul style="list-style-type: none"> • Drainage Strategy • Water efficiency measures.
Archaeology	<ul style="list-style-type: none"> • Removal of buried heritage assets within the site. 	<ul style="list-style-type: none"> • Targeted archaeological excavation • Watching brief to preserve by record 	None

Topic	Effects	Construction Mitigation Measures	Operational Mitigation Measures
Built Heritage	<ul style="list-style-type: none"> Impact on the setting of heritage assets Impact on the structure and physical condition of heritage assets Impact of vibration on heritage assets 	<ul style="list-style-type: none"> On site heritage structures to be protected and works taken out by suitably qualified professionals. Historic Goods Yard structures on the Site will be recorded at Historic England Level 3 or 4 before refurbishment or demolition in order to understand the complex development of the Bishopsgate Goods Yard before alteration. Conservation focused CEMP. 	<ul style="list-style-type: none"> Design of Revised Scheme aims to respect the listed fabric on site. Design of the Revised Scheme to reduce the impact on the setting of nearby heritage assets.
Ecology	<p>Effect on:</p> <ul style="list-style-type: none"> Spitalfields City Farm and Allen Gardens (Borough Site of Importance for Nature Conservation) Open mosaic habitats on previously developed land Effect on bats, black redstart, breeding birds, and terrestrial invertebrates 	<ul style="list-style-type: none"> CoCP Removal of habitats to take place outside of bird breeding season Landscaping to support biodiversity, including living roofs, species rich lawns, new open mosaic habitat, hedges, trees and other planting of wildlife value. Bird boxes. An appropriate mitigation strategy will be implemented for hibernating bats to ensure no net loss of roost sites. Precautionary method of works such as timing, season and method restrictions will be put in place to reduce the likelihood of hibernating bats being disturbed, killed or injured during the works. All works to the tunnels / archways with potential to support hibernating bats will be supervised by a suitably qualified ecologist. 	Landscape and Ecological Management Plan
Climate Change	<p>Mitigation</p> <ul style="list-style-type: none"> Impact of the development on global climate change through greenhouse gas emissions <p>Adaptation and Resilience</p> <ul style="list-style-type: none"> Impact of climate change on the Revised Scheme receptors, including the exacerbation of other effects due to climate change. 	<p>Construction Traffic Management Plan</p> <p>None for adaptation</p>	<ul style="list-style-type: none"> Energy Strategy Travel Plan <p>Potential Climate Change Adaptation Plan at a future design stage.</p>
Air Quality	Increase in NO _x , PM ₁₀ and PM _{2.5} pollution in some locations as a result of construction and operational traffic, dust generated by construction, and operational plant.	<ul style="list-style-type: none"> CoCP <p><u>Additional</u></p> <ul style="list-style-type: none"> Dust Management Plan applying best practice methods 	<ul style="list-style-type: none"> Air Source Heat Pumps No on-site parking <p><u>Additional</u></p> <ul style="list-style-type: none"> Possible sealing facades and implementing mechanical ventilation with NO_x filtration at location E14.
Townscape and Visual Impact	<ul style="list-style-type: none"> Visual effects on local, middle distance and LVMF views. Visual effects on the setting of conservation areas and listed buildings 	<ul style="list-style-type: none"> Perimeter hoarding 	<ul style="list-style-type: none"> Designed to reduce effect of massing on protected views.

20.3 SIGNIFICANT RESIDUAL EFFECTS

20.3.1 The significant residual effects of the Revised Scheme following implementation of both embedded and additional mitigation measures have been assessed. Although each technical chapter (**ES Addendum Volume 2: Chapters 6 to 19 and Volume 3**) contains detailed consideration of residual effects, **Table 20.2** summarises these. It is assumed for the purposes of this EIA that any effects of 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 20.2. Summary of Significant Residual Effects

Topic	Stage of Development	Residual Effects	Duration of Effect	Significance of Residual Effects
Waste and Recycling	Construction	None	N/A	N/A
	Operation	None	N/A	N/A
Socio-Economics	Construction	None	N/A	N/A
	Operation	Housing supply for the local population. Employment and skills for the local population	Permanent Permanent	Moderate-Minor Beneficial (significant) Moderate-Minor Beneficial (significant)
Ground Conditions	Construction	None	N/A	N/A
	Operation	Impact of soil and groundwater contamination on human health	Medium-term	Minor to Major Beneficial
Traffic and Transport	Construction	None	N/A	N/A
	Operation	Amenity for pedestrians at locations where public realm is substantially improves	Permanent	Major Beneficial
Wind Microclimate	Construction	None.	N/A	N/A
	Operation	Wind conditions on balconies/terraces to west of Building 2	Permanent	Minor Adverse
Daylight, Sunlight, Overshadowing, Solar Glare and Light Pollution	Construction	Reduction of daylight and sunlight in neighbouring properties Light pollution Overshadowing of amenity areas	Temporary	<u>Daylight</u> - Moderate Adverse to 11 properties and Major Adverse to 9 properties. <u>Sunlight</u> - Moderate Adverse to 4 properties and Major Adverse to 9 properties. <u>Light Pollution</u> – Moderate to 1 receptor internal to the Site <u>Overshadowing of amenity areas</u> Negligible to Major Adverse.

Topic	Stage of Development	Residual Effects	Duration of Effect	Significance of Residual Effects
	Operation	Reduction of daylight and sunlight in neighbouring properties Light pollution Overshadowing of amenity areas	Permanent	<u>Daylight – neighbouring properties</u> - Moderate Adverse to 11 properties and Major Adverse to 9 properties. <u>Sunlight – neighbouring properties</u> - Moderate Adverse to 4 properties and Major Adverse to 9 properties. <u>Light Pollution</u> – Negligible to all external receptors, Moderate to 1 receptor internal to the Site <u>Overshadowing of amenity areas</u> Negligible to Major Adverse.
Air Quality	Construction	None	N/A	N/A
	Operation	None	N/A	N/A
Noise and Vibration	Construction	Impact of noise on existing receptors within 15m of the site perimeter, and new receptors within 15m of the nearest construction area.	Temporary	Moderate Adverse during foundation and superstructure.
	Operation	None	N/A	N/A
Water Resources and Flood Risk	Construction	None	N/A	N/A
	Operation	None	N/A	N/A
Archaeology	Construction	None	N/A	N/A
	Operation	None	N/A	N/A
Built Heritage	Construction	Long term effects of repair and restoration - Braithwaite Viaduct, Forecourt wall and gates to old Bishopsgate Goods Station. Goods Yard structures that are to be demolished. Demolition of unlisted Bishopsgate Goods yard structures Heritage Assets: (vaults to the west of the Braithwaite Viaduct), ramp and vaults below between Commercial Road and Wheeler Street - Braithwaite Viaduct, Forecourt wall and gates to old Bishopsgate Goods Station Long term physical effects of removal of adjoining and other Goods Yard structures Goods Yard Structures that are to be retained.	Permanent	Moderate Beneficial
			Permanent	Moderate to Major Adverse
			Permanent	Moderate to Major Adverse
			Permanent	Moderate Adverse

Topic	Stage of Development	Residual Effects	Duration of Effect	Significance of Residual Effects
		Long term effects of alteration, loss, covering up of historic fabric upon Forecourt wall and gates to old Bishopsgate Goods Station	Permanent	Moderate to Major Adverse
		Long term effects of alteration, loss, covering up of historic fabric upon Braithwaite Viaduct and Forecourt wall and gates to old Bishopsgate Goods Station	Permanent	Moderate Adverse
		Effect on setting of Elder Street and Boundary Estate conservation areas,	Permanent	Moderate Adverse
	Operation	Effect upon setting to Heritage Assets within the 500m in the ZVI (Listed and Locally Listed), Boundary Estate - Arnold Circus Garden, Boundary Estate – Residential blocks and ancillary service, Elder Street – group of 18th century terraced houses, Folgate Street, Nos, 10-18 – group of 18th century terraced houses.	Permanent	Moderate Adverse
		Effect on setting of Elder Street and Boundary Estate conservation areas.	Permanent	Moderate Adverse
Ecology	Construction	None	N/A	N/A
	Operation	None	N/A	N/A
Climate Change Mitigation and Adaptation	Construction	GHG emissions embedded in construction materials	Permanent	Moderate-minor adverse
	Operation	GHG emissions associated with end-of-life costs	Permanent	Moderate-minor adverse
Townscape and Visual Impact	Construction	Local townscape and pedestrian amenity	Temporary	Moderate Adverse
	Operation	Effect on townscape character areas – the Site, Shoreditch	Permanent	Moderate Beneficial
		Effect on townscape character areas – Bethnal Green Road, Spitalfields	Permanent	Moderate-Major Beneficial
		Effect on townscape character areas – The City,	Permanent	Minor-Moderate Beneficial
		Effect on townscape character areas – Boundary Estate	Permanent	Moderate Neutral
	Effect on setting of heritage assets (Conservation Areas) - South Shoreditch, Redchurch Street, Brick Lane and Fournier Street	Permanent	Moderate-Major Beneficial	
	Effect on setting of heritage assets (Conservation Areas) - Elder Street, Boundary Estate	Permanent	Moderate-Major Beneficial	

Topic	Stage of Development	Residual Effects	Duration of Effect	Significance of Residual Effects
		Effect on setting of heritage assets (Listed Buildings) on site - Braithwaite Viaduct, boundary wall	Permanent	Moderate-Major neutral
		Effect on setting of heritage assets (Listed Buildings) close to the site - Commercial Street & Quaker Street/Wheeler Street, 25 Bethnal Green Road, Great Eastern Street south-east, Fairchild Place.	Permanent	Moderate-Major Beneficial
		Effect on setting of heritage assets (Listed Buildings) -listed buildings on the Boundary Estate	Permanent	Moderate-Major Beneficial
		Effect on setting of heritage assets (Listed Buildings) - Elder Street and Fleur De Lis Street	Permanent	Moderate neutral
		Effect on setting of heritage assets (Listed Buildings) - Routes that align onto the site, including Worship Street West, Paul Street & Wilson Street, Shoreditch High Street south, Shoreditch High Street north, Spitalfields market, Bethnal Green Road	Permanent	Moderate Adverse
		Effect on LVMF views – LVMF 1A.1, 2A.1, 4A.1, 6A.1,	Permanent	Ranging from Minor to Major and Neutral to Beneficial
		Effect on most local views	Permanent	Moderate neutral
		Effect on local view from Folgate Street on axis of Elder Street	Permanent	Ranging from Minor to Major and Neutral to Beneficial
				Major Adverse

20.4 CONCLUSION

- 20.4.1 The site is approximately 4.4 hectares (ha) in size, located partly within the London Borough of Hackney (LBH) and partly within the London Borough of Tower Hamlets (LBTH). Current uses of the site include Shoreditch High Street Station, sports pitches and a temporary shopping mall. The site contains a number of above and below ground constraints, particularly traffic infrastructure and listed and unlisted heritage assets including viaducts, the boundary wall, and buildings to the north of the boundary wall.
- 20.4.2 The planning application comprises an outline application with Plots 2 and 7A, B, C and D submitted in detail, and an application for Listed Building Consent for Plot 7A, B, C and D.
- 20.4.3 The Revised Scheme would create up to 18,390 m² GIA of retail use, 130,940 m² GIA of commercial/office use, up to 500 residential homes, a 150 room hotel, D1/D2 use including an assembly and recreation venue, and open space with a total 25,812 m² public realm.
- 20.4.4 It is expected that construction would take place in phases beginning in January 2021 and end in January 2034.
- 20.4.5 The environmental effects of the Revised Scheme during both construction and operation have been assessed, and appropriate mitigation has been recommended.
- 20.4.6 The significant adverse residual effects anticipated during construction comprise:

- Impact of noise on existing receptors within 15m of the site perimeter;
 - Temporary visual impacts of construction;
 - Goods Yard structures that are to be demolished;
 - Demolition of unlisted Bishopsgate Goods yard structures Heritage Assets;
 - Long term physical effects of removal of adjoining and other Goods Yard structures Goods Yard Structures that are to be retained;
 - Long term effects of alteration, loss, covering up of historic fabric upon Forecourt wall and gates to old Bishopsgate Goods Station;
 - Greenhouse gas emissions embedded in construction materials;
 - Reduction of daylight to 20 properties;
 - Reduction of sunlight to 13 properties; and
 - Overshadowing of two amenity areas.
- 20.4.7 The significant beneficial residual effects anticipated during construction comprise:
- Long term effects of repair and restoration - Braithwaite Viaduct, Forecourt wall and gates to old Bishopsgate Goods Station.
- 20.4.8 The significant adverse residual effects anticipated during operation comprise:
- Effect upon setting to Heritage Assets within the 500m in the ZVI (Listed and Locally Listed), Boundary Estate - Arnold Circus Garden, Boundary Estate – Residential blocks and ancillary service, Elder Street – group of 18th century terraced houses, Folgate Street, Nos, 10-18 – group of 18th century terraced houses.
 - Effect on setting of Elder Street and Boundary Estate conservation areas.
 - Conditions windier than suitable on balconies/terraces on the western side of Building 2;
 - Reduction of daylight to 20 properties;
 - Reduction of sunlight to 13 properties; and
 - Overshadowing of some amenity areas.
- 20.4.9 The significant beneficial residual effects anticipated during operation comprise:
- Housing supply for the local population;
 - Employment and skills for the local population;
 - Improvements to the character of local areas, some views and the setting of some heritage assets;
 - Improvements to the structure and fabric of on-site heritage assets; and
 - Increased pedestrian amenity as a result of improvements to public realm.
- 20.4.10 There is some potential for overall nuisance effects to nearby residents during the construction phase due to the interaction of construction noise, reduction in daylight and sunlight to surrounding buildings, and construction traffic.
- 20.4.11 Interactive effects during the operational phase are expected to be predominantly minor positive. Adverse interactive effects are likely to be limited to those residents affected by reductions in daylight and sunlight availability who are also affected by pedestrian amenity reduction such as that anticipated at the western end of Bethnal Green Road and at road crossings with Shoreditch High Street.
- 20.4.12 There will also be some significant cumulative effects when considering the Revised Scheme with the surrounding development schemes.
- 20.4.13 Significant adverse cumulative effects comprise:
- Significant loss of daylight to an additional 13 properties;
 - Significant loss of sunlight to an additional 2 properties; and
 - Effects on the setting of some heritage assets, although this will not exceed the residual effect of the Proposed Development in isolation on the setting of these heritage assets.
- 20.4.14 Significant beneficial cumulative effects comprise:
- Further improvement to some local views;
 - Impact of the spending of the additional population on the local economy in LBH and LBTH.
- 20.4.15 The ES Addendum has identified that the Revised Scheme will give rise to a number of adverse and beneficial environmental and social impacts as identified above.
- 20.4.16 The adverse effects are limited to daylight and sunlight and overshadowing and effects upon the setting of surrounding listed buildings. Whilst these effects are significant, they are typical of areas undergoing regeneration on the city fringe.
- 20.4.17 These benefits include the creation of jobs (both during construction and operation), additional local spending and the provision of additional housing and open space.
- 20.4.18 The Revised Scheme will allow the regeneration of the structure and fabric on the onsite listed buildings in the form of the Braithwaite Viaduct and Forecourt Wall, Oriol and Gates to the Goodsyrd Station integrating them into the site which will then maintain their favourable status in perpetuity.
- 20.4.19 The revised scheme will also enable the regeneration of a brownfield urban site designated for development; improve site permeability and pedestrian routes through the site and enhance the townscape of the local area.
- 20.4.20 Key benefits of the Revised Scheme include:
- The provision of up to 500 high quality homes for the LBTH and Greater London;
 - The provision of over 1 hectare of public realm and other areas of open space;
 - The repair and restoration of listed and unlisted heritage assets;
 - The provision of office facilities for the local area and Greater London;
 - The provision of considerable retail space;
 - The regeneration of large strategically important brownfield site on the fringe of the City of London;
 - The provision of an accessible development, useable and permeable for all users;
 - The increase in spending in the local and regional economy;
 - The generation of approximately 520 FTE construction related jobs on average per year; and
 - The generation in the region of 6,231 net permanent jobs (under the minimum development scenario) once the Revised Scheme is complete and operational.
- 20.4.21 In conclusion, the ES Addendum has identified that the Revised Scheme will give rise to some adverse environmental effects which will be experienced during the demolition and construction phase, and operation of the Revised Scheme, however appropriate mitigation has been put forward which will ameliorate the majority of effects. The Revised will also give rise to a number of beneficial effects and allow the redevelopment of a site which has been undeveloped for over 60 years.

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