# 14. Cumulative Effects

## Introduction

14.1. This chapter supersedes and replaces Chapter 14 of the December 2018 ES. This updated chapter presents an assessment of the likely significant cumulative effects of the Development in relation to interactions between the various environmental effects of the Development and the likely significant environmental effects of the Development in combination with those arising from consented and 'reasonably foreseeable' schemes near the Site.

14.2. This chapter has been written by Waterman Infrastructure & Environment (Waterman IE) with input from all other consultants and specialists who have contributed to the December 2018 ES. The Chapter has been informed by all preceding technical chapters of the December 2018 ES (**Chapter 7** to **Chapter 13**) including **Part 3: Townscape, Visual Impact and Built Heritage Assessment** and **Appendices E** (updated ES Chapter 7: Transport) and **Appendix F** (updated ES Chapter 9: Air Quality) of the June 2020 ES Addendum.

14.3. Please note that for the purposes of this ES chapter, the demolition, deconstruction, refurbishment and construction works will be referred to as 'the Works'.

14.4. As noted in Chapter 2: EIA Methodology of the December 2018 ES, for the purposes of this ES, minor, moderate and major are all considered as significant effects. The exception to this is in the Townscape, Visual Impact and Built Heritage Assessment where minor or minor/moderate effects are considered to be not significant; moderate and major effects are considered as significant effects.

## Assessment Methodology

14.5. The Chapter considers two types of cumulative effects:

- **Type 1 Cumulative Effects:** the combination of individual likely significant environmental effects resulting from the Development in isolation upon sensitive receptors, e.g. combination of noise, dust and visual effects on a particular receptor such as residents; and
- **Type 2 Cumulative Effects:** the combined effects arising from consented and 'reasonably foreseeable' schemes (collectively known as 'cumulative schemes'), which individually might be insignificant, but when considered together, could create a significant cumulative effect.

## Type 1 Effects

14.6. Likely significant Type 1 cumulative effects have been identified and qualitatively assessed using the findings of all technical assessments reported within this ES, together with professional judgement.

14.7. Type 1 cumulative effects likely to arise from the Development have been considered in the context of both the Works and once the Development is complete and operational.

14.8. In consideration of the comprehensive range of environmental management controls and other mitigation measures committed to by the Applicant, as reported in this ES, Type 1 cumulative effects have only been considered in relation to the likely residual effects of the Development, as identified in **Chapter 7** to **Chapter 13** of this ES and within **Part 3: Townscape, Visual Impact and Built Heritage Assessment**. The Type 1 cumulative effects for the Works were therefore

assessed qualitatively using professional judgement based on the findings of the assessments of this ES.

## Type 2 Effects

14.9. Although there is no formal guidance as to what should be considered a cumulative scheme, criteria for defining a scope of assessment for Type 2 cumulative effects was developed using professional experience and expert judgement and was stated in the EIA Scoping Report (**Appendix 2.1**). To determine which cumulative schemes are likely to give rise to significant cumulative effects in combination with the Development, consideration was given to the following criteria:

- Schemes within 1km of the Site and with a valid planning permission which have a floorspace uplift of greater than 10,000 sqm Gross External Area (GEA); and
- Schemes within 1km of the Site and with a valid planning permission, which have a floorspace uplift in GEA of less than 10,000 sqm but would introduce sensitive receptors near to the Site.

14.10. Likely significant Type 2 cumulative effects have been assessed for each of the environmental topics scoped into the EIA. The likely significance of Type 2 cumulative effects has been assessed through a combination of quantitative and qualitative means, as appropriate. Where likely significant Type 2 cumulative effects are not anticipated, justification is provided. As for Type 1 cumulative effects, only the likely residual effects are considered within this assessment since it is a reasonable assumption that all mitigation and enhancement measures recommended for the Development such as the Site-specific Environmental Management Plan (as set out in this ES) and cumulative schemes would be implemented.

14.11. **Table 14.1** provides the details of all the cumulative schemes which have been considered in this assessment. A plan showing the location of the cumulative schemes in relation to the Site is presented as **Figure 14.1**. The cumulative schemes to be included in the assessment were agreed through consultation with London Borough of Southwark (LBS).

Table 14.1 List of Cumulative Schemes Assessed

| Ref. (Figure 14.1) | Cumulative Scheme | Planning Reference Number (Borough) | Summary Description |
|---|---|---|---|
| **1** | 185 Park Street | 17/AP/1944 (SC) | Minor material amendment to planning permission 14/AP/3842. Demolition of existing buildings and redevelopment to provide a mixed use development providing three new buildings comprising basement, lower ground and ground floor plus part 8, 14 and 18 storeys (maximum height 19 storeys) containing 163 residential units (Class C3), Office (Class B1), Retail (Class A1/A3/A4), Cultural facility (Class D1/A1/A3/A4); provision of hard and soft landscaping and the provision of parking, servicing and plant areas |
| **2** | Tower Bridge Magistrates Court and Police Station, 209-211 Tooley Street | 15/AP/3303 (SC) | Part demolition, alteration and extension of existing building, construction of new build floorspace, excavation and change of use of the site from magistrates' court (use class D1) and police station (use class Sui Generis) to provide a seven storey building for hotel use (use class C1) at lower ground, ground, mezzanine and 1st to 5th floors (198 bedrooms), delicatessen (use class A1), restaurant and cafe use (use class A3), hotel bar use |

| Ref. (Figure 14.1) | Cumulative Scheme | Planning Reference Number (Borough) | Summary Description |
|---|---|---|---|
| | | | (use class A4), and leisure use (use class D2) with associated vehicle and cycle parking, landscaping, plant and engineering works' |
| **3** | Capital House | 18/AP/0900 (SC) (revised scheme) | Redevelopment of the site to include the demolition of Capital House and the erection of a 39-storey building (3 basement levels and ground with mezzanine and 38 storeys) of a maximum height of 137.9m (AOD) to provide up to 905 student accommodation units (Sui Generis use), flexible retail/café/office floorspace (Class A1/A3/B1), cycle parking, servicing, refuse and plant areas, public realm improvements and other associated works incidental to the development. The application is accompanied by an Environmental Statement. |
| **4** | Shard Place (Fielden House) 28-42 St Thomas Street | 17/AP/4008 (SC) | Minor material amendment to planning permission 14-AP-1302. Demolition of existing buildings and erection of part 26 and part 16 storeys to provide 176 apartments (141 Use Class C3 and 35 flexible use C1/C3), with 1,800sqm (gross) of flexible retail space (Classes A1, A2, A3 and A4) at St. Thomas Street and London Bridge Street (Concourse) levels, service area, one level of basement including car parking (4 spaces) and associated hard and soft landscaping, amenity spaces and alterations to existing highways adjoining |
| **5** | 25-29 Harper Road | 15/AP/3886 (SC) | Demolition of the existing former Sorting Office and Former Court building and redevelopment to provide 64 residential units (2 studios, 20 x 1b2p, 29 x 2b4p, 8 x 3b5p, 4 x 4b5p, 1 x 4b6p) in three blocks of 4, 5 and 7-storeys in height plus lower ground floor; 299sqm of B1 floorspace together with associated amenity space, landscaping and related ancillary works. |
| **6** | Isis House, 67-69 Southwark Street | 13/AP/2075 (SC) | Demolition of existing building and erection of a part 13, part 16 storey building comprising a retail unit on the ground floor (Use Class A1) and 9 self-contained residential units above (Use Class C3). |
| **7** | 153-159 Borough High Street | 15/AP/4980 (SC) | Demolition of 153-159 Borough High Street, and erection of 7-storey hotel (with basement), comprising 50 bedrooms and roof terrace, top 2 floors set back; and A1/A3 use at basement and ground floor level. |
| **8** | 175-179 Long Lane | 15/AP/4072 (SC) | Redevelopment of site to provide a part 6, part 7 and part 8 storey building comprising commercial units at ground and mezzanine level (Use Class B1) with 94 residential units above (Use Class C3) (39 x 1 bed, 39 x 2 bed and 16 x 3 bed), associated car and cycle parking, landscaping, gymnasium, podium garden at first floor level and other associated works. |
| **9** | Lavington House, 25 Lavington Street | 16/AP/2668 (SC) | Demolition of existing buildings and redevelopment of the site to provide a 10 storey (plus basement) commercial building with two flexible A1/A3/B1 units at ground/basement level and B1 floorspace on all upper levels and accessible parking/vehicular access and servicing from Ewer Street; 170 apartments in three residential buildings at 8, 13 and 21 storeys (plus basement, including roof plant) with a flexible A1/A3/B1 |

| Ref. (Figure 14.1) | Cumulative Scheme | Planning Reference Number (Borough) | Summary Description |
|---|---|---|---|
| | | | unit at basement/ground floor level; parking/vehicular access from Lavington Street; 3 mews houses (3 storeys); new public realm; hard and soft landscaping; pedestrian routes; alterations to the public highways including widened footways, relocated parking and service bays, tree planting, resurfacing and associated works. |
| **10** | 19-23 Harper Street, 325 Borough High Street and 1-5 and 7-11 Newington Causeway | 18/AP/0657 (SC) | Demolition of existing buildings and redevelopment to provide a hotel-led mixed use development comprising construction of a part single, part 5, part 7, part 8 and part 14-storey building (maximum height 51m AOD) plus basement, providing 427 hotel rooms (Use Class C1) 6 no. residential dwellings (Use Class C3), office use (Class B1), retail use (Class A1-A3) and flexible use (Class B1/D1), 4 no. car parking spaces together with access, cycle parking, hard and soft landscaping and other associated works incidental to the development. |
| **11** | 133 Park Street | 16/AP/4569 (SC) | Demolition of existing buildings and redevelopment to provide two Class B1 office buildings of nine storeys and ten storeys plus plant (41m AOD on Sumner Street and 42.85m AOD on Park Street). The development will include the creation of a new basement; new public realm; provision of a retail (Class A1/A3/A5) kiosk; hard and soft landscaping and other associated works. |
| **12** | Southwark Fire Station, 94 Southwark Bridge Road; | 17/AP/0367 (SC) | Redevelopment of the site including alterations and extensions to listed buildings for a mixed use scheme to provide a new secondary school with 6th form (up to 1150 pupils), 199 residential units in buildings up the 10 storeys in height, 234 sqm of flexible commercial or community use (Class A1, A3, B1, D1, D2), a 139 sqm Gym, associated landscape and public realm works, cycle parking, disabled parking and servicing access; and the redevelopment of land at Grotto Place for the provision of a new sports hall (1,452sqm) and external multi use games facility and landscaping. |
| **13** | 1-5 Paris Garden and 16-19 Hatfields | 17/AP/4230 (SC) | Phased redevelopment comprising: Phase 1: Demolition of 4-5 Paris Garden and 18-19 Hatfields to create a part 23 and part 26 storey tower building (+ double basement)(up to 115.75m AOD) to be used for offices (Class B1), above a new public space with flexible retail/professional services/restaurant uses (Classes A1/A2/A3) at ground floor level and restaurant/bar uses (Classes A3/A4) at third floor level; Phase 2: Partial demolition, refurbishment and extensions to 16-17 Hatfields and 1-3 Paris Garden for continued use as offices (Class B1) with flexible use of the ground floor level (Classes A1/A2/A3/A4/B1) and restaurant/bar uses (Classes A3/A4) at part fifth floor level; creation of a new public, landscaped roof terrace at part fifth floor level and green roof at sixth floor level; lowering of existing basement slab; new landscaping and public realm; reconfigured vehicular and pedestrian access; associated works to public highway; cycle parking; ancillary servicing and plant and other associated works. |

| Ref. (Figure 14.1) | Cumulative Scheme | Planning Reference Number (Borough) | Summary Description |
|---|---|---|---|
| **14** | Sampson House, 64 Hopton Street | 17/AP/2286 (SC) | Variation of Condition 2, approved plans, of planning permission 12-AP-3940 for "Demolition of existing buildings and the construction of a mixed use development totalling 144,622 sq.metres GEA comprising 489 flats (Class C3), 45,378 sqm (including basement) of offices (Class B1), 2,627sqm of retail (Classes A1-A5), 1,969sqm of community uses (Class D1) and 1,014sqm of gym (Class D2). New open space including formation of two new east-west routes, new public square, reconfigured vehicular and pedestrian access and works to the public highway with associated works including landscaping and basement car park for 200 cars (including 54 disabled car parking spaces) plus servicing and plant areas. Change of use of the railway arches from a nightclub to retail, gym and community uses. Configuration of the toilet block for retail uses and toilets. The development contains of 9 new buildings: Ludgate A: 13 storeys (62.08m AOD), Ludgate B: 49 storeys (169.60m AOD), Ludgate C: 15 storeys (73m AOD), Sampson A: 17 storeys (62.85m AOD), Sampson B: 31 storeys, (112.10m AOD), Sampson C: 27 storeys (98.30m AOD), Sampson D: 14 storeys (60.80m AOD), Sampson E: 5 storeys (24.6m AOD), Sampson F: 6 storeys (28.9m AOD)" |
| **15** | 1 Bank End | 15/AP/3066 (SC) | Redevelopment of 1 Bank End, including reuse of railway arches and rebuilding and extension of the rear of Thames House, Park Street (behind retained facade); remodelling of Wine Wharf building on Stoney Street and development of a two storey building at 16 Park Street, all to provide a development reaching a maximum height of 6 storeys (maximum building height 27.419m AOD) comprising retail units (flexible class A1 shops, A3 cafes/restaurants and A4 drinking establishments use) at ground and first floor levels, a gallery (Class D1 use) at ground floor level, office floorspace (Class B1 use) at ground up to fifth floor level, a cinema (Class D2 use) at ground floor and basement level, associated cycle parking spaces at basement, associated refuse and recycling with new public access routes and public open space. |
| **16** | Becket House / 60 St Thomas Street | 18/AP/4136 (SC)<br>Pre-application. | Request for an Environmental Impact Assessment Scoping Opinion relating to the redevelopment of the site for a commercial building up to 24 storeys in height. |
| **17** | Bermondsey Street/Snowfields | 19/AP/0404 (SC)<br>Not yet determined | Demolition of existing buildings at 40-44 Bermondsey Street including partial demolition, rebuilding and refurbishment of existing Vinegar Yard Warehouse and erection of three new buildings (two linked) with up to two levels of basement and heights ranging from five storeys (24.2m AOD) to 17 storeys (67m AOD) to provide office space (Class B1); flexible retail space (Classes A1/A2/A3/A4/A5); new landscaping and public realm; reconfigured pedestrian and vehicular access; associated works to public highway; ancillary servicing; plant; storage and associated works. The application is accompanied by an Environmental Statement. |

| Ref. (Figure 14.1) | Cumulative Scheme | Planning Reference Number (Borough) | Summary Description |
|---|---|---|---|
| **18** | Vinegar Yard | 18/AP/4171 (SC)<br>Not yet determined. | Redevelopment of the site to include the demolition of the existing buildings and the erection of a 5 to 19 storey building (plus ground and mezzanine) with a maximum height of 86.675m (AOD) and a 2 storey pavilion building (plus ground) with a maximum height of 16.680m (AOD) with 3 basement levels across the site providing a total of 30,292 sqm (GIA) of commercial floorspace comprising of use classes B1, A1, A2, A3, A4, D2 and sui generis (performance venue), cycle parking, servicing, refuse and plant areas, public realm (including soft and hard landscaping) and highway improvements and all other associated works. |
| **19** | 2-4 Melior Place | 18/AP/3229 (SC) | Redevelopment of the site involving the construction of a 6-storey plus basement building, comprising a retail art gallery (Class A1) on the ground floor and 3 x 2 bed, 2 x 3 bed and 2 x 4 bed residential units on the upper floors. |

14.12. Five other applications were reviewed but excluded from the list of schemes, as follows:

- 127-143 Borough High Street (13/AP/1714) – it is completed and operational as a hotel and so forms part of the baseline;
- 59-61 Borough High Street (14/AP/4623) – comprises four residential units and so is too small to have cumulative effects, but the occupants have been included as sensitive receptors;
- 43 Borough High Street (15/AP/3224) - comprises four residential units and so is too small to have cumulative effects, but the occupants have been included as sensitive receptors;
- Boland House – this is a change in use from a restaurant to a museum which is not considered to be significant enough to require inclusion;
- London Bridge Station works – these are ongoing works and complete enough to be included in the baseline.

14.13. It should be noted that Shard Place (reference 4 in **Table 14.1**) forms part of the baseline for the assessments. This is because the physical mass of Shard Place is already built and the scheme is due for completion in 2020, prior to the commencement of the Works on Site. This was agreed with SC. Shard Place is in close proximity to the Site and therefore has the potential to affect the baseline situation for these disciplines. Shard Place along with five other committed developments are part of the 'future baseline' traffic model (as outlined in paragraph 14.21) and so are 'baseline' schemes for transport and the associated air quality, noise and vibration effects.

14.14. As Shard Place will be constructed before the Works start there are no demolition or construction cumulative effects between the Development and Shard Place. Shard Place is a Sensitive Receptor (SR) for baseline and cumulative assessments as it will be present by the time the Works on New City Court commence.

14.15. The visual impact assessment includes some cumulative developments outside of the criteria stated above, principally that they are further away from the Site than 1km. The reason is that long distance views are included in the visual impact assessment and therefore these other

schemes are relevant to the assessment. These schemes are identified in **Part 3: Townscape, Visual Impact and Built Heritage Assessment** and were discussed and agreed with SC.

14.16. The above cumulative schemes comprise a combination of consented and 'reasonably foreseeable' schemes which have yet to be determined.

14.17. Design information for the cumulative schemes have been based upon readily available public information at the time of undertaking the assessment. Where construction programmes and completion dates for the cumulative schemes are not known, for the purposes of the assessment, it is assumed that some may overlap with the Development as a worst case.

## Assessment of Type 1 Cumulative Effects

**The Works**

14.18. The likely Type 1 cumulative effects for various sensitive receptors and land uses (identified in **Chapter 7 to Chapter 13**) in the vicinity of the Site are listed in **Table 14.2**. **Table 14.2** also identifies the anticipated effect interactions during each of the key stages of the Works. In accordance with **Chapter 6: Development Programme, Demolition, Deconstruction, Refurbishment and Construction**, the Works activities have been outlined, some of which would overlap in terms of programme and timescales.

14.19. In view of the assessment methodology and the findings of the technical assessments reported within this ES, the most significant Type 1 cumulative effects interactions during the Works phase of the Development are likely to result from:

- **Short** to **medium term**, **local, adverse effects** of **moderate to major significance** on heritage receptors (e.g. Grade II Georgian Terrace and Borough High Street Conservation Area) and a **short** to **medium** term, **local** to **regional, adverse effect** of **minor** to **major significance** on Townscape Character Areas and views (refer to **Part 3: Townscape, Visual Impact and Built Heritage Assessment** and **Appendix I: Part 1 of BH1** of the **June 2020 ES Addendum)**;
- **Temporary**, **local**, **adverse effects** of **minor** to **major significance** on nearby residents in relation to noise generated from activities such as demolition, earth works, piling, concreting and pavement works (refer to **Chapter 8: Noise and Vibration**);
- **Temporary, local, beneficial effects to local**, **adverse effects** of **minor** to **major significance** in relation to daylight, sunlight and overshadowing reflecting the gradual change from demolition (beneficial) to a situation where the effects will be as per the completed Development (see **Chapter 13: Daylight, Sunlight, Overshadowing, Solar Glare and Light Pollution**).

14.20. Within **Table 14.2**, the likely sensitive receptors have been grouped together according to land use and / or key receptors.

Table 14.2 Type 1 Effect Interactions During the Works of the Development

| Sensitive Receptor / Land Use | Demolition | Excavation/ Piling | Substructure | Superstructure and Envelope | Fitting-Out | Landscaping and External Works |
|---|---|---|---|---|---|---|
| Future and existing surrounding residential occupants to the south of the Development including Nos. 51-55 Borough High Street, 22 Southwark Street, | L, LP, N | L, LP, N | L, LP | TH, TC, D, N | TH, TC, D | D |
| Future and existing surrounding residential occupants to the west, north and east of the Development including Bunch of Grapes Public House, 43 Borough High Street[i] , Shard Place and 6 London Bridge Street. | L, LP, N | L, LP, N | L, LP | TH, TC, D, N | TH, TC, D | D |
| Iris Brook House and Orchard Lisle House | L, LP, N | L, LP, N | L, LP | TH, TC, D, N | TH, TC, D | VE, D |
| Existing and future pedestrians, cyclists and road / rail users. | TH, TC, N, L, SG | TH, TC, N, L, SG | TH, TC, N, L, SG | TH, TC, N, D, L | TH, TC, N, D | N, D |
| Site construction workers | N | N | N | N | × | × |
| Guy's Hospital patients | L, LP, N | L, LP, N | L, LP | N | × | N |
| Listed Buildings/ non-designated heritage assets | TH, TC | TH, TC | TH, TC | TH, TC | TH, TC | × |

*Notes:* *TH - temporary, local, adverse effects of moderate to major significance on heritage receptors.*
*TC - short to medium term, local to regional, adverse effect of minor to moderate to major significance on Townscape Character Areas*
*N - temporary, local, adverse effects of moderate to major significance in relation to noise generated from activities.*
*D - local, adverse effects of minor to moderate significance in relation to daylight, sunlight and overshadowing*
*L – temporary, local, beneficial effects of minor to moderate significance in relation to daylight, sunlight and overshadowing*
*LP – temporary, local, beneficial effect of minor significance due to reduced light pollution*
*SG – temporary, beneficial effect from reduced solar glare*
*× - No interactive effects*

[i] The loss of daylight and sunlight from 43 Borough High Street is considered an adverse effect of major significance. However, it is important to note that this property is recessed between two buildings on either side, creating flank walls which would limit the amount of daylight available from oblique angles.

## Type 2 Effects

### Transportation and Access

14.21. In order to assess the cumulative effects of the Development and other committed developments on users of the road network, public transport users, pedestrians and cyclists surrounding the Site, a cumulative assessment has been undertaken. As described within **Chapter 7: Transportation and Access** of this ES, there are 15 developments in the vicinity of the Development with the potential to result in cumulative effects. The Transport Assessment included those committed developments which are currently under construction and are expected to be completed by the Development opening year within a Future Baseline scenario. These included:

- Tower Bridge Magistrates Court and Police Station (15/AP/3303);
- 175-179 Long Lane (15/AP/4072);
- 25-29 Harper Road (15/AP/3886);
- Isis House, 67-69 Southwark Street;
- 1 Bank End (15/AP/3066); and
- Shard Place (Fielden House) (17/AP/4008).

14.22. The remaining developments were included within the cumulative scenario, which is reported below.

### The Works

14.23. Should construction works of the Development and the cumulative schemes overlap, there would be an increase in construction vehicle movements on the surrounding road network, compared to the Development in isolation. However, given that there is an uncertainty over when the various committed developments would come forward in the area, the methods of construction that would be employed; the management measures that would be adopted at each site and the periods of peak construction vehicle movement, it is difficult to predict the cumulative impacts of construction activities, particularly where the intensive operations are of short duration. Capital House construction vehicles could be expected to use St. Thomas Street to access the site, as the Development does. Information provided within the ES for the Capital House cumulative scheme indicates that there would be potentially 6 construction vehicle movements per hour on St Thomas Street. Similarly, for cumulative schemes Bermondsey Street/Snowfields and the Vinegar Yard construction vehicles will also use St Thomas Street with 11 movements predicted as part of the redevelopment. It is noted that these figures are peak construction estimates during the most intense phase of construction activities.

14.24. Beyond this the cumulative schemes may use the A2 and A201 but these are main roads and have large traffic volumes on them already given their strategic importance. The A2 carries in excess of 15,508 vehicles a day of which over 1,000 are HGVs. The A201 has a daily flow of over 25,000 vehicles including 2,000 HGVs.

14.25. It is anticipated that each site coming forward would be required to develop their own SEMP and construction logistics plan (CLP) and therefore agree vehicular numbers and vehicular routes with SC and TfL. It is therefore considered that on this basis and subject to the implementation of best practice construction traffic management measures, the residual cumulative effects on all users of the local transport network would be **insignificant**.

## Completed Developments

### Effect on Pedestrian Movement, Capacity, Severance, Delay, Fear and Intimidation, Amenity

14.26. Each of the committed developments would generate their individual number of pedestrian trips, but as with the Development, they would be required to deliver schemes that would enable easy pedestrian movement, not restrict capacity, provide high environmental and design quality and improved public realm. Some of the pedestrian links in the vicinity of the Site are forecast to have poor pedestrian comfort as a result of additional developments in the area with Borough High Street predicted to experience very uncomfortable conditions, (see the 'do nothing 2031 future baseline scenario' set out in Space Syntax report).

14.27. The additional permeability and the improved public realm as part of the Development significantly improves the pedestrian comfort around the site and takes away pressure off Borough High Street.

14.28. Therefore, when the committed developments are considered together with the Development, the resultant cumulative effects are assessed as **insignificant** to **moderate beneficial** on pedestrians in respect of movement, capacity, severance, delay, fear, intimidation and amenity.

### Effect on Cyclists

14.29. Each of the committed developments would establish the individual number of cycling trips generated by the scheme, but similar to the Development, they would be required to deliver schemes of high environmental and design quality, improved public realm and sufficient cycle parking provision for occupants and visitors in accordance with SC and TfL requirements.

14.30. These would translate as mitigation measures and when considered collectively would be expected to result in an **insignificant** effect on cyclists.

### Effect on Bus Users

14.31. As part of current TfL guidance, developers are required to assess and report the likely bus trip generation associated with their site. TfL subsequently undertake their own capacity analysis based on their current and proposed level of services to meet predicted demand levels. Therefore the cumulative effects on bus users would be **insignificant.**

### Effect on London Underground Services

14.32. The passenger numbers on the Jubilee and the Northern Line for the future baseline have been established based on growth assumptions supplied by TfL. These take into account changes to line loads and Crossrail. In order to assess the cumulative effects on the assessment baseline, the predicted Underground trips from the committed developments have been added to the

Proposed Development trips. These trips have been obtained from the committed developments' respective Transport Assessments. From the review of the transport reports, it has been found that each of the committed development proposals involve redeveloping brownfield land whereby the proposed development replaces an existing use allowing for the trips to be offset against the existing sites the committed developments seek to replace. The additional committed developments Underground trips have been obtained from their respective transport documents with the trips added onto the cumulative flows as set out below in **Table 14.3**.

14.33. Additionally, it has been noted that it is understood that there are proposals to enhance the capacity of both the Jubilee and the Northern Line by increasing the peak hour frequencies to 36 and 30 services per hour respectively although there is no guarantee at present that these improvements would be implemented by the Development opening year and therefore have not been taken into account.

Table 14.3 Cumulative Assessment on Underground Capacity

| Direction | | Future Planning Capacity (pphd) | Future Assessment Baseline Loads 2026 | Ratio of Demand to Capacity | Cumulative Loads + Development | Ratio of Demand to Capacity | % Change |
|---|---|---|---|---|---|---|---|
| Jubilee Line | From Bermondsey | 28,800 | 24,828 | 86.21% | 25,093 | 87.1% | 0.92% |
| | To Southwark | 28,800 | 24,688 | 85.72% | 24,710 | 85.8% | 0.08% |
| | From Southwark | 28,800 | 20,313 | 70.53% | 20,649 | 71.7% | 1.17% |
| | To Bermondsey | 28,800 | 21,214 | 73.66% | 21,231 | 73.7% | 0.06% |
| Northern Line | From Borough | 20,000 | 15,402 | 77.01% | 15,640 | 78.2% | 1.19% |
| | To Bank | 20,000 | 18,094 | 90.47% | 18,122 | 90.6% | 0.14% |
| | From Bank | 18,400 | 12,243 | 66.54% | 12,683 | 68.9% | 2.39% |
| | To Borough | 18,400 | 6,353 | 34.53% | 6,369 | 34.6% | 0.08% |

14.34. From the above table, it can be seen that the additional passenger loads as a result of the cumulative assessment would be less than 3% resulting in an **insignificant** effect.

### Effect on National Rail Services and Users

14.35. Developers are required to provide the likely rail trip generation associated with their site together with an associated trip purpose and distribution analysis. Rail operators subsequently undertake their own capacity analysis based on their current and proposed level of services to meet predicted demand levels. The additional demand of the committed developments on rail services would be mitigated directly by these schemes through service enhancements secured as planning contributions. Therefore residual cumulative effect would be **insignificant**.

### Effect on Traffic Flows and Road Vehicle Users

14.36. The cumulative baseline traffic flows have been estimated based on the trip generation set out in each of the committed developments' Transport Assessments which have been obtained from SC. From the review of the transport reports, it has been found that each of the committed

development proposals involve redeveloping brownfield land whereby the proposed development replaces an existing use. All schemes have been designed to exclude general car parking in order to comply with the current transport guidance and additionally many of the developments replace sites with car parking provision. As a result, the majority of the committed developments are reported not to result in additional traffic on the highway network. For those developments where an increase in traffic is predicted the increases are **insignificant** and these have been added to the baseline flows to generate the cumulative baseline flows.

14.37. With regard to the additional committed developments, their transport documentation has been reviewed to understand their respective traffic generation estimates. With regard to Vinegar Yard, only one and two car/taxi trips are predicted in the AM and PM peak respectively. In addition, as a worse case, 3 delivery trips are estimated during both the AM and PM peak hour.

14.38. Melior Place is proposed to be car-free and additional does not provide a vehicular access. No car or delivery trips are forecast in the peak periods.

14.39. The Bermondsey Street/Snowfields site is predicted to attract an extra 2 vehicle trips in the AM and PM peak hour and a maximum of 6 deliveries per peak hour.

14.40. Transport information for the Capital House scheme predicts a reduction of 11 and 13 vehicle movements during the AM and PM peak hour respectively.

14.41. Becket House whilst not yet submitted replaces an existing office development which has a sizeable car park with a car-free development. Accordingly, the redevelopment is expected to result in a reduction in vehicle trips.

14.42. Overall, when considered together, the additional committed developments result in a net reduction in vehicle movements although it is noted that the reduction is not significant. The original assessment is therefore valid and represents a robust, worse case assessment.

14.43. **Table 14.4** provides details of the effects of the committed developments in combination with the Development on the local highway network.

Table 14.4 Cumulative Assessments of Traffic Flows

| Link | Future Baseline Flows | | Cumulative Baseline + Development | | Percentage Difference | |
|---|---|---|---|---|---|---|
| | AM | PM | AM | PM | AM | PM |
| London Bridge to the north of Tooley Street | 1,294 | 1,108 | 1,309 | 1,120 | 1.1% | 1.0% |
| Borough High Street to the south of London Bridge | 2,347 | 2,525 | 2,362 | 2,537 | 0.6% | 0.5% |
| St. Thomas Street | 258 | 213 | 263 | 218 | 1.7% | 2.1% |
| White Hart Yard | 4 | 2 | 8 | 6 | 100.0% | 200.0% |
| Southwark Street to the east of Southwark Bridge Road | 413 | 381 | 431 | 393 | 4.4% | 3.1% |
| Southwark Street to the west of Southwark Bridge Road | 890 | 741 | 908 | 753 | 2.0% | 1.6% |
| Southwark Bridge Road | 759 | 623 | 762 | 626 | 0.3% | 0.4% |
| Marshalsea Road | 763 | 755 | 766 | 758 | 0.3% | 0.3% |

| Link | Future Baseline Flows | | Cumulative Baseline + Development | | Percentage Difference | |
|---|---|---|---|---|---|---|
| | AM | PM | AM | PM | AM | PM |
| Borough High Street to the north of Union Street | 862 | 837 | 886 | 851 | 2.8% | 1.7% |
| Long Lane | 683 | 570 | 684 | 571 | 0.1% | 0.1% |
| Tower Bridge Road to the south of Druid Lane | 1392 | 1160 | 1,392 | 1,160 | 0.0% | 0.0% |
| Tooley Street | 537 | 460 | 537 | 460 | 0.0% | 0.0% |

14.44. As can be seen from the above assessment, when the cumulative baseline plus the Development traffic flows are compared with the baseline flows, White Hart Yard is predicted to experience increases in traffic flows which exceed the Rule 1 threshold with major adverse significance. This is as the direct result of the completed Development and has been assessed in **ES Chapter 7 Transportation and Access** with mitigation measures proposed. This assessment showed that in real terms, the resultant traffic flows on White Hart Yard will continue to be well within the 'low traffic volumes' threshold for when pedestrians treat a street as a space to be occupied and not a road based on advice provided within the Manual for Streets. Additionally, the proposed pedestrian and public realm enhancements are expected encourage pedestrians to divert onto King's Head Yard instead. Therefore, the cumulative effect is expected to be **insignificant** to **adverse and of minor significance**.

14.45. All other links would experience an increase of traffic of less than 10% during both the AM and PM peak. Therefore, the cumulative effect is assessed as being **insignificant** across the wider road network.

## Noise and Vibration

### The Works

14.46. Potential cumulative noise and vibration effects may be expected where construction sites are within 100m of each other and noisy or vibration-inducing operations occur concurrently. It is clear that each of the cumulative schemes are located at a distance greater than 100m with the exception of Shard Place which is be completed by the time the Works start on the Site and therefore its construction works will not overlap with the Works. Given the screening between the cumulative sites from intervening buildings it is considered that the potential for Type 2 cumulative noise and vibration effects during the Works is **insignificant** with the implementation of a SEMP and CLP by each site.

14.47. Cumulative effects resultant from construction traffic, generated by cumulative schemes within beyond 100m of the Site but which are passing by the Site, would have the potential to cause Type 2 cumulative effects from road traffic noise, should the construction phases of each cumulative scheme and the Development overlap. However, each cumulative scheme (as per the Development) would be required to implement its own CLP including consideration of concurrent construction schemes to minimise the combined effects of construction traffic. A combined management strategy shared by all developers may also be used, as far as reasonably

practicable, to minimise cumulative adverse effects. Consequently, the likely Type 2 cumulative residual effects from construction traffic noise are likely to be **insignificant**.

### Completed and Operational Development

14.48. Noise from fixed plant associated with the Development would be subject to a standard planning condition based upon the guidance provided in BS 4142. Such a planning condition would limit noise generated by fixed mechanical plant and building services to 10 dB (A) below the minimum background noise level. It is expected that other schemes would adhere to the same noise policy. As such, noise from fixed plant from all cumulative schemes and the Development would be **insignificant**.

14.49. All other noise and vibration from operation of the Development is insignificant, as is the noise and vibration from Shard Place. All other committed developments are too distant from the sensitive receptors around the Development to cause significant Type 2 cumulative residual impacts in terms of noise and vibration.

14.50. It is considered that noise associated with the cumulative schemes and the Development in relation to deliveries and servicing noise would be **insignificant**.

## Air Quality

### The Works

14.51. The main effects on air quality during the construction phase of the cumulative developments are in relation to dust. Owing to the typical dispersal and deposition rates of dust with distance from their source and assuming that as per the Development, all other cumulative schemes would implement their own SEMPs in order to mitigate dust nuisance effects as far as practicable possible, it is considered that Type 2 cumulative dust effects would likely be an issue for those cumulative schemes within 100m of the Site, and only if they were to be constructed at the same time.

14.52. One of the 15 cumulative schemes is located within 100m of the Site, Shard Place to the north-east of the Site. However, this scheme will be completed by the time the Development starts on Site. Cumulative dust effects are therefore considered to be **insignificant**.

14.53. Construction vehicle exhaust emissions from the combined construction traffic of the Development and the cumulative schemes could give rise to cumulative residual effects on local air quality. However, this would depend upon the extent to which the implementation of the Development and the cumulative schemes overlap. In the worst-case scenario, the demolition and construction of the cumulative schemes would overlap with the Works, and use the same construction traffic routes. It is considered that the Works' traffic would add a very small proportion of additional traffic to the local highway network around the Site. In addition, it is considered that appropriate traffic management measures would be implemented to reduce the generation of cumulative construction traffic on the local road network. Based on professional judgement, with the implementation of appropriate CLP for the cumulative schemes, the residual cumulative effect of construction vehicles is considered to have a **short-term**, **local adverse effect** of **minor significance**.

14.54. Exhaust emissions from plant operating on the Site and cumulative scheme sites concurrently would be **insignificant**, even in a combined situation, in the context of the existing adjacent road traffic and exhaust emissions.

### Completed and Operational Development

14.55. The main effect of the cumulative Developments on air quality is linked to associated changes in traffic flows. The traffic data used within the air quality assessment for the future year of 2026 includes traffic related to other relevant cumulative schemes in the surrounding area and therefore comprises a cumulative effect assessment in this regard. Therefore, is it considered that the likely Type 2 cumulative residual effects of traffic emissions upon local air quality from the Development and cumulative schemes would be **insignificant.**

## Archaeology

### The Works

14.56. This assessment considers the effect of other developments affecting the same buried heritage assets as the Development. Buried heritage assets (archaeological remains) are generally site-specific, and construction in relation to the only nearby development scheme, Shard Place, which is located within the study area used for the archaeological assessment of the Site, is already complete and therefore considered as part of the baseline. Since the Works are subject to an appropriate programme of mitigation (reviewed and agreed by the local planning authority and its archaeological advisors), and given the limited archaeological potential of the Site, it is considered that with the implementation of a successful programme of mitigation at the Site, cumulative effects with regard to buried heritage assets would be no greater than those identified in relation to the Development alone i.e. moderate and minor adverse. From a wider perspective however, and particularly within the archaeological priority areas, any development project that has an impact on archaeology contributes to the cumulative erosion of this resource.

### Completed and Operational Development

14.57. As for the Development, none of the cumulative schemes are likely to give rise to any additional intrusive ground works or activities over and above those required for the implementation of the cumulative schemes once completed and operational. It is therefore considered that there would be **no cumulative effects** on archaeology once the Development and all cumulative schemes are completed.

## Water Resources and Flood Risk

### The Works

14.58. Flood risk effects associated with demolition and construction are typically of local significance. The only scheme near enough to cause a flood risk during construction is Shard Place (Fielden House) but this will have reduced surface water discharge to Thames Water's combined sewer by 10% due to the proposed 50% betterment in surface water runoff before commencement of the Works and hence there are not expected to be any cumulative effects.

14.59. The Works are unlikely to significantly alter or displace groundwater flows and surface water runoff from the sites would be controlled through the implementation of management plans, where required. It can therefore be concluded that there will be no Type 2 cumulative effects.

14.60. The demolition and construction of cumulative schemes, alongside the Development, is unlikely to increase pressure on potable water demand, and as such, it is considered there would be **insignificant** effects.

### Completed and Operational Development

14.61. With regard to flood risk, this assessment has assumed that in order for an applicant to submit a planning application and gain planning permission, cumulative schemes have or will be approved by the Local Lead Flood Authority and Environment Agency. This would mean that as per the Development, each cumulative scheme in isolation, and combined, would not increase flood risk within the area.

14.62. Similarly, in line with planning policy requirements, it has been assumed that cumulative schemes would increase surface water attenuation, where required. Should some or all of the cumulative schemes adhere to the Mayor's London Plan Supplementary Planning Guidance on Sustainable Design and Construction[1], then reductions to at least 50% of existing surface water runoff have the potential to result in significant beneficial effects to flood risk. Consequently, the overall likely cumulative effect in relation to flood risk is considered to range from **insignificant** to **long-term**, **local**, **beneficial** and of **minor significance**.

14.63. Where necessary, the cumulative schemes would include diversion and upgrading of sewers, which would be undertaken in agreement with Thames Water. The upgrade / upsizing of sewers would ensure that there is adequate capacity to accommodate these schemes, together with the Development. The likely cumulative effects on foul water drainage capacity and potable water demand are therefore anticipated to be **insignificant**.

## Wind

14.64. Based on professional judgement Wirth Research consider it unlikely that there would be cumulative effects during demolition given the relatively calm conditions of the existing Site and the relative low height of the existing buildings to be demolished on Site.

14.65. As construction of the Development and cumulative schemes progress, the likely wind microclimate would gradually adjust to that identified for the Development and cumulative schemes, once completed and operational, as reported below.

14.66. As reported in **Chapter 12: Wind Microclimate**, Computational Fluid Dynamics (CFD) has been used to assess the pedestrian conditions at and around the Site. Configurations 3 and 4, as described in **Chapter 12** included relevant cumulative schemes that would be reasonably expected to result in potential cumulative effects. These include Capital House (not started yet) and 153-159 Borough High Street (not started yet). Shard Place (Fielden House) is included in the baseline surrounds for wind microclimate assessments as the physical mass that affects wind is already completed for this development.

14.67. Comparison of the completed and operational development with baseline surrounds and the completed and operational development with baseline and cumulative schemes shows the same

strength and pattern of wind effects at every level analysed (see **Appendix 12-1**). Therefore, same as for the Development an insignificant effect on wind microclimate is expected.

14.68. Capital house is located 120° (from north) relative to the Development, which is a highly uncommon wind direction, perpendicular to the prevailing winds. 153-159 Borough High Street is upwind from the Development from 210°, which is a dominant wind direction, but is only 7 storeys high and 250m from the Development. Thus, it is to be expected that the choice between baseline and cumulative surrounds would not have an effect upon wind conditions on or around these cumulative sites.

14.69. In June 2019, further CFD studies were performed to include further additional cumulative schemes. These are as follows:

- Snowsfield / Bermondsey Street site - ref. 19/AP/0404
- Vinegar Yard - ref. 18/AP/4171
- Beckett House, 60 St Thomas Street – ref. 18/AP/4136
- 2-4 Melior Place – ref. 18/AP/3229

14.70. The further CFD studies were formed of 2 additional configurations:

- Configuration 6: The Site (as existing) with the baseline and original cumulative schemes, plus further cumulative schemes; and
- Configuration 7: The completed and operational Development with landscaping and mitigation measures, with the baseline and original cumulative schemes, plus further cumulative schemes.

14.71. The results of these studies are shown in **Figures 14.2-14.7**.

14.72. Comparison of these figures with **Figures 12.5, 12.6, 12.7, 12.13, 12.14** and **12.15 of the December 2018 ES** shows that the effect of adding the additional cumulative schemes results in the same peak level wind conditions for all regions.

14.73. Furthermore, the effect of changing from the existing Site to the completed and operational Development (with landscaping and mitigation measures) has not been materially impacted by the inclusion of the additional cumulative schemes.

14.74. It can be concluded that the cumulative effects on wind microclimate are **insignificant**.

## Daylight, Sunlight, Overshadowing, Solar Glare and Light Pollution

14.75. Shard Place (Fielden House) was included in the baseline assessment as reported within **Chapter 13: Daylight, Sunlight, Overshadowing, Solar Glare and Light Pollution** as the physical mass that affects daylight, sunlight and overshowing measures is already present. The other cumulative schemes are too distant from the Site to result in any cumulative daylight, sunlight, overshadowing effects, therefore a separate cumulative effects assessment has not been undertaken.

## Townscape, Visual Impact and Built Heritage

14.76. The full cumulative assessment for townscape, visual and built heritage effects is provided in **Part 3: Townscape, Visual Impact and Built Heritage Assessment** (TVIBHA) of the December 2018

ES and **Appendix B: TVIBHA Cumulative ES Addendum** of the June 2020 ES Addendum and not reproduced within this chapter. The additional Heritage Assets identified in **Appendix I** of the June 2020 ES Addendum has not resulted in any additional cumulative effects. This approach enables the reader to view the Accurate Visual Representations (AVRs) of the Development alongside the committed developments together with the resulting cumulative assessment. This approach also restricts this chapter from becoming overly long.

14.77. As for previous topics, Shard Place (Fielden House) was included in the baseline assessment as its physical mass was present in the AVRs.

## References

1 Greater London Authority (2014), 'Sustainable Design and Construction - Supplementary Planning Guidance', Greater London Authority, London.