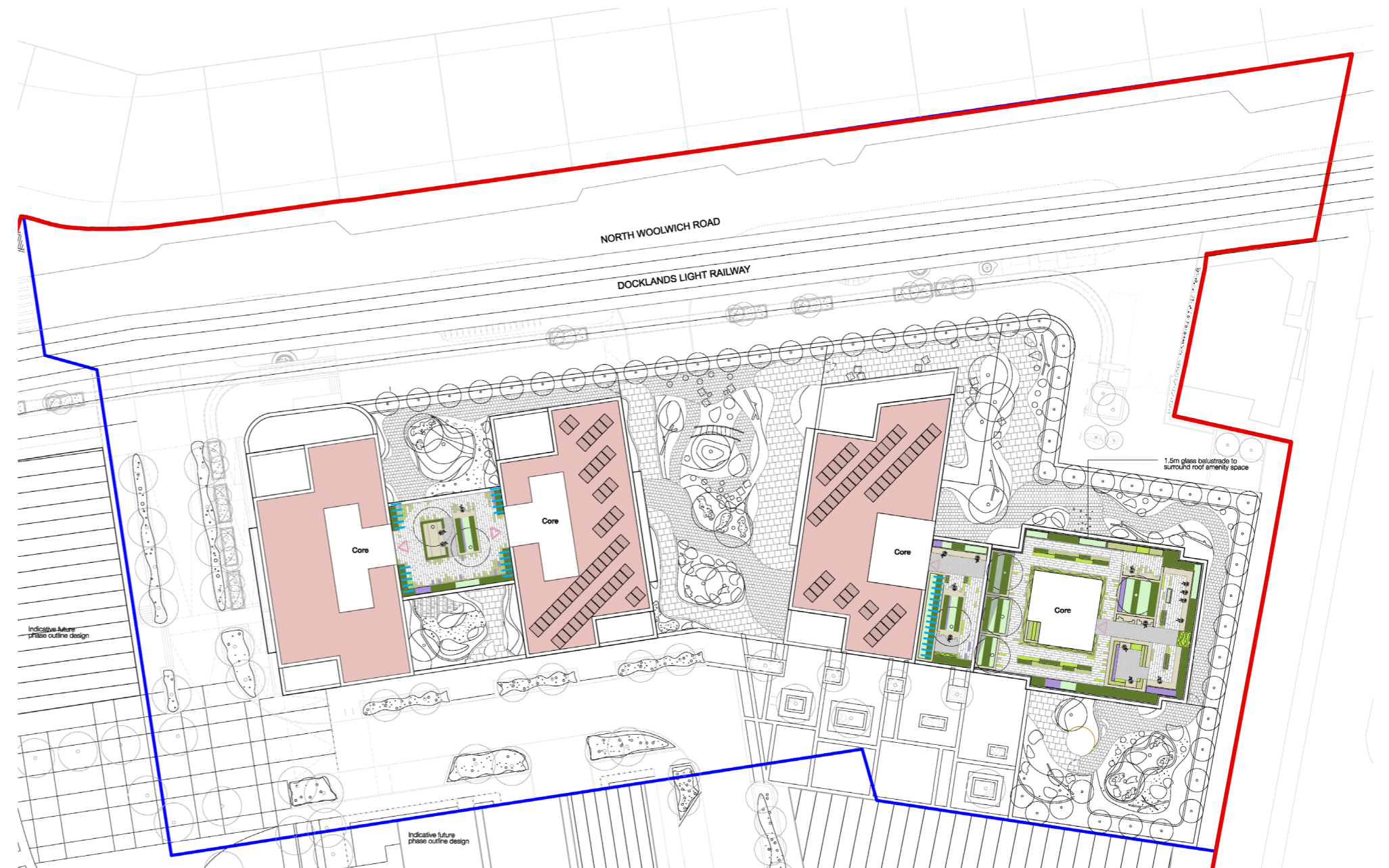




4.10 Rooftop gardens

Spaces have been made available to gain views across the River Thames. Seating with planters will provide for a variety of different sized groups while a glass parapet will help block any wind while keeping views available.

Buffer planting to provide separation and privacy for residents within their homes is provided alongside the residential frontage facing onto the common rooftop gardens of Buildings A and B.



PROPOSED LANDSCAPE AT ROOF LEVEL

■■■■ Buffer planting

5.0

Consultant Summaries



5.1 Planning Context

Barton Willmore

The Development Plan

The Development Plan documents relevant to this proposal comprise the adopted London Plan (2016) and the Newham Local Plan (2018).

Site Designations

The Site is subject to a strategic allocation in the adopted Newham Local Plan for mixed use development. Strategic Allocation S09 Silvertown Landing seeks the following:

“Mixed use consolidating the community centred on the new DLR station at Thames Wharf on the western part of the site through Managed Release of SIL, and employment/strategic infrastructure development at the east of the site, where the functionality and capacity of the SIL will be protected securing buffering of both new and existing SIL and strategic infrastructure with possible scope for further limited release via Managed Intensification as per J2. Employment uses on the SIL should include modern industrial and warehousing, but may also link to the adjacent LMUA, with the scope to secure Managed Intensification (as per J2) and further release if new formats are realised, reducing the spatial footprint whilst achieving the same capacity, functionality and ability to respond to industrial and warehousing demand. The Managed Release of the western part of the site for mixed use will secure an appropriate transition from SIL and strategic infrastructure and include residential uses, green and community infrastructure meeting local need, and employment generating uses. Convenient and comfortable

connections to the DLR stations at West Silvertown, Thames Wharf and Royal Victoria, and along and across North Woolwich Road will be improved as will pedestrian and cycle links through to and along the river (where public space will open out) and docks and to nearby local centres and Canning Town town centre. Indicative building heights of 10 to 12 storeys with buildings of up to 18 storeys being acceptable at key locations.”

The adopted Development Plan confirms that the site is also designated as follows:

- As a Strategic Industrial Location (partial);
- As the Silvertown Crossing Safeguarding Area;
- As Flood defence maintenance (TE2100)
- Employment Hub (E2 Thameside West);
- The cable car protection zone; and
- A mooring point that is protected for future river bus services.

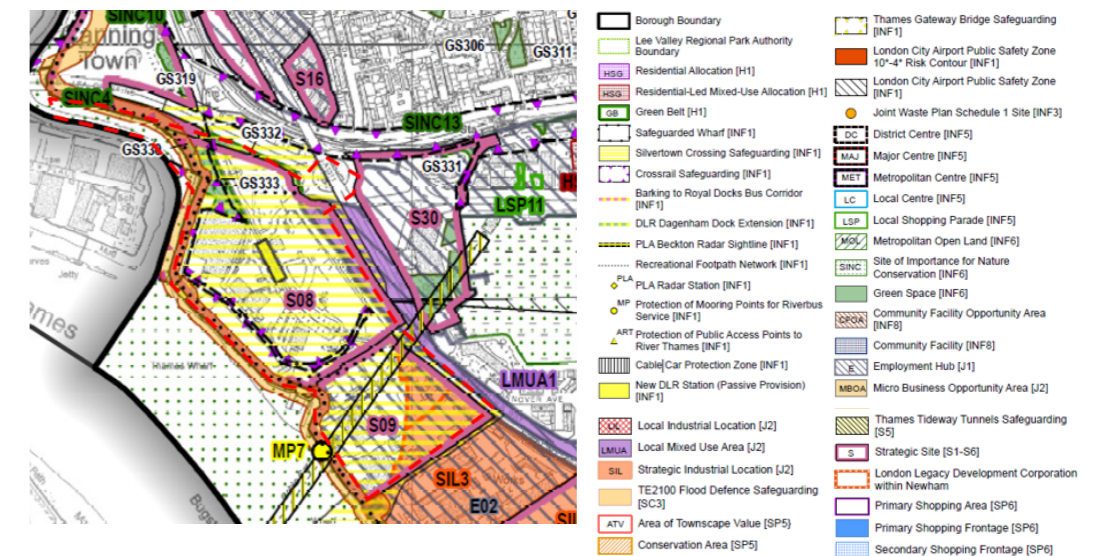
In addition, the Site is located within Flood Zones 2 and 3, an Archaeological Priority Area (Tier 3) and the Thames Policy Area. The whole of the river-front within the site is designated for recreational footpath network.

In terms of wider designations, the Site is located within the Arc of Opportunity and the Royal Docks & Beckton Riverside Opportunity Area (Royal Docks OA), where policy confirms that most growth in Newham will be focused.

The ‘Intend to Publish’ Draft New London Plan describes the Royal Docks OA as “one of the largest regeneration opportunities in London” and confirms that it has capacity for 30,000 new homes and 41,500 new jobs.



S09 Silvertown Landing



Adopted Newham Local Plan

5.2 Master planning Fosters and Partners

Following the Mayor’s decision on 2nd December 2019 to act as the local planning authority for purposes of determining the Application the scheme has undergone a series of amendments in close consultation with the Greater London Authority planning and design teams, and observed by the London Borough of Newham.

The principle revisions to the masterplan are summarised below. For further information please refer to Design and Access Statement Volume 1.

- The distribution of massing across the masterplan has been amended to improve separation distances to ensure a minimum separation distance of 18m between habitable rooms for single aspect units.
- Blocks A and B have been revised in both height and density. Please refer to Chapter 2.1 of this document for further information. The displaced massing from these amendments is redistributed across Blocks L, K and H within the Thameside Crescent character area.
- The setting out of Blocks Q and U has been amended to improve the outlook from Station Plaza and access through to the river from the proposed DLR station. The displaced massing from these amendments is redistributed across Blocks S and T in the adjacent Riverside Quarter character area.
- The setting out of Blocks D, E and F have been revised to improve the outlook of residential units and relationship to the adjacent SIL. Block D has undergone further revision and reduction in height to form a stepping down in massing towards the neighbouring SIL development. The displaced massing from these amendments is redistributed to Blocks N, M and J within the Quays and Victoria Wharf character areas.



5.3 Energy & Sustainability

Buro Happold

The applicant is committed to providing a sustainable development and as such wishes to provide a zero carbon development in line with the GLA definition and approach. As result a Fabric First Approach has been followed. Homes and non-residential areas have been designed to minimise heating demands through efficient design and high performing specification. They have also been designed to provide natural daylight, reduced energy bills and a comfortable internal environment.

Key energy and CO₂ commitments are as follows:

- Buildings will be specified with high energy efficiency fabric and services measures, thereby reducing the energy demand through passive measures as much as possible within viability;
- ‘Reasonable endeavours’ will be used to review and connect to the Excel district heat network (DHN) to provide low carbon heating. The technical and commercial details of the connection are yet to be finalised and agreed; see figure 1.
- Phase 1 regulated CO₂ emissions will be reduced by at least 35% for residential units and non-residential units as compared to GLA Baseline, using energy efficiency measures, connection to an off-site heat network for phases 1-3 as well as solar PV, see figure 2.
- A cash-in-lieu payment and/or retrofit schemes identified in the local area will be made to offset the difference between the savings achieved on-site and the target set by the Zero Carbon Homes Policy of the Greater London Authority, see figure 3.
- The design and specification will reduce overheating risk in highest risk areas using the CIBSE TM59 methodology whilst balancing daylighting and energy demand reduction requirements, see figure 4.

- Non-residential elements will achieve BREEAM ‘Very Good’ certification under New Construction Shell and Core 2018, with the aspiration of achieving ‘Excellent’.
- Figure 3 shows the carbon savings across residential and non-residential elements for Phase 1. A 38% carbon reduction is expected using Part L 2013 carbon factors.

The graph shows the savings from energy efficiency (Lean), connection to the ENGIE heat network (Clean), as well as solar PV on site (Green). It also outlines that the resulting 62% of carbon emissions will need to be offset in line with GLA zero carbon policy.

Overheating

Dynamic overheating analysis has been undertaken in line with CIBSE TM59 guidance. The units analysed were living rooms, kitchens and bedrooms, representing 180 habitable spaces across the two blocks of all orientations. The facade design has included an aluminium sandwich panel in combination with internal blinds in locations that show a higher overheating risk in order to reduce the risk in occupation, refer to figure 5.

The sandwich panels are not included in locations where daylight is a driving factor for the façade design. With this design approach the façade will look to optimise performance to minimise overheating risk in exposed locations and maximise daylight in shaded locations.

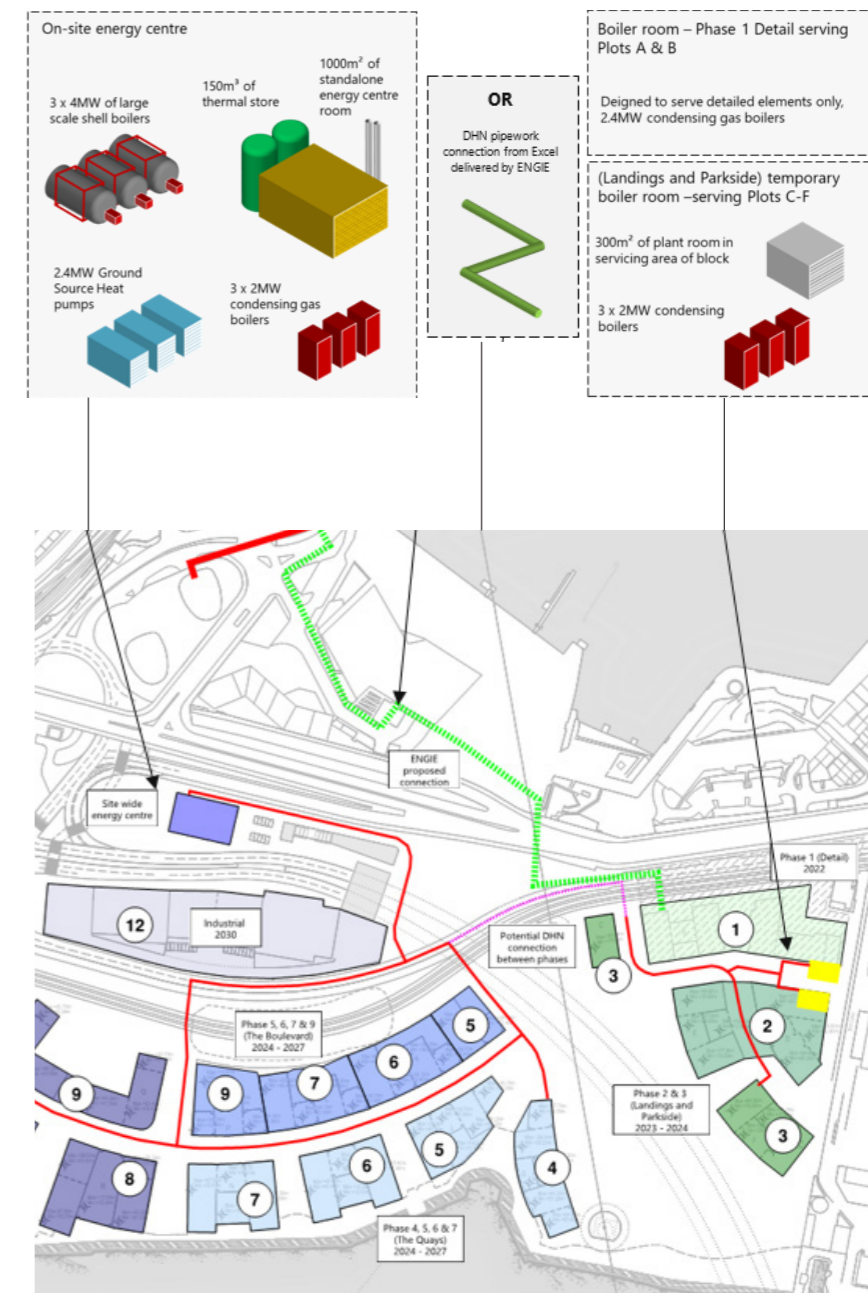


Figure 1. Site wide heat networks

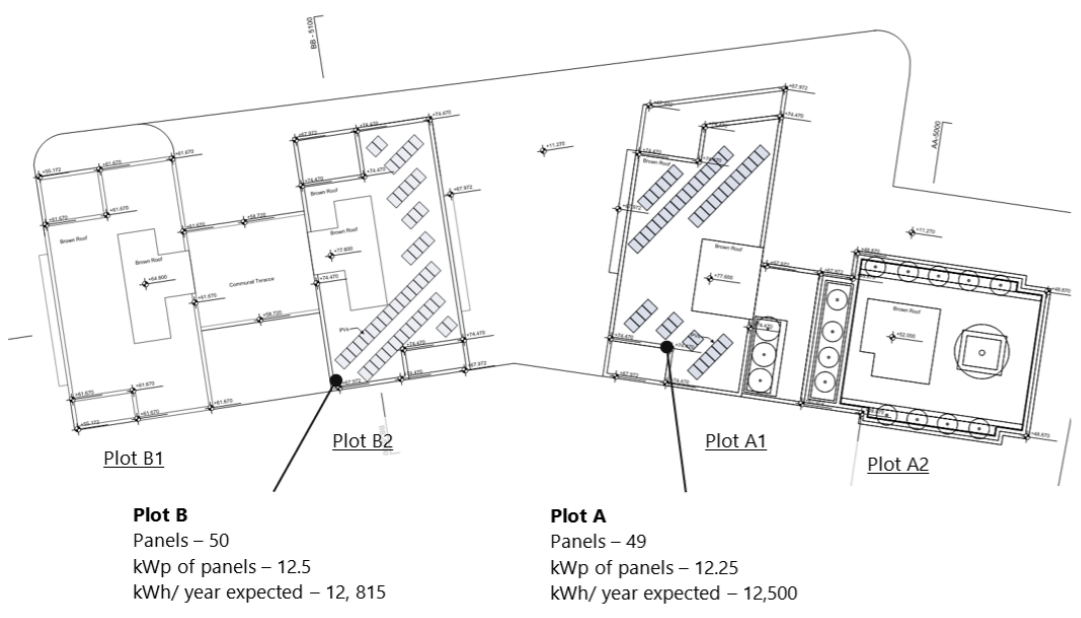


Figure 2. Phase 1 Solar PVs

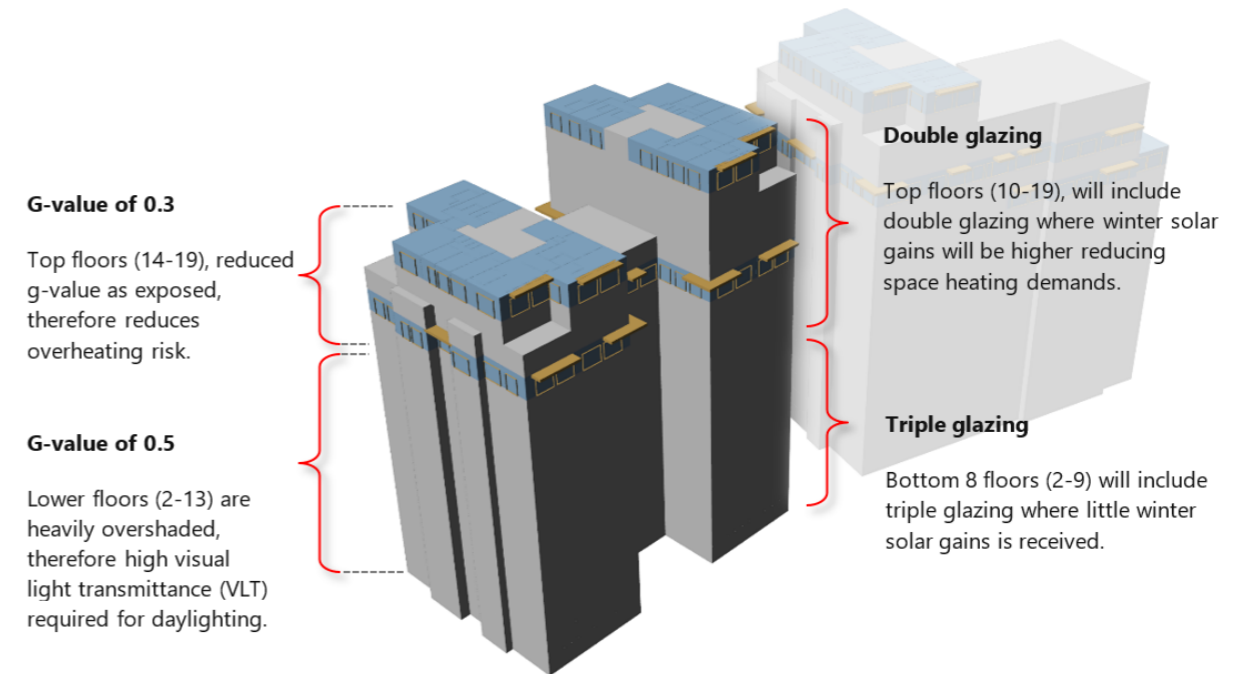


Figure 4. Phase 1 Overheating mitigations - glazing specifications

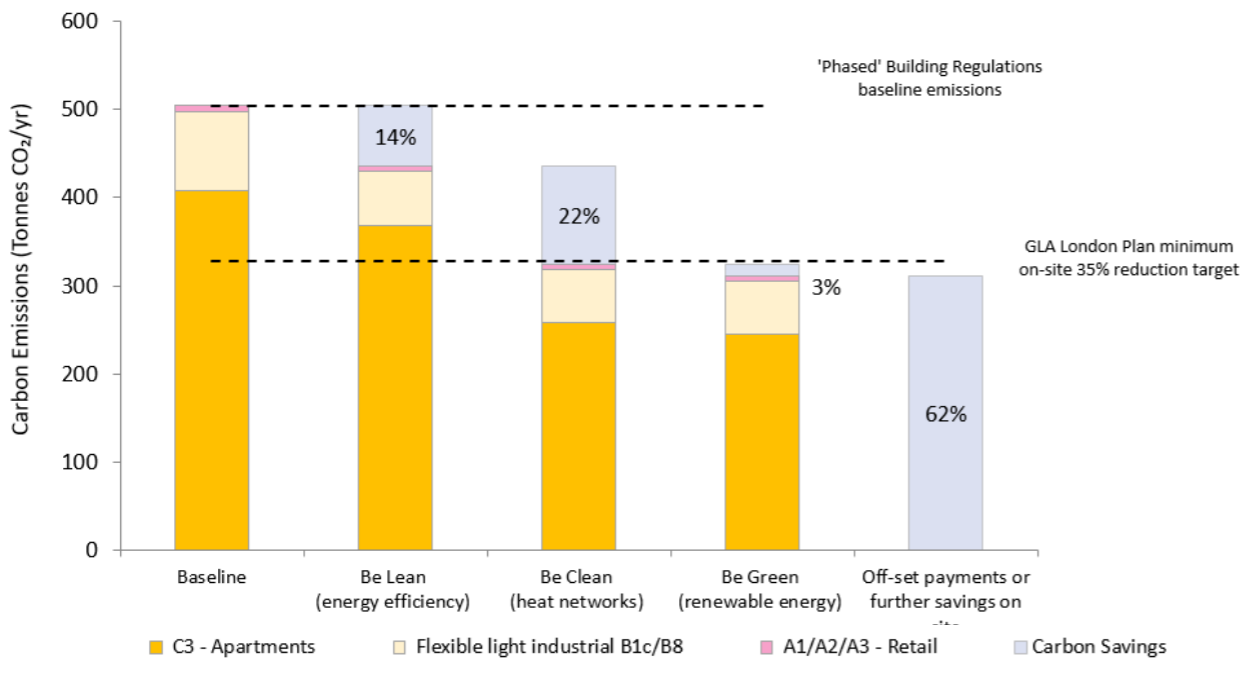


Figure 3. Phase 1 CO2 reduction

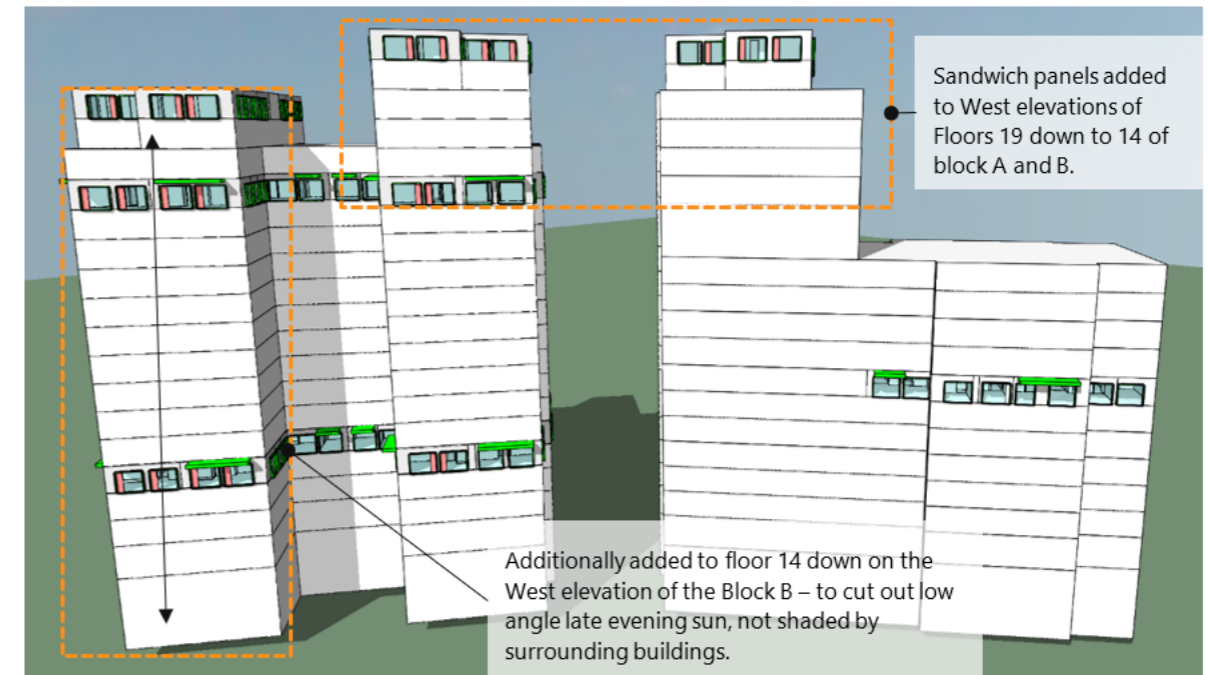


Figure 5. Phase 1 Overheating mitigations - sandwich panels

5.4 Environmental Assessment

Buro Happold

Noise & Vibration

An assessment on the effects of noise and vibration from the project was undertaken and a residual minor adverse effect is predicted to occur at the existing receptor LA Lounge and future receptors within the development due to construction noise and vibration. It is recommended to use mitigation methods to control construction noise which can be found in Section 8 of BS 5228-1:2009+A1:2014, such as selection of quieter plant and equipment, turning equipment off when not in use, providing enclosures around fixed plant like power generators or using mains power, ensuring that all plant and equipment is well maintained, keeping internal haul routes well maintained and avoid steep gradients, using rubber linings in chutes and dumpers to reduce impact noise, minimising drop heights of materials, starting plant up sequentially rather than simultaneously, moving fixed plant away from identified noise sensitive receptors, modifying existing plant with noise attenuation packages such as acoustic enclosures and attenuators, avoiding using diesel power generators and use local electricity grid wherever possible, for impact driven piling, use a non-metallic dolly between the hammer and the driving helmet, introducing an acoustic shroud for impact driven piles, choosing a quieter piling method; and avoiding unnecessary revving of engines.

Predicted ambient noise levels from traffic and the DLR trains alone lead to recommend the provision of mechanical ventilation to all dwellings within the proposed development. Additionally, the proposed development falls within the London City Airport 57 dB contour which reinforces the above, given that even elevations not affected by traffic or train noise will be affected by noise from airplane pass bys. Therefore, the provision of mechanical ventilation is highly recommended to all the dwellings within Thameside West.

The worst-case elevation in the most-affected phase has been assessed, the implication being that if this absolute-worst-case scenario can provide a good internal acoustic environment for future residents, then less-affected locations can work by default. The assessment includes consideration of $L_{AF,max}$ and therefore accounts for the worst-case aircraft flyover levels.

BS 8233:2014 recognises that if noise levels in external amenity spaces of the development are above 55 dB(A) $L_{Aeq,T}$ due to being adjacent to a strategic transport network, a compromise between elevated noise and the convenience of living in such location should be made. The development should be designed to achieve the lowest practicable noise levels in these external amenity spaces, but should not be prohibited.

Phase 1 of Thameside West is located less than 10 m away from the elevated DLR tracks and approximately 30 m away from the elevated Silvertown Way road (Type A road); therefore, ambient noise levels in the area are elevated, but the development will have the convenience of multiple transport links nearby. It is Buro Happold's experience that very few external elevations which front transport networks in central London are fortunate enough to experience noise levels below 55 dB(A) $L_{Aeq,T}$. However, it is generally accepted that residents still prefer the option of having a balcony and being able to access external space even in this external noise climate

With the exception of the south west elevation in Phase 1, calculations show that balconies on all other elevations are anticipated to be exposed to ambient noise levels above 55 dB(A) $L_{Aeq,T}$. Likewise, it has been shown that noise levels on the podium of Phase 1 are likely to be above guidance noise values. Calculations demonstrate that ambient noise levels on the podium can be reduced to noise levels within the

Location	Room Type	Sound Reduction Index, R at Octave Band Centre Frequencies (Hz)						$R_w + C_{tr}$	Façade strategy
		125	250	500	1k	2k	4k		
Residential	Bedroom	28	36	39	45	46	58	39	8 mm floating glass + 16 mm air gap + 16 PVP interlayer (2no)
	Living room	30	27	34	41	47	53	35	10 mm float glass + 9 mm air gap + 6.4 laminated glass
Commercial	Open office	30	27	34	41	47	53	39	10 mm float glass + 9 mm air gap + 6.4 laminated glass
School	Classroom	21	20	26	38	37	39	28	6 mm float glass + 20 mm air gap + 4 mm float glass

Glazing Performance for Phase 1

desirable range of external noise levels as recommended in BS 8233 with the introduction of a 2m high barrier around the perimeter of the podium. Furthermore, noise levels on the communal terrace of Block A in Phase 1 and the play area between Phase 1 and Phase 2 have been modelled to be below 55 dB(A) $L_{Aeq,T}$ without the need of any mitigation measures.

To sum up, although noise levels in the balconies of most elevations of Phase 1 (except for the south west elevation) have been calculated to be above 55 dB(A) $L_{Aeq,T}$, residents will have the possibility of using external amenity areas where noise levels are below 55 dB(A) $L_{Aeq,T}$; therefore, the site is considered appropriate for residential use.

The majority of proposed units (90%) will exceed the minimum space standards, offering in some cases an equivalent area of required balcony size to compensate. The majority of balconies are also oversized - offering a higher quality of residential product. Residents of blocks A and B will also have access to high quality areas of roof gardens, comprising 420sqm of communal amenity under the guideline noise levels, and residents will eventually have direct access to the 4-acre park and riverside walk - offering alternative amenity space provision.

Air Quality

The proposed development is located adjacent to the London Borough of Newham's air quality management area (AQMA), which has been declared owing to exceedances of the annual mean NO₂ and daily mean PM₁₀ air quality objectives. The main source of pollutants within this AQMA is defined as road transport emissions. The assessment has considered the exposure of future site occupants to poor air quality as well as the change in pollutant concentrations as a result of the development at various assessment years, including in 2022, when Phase 1 of the proposed development will become operational, and in 2031, at full completion of the proposed development.

The assessment has considered emissions associated with the change in traffic flows associated with the construction and operation of the proposed development and emissions associated with on-site boilers, as well as the introduction of the Silvertown tunnel and other committed developments which will influence local traffic flows in the future years. The impact at all existing receptors is predicted to be negligible.

With regards to exposure of Phase 1 occupants it is predicted that all proposed residential properties will meet all relevant air quality objectives, and therefore the site is considered acceptable for its proposed use, and no further mitigation is required.

Water Resources and Flood Risk

The proposed development is situated in Flood Zone 3a, with some areas in Flood Zone 2. The site currently benefits from flood defences with a tidal flood defence of 5.14mAOD to 5.4mAOD provided by the river wall.

The proposed development includes a new river wall along the 1,080m river frontage, raising the flood defence level to 6.2mAOD, which is the level required by the year 2100 under the EA Thames Estuary 2100 (TE2100) Plan. The proposed alignment of the flood defence provides 14,000m³ of additional flood storage when compared to the existing river wall and approximately 4,500m² of inter-tidal, planted habitat. It is proposed that the ground level immediately behind the new river wall is also raised to a level of at least 6.2m AOD. With consideration of the improvements to the defences, and the protection provided by the Thames Barrier, the overall fluvial and tidal flood risk is considered to be low.

There is a residual risk of a breach in the defences. In the event of a breach, there is a risk that the lower lying areas of the site are flooded. These areas are situated in the north and south east of the proposed development. More Vulnerable land uses, including residential units, have been proposed on land raised to at least the 6.2mAOD TE2100 flood defence level. Whilst uses classified as being Less Vulnerable (e.g. industrial) are allocated to lower lying areas within the site.

It is concluded that the proposed Thameside West development is at low risk of flooding and will provide enhanced flood defences in the form of a new river wall that also includes a river walkway and benefits in terms of increased flood storage and planted habitat.

Ground Conditions

The site has a long industrial history, associated primarily with the Royal Victoria Dock (constructed in 1850). Part of the site was occupied by the Thames Iron Works (ship building), dry docks and a dock inlet and by a chemical works. During the 20th century the land was also occupied by rail sidings. During WW2, the area was subjected to heavy aerial bombardment. After the 1950s, the industrial use declined, and the docks and dock inlet were infilled. Recent years have seen the construction of the DLR railway and the Emirates Air Line (Cable Car) and the site is currently in use for a variety of light industrial uses, warehousing and recycling activities.

Much of the ground surface is currently hardstanding (concrete / tarmac etc.). Beneath this is a highly variable thickness (between about 1m to 15m thick) of Made Ground / fill which is contaminated from the historical industrial activities and includes many below ground obstructions. The profile of the ground contamination is not currently well defined (and will be subject to further site investigation). However, the existing data has recorded elevated concentrations of heavy metals, inorganic and organic contaminants in both soils and groundwater. Elevated concentrations of hazardous gases (methane and carbon dioxide) and vapours (volatile organic compounds) have also been recorded.

The underlying natural geological sequence comprises: Alluvium up to 10m of soft clay, River Terrace Gravels (a Secondary Aquifer), London Clay (about 10m thick) followed by a series of sands and clays with the Chalk (Principal Aquifer) at about 55mbgl.