Chapter 3: Alternatives and Design Evolution

INTRODUCTION

3.1 This chapter of the Environmental Statement (ES) summarises the reasonable alternatives considered by the Applicant and details the environmental considerations that have influenced the design of the Proposed Development. Following this, a narrative is provided on the evolution of the selected option for the site, focusing on key design modifications that were made during the design process. Environmental considerations which have influenced the design evolution process are discussed where relevant.

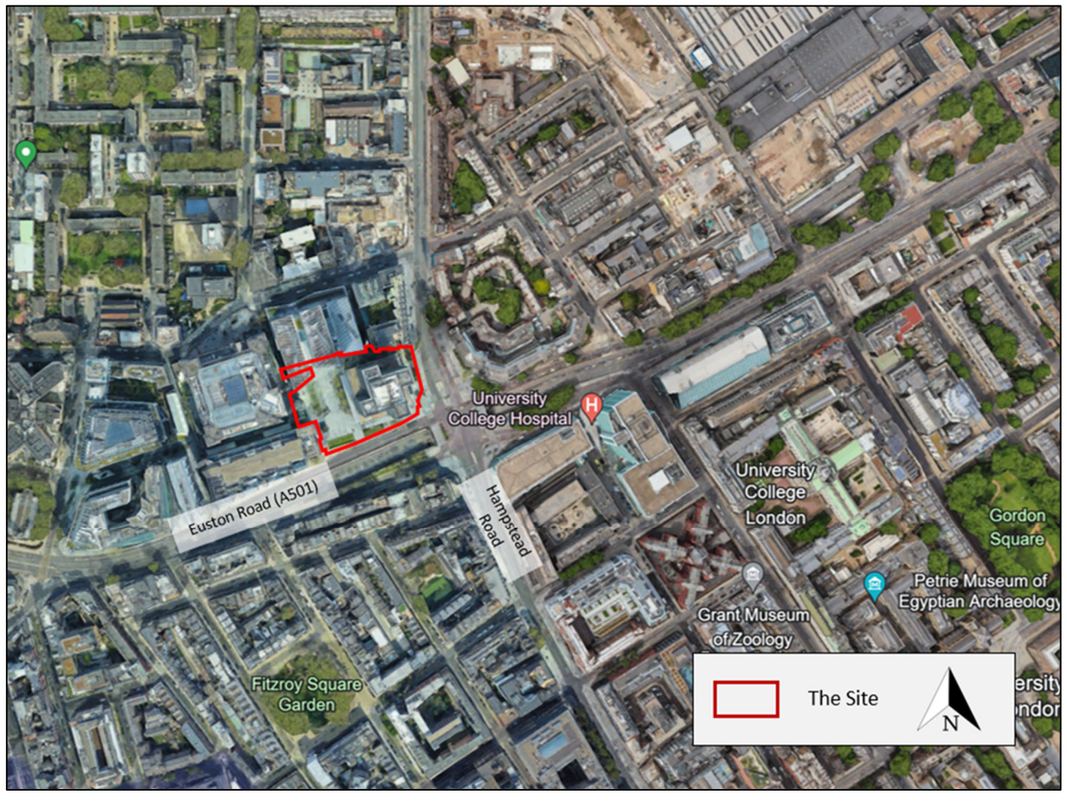
SITE AND SURROUNDING CONTEXT

Exiting Site and Surrounds Description

3.2 The site currently comprises a single, ground plus 36-storey building with a basement. The ground level comprises retail space with office space and associated supporting uses (including plant space) above. The existing Euston Tower was developed in stages between 1962 and 1972. The current basement within Euston Tower provides 102 car parking spaces and 200 cycle parking spaces. This basement is connected to the wider Regent's Campus basement, which also provides a servicing yard used by the existing Euston Tower. The ground floor is commercially occupied by a Starbucks, Pret A Manger and Amazon Fresh. Above ground, the existing building is predominately vacant, having previously accommodated office use. The open space within Regent's Place Plaza is predominantly paved with limited greening, and this paving extends around the perimeter of the existing building.

3.3 The site is designated within the Knowledge Quarter Innovation District ('KQID'), home to world-class clusters of scientific and knowledge-based institutions and companies specialising in life-sciences, data and technology and creative industries.

Figure 3.1 Site Location



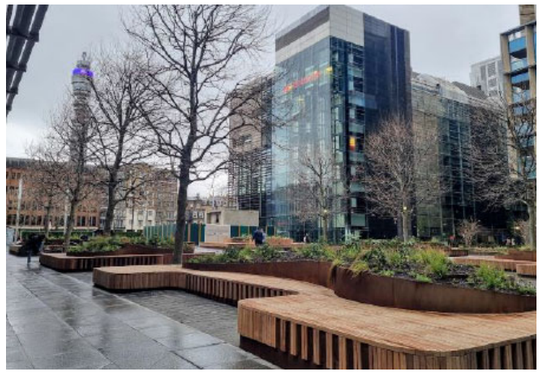
3.4 The surrounding area comprises the following:

- North – immediately to the north of the site is the Triton Building (retail and residential) and 10 Brock Street (offices);
- East – immediately to the east is Hampstead Road; beyond which is University College Hospital (UCH) Education Centre, followed by North Gower Street which features multiple Grade II listed buildings, 185-191, 168 and 170, and 184-188 North Gower Street;
- South – Euston Road (A501) borders the south of the site, beyond which lies residential and commercial properties and Warren Street London Underground Station; followed by Grade II listed buildings 15, 16, 17, 20, 21, 66, 58-62, and 63-68 Warren Street; and
- West – Regent's Place Plaza and Regent's Place (commercial) lie to the west, beyond which are further commercial properties with heights of approximately 65m. Regent's Park is also located approximately 420m northwest of the site.

Figure 3.2 The Existing Site

Existing Tower from Hamstead/Euston Road junction

Ground-level planters at the eats of the site



Ground-level planters in Regent's Place Plaza

Modified grassland in Regent's Place Plaza

Local Environmental Context

Air Quality

3.5 The site is located within the borough wide Air Quality Management Area (AQMA), as declared by the London Borough of Camden (LBC) in September 2002. It is designated for exceedances of the 24-hour mean objective value for particulate matter (PM_{10}) and the annual mean objective value nitrogen dioxide (NO_2).

3.6 The Proposed Development is also located within one of the Greater London Authority's (GLA) Air Quality Focus Areas (Marylebone Road from Marble Arch / Euston / King's Cross Junction); these are locations with high levels of human exposure where the annual mean limit value for NO_2 is exceeded.

3.7 The LBC operates five automatic monitoring stations within its administrative area, with one monitoring site ('CD9') located within the study area. The LBC also operates a number of NO_2 monitoring sites using diffusion tubes prepared and analysed by Gradko International Ltd (using the 50% TEA in acetone method), with 15 diffusion tube monitoring sites located within and in close proximity to the study area.

3.8 Given that the site is located within central London, the site is also located within the Congestion Charge (CC) zone, the Low Emission Zone (LEZ) and the Ultra Low Emission Zone (ULEZ).

Archaeology

3.9 The site is not located within any Archaeological Priority Areas (APA). The closest APA is Regent's Park Tier 3 APA approximately 330m west from the site.

3.10 There are no scheduled monuments on the site; the closest being a Subterranean Commercial Ice-well, Park Crescent West, approximately 600m west of the site.

Built Heritage

3.11 The site is not within a designated Conservation Area (CA). However, within the 500m study radius, there are seven conservation areas that lie within both LBC and, to the west, the City of Westminster (CoW): Fitzroy Square Conservation Area (LBC); approximately 60m to the south of the site; Bloomsbury Conservation Area (LBC); Regent's Park Conservation Area (LBC); Charlotte Street Conservation Area (LBC); Regent's Park Conservation (CoW); Cleveland Street Conservation Area (CoW); and Harley Street Conservation Area (CoW).

3.12 The site and proximity to the surrounding CA is presented in Figure 3.3.

3.13 There are no statutory or locally listed buildings on the site. Within a 500m radius of the site, there are 132 listed buildings, 13 of which are Grade I listed, eight which are Grade II* listed buildings and 111 are Grade II listed. The closest listed buildings to the site are Nos.48-52 Stanhope Street (Grade II) to the north and Nos.15, 16, 17, 20, 21, 56, 58-62, 63-68 Warren Street (all Grade II) and Nos.159-161 Whitfield Street (Grade II), to the south, which are all within 150m of the site boundary.

3.14 There are three Registered Parks and Gardens within a 1km radius of the site, including Regent's Park approximately 480m west, Russell Square approximately 860m southeast, and Bedford Square Garden approximately 870m southeast of the site.

Ecology and Biodiversity

3.15 The site currently comprises one building and the open space within Regent's Place Plaza, which is predominantly paved with limited greening; this paving extends around the perimeter of the existing building. Habitats on-site are considered to be of low ecological value.

3.16 The site is not subject to any European or national ecological designation (statutory or non-statutory). Furthermore, the site is not within a 1km radius of any of the following designated sites: Areas of Outstanding Natural Beauty (AONB), Biosphere Reserves, National Nature Reserves (NNR), Ramsar Sites, Site of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) or Special Protection Areas (SPA).

3.17 The nearest designation is a Metropolitan Site of Importance for Nature Conservation (SINC) at Regent's Park approximately 450m west of the site, which is connected to a Borough II SINC in park square, immediately south of Regent's Park, approximately 420m west.

Noise and Vibration

3.18 Noise at the site is dominated by road traffic along Euston Road (A501) and Hampstead Road. Furthermore, sources of vibration at the site comprise London Underground trainlines that pass close to the site; these include Circle, Hammersmith & City, Metropolitan, Northern and Victoria underground lines.

Townscape and Visual

3.19 The area surrounding the site is comprised of a mixture of use classes, including (but not limited to) commercial uses, residential dwellings, retail, and open spaces. The existing building is tall in the context of its surroundings, making it highly visible to surrounding viewpoints.

3.20 The existing building is visible within London View Management Framework ('LVMF') London Panoramas from Parliament Hill to Westminster, LVMF London Panorama from Primrose Hill to Westminster, and LVMF River Prospects from Lambeth Bridge. The images presented in Figure 3.3 provide a brief analysis of the existing building and the surrounding context.

Transport

3.21 The site has a Public Transport Accessibility Level (PTAL) rating of 6b (where 0 is the worst and 6b is the best) and is therefore considered to be highly accessible via public transport.

3.22 The site is served by the following London Underground stations within close proximity: Warren Street - Victoria and Northern lines (approximately 100m South); Euston Square - Circle, Hammersmith & City and Metropolitan lines (approximately 280m east); Regent's Park – Bakerloo (550m west); Euston – Northern Line (600m east); and Kings Cross St Pancras Station – Circle, Hammersmith & City, Metropolitan, Northern, Piccadilly, and Victoria lines (1.2km east)

3.23 Euston Rail Station is located approximately 600m east of the site and is serviced by Avanti West Coast, West Midlands Trains, Caledonian Sleeper, and London Overground rail services. King's Cross and St Pancras Stations are also situated approximately 1.2km to the east of the site. King's Cross is served by Great Northern, Grand Central, London North Eastern Railway (LNER) and Hull Trains. St Pancras International is served by Thameslink and East Midlands Railway (EMR) as well as high speed routes to Kent. In addition, Eurostar services to Europe are also available from this station.

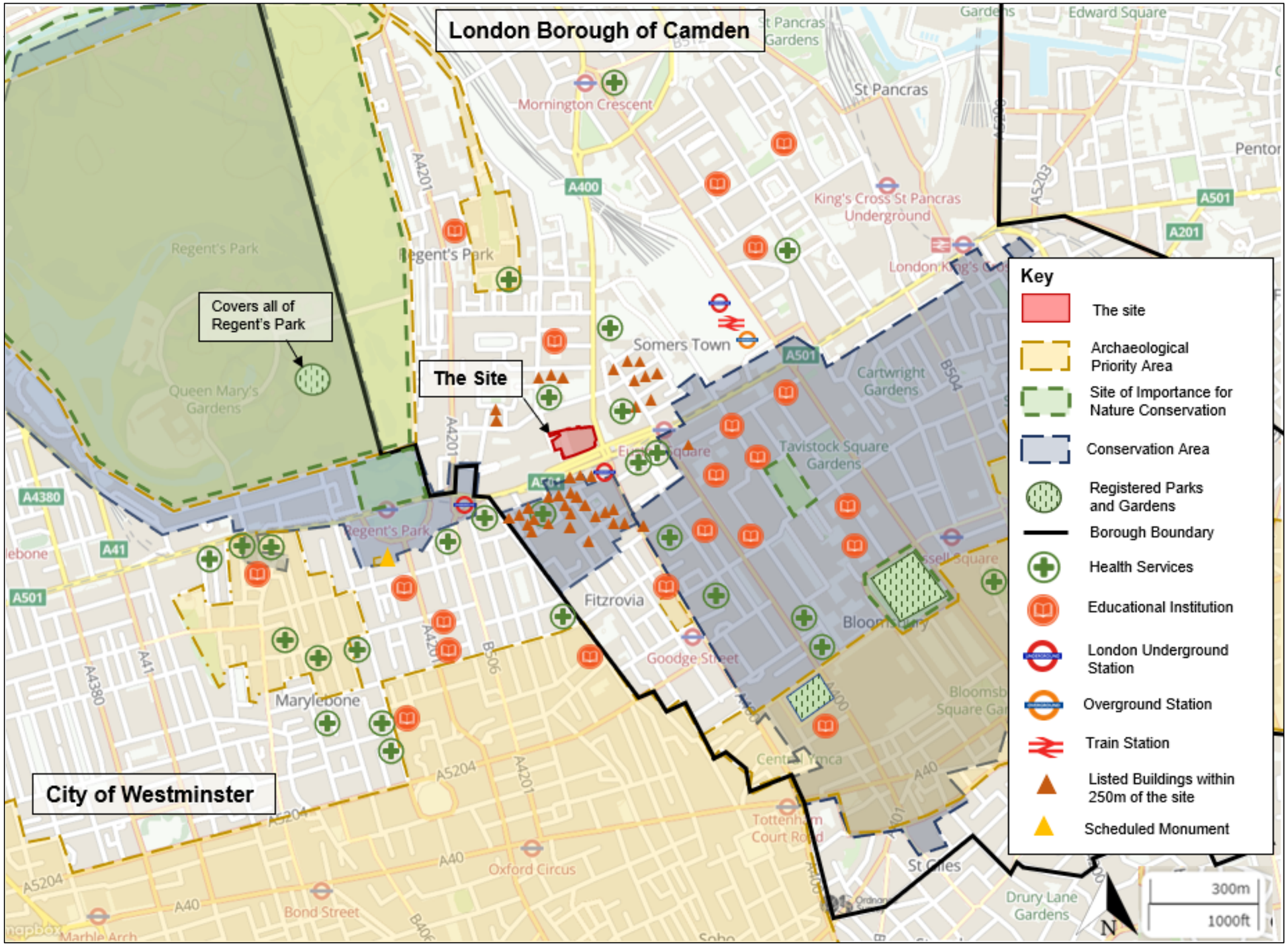
3.24 The site benefits from its close proximity to a number of different bus stops and bus services. The nearest bus stops are located adjacent to the site to the east, on Hampstead Road (A400) and to the south, on Euston Road (A501). Warren Street Station (Stop KA) bus stop is located immediately south of the site, serviced by Bus Routes 18, 30, 205 and N205. Warren Street Station (Stop V) bus stop is located approximately 50m south and is serviced by bus routes 18, 27, 30, 205, N27 and N205. Drummond Street (stop S) bus stop is located approximately 20m north-east, serviced by bus routes 24, 29, N29 and N279. Warren Street Station Euston Road (Stop U) bus stop is located approximately 30m east, serviced by bus routes 24, 27, 29, 134, N27, N29 and N279. University College Hospital Warren Street Station (Stop W) is located approximately 120m east, serviced by bus routes 18, 30, 73, 205, 390, N5, N20, N73 and N205.

3.25 Euston Tower is part of Regent's Place Campus, which offers a pedestrian friendly environment with largely pedestrianised streets, walkways, and plazas. Euston Road, bordering the south of the site, and Hampstead Road, bordering the east of the site, have comprehensive footway provision along both sides of the carriageway; around the site there are wide footways, signalised pedestrian crossings with dropped kerbs and tactile paving.

3.26 A London Cycle Network route runs along Hampstead Road east of the site. Cycleway 27 (C27) is located approximately 280m south of the site running between North Acton and Lower Clapton.

3.27 The existing basement within Euston Tower provides 102 car parking spaces and 200 cycle parking spaces.

Figure 3.3 Site and Surrounding Context Map



PRE-APPLICATION CONSULTATION

3.28 An extensive programme of consultation has been undertaken throughout the design evolution of the Proposed Development. This included meetings, workshops, and exhibitions for a variety of stakeholder groups and local residents in order to create a scheme which is inclusive, and which has been informed by the public.

Statutory Stakeholder Consultation

3.29 The Proposed Development has been subject to a number of statutory consultee and stakeholder consultation meetings with the LBC in order to evolve and refine the emerging design. Since February 2022, the Applicant team have been developing the proposal through an intensive, collaborative process with the planning officers and wider stakeholders. Through a series of pre-application meetings, workshops and design sessions and review panels, strategic panels and developer's briefings, opportunity for feedback and discussion has been created, the result of which is reflected in the Proposed Development.

3.30 The following key statutory stakeholders have been engaged with to date: London Borough of Camden (LBC) (including the Environmental Health Officer (EHO) and Designing Out Crime Officer); Greater London Authority (GLA); Transport for London (TFL); London Underground Limited (LUL); Crossrail 2; and Historic England (HE).

Public Consultation

3.31 In addition to the above statutory stakeholder consultation, a series of public consultation events were conducted to obtain public feedback to inform the evolution of the design. This engagement took the form of Co-Design Workshops and Panel Discussions, whereby the local community were invited to share their thoughts and discuss and shape the design proposals. The series of workshops and panel discussions were grouped into 3 key themes: Inclusivity in the Public Realm, Interior Public Spaces & Programming, and Exterior Public Spaces & Programming.

3.32 The Applicant undertook a comprehensive programme of engagement on the plans for Euston Tower, which was comprised of three phases:

- First stage of engagement – December 2022-June 2023. Targeted engagement sessions with local groups and organisations to shape the emerging designs for Euston Tower;
- Second stage of engagement – July 2023. Presenting the emerging designs and gaining feedback from the wider public; and
- Third stage of engagement – October 2023. Presenting the developed designs for Euston Tower ahead of the submission of the application.

3.33 In total, the project team engaged with over 570 people through the pre-application process.

3.34 A summary of the public consultation events undertaken are presented below:

- 21 March 2023 - Inclusivity in the Public Realm Co-Design Workshop;
- 4 April 2023 - Inclusivity in the Public Realm Panel Discussion;
- 28 April 2023 - Interior Public Spaces & Programming Co-Design Workshop;
- 2 May 2023 - Interior Public Spaces & Programming Panel Discussion;
- 12 May 2023 – Design Review Panel 1;
- 16 May 2023 - Exterior Public Spaces & Programming Co-Design Workshop;
- 30 May 2023 - Exterior Public Spaces & Programming Panel Discussion;
- 4 July 2023 – Sustainability Event;
- 8 July – 16 July 2023 – Public Exhibition 1;
- 29 September 2023 – Design Review Panel 2; and
- 13 October 2023 – 20 October 2023 – Public Exhibition 2.

3.35 Key comments and themes raised from the public consultation events and explored in the design review panels are as follows:

- Development of a scheme which is adaptable to future needs without the need for extensive demolition;
- Ensuring a balance between a robust building with a strong base and encroachment into the public realm as a result of the increased building size;
- Reflection of the surroundings as influences for the façade treatment and colour palette and detailed consideration of the townscape impacts;
- Supportive of the landscape-led approach and maximising green spaces within the public realm and ensure these spaces are fully accessible to all;
- Reflecting the lower-level landscaping at the upper levels;
- Encouraging material reuse and securing ambitious sustainability goals through the planning process and managing embodied carbon through detailed studies; and
- Support the relationship between the building and the public realm through microclimate analysis.

ALTERNATIVES ANALYSIS

3.36 The following sections review the alternatives to the Proposed Development that have been considered by the Applicant including:

- The Do-Nothing/ No Development Alternative;
- Alternative Sites; and
- Alternative Designs / Design Evolution.

Do-Nothing/ No Development Alternative

3.37 The Do-Nothing / No Development Alternative refers to an option of leaving the site in its current state, with the existing building remaining present at Euston Tower. The building has been largely vacant since 2021 and has been stripped out, as it is inadequate for use by modern occupiers in its current form.

3.38 The Do-Nothing / No Development Alternative is not a viable option. A feasibility study was initially conducted to investigate the current condition of the existing Euston Tower, with the aim to bring the disused building back to life, minimise wate and carbon emissions, and create a world leading science, technology and innovation building and public realm for Camden and the Knowledge Quarter. After considering the planning policy and market requirements for continued commercial use of the Tower, the investigation concluded that the cost and carbon impact of upgrades required for continued office use and the quality of the space delivered would make viability very challenging, and the resulting product would be compromised in the leasing market.

3.39 The Do-Nothing / No Development Alternative would not be desirable as the new modern and fit-for-purpose facilities proposed as part of the Proposed Development would not be delivered. At present, the existing building remains largely unused; the Proposed Development therefore presents an opportunity redevelop the site to provide a leading science, technology and innovation building and public realm for Camden and the Knowledge Quarter.

3.40 Additionally, existing green space on-site is limited. The Proposed Development offers the opportunity to redevelop the site to provide extensive urban greening that is situated within a heavily urbanised and high-rise area of low ecological value in London.

3.41 For the above reasons, the Do-Nothing / No Development Alternative would not deliver the significant planning, public, energy efficiency and ecological benefits offered by the Proposed Development, and as such has not been considered further.

Alternative Sites

3.42 No alternatives sites were considered for the location of the Proposed Development given that the Applicant has ownership of the site. The site is deemed an appropriate location for the redevelopment of an office-led, lab-enabled commercial scheme given it is situated within the Central Activities Zone in Camden, and moreover

within The Knowledge Quarter.

Alternatives Designs

3.43 The Design Evolution section of this chapter sets out the key design considerations, the design brief, and the framework principles which have guided the evolution of the Proposed Development. The design has evolved as a result of these starting framework principles. No entirely alternative designs have been developed, which differ from these starting framework principles, however the design of the Proposed Development has emerged and evolved in response to feedback from the pre-application consultation process (both in terms of the public consultation process and the pre-application discussions with LBC) as well as design development, and input in relation to the technical and environmental design aspects of the scheme. Further detail on the design evolution for the scheme is available in the Design and Access Statement (DAS) submitted alongside the planning application.

3.44 Where design options have been influenced by environmental considerations and assessment work, this has been discussed within the Design Evolution section of this chapter as relevant.

DESIGN EVOLUTION

3.45 The following sub-sections of this ES chapter describe the design evolution processes undertaken by the Applicant's design team and is structured around the key design constraints and opportunities, design principles, the key design changes, and the consultation activities that have led to the final design of the Proposed Development.

3.46 The design of the Proposed Development has emerged and evolved in response to feedback from the pre-application consultation process, both in terms of the public consultation process and the pre-application discussions with the LBC, as well as design development, and input in relation to the technical design aspects of the scheme.

Initial Land Use Considerations

3.47 A series of studied considering various options for "alternative uses" for the existing tower within its current footprint were undertaken as part of feasibility investigations. These included continued commercial uses, residential, student accommodation, hotel, as well as combinations of these uses. Mixed use scenarios were identified to be especially challenging as they require separate, diversified fire escapes which erodes usable area within the final building envelope. The following options were studied as part of the feasibility investigations.

3.48 Commercial-led schemes:

- Commercial office only; and
- Commercial office with laboratory (life sciences / innovation).

3.49 Residential-led mixed use:

- Residential with commercial office;
- Residential with laboratory; and
- Residential with hotel.

3.50 Hotel/Student Housing developments:

- Hotel only; and
- Hotel with student housing.

3.51 Notwithstanding the policy protection for commercial land use associated with the site, the abovementioned options underwent technical analysis and presented similar challenges, i.e. that fundamental issues with respect to the existing building (including building regulations, fire safety, and energy performance) need to be addressed before the building can be brought back into use.

3.52 The existing structural loading capacity was shown to be sufficient for any of the alternative uses with the exception of the laboratory spaces, which require a more extensive structure. The dynamic response of the structure (i.e. how much it vibrates at a microscopic scale) was shown to be more challenging, especially for uses with bedrooms where users are likely to be more sensitive to vibrations.

3.53 Fire safety was identified as a challenge for the mixed uses as, in addition to providing dual fire escapes, each separate use requires independent firefighting provisions and fire escape routes. Practically, this precludes combining more than two distinct uses as the efficiency of the floor layout (ratio of the area which is usable compared to the overall area) would be severely eroded with the additional space required for independent fire safety requirements.

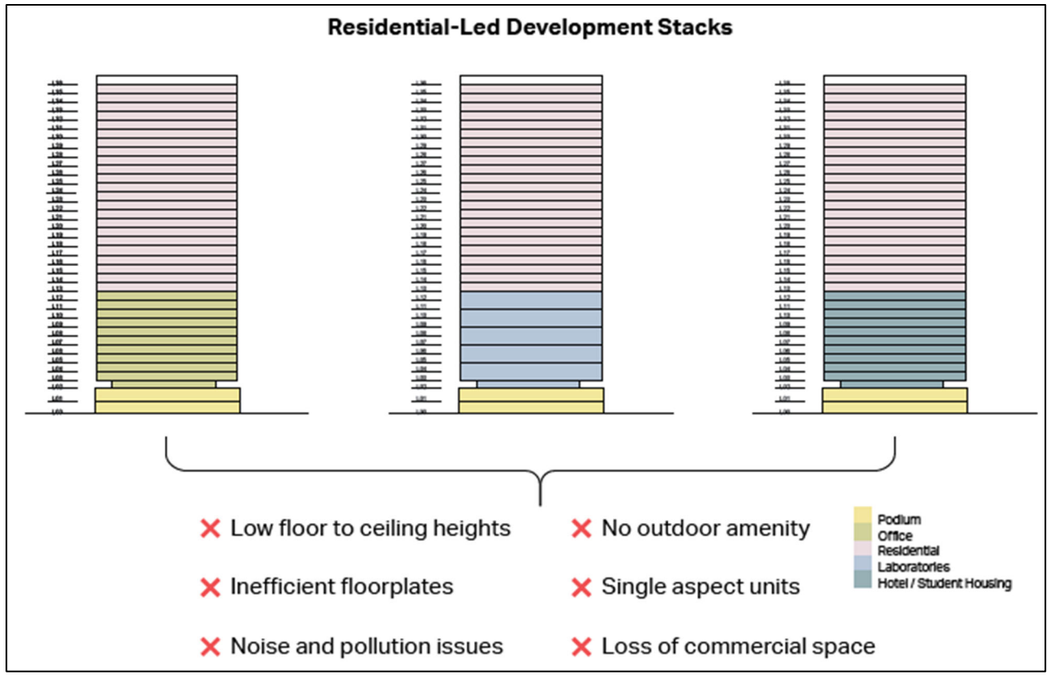
3.54 The ceiling zone required to accommodate modern, energy-efficient building services was also challenging to fit within the height between the existing storeys (currently 3.2m) while also delivering the clear ceiling heights recommended by the GLA.

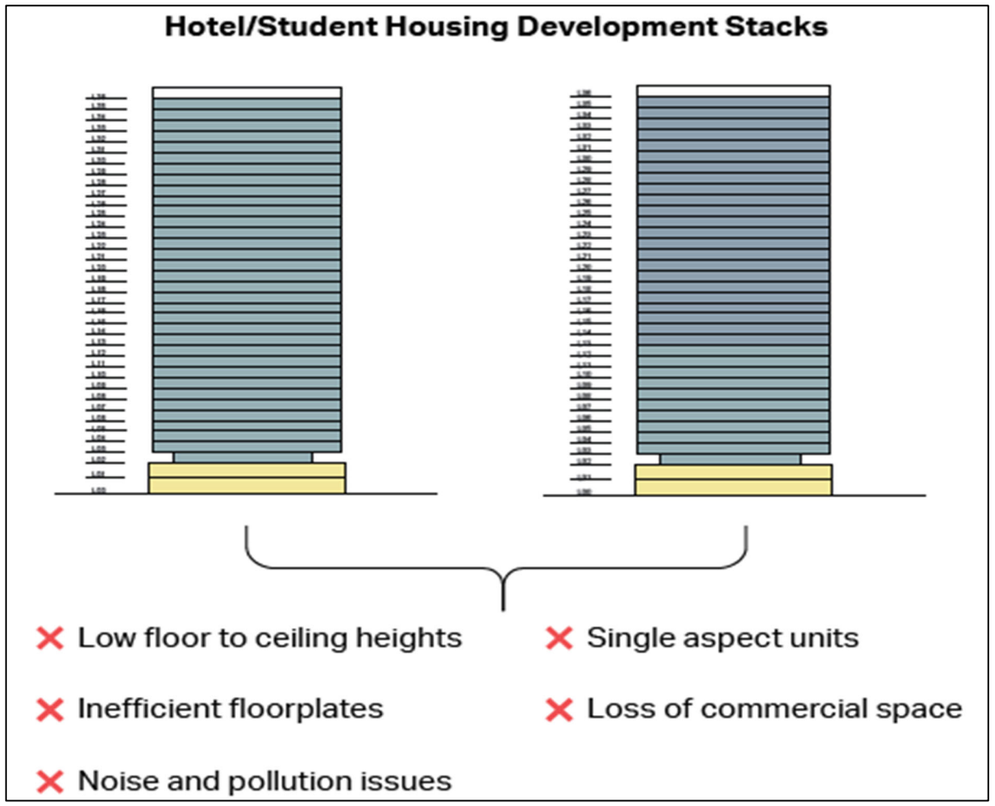
3.55 This junction of Euston Road and Hampstead Road experiences relatively poor air quality and high noise levels, and therefore is not ideal for residential accommodation, a hotel or student accommodation. In addition, and due to the aforementioned challenges layouts for residential accommodation, a hotel or student accommodation are compromised due to the following:

- Several single-aspect units (and some north-facing facing units);
- Some self-shaded units due to overshadowing from the shape of the existing building;
- Several narrow and inefficient units with lots of wasteful circulation space;
- Instances of long corridors with no daylight; and
- No private outdoor amenity space due to wind conditions.

3.56 Consequently, it was determined that continuing a commercial use on the site was the most suitable use to be taken forward as it not only aligned with the current policy allocation and surrounding land uses, but also provided opportunities to retain and reuse the existing building (including parts of the structure and core) where possible.

Figure 3.4 Alternative Uses Studied for Euston Tower





Design Brief and Principles

3.57 The aim of the Proposed Development was to redevelop the disused and mostly vacant building, minimise waste and carbon emissions, and create a world leading science, technology and innovation building and public realm for Camden and the Knowledge Quarter. The existing tower consists of poor quality and inflexible floorplates, an insular, and reflective façade, and an uninviting podium with limited connection to the public realm. This warranted exploration into opportunities for retention, reuse, and recycling to transform the existing building into a building fit for the future.

3.58 As described above, the existing building is considered increasingly unsuitable for modern use. The Applicant therefore set an aspiration for the creation of an iconic building that would be fit for purpose for the next 100 years and that inspires, connects and creates opportunities for local people and businesses.

3.59 Consideration was given as to whether the building could be refurbished to modern commercial and sustainability standards, and subsequently the feasibility of redevelopment that could deliver best in class lab-use and office floorspace alongside outstanding public benefits.

3.60 The design of the Proposed Development has evolved in response to a number of design principles including:

- Transforming the existing Euston Tower ensuring it is fit for the future by adopting cutting-edge sustainability targets and reusing, recycling, and offsetting, where necessary, to reach net zero at completion and in operation;
- Putting social impact at the heart of the project from the start and ensuring that communities play a key role in shaping new spaces which meet local needs;
- Creating pioneering workspaces in the Knowledge Quarter for businesses of all sizes to prosper, including flexible incubator and accelerator spaces, to support start-ups, scale-ups and knowledge sharing;
- Ensuring that the future use of Euston Tower is built upon identified need and contributes to a thriving local, regional and national economy for our ever-changing world; and
- Reimagining the public spaces of Regent's Place Campus, creating safe, inclusive, connected and sustainable spaces for Camden's communities.

Sustainability and Minimising Embodied Carbon

3.61 From the outset it was established that sustainability is an important design consideration with the following objectives:

- Deliver a highly sustainable tall building and explore the potential of delivering a climate positive building;
- Minimise Embodied Carbon & Carbon in Use with a target of delivering a Net Zero Carbon building;
- Optimise the design to improve end user productivity by for example enhancing air purity etc.;
- Deliver an all-electric building which minimises energy consumption and achieves UK Green Building Council 2030 targets;
- Develop a market leading Circular Economy strategy to ensure that 50% of the building material is re-usable at the end of the buildings life;
- Document and re-use elements of the existing building where possible;
- Encourage green behaviours through the design e.g. integrating live feedback on energy use and options such as reduced speed lift journeys;
- Explore the use of innovative low carbon materials both internally and externally; and
- Minimise vehicle movements associated with building use.

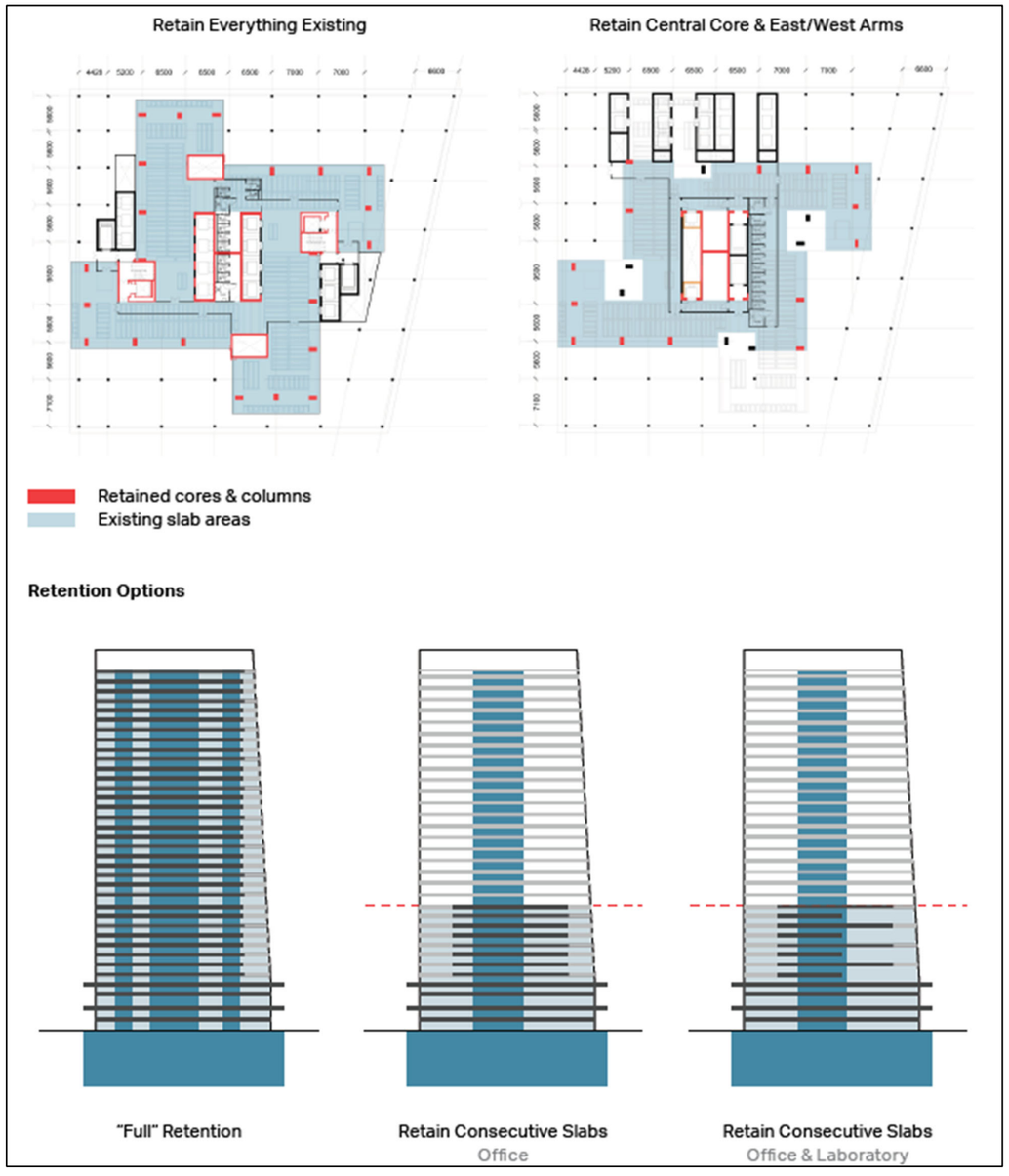
3.62 In accordance with the design objectives in terms of sustainability, an initial exercise to consider the potential for retaining and refurbishing the existing building was undertaken as presented in Figure 3.5.

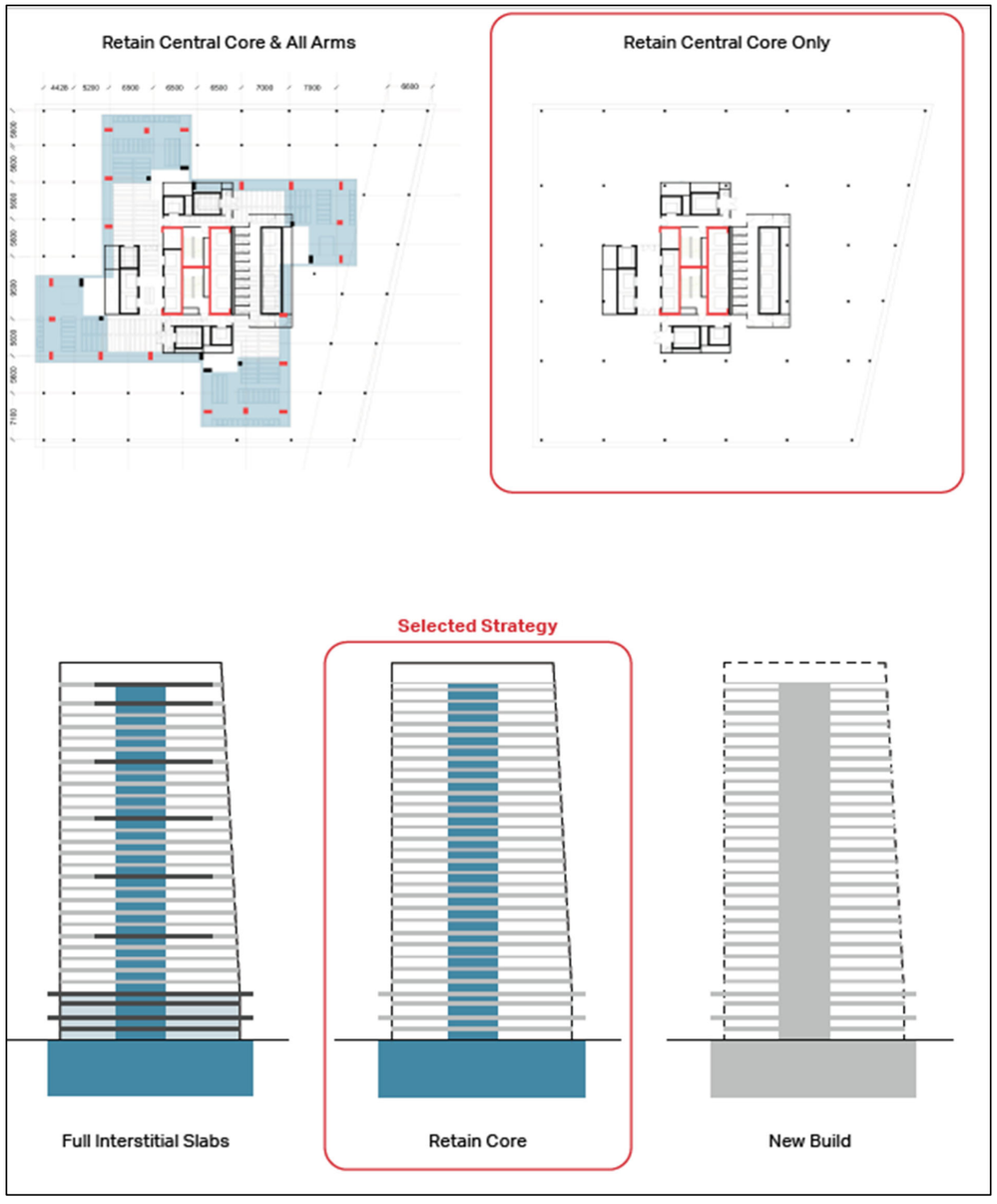
3.63 Five main options were considered:

- Major Refurbishment – this was not considered feasible due to the constraints of the floorplate and the existing building;
- Retention and Partial Extension – resulting in maximum retention of the building;
- Retention and Extension – resulting in 'full retention' of the building;
- Partial Retention and Extension (Disassemble and Reuse) – comprising retention of the consecutive and interstitial slabs and the core; and
- New Build – completely new building.

3.64 Following a review of all the options, it was determined that the retention of the central core option was the optimal solution as it aligned with the design objectives to achieve sustainable outcomes, by retaining the optimal amount of embodied carbon in the existing building and minimising the operational carbon in the future life of the building (Figure 3.5). Accordingly, the option that retains the foundation, basement, and central core was chosen as the proposal as it presents the best balance of retention, carbon, quality, future-proofing, and health & safety, whilst allowing the new structure to be flexible and meet the needs of a modern commercial development.

Figure 3.5 Overview of Structural Options Studied





Massing Evolution

3.65 Once it was determined that the optimal solution was to retain the foundation, basement, and central core of the existing building, a number of massing options were considered as shown in Figure 3.6.

Figure 3.6 Initial Massing Studies

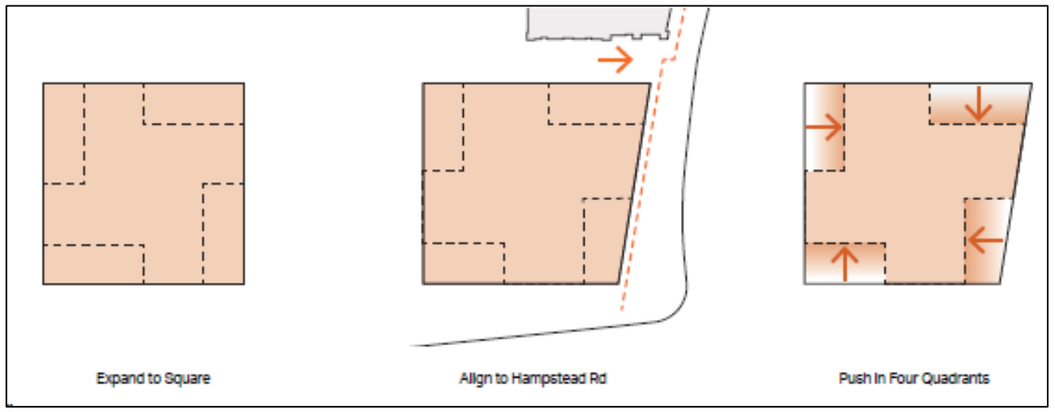
3.66 The initial studies surrounding massing on-site suggested that the site could accommodate a building of significant mass and scale, commensurate with the height and massing of the existing Euston Tower and its prominence on Euston Circus.

3.67 The pinwheel floor plate shape of the existing Euston Tower inspired a four quadrants approach to the tower massing of the Proposed Development; the concept was seen as central to the idea of challenging the conventional tower typology and ensuring that the Proposed Development will be a landmark in Camden.

3.68 The four quadrant concept was therefore further explored, as presented in Figure 3.7, and opportunities for massing development were investigated, as presented in Figure 3.8.

Figure 3.7 Initial Massing and Articulation Explorations

Figure 3.8 Massing Concept Development



3.69 Expanding the floor plate from the pinwheel shape increases usability and future flexibility of programme for tower levels by ensuring that the floor plate is more connected.

3.70 Angling the expanded tower floor plate towards the east provides a continuity in the streetscape experience along Hampstead Road and adds additional space around the busy intersection of Hampstead Road and Euston Road.

3.71 Pushing in the four quadrants provides a vertical separation of each side of the tower so that each face is split into two. This separation gives the tower a verticality which can be appreciated from long range views and also up close as a passerby.

3.72 The initial tower massing has an angled east façade face. This tapering element was introduced in order to create a more streamlined building that would mitigate the adverse wind condition and relate to the neighbouring buildings along Hampstead Road, providing a more generous public space at the junction with Euston Road.

Tower Massing Evolution

3.73 Following the above refinements to the massing of the main tower, this proposal was tested against the protected views within which the site fell. There was a slight encroachment on the protected view as discussed in the *Key Environmental Considerations – Townscape and Visual Impact* section of this ES chapter and resulted in a slight reduction in the massing as shown in Figure 3.9.

3.74 The podium and tower massing were reduced by approximately 2.8m from the west side of the development due to interference with a LVMF viewing corridor from Parliament Hill that is framed by the existing Euston Tower and the BT Tower.

3.75 The development of the Proposed Development's Mechanical, Electrical and Plumbing (MEP) strategy required a considerable amount of louvres to support the amount of air required for the building's systems. Breathing spines were introduced at the junction of each quadrant, and massing adjusted accordingly, making this element both functional and consistent with the overall architectural concept.

3.76 The angle of the eastern quadrant changed from 12° to 9°; this change ensured that the BT Tower would be properly addressed when travelling south along Hampstead Road, retaining its character as an important local landmark.

3.77 A series of two-storey 'cuts' were added throughout each of the quadrants of these buildings providing space for amenity such as external terraces and winter gardens. These cuts also help further reduce the massing, creating a series of stacked boxes that allow the building to function as a 'vertical campus' to complement the character of Regent's Place.

Podium Massing Evolution

3.78 Initial podium designs featured a single box massing for the upper levels of the podium. This design evolved into a series of four floating boxes for the upper levels with a push and pull of their front faces so that the boxes stood apart from one another. The proposed design for the podium features a massing where the upper floor boxes are aligned on their front faces and lifted up on the northeast corner at Hampstead Road and on the northwest corner facing Regent's Place Plaza. In addition, the ground floor glass is pushed in strategically at entrances along both Euston Road and Hampstead Road.

3.79 The podium massing principles shown in Figure 3.10 were developed to guide the design of the lower levels of the building.

3.80 Large grills and thick façade elements were introduced, creating areas of interest and framed views up to the tower in the podium soffit when experienced from ground level. These features were integrated into the façade design to also operate as wind mitigating baffles and were optimised through iterative Computational Fluid Dynamics (CFD) and wind tunnel testing to ensure improved microclimate conditions in the public realm.

3.81 A regular 3m spacing for the podium façade module was developed to ensure visual consistency with the 3m tower façade planning module. Through adopting a consistent approach between podium and tower façades, the proposal as a whole was read more coherently.

3.82 Mini-Breathing Spines were introduced to reflect the vertical louvres that signify the integrated ventilation strategy in the tower façade. The mini-breathing spines helped break down the scale of the regular 3m rhythm of the proposed podium façade and allowed for a consistent approach to articulating the ventilation strategy across the design.

3.83 A terraced landscape was developed to create an active connection between Regent's Place Plaza and multiple levels of the podium, in line with the concept of creating a welcoming, inviting, and permeable public podium space and improving biodiversity / greening. This planted, sloped pathway and stairs provide access to the level 01 cafe terrace and has been significantly influenced through both the co-design and LBC pre-application workshops with the ambition of creating a fully accessible, engaging, and immersive green landscape that encourages entry and access through the public podium. A further external staircase is proposed to give access between the level 01 and level 02 terraces.

3.84 The co-design process highlighted the significance of Hampstead Road and the north-south route for the local community. A strategy was therefore developed whereby the main entrance to the public use in the podium was located at the north-east corner of the site at ground floor.

3.85 Following the reductions in the tower massing in the north-east corner to improve the proposals' setting within its context and the wider townscape, the podium and ground floor façades were also pushed in to provide more public realm space at this public corner.

3.86 To reflect the importance of the public use within the podium and inspired by the conversations and co-design consultation with the local community members, a flexible, 'demonstration space' was moved from level 02 to the ground floor to improve access and awareness of the public offerings. Additionally, as an architectural gesture, the podium was pushed up in this corner to create a generous and exciting triple height entrance space that provides visibility through and up the building.

3.87 Internally, a large social stair at the main public entrance and associated accessible lift were proposed to provide a clear public route up to level 01, through the podium and out towards the café terrace and Regent's Place Plaza beyond, thereby improving access and permeability through the podium and site. A series of varied public spaces along this route were proposed to help create a framework for a vibrant and engaging public programme that appeals to the local community.

Figure 3.9 Tower Massing Evolution

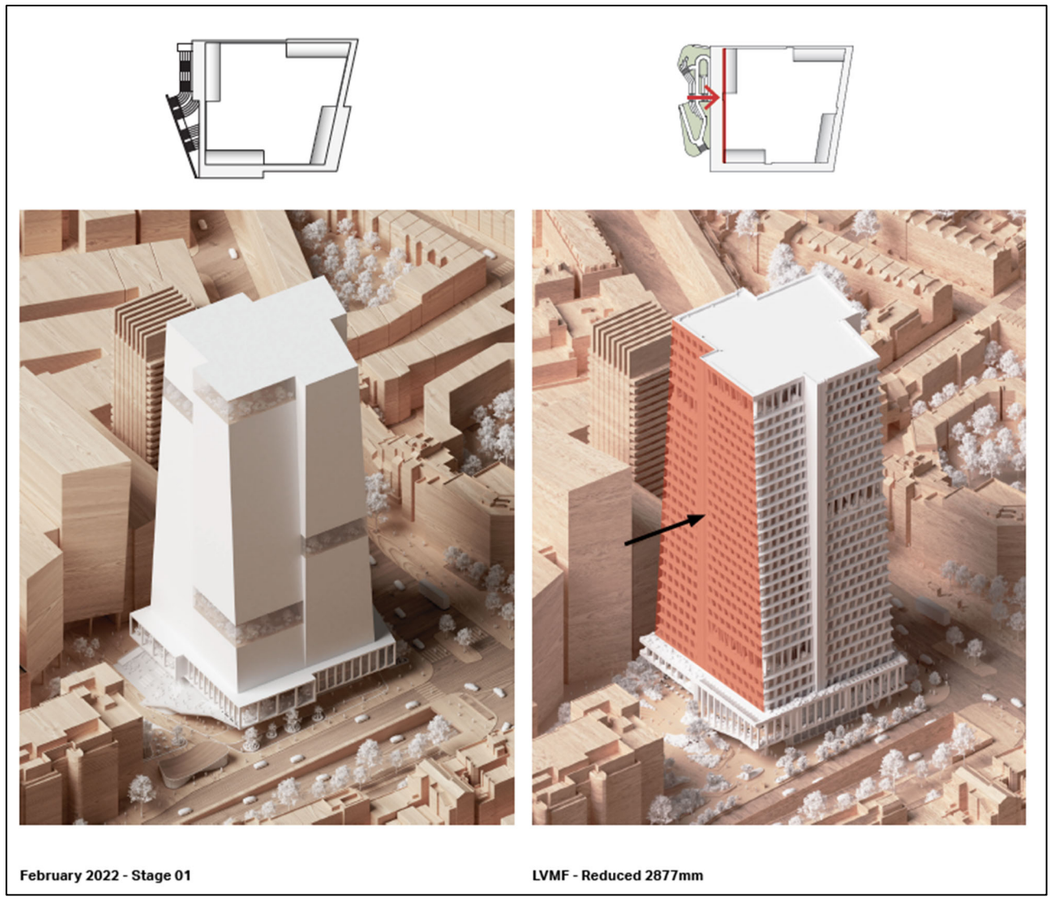
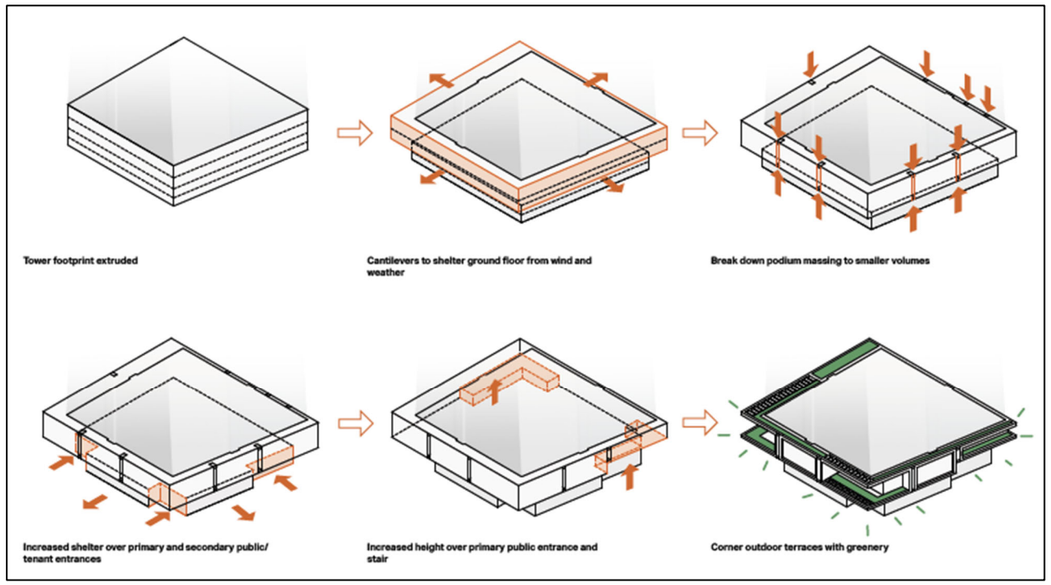


Figure 3.10 Podium Massing Principles



Key Environmental Massing Design Considerations

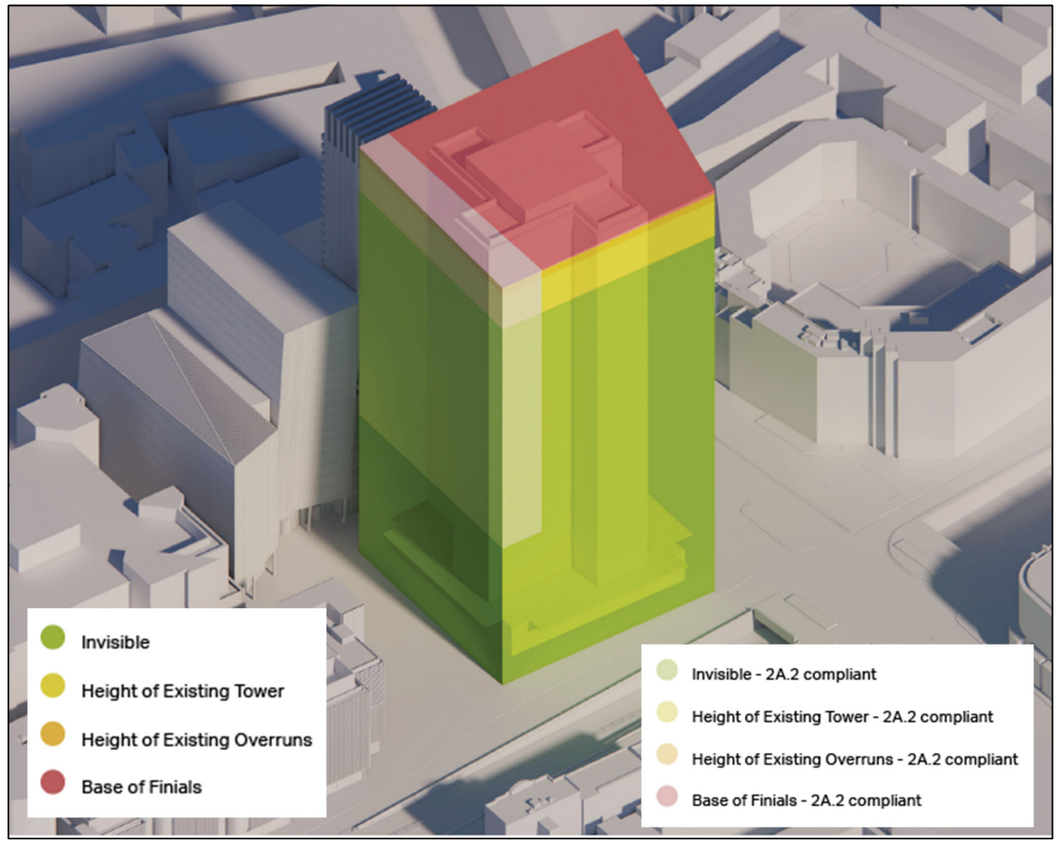
Townscape and Visual Impact

3.88 The London View Management Framework (LVMF) provided the visual context which defined the massing for the Proposed Development. The views and vistas from which the proposed scheme can be seen, as it relates to the protected LVMF viewing corridors, establishes the Zone of Visual Influence.

3.89 These key views, both distant and more locally, are one of the most important factors considered as part of the design process and have helped to define the overall architectural approach.

3.90 The Kinetic view from Lambeth Bridge over Houses of Parliament (LVMF View 19A) limits the height of the development. The massing to the west and south is also restricted by the view from Parliament Hill to the Houses of Parliament (LVMF View 2A.2) and limited to the east and south due to the ability to appreciate the BT Tower at points along Hampstead Road.

Figure 3.11 Townscape Considerations on Height and Massing



Daylight, Sunlight and Overshadowing

3.91 In order to minimise daylight and sunlight impacts to the surrounding existing and emerging sensitive receptors, the Proposed Development has undergone an iterative process of massing optimisation which has informed the final massing proposed.

3.92 These measures include the tapering in of the massing, setting back the building edge along Hampstead Road and not increasing the existing tower building height.

3.93 These measures ensure that the proposed scheme does not generate a continuous obstruction to the neighbours, and therefore maximises sky visibility and access to daylight and sunlight to the neighbouring properties.

3.94 Furthermore, in evolution of façade design, daylight simulations were used to explore factors such as direct sunlight hours, daylight factor and glazing ratios, in regard to concerns around solar gain and façade depth. This design process investigated a balanced solution that provides adequate daylighting factor, direct sunlight hours, and solid to glazing ratio.

Wind Microclimate

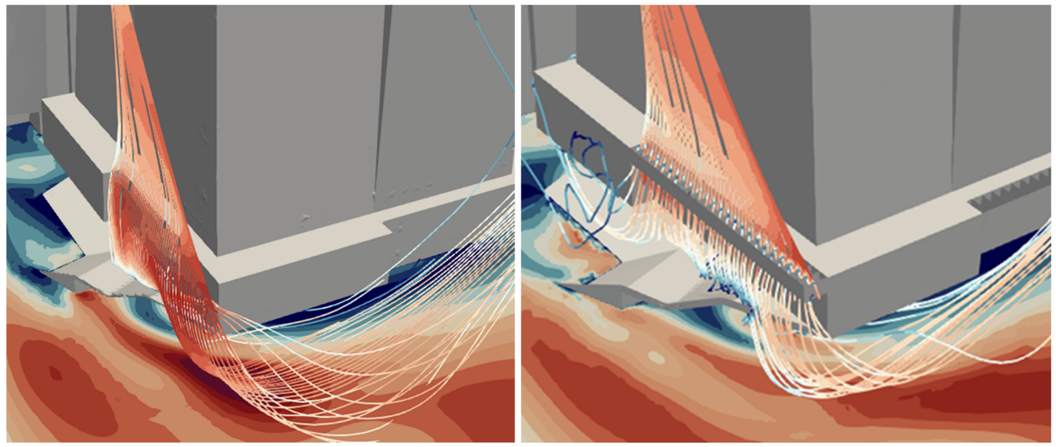
3.95 The wind microclimate both within and surrounding the site has been carefully considered throughout the design evolution process. Utilizing both Wind Tunnel and Computational Fluid Dynamics approach, the wind engineers have worked collaboratively with the architects to design inherent features (examples in Figure 3.12 and Figure 3.13) into the scheme and carefully consider the impacts on the local surrounding sensitive uses with the introduction of the Proposed Development.

3.96 Extensive design and testing of the Proposed Development showed direct links between specific architectural elements and calmer wind conditions at ground level. Many of these were incorporated where possible and include:

- Podium overhangs and ground floor setback to disrupt down drafting and create a sheltered public realm underneath;
- Porous fin arrays and oversized grills integrated within the façade articulation of the podium south-west and south-east corners (to create an intentional 'air-curtain' that disrupts direct ground level accelerations);
- Recessing main entrances facing Euston Road (to create local shelter) and Hampstead Road;
- Double-height amenity spaces up the tower façade provide some disruption to the downdrafting effects;
- External structural elements disrupt wind and microclimate locally, both at ground and on the terraces; and
- An integrated wayfinding totem creates localised improved conditions around the main south-west entrance.

3.97 All embedded mitigation features were iteratively tested using high-level CFD (steady state RANS for select wind directions) and confirmed with boundary layer wind tunnel testing. Examples of the CFD outputs and design iterations are shown in Figure 3.12 below.

Figure 3.12 3D Visualisation of Simplified Wind Streamlines

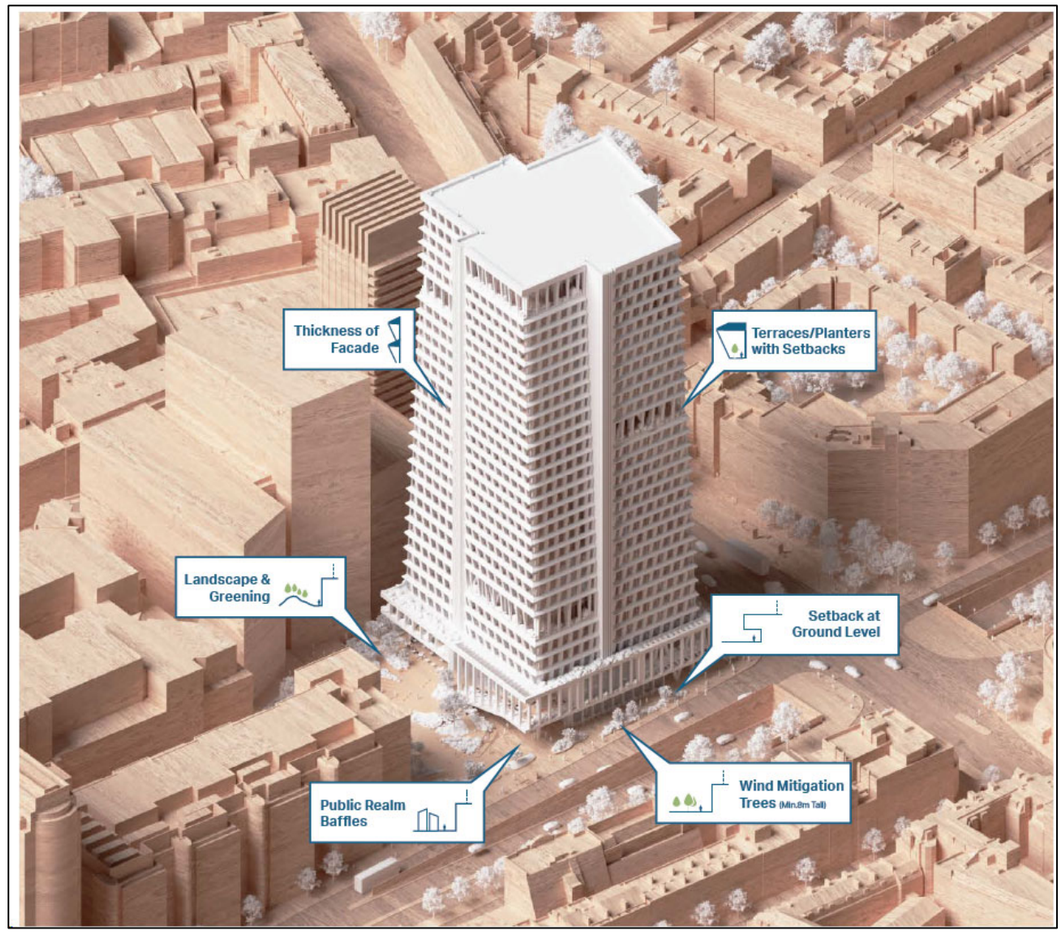


Note: wind streamlines interacting with early versions of the south-west corner of the Proposed Development, (left) without porous fin arrays and (right) with an early version of the porous fin array that was developed into the final design. Colours are qualitative and show areas of relative acceleration (red) and sheltering (blue) and are not directly comparable to Lawson conditions.

3.98 Key wind mitigation measures, as presented in **ES Volume 1, Chapter 11: Wind Microclimate** include:

- Pockets/Setbacks at Ground Level;
- Terrace Façade Articulation & External Structure;
- Wind Mitigation Trees;
- Landscaping Mounds & Greening; and
- 1no. Public Realm Wayfinding Totem.

Figure 3.13 Design Considerations for Wind



Key Environmental Design Considerations – Air Quality

Air Quality

3.99 The following design principles to reduce exposure to air pollution and improve air quality have been considered in the design:

- Ensuring that any ventilation air intakes, where proposed, are distanced appropriately from sources of air pollution;
- The exhaust flue of the proposed life-safety generator is located at the podium level with appropriate odour and contamination controls to ensure adequate dispersion and minimise the impact of emissions upon surrounding sensitive properties, as well as minimising the impact upon the Proposed Development itself;
- Maximise access to public transport options, prioritisation of cycle parking, as well as cycle and walking routes (mainly via the south-eastern corner of Hampstead Road, the southwestern corner of Euston Road and the Regent's Place public realm), to minimise private car trips to and from the site;
- Provision of cycle storage facilities at basement level, which are easily accessible either by a bike ramp accessed in the southwest corner of the building or via a set of steps and a lift located to the east of the

building, as well as provision of showers / changing facilities for commercial uses to enable staff to cycle to work;

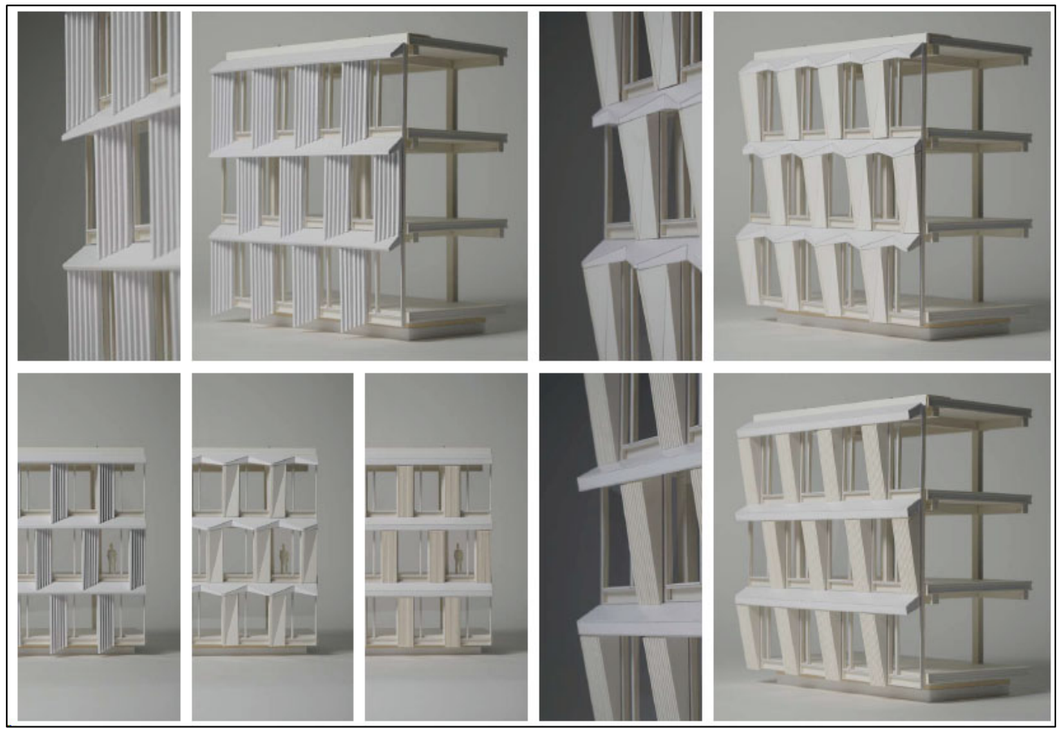
- Incorporating the Healthy Streets Approach into the scheme to reduce the need to travel, or to promote sustainable transport opportunities; and,
- Limiting car parking provision to only two blue-badge car parking spaces, in line with the London Plan requirements.

Façade Design Evolution

3.100 In the evolution of the façade design, a comprehensive approach was employed, harnessing various tools - from daylight simulations, physical models, 2D drawings, and digital 3D models - to refine and articulate the final vision.

3.101 Simulations and models, as presented in Figure 3.14, of various façade depths and geometry offered tangible insights into the interplay of light and shadow across the façade. The models facilitated a deeper understanding of the potential for integrating natural ventilation into solid façade elements, contributing to both aesthetic and functional considerations in the design evolution.

Figure 3.14 Façade Optimisation Models



3.102 Amenity spaces have been strategically placed across the building, taking advantage of key views and maximising exposure to natural daylight. These areas were initially distinguished by a clear glazed façade type which differed from the typical tower façade elements. Further refinements were made to the façade of the amenity spaces including:

- Very open and glass dominant amenity spaces were used as a gap in the façade, without solid divisions and solar shading;
- With the introduction of the spines the amenity spaces were adjusted, and different open terraces explored;
- Breaking up and experimenting with solidity, extending the main façade at amenity locations in various ways;
- Moving the amenity façade in and out to provide a variation in the expression and making space for a terrace and greenery; and
- A variation of push-ins creates a calm continuation of the main façade dynamic façade expression.

3.103 Following the above design process, amenity façades have been pushed back to create terraces, spaces for greenery and social outdoor interaction. By adding double high amenity façade elements, the tower now has a coherent expression and frames the view of the city from the inside.

Materiality and Colour Evolution

3.104 A key element of the Proposed Development's design is to tie in the new Euston Tower more closely with its immediate context and the architectural character of Camden. Whilst there is a broad range of typology, materiality and architectural approach visible in Camden, there are also some common threads, for example, red brick, warm natural stones and vertical proportions.

3.105 Throughout the design development the façade elements have been adjusted both in material, finishes and colour. This have been done to strengthen the relationship between the context around Euston. The façade colour aims to harmonise with the natural tones of Fitzroy Square Conservation Area and the landscape of Regent's Park. The façade materiality and colour of the Proposed Development evolved as follows:

- Perforated metal and terracotta - To achieve openness for air flow the sides of the façade was painted metal and the front in an energetic red terracotta. These two would appear different also over time with weathering;
- All terracotta - Along with moving away from metal façade elements the color of the building was also toned down with a lighter frame around the glazing;
- Introduction of aggregate - GRC was chosen as the façade material and more options were possible, both in color and finishes. Aggregates in a slightly darker color were studied with the aim of having a lighter perception on distance and an even lighter frame to differentiate the façade viewed from an angle;
- A monochrome façade - Changing the façade modules removed the frames and simplified the façade, as part of this, only one material and color was chosen for all elements in the façade; and
- Desaturated façade colour - To reduce the contrasts to the context, Fitzroy Square Conservation Area, and the landscape of Regent's Park a more desaturated terracotta color was chosen to draw further upon the most immediate context.

Landscaping and Public Realm

3.106 The following environmental objectives were set in relation to landscaping, public realm, urban greening and biodiversity:

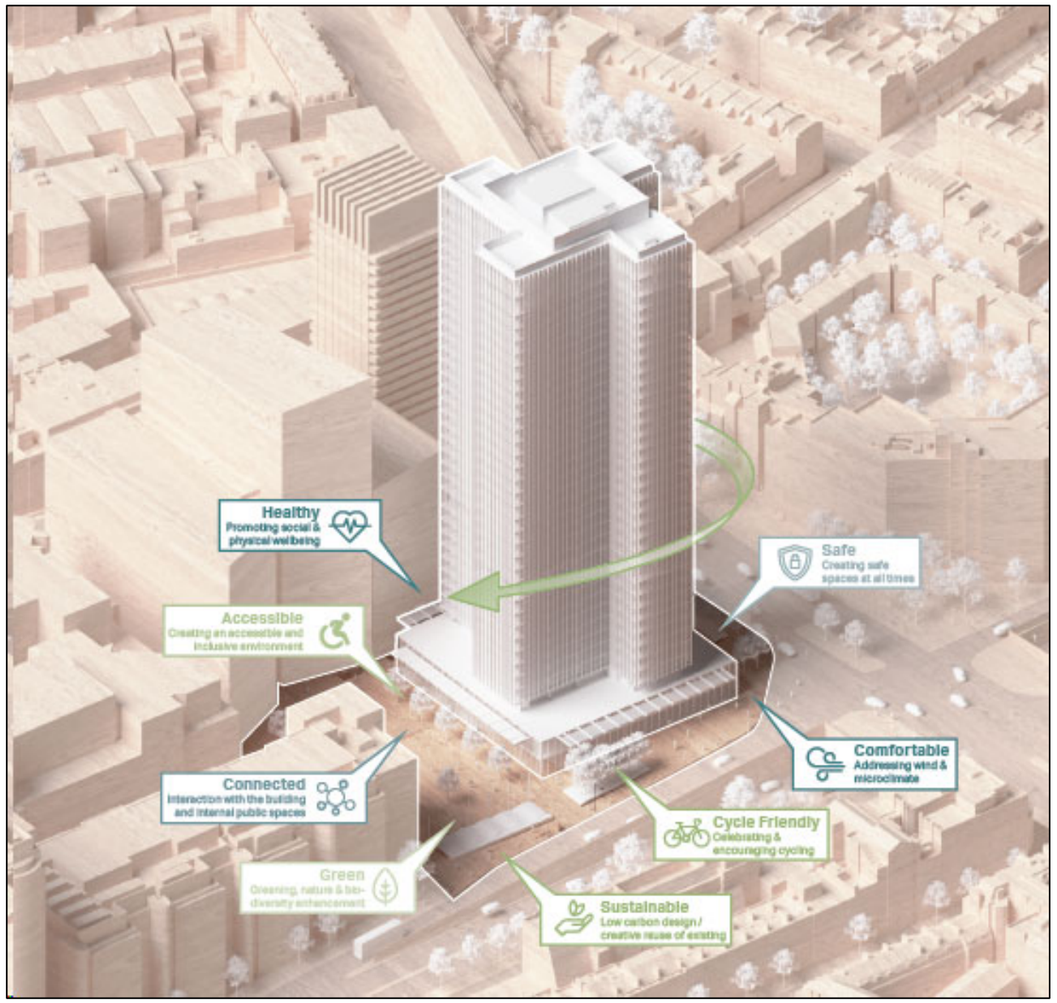
- Enhance biodiversity and link to the network of existing green spaces; and
- Encourage active travel through enhanced cycling.

3.107 The initial sketch for the connection to Regent's Place Plaza was an amphitheatre staircase which extended out from the shifted boxes and framed a rounded plaza at ground level. However, the design of the terraced landscape evolved through the design process:

- Discussions around accessibility and incorporating greenery into the staircase enabled the design to evolve to a wider stair and a ramp that wove between large green planters;
- Curvilinear Edges - The organic design of the landscape mounds begins to be reflected in the curvilinear edges of the staircase;
- Terraced Landscape Mounds - The landscape mound concept is expanded up and onto the stairs creating a terraced landscape that connects ground floor public realm to upper levels; and

- The proposed design for the terraced landscape finds the balance between green landscape elements embedded in the space and clear and accessible connections to upper levels of the podium.

Figure 3.15 Sustainable Design Principals



3.108 The spatial organisation and character of the public realm has been designed with reference to Hampstead Heath, a greenspace within the borough and one that was historically linked to the site through water. The design uses principles found in the natural ecosystem to create lasting greenspace in an urban centre.

3.109 The development of the spatial design took inspiration from fluvial patterns and imagined pedestrian flows as water courses that defined the landforms. Therefore, pedestrian movement determined the location and size of landscape features, with a central clearing located at the base of the stairs. This principle allows for the configuration of a flexible use space within the plaza that does not hinder the anticipated movement throughout Regent's Place.

3.110 Four key habitats were highlighted and studied for their character, ecosystem functions, and site suitability:

- Heathland: Found at the highest elevation in sandy, nutrient-poor, well-drained soils. Plants are often robust, drought tolerant species;
- Grassland: Similar soil profiles to heathlands, grasslands are found at lower elevations and comprise of a variety of wildflower meadows and tall grasses punctuated with fast-growing pioneer tree species;
- Woodland: Successive from older heath and grasslands, increased nutrient availability in the soils allow for larger plant species to root. Characterized by ancient tree canopies that create ideal conditions for shade-tolerant understorey planting; and
- Wetlands: Habitats that are periodically wet or flooded and are home to a variety of grasses, and hydrophilic tree species.

3.111 The proposed design for Regent's Place Plaza revolves around a strategically arranged array of landscape elements encircling a civic square.

3.112 The eastern side integrates podium stairs into the landscape, extending the public realm and connecting the ground floor with the first-floor podium through dense planting beds. The stairs work to extend the functionality of the civic square by providing additional seating opportunities or a back drop for performances. The ability to fully drain the water feature allows the entirety of the space to be used for public programming.

3.113 The inclusion of tree planting along the stairs further extends the site's green potential vertically. At the core of the plaza concept lies a shallow waterplay feature serving as both a splash pad and reflective pool. This feature, may be programmable to adapt to changing climates and user preferences, can is proposed to be fully drained to create open space in the square.

3.114 Situated to the north-west are proposed to be two wetland beds, each equipped with accessible boardwalk crossings. The freshwater wetland, positioned to the north, maintains a permanent body of water, while the riparian wetland to the south allows for periodic flooding during storm events. Both beds are designed with submergent and emergent vegetation to foster biodiversity. The main entrance to the public space and cafe on level 01 is accessed via stairs or a ramp from the plaza, while to the south, the primary cycle store is conveniently reachable through a cycle ramp beneath the central staircase.

Key Environmental Landscape and Public Realm Design Considerations

Ecology and Biodiversity

3.115 Sustainability is a key principle of the Proposed Development and hence biodiversity enhancement is a priority. A site walkover was undertaken in January 2023 to establish the ecological baseline conditions at the site, as well as provide recommendations for measures to improve biodiversity as part of the Proposed Development. These include:

- Incorporation of bird boxes into the façade of the Proposed Development and planting native species including berry-bearing plants to support birds;
- Design and implement a lighting strategy in accordance with the Bat Conservation Trust (BCT) and Institution of Lighting Professionals (ILP) guidance including installation of low-level LED bulbs with directional, downward facing and shielded lights pointed away from key green features such as wildlife friendly landscaping;
- A green roof planted with biodiverse and nectar-rich wildlife friendly herbaceous / shrub mix in limited roof space.
- Provision of extensive, substrate-based biodiverse roofs on all available flat roof spaces;
- SUDS features such as rain gardens and attenuation basins;
- Nectar-rich wildlife planting at terrace and ground level within the planters (such as those listed on the Royal Horticultural Society Plants for Sect 41 and UKBAP pollinators);
- Retention of existing trees where possible as well as street tree planting should be incorporated into the public realm areas;
- Hedge planting acting as a buffer to Euston Road A501 with a diverse mix of native species;
- Invertebrate habitat features including bee houses / log piles to be incorporated into the public realm;
- Bird boxes for swift, house sparrow, black redstart and peregrine falcon; and
- Bat boxes targeting crevices-dwelling species.

3.116 The introduction of new green spaces and a fully accessible public realm has been a key design objective from the outset, to create a space for future users and visitors, as well as existing users in the surrounding area to interact with nature.

3.117 The current site has a low potential to support nesting birds and negligible potential to support other notable and / or protected species as detailed in the Biodiversity Net Gain Assessment.

Traffic and Transport

3.118 Due to the site's proximity to a number of key transport interchanges, including Euston Station, Warren Street Station and Great Portland Street Station pedestrian and cyclist permeability and access were key considerations in the design development.

3.119 Pedestrian flow data was collected in April 2023 to establish the existing baseline for pedestrian flows which was accompanied by a Pedestrian Comfort Level assessment to consider the current pedestrian experience. The results of these initial studies indicated that current pedestrian comfort levels were high, and therefore maintenance of this was a key consideration in the evolving design.

3.120 Cyclist facilities have also been a key consideration from the outset of the design proposals, as the site is located in proximity to a number of key cycle routes, including Cycleway 27 which connects Hammersmith and Clapton via Paddington, Angel, Islington and Hackney. There are currently 78 cycle stands in the public realm surrounding Euston Tower as well as Brompton lockers within Regent's Square. The existing provision will remain and will be relocated within the new public realm. An additional 12 short stay cycle parking will be provided bringing it to a total of 90 parking spaces. Further cycle parking for the Proposed will also be provided in the basement, as detailed in **ES Volume 1, Chapter 4: The Proposed Development**.

SUMMARY

3.121 This ES chapter demonstrates that the Proposed Development has been subject to a detailed design evolution process, holistically considering and evaluating environmental constraints and opportunities throughout. Through an extensive consultation process, the Proposed Development has significantly evolved, with the consideration of key environmental and socio-economic effects (both beneficial and adverse).

3.122 The final design of the Proposed Development (discussed in Chapter 4 of this ES) has been informed by key environmental considerations, including whole life carbon and greenhouse gas emissions, townscape and visual effects, daylight, sunlight and overshadowing, wind microclimate, air quality, ecology, biodiversity, and social infrastructure, becoming key drivers for the design of the Proposed Development. The design evolution of the Proposed Development has responded to stakeholder and public concerns and balanced the environmental considerations to create a development with minimised environmental impacts while delivering high quality design.