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HOUNSLOW CHARACTER, SUSTAINABILITY AND DESIGN CODES SPD

PART A4 TALL BUILDING CODES

 London Borough
of Hounslow

Allies and Morrison
Urban Practitioners

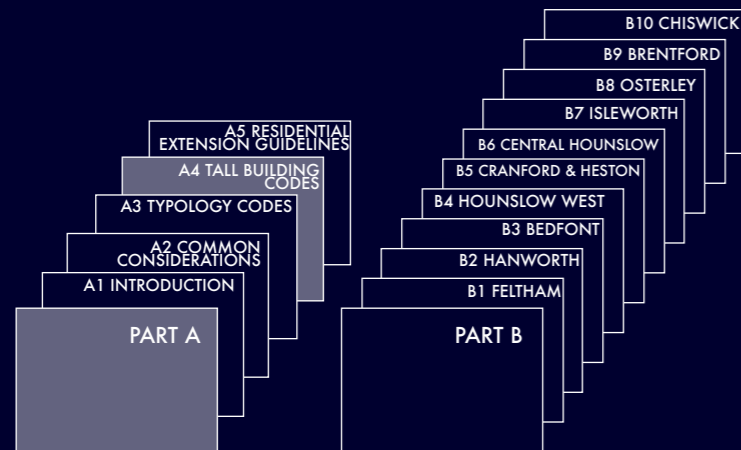
A4 TALL BUILDING CODES

Document structure

This Character, Sustainability and Design Codes SPD is comprised of the following parts;

- Part A: Introduction & Design Codes
- Part B: Places

Within each part, there are individual chapters that must be opened separately to view. Use this diagram to help navigate the structure of the Character, Sustainability and Design Codes SPD.



This section provides further detail on the criteria for assessing tall buildings set out in the London Plan Policy D9

Tall buildings introduction	5
Considering context for tall buildings	7
The public realm	10
Good design	11
Microclimate	13
Sustainability	14

Tall buildings introduction

The role of tall buildings

A43 Tall and high density buildings can offer a range of benefits. They can make use of district energy systems; they can help people live closer to local centres, reducing sprawl and retaining vital open land. When situated close to transport links, tall buildings can reduce the reliance on cars and encourage healthier ways of getting around. In isolation, tall buildings can also improve way-finding and add to the visual intricacy of neighbourhoods.

A44 However, perhaps more than any other housing typology, tall buildings must balance the needs of individual homes with broader townscape considerations. This building type can have a profound, lasting impact on the skyline and significantly compromise the character of historic areas if they are situated inappropriately or poorly designed. A single tower inserted into an already well-connected site with significant activity at ground level is likely to be more successful as both a home and an integrated 'piece of city' than one on a more suburban or isolated site. This housing type is suited to areas on the 'transform' end of the spectrum. Due to the high amount of embodied carbon within a tall building, it is important that tall buildings are well designed to avoid subsequent demolition and the environmental implications associated with this.

Existing building heights

A41 Hounslow is a predominantly low-rise Borough comprising two-storey suburban houses. The majority of mid-rise buildings are located around town centres in the form of office and apartment buildings. Clusters of mid-rise buildings can also found within industrial estates, business parks and arterial roads such as the Staines Road or Chiswick High Road. Tall buildings are concentrated within town centres such as Feltham, Hounslow Central and along the Great West Road between Brentford and Gunnersbury.

A42 For a more detailed measure of the range of existing building heights in different areas, please refer to the individual neighbourhood sections in Part B Places and the separate Tall Buildings Study.

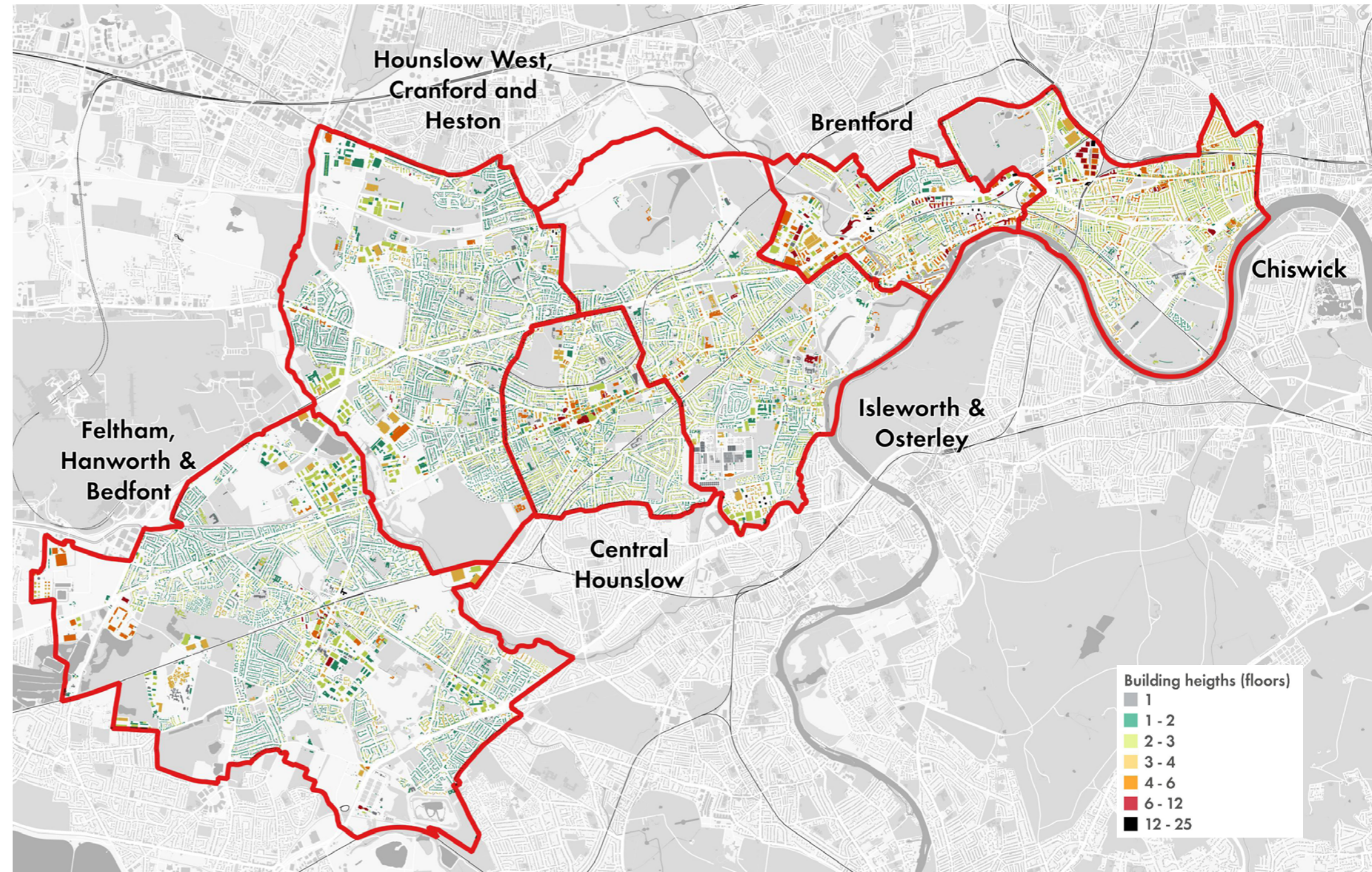


Fig A4.1 Existing building heights in Hounslow



Fig A4.2 Examples of existing taller elements found across the Borough © Allies and Morrison

Considering context for tall buildings

The built environment

- A45 Applicants considering tall building developments are encouraged to:
 - present alternative options for equally dense but lower / medium-rise forms of development as part of the design process.
 - present a clear townscape merit and justification for their height which ought to be proportional to their role and function in the immediate and broader context.
 - integrate taller elements within larger blocks with varied massing which can mediate between the scale of proposed developments and existing buildings.
 - seek to protect or improve the cross-sectional profile and character of existing streets.
 - reinforce the spatial hierarchy of the wider context by aiding legibility and way finding.
- A46 It is best practice for proposals for clusters of tall buildings (i.e. three or more within close proximity) to:
 - position taller buildings closer to the centre and lower buildings towards periphery of the cluster to manage the transition in height
 - be designed with varied heights to provide visual intricacy across the existing skyline.
- A47 Proposals for tall buildings should evidence how they respond sensitively to local character through visual impact testing of nearby, mid-range and long-distance views. The analytical potential of 3D modelling of proposals in their context is encouraged through Zones of Theoretical Visibility Testing, Accurate Visual Representations and verified views analyses.

- A48 These visualisation techniques can be used to ensure that tall building proposals have taken into account historical settings, the local built environment and local heritage assets within and beyond the borough.. Such testing is particularly important within Conservation Areas, near listed buildings and in places where there is heritage at risk. In such areas, the careful selection of materials, colours and outward appearance is key to ensuring that tall buildings enrich and reinforce rather than work against their historic settings.
- A49 Tall buildings will have the greatest impact on the evolving skyline of Hounslow, as such their design should be exemplary. In accordance with London Plan Policy D4, such schemes will undergo design review by an independent panel to ensure that applications conform with Council policies, best practice guidance and demonstrate a positive contribution to their context.



Fig A4.3 Proposed new build scheme of six storeys in a suitable-and-sensitive location, where the lower four storeys (R) reinforce the scale of existing buildings across the street (L) while the upper two floors stepped back from the street.
© Allies and Morrison, Hayes Davidson

The natural environment

- A4.10 When considering nature, proposals for tall buildings should aim to:
 - work with the site topography to exploit prospects and panoramas without impeding local views.
 - limit excavation and, where possible, reuse excavated soil on site.
 - assess whether a site is liable to flooding and ensure that the flood risk may be properly managed and mitigated.
 - seek to protect and enhance the open quality and amenity of the Green Belt, Metropolitan Open Land and other Public Open Spaces including parks, rivers and canals.
 - consider the existing ecosystems and surrounding sites and demonstrate how the proximity of tall buildings to biodiverse woodlands or waterbodies supporting notable animal species would not negatively impact on their habitats and migration patterns.

Key policies and guidance

- London Plan Policy D9
- Local Plan Policy CC3
- Emerging Tall Buildings Study

The public realm

A characteristically 'London' tall building...

A4.11 Many tall buildings in the City of London, at Canary Wharf and along urbanised parts of the river Thames adopt a more generic, international style of architecture which is characterised by the extensive use of glazing, metallic profiles and deep (usually office) floorplates. More recently, a new vernacular of tall buildings has emerged in less central parts of the city which share a set of common characteristics or aspirational qualities.



...mediates with buildings
With techniques such as shoulder blocks to modulate the overall composition of the massing to provide a transition between the new, taller elements and the existing buildings. © Allies and Morrison

Factors to consider

A4.12 Successful tall buildings integrate well within neighbourhoods, balancing the interests of occupants and providing a good living environment while strengthening the sense of local community. To establish a positive relationship with their surroundings, tall buildings proposals should seek to:

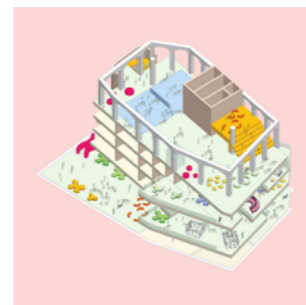
- analyse the nearby urban morphology and, where possible, adopt a finer grain of building footprints;
- provide new or extend existing linkages to roads, pavements and crossings encouraging active travel;
- improve permeability through the site and assert pedestrian priority where possible;
- ensure the width of footways are proportional to their role in the overall movement network;
- create new, publicly accessible landscaped open spaces that are well designed and enhance the outdoor amenity;
- avoid areas with ill-defined functions;
- introduce soft landscaping, tree-planting, sustainable urban drainage and other measures which enhance the natural character of the site;
- ensure that the quality and amenity of adjacent buildings and outdoor spaces are not diminished with regards to privacy, overlooking and overshadowing;
- offer a mix of uses, particularly at ground level, to animate the street and to encourage wider social and economic interactions.

Safety and management

A4.13 Tall buildings should benefit from a clear delineation of what is public and private space. Defensible spaces and street-facing front doors at ground floor can provide a sense of enclosure and safety. The security and management regime of communal areas should be set out clearly to ensure the design an operational use of the building follows Secured By Design guidance. Well-defined prevention, evacuation and response strategies will minimise the threats from fire, flooding, terrorism, and other situational hazards. If terror protection is considered relevant, the use of bollards, planters or low walls along the perimeter are preferable to taller fences.



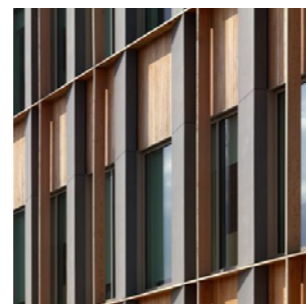
...evolves existing types
Extending London's long tradition of urban innovation by reinventing historical building types, augmenting their density potential and making them fit for purpose in the 21st century. © Allies and Morrison



...is internally diverse
Catering for residents by providing a blend of private and affordable housing tenures and a mix of housing sizes for singles, couples, families, young and old - in tandem with non-residential uses. © Allies and Morrison



...offers visual intricacy
Through the picturesque arrangement of built form and proposed roofscape to provide interesting and delightful views from street level and visual connections to nearby buildings.



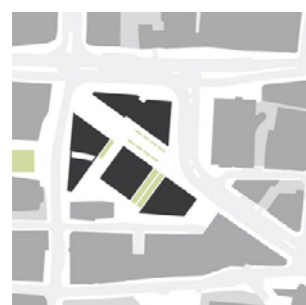
...is well crafted
Through a high quality of design, masonry construction and brick detailing which together enhance the outward character and the internal amenity of the new development. © Allies and Morrison



...serves its locality well
Providing characterful buildings at high density with shared amenities and active frontages framing attractive streets with pockets of carefully conceived green open spaces and play areas.



...is multi-layered
Aesthetic variation through the subtle use of subdued materials, colours and textures with a sense of depth achieved by windows recessed in deep reveals and projecting balconies. © Edmund Sumner



..is tailored to its site
London tall buildings reflect the material character of their surroundings as well as the particular geometries and the three-dimensional constraints that are present on site. © Allies and Morrison



..treads lightly
By ensuring that the footprint of the building does not occupy the entire site but instead introduces new spaces and passages at ground floor offering connections to and through the site. © Ståle Eriksen



Fig A4.4 Public spaces offset the pressure of dense and high-rise development © Dennis Gilbert / VIEW



Fig A4.5 Clear delineation of public and private space. © Dennis Gilbert / VIEW

Good design

The top

- A414 The top provides an inflection point in the existing roofline. The extent to which the top is iconic or sympathetic to the local character should be justified by the role of the tall building in relation to its position and wider context.
- It is preferable that the uppermost floors be articulated and distinct to the middle.
 - Roof-top telecoms and mechanical equipment (such as plants, BMUs and lift overruns) should be integrated within plant enclosures and concealed by parapets.
 - While publicly accessible viewing platforms are encouraged, outdoor amenity spaces must ensure safety for persons at height and street level.

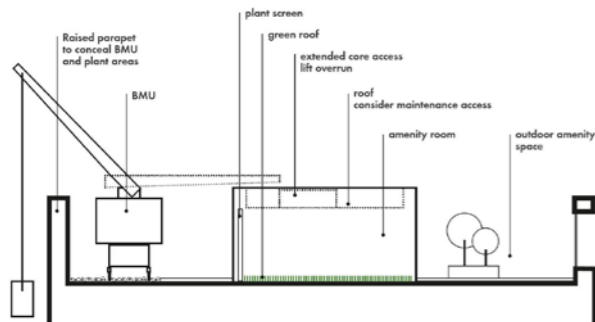


Fig A4.6 Roof section indicative of the variety of components and uses

The middle

- A415 The middle comprises the main building volume. Its three-dimensional form will affect the microclimate directly so the design should consider the impact on wind flow, ambient heat, privacy, light and overshadowing. The building envelope should balance the internal functional requirements with outward elegance and appearance to and from surrounding buildings, streets and spaces.
- A direct relationship between the typical floor plate(s) and facade composition is desirable.
 - A harmonious modulation of elements such as balconies, recesses, and fenestration is desirable.
 - The selection of materials and lighting ought to enhance the townscape, particularly at night.

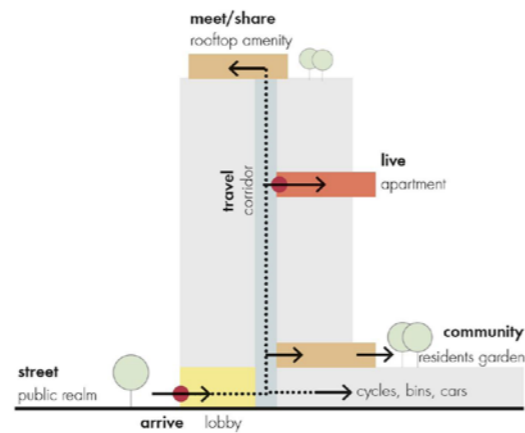


Fig A4.7 Cross-section diagram of the tiered functions in a tall building

The base

- A416 The base creates a sense of belonging to one's home which is important for the sustained care and longevity of the built fabric. Base design comprises the:
- Building approach: the public realm and entrance should provide a welcoming arrival experience.
 - Front of house areas: entrance lobby, circulation and shared spaces should be safe and well lit.
 - Ground floor podia and communal spaces should be easy to access, inclusive and animate the surrounding streets.
 - Back of house areas should be well organised and sufficiently large to accommodate essential functions such as bike storage, bin storage, car parking and refuse collection.



Fig A4.8 Welcoming, attractive and clearly defined entrances which relate positively to the surrounding street © Guy Montagu-Pollock / arcaidimages.com (left) and © Dennis Gilbert / VIEW (right)

Microclimate

- A417 It is essential to understand the local, climatic context within which a proposed tall building will be situated. A 'microclimate' is shaped by the interaction between the climate and the built environment. It influences the way tall buildings perform and how end users experience the urban environment through variations in temperature, humidity, rainfall, wind and other factors.
- A418 Severe microclimatic variations which relate directly to tall building development include:
 - Extreme wind turbulence: caused by the height and three-dimensional form of a building and its orientation to the prevailing wind direction.
 - The urban heat island effect: whereby canyon-like developments with large surface areas absorb and reflect sunlight increasing the rate at which urban streets and spaces are heated.
- A419 Analyses of the macro- and micro-scale climatic conditions for a site should be carried out at the earliest possible stage of the design process to ensure that a scheme can anticipate opportunities and mitigate risks in the way that the local climate interacts with the site.
- A420 Taking such early initiative will also ensure that effective passive design solutions can be implemented from the outset. This can lead significant downstream efficiencies in energy demands such as heating and cooling as well as improvements to occupational comfort.

Please refer to the LETI Climate Emergency Design Guide for more information on how new buildings in the UK can address climate change and sustainability

- A421 It is advised that the following factors be considered when carrying out a comprehensive microclimate analysis:
 - Solar radiation: evaluate annual levels of direct and indirect solar radiation in comparison to cloud cover. Can frequency of solar exposure during winter months facilitate an effective passive solar design to aid heating demand? Or does cloud cover prevent this? Assess the seasonal daylight available to outdoor amenity spaces and sunlight penetration into the building and its effect on occupant comfort and thermal performance.
 - Temperature: review annual peak high/low and average temperature by month. Consider the annual variation in temperature and any notable stress points from extreme high/low events.
 - Wind: assess the direction and speed of prevailing winds and model its impact in relation to private amenities and public realm areas surrounding the building.
 - Noise: consider the potential noise levels created by air movement, building use or operational machinery to maximise the enjoyment of internal and open spaces around the building.
 - Air movement: model the building envelope and its effect on air movement. Consider massing options which encourage the effective dispersion of pollutants, but avoid adversely affecting street-level conditions.

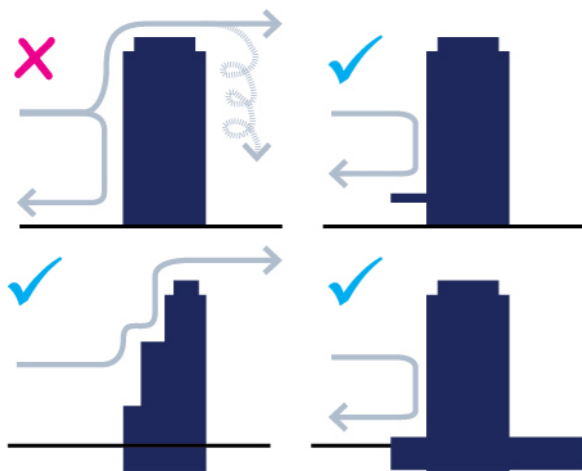


Fig A4.9 Canopies (b), setbacks (c) and podia (d) can mitigate wake and downwash effects of excessive wind (a)

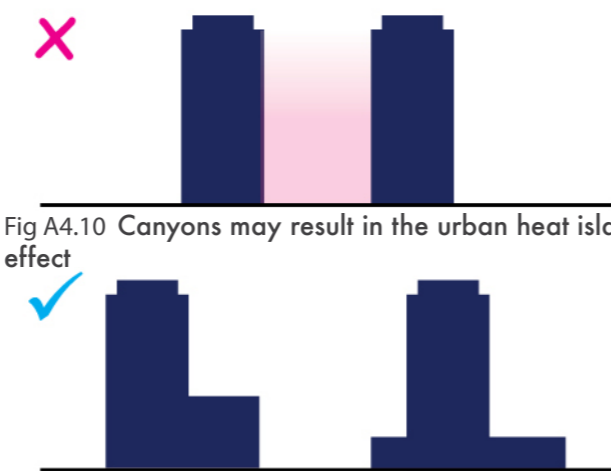


Fig A4.10 Canyons may result in the urban heat island effect

Fig A4.11 Setbacks and wider street can mitigate the excessive heat

Sustainability

- A422 Tall buildings are held to a much greater level of design scrutiny than any other building type by the London Plan. At the same time, owing to their cost, scale, complexity and potential impact in terms of housing delivery, tall buildings are required to make considerable and positive social, economic and environmental contributions to their localities. Managing these diverse requirements is challenging yet the benefits of truly sustainable tall buildings are significant. Proposals that integrate early and sustainable design strategies will benefit from the considerable economies of scale which tall buildings present. Factors to consider include:
 - **Glazing ratio:** large amounts of glazing can lead to increasing levels of heat loss (in heating season) and solar heat gain (in cooling season) - both of which result in additional energy consumption (and the latter in overheating in residential properties). Glazing levels should seek to satisfy space heating demand, ensuring good daylight levels and limit peak solar gain. Proposals should refer to TM59: Design methodology for the assessment of overheating risk in homes (2017) for further information.
 - **Equipment:** Energy use associated with mechanical apparatus such as lifts increases with height. Tall buildings should seek to limit energy demand via low-energy vertical transportation systems.
 - **Embodied Carbon:** It is generally accepted that embodied emissions in the superstructure of tall buildings may rise with height due to the wind loading requirements. Design teams should pay careful attention to this target and potentially challenge the safety margins being used in structural design elements.
 - **Amenity space:** post-pandemic research indicates that levels of occupant discomfort in mid and high-rise properties mostly stems from the lack of private amenity space. Balconies may become infeasible (and unused) at greater heights. Winter gardens offer one solution to this issue by providing a 'buffer' space between internal and outside conditions. Greater

provision of communal amenity spaces is extremely desirable.

- **Externalities:** tall buildings also risk negatively impacting neighbouring properties, so care should be taken to properly evaluate and mitigate these risks during early design stages. Examples include solar access for daylight and renewable energy systems and build up of pollution.
- **Longevity and reuse:** many tall buildings only last as long as the facade system they employ. In the case of curtain wall cladding this is limited to 35-50 years, yet the design life of the structure is hundreds of years. The durability of building components (and the ability to replace some elements without compromising others) should be prioritised alongside the potential to recycle components as part of a wider circular economy. See the GLA's Whole Life-Cycle Carbon Assessments guidance for more information.

Passive design principles

- A423 Applicants are encouraged to adopt Passive design principles and consider issues which are especially relevant to tall buildings. Key junctions in the thermal envelope such as wall to floor connections, window head/cill/jamb and balcony connections as the efficiency gains/losses will multiply at such scale and any impact will be cumulative.



Fig A4.12 Agar Grove is a high density mid/high-rise Passivhaus development promoting a 'fabric-first' approach to energy performance and human comfort ©Hawkins/Brown

